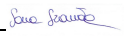
Base Load Power Hub (BLPH)

MANUFACTURERS RECORD BOOK (FINAL DOSSIER)

Document Number: 1724000798-QC-DB-00010

Document Class: 2

BALL, SBB, DBB VALVES

					
01	08/05/2025	Accepted for Construction (AFC)	F.CRIMELLA	G.GRANATA	A.DE CARLI
00	18/12/2024	Issue for Review (IFR)	F.CRIMELLA	G.GRANATA	A.DE CARLI
Rev.	Date	Description	Prepared	Reviewed	Approved

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1	Cover	X	X						
2	Table of Contents	X	X						
3	Revision / Change Log	X	X						
4	MRB INDEX (FINAL DOSSIER)	X	X						

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Rev.	Description
00	Issue for review (IFR)
01	Accepted for Construction (AFC)

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PART 1 – DESIGN DOSSIER

CHAPTER 1

SECTION 0

INDEX

Base Load Power Hub (BLPH)

MANUFACTURERS RECORD BOOK (FINAL DOSSIER) - INDEX

Document Number: 1724000798-QC-LIS-00011

ROSETTI MARINO	
1	NO COMMENTS - APPROVED - WORK MAY PROCEED
2	MINOR COMMENTS - REVISE AND RESUBMIT - WORK MAY PROCEED
3	MAJOR COMMENTS – REJECTED – DO NOT PROCEED
4	APPROVAL NOT REQUIRED
NOTE: Approval doesn't relieve the supplier from mandatory compliance with contractual documents and specifications. Comments made do not imply acceptance of any cost or delivery impact.	
Sign	Date
ROSETTI MARINO S.p.A. Shipyard Unit Quality Control Dept.	05/11/2024

Document Class: 2

Rev.	Date	Description	Prepared	Reviewed	Approved
03	08/10/2024	Accepted for Construction (AFC)	F.CRIMELLA	G.GRANATA	A.DE CARLI
02	13/09/2024	Accepted for Construction (AFC)	F.CRIMELLA	G.GRANATA	A.DE CARLI
01	12/06/2024	Issue for Review (IFR)	F.CRIMELLA	G.GRANATA	A.DE CARLI
00	24/05/2024	Issue for Review (IFR)	F.CRIMELLA	G.GRANATA	A.DE CARLI

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4	MRB INDEX (FINAL DOSSIER)	X	X	X	X				

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Revision / Change Log

Rev.	Description
00	ISSUE FOR REVIEW (IFR)
01	ISSUE FOR REVIEW (IFR)
02	ACCEPTED FOR CONSTRUCTION (AFC)
03	ACCEPTED FOR CONSTRUCTION (AFC)

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1	**0**		**List**	4
	1	1724000798-MD-LIS-00001	Document Register	10
	2	1724000798-PP-LIS-00012	Vendor Asset and Tag Register	16
2	**0**		**Diagrams**	N/A
	1		PFD	N/A
	2		P&ID	N/A
	3		ESD	N/A
	4		Isometrics	N/A
	5		Systems diagrams	N/A
	6		Block diagrams	N/A
	7		Computer Systems Architectural Diagrams.	N/A
3	**0**		**Drawings**	
	1	1724000798-PP-DA-00003	General arrangement drawings	21
	2		Plot Plans	N/A
	3		Layouts	N/A
	4	1724000798-PP-DA-00004	Data Sheets	80
	5		Detail shop drawings (excluding detailed machining drawings).	N/A
4	**0**		**Project Procedures and Specification**	
	1		Project management	N/A
	2		Engineering	N/A
	3		Procurement / Supply	N/A
	4		Construction	N/A
	5-1	1724000798-NDT-PRO-00006	NDE Procedure	124
	5-2	1724000798-QC-PRO-00007	Helium Test Procedure	N/A
	5-3	1724000798-QC-PRO-00008	Fugitive Test Procedure	157
	5-4	1724000798-QC-PRO-00009	Hydrotest and Final Test Procedure	174
	5-5	1724000798-QC-PRO-00015	Packing Handling Shipping Preservation and Storage Procedure	199
	6		Installation - Transportation	N/A
	7		Hook-up	N/A
	8		Start - up	N/A
	10	1724000798-PP-LIS-00013	Installation Operation and Maintenance manual	211
	11	1724000798-COM-LIS-00014	Spare Part Index Register (Commissioning, 2 Years Operation, Capital)	242

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PART 2 - CERTIFICATION DOSSIER				
Chapter	Section	DOCUMENT NUMBER	Description	Page
1	**0**		**Acceptance**	
	1		Derogations and queries registers with signed copies	N/A
	2		Internal and External Inspection certificates/reports (Vendors)	251
	3		Conformity with technical specification certificates	N/A
	4		Acceptance qualifications list (equipment/construction)	N/A
	5		Documents confirming Takeover/Hand over between parties.	N/A
2	**0**		**Manufacturing and testing Record**	
	1		Authorities and Third parties' acceptance and release certificates/reports	N/A
	2		Materials certificates (including consumables, such as electrodes and paint)	252
	3		Weighing and Centre Of Gravity certificates	N/A
	4		Warranty Surveyor's certificates.	N/A
	5		Floating and Marine Registrations (Classifications)	N/A
	6	1724000798-QC-ITP-00002	Quality Control plan /Inspection & test Plan / Inspection Reports	1216
	7		Marking drawings and associated traceability	N/A
	8		Non-Destructive Testing certificates/reports	1232
	9		Dimensional control certificates/reports	N/A
	10		Painting certificates	1418
	11		NCR's and Waivers reports	N/A
	12		Welding and preheating book/procedures	N/A
	13	1724000798-MAT-PRO-00005	Painting Procedures	1582
	14		Workers qualifications (welders, painters…).	1629
	15		Compliance with CE Marking, ATEX, and PED requirements as relevant to the scope of supply.	1631
	16		Relevant equipment Design IRCs (where applicable)	1637
	17		Pressure & Function Test Reports	1646
3	**0**		**Test Record**	
	1		Test records included any qualification testing that has been performed when applicable.	N/A
	2		Production test result records.	N/A
	3		Mechanical Completion records	N/A
	4		FAT Reports	1647

PART 1 – DESIGN DOSSIER

CHAPTER 1

SECTION 1

DOCUMENT REGISTER

Base Load Power Hub (BLPH)

BALL, SBB, DBB VALVES

SUPPLIER MASTER INFORMATION REGISTER

Document Number: 1724000798-MD-LIS-00001

Document Class: 3

02	03/10/2024	Issue for Information (IFI)	F.CRIMELLA	G.GRANATA	A.DE CARLI
01	18/06/2024	Issue for Information (IFI)	F.CRIMELLA	G.GRANATA	A.DE CARLI
00	21/05/2024	Issue for Information (IFI)	F.CRIMELLA	G.GRANATA	A.DE CARLI
Rev.	Date	Description	Prepared	Reviewed	Approved

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1	Cover	X	X	X					
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3	Revision / Change Log / Hold List	X	X	X					
4	References	X	X	X					
5	SMIR	X	X	X					

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Revision / Change Log

Rev.	Description
00	Issue for Information (IFI)
01	Issue for Information (IFI)
02	Issue for Information (IFI)

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SMIR - REGISTRO DOCUMENTI / *SMIR - SUPPLIER MASTER INFORMATION REGISTER*

	Ordine n°/*order nr.*	1724000798		Fornitore/*Supplier* :	INDRA SRL									
	data / *dated:*			Codice F./ *S. Code:*										
	Commessa / *Job:*			Indirizzo/ *address* :	20013 Magenta (MI) Italy - Via Novara, 10/B-C,									
	Descrizione / *Description*	MANUAL BALL VALVES, DBB, SBB		Persona di riferim./ *contact person:*										
	Macrofase / *Phase*													

Pos.	Document nr. Client (1)	Doc Client Rev. (1)	Document nr. Internal	Document nr. Internal Rev. (2)	Document nr. Supplier (3)	Doc Supplier Rev. (3)	Titolo Documento / *Document title* (4)	Disciplina / *Discipline* (5)	Blocco Classe / *Class Block* (*6*)	Docum. Format (7)	first issue date (8)	Third Party Approval (I/A)	KEY Document Ingegneria	Documents subject to liquidated damages	Document Approval (I/A)
1	1724000798-MD-LIS-00001	00	1724000798-MD-LIS-00001	00	24 01216/SMIR	00	SUPPLIER MASTER INDEX REGISTER (SMIR)	INS		A3	21/05/2024				A
							QUALITY DOCUMENTS								
2	1724000798-QC-ITP-00002	00	1724000798-QC-ITP-00002	00	24 01216/ITP	00	INSPECTION AND TEST PLAN	QUA		A4	21/05/2024		X	X	A
							ENGINEERING DOCUMENTS								
3	1724000798-PP-DA-00003	00	1724000798-PP-DA-00003	00	24 01216/GAD	00	GENERAL ARRANGMENT DRAWINGS WITH NAMEPLATE	PIP		A4	21/05/2024		X	X	A
4	1724000798-PP-DS-00004	00	1724000798-PP-DS-00004	00	24 01216/DS	00	DATA SHEETS	PIP		A4	25/06/2024				I
5	1724000798-MAT-PRO-00005	00	1724000798-MAT-PRO-00005	00	24 01216/PAINT PROC	00	PAINTING PROCEDURE	PIP		A4	19/06/2024				A
6	1724000798-NDT-PRO-00006	00	1724000798-NDT-PRO-00006	00	24 01216/NDE PROC	00	NDE PROCEDURE	QUA		A4	19/06/2024				A
~~7~~	~~1724000798-QC-PRO-00007~~	~~00~~	~~1724000798-QC-PRO-00007~~	~~00~~	~~24 01216/HELIUM TEST PROC~~	~~00~~	~~HELIUM TEST PROCEDURE~~	~~QUA~~		~~A4~~	~~19/06/2024~~				~~A~~
8	1724000798-QC-PRO-00008	00	1724000798-QC-PRO-00008	00	25 01216/FUGIT TEST PROC	00	FUGITIVE TEST PROCEDURE	QUA		A4	19/06/2024				A
9	1724000798-QC-PRO-00009	00	1724000798-QC-PRO-00009	00	26 01216/HYDRO TEST PROC	00	HYDROTEST AND FINAL TEST PROCEDURE	QUA		A4	19/06/2024				A
							CERTIFICATES								
10	1724000798-QC-DB-00010	00	1724000798-QC-DB-00010	00	24 01216/MRB	00	MANUFACTURERS RECORD BOOK (FINAL DOSSIER)	CERT		A4	30/09/2024				A
11	1724000798-QC-LIS-00011	00	1724000798-QC-LIS-00011	00	24 01216/MRB INDEX	00	MANUFACTURERS RECORD BOOK (FINAL DOSSIER) - INDEX	QUA		A4	30/05/2024				A
12	1724000798-PP-LIS-00012	00	1724000798-PP-LIS-00012	00	24 01216/ASS E TAG REG	00	VENDOR ASSET AND TAG REGISTER	QUA		A4	03/09/2024				A
							SPARES & MAINTENANCE DATA								
13	1724000798-PP-LIS-00013	00	1724000798-PP-LIS-00013	00	24 01216/IOM	00	INSTALLATION, OPERATION AND MAINTENANCE MANUAL	PIP		A4	30/07/2024				I
14	1724000798-COM-LIS-00014	00	1724000798-COM-LIS-00014	00	24 01216/SPIR	00	SPARE PART INDEX REGISTER (COMMISSIONING, 2-YEAR's OPERATION, CAPITAL)	COMM		A4	30/06/2024				A
15	1724000798-QC-PRO-00015	00	1724000798-QC-PRO-00015	00	24 01216/PACK PROC	00	PACKING, HANDLING, SHIPPING, PRESERVATION AND STORAGE PROCEDURES	EXP		A4	30/06/2024				I

Notes:

(1) Numero documento Cliente
Document number assigned by final Client

(2) Numero documento interno
Document number internal

(3) Numero documento Fornitore (assegnato dal Fornitore)
Document number assigned by Supplier

(4) Assegnare il Titolo del documento (assegnato dal Fornitore)
Fill in the document title (to be assigned by Vendor)

(5) Specific are la disciplina (compilato da Rosetti)
Quality dep., Expediting. Dep., Commissioning dep., Engineering dep.

(6) Blocco Classe: Specifica, Disegno, Report, Data Sheet, etc. (compilato da Rosetti)
Procedure, list, drawing, data sheet, etc. (to be filled by Rosetti)

(7) A4, A3, A1 (compilato dal Fornitore)
A4, A3, A1 (Supplier)

(8) Data prevista per l'emissione del documento (compilato dal Fornitore)
Foreseen date for the first issue (Supplier)

PART 1 – DESIGN DOSSIER

CHAPTER 1
SECTION 2

VENDOR ASSET E
TAG REGISTER

Base Load Power Hub (BLPH)

VENDOR REGISTER FOR PO 1724000798

BALL, SBB, DBB VALVES

Document Number:1724000798-PP-LIS-00012

Document Class: 2

ROSETTI MARINO

1	NO COMMENTS - APPROVED - WORK MAY PROCEED
2	MINOR COMMENTS - REVISE AND RESUBMIT - WORK MAY PROCEED
3	MAJOR COMMENTS – REJECTED – DO NOT PROCEED
4	APPROVAL NOT REQUIRED

NOTE: Approval doesn't relieve the supplier from mandatory compliance with contractual documents and specifications. Comments made do not imply acceptance of any cost or delivery impact.

Sign	Date
Mauro Liberato	20.02.25

Rev.	Date	Description	Prepared	Reviewed	Approved
06	09/01/2025	Accepted for Construction (AFC)	F.CRIMELLA	F.NOVARINA	A.DE CARLI
05	11/12/2024	Accepted for Construction (AFC)	F.CRIMELLA	F.NOVARINA	A.DE CARLI
04	27/09/2024	Accepted for Construction (AFC)	F.CRIMELLA	F.NOVARINA	A.DE CARLI
03	01/08/2024	Accepted for Construction (AFC)	F.CRIMELLA	G.GRANATA	A.DE CARLI
02	10/07/2024	Accepted for Construction (AFC)	F.CRIMELLA	G.GRANATA	A.DE CARLI
01	25/06/2024	Accepted for Construction (AFC)	F.CRIMELLA	G.GRANATA	A.DE CARLI
00	07/06/2024	Issue for Review (IFR)	F.CRIMELLA	G.GRANATA	A.DE CARLI

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3	Revision / Change Log	X	X	X	X	X	X	X	
4	Asset Register	X	X	X	X	X	X	X	

Revision / Change Log

Rev.	Description
00	ISSUE FOR REVIEW (IFR)
01	ACCEPTED FOR CONSTRUCTION (AFC)
02	ACCEPTED FOR CONSTRUCTION (AFC)
03	ACCEPTED FOR CONSTRUCTION (AFC)
04	ACCEPTED FOR CONSTRUCTION (AFC)
05	ACCEPTED FOR CONSTRUCTION (AFC)
06	ACCEPTED FOR CONSTRUCTION (AFC)

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Tag	Tag Description	Physical Class Name	Location	System / SubSystem Code	Purchase Order Number	Vendor Company Name	Manufacturer Company Name	Model Number	Equipment Manufacturer Serial Number	Model Part No	Hazardous Area Equip Relevant	PED DECLARATION	Hazardous Area Certificate Standard	Hazardous Area Certifying Authority	Hazardous Area Certificate Number	Atex Classification	Explosion Protection Examination Certificate	Layout Drawing	Datasheet	Assembly/Dimensional Drawing	General Arrangement	Operating & Maintenance Manual	Wiring Diagram	Spare Parts List	Lubricant Document Reference	Criticality *	Remarks
BLPH-MV-470	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	SBB-798-25-F150RF3-F-D-F55F-F55	106901	00.VSF.2784(T)								00.VSF.2784(T)	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-471	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	SBB-798-25-F150RF3-F-D-F55F-F55	106902	00.VSF.2784(T)								00.VSF.2784(T)	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-001	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	SBB-798-25-F150RF3-F-D-DLF-DL	106032	00.VSF.2696/V								00.VSF.2696/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-002	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	SBB-798-HR-50-J150RF3-J-D-DL	106033	00.VSF.2702/V		APPLICABLE						00.VSF.2702/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-003	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	DBB-898-HR-25-F300RF3-F-D-DL	105982	00.VSF.2680/V								00.VSF.2680/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-005	TRUNNION BV				1724000798	INDRA SRL	INDRA SRL	SB-598-TRU-HR-150-Q150RF3-Q-DLF-DL	106048	00.VSFT.0224/V		APPLICABLE						00.VSFT.0224/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-006	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	SBB-798-HR-100-N150RF3-N-D-DLF-DL	106035	00.VSF.2700/V		APPLICABLE						00.VSF.2700/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-007	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	SBB-798-HR-25-F150RF3-F-D-DL	106028	00.VSF.2701/V								00.VSF.2701/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-009	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	SBB-798-HR-25-F150RF3-F-D-DL	106029	00.VSF.2701/V								00.VSF.2701/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-010	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	DBB-898-HR-25-F300RF3-F-D-DL	105983	00.VSF.2680/V								00.VSF.2680/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-013	MONOFLANGE				1724000798	INDRA SRL	INDRA SRL	DBB-737-HR-E300RF3-D-D-DLF-DL	106049	00.MNF.0604/V								00.MNF.0604/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-014	MONOFLANGE				1724000798	INDRA SRL	INDRA SRL	DBB-737-HR-E300RF3-D-D-DLF-DL	106050	00.MNF.0604/V								00.MNF.0604/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-016	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	SBB-798-HR-50-J150RF3-J-D-DL	106034	00.VSF.2702/V		APPLICABLE						00.VSF.2702/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-018	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	DBB-898-HR-25-F300RF3-F-D-DL	105984	00.VSF.2680/V								00.VSF.2680/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-019	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	DBB-898-HR-50-J300RF3-J-D-DL	106017	00.VSF.2682/V		APPLICABLE						00.VSF.2682/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-024	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	SB-598-HR-20-E150RF3-E-DLF-DL	105960	00.VSF.2693/V								00.VSF.2693/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-025	MONOFLANGE				1724000798	INDRA SRL	INDRA SRL	SBB-727-HR-E150RF3-D-D-DLF-DL	106063	00.MNF.0608/V								00.MNF.0608/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-028	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	SB-598-HR-20-E150RF3-E-DLF-DL	105961	00.VSF.2693/V								00.VSF.2693/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-029	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	DBB-898-HR-25-F300RF3-F-D-DL	105985	00.VSF.2680/V								00.VSF.2680/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-032	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	DBB-898-HR-40-H300RF3-H-D-DL	106010	00.VSF.2681/V		APPLICABLE						00.VSF.2681/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-033	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	SBB-798-HR-100-N150RF3-N-D-DLF-DL	106036	00.VSF.2700/V		APPLICABLE						00.VSF.2700/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-034	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	DBB-898-HR-100-N300RF3-N-D-DLF-DL	106018	00.VSF.2679/V		APPLICABLE						00.VSF.2679/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-035	TRUNNION BV				1724000798	INDRA SRL	INDRA SRL	DBB-898-TRU-HR-150-Q300RF3-Q-D-DLF-DL	106042	00.VSFT.0223/V		APPLICABLE						00.VSFT.0223/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-038	MONOFLANGE				1724000798	INDRA SRL	INDRA SRL	SBB-727-HR-E150RF3-D-D-DLF-DL	106064	00.MNF.0608/V								00.MNF.0608/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-043	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	SBB-798-40-H150RF3-H-D-F55F-F55	106030	00.VSF.2698(T)		APPLICABLE						00.VSF.2698(T)	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-044	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	SB-598-20-E150RF3-E-F55F-F55	105967	00.VSF.2685(T)								00.VSF.2685(T)	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-048	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	SB-598-25-F150RF3-F-F55F-F55	105970	00.VSF.2688(T)								00.VSF.2688(T)	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-050	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	SBB-798-40-H150RF3-H-D-F55F-F55	106031	00.VSF.2698(T)		APPLICABLE						00.VSF.2698(T)	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-051	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	SB-598-25-F150RF3-F-F55F-F55	105971	00.VSF.2688(T)								00.VSF.2688(T)	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-054	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	SB-598-20-E150RF3-E-F55F-F55	105968	00.VSF.2685(T)								00.VSF.2685(T)	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-086	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	DBB-898-HR-25-F300RF3-F-D-DL	105986	00.VSF.2680/V								00.VSF.2680/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-087	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	DBB-898-HR-25-F300RF3-F-D-DL	105987	00.VSF.2680/V								00.VSF.2680/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-088	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	DBB-898-HR-25-F300RF3-F-D-DL	105988	00.VSF.2680/V								00.VSF.2680/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-091	MONOFLANGE				1724000798	INDRA SRL	INDRA SRL	DBB-737-HR-E300RF3-D-D-DLF-DL	106051	00.MNF.0604/V								00.MNF.0604/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-092	MONOFLANGE				1724000798	INDRA SRL	INDRA SRL	DBB-737-HR-E300RF3-D-D-DLF-DL	106052	00.MNF.0604/V								00.MNF.0604/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-093	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	DBB-898-HR-25-F300RF3-F-D-DL	105989	00.VSF.2680/V								00.VSF.2680/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-094	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	DBB-898-HR-25-F300RF3-F-D-DL	105990	00.VSF.2680/V								00.VSF.2680/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-096	MONOFLANGE				1724000798	INDRA SRL	INDRA SRL	DBB-737-HR-E300RF3-D-D-DLF-DL	106053	00.MNF.0604/V								00.MNF.0604/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-097	MONOFLANGE				1724000798	INDRA SRL	INDRA SRL	DBB-737-HR-E300RF3-D-D-DLF-DL	106054	00.MNF.0604/V								00.MNF.0604/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-098	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	DBB-898-HR-25-F300RF3-F-D-DL	105991	00.VSF.2680/V								00.VSF.2680/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-111	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	SB-598-20-E150RF3-E-DLF-DL	105942	00.VSF.2684/V								00.VSF.2684/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-149	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	SB-598-40-H150RF3-H-DLF-DL	105958	00.VSF.2690/V		APPLICABLE						00.VSF.2690/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-150	MONOFLANGE				1724000798	INDRA SRL	INDRA SRL	SBB-727-E150RF3-D-D-DLF-DL	106067	00.MNF.0605/V								00.MNF.0605/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-151	MONOFLANGE				1724000798	INDRA SRL	INDRA SRL	SBB-727-E150RF3-D-D-DLF-DL	106068	00.MNF.0605/V								00.MNF.0605/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-166	MONOFLANGE				1724000798	INDRA SRL	INDRA SRL	SBB-727-E150RF3-D-D-LF2-DL	106069	00.MNF.0612/V								00.MNF.0612/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-167	MONOFLANGE				1724000798	INDRA SRL	INDRA SRL	SBB-727-E150RF3-D-D-LF2-DL	106070	00.MNF.0612/V								00.MNF.0612/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-172	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	SB-598-HR-25-F150RF3-F-DLF-DL	105962	00.VSF.2694/V								00.VSF.2694/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-191	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	SBB-798-HR-100-N150RF3-N-D-DLF-DL	106037	00.VSF.2700/V		APPLICABLE						00.VSF.2700/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-192	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	DBB-898-HR-25-F300RF3-F-D-DL	105992	00.VSF.2680/V								00.VSF.2680/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-193	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	DBB-898-HR-25-F300RF3-F-D-DL	105993	00.VSF.2680/V								00.VSF.2680/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-194	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	SBB-798-HR-100-N150RF3-N-D-DLF-DL	106038	00.VSF.2700/V		APPLICABLE						00.VSF.2700/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-195	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	DBB-898-HR-25-F300RF3-F-D-DL	105994	00.VSF.2680/V								00.VSF.2680/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-196	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	SBB-798-HR-100-N150RF3-N-D-DLF-DL	106039	00.VSF.2700/V		APPLICABLE						00.VSF.2700/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-197	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	DBB-898-HR-25-F300RF3-F-D-DL	105995	00.VSF.2680/V								00.VSF.2680/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-198	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	DBB-898-HR-25-F300RF3-F-D-DL	105996	00.VSF.2680/V								00.VSF.2680/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-199	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	SBB-798-HR-100-N150RF3-N-D-DLF-DL	106040	00.VSF.2700/V		APPLICABLE						00.VSF.2700/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-200	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	DBB-898-HR-25-F300RF3-F-D-DL	105997	00.VSF.2680/V								00.VSF.2680/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-201	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	SBB-798-HR-100-N150RF3-N-D-DLF-DL	106041	00.VSF.2700/V		APPLICABLE						00.VSF.2700/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-204	MONOFLANGE				1724000798	INDRA SRL	INDRA SRL	DBB-737-HR-E300RF3-D-D-DLF-DL	106055	00.MNF.0604/V								00.MNF.0604/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-205	MONOFLANGE				1724000798	INDRA SRL	INDRA SRL	DBB-737-HR-E300RF3-D-D-DLF-DL	106056	00.MNF.0604/V								00.MNF.0604/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-206	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	DBB-898-HR-25-F300RF3-F-D-DL	105998	00.VSF.2680/V								00.VSF.2680/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-207	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	DBB-898-HR-25-F300RF3-F-D-DL	105999	00.VSF.2680/V								00.VSF.2680/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-210	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	SB-598-25-F150RF3-F-DLF-DL	105943	00.VSF.2687/V								00.VSF.2687/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-211	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	DBB-898-HR-25-F300RF3-F-D-DL	106000	00.VSF.2680/V								00.VSF.2680/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-212	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	DBB-898-HR-25-F300RF3-F-D-DL	106001	00.VSF.2680/V								00.VSF.2680/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-213	MONOFLANGE				1724000798	INDRA SRL	INDRA SRL	SBB-727-HR-E150RF3-D-D-DLF-DL	106065	00.MNF.0608/V								00.MNF.0608/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-214	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	SB-592-PE80-20-E-E-C276F-C276	105979	00.VSF.2683(T)								00.VSF.2683(T)	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-222	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	DBB-898-HR-100-N300RF3-N-D-DLF-DL	106019	00.VSF.2679/V		APPLICABLE						00.VSF.2679/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-241	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	SB-598-20-E150RF3-E-F55F-F55	105969	00.VSF.2685(T)								00.VSF.2685(T)	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-242	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	SB-598-25-F150RF3-F-DLF-DL	105944	00.VSF.2687/V								00.VSF.2687/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-263	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	SB-598-25-F150RF3-F--LF2-DL	105975	00.VSF.2770/V								00.VSF.2770/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-264	TRUNNION BV				1724000798	INDRA SRL	INDRA SRL	DBB-898-TRU-HR-150-Q300RF3-Q-D-DLF-DL	106043	00.VSFT.0223/V		APPLICABLE						00.VSFT.0223/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-266	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	DBB-898-HR-40-H300RF3-H-D-DL	106011	00.VSF.2681/V		APPLICABLE						00.VSF.2681/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-269	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	SBB-798-25-F150RF3-F-D-LF2-DL	106024	00.VSF.2697/V								00.VSF.2697/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-270	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	SB-598-40-H150RF3-H-DLF-DL	105959	00.VSF.2690/V		APPLICABLE						00.VSF.2690/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-271	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	SBB-798-25-F150RF3-F-D-LF2-DL	106025	00.VSF.2697/V								00.VSF.2697/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-275	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	SB-598-20-E150RF3-E-LF2-DL	105974	00.VSF.2686/V								00.VSF.2686/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-278	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	SBB-798-40-H150RF3-H-D-LF2-DL	106027	00.VSF.2699/V		APPLICABLE						00.VSF.2699/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-282	MONOFLANGE				1724000798	INDRA SRL	INDRA SRL	DBB-737-HR-E300RF3-D-D-DLF-DL	106057	00.MNF.0604/V								00.MNF.0604/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-283	MONOFLANGE				1724000798	INDRA SRL	INDRA SRL	DBB-737-HR-E300RF3-D-D-DLF-DL	106058	00.MNF.0604/V								00.MNF.0604/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-384	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	DBB-898-HR-25-F300RF3-F-D-DL	106002	00.VSF.2680/V								00.VSF.2680/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-385	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	DBB-898-HR-25-F300RF3-F-D-DL	106003	00.VSF.2680/V								00.VSF.2680/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-386	MONOFLANGE				1724000798	INDRA SRL	INDRA SRL	SBB-727-E150RF3-D-D-LF2-DL	106071	00.MNF.0612/V								00.MNF.0612/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-387	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	DBB-898-HR-100-N300RF3-N-D-DLF-DL	106020	00.VSF.2679/V		APPLICABLE						00.VSF.2679/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-388	TRUNNION BV				1724000798	INDRA SRL	INDRA SRL	DBB-898-TRU-HR-150-Q300RF3-Q-D-DLF-DL	106044	00.VSFT.0223/V		APPLICABLE						00.VSFT.0223/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-389	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	DBB-898-HR-40-H300RF3-H-D-DL	106012	00.VSF.2681/V		APPLICABLE						00.VSF.2681/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-390	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	DBB-898-HR-25-F300RF3-F-D-DL	106004	00.VSF.2680/V								00.VSF.2680/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-391	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	DBB-898-HR-25-F300RF3-F-D-DL	106005	00.VSF.2680/V								00.VSF.2680/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-400	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	SB-592-PE80-20-E-E-C276F-C276	105980	00.VSF.2683(T)								00.VSF.2683(T)	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-402	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	SB-598-HR-50-L150RF3-L-DLF-DL	105981	00.VSF.2695/V		APPLICABLE						00.VSF.2695/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-404	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	SB-598-HR-25-F150RF3-F-DLF-DL	105963	00.VSF.2694/V								00.VSF.2694/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-405	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	SB-598-HR-25-F150RF3-F-DLF-DL	105964	00.VSF.2694/V								00.VSF.2694/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-407	MONOFLANGE				1724000798	INDRA SRL	INDRA SRL	SBB-727-HR-E150RF3-D-D-DLF-DL	106066	00.MNF.0608/V								00.MNF.0608/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-409	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	SBB-798-25-F150RF3-F-D-LF2-DL	106026	00.VSF.2697/V								00.VSF.2697/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-411	MONOFLANGE				1724000798	INDRA SRL	INDRA SRL	SBB-727-E150RF3-D-D-LF2-DL	106072	00.MNF.0606/V								00.MNF.0606/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-412	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	SB-598-40-H150RF3-H-LF2-DL	105978	00.VSF.2691/V		APPLICABLE						00.VSF.2691/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-416	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	DBB-898-HR-40-H300RF3-H-D-DL	106013	00.VSF.2681/V		APPLICABLE						00.VSF.2681/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-417	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	SB-598-25-F150RF3-F-LF2-DL	105977	00.VSF.2689/V								00.VSF.2689/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-419	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	SB-598-25-F150RF3-F--LF2-DL	105976	00.VSF.2770/V								00.VSF.2770/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-421	MONOFLANGE				1724000798	INDRA SRL	INDRA SRL	DBB-737-HR-E300RF3-D-D-DLF-DL	106059	00.MNF.0604/V								00.MNF.0604/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-422	MONOFLANGE				1724000798	INDRA SRL	INDRA SRL	DBB-737-HR-E300RF3-D-D-DLF-DL	106060	00.MNF.0604/V								00.MNF.0604/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-423	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	DBB-898-HR-100-N300RF3-N-D-DLF-DL	106021	00.VSF.2679/V		APPLICABLE						00.VSF.2679/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-424	TRUNNION BV				1724000798	INDRA SRL	INDRA SRL	DBB-898-TRU-HR-150-Q300RF3-Q-D-DLF-DL	106045	00.VSFT.0223/V		APPLICABLE						00.VSFT.0223/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-426	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	DBB-898-HR-25-F300RF3-F-D-DL	106006	00.VSF.2680/V								00.VSF.2680/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-428	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	DBB-898-HR-25-F300RF3-F-D-DL	106007	00.VSF.2680/V								00.VSF.2680/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-431	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	DBB-898-HR-100-N300RF3-N-D-DLF-DL	106022	00.VSF.2679/V		APPLICABLE						00.VSF.2679/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-432	TRUNNION BV				1724000798	INDRA SRL	INDRA SRL	DBB-898-TRU-HR-150-Q300RF3-Q-D-DLF-DL	106046	00.VSFT.0223/V		APPLICABLE						00.VSFT.0223/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-433	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	DBB-898-HR-40-H300RF3-H-D-DL	106014	00.VSF.2681/V		APPLICABLE						00.VSF.2681/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-434	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	DBB-898-HR-25-F300RF3-F-D-DL	106008	00.VSF.2680/V								00.VSF.2680/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-435	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	DBB-898-HR-25-F300RF3-F-D-DL	106009	00.VSF.2680/V								00.VSF.2680/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-438	MONOFLANGE				1724000798	INDRA SRL	INDRA SRL	DBB-737-HR-E300RF3-D-D-DLF-DL	106061	00.MNF.0604/V								00.MNF.0604/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-439	MONOFLANGE				1724000798	INDRA SRL	INDRA SRL	DBB-737-HR-E300RF3-D-D-DLF-DL	106062	00.MNF.0604/V								00.MNF.0604/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-440	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	DBB-898-HR-100-N300RF3-N-D-DLF-DL	106023	00.VSF.2679/V		APPLICABLE						00.VSF.2679/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-441	TRUNNION BV				1724000798	INDRA SRL	INDRA SRL	DBB-898-TRU-HR-150-Q300RF3-Q-D-DLF-DL	106047	00.VSFT.0223/V		APPLICABLE						00.VSFT.0223/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-442	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	DBB-898-HR-40-H300RF3-H-D-DL	106015	00.VSF.2681/V		APPLICABLE						00.VSF.2681/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-447	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	SB-598-25-F150RF3-F-DLF-DL	105945	00.VSF.2687/V								00.VSF.2687/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-448	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	SB-598-25-F150RF3-F-DLF-DL	105946	00.VSF.2687/V								00.VSF.2687/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-449	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	SB-598-25-F150RF3-F-DLF-DL	105947	00.VSF.2687/V								00.VSF.2687/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-450	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	SB-598-25-F150RF3-F-DLF-DL	105948	00.VSF.2687/V								00.VSF.2687/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-451	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	SB-598-25-F150RF3-F-DLF-DL	105949	00.VSF.2687/V								00.VSF.2687/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-452	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	SB-598-25-F150RF3-F-DLF-DL	105950	00.VSF.2687/V								00.VSF.2687/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-453	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	SB-598-25-F150RF3-F-DLF-DL	105951	00.VSF.2687/V								00.VSF.2687/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-454	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	SB-598-25-F150RF3-F-DLF-DL	105952	00.VSF.2687/V								00.VSF.2687/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-455	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	SB-598-25-F150RF3-F-DLF-DL	105953	00.VSF.2687/V								00.VSF.2687/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-456	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	SB-598-25-F150RF3-F-DLF-DL	105954	00.VSF.2687/V								00.VSF.2687/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-457	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	SB-598-25-F150RF3-F-DLF-DL	105955	00.VSF.2687/V								00.VSF.2687/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-458	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	SB-598-25-F150RF3-F-DLF-DL	105956	00.VSF.2687/V								00.VSF.2687/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-459	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	SB-598-25-F150RF3-F-DLF-DL	105957	00.VSF.2687/V								00.VSF.2687/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-462	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	SB-598-HR-25-F150RF3-F-DLF-DL	105965	00.VSF.2694/V								00.VSF.2694/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
BLPH-MV-463	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	SB-598-HR-25-F150RF3-F-DLF-DL	105966	00.VSF.2694/V								00.VSF.2694/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
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BLPH-MV-466	BALL VALVE				1724000798	INDRA SRL	INDRA SRL	DBB-898-HR-25-F300RF3-F-D-DL	106899	00.VSF.2680/V								00.VSF.2680/V	1724000798-PP-DS-00004	1724000798-PP-DA-00003	1724000798-PP-DA-00003	1724000798-PP-LIS-00013		1724000798 -COM -LIS -00014		3	
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PART 1 – DESIGN DOSSIER

CHAPTER 3

SECTION 1

GENERAL ARRANGEMENT DRAWINGS

Base Load Power Hub (BLPH)

BALL, DBB & SBB in line & MONOFLANGE DBB & SBB VALVES

GENERAL ARRANGEMENT DRAWINGS AND NAMEPLATE

Document Number: 1724000798-PP-DA-00003

ROSETTI MARINO

1	NO COMMENTS - APPROVED - WORK MAY PROCEED
2	MINOR COMMENTS - REVISE AND RESUBMIT - WORK MAY PROCEED
3	MAJOR COMMENTS – REJECTED – DO NOT PROCEED
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Mauro Liberato	27.11.24

Document Class: 2

Rev.	Date	Description	Prepared	Reviewed	Approved
06	12/11/2024	Accepted for Construction (AFC)	F.CRIMELLA	G.GRANATA	A.DE CARLI
05	29/10/2024	Accepted for Construction (AFC)	F.CRIMELLA	G.GRANATA	A.DE CARLI
04	11/09/2024	Accepted for Construction (AFC)	F.CRIMELLA	G.GRANATA	A.DE CARLI
03	29/08/2024	Accepted for Construction (AFC)	F.CRIMELLA	G.GRANATA	A.DE CARLI
02	30/07/2024	Accepted for Construction (AFC)	F.CRIMELLA	G.GRANATA	A.DE CARLI
01	02/07/2024	Issue for Review (IFR)	F.CRIMELLA	G.GRANATA	A.DE CARLI
00	21/05/2024	Issue for Review (IFR)	F.CRIMELLA	G.GRANATA	A.DE CARLI

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Rev.	Description
00	Issue for Review (IFR)
01	Issue for Review (IFR)
02	Accepted for Construction (AFC)
03	Accepted for Construction (AFC)
04	Accepted for Construction (AFC)
05	Accepted for Construction (AFC)
06	Accepted for Construction (AFC)

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1 INTRODUCTION

1.1 PROJECT OVERVIEW

Crosswind, a Shell and Eneco joint venture, was awarded the tender to develop the offshore Hollandse Kust Noord (HKN) wind farm, located 18.5km off the coast of Netherlands near the town of Egmond aan Zee. The consortium plans to have HKN operational in 2023 with an installed capacity of 759MW generating at least 3.3TWh per year. This is sufficient renewable power to supply more than 1 million Dutch households with green electricity.

Offshore wind farms produce intermittent electricity and balancing these dips and peaks and integrating this electricity into the national energy system requires new technologies. For this reason, the offshore wind farm will include several new technologies that could be implemented at full-scale in the future. The new technologies being explored include a floating solar park, a short-duration battery storage as well as long-term storage via green hydrogen produced by water electrolysis and subsequently consumed in a fuel cell. The combination of these individual measures, herein referred to as the Base Load Power Hub (BLPH) will ensure a continuous power supply regardless of the wind situation.

1.1.1 Project Location

The Hollandse Kust Noord (HKN) wind farm is located 18.5km off the coast of the Netherlands near the town of Egmond aan Zee.

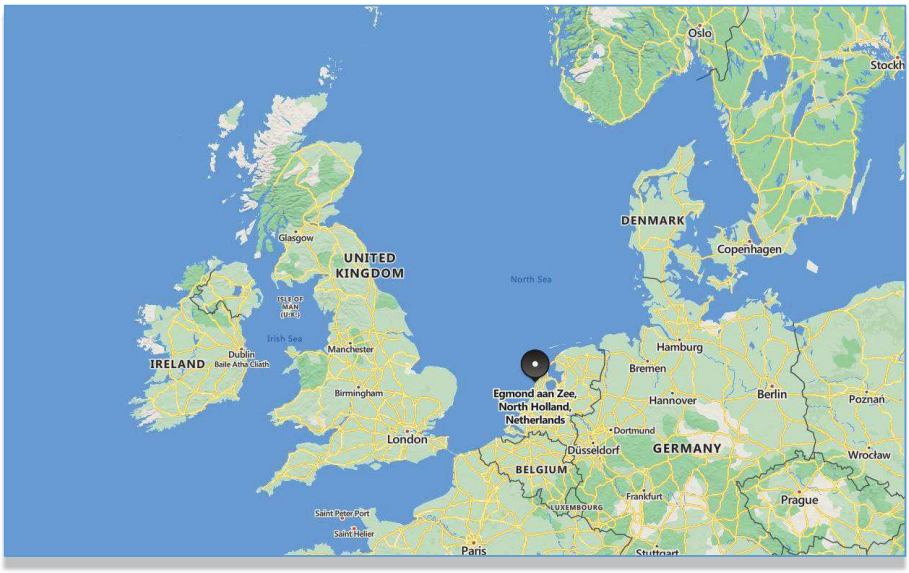


Figure 1 HOLLANDSE KUST NOORD WIND PARK Location Map



Figure 2 - Wind Park Details

The wind farm will consist of No. 69 x 11.5MW wind turbine generators each to be installed on a dedicated monopile structure. A 70th monopile located on coordinates E 590719.1, N 5841602.3 is reserved for installing the platform accommodating the BLPH. The monopile structure was designed and installed by Van Oord Offshore Wind (VooW) and therefore not part of the BLPH scope.

1.1.2 Project Concept

All components included in the BLPH will be integrated onshore on a topsides and installed in an offshore location within the boundaries of the HKN wind farm. At its simplest, the BLPH will store energy during periods of high electricity generation from renewable sources (a wind turbine generator and the floating solar PV farm) and release it during periods of low generation. In practice. It is expected that the energy stored will supplement generation from renewable sources to ensure that at least 1.0MW of power is exported to the electrical grid regardless of wind/solar availability.

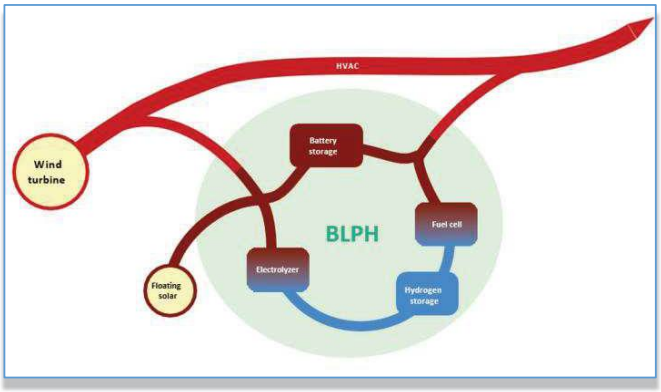


Figure 3 – BLPH Concept

Electricity in the BLPH will be stored in the form of electrons in a battery energy storage system (BESS) as well as converted into green hydrogen via water electrolysis. When the power output from the connecting wind turbine drops to below 1 MWe, the BLPH will return its stored energy to supplement the remaining power output. This will be by discharging the BESS, while stored hydrogen will be converted back into electricity using a fuel cell to extend the discharge duration.

The purpose of the BLPH s to function as a testbed for the integration of energy storage technologies with renewable generation. It is expected that equipment installed on the BLPH will operate as Normally Unmanned Installation for at least two (2) years with no or minimal maintenance and it will have its own independent control room with the ability to communicate with Crosswind's control room

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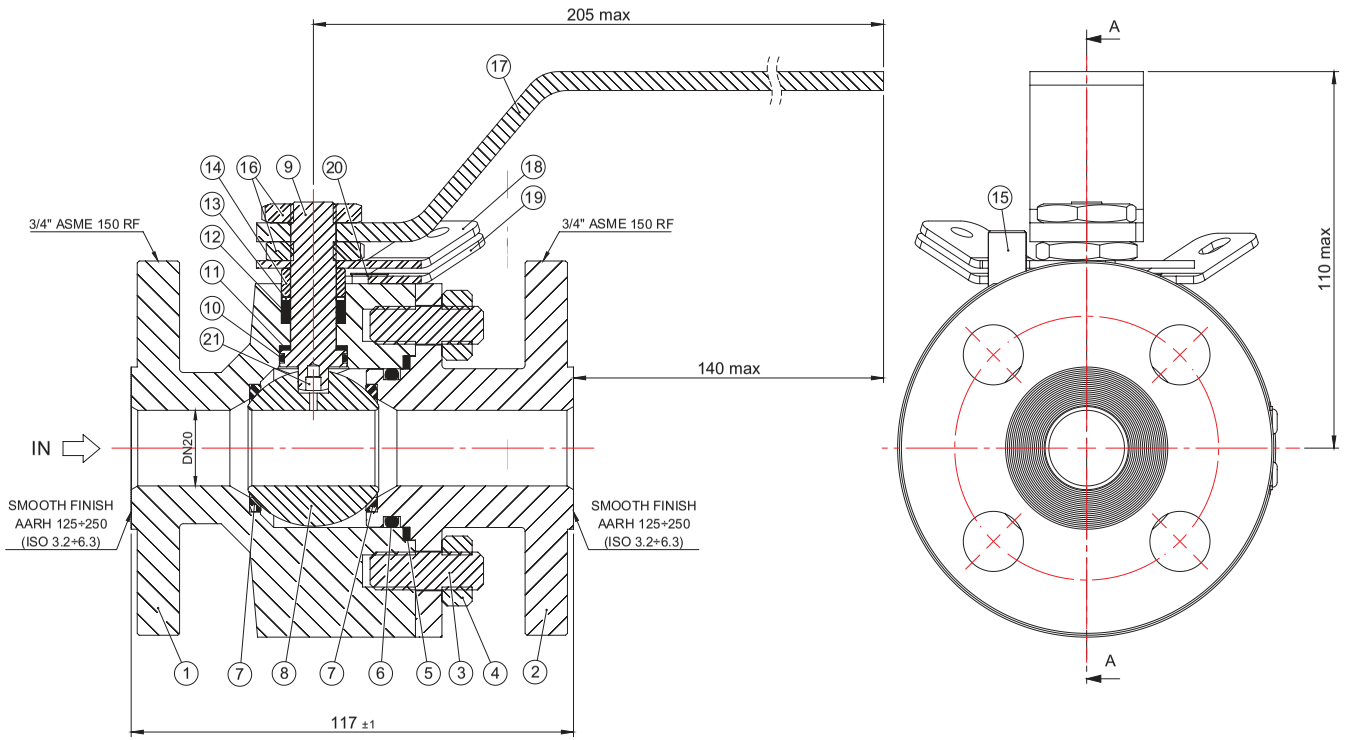
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MODEL	DWG CODE	SAP CODE	DATA SHEET 123A90-DDL-PP-DS-70003 REV.02	TAG VALVE	NOTES	PAGE
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SB-598-25-F150RF3_F	00.VSF.2687/V	VBC0NN06950100	BS01C01RF	**BLPH-MV-210**	-	11
SB-598-25-F150RF3_F	00.VSF.2687/V	VBC0NN06950100	BS01C01RF	**BLPH-MV-242**	-	11
SB-598-25-F150RF3_F	00.VSF.2687/V	VBC0NN06950100	BS01C01RF	**BLPH-MV-447**	-	11
SB-598-25-F150RF3_F	00.VSF.2687/V	VBC0NN06950100	BS01C01RF	**BLPH-MV-448**	-	11
SB-598-25-F150RF3_F	00.VSF.2687/V	VBC0NN06950100	BS01C01RF	**BLPH-MV-449**	-	11
SB-598-25-F150RF3_F	00.VSF.2687/V	VBC0NN06950100	BS01C01RF	**BLPH-MV-450**	-	11
SB-598-25-F150RF3_F	00.VSF.2687/V	VBC0NN06950100	BS01C01RF	**BLPH-MV-451**	-	11
SB-598-25-F150RF3_F	00.VSF.2687/V	VBC0NN06950100	BS01C01RF	**BLPH-MV-452**	-	11
SB-598-25-F150RF3_F	00.VSF.2687/V	VBC0NN06950100	BS01C01RF	**BLPH-MV-453**	-	11
SB-598-25-F150RF3_F	00.VSF.2687/V	VBC0NN06950100	BS01C01RF	**BLPH-MV-454**	-	11
SB-598-25-F150RF3_F	00.VSF.2687/V	VBC0NN06950100	BS01C01RF	**BLPH-MV-455**	-	11
SB-598-25-F150RF3_F	00.VSF.2687/V	VBC0NN06950100	BS01C01RF	**BLPH-MV-456**	-	11
SB-598-25-F150RF3_F	00.VSF.2687/V	VBC0NN06950100	BS01C01RF	**BLPH-MV-457**	-	11
SB-598-25-F150RF3_F	00.VSF.2687/V	VBC0NN06950100	BS01C01RF	**BLPH-MV-458**	-	11
SB-598-25-F150RF3_F	00.VSF.2687/V	VBC0NN06950100	BS01C01RF	**BLPH-MV-459**	-	11
SB-598-40-H150RF3_H	00.VSF.2690/V	VBC0NN06961H00	BS01C01RF	**BLPH-MV-149**	LO	12
SB-598-40-H150RF3_H	00.VSF.2690/V	VBC0NN06961H00	BS01C01RF	**BLPH-MV-270**	LO	12
SB-598-HR-20-E150RF3_E	00.VSF.2693/V	VBC0NN24343Q00	BS01C01RFH	**BLPH-MV-024**	-	13
SB-598-HR-20-E150RF3_E	00.VSF.2693/V	VBC0NN24343Q00	BS01C01RFH	**BLPH-MV-028**	-	13
SB-598-HR-25-F150RF3_F	00.VSF.2694/V	VBC0NN24350100	BS01C01RFH	**BLPH-MV-172**	LO	14
SB-598-HR-25-F150RF3_F	00.VSF.2694/V	VBC0NN24350100	BS01C01RFH	**BLPH-MV-404**	-	14
SB-598-HR-25-F150RF3_F	00.VSF.2694/V	VBC0NN24350100	BS01C01RFH	**BLPH-MV-405**	-	14
SB-598-HR-25-F150RF3_F	00.VSF.2694/V	VBC0NN24350100	BS01C01RFH	**BLPH-MV-462**	-	14
SB-598-HR-25-F150RF3_F	00.VSF.2694/V	VBC0NN24350100	BS01C01RFH	**BLPH-MV-463**	-	14
SB-598-20-E150RF3_E	00.VSF.2685	VBC0NN24433Q00	BS01F01RF	**BLPH-MV-044**	Stem Extension 100mm	15
SB-598-20-E150RF3_E	00.VSF.2685	VBC0NN24433Q00	BS01F01RF	**BLPH-MV-054**	Stem Extension 100mm	15
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SB-598-25-F150RF3_F	00.VSF.2688	VBC0NN24440100	BS01F01RF	**BLPH-MV-051**	Stem Extension 100mm	16
SB-598-50-J150RF3_J	00.VSF.2692	VBC0NN24460200	BA01F01RF	**BLPH-MV-464**	Stem Extension 100mm	17
SB-598-50-J150RF3_J	00.VSF.2692	VBC0NN24460200	BA01F01RF	**BLPH-MV-465**	Stem Extension 100mm	17
SB-598-20-E150RF3_E	00.VSF.2686/V	VBC0NN24703Q00	BS01B01RF	**BLPH-MV-275**	-	18
SB-598-25-F150RF3_F	00.VSF.2770/V	VBC0NN24710100	BS01B01RF	**BLPH-MV-263**	-	19
SB-598-25-F150RF3_F	00.VSF.2770/V	VBC0NN24710100	BS01B01RF	**BLPH-MV-419**	LC	19
SB-598-25-F150RF3-F	00.VSF.2689/V	VBC0NN24710100	BS01B01RF	**BLPH-MV-417**	Stem Extension 100mm - LC	20
SB-598-40-H150RF3_H	00.VSF.2691/V	VBC0NN24721H00	BS01B01RF	**BLPH-MV-412**	Stem Extension 100mm - LO	21
SB-59X-PE80-20-E-E	00.VSF.2683	VBC0NN24893Q00	BA01P01KT	**BLPH-MV-214**	Stem Extension 100mm	22
SB-59X-PE80-20-E-E	00.VSF.2683	VBC0NN24893Q00	BA01P01KT	**BLPH-MV-400**	Stem Extension 100mm	22
SB-598-HR-50-L150RF3_L	00.VSF.2695/V	VBD0NN16460300	BC01C01RFH	**BLPH-MV-402**	-	23
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DBB-898-HR-40-H300RF3_H_D	00.VSF.2681/V	VLBBNN07201H00	DA03C01RFH	**BLPH-MV-433**	FB - LO	26
DBB-898-HR-40-H300RF3_H_D	00.VSF.2681/V	VLBBNN07201H00	DA03C01RFH	**BLPH-MV-442**	FB - LO	26
DBB-898-HR-50-J300RF3_J_D	00.VSF.2682/V	VLBBNN07210200	DA03C01RFH	**BLPH-MV-019**	FB - LO	28
DBB-898-HR-100-N300RF3_N	00.VSF.2679/V	VLBBNN07230400	DA03C01RFH	**BLPH-MV-034**	FB - LO	30
DBB-898-HR-100-N300RF3_N	00.VSF.2679/V	VLBBNN07230400	DA03C01RFH	**BLPH-MV-222**	FB - LO	30
DBB-898-HR-100-N300RF3_N	00.VSF.2679/V	VLBBNN07230400	DA03C01RFH	**BLPH-MV-387**	FB - LO	30
DBB-898-HR-100-N300RF3_N	00.VSF.2679/V	VLBBNN07230400	DA03C01RFH	**BLPH-MV-423**	FB - LO	30
DBB-898-HR-100-N300RF3_N	00.VSF.2679/V	VLBBNN07230400	DA03C01RFH	**BLPH-MV-431**	FB - LO	30
DBB-898-HR-100-N300RF3_N	00.VSF.2679/V	VLBBNN07230400	DA03C01RFH	**BLPH-MV-440**	FB - LO	30
DBB-898-TRU-HR-150-Q300RF3_Q	00.VSFT.0223/V	VLBBNN07240600	DA03C01RFH	**BLPH-MV-035**	FB - LO	32
DBB-898-TRU-HR-150-Q300RF3_Q	00.VSFT.0223/V	VLBBNN07240600	DA03C01RFH	**BLPH-MV-264**	FB - LO	32
DBB-898-TRU-HR-150-Q300RF3_Q	00.VSFT.0223/V	VLBBNN07240600	DA03C01RFH	**BLPH-MV-388**	FB - LO	32
DBB-898-TRU-HR-150-Q300RF3_Q	00.VSFT.0223/V	VLBBNN07240600	DA03C01RFH	**BLPH-MV-424**	FB - LO	32
DBB-898-TRU-HR-150-Q300RF3_Q	00.VSFT.0223/V	VLBBNN07240600	DA03C01RFH	**BLPH-MV-432**	FB - LO	32
DBB-898-TRU-HR-150-Q300RF3_Q	00.VSFT.0223/V	VLBBNN07240600	DA03C01RFH	**BLPH-MV-441**	FB - LO	32
SBB-798-25-F150RF3_F_D	00.VSF.2697/V	VLBLNN01280100	BS01B01RFS	**BLPH-MV-269**	LO	34
SBB-798-25-F150RF3_F_D	00.VSF.2697/V	VLBLNN01280100	BS01B01RFS	**BLPH-MV-271**	LO	34
SBB-798-25-F150RF3_F_D	00.VSF.2697/V	VLBLNN01280100	BS01B01RFS	**BLPH-MV-409**	LC	34
SBB-798-25-F150RF3_F_D	00.VSF.2699/V	VLBLNN01291H00	BS01B01RFS	**BLPH-MV-278**	FB-LO	36
SBB-798-HR-25-F150RF3_F_D	00.VSF.2701/V	VLBLNN01320100	BS01C01RFHS	**BLPH-MV-007**	-	38
SBB-798-HR-25-F150RF3_F_D	00.VSF.2701/V	VLBLNN01320100	BS01C01RFHS	**BLPH-MV-009**	-	38
SBB-798-40-H150RF3_H_D	00.VSF.2698	VLBLNN01381H00	BS01F01RFS	**BLPH-MV-043**	Stem Extension 100mm	40
SBB-798-40-H150RF3_H_D	00.VSF.2698	VLBLNN01381H00	BS01F01RFS	**BLPH-MV-050**	Stem Extension 100mm	40
SBB-798-25-F150RF3_F_D	00.VSF.2696/V	VLBLNN01410100	BS01C01RFS	**BLPH-MV-001**	Stem Extension 100mm	42
SBB-798-HR-50-J150RF3-J-D	00.VSF.2702/V	VLBLNN01430200	BA01C01RFHS	**BLPH-MV-002**	FB - LO	44
SBB-798-HR-50-J150RF3-J-D	00.VSF.2702/V	VLBLNN01430200	BA01C01RFHS	**BLPH-MV-016**	LO	44
SBB-798-HR-100-N150RF3-N-D	00.VSF.2700/V	VLBLNN01450400	BA01C01RFHS	**BLPH-MV-006**	FB-LO	46
SBB-798-HR-100-N150RF3-N-D	00.VSF.2700/V	VLBLNN01450400	BA01C01RFHS	**BLPH-MV-033**	FB - LO	46
SBB-798-HR-100-N150RF3-N-D	00.VSF.2700/V	VLBLNN01450400	BA01C01RFHS	**BLPH-MV-191**	FB - LO	46
SBB-798-HR-100-N150RF3-N-D	00.VSF.2700/V	VLBLNN01450400	BA01C01RFHS	**BLPH-MV-194**	FB - LO	46
SBB-798-HR-100-N150RF3-N-D	00.VSF.2700/V	VLBLNN01450400	BA01C01RFHS	**BLPH-MV-196**	FB - LO	46
SBB-798-HR-100-N150RF3-N-D	00.VSF.2700/V	VLBLNN01450400	BA01C01RFHS	**BLPH-MV-199**	FB - LO	46
SBB-798-HR-100-N150RF3-N-D	00.VSF.2700/V	VLBLNN01450400	BA01C01RFHS	**BLPH-MV-201**	FB - LO	46
SB-598-TRU-HR-150-Q150RF3-Q	00.VSFT.0224/V	VLBLNN01460600	BA01C01RFHS	**BLPH-MV-005**	FB-LO	48
DBB-737-HR-E300RF3-D-D	00.MNF.0604/V	VLBMNN00013Q0H	MD03C02YH	**BLPH-MV-013**	-	50
DBB-737-HR-E300RF3-D-D	00.MNF.0604/V	VLBMNN00013Q0H	MD03C02YH	**BLPH-MV-014**	-	50
DBB-737-HR-E300RF3-D-D	00.MNF.0604/V	VLBMNN00013Q0H	MD03C02YH	**BLPH-MV-091**	-	50
DBB-737-HR-E300RF3-D-D	00.MNF.0604/V	VLBMNN00013Q0H	MD03C02YH	**BLPH-MV-092**	-	50
DBB-737-HR-E300RF3-D-D	00.MNF.0604/V	VLBMNN00013Q0H	MD03C02YH	**BLPH-MV-096**	-	50
DBB-737-HR-E300RF3-D-D	00.MNF.0604/V	VLBMNN00013Q0H	MD03C02YH	**BLPH-MV-097**	-	50
DBB-737-HR-E300RF3-D-D	00.MNF.0604/V	VLBMNN00013Q0H	MD03C02YH	**BLPH-MV-204**	-	50
DBB-737-HR-E300RF3-D-D	00.MNF.0604/V	VLBMNN00013Q0H	MD03C02YH	**BLPH-MV-205**	-	50
DBB-737-HR-E300RF3-D-D	00.MNF.0604/V	VLBMNN00013Q0H	MD03C02YH	**BLPH-MV-282**	-	50
DBB-737-HR-E300RF3-D-D	00.MNF.0604/V	VLBMNN00013Q0H	MD03C02YH	**BLPH-MV-283**	-	50
DBB-737-HR-E300RF3-D-D	00.MNF.0604/V	VLBMNN00013Q0H	MD03C02YH	**BLPH-MV-421**	-	50
DBB-737-HR-E300RF3-D-D	00.MNF.0604/V	VLBMNN00013Q0H	MD03C02YH	**BLPH-MV-422**	-	50
DBB-737-HR-E300RF3-D-D	00.MNF.0604/V	VLBMNN00013Q0H	MD03C02YH	**BLPH-MV-438**	-	50
DBB-737-HR-E300RF3-D-D	00.MNF.0604/V	VLBMNN00013Q0H	MD03C02YH	**BLPH-MV-439**	-	50
SBB-727-HR-E150RF3-D-D	00.MNF.0608/V	VLBNNN00023Q0H	MS01C02YH	**BLPH-MV-025**	-	51
SBB-727-HR-E150RF3-D-D	00.MNF.0608/V	VLBNNN00023Q0H	MS01C02YH	**BLPH-MV-038**	-	51
SBB-727-HR-E150RF3-D-D	00.MNF.0608/V	VLBNNN00023Q0H	MS01C02YH	**BLPH-MV-213**	-	51
SBB-727-HR-E150RF3-D-D	00.MNF.0608/V	VLBNNN00023Q0H	MS01C02YH	**BLPH-MV-407**	-	51
SBB-727-E150RF3-D-D	00.MNF.0605/V	VLBNNN00033Q0H	MS01C02Y	**BLPH-MV-150**	-	52
SBB-727-E150RF3-D-D	00.MNF.0605/V	VLBNNN00033Q0H	MS01C02Y	**BLPH-MV-151**	-	52
SBB-727-E150RF3-D-D-	00.MNF.0612/V	VLBNNN00063Q0H	MS01B02Y	**BLPH-MV-166**	-	53
SBB-727-E150RF3-D-D-	00.MNF.0612/V	VLBNNN00063Q0H	MS01B02Y	**BLPH-MV-167**	-	53
SBB-727-E150RF3-D-D-	00.MNF.0612/V	VLBNNN00063Q0H	MS01B02Y	**BLPH-MV-386**	-	53
SBB-727-E150RF3-D-D	00.MNF.0606/V	VLBNNN00063Q0H	MS01B02Y	**BLPH-MV-411**	Stem Extension 100mm	54
SB-598-50-L150RF3-L-LF2	00.VSF.2716/V	VBDNN16610300	BC01B01RF	**BLPH-MV-467**		55
DBB-898-HR-25-F300RF3_F_D	00.VSF.2680/V	VLBBNN07190100	DA03C01RFH	**BLPH-MV-466**		24
DBB-898-HR-40-H300RF3_H_D	00.VSF.2681/V	VLBBNN07201H00	DA03C01RFH	**BLPH-MV-468**	-	25
SBB-798-25-F150RF3-F-D-	00.VSF.2784(T)	VLBLNN01370100	BS01F01RFS	**BLPH-MV-469**	-	56
SBB-798-25-F150RF3-F-D-	00.VSF.2784(T)	VLBLNN01370100	BS01F01RFS	**BLPH-MV-470**	-	56
SBB-798-25-F150RF3-F-D-	00.VSF.2784(T)	VLBLNN01370100	BS01F01RFS	**BLPH-MV-471**	-	56

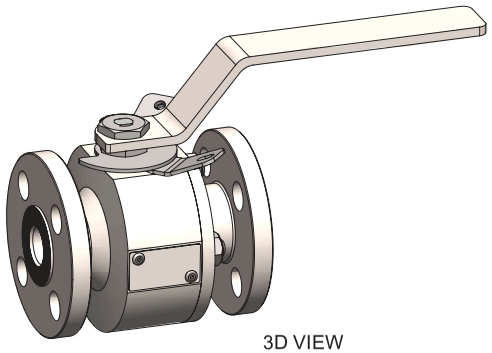
SB BALL VALVE		
Item	**Description**	**Material**
1	VALVE BODY	ASTM A182 F316/316L NACE
2	CLOSURE	ASTM A182 F316/316L NACE
3	STUD BOLT	ASTM A193 B8M Cl.2
4	NUT	ASTM A194 Gr.8M
5	CLOSURE SEAL RING	GRAPHITE
6	CLOSURE O-RING	FKM AED
7	SEAT	RPTFE
8	BALL	ASTM A479 316/316L NACE
9	STEM	ASTM A479 316/316L NACE
10	STEM O-RING	FKM AED
11	STEM THRUST WASHER	PEEK
12	STEM SEAL RING	GRAPHITE
13	STEM RING	St.St. 316L
14	STEM COMPRESSION RING	St.St. 316L
15	STOP PIN	St.St. 316L
16	HANDLE LOCKING NUT	St.St. 316
17	HANDLE	St.St. 316
18	LEVER LOCKING PLATE	St.St. 316
19	LOCKING PLATE	St.St. 316
20	LOCKING PLATE BOLT	St.St. 316
21	ANTISTATIC DEVICE SPRING	ELGILOY R30003

SPECIFICATION

1. Construction: 1 Ball Isolate
2. Inlet: 3/4" Cl.150 RF (ASME B16.5)
3. Outlet: 3/4" Cl.150 RF (ASME B16.5)
4. Design Code: ASME B16.34/B16.5
5. Bore Size: DN 20
6. Face to face dimension according to ASME B16.10
7. Antistatic device
8. Anti-blow out stem
9. Design temperature: -29°C / +100°C
10. Pressure test: API 598, API 6D
11. Corrosion Allowance 3mm
12. PMI: PMI Test on body, closure and wetted parts
13. Bidirectional valve
14. Cavity Relief Pressure Test
15. Antistatic Test
16. Hardness Test on body, closure and wetted parts
17. Fire Safe: API 607 / ISO 10497, API 6FA
18. Painting: treatment according to spec. 123A90-DDL-MAT-SP-60006,
    Valve: System SYS-6A, Color RAL 9002
    Lever: System SYS-6A, Color RAL 9005



SECTION A-A



3D VIEW

FLOW DIAGRAM



All dimensions are in mm

TAG No.	Cust. Item	Data Sheet	PIPING Class	SAP CODE	Indra Part Number	Operating Temperature °C	Design Pressure barg Min / Max
BLPH-MV-111	10	BS01C01RF	01SS	VBC0NN06943Q00	00.VSF.2684/V	5 / 35	11 / 16,2

indra VALVES - ITALY
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TITOLO: TITLE:	SB BALL VALVE FLANGED - FLANGED			DISEGNO: DWG.:	00.VSF.2684/V
MODELLO: MODEL:	SB-598-20-E150RF3_E			REV.: 02 A	DATA: DATE: 27/06/2024
CODICE: CODE:	00.VSF.2684/V			NOTE / NOTES:	*Rev01: Updated drawing* *Rev02: Updated drawing*
SCALA: SCALE:	N/A	FOGLIO: SHEET:	1/1	MATERIALE: MATERIAL:	See Table
DISEGNATO DA: DRAWN BY:	D.S	CONTROLLATO DA: CONTROLLED BY:	D.R	PESO: WEIGHT:	5,3 kg (max)
DATA: DATE:	14/05/2024	REVISIONATO DA: REVISED BY:	S.M	RICHIESTO DA: REQUESTED BY:	G.G

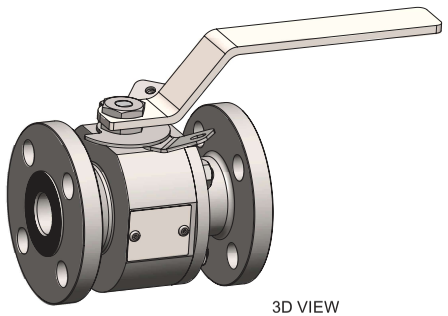
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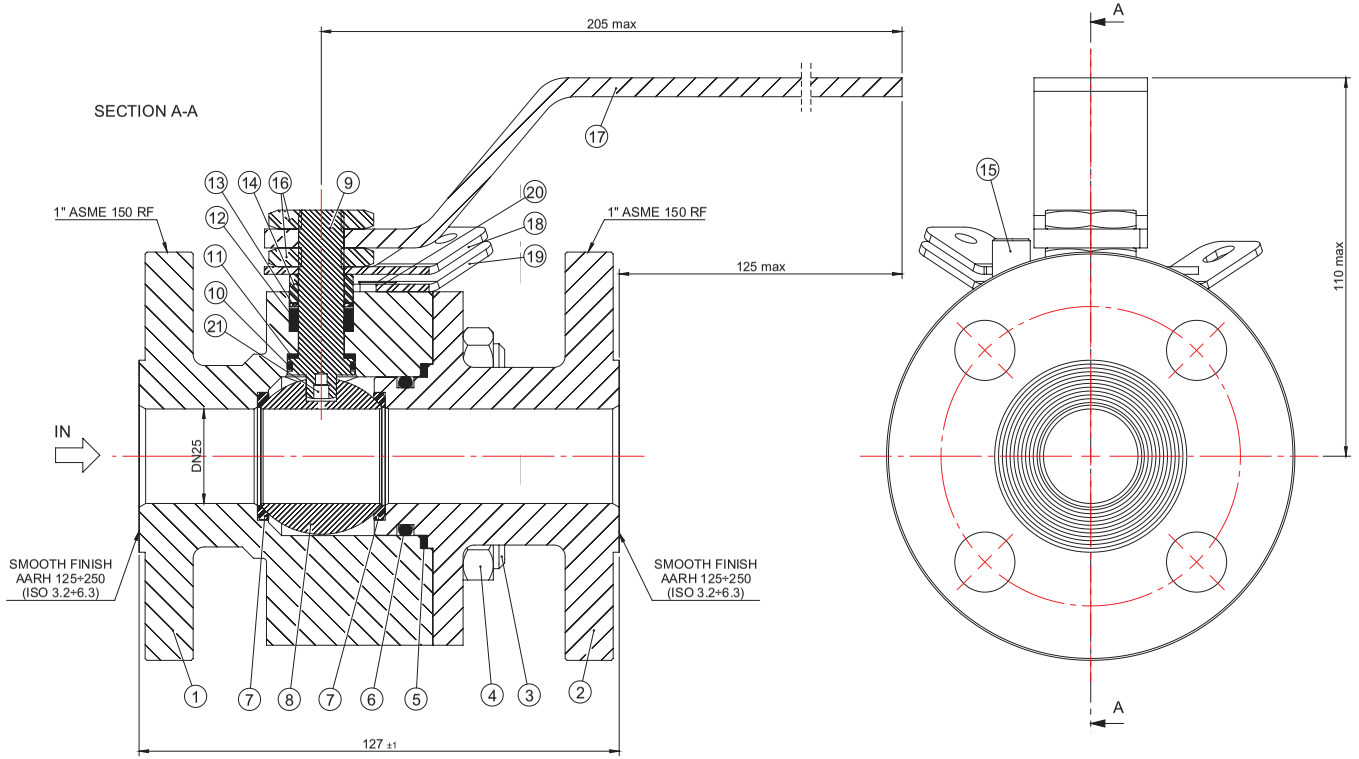
SB BALL VALVE		
Item	**Description**	**Material**
1	VALVE BODY	ASTM A182 F316/316L NACE
2	CLOSURE	ASTM A182 F316/316L NACE
3	STUD BOLT	ASTM A193 B8M Cl.2
4	NUT	ASTM A194 Gr.8M
5	CLOSURE SEAL RING	GRAPHITE
6	CLOSURE O-RING	FKM AED
7	SEAT	RPTFE
8	BALL	ASTM A479 316/316L NACE
9	STEM	ASTM A479 316/316L NACE
10	STEM O-RING	FKM AED
11	STEM THRUST WASHER	PEEK
12	STEM SEAL RING	GRAPHITE
13	STEM RING	St.St.316L
14	STEM COMPRESSION RING	St.St.316L
15	STOP PIN	St.St.316L
16	HANDLE LOCKING NUT	St.St. 316
17	HANDLE	St.St. 316
18	LEVER LOCKING PLATE	St.St. 316
19	LOCKING PLATE	St.St. 316
20	LOCKING PLATE BOLT	St.St. 316
21	ANTISTATIC DEVICE SPRING	ELGILOY R30003

SPECIFICATION

1. Construction: 1 Ball Isolate
2. Inlet: 1" Cl.150 RF (ASME B16.5)
3. Outlet: 1" Cl.150 RF (ASME B16.5)
4. Design Code: ASME B16.34/B16.5
5. Bore Size: DN 25
6. Face to face dimension according to ASME B16.10
7. Antistatic device
8. Anti-blow out stem
9. Design temperature: -29°C / +100°C
10. Pressure test: API 598, API 6D
11. Corrosion Allowance 3mm
12. PMI: PMI Test on body, closure and wetted parts
13. Hardness Test on body, closure and wetted parts
14. Bidirectional valve
15. Cavity Relief Pressure Test
16. Antistatic Test
17. Fire Safe: API 607 / ISO 10497, API 6FA
18. Painting: treatment according to spec. 123A90-DDL-MAT-SP-60006,
    Valve: System SYS-6A, Color RAL 9002
    Lever: System SYS-6A, Color RAL 9005



3D VIEW



TAG No.	Cust. Item	Data Sheet	PIPING Class	SAP CODE	Indra Part Number	Operating Temperature °C	Design Pressure barg Min / Max
BLPH-MV-210 - BLPH-MV-242 BLPH-MV-447 - BLPH-MV-448 BLPH-MV-449 - BLPH-MV-450 BLPH-MV-451 - BLPH-MV-452 BLPH-MV-453 - BLPH-MV-454 BLPH-MV-455 - BLPH-MV-456 BLPH-MV-457 - BLPH-MV-458 BLPH-MV-459	20	BS01C01RF	01SS	VBC0NN06950100	00.VSF.2687/V	5 / 35	11 / 16,2

FLOW DIAGRAM

All dimensions are in mm

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E-mail: indra@indra.it - http://www.indra.it

TITOLO: TITLE:	SB BALL VALVE FLANGED - FLANGED	DISEGNO: DWG.:	00.VSF.2687/V
MODELLO: MODEL:	SB-598-25-F150RF3_F	REV.: 02 A	DATA: DATE: 27/06/2024
CODICE: CODE:	00.VSF.2687/V	NOTE / NOTES:	*Rev01: Updated drawing* *Rev02: Updated drawing*
SCALA: SCALE: N/A	FOGLIO: SHEET: 1/1	MATERIALE: MATERIAL:	See Table
DISEGNATO DA: DRAWN BY: D.S	CONTROLLATO DA: CONTROLLED BY: D.R	PESO: WEIGHT:	6 kg (max)
DATA: DATE: 15/05/2024	REVISIONATO DA: REVISED BY: S.M	RICHIESTO DA: REQUESTED BY:	G.G

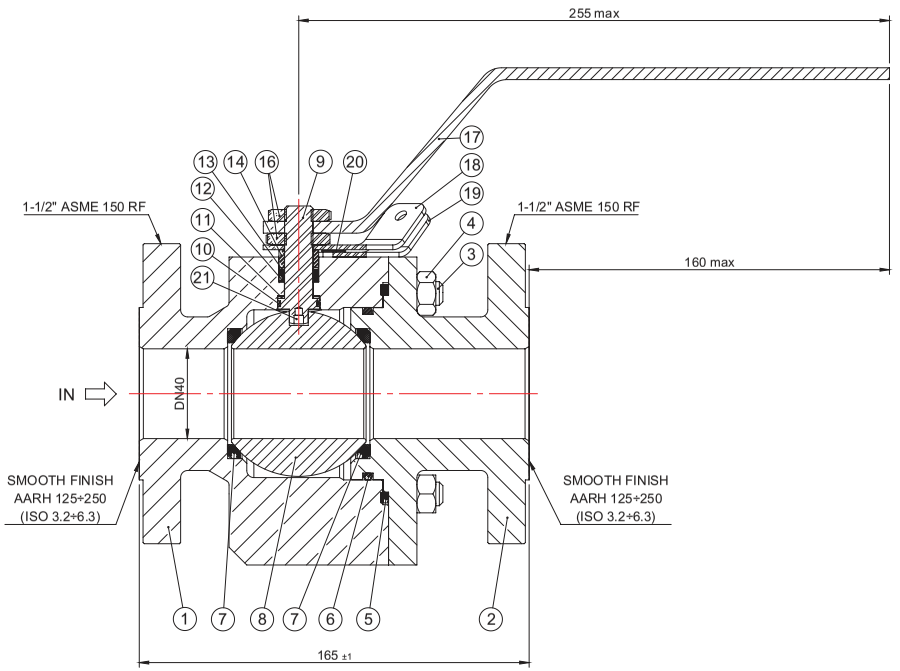
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A4 - ORIZ.

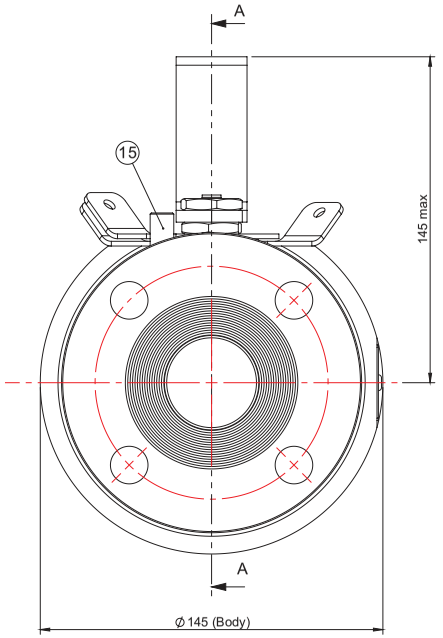
SB BALL VALVE		
Item	**Description**	**Material**
1	VALVE BODY	ASTM A182 F316/316L NACE
2	CLOSURE	ASTM A182 F316/316L NACE
3	STUD BOLT	ASTM A193 B8M Cl.2
4	NUT	ASTM A194 Gr.8M
5	CLOSURE SEAL RING	GRAPHITE
6	CLOSURE O-RING	FKM AED
7	SEAT	RPTFE
8	BALL	ASTM A479 316/316L NACE
9	STEM	ASTM A479 316/316L NACE
10	STEM O-RING	FKM AED
11	STEM THRUST WASHER	PEEK
12	STEM SEAL RING	GRAPHITE
13	STEM RING	St.St. 316L
14	STEM COMPRESSION RING	St.St. 316L
15	STOP PIN	St.St. 316L
16	HANDLE LOCKING NUT	St.St. 316
17	HANDLE	St.St. 316
18	LEVER LOCKING PLATE	St.St. 316
19	LOCKING PLATE	St.St. 316
20	LOCKING PLATE BOLT	St.St. 316
21	ANTISTATIC DEVICE SPRING	ELGILOY R30003

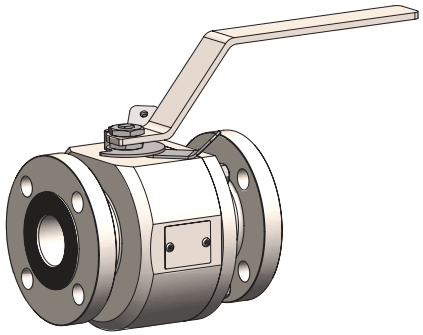
SPECIFICATION

1. Construction: 1 Ball Isolate
2. Inlet: 1-1/2" Cl. 150 RF (ASME B16.5)
3. Outlet: 1-1/2" Cl. 150 RF (ASME B16.5)
4. Design Code: ASME B16.34 / B16.5
5. Bore Size: DN40
6. Face to face dimension according to ASME B16.10
7. Antistatic device
8. Anti-blow out stem
9. Design Temperature: -29°C / +100°C
10. Pressure Test: API 598, API 6D
11. Corrosion Allowance 3mm
12. PMI: PMI Test on body, closure and wetted parts
13. Hardness Test on body, closure and wetted parts
14. Bidirectional valve
15. Cavity Relief Pressure Test
16. Antistatic Test
17. Fire Safe: API 607 / ISO10497 / API 6FA
18. Painting: Treatment according to spec. 123A90-DDL-MAT-SP-60006,
    Valve: System SYS-6A, Color RAL 9002
    Lever: System SYS-6A, Color RAL 9005



SECTION A-A





3D VIEW

FLOW DIAGRAM



All dimensions are in mm

TAG No.	Cust. Item	Data Sheet	PIPING Class	SAP CODE	Indra Part Number	Operating Temperature °C	Design Pressure barg Min / Max
BLPH-MV-149 BLPH-MV-270	30	BS01C01RF	01SS	VBC0NN06961H00	00.VSF.2690/V	5 / 35	11 / 16,2

indra VALVES - ITALY
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Tel. 02 97.29.86.63 r.a. - Fax 02 97.29.18.55
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TITOLO: TITLE:	SB BALL VALVE FLANGED - FLANGED			DISEGNO: DWG.:	00.VSF.2690/V
MODELLO: MODEL:	SB-598-40-H150RF3_H			REV.: 02 A	DATA: DATE: 27/06/2024
CODICE: CODE:	00.VSF.2690/V			NOTE / NOTES:	*Rev01: Updated drawing* *Rev02: Updated drawing*
SCALA: SCALE:	N/A	FOGLIO: SHEET:	1/1	MATERIALE: MATERIAL:	See Table
DISEGNATO DA: DRAWN BY:	S.M	CONTROLLATO DA: CONTROLLED BY:	D.R	PESO: WEIGHT:	12,7 kg (max)
DATA: DATE:	16/05/2024	REVISIONATO DA: REVISED BY:	S.M	RICHIESTO DA: REQUESTED BY:	G.G

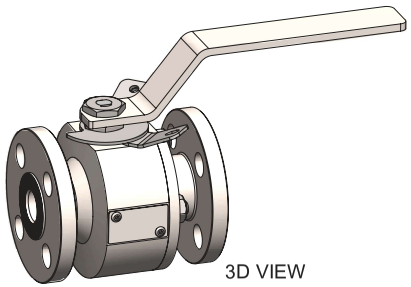
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A4 - ORIZ.

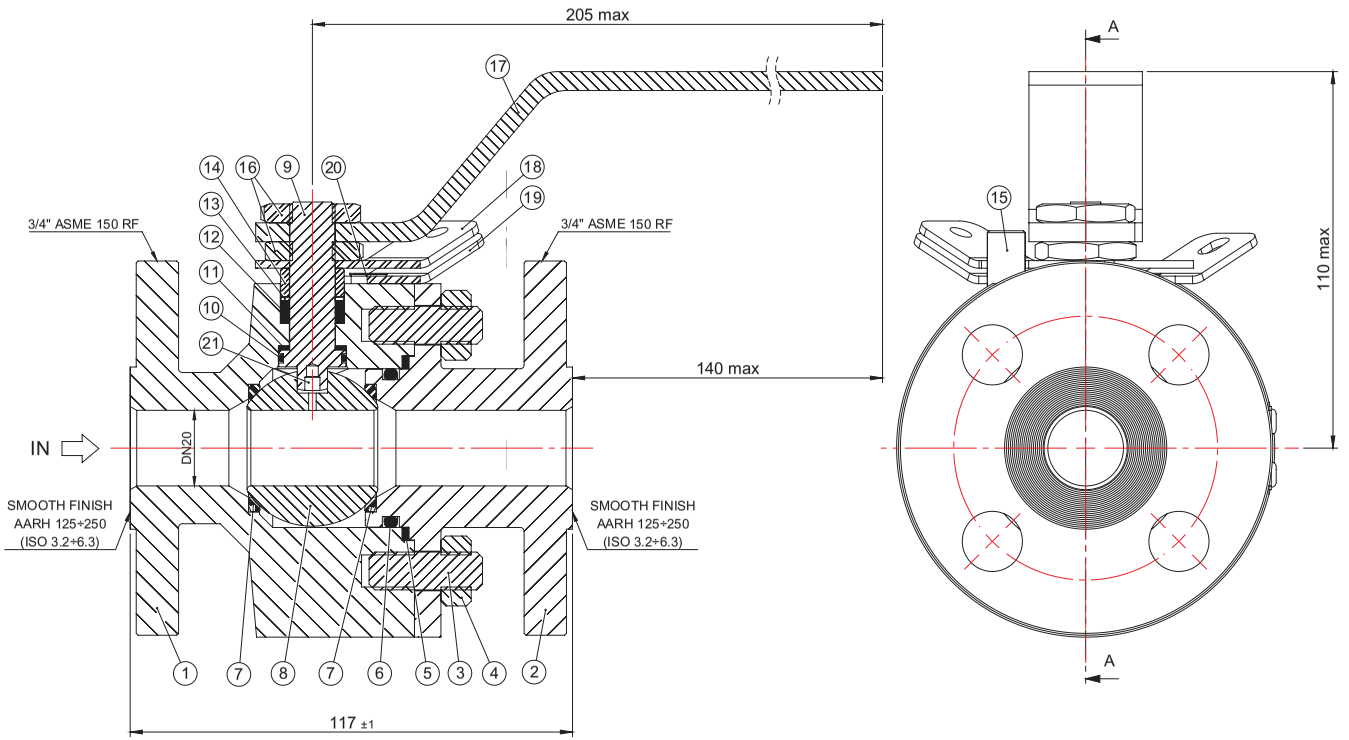
SB BALL VALVE		
Item	**Description**	**Material**
1	VALVE BODY	ASTM A182 F316/316L NACE
2	CLOSURE	ASTM A182 F316/316L NACE
3	STUD BOLT	ASTM A193 B8M Cl.2
4	NUT	ASTM A194 Gr.8HM
5	CLOSURE SEAL RING	GRAPHITE
6	CLOSURE O-RING	FKM AED
7	SEAT	RPTFE
8	BALL	ASTM A479 316/316L NACE
9	STEM	ASTM A479 316/316L NACE
10	STEM O-RING	FKM AED
11	STEM THRUST WASHER	PEEK
12	STEM SEAL RING	GRAPHITE
13	STEM RING	St.St. 316L
14	STEM COMPRESSION RING	St.St. 316L
15	STOP PIN	St.St. 316L
16	HANDLE LOCKING NUT	St.St. 316
17	HANDLE	St.St. 316
18	LEVER LOCKING PLATE	St.St. 316
19	LOCKING PLATE	St.St. 316
20	LOCKING PLATE BOLT	St.St. 316
21	ANTISTATIC DEVICE SPRING	ELGILOY R30003

SPECIFICATION

1. Construction: 1 Ball Isolate
2. Inlet: 3/4" Cl.150 RF (ASME B16.5)
3. Outlet: 3/4" Cl.150 RF (ASME B16.5)
4. Design Code: ASME B16.34/B16.5
5. Bore Size: DN 20
6. Face to face dimension according to ASME B16.10
7. Antistatic device
8. Anti-blow out stem
9. Design temperature: -29° / +100°C
10. Pressure test: API 598, API 6D
11. Corrosion Allowance 3mm
12. Hydrogen Service
13. PMI: PMI Test on body, closure and wetted parts
14. Hardness Test on body, closure and wetted parts
15. Bidirectional valve
16. Cavity Relief PressureTest
17. Antistatic Test
18. Fire Safe: API 607 / ISO 10497, API 6FA
19. Dye Penetrant Test on body and closure
20. High Pressure Gas Test with Helium
21. Fugitive Emission Certificate according to ISO 15848-1
22. Fugitive Emission Test according to ISO 15848-2
23. Painting: treatment according to spec. 123A90-DDL-MAT-SP-60006,
    Valve: System SYS-6A, Color RAL 9002
    Lever: System SYS-6A, Color RAL 9005



3D VIEW



SECTION A-A

TAG No.	Cust. Item	Data Sheet	PIPING Class	SAP CODE	Indra Part Number	Operating Temperature °C	Design Pressure barg Min / Max
BLPH-MV-024 BLPH-MV-028	40	BS01C01RFH	01HSS	VBC0NN24343Q00	00.VSF.2693/V	-27 / 25	10 / 16,2

FLOW DIAGRAM



All dimensions are in mm

indra VALVES - ITALY
20013 Magenta (MI) - Italy - Via Novara, 10/B
Tel. 02 97.29.86.63 r.a. - Fax 02 97.29.18.55
E-mail: indra@indra.it - http://www.indra.it

TITOLO: TITLE:	SB BALL VALVE FLANGED - FLANGED			DISEGNO: DWG.:	00.VSF.2693/V
MODELLO: MODEL:	SB-598-HR-20-E150RF3_E			REV.: 02 A	DATA: DATE: 26/06/2024
CODICE: CODE:	00.VSF.2693/V			NOTE / NOTES:	*Rev01: Updated drawing* *Rev02: Updated drawing*
SCALA: SCALE:	N/A	FOGLIO: SHEET:	1/1	MATERIALE: MATERIAL:	See Table
DISEGNATO DA: DRAWN BY:	D.S	CONTROLLATO DA: CONTROLLED BY:	D.R	PESO: WEIGHT:	5,3 kg (max)
DATA: DATE:	15/05/2024	REVISIONATO DA: REVISED BY:	S.M	RICHIESTO DA: REQUESTED BY:	G.G

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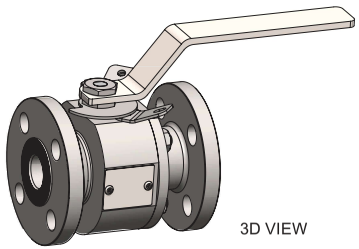
A4 - ORIZ.

SB BALL VALVE

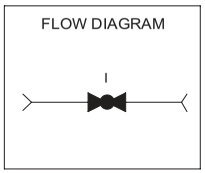
Item	Description	Material
1	VALVE BODY	ASTM A182 F316/316L NACE
2	CLOSURE	ASTM A182 F316/316L NACE
3	STUD BOLT	ASTM A193 B8M Cl.2
4	NUT	ASTM A194 Gr.8M
5	CLOSURE SEAL RING	GRAPHITE
6	CLOSURE O-RING	FKM AED
7	SEAT	PEEK
8	BALL	ASTM A479 316/316L NACE
9	STEM	ASTM A479 316/316L NACE
10	STEM O-RING	FKM AED
11	STEM THRUST WASHER	PEEK
12	STEM SEAL RING	GRAPHITE
13	STEM RING	St.St.316L
14	STEM COMPRESSION RING	St.St.316L
15	STOP PIN	St.St.316L
16	HANDLE LOCKING NUT	St.St. 316
17	HANDLE	St.St. 316
18	LEVER LOCKING PLATE	St.St. 316
19	LOCKING PLATE	St.St. 316
20	LOCKING PLATE BOLT	St.St. 316
21	ANTISTATIC DEVICE SPRING	ELGILOY R30003

SPECIFICATION

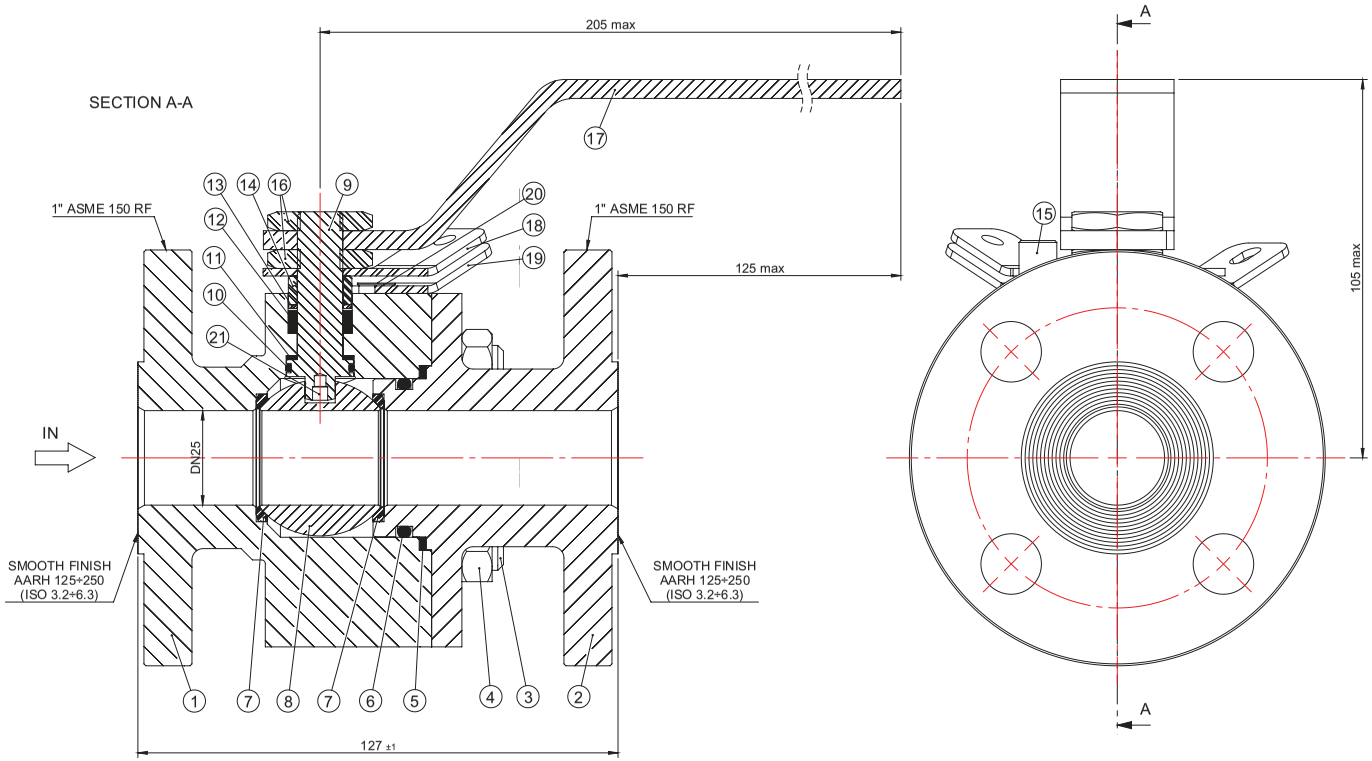
1. Construction: 1 Ball Isolate
2. Inlet: 1" Cl.150 RF (ASME B16.5)
3. Outlet: 1" Cl.150 RF (ASME B16.5)
4. Design Code: ASME B16.34 / B16.5
5. Bore Size: DN25
6. Face to face dimension according to ASME B16.10
7. Antistatic device
8. Anti-blow out stem
9. Design Temperature: -29°C / +100°C
10. Pressure Test: API 598, API 6D
11. PMI: PMI Test on body, closure and wetted parts
12. Bidirectional valve
13. Cavity Relieve Pressure Test
14. Antistatic Test
15. Fire Safe: API 607 / ISO10497 / API 6FA
16. Fugitive Emission Certificate according to ISO 15848-1
17. Fugitive Emission Test according to ISO 15848-2
18. Hydrogen Service
19. Dye Penetrant Test on body and closure
20. High Pressure Gas Test with Helium
21. Hardness Test on body, closure and wetted parts
22. Painting: Treatment according to spec. 123A90-DDL-MAT-SP-60006,
    Valve: System SYS-6A, Color RAL 9002
    Lever: System SYS-6A, Color RAL 9005



3D VIEW



All dimensions are in mm



TAG No.	Cust. Item	Data Sheet	PIPING Class	SAP CODE	Indra Part Number	Operating Temperature °C	Design Pressure barg Min / Max
BLPH-MV-172 BLPH-MV-404 BLPH-MV-405 BLPH-MV-462 BLPH-MV-463	50	BS01C01RFH	01HSS	VBC0NN24350100	00.VSF.2694/V	-27 / 25	10 / 16,2

INDRA VALVES - ITALY
20013 Magenta (MI) - Italy - Via Novara, 10/B
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E-mail: indra@indra.it - http://www.indra.it

TITOLO: TITLE:	SB BALL VALVE FLANGED - FLANGED	DISEGNO: DWG.:	00.VSF.2694/V
MODELLO: MODEL:	SB-598-HR-25-F150RF3_F	REV.: 02 A	DATA: DATE: 27/06/2024
CODICE: CODE:	00.VSF.2694/V	NOTE / NOTES:	*Rev01: updated drawing* *Rev02: updated drawing*
SCALA: SCALE: N/A	FOGLIO: SHEET: 1/1	MATERIALE: MATERIAL:	See Table
DISEGNATO DA: DRAWN BY: D.S	CONTROLLATO DA: CONTROLLED BY: D.R	PESO: WEIGHT:	5,8 kg (max)
DATA: DATE: 15/05/2024	REVISIONATO DA: REVISED BY: S.M	RICHIESTO DA: REQUESTED BY:	G.G

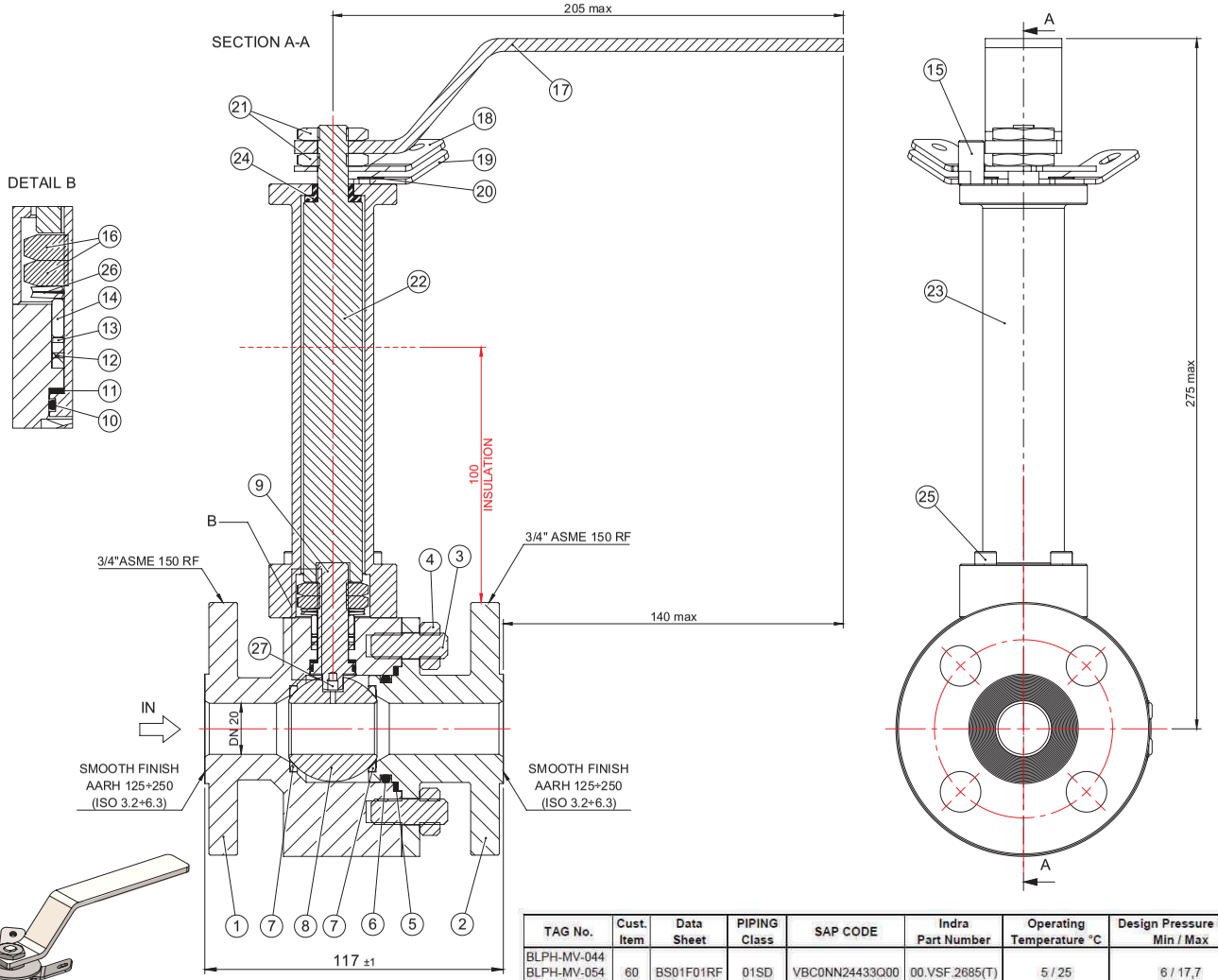
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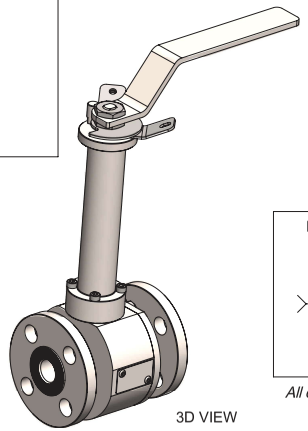
A4 - ORIZ.

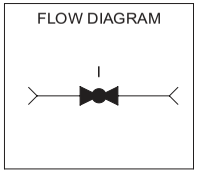
SB BALL VALVE		
Item	**Description**	**Material**
1	VALVE BODY	ASTM A182 F55 NACE
2	CLOSURE	ASTM A182 F55 NACE
3	STUD BOLT	ASTM A193 B7M + HDG
4	NUT	ASTM A194 Gr.2HM + HDG
5	CLOSURE SEAL RING	GRAPHITE
6	CLOSURE O-RING	FKM AED
7	SEAT	PEEK
8	BALL	ASTM A479 F55 NACE
9	STEM	ASTM A479 F55 NACE
10	STEM O-RING	FKM AED
11	STEM THRUST WASHER	PEEK
12	STEM SEAL RING	GRAPHITE
13	STEM RING	St.St. 316L
14	STEM COMPRESSION RING	St.St. 316L
15	STOP PIN	St.St. 316L
16	STEM LOCKING NUT	St.St. 316
17	HANDLE	St.St. 316
18	LEVER LOCKING PLATE	St.St. 316
19	LOCKING PLATE	St.St. 316
20	LOCKING PLATE BOLT	St.St. 316
21	HANDLE LOCKING NUT	St.St. 316
22	STEM EXTENSION	ASTM A479 F55 NACE
23	BRACKET	ASTM A479 316/316L NACE
24	BRACKET BEARING	PTFE
25	BRACKET BOLTING	ASTM A193 B7M + HDG
26	CUP SPRING	St.St.
27	ANTISTATIC DEVICE SPRING	ELGILOY R30003

SPECIFICATION

1. Construction: 1 Ball Isolate
2. Inlet: 3/4" Cl.150 RF (ASME B16.5)
3. Outlet: 3/4" Cl.150 RF (ASME B16.5)
4. Design Code: ASME B16.34/B16.5
5. Bore Size: DN 20
6. Face to face dimension according to ASME B16.10
7. Antistatic device
8. Anti-blow out stem
9. Design temperature: -29°C / +100°C
10. Pressure test: API 598, API 6D
11. Lever is suitable for insulation up to 100mm
12. PMI: PMI Test on body, closure and wettd parts
13. Hardness Test on body, closure and wetted parts
14. Bidirectional valve
15. Cavity Relief PressureTest
16. Antistatic Test
17. Fire Safe: API 607 / ISO 10497, API 6FA
18. Impact Test on raw material of body and closure at -50°C
19. Body and wetted parts in according to Norsok




3D VIEW



All dimensions are in mm

TAG No.	Cust. Item	Data Sheet	PIPING Class	SAP CODE	Indra Part Number	Operating Temperature °C	Design Pressure barg Min / Max
BLPH-MV-044 BLPH-MV-054 BLPH-MV-241	60	BS01F01RF	01SD	VBC0NN24433Q00	00.VSF.2685(T)	5 / 25	6 / 17,7

indra VALVES - ITALY
20013 Magenta (MI) - Italy - Via Novara, 108
Tel. 02 97.29.86.63 r.a. - Fax 02 97.29.18.55
E-mail: indra@indra.it - http://www.indra.it

TITOLO: TITLE:	SB BALL VALVE FLANGED - FLANGED	DISEGNO: DWG.:	00.VSF.2685
MODELLO: MODEL:	SB-598-20-E150RF3_E	REV.: 01 A	DATA: DATE: 27/06/2024
CODICE: CODE:	00.VSF.2685	NOTE / NOTES:	*Rev01: Updated drawing*
SCALA: SCALE: N/A	FOGLIO: SHEET: 1/1	MATERIALE: MATERIAL:	See Table
DISEGNATO DA: DRAWN BY: D.S	CONTROLLATO DA: CONTROLLED BY: D.R	PESO: WEIGHT:	7 kg (max)
DATA: DATE: 15/05/2024	REVISIONATO DA: REVISED BY: S.M	RICHIESTO DA: REQUESTED BY:	G.G

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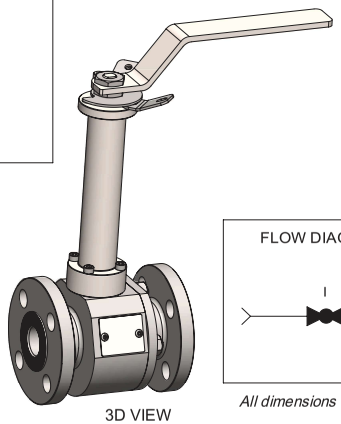
A4 - ORIZ.

SB BALL VALVE

Item	Description	Material
1	VALVE BODY	ASTM A182 F55 NACE
2	CLOSURE	ASTM A182 F55 NACE
3	STUD BOLT	ASTM A193 B7M + HDG
4	NUT	ASTM A194 Gr.2HM + HDG
5	CLOSURE SEAL RING	GRAPHITE
6	CLOSURE O-RING	FKM AED
7	SEAT	PEEK
8	BALL	ASTM A479 F55 NACE
9	STEM	ASTM A479 F55 NACE
10	STEM O-RING	FKM AED
11	STEM THRUST WASHER	PEEK
12	STEM SEAL RING	GRAPHITE
13	STEM RING	St.St. 316L
14	STEM COMPRESSION RING	St.St. 316L
15	STOP PIN	St.St. 316L
16	STEM LOCKING NUT	St.St. 316
17	HANDLE	St.St. 316
18	LEVER LOCKING PLATE	St.St. 316
19	LOCKING PLATE	St.St. 316
20	LOCKING PLATE BOLT	St.St. 316
21	HANDLE LOCKING NUT	St.St. 316
22	STEM EXTENSION	ASTM A479 F55 NACE
23	BRACKET	ASTM A479 316/316L NACE
24	BRACKET BEARING	PTFE
25	BRACKET BOLTING	ASTM A193 B7M + HDG
26	CUP SPRING	St.St.
27	ANTISTATIC DEVICE SPRING	ELGILOY R30003

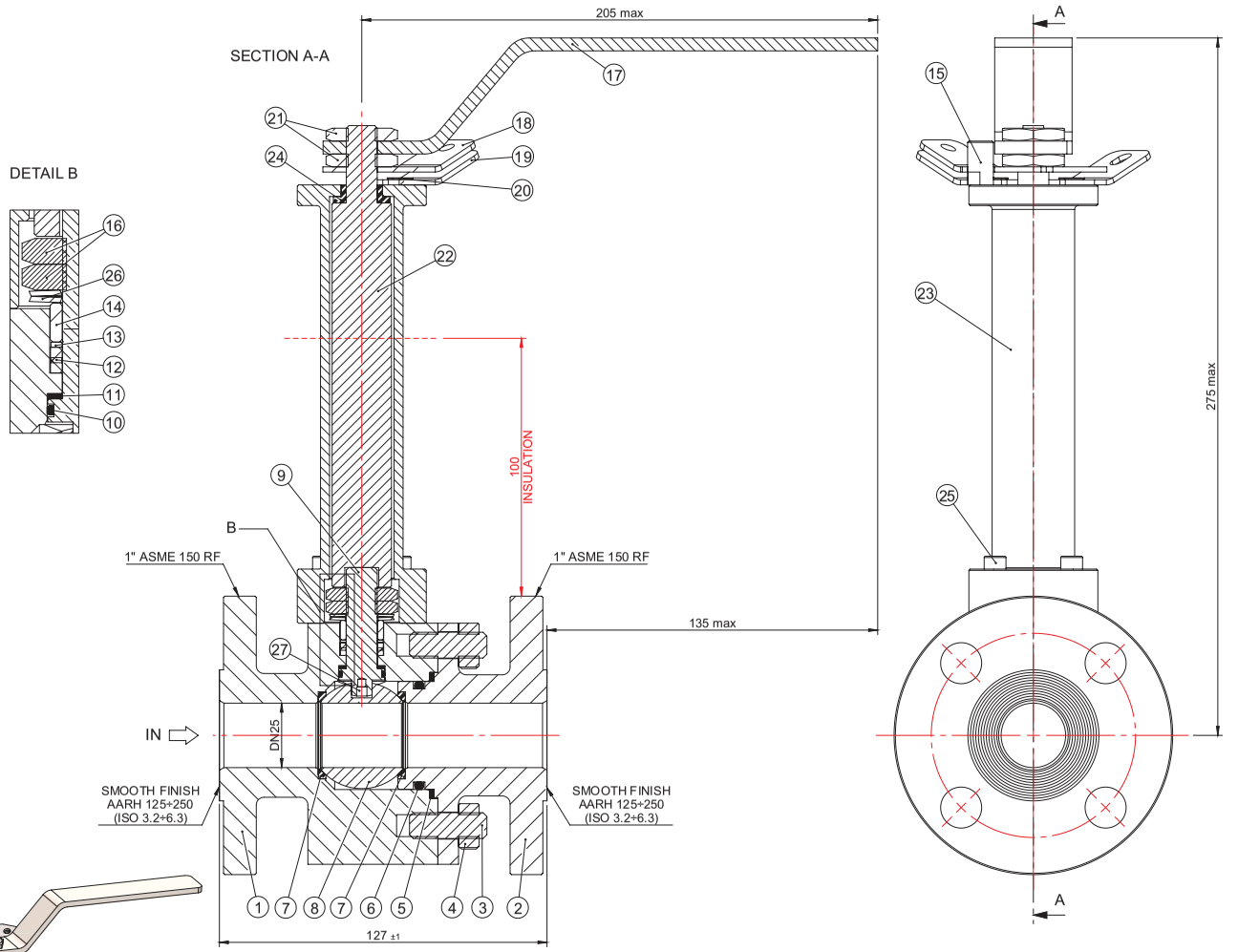
SPECIFICATION

1. Construction: 1 Ball Isolate
2. Inlet: 1" Cl.150 RF (ASME B16.5)
3. Outlet: 1" Cl.150 RF (ASME B16.5)
4. Design Code: ASME B16.34/B16.5
5. Bore Size: DN 25
6. Face to face dimension according to ASME B16.10
7. Antistatic device
8. Anti-blow out stem
9. Design temperature: -29°C / +100°C
10. Pressure test: API 598, API 6D
11. Body and wetted parts in according to Norsok
12. Lever is suitable for insulation up to 100mm
13. PMI: PMI Test on body, closure and wetted parts
14. Bidirectional valve
15. Cavity Relief Pressure Test
16. Antistatic Test
17. Fire Safe: API 607 / ISO 10497, API 6FA
18. Impact Test on raw material of body and closure at -50°C
19. Hardness Test on body, closure and wetted parts



3D VIEW

All dimensions are in mm



TAG No.	Cust. Item	Data Sheet	PIPING Class	SAP CODE	Indra Part Number	Operating Temperature °C	Design Pressure barg Min / Max
BLPH-MV-048 BLPH-MV-051	70	BS01F01RF	01SD	VBC0NN24440100	00.VSF.2688(T)	5 / 25	6 / 17,7

indra VALVES - ITALY
20013 Magenta (MI) - Italy - Via Novara, 10/B
Tel. 02 97.29.86.63 r.a. - Fax 02 97.29.18.55
E-mail: indra@indra.it - http://www.indra.it

TITOLO: TITLE:	SB BALL VALVE FLANGED - FLANGED	DISEGNO: DWG.:	00.VSF.2688
MODELLO: MODEL:	SB-598-25-F150RF3_F	REV.: 01 A	DATA: DATE: 27/06/2024
CODICE: CODE:	00.VSF.2688	NOTE / NOTES:	*Rev01: Updated drawing*
SCALA: SCALE: N/A	FOGLIO: SHEET: 1/1	MATERIALE: MATERIAL:	See Table
DISEGNATO DA: DRAWN BY: D.S	CONTROLLATO DA: CONTROLLED BY: D.R	PESO: WEIGHT:	8 kg (max)
DATA: DATE: 15/05/2024	REVISIONATO DA: REVISED BY: S.M	RICHIESTO DA: REQUESTED BY:	G.G

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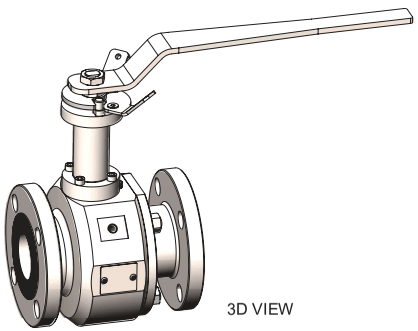
A4 - ORIZ.

SB BALL VALVE

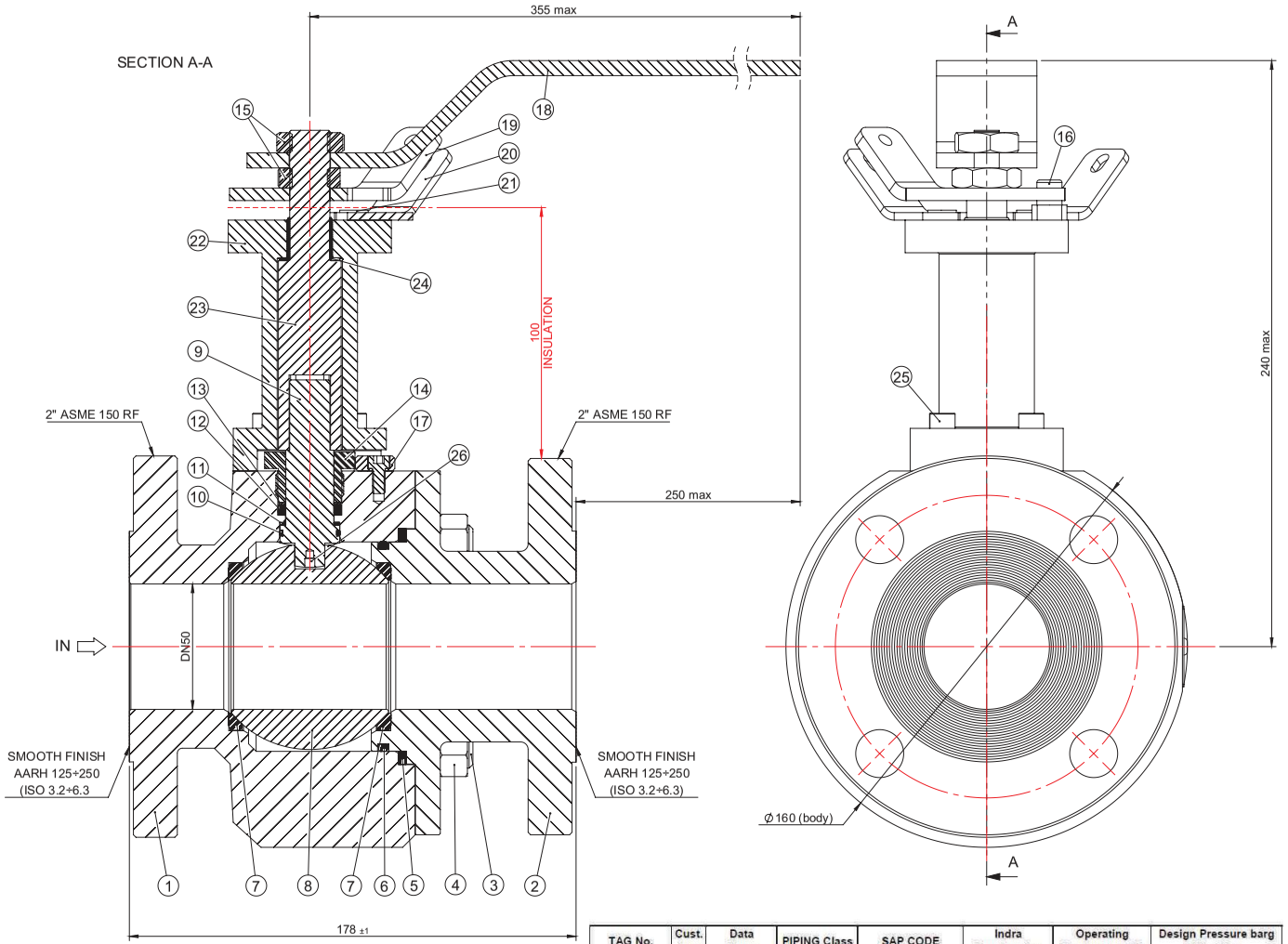
Item	Description	Material
1	VALVE BODY	ASTM A182 F55 NACE
2	CLOSER	ASTM A182 F55 NACE
3	STUD BOLT	ASTM A193 B7M + HDG
4	NUT	ASTM A194 Gr.2HM + HDG
5	CLOSER SEAL RING	Graphite
6	CLOSER O-RING	FKM AED
7	SEAT	PEEK
8	BALL	ASTM A479 F55 NACE
9	STEM	ASTM A479 F55 NACE
10	STEM O-RING	FKM AED
11	STEM THRUST WASHER	PEEK
12	STEM SEAL RING	Graphite
13	STEM RING	St.St. 316/316L
14	STEM COMPRESSION RING	St.St. 316/316L
15	HANDLE LOCKING NUT	St.St. 316/316L
16	STOP PIN	St.St. 316/316L
17	ECCENTRIC	St.St. 316
18	HANDLE	St.St. 316
19	LEVER LOCKING PLATE	St.St. 316
20	LOCKING PLATE	St.St. 316
21	LOCKING PLATE BOLT	St.St. 316
22	BRACKET	ASTM A479 316/316L NACE
23	STEM EXTENSION	ASTM A479 F55 NACE
24	BRACKET BEARING	Polyamide
25	BRACKET BOLTING	ASTM A193 B7M + HDG
26	ANTISTATIC DEVICE SPRING	ELGILOY R30003

SPECIFICATION

1. Construction: 1 Ball Isolate
2. Inlet: 2" Cl. 150 RF (ASME B16.5
3. Outlet: 2" Cl. 150 RF (ASME B16.5
4. Design Code: ASME B16.34 / B16.5
5. Bore Size: DN50
6. Face to face dimension according to ASME B16.10
7. Antistatic device
8. Anti-blow out stem
9. Design Temperature: -29°C / +100°C
10. Pressure Test: API 598, API 6D
11. Lever is suitable for insulation up to 100mm
12. PMI: PMI Test on body, closure and wetted parts
13. Bidirectional valve
14. Cavity Relief Pressure Test
15. Antistatic Test
16. Fire Safe: API 607 / ISO10497 / API 6FA
17. Impact Test on raw material of body and closure at -50°C
18. Hardness Test on body, closure and wetted parts

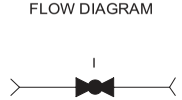


3D VIEW



TAG No.	Cust. Item	Data Sheet	PIPING Class	SAP CODE	Indra Part Number	Operating Temperature °C	Design Pressure barg Min / Max
BLPH-MV-464 BLPH-MV-465	80	BA01F01RF	01SD	VBC0NN24460200	00.VSF.2692(T)	5 / 25	6 / 17,7

FLOW DIAGRAM



All dimensions are in mm

indra VALVES - ITALY
20013 Magenta (MI) - Italy - Via Novara, 10/B
Tel. 02 97.29.86.63 r.a. - Fax 02 97.29.18.55
E-mail: indra@indra.it - http://www.indra.it

TITOLO: TITLE:	SB BALL VALVE FLANGED - FLANGED	DISEGNO: DWG.:	00.VSF.2692
MODELLO: MODEL:	SB-598-50-J150RF3_J	REV.: 01 A	DATA: DATE: 27/06/2024
CODICE: CODE:	00.VSF.2692	NOTE / NOTES:	*Rev01: Updated drawing*
SCALA: SCALE: N/A	FOGLIO: SHEET: 1/1	MATERIALE: MATERIAL:	See Table
DISEGNATO DA: DRAWN BY: D.S	CONTROLLATO DA: CONTROLLED BY: D.R	PESO: WEIGHT:	19,2 kg (max)
DATA: DATE: 15/05/2024	REVISIONATO DA: REVISED BY: S.M	RICHIESTO DA: REQUESTED BY:	G.G

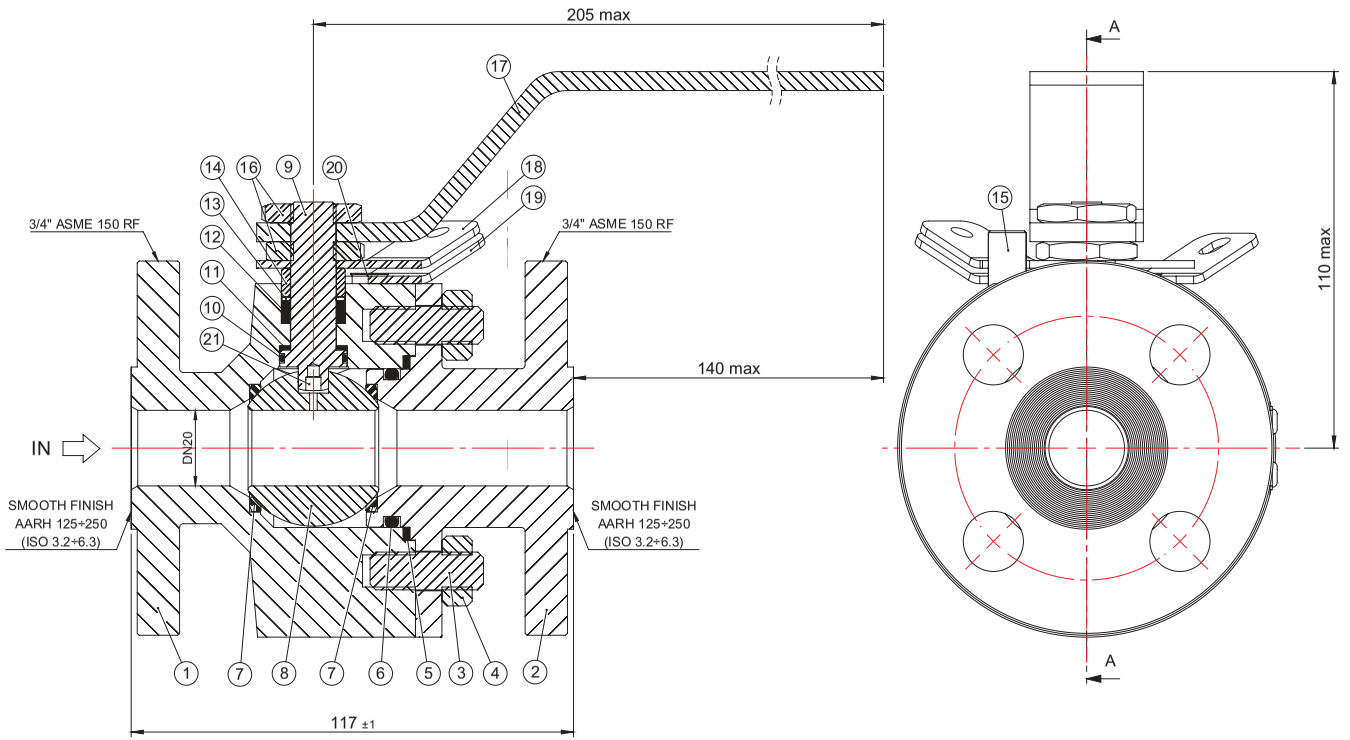
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A4 - ORIZ.

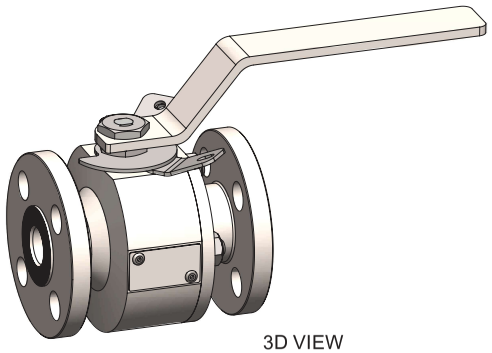
SB BALL VALVE		
Item	**Description**	**Material**
1	VALVE BODY	ASTM A350 LF2 CL.1 NACE
2	CLOSURE	ASTM A350 LF2 CL.1 NACE
3	STUD BOLT	ASTM A193 B7M + HDG
4	NUT	ASTM A194 Gr.2HM + HDG
5	CLOSURE SEAL RING	GRAPHITE
6	CLOSURE O-RING	FKM AED
7	SEAT	RPTFE
8	BALL	ASTM A479 316/316L NACE
9	STEM	ASTM A479 316/316L NACE
10	STEM O-RING	FKM AED
11	STEM THRUST WASHER	PEEK
12	STEM SEAL RING	GRAPHITE
13	STEM RING	St.St. 316L
14	STEM COMPRESSION RING	St.St. 316L
15	STOP PIN	St.St. 316L
16	HANDLE LOCKING NUT	St.St. 316
17	HANDLE	St.St. 316
18	LEVER LOCKING PLATE	St.St. 316
19	LOCKING PLATE	St.St. 316
20	LOCKING PLATE BOLT	St.St. 316
21	ANTISTATIC DEVICE SPRING	ELGILOY R30003

SPECIFICATION

1. Construction: 1 Ball Isolate
2. Inlet: 3/4" Cl.150 RF (ASME B16.5)
3. Outlet: 3/4" Cl.150 RF (ASME B16.5)
4. Design Code: ASME B16.34/B16.5
5. Bore Size: DN 20
6. Face to face dimension according to ASME B16.10
7. Antistatic device
8. Anti-blow out stem
9. Design temperature: -46°C / +100°C
10. Pressure test: API 598, API 6D
11. Corrosion Allowance 3mm
12. PMI: PMI Test on wetted parts (excluded carbon steel)
13. Hardness Test on body, closure and wetted parts
14. Bidirectional valve
15. Cavity Relief Pressure Test
16. Antistatic Test
17. Impact Test at -46°C
18. Fire Safe: API 607 / ISO 10497, API 6FA
19. Painting: treatment according to spec. 123A90-DDL-MAT-SP-60006,
    Valve: System SYS-1, Color RAL 9002
    Lever: System SYS-1, Color RAL 9005



SECTION A-A



3D VIEW

FLOW DIAGRAM



All dimensions are in mm

TAG No.	Cust. Item	Data Sheet	PIPING Class	SAP CODE	Indra Part Number	Operating Temperature °C	Design Pressure barg Min / Max
BLPH-MV-275	90	BS01B01RF	01CS	VBC0NN24703Q00	00.VSF.2686/V	-10 /70	10 / 17,7

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20013 Magenta (MI) - Italy - Via Novara, 10/B
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E-mail: indra@indra.it - http://www.indra.it

TITOLO: TITLE:	SB BALL VALVE FLANGED - FLANGED			DISEGNO: DWG.:	00.VSF.2686/V
MODELLO: MODEL:	SB-598-20-E150RF3_E			REV.: 02 A	DATA: DATE: 27/06/2024
CODICE: CODE:	00.VSF.2686/V			NOTE / NOTES:	
SCALA: SCALE:	N/A	FOGLIO: SHEET:	1/1	MATERIALE: MATERIAL:	See Table
DISEGNATO DA: DRAWN BY:	D.S	CONTROLLATO DA: CONTROLLED BY:	D.R	PESO: WEIGHT:	5,3 kg (max)
DATA: DATE:	15/05/2024	REVISIONATO DA: REVISED BY:	S.M	RICHIESTO DA: REQUESTED BY:	G.G

Rev01: Updated drawing
Rev02: Updated drawing

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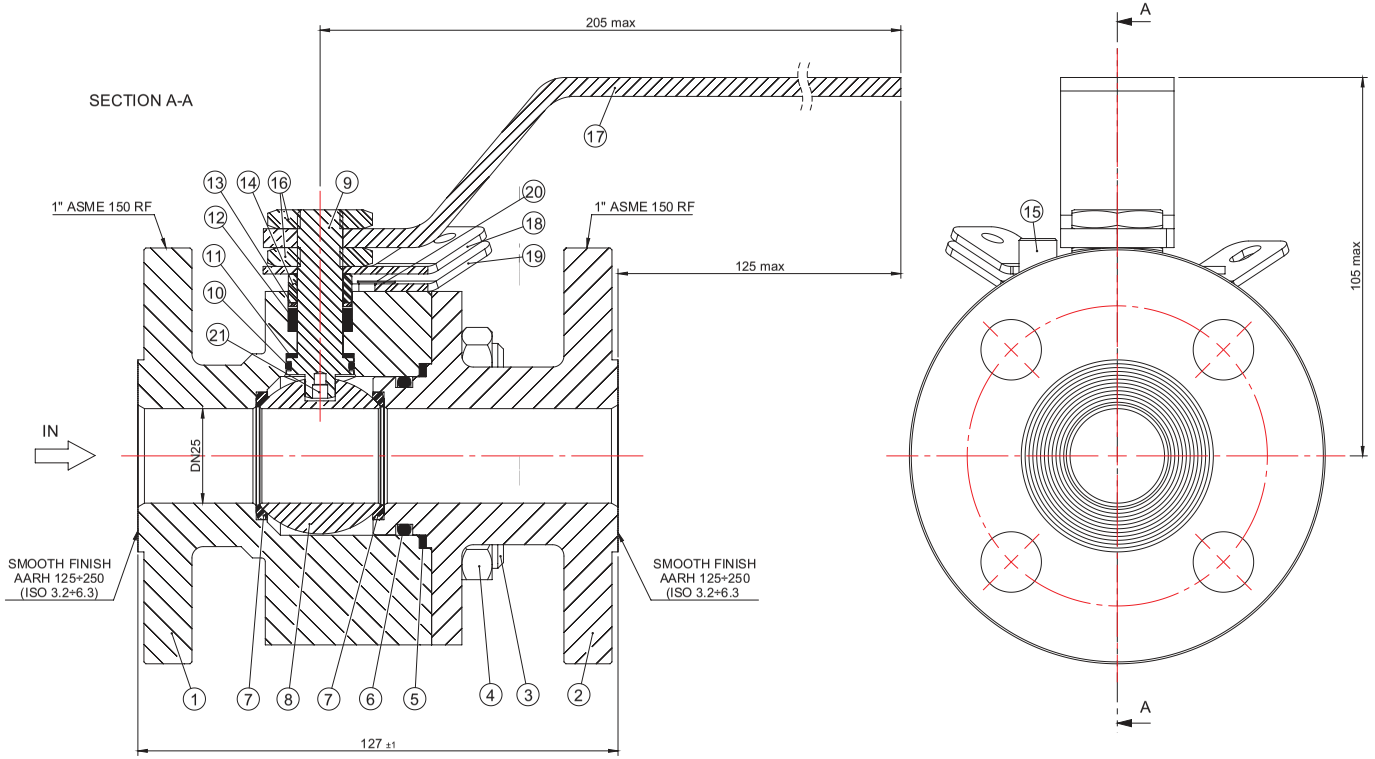
A4 - ORIZ.

SB BALL VALVE

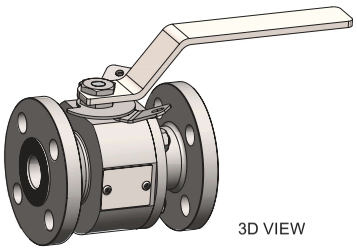
Item	Description	Material
1	VALVE BODY	ASTM A350 LF2 Cl.1 NACE
2	CLOSURE	ASTM A350 LF2 Cl.1 NACE
3	STUD BOLT	ASTM A193 B7M + HDG
4	NUT	ASTM A194 Gr.2HM + HDG
5	CLOSURE SEAL RING	GRAPHITE
6	CLOSURE O-RING	FKM AED
7	SEAT	RPTFE
8	BALL	ASTM A479 316/316L NACE
9	STEM	ASTM A479 316/316L NACE
10	STEM O-RING	FKM AED
11	STEM THRUST WASHER	PEEK
12	STEM SEAL RING	GRAPHITE
13	STEM RING	St.St.316L
14	STEM COMPRESSION RING	St.St.316L
15	STOP PIN	St.St.316L
16	HANDLE LOCKING NUT	St.St. 316
17	HANDLE	St.St. 316
18	LEVER LOCKING PLATE	St.St. 316
19	LOCKING PLATE	St.St. 316
20	LOCKING PLATE BOLT	St.St. 316
21	ANTISTATIC DEVICE SPRING	ELGILOY R30003

SPECIFICATION

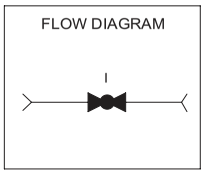
1. Construction: 1 Ball Isolate
2. Inlet: 1" Cl.150 RF (ASME B16.5)
3. Outlet: 1" Cl.150 RF (ASME B16.5)
4. Design Code: ASME B16.34 / B16.5
5. Bore Size: DN25
6. Face to face dimension according to ASME B16.10
7. Antistatic device
8. Anti-blow out stem
9. Design Temperature: -46°C / +100°C
10. Pressure Test: API 598, API 6D
11. PMI: PMI Test on wetted parts (excluded carbon steel)
12. Bidirectional valve
13. Cavity Relieve Pressure Test
14. Antistatic Test
15. Fire Safe: API 607 / ISO10497 / API 6FA
16. Cavity Relief Pressure Test
17. Hardness Test on body, closure and wetted parts
18. Corrosion Allowance 3mm
19. Painting: Treatment according to spec. 123A90-DDL-MAT-SP-60006,
    Valve: SYS-1, Color RAL 9002
    Lever: SYS-1, Color RAL 9005



TAG No.	Cust. Item	Data Sheet	PIPING Class	SAP CODE	Indra Part Number	Operating Temperature °C	Design Pressure barg Min / Max
BLPH-MV-263	100	BS01B01RF	01CS	VBC0NN24710100	00.VSF.2770/V	-10 /70	10 / 17,7
BLPH-MV-419	100	BS01B01RF	01CS	VBC0NN24710100	00.VSF.2770/V	-10 /70	10 / 17,7



3D VIEW



All dimensions are in mm

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E-mail: indra@indra.it - http://www.indra.it

TITOLO: TITLE:	SB BALL VALVE FLANGED - FLANGED	DISEGNO: DWG.:	00.VSF.2770/V
MODELLO: MODEL:	SB-598-25-F150RF3_F	REV.: 00 A	DATA: DATE: 26/06/2024
CODICE: CODE:	00.VSF.2770/V	NOTE / NOTES:	
SCALA: SCALE: N/A	FOGLIO: SHEET: 1/1	MATERIALE: MATERIAL: See Table	
DISEGNATO DA: DRAWN BY: D.R	CONTROLLATO DA: CONTROLLED BY: D.S	PESO: WEIGHT: 5,8 kg (max)	
DATA: DATE: 26/06/2024	REVISIONATO DA: REVISED BY: -	RICHIESTO DA: REQUESTED BY: G.G	

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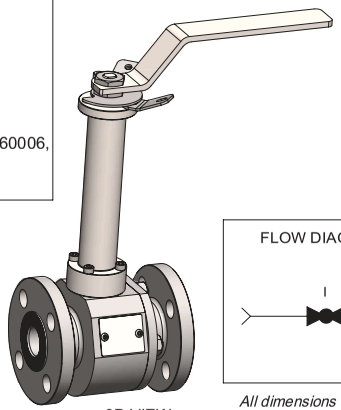
A4 - ORIZ.

SB BALL VALVE

Item	Description	Material
1	VALVE BODY	ASTM A350 LF2 CL.1 NACE
2	CLOSURE	ASTM A350 LF2 CL.1 NACE
3	STUD BOLT	ASTM A193 B7M + HDG
4	NUT	ASTM A194 Gr.2HM + HDG
5	CLOSURE SEAL RING	GRAPHITE
6	CLOSURE O-RING	FKM AED
7	SEAT	RPTFE
8	BALL	ASTM A479 316/316L NACE
9	STEM	ASTM A479 316/316L NACE
10	STEM O-RING	FKM AED
11	STEM THRUST WASHER	PEEK
12	STEM SEAL RING	GRAPHITE
13	STEM RING	St.St. 316L
14	STEM COMPRESSION RING	St.St. 316L
15	STOP PIN	St.St. 316L
16	STEM LOCKING NUT	St.St. 316/316L
17	HANDLE	St.St. 316
18	LEVER LOCKING PLATE	St.St. 316
19	LOCKING PLATE	St.St. 316
20	LOCKING PLATE BOLT	St.St. 316
21	HANDLE LOCKING NUT	St.St. 316/316L
22	STEM EXTENSION	ASTM A479 316/316L NACE
23	BRACKET	ASTM A350 LF2 CL.1 NACE
24	BRACKET BEARING	PTFE
25	BRACKET BOLTING	ASTM A193 B7M + HDG
26	CUP SPRING	St.St.
27	ANTISTATIC DEVICE SPRING	ELGILOY R30003

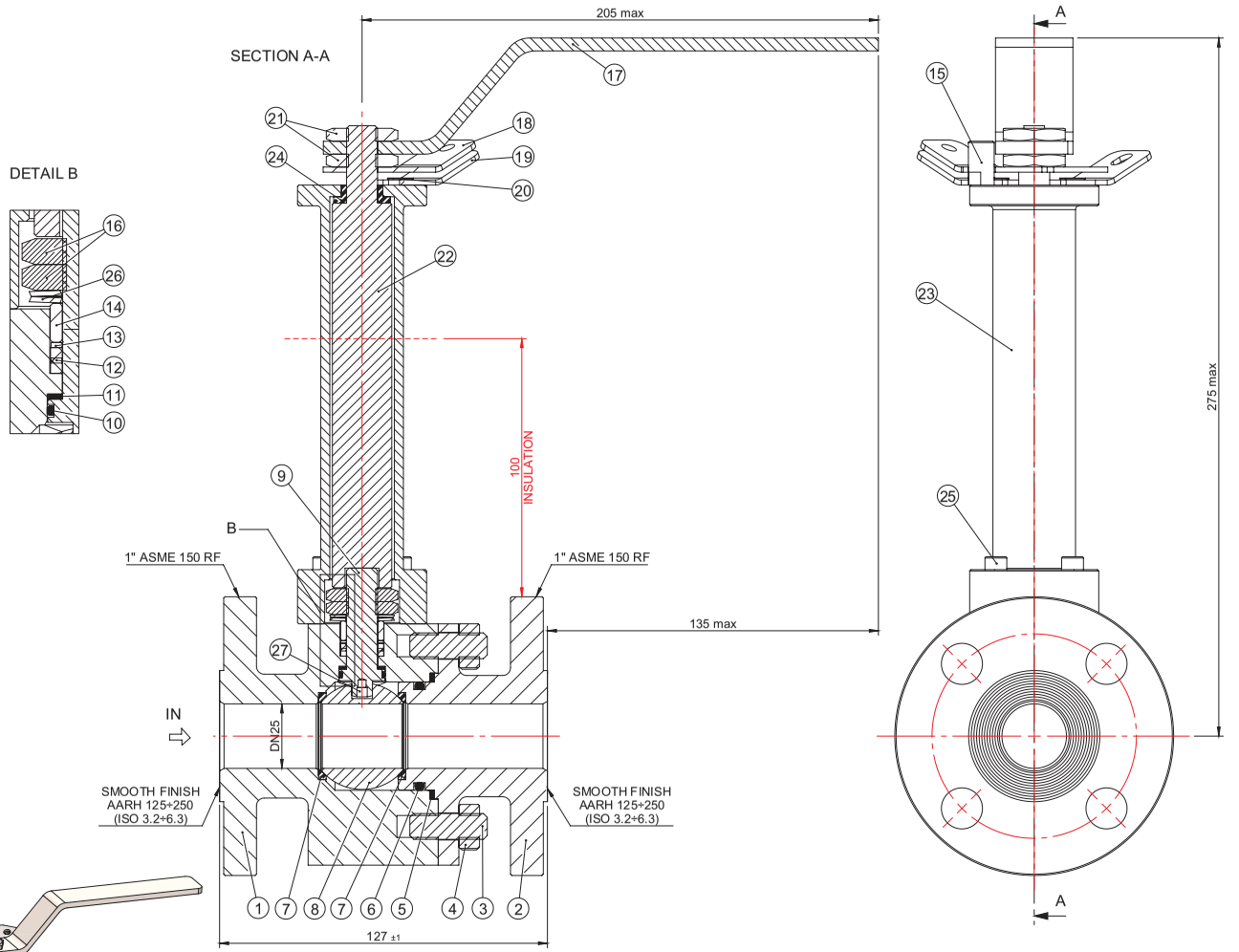
SPECIFICATION

1. Construction: 1 Ball Isolate
2. Inlet: 1" Cl.150 RF (ASME B16.5)
3. Outlet: 1" Cl.150 RF (ASME B16.5)
4. Design Code: ASME B16.34/B16.5
5. Bore Size: DN 25
6. Face to face dimension according to ASME B16.10
7. Antistatic device
8. Anti-blow out stem
9. Design temperature: -46°C / +100°C
10. Pressure test: API 598, API 6D
11. Corrosion Allowance 3mm
12. Lever is suitable for insulation up to 100mm
13. PMI: PMI Test on wetted parts (excluded carbon steel)
14. Bidirectional valve
15. Cavity Relief Pressure Test
16. Antistatic Test
17. Impact Test at -46°C
18. Fire Safe: API 607 / ISO 10497, API 6FA
19. Painting: treatment according to spec. 123A90-DDL-MAT-SP-60006,
    Valve: System SYS-9, Color RAL 9002
    Lever: System SYS-9, Color RAL 9005



3D VIEW

All dimensions are in mm



TAG No.	Cust. Item	Data Sheet	PIPING Class	SAP CODE	Indra Part Number	Operating Temperature °C	Design Pressure barg Min / Max
BLPH-MV-417	110	BS01B01RF	01CS	VBC0NN24710100	00.VSF.2689/V	-10 /70	10 / 17,7

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Tel. 02 97.29.86.63 r.a. - Fax 02 97.29.18.55
E-mail: indra@indra.it - http://www.indra.it

TITOLO: TITLE:	SB BALL VALVE FLANGED - FLANGED	DISEGNO: DWG.:	00.VSF.2689/V
MODELLO: MODEL:	SB-598-25-F150RF3_F	REV.: 02 A	DATA: DATE: 27/06/2024
CODICE: CODE:	00.VSF.2689/V	NOTE / NOTES:	*Rev01: Updated drawing* *Rev02: Updated drawing*
SCALA: SCALE: N/A	FOGLIO: SHEET: 1/1	MATERIALE: MATERIAL:	See Table
DISEGNATO DA: DRAWN BY: D.S	CONTROLLATO DA: CONTROLLED BY: D.R	PESO: WEIGHT:	8 kg (max)
DATA: DATE: 15/05/2024	REVISIONATO DA: REVISED BY: S.M	RICHIESTO DA: REQUESTED BY:	G.G

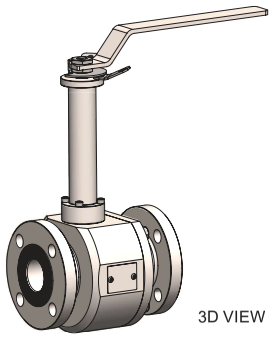
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A4 - ORIZ.

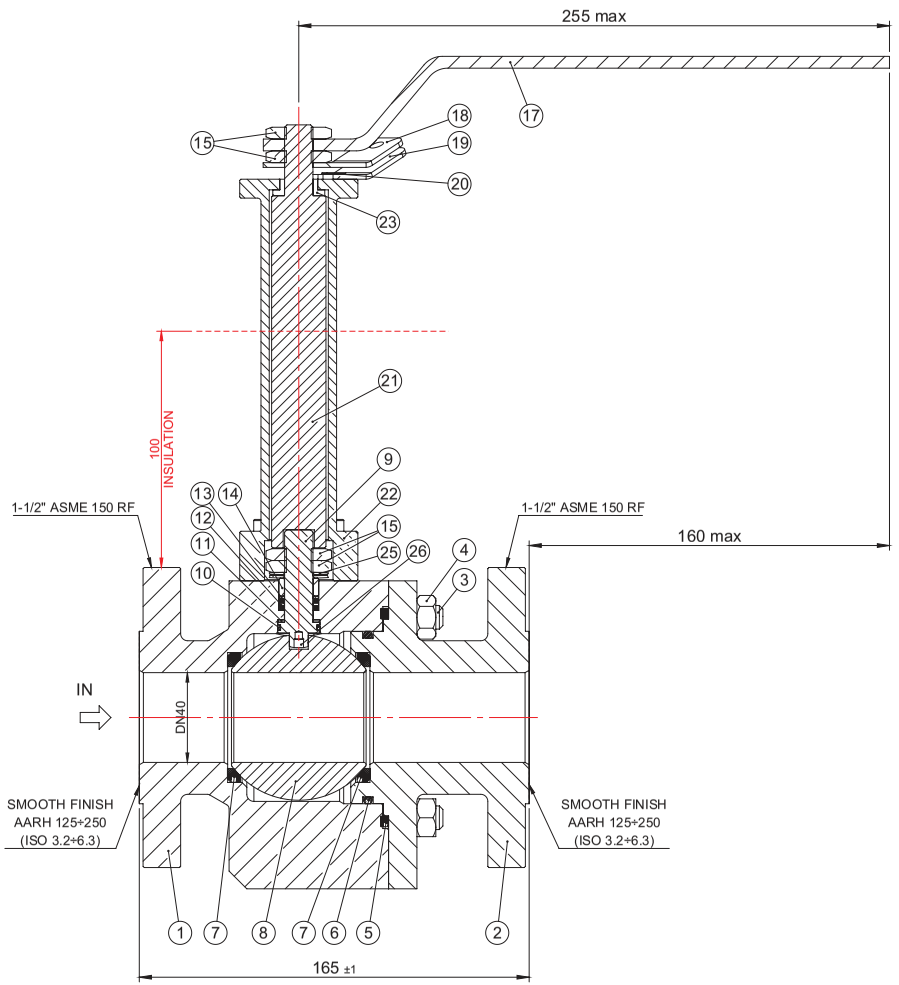
SB BALL VALVE		
Item	Description	Material
1	VALVE BODY	ASTM A350 LF2 CL.1 NACE
2	CLOSER	ASTM A350 LF2 CL.1 NACE
3	STUD BOLT	ASTM A193 B7M + HDG
4	NUT	ASTM A194 Gr.2HM + HDG
5	CLOSER SEAL RING	GRAPHITE
6	CLOSER O-RING	FKM AED
7	SEAT	RPTFE
8	BALL	ASTM A479 316/316L NACE
9	STEM	ASTM A479 316/316L NACE
10	STEM O-RING	FKM AED
11	STEM THRUST WASHER	PEEK
12	STEM SEAL RING	GRAPHITE
13	STEM RING	St.St. 316/316L
14	STEM COMPRESSION RING	St.St. 316/316L
15	HANDLE LOCKING NUT	St.St. 316/316L
16	STOP PIN	St.St. 316/316L
17	HANDLE	St.St. 316
18	LEVER LOCKING PLATE	St.St. 316
19	LOCKING PLATE	St.St. 316
20	LOCKING PLATE BOLT	St.St. 316
21	STEM EXTENSION	ASTM A479 316/316L NACE
22	BRACKET	ASTM A350 LF2 CL.1 NACE
23	BRACKET BEARING	PTFE
24	BRACKET BOLTING	ASTM A193 B7M + HDG
25	CUP SPRING	St.St.
26	ANTISTATIC DEVICE SPRING	ELGILOY R30003

SPECIFICATION

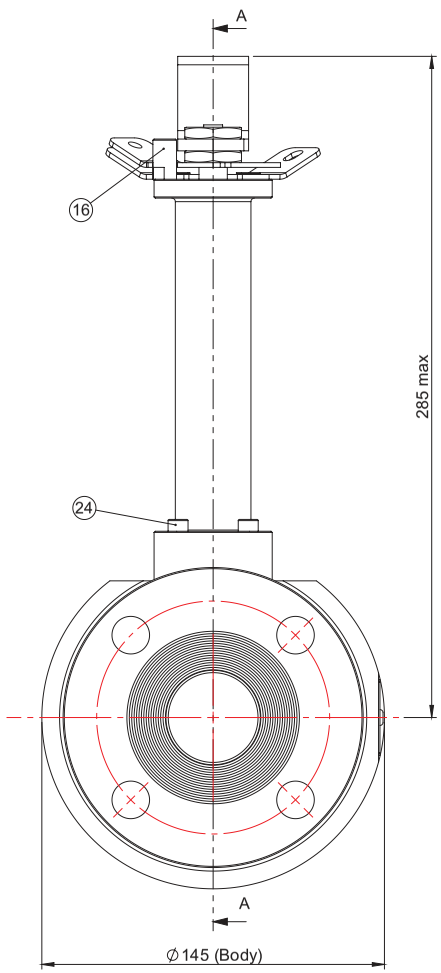
1. Construction: 1 Ball Isolate
2. Inlet: 1-1/2" Cl. 150 RF (ASME B16.5)
3. Outlet: 1-1/2" Cl. 150 RF (ASME B16.5)
4. Design Code: ASME B16.34 / B16.5
5. Bore Size: DN40
6. Face to face dimension according to ASME B16.10
7. Antistatic device
8. Anti-blow out stem
9. Design Temperature: -46°C / +100°C
10. Pressure Test: API 598, API 6D
11. Corrosion Allowance 3mm
12. Lever is suitable for insulation up to 100mm
13. PMI: PMI Test on wetted parts (excluded carbon steel)
14. Hardness Test on body, closure and wetted parts
15. Bidirectional valve
16. Cavity Relief Pressure Test
17. Antistatic Test
18. Impact Test at -46°C
19. Fire Safe: API 607 / ISO10497 / API 6FA
20. Painting: Treatment according to spec. 123A90-DDL-MAT-SP-60006,
    Valve: System SYS-9, Color RAL 9002
    Lever: System SYS-9, Color RAL 9005



3D VIEW



SECTION A-A



FLOW DIAGRAM



All dimensions are in mm

TAG No.	Cust. Item	Data Sheet	PIPING Class	SAP CODE	Indra Part Number	Operating Temperature °C	Design Pressure barg Min / Max
BLPH-MV-412	120	BS01B01RF	01CS	VBC0NN24721H00	00.VSF.2691/V	-10 /70	10 / 17,7

indra VALVES - ITALY
20013 Magenta (MI) - Italy - Via Novara, 10B
Tel. 02 97.29.86.63 r.a. - Fax 02 97.29.18.55
E-mail: indra@indra.it - http://www.indra.it

TITOLO: TITLE:	SB BALL VALVE FLANGED - FLANGED			DISEGNO: DWG.:	00.VSF.2691/V
MODELLO: MODEL:	SB-598-40-H150RF3_H			REV.: 02	A DATA: DATE: 27/06/2024
CODICE: CODE:	00.VSF.2691/V			NOTE / NOTES:	
SCALA: SCALE:	N/A	FOGLIO: SHEET:	1/1	MATERIALE: MATERIAL:	See Table
DISEGNATO DA: DRAWN BY:	S.M	CONTROLLATO DA: CONTROLLED BY:	D.R	PESO: WEIGHT:	14,5 kg (max)
DATA: DATE:	16/05/2024	REVISIONATO DA: REVISED BY:	S.M	RICHIESTO DA: REQUESTED BY:	G.G

Rev01: Updated drawing
Rev02: Updated drawing

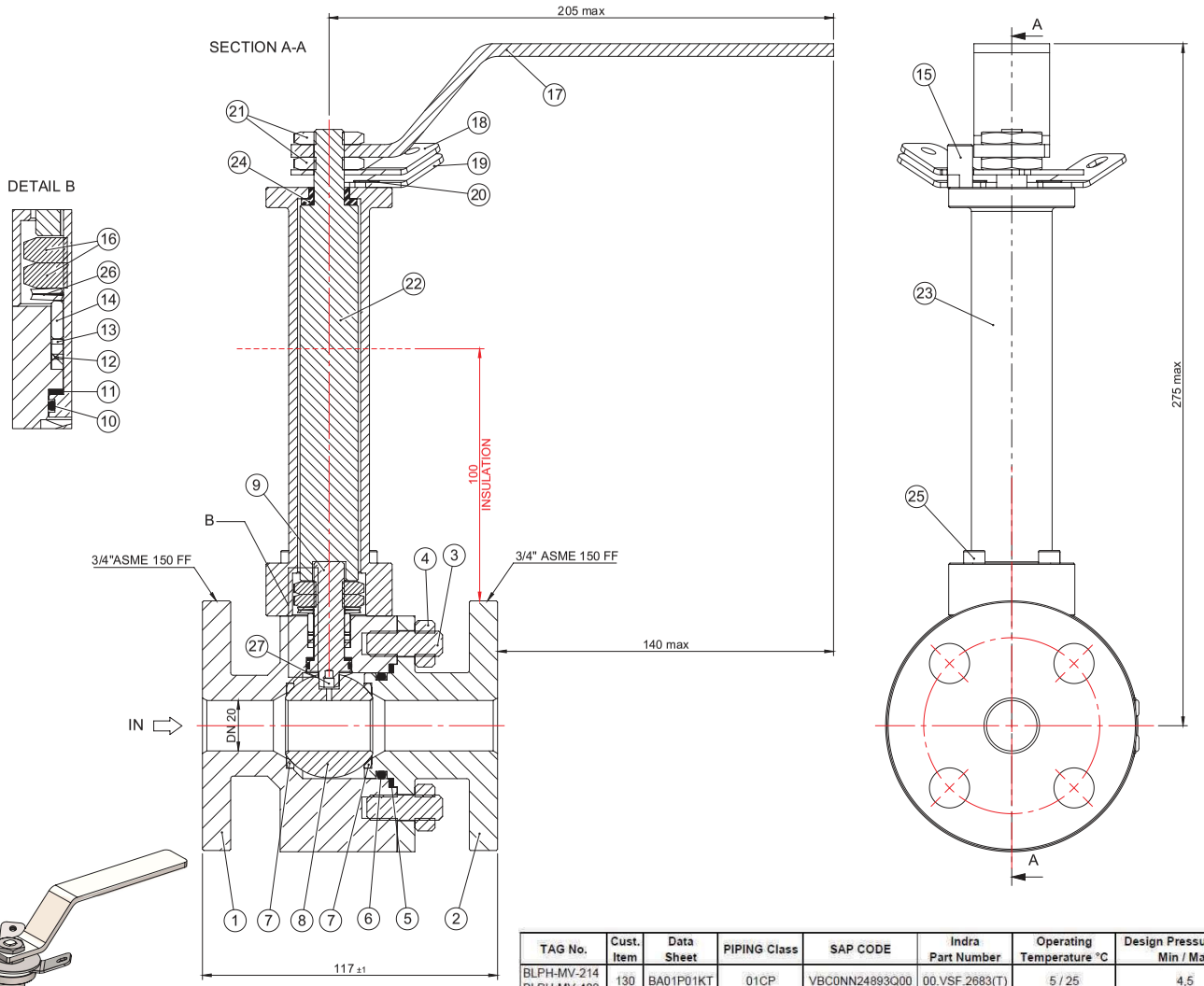
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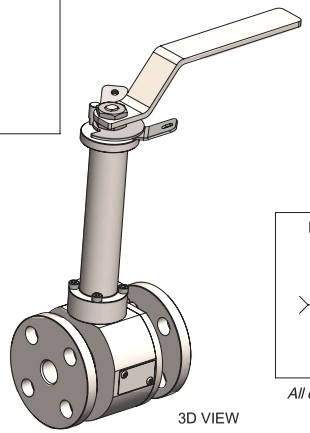
A4 - ORIZ.

SB BALL VALVE		
Item	**Description**	**Material**
1	VALVE BODY	ASTM B564 HASTELLOY C276 NACE
2	CLOSURE	ASTM B564 HASTELLOY C276 NACE
3	STUD BOLT	ASTM A193 B8M Cl.2
4	NUT	ASTM A194 Gr.8M
5	CLOSURE SEAL RING	GRAPHITE
6	CLOSURE O-RING	FKM AED
7	SEAT	PEEK
8	BALL	ASTM B574 HASTELLOY C276 NACE
9	STEM	ASTM B574 HASTELLOY C276 NACE
10	STEM O-RING	FKM AED
11	STEM THRUST WASHER	PEEK
12	STEM SEAL RING	GRAPHITE
13	STEM RING	St.St. 316L
14	STEM COMPRESSION RING	St.St. 316L
15	STOP PIN	St.St. 316L
16	STEM LOCKING NUT	St.St. 316
17	HANDLE	St.St. 316
18	LEVER LOCKING PLATE	St.St. 316
19	LOCKING PLATE	St.St. 316
20	LOCKING PLATE BOLT	St.St. 316
21	HANDLE LOCKING NUT	St.St. 316
22	STEM EXTENSION	ASTM B574 HASTELLOY C276 NACE
23	BRACKET	ASTM A479 316/316L NACE
24	BRACKET BEARING	PTFE
25	BRACKET BOLTING	ASTM A193 B8M Cl.2
26	CUP SPRING	St.St.
27	ANTISTATIC DEVICE SPRING	ELGILOY R30003

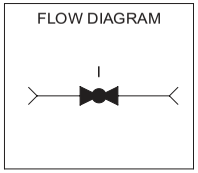
SPECIFICATION

1. Construction: 1 Ball Isolate
2. Inlet: 3/4" Cl.150 FF (ASME B16.5)
3. Outlet: 3/4" Cl.150 FF (ASME B16.5)
4. Design Code: ASME B16.34/B16.5
5. Bore Size: DN 20
6. Face to face dimension according to ASME B16.10
7. Antistatic device
8. Anti-blow out stem
9. Design temperature: 5° / +50°C
10. Pressure test: API 598, API 6D
11. Corrosion Allowance 3mm
12. Lever is suitable for insulation up to 100mm
13. PMI: PMI Test on body, closure and wetted parts
14. Bidirectional valve
15. Cavity Relief Pressure Test
16. Antistatic Test
17. Hardness Test on body, closure and wetted parts
18. Fire Safe: API 607 / ISO 10497, API 6FA





3D VIEW



All dimensions are in mm

TAG No.	Cust. Item	Data Sheet	PIPING Class	SAP CODE	Indra Part Number	Operating Temperature °C	Design Pressure barg Min / Max
BLPH-MV-214 BLPH-MV-400	130	BA01P01KT	01CP	VBC0NN24893Q00	00.VSF.2683(T)	5 / 25	4,5

indra VALVES - ITALY
20013 Magenta (MI) - Italy - Via Novara, 105
Tel. 02 97.29.86.63 r.a. - Fax 02 97.29.18.55
E-mail: indra@indra.it - http://www.indra.it

TITOLO: TITLE:	SB BALL VALVE FLANGED - FLANGED	DISEGNO: DWG.:	00.VSF.2683
MODELLO: MODEL:	SB-598-20-E150FF_E	REV.: 02 A	DATA: DATE: 27/06/2024
CODICE: CODE:	00.VSF.2683	NOTE / NOTES:	*Rev02: Updated drawing*
SCALA: SCALE: N/A	FOGLIO: SHEET: 1/1	MATERIALE: MATERIAL:	See Table
DISEGNATO DA: DRAWN BY: S.M	CONTROLLATO DA: CONTROLLED BY: D.R	PESO: WEIGHT:	7 kg (max)
DATA: DATE: 17/05/2024	REVISIONATO DA: REVISED BY: D.S	RICHIESTO DA: REQUESTED BY:	G.G

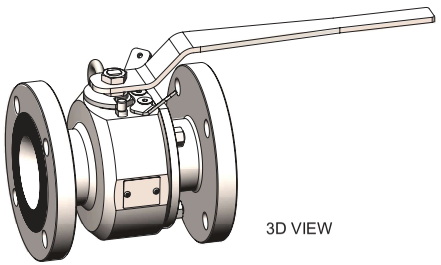
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A4 - ORIZ.

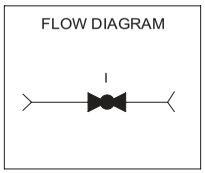
SB BALL VALVE		
Item	Description	Material
1	VALVE BODY	ASTM A182 F316/136L NACE
2	CLOSER	ASTM A182 F316/136L NACE
3	STUD BOLT	ASTM A193 B8M Cl. 2
4	NUT	ASTM A194 Gr.8M
5	CLOSER SEAL RING	Graphite
6	CLOSER O-RING	FKM AED
7	SEAT	RPTFE
8	BALL	ASTM A479 316/316L NACE
9	STEM	ASTM A479 316/316L NACE
10	STEM O-RING	FKM AED
11	STEM THRUST WASHER	PEEK
12	STEM SEAL RING	Graphite
13	STEM RING	St.St. 316/316L
14	STEM COMPRESSION RING	St.St. 316/316L
15	PACKING NUT LOCKING	St.St. 316/316L
16	STOP PIN	St.St. 316/316L
17	HANDLE LOCKING NUT	St.St. 316/316L
18	HANDLE	St.St. 316
19	LEVER LOCKING PLATE	St.St. 316
20	LOCKING PLATE	St.St. 316
21	LOCKING PLATE BOLT	St.St. 316
22	ANTISTATIC DEVICE SPRING	ELGILOY R30003
23	EYEBOLT	St.St. 316

SPECIFICATION

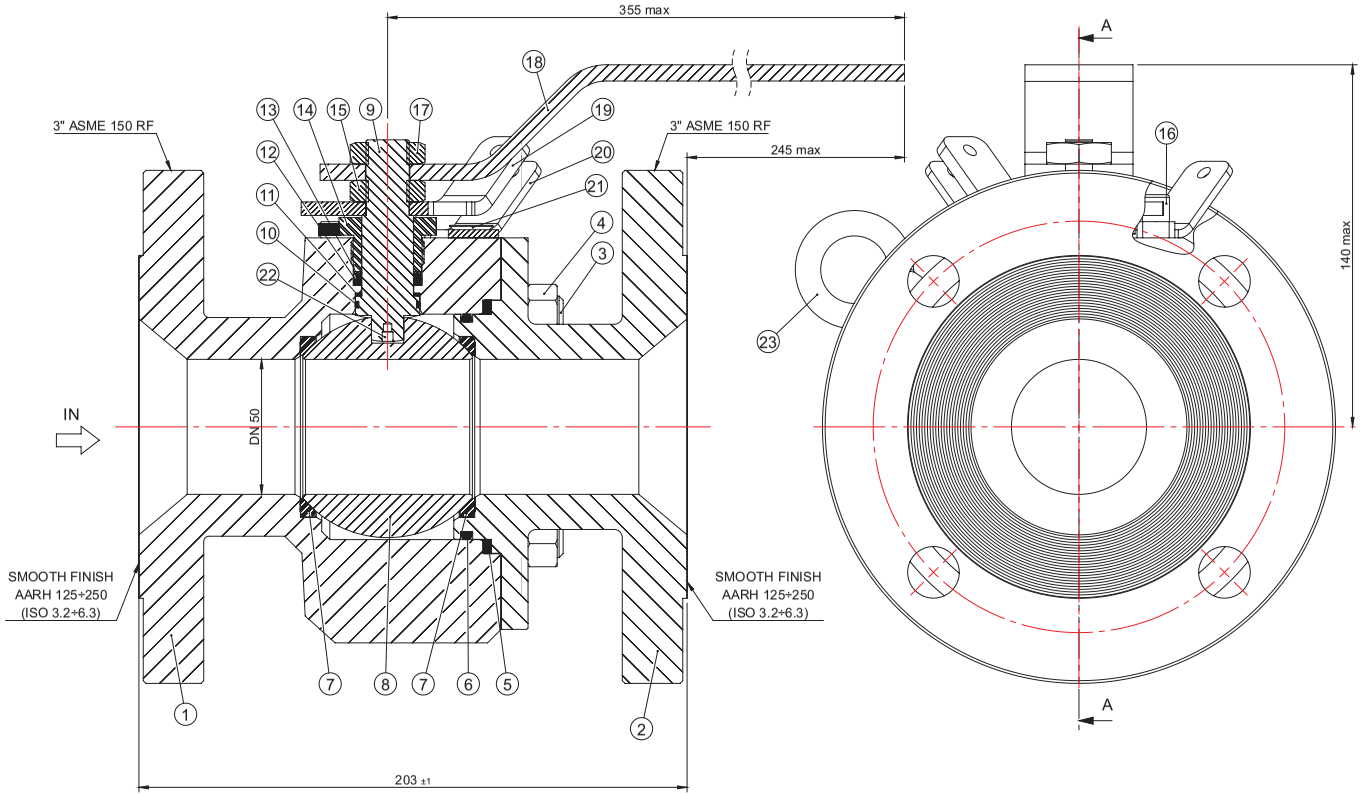
1. Construction: 1 Ball Isolate
2. Inlet: 3" Cl.150 RF (ASME B16.5)
3. Outlet: 3" Cl.150 RF (ASME B16.5)
4. Design Code: ASME B16.34/B16.5
5. Bore Size: DN 50
6. Face to face dimension according to ASME B16.10
7. Antistatic device
8. Anti-blow out stem
9. Design temperature: -29°C / +100°C
10. Pressure test: API 598, API 6D
11. Corrosion Allowance 3mm
12. Hydrogen Service
13. PMI: PMI Test on body, closure and wetted parts
14. Hardness Test on body, closure and wetted parts
15. Bidirectional valve
16. Cavity Relief PressureTest
17. Antistatic Test
18. Fire Safe: API 607 / ISO 10497, API 6FA
19. Dye Penetrant Test on body and closure
20. High Pressure Gas Test with Helium
21. Fugitive Emission Certificate according to ISO 15848-1
22. Fugitive Emission Test according to ISO 15848-2
23. Painting: treatment according to spec. 123A90-DDL-MAT-SP-60006,
    Valve: System SYS-6A, Color RAL 9002
    Lever: System SYS-6A, Color RAL 9005



3D VIEW



All dimensions are in mm



SECTION A-A

TAG No.	Cust. Item	Data Sheet	PIPING Class	SAP CODE	Indra Part Number	Operating Temperature °C	Design Pressure barg Min / Max
BLPH-MV-402	140	BC01C01RFH	01HSS	VBD0NN16460300	00.VSF.2695/V	-27 / 25	10 / 16,2

indra VALVES - ITALY
20013 Magenta (MI) - Italy - Via Novara, 10/B
Tel. 02 97.29.86.63 r.a. - Fax 02 97.29.18.55
E-mail: indra@indra.it - http://www.indra.it

TITOLO: TITLE:	SB BALL VALVE FLANGED - FLANGED			DISEGNO: DWG.:	00.VSF.2695/V
MODELLO: MODEL:	SB-598-HR-50-L150RF3_L			REV.: 02	A DATA: DATE: 26/06/2024
CODICE: CODE:	00.VSF.2695/V			NOTE / NOTES:	*Rev01: updated drawing* *Rev02: updated drawing*
SCALA: SCALE:	N/A	FOGLIO: SHEET:	1/1	MATERIALE: MATERIAL:	See Table
DISEGNATO DA: DRAWN BY:	D.S	CONTROLLATO DA: CONTROLLED BY:	D.R	PESO: WEIGHT:	23,3 kg (max)
DATA: DATE:	16/05/2024	REVISIONATO DA: REVISED BY:	S.M	RICHIESTO DA: REQUESTED BY:	G.G

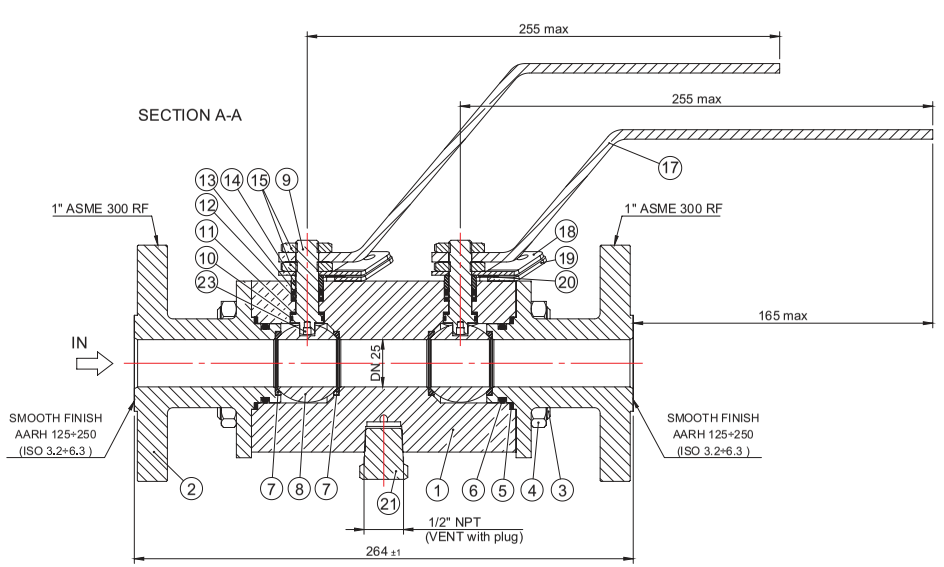
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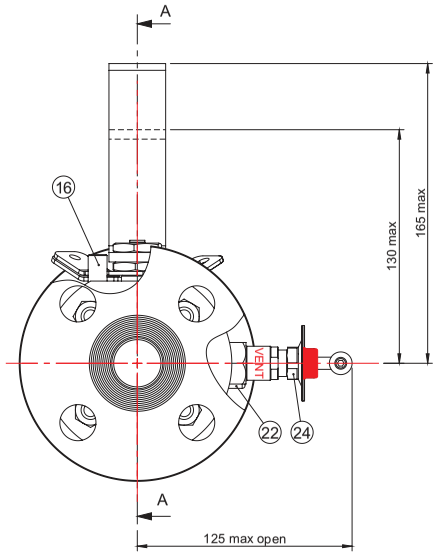
A4 - ORIZ.

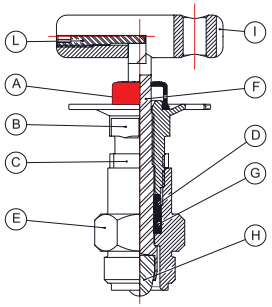
DBB BALL VALVE		
Item	Description	Material
1	VALVE BODY	ASTM A182 F316/316L NACE
2	CLOSURE	ASTM A182 F316/316L NACE
3	STUD BOLT	ASTM A193 B8M CL.2
4	NUT	ASTM A194 Gr. 8M
5	CLOSER SEAL RING	Graphite
6	CLOSER O-RING	FKM AED
7	SEAT	PEEK
8	BALL	ASTM A479 316/316L NACE
9	STEM	ASTM A479 316/316L NACE
10	STEM O-RING	FKM AED
11	STEM THRUST WASHER	PEEK
12	STEM SEAL RING	Graphite
13	STEM RING	St.St. 316/316L
14	STEM COMPRESSION RING	St.St. 316/316L
15	HANDLE LOCKING NUT	St.St. 316/316L
16	STOP PIN	St.St. 316/316L
17	HANDLE	St.St. 316
18	LEVER LOCKING PLATE	St.St. 316
19	LOCKING PLATE	St.St. 316
20	LOCKING PLATE BOLT	St.St. 316
21	PLUG 1/2" NPT-MALE	ASTM A479 316L
22	BONNET STOP PIN	St.St. 316L
23	ANTISTATIC DEVICE SPRING	ELGILOY R30003
24	**BONNET ASSEMBLY (VENT)**	
A	DUST CUP	Plastic
B	COMPRESSION NUT	St.St. 316L
C	LOCKING NUT	St.St. 316L
D	FOLLOWER	St.St. 316/316L
E	BONNET BODY	ASTM A479 316/316L NACE
F	STEM	ASTM A479 316/316L NACE
G	PACKING	Graphite
H	TIP	ASTM A479 316/316L NACE
I	TEE-BAR	St.St. 316L
L	TEE-BAR SCREW	St.St. 316L

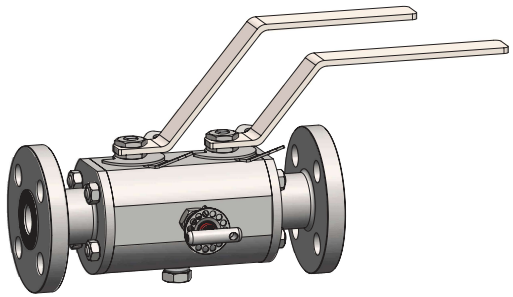
SPECIFICATION

1. Construction: 2 Ball Isolate, 1 Needle Vent
2. Inlet: 1" CL.300 RF (ASME B16.5)
3. Outlet: 1" CL.300 RF (ASME B16.5)
4. Vent: 1/2" NPT-Female (ASME B1.20.1)
5. Design Code: ASME B16.34; ASME B16.5; ASME B1.20.1
6. Bore size: Ball DN 25, Needle 5mm
7. Antistatic device
8. Anti-blow out stem
9. Design Temperature: -46°C / +80°C
10. Pressure Test: API 598, API 6D
11. Bidirectional valve
12. Fugitive Emission Certificate according to EN ISO 15848-1
13. Fugitive Emission Test according to ISO 15848-2
14. Hydrogen Service
15. High Pressure Gas Test with Helium
16. Fire Safe: API 607 / ISO 10497 , API 6FA
17. PMI: PMI Test on body, closure and wetted parts
18. Hardness Test on body, closure and wetted parts
19. Dye Penetrant Test on body and closure
20. Cavity Relief Pressure Test
21. Antistatic Test
22. Painting:
    Treatment according to spec. 123A90-DDL-MAT-SP-60006,
    Valve: System SYS-6A, Color RAL 9002
    Lever: System SYS-6A, Color RAL 9005

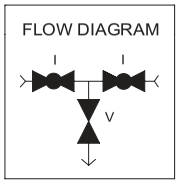








3D VIEW



All dimensions are in mm

indra VALVES - ITALY	TITOLO: TITLE: DBB BALL VALVE FLANGED - FLANGED		DISEGNO: DWG.: 00.VSF.2680/V
20013 Magenta (MI) - Italy - Via Novara, 10/B Tel. 02 97.29.86.63 r.a. - Fax 02 97.29.18.55 E-mail: indra@indra.it - http://www.indra.it	MODELLO: MODEL: DBB-898-HR-25-F300RF3_F_D		REV.: 02 A DATA: DATE: 26/06/2024
	CODICE: CODE: 00.VSF.2680/V		NOTE / NOTES: *Rev01: updated drawing* *Rev02: updated drawing*
SCALA: SCALE: N/A	FOGLIO: SHEET: 1/1	MATERIALE: MATERIAL: See Table	
DISEGNATO DA: DRAWN BY: S.M	CONTROLLATO DA: CONTROLLED BY: D.R	PESO: WEIGHT: 13,5 kg (max)	
DATA: DATE: 15/05/2024	REVISIONATO DA: REVISED BY: S.M	RICHIESTO DA: REQUESTED BY: G.G	

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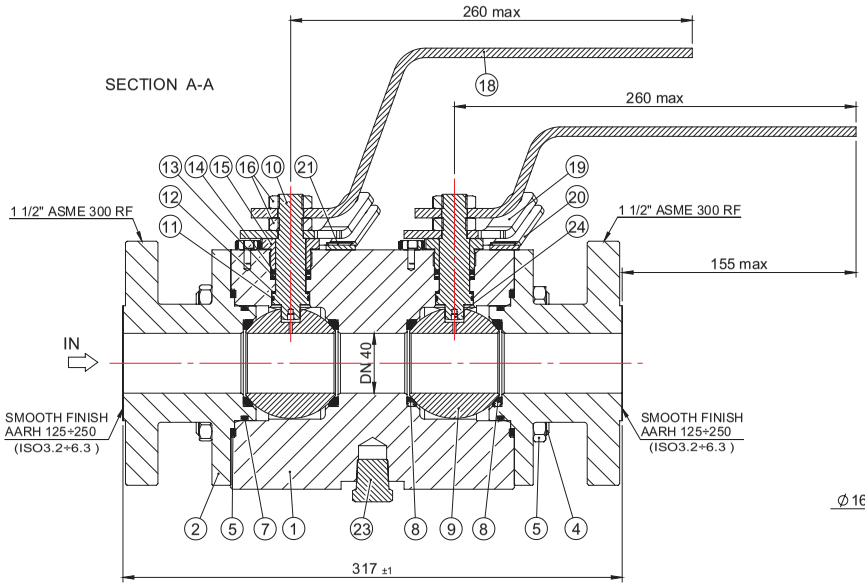
A4 - ORIZ.

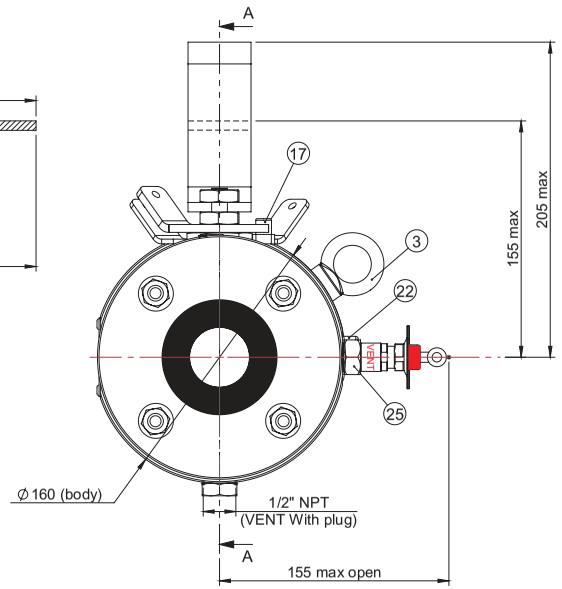
TAG No.	Cust. Item	Data Sheet	PIPING Class	SAP CODE	Indra Part Number	Operating Temperature °C	Design Pressure barg Min / Max
BLPH-MV-003 BLPH-MV-010 BLPH-MV-018 BLPH-MV-029 BLPH-MV-086 BLPH-MV-087 BLPH-MV-088 BLPH-MV-093 BLPH-MV-094 BLPH-MV-098 BLPH-MV-192 BLPH-MV-193 BLPH-MV-195 BLPH-MV-197 BLPH-MV-198 BLPH-MV-200 BLPH-MV-206 BLPH-MV-207 BLPH-MV-211 BLPH-MV-212 BLPH-MV-384 BLPH-MV-385 BLPH-MV-390 BLPH-MV-391 BLPH-MV-426 BLPH-MV-428 BLPH-MV-434 BLPH-MV-435 BLPH-MV-466	150/400	DA03C01RFH	03HSS	VLBBNN07190100	00.VSF.2680/V	-27 / 65	40 / 42,2

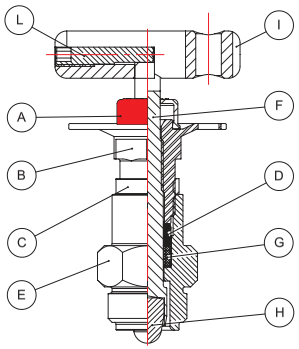
DBB BALL VALVE		
Item	**Description**	**Material**
1	VALVE BODY	ASTM A182 F316/316L NACE
2	CLOSER	ASTM A182 F316/316L NACE
3	EYEBOLT	St.St. 316
4	STUD BOLT	ASTM A193 B8M Cl.2
5	NUT	ASTM A194 Gr. 8M
6	CLOSER SEAL RING	Graphite
7	CLOSER O-RING	FKM AED
8	SEAT	PEEK
9	BALL	ASTM A479 316/316L NACE
10	STEM	ASTM A479 316/316L NACE
11	STEM O-RING	FKM AED
12	STEM THRUST WASHER	PEEK
13	STEM SEAL RING	Graphite
14	STEM RING	St.St. 316/316L
15	STEM COMPRESSION RING	St.St. 316/316L
16	HANDLE LOCKING NUT	St.St. 316/316L
17	STOP PIN	St.St. 316/316L
18	HANDLE	St.St. 316
19	LEVER LOCKING PLATE	St.St. 316
20	LOCKING PLATE	St.St. 316
21	LOCKING PLATE BOLT	St.St. 316
22	BONNET STOP PIN	St.St. 316L
23	PLUG 1/2" NPT	ASTM A479 316L
24	ANTISTATIC DEVICE SPRING	ELGILOY R30003
25	**BONNET ASSEMBLY (VENT)**	
A	DUST CUP	Plastic
B	COMPRESSION NUT	St.St. 316L
C	LOCKING NUT	St.St. 316L
D	FOLLOWER	St.St. 316/316L
E	BONNET BODY	ASTM A479 316/316L NACE
F	STEM	ASTM A479 316/316L NACE
G	PACKING	Graphite
H	TIP	ASTM A479 316/316L NACE
I	TEE-BAR	St.St. 316L
L	TEE-BAR SCREW	St.St. 316L

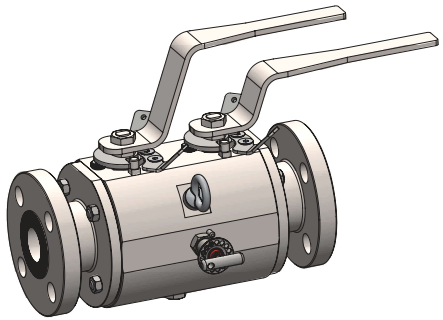
SPECIFICATION

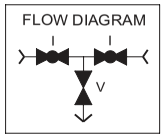
1. Construction: 2 Ball Isolate, 1 Needle Vent
2. Inlet: 1-1/2" Cl.300 RF (ASME B16.5)
3. Outlet: 1-1/2" Cl.300 RF (ASME B16.5)
4. Vent: 1/2" NPT-Female (ASME B1.20.1)
5. Design Code: ASME B16.34 / B16.5 / B1.20.1
6. Bore Size: Ball DN40, Needle 5mm
7. Antistatic device
8. Anti-blow out stem
9. Design Temperature: -46°C / +80°C
10. Pressure Test: API 598, API 6D
11. Bidirectional valve
12. Fugitive Emission Certificate according to EN ISO 15848-1
13. Fugitive Emission Test according to ISO 15848-2
14. Hydrogen Service
15. High Pressure Gas Test with Helium
16. Fire Safe: API 607 / ISO 10497 , API 6FA
17. PMI: PMI Test on body, closure and wetted parts
18. Hardness Test on body, closure and wetted parts
19. Dye Penetrant Test on body and closure
20. Cavity Relief Pressure Test
21. Antistatic Test
22. Painting:
    Treatment according to spec. 123A90-DDL-MAT-SP-60006,
    Valve: System SYS-6A, Color RAL 9002
    Lever: System SYS-6A, Color RAL 9005











All dimensions are in mm

TITOLO: TITLE:	DBB BALL VALVE FLANGED - FLANGED		DISEGNO: DWG.: 00.VSF.2681/V
MODELLO: MODEL:	DBB-898-HR-40-H300RF3_H_D		REV.: 02 A DATA: DATE: 26/06/2024
CODICE: CODE:	00.VSF.2681/V		NOTE / NOTES: *Rev01: updated drawing* *Rev02: updated drawing*
SCALA: SCALE: N/A	FOGLIO: SHEET: 1/1	MATERIALE: MATERIAL: See Table	
DISEGNATO DA: DRAWN BY: S.M	CONTROLLATO DA: CONTROLLED BY: D.R	PESO: WEIGHT: 40 kg (max)	
DATA: DATE: 15/05/2024	REVISIONATO DA: REVISED BY: S.M	RICHIESTO DA: REQUESTED BY: G.G	

indra VALVES - ITALY
20013 Magenta (MI) - Italy - Via Novara, 10/B
Tel. 02 97.29.86.63 r.a. - Fax 02 97.29.18.55
E-mail: indra@indra.it - http://www.indra.it

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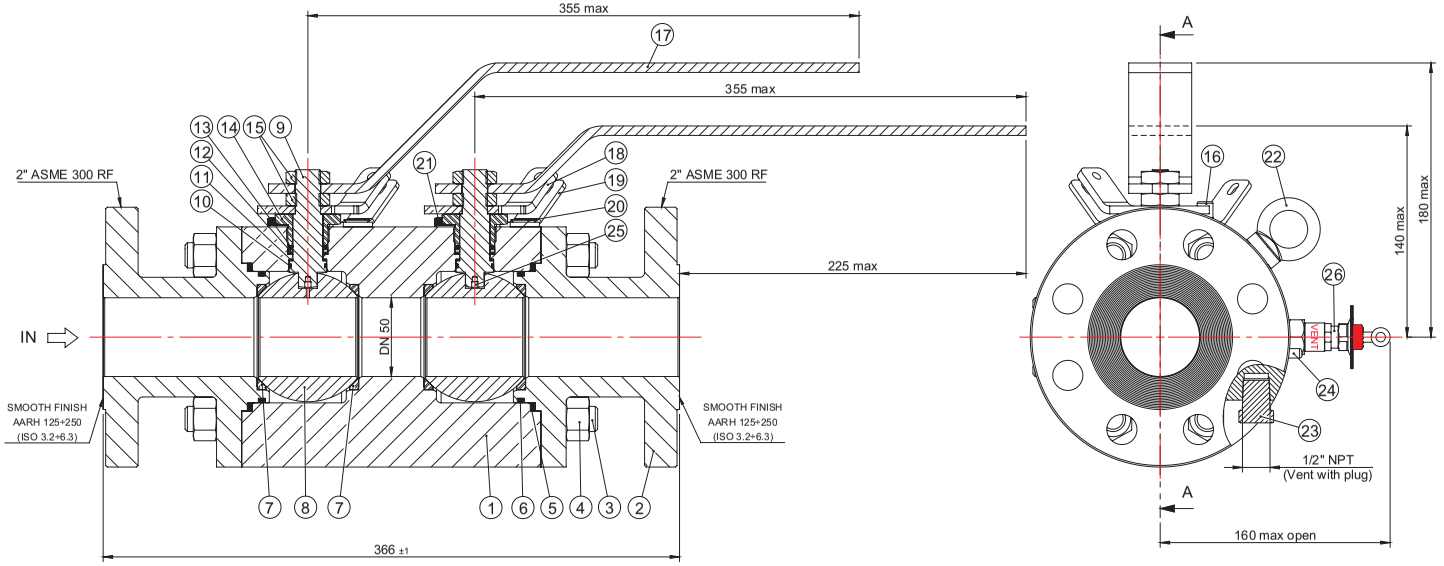
A4 - ORIZ.

TAG No.	Cust. Item	Data Sheet	PIPING Class	SAP CODE	Indra Part Number	Operating Temperature °C	Design Pressure barg Min / Max
BLPH-MV-032 BLPH-MV-266 BLPH-MV-389 BLPH-MV-416 BLPH-MV-433 BLPH-MV-442 BLPH-MV-468	160/410	DA03C01RFH	03HSS	VLBBNN07201H00	00.VSF.2681/V	-27 / 65	40 / 42,2

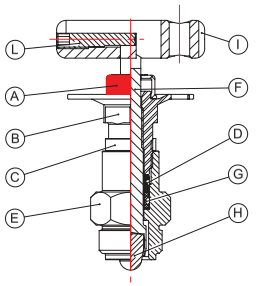
DBB BALL VALVE		
Item	**Description**	**Material**
1	VALVE BODY	ASTM A182 F316/316L NACE
2	CLOSER	ASTM A182 F316/316L NACE
3	STUD BOLT	ASTM A193 B8M Cl. 2
4	NUT	ASTM A194 Gr. 8M
5	CLOSER SEAL RING	Graphite
6	CLOSER O-RING	FKM AED
7	SEAT	PEEK
8	BALL	ASTM A479 316/316L NACE
9	STEM	ASTM A479 316/316L NACE
10	STEM O-RING	FKM AED
11	STEM THRUST WASHER	PEEK
12	STEM SEAL RING	Graphite
13	STEM RING	St.St. 316/316L
14	STEM COMPRESSION RING	St.St. 316/316L
15	HANDLE LOCKING NUT	St.St. 316/316L
16	STOP PIN	St.St. 316/316L
17	HANDLE	St.St. 316
18	LEVER LOCKING PLATE	St.St. 316
19	LOCKING PLATE	St.St. 316
20	LOCKING PLATE BOLT	St.St. 316
21	ECCENTRIC	St.St. 316
22	EYEBOLT	St.St. 316
23	PLUG 1/2" NPT	ASTM A479 316L
24	BONNET STOP PIN	St.St. 316L
25	ANTISTATIC DEVICE SPRING	ELGILOY R30003
26	**BONNET ASSEMBLY (VENT)**	
A	DUST CUP	Plastic
B	COMPRESSION NUT	St.St. 316L
C	LOCKING NUT	St.St. 316L
D	FOLLOWER	St.St. 316/316L
E	BONNET BODY	ASTM A479 316/316L NACE
F	STEM	ASTM A479 316/316L NACE
G	PACKING	Graphite
H	TIP	ASTM A479 316/316L NACE
I	TEE-BAR	St.St. 316L
L	TEE-BAR SCREW	St.St. 316L

SPECIFICATION

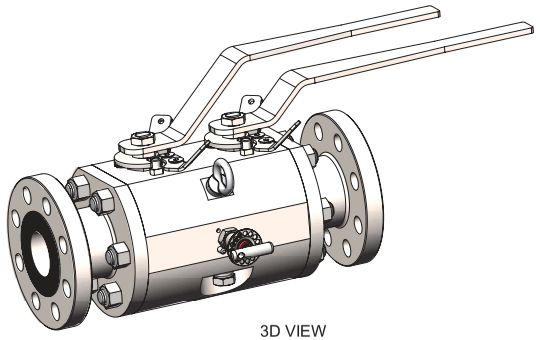
1. Construction: 2 Ball Isolate, 1 Needle Vent
2. Inlet: 2" CL.300 RF (ASME B16.5)
3. Outlet: 2" CL.300 RF (ASME B16.5)
4. Vent: 1/2" NPT-Female (ASME B1.20.1)
5. Design Code: ASME B16.34 / B16.5 / B1.20.1
6. Bore Size: Ball DN50, Needle 5mm
7. Antistatic device
8. Anti-blow out stem
9. Design Temperature: -46°C / +80°C
10. Pressure Test: API 598, API 6D
11. Bidirectional valve
12. Fugitive Emission Certificate according to EN ISO 15848-1
13. Fugitive Emission Test according to ISO 15848-2
14. Hydrogen Service
15. High Pressure Gas Test with Helium
16. Fire Safe: API 607 / ISO 10497 , API 6FA
17. PMI: PMI Test on body, closure and wetted parts
18. Hardness Test on body, closure and wetted parts
19. Dye Penetrant Test on body and closure
20. Cavity Relief Pressure Test
21. Antistatic Test
22. Painting:
    Treatment according to spec. 123A90-DDL-MAT-SP-60006,
    Valve: System SYS-6A, Color RAL 9002
    Lever: System SYS-6A, Color RAL 9005



SECTION A-A

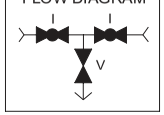


BONNET ASSEMBLY



3D VIEW

FLOW DIAGRAM



All dimensions are in mm

indra VALVES - ITALY	TITOLO: TITLE: DBB BALL VALVE FLANGED - FLANGED		DISEGNO: DWG.: 00.VSF.2682/V
20013 Magenta (MI) - Italy - Via Novara, 10/B Tel. 02 97.29.86.63 r.a. - Fax 02 97.29.18.55 E-mail: indra@indra.it - http://www.indra.it	MODELLO: MODEL: DBB-898-HR-50-J300RF3_J_D		REV.: 02 A DATA: DATE: 27/06/2024
	CODICE: CODE: 00.VSF.2682/V		NOTE / NOTES: *Rev01: updated drawing* *Rev02: updated drawing*
SCALA: SCALE: N/A	FOGLIO: SHEET: 1/1	MATERIALE: MATERIAL: See Table	
DISEGNATO DA: DRAWN BY: S.M	CONTROLLATO DA: CONTROLLED BY: D.R	PESO: WEIGHT: 42,1 kg (max)	
DATA: DATE: 15/05/2024	REVISIONATO DA: REVISED BY: S.M	RICHIESTO DA: REQUESTED BY: G.G	

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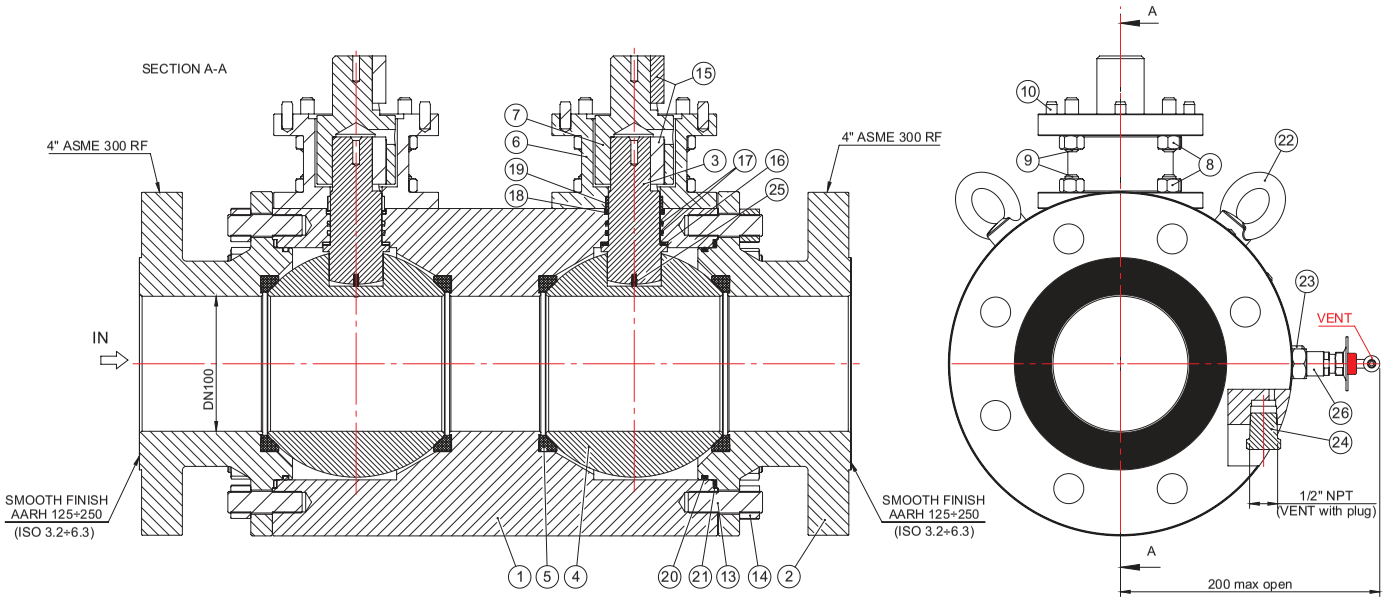
A4 - ORIZ.

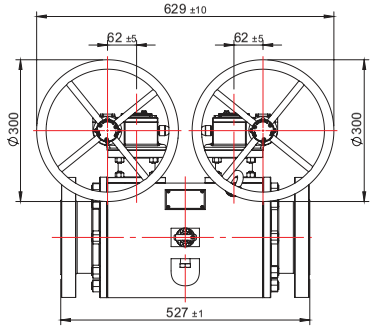
TAG No.	Cust. Item	Data Sheet	PIPING Class	SAP CODE	Indra Part Number	Operating Temperature °C	Design Pressure barg Min / Max
BLPH-MV-019	170	DA03C01RFH	03HSS	VLBBNN07210200	00.VSF.2682/V	-27 / 65	40 / 42,2

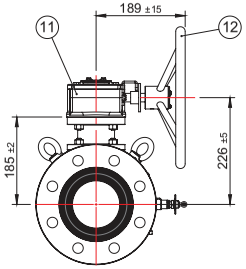
DBB BALL VALVE		
Item	Description	Material
1	BODY	ASTM A182 F316/F316L NACE
2	CLOSURE	ASTM A182 F316/F316L NACE
3	STEM	ASTM A479 316/316L NACE
4	BALL	ASTM A479 316/316L NACE
5	SEAT	RPTFE
6	BRACKET	ASTM A479 316/316L NACE
7	STEM EXTENSION	ASTM A479 316/316L NACE
8	BRACKET NUT	ASTM A194 Gr.8M
9	BRACKET STUD	ASTM A193 B8M Cl.2
10	GEAR PIN	St.St. 316/316L
11	GEAR WITH LOCKING DEVICE	DUCTILE IRON
12	HANDWHEEL	St.St. 316
13	BODY STUD	ASTM A193 B8M Cl.2
14	BODY NUT	ASTM A194 Gr.8M
15	STEM KEY	St.St. 316
16	STEM WASHER	316+PTFE
17	STEM O-RING	FKM AED
18	STEM GASKET	GRAPHITE
19	BRACKET BEARING	316+PTFE
20	CLOSURE O-RING	FKM AED
21	CLOSURE GASKET	GRAPHITE
22	LIFTING EYE BOLT	St.St. 316
23	BONNET STOP PIN	St.St. 316L
24	PLUG 1/2" NPT	ASTM A479 316L
25	ANTISTATIC DEVICE SPRING	ELGILOY R30003
26	**BONNET ASSEMBLY (VENT)**	
A	DUST CUP	Plastic
B	COMPRESSION NUT	St.St. 316L
C	LOCKING NUT	St.St. 316L
D	FOLLOWER	St.St. 316/316L
E	BONNET BODY	ASTM A479 316/316L NACE
F	STEM	ASTM A479 316/316L NACE
G	PACKING	Graphite
H	TIP	ASTM A479 316/316L NACE
I	TEE-BAR	St.St. 316L
L	TEE-BAR SCREW	St.St. 316L

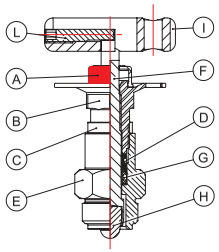
SPECIFICATION

1. Construction: 1 Ball Isolate
2. Inlet: 4" 300 RF (ASME B16.5
3. Outlet: 4" 300 RF (ASME B16.5)
4. Vent: 1/2" NPT-Female (ASME B1.20.1)
4. Design Code: ASME B16.34 / ASME B16.5 / B1.20.1
5. Bore size: Ball DN100, Needle 5mm
7. Antistatic device
8. Anti-blow out stem
9. Design temperature: -46°C / +80°C
10. Pressure test: API 598, API 6D
11. Dye Penetrant Test on body and closures
12. PMI: PMI Test on body, closures and wetted parts
13. Bidirectional valve
14. High Pressure Gas Test with Helium
15. Cavity Relief Pressure test
16. Antistatic Test
17. Fugitive Emission Certificate according to EN ISO 15848-1
18. Fugitive Emission Test according to ISO 15848-2
19. Fire Safe: API 607 / ISO 10497, API 6FA
20. Hardness Test on body, closures and wetted parts
21. Hydrogen Service
22. Painting:
    Treatment according to spec. 123A90-DDL-MAT-SP-60006,
    Valve: System SYS-6A, Color RAL 9002
    Handwheel: System SYS-6A, Color RAL 9005



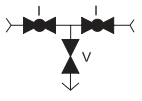






BONNET ASSEMBLY

FLOW DIAGRAM



All dimensions are in mm

TITOLO: TITLE:	DBB BALL VALVE FLANGED - FLANGED		DISEGNO: DWG.: 00.VSF.2679/V
MODELLO: MODEL:	DBB-898-HR-100-N300RF3_N		REV.: 02 A DATA: DATE: 28/06/2024
CODICE: CODE:	00.VSF.2679/V		NOTE / NOTES: *Rev01: updated drawing* *Rev02: updated drawing*
SCALA: SCALE: N/A	FOGLIO: SHEET: 1/1	MATERIALE: MATERIAL: See Table	
DISEGNATO DA: DRAWN BY: M.M	CONTROLLATO DA: CONTROLLED BY: D.R	PESO: WEIGHT: 170 kg (max)	
DATA: DATE: 16/05/2024	REVISIONATO DA: REVISED BY: S.M	RICHIESTO DA: REQUESTED BY: G.G	

20013 Magenta (MI) - Italy - Via Novara, 10/B
Tel. 02 97.29.86.63 r.a. - Fax 02 97.29.18.55
E-mail: indra@indra.it - http://www.indra.it

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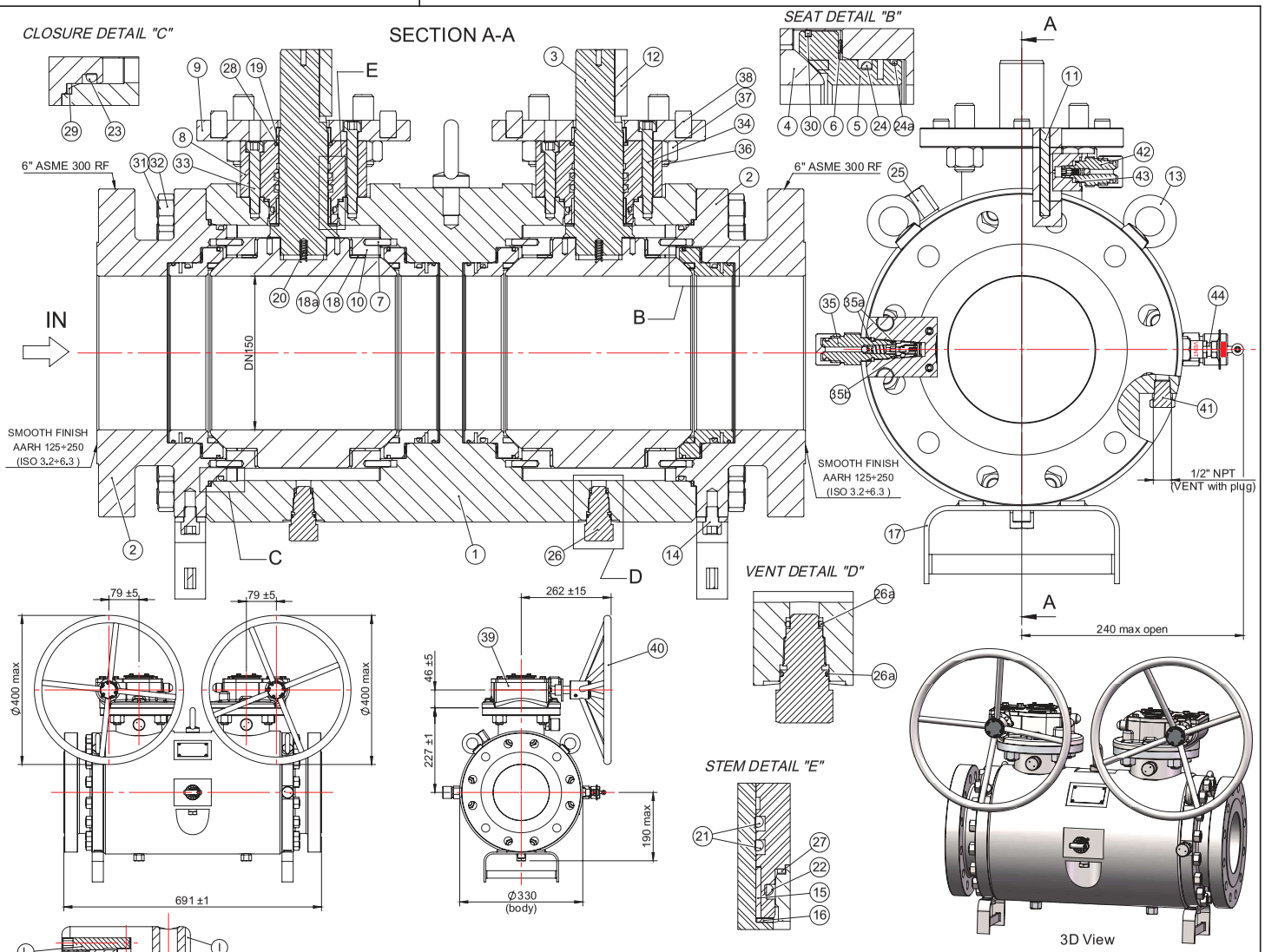
A4 - ORIZ.

TAG No.	Cust. Item	Data Sheet	PIPING Class	SAP CODE	Indra Part Number	Operating Temperature °C	Design Pressure barg Min / Max
BLPH-MV-034 - BLPH-MV-222 BLPH-MV-387 - BLPH-MV-423 BLPH-MV-431 - BLPH-MV-440	180	DA03C01RFH	03HSS	VLBBNN07230400	00.VSF.2679/V	-27 / 65	40 / 42,2

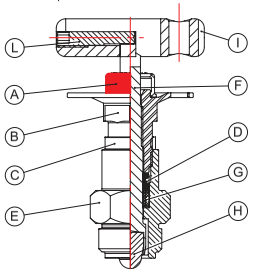
DBB TRUNNION BALL VALVE		
Item	Description	Material
1	BODY	ASTM A182 F316/316L NACE
2	CLOSURE	ASTM A182 F316/316L NACE
3	STEM	ASTM A479 316/316L NACE
4	BALL	ASTM A479 316/316L NACE
5	SEAT + INSERT	ASTM A479 316/316L NACE+RPTFE
6	SEAT SPRING	ELGILOY R30003
7	BALL SUPPORT FLANGE PIN	St.St. 316/316L
8	GLANDE PLATE	ASTM A182 F316/316L NACE
9	FLANGE	ASTM A182 F316/316L NACE
10	BALL SUPPORT FLANGE	St.St. 316/316L
11	FLANGE PIN	St.St. 316/316L
12	STEM KEY	St.St. 316/316L
13	LIFTING EYE BOLT	AISI 316
14	VALVE SUPPORT BOLT	St.St. 316/316L
15	STEM BEARING	AISI 316 + PTFE
16	STEM WASHER	AISI 316 + PTFE
17	VALVE SUPPORT	AISI 316
18	BALL WASHER	AISI 316 + PTFE
18a	BALL BEARING	AISI 316 + PTFE
19	FLANGE BEARING	AISI 316 + PTFE
20	ANTISTATIC DEVICE SPRING	ELGILOY R30003
21	STEM O-RING	FKM AED
22	GLANDE PLATE O-RING	FKM AED
23	CLOSURE O-RING	FKM AED
24	SEAT O-RING PRIMARY	FKM AED
24a	SEAT O-RING SECONDARY	FKM AED
25	VENT BLEEDER	St.St. 316/316L
26	BODY DRAIN	St.St. 316/316L
26a	BODY DRAIN O-RING	FKM AED
27	GLANDE PLATE GASKET	GRAPHITE
28	STEM GASKET	GRAPHITE
29	CLOSURE GASKET	GRAPHITE
30	SEAT GASKET	GRAPHITE
31	BODY STUD	ASTM A193 B8M Cl.2
32	BODY NUT	ASTM A194 Gr.8M
33	GLANDE PLATE BOLT	ASTM A193 B8M Cl.2
34	FLANGE BOLT	ASTM A193 B8M Cl.2
35	SEAT LUBRIFICATOR	St.St. 316/316L
35a	SEAT LUBRIFICATOR O-RING	FKM AED
35b	CHECK VALVE	St.St. 316/316L
36	GEAR STUD	ASTM A193 B8M Cl.2
37	GEAR NUT	ASTM A194 Gr.8M
38	GEAR PIN	St.St. 316/316L
39	GEAR	DUCTILE IRON
40	HANDWHEEL	St.St. 316
41	PLUG 1/2" NPT	ASTM A479 316L
42	STEM LUBRIFICATOR	St.St. 316/316L
43	STEM LUBRIFICATOR O-RING	FKM AED
44	**BONNET ASSEMBLY (VENT)**	
A	DUST CUP	Plastic
B	COMPRESSION NUT	St.St. 316L
C	LOCKING NUT	St.St. 316L
D	FOLLOWER	St.St. 316/316L
E	BONNET BODY	ASTM A479 316/316L NACE
F	STEM	ASTM A479 316/316L NACE
G	PACKING	Graphite
H	TIP	ASTM A479 316/316L NACE
I	TEE-BAR	St.St. 316L
L	TEE-BAR SCREW	St.St. 316L

SPECIFICATION

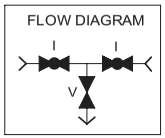
1. Construction: 2 Ball Isolate, 1 Needle Vent
2. Inlet: 6" Cl.300 RF (ASME B16.5)
3. Outlet: 6" Cl.300 RF (ASME B16.5)
4. Vent: 1/2" NPT-Female (ASME B1.20.1)
5. Design Code: ASME B16.34/B16.5/B1.20.1
6. Bore Size: Ball DN 150, Needle 5mm
7. Antistatic device
8. Anti-blow out stem
9. Design temperature: -46°C / +80°C
10. Pressure test: API 598, API 6D
11. PMI: PMI Test on body, closure and wetted parts
12. Bidirectional valve
13. Cavity Relieve Pressure Test
14. Antistatic Test
15. Fire Safe: API 607 / ISO 10497, API 6FA
16. Dye Penetrant Test on body and closure
17. High Pressure Gas Test with Helium
18. Fugitive Emission Test according to ISO 15848-2
19. Hydrogen Service
20. Hardness Test on body, closure and wetted parts
21. Painting: treatment according to spec. 123A90-DDL-MAT-SP-60006,
    Valve: System SYS-6A, Color RAL 9002
    Gear: System SYS-6A, Color RAL 9005



3D View



BONNET ASSEMBLY



All dimensions are in mm

TITOLO: TITLE: DBB TRUNNION BALL VALVE FLANGED - FLANGED			DISEGNO: DWG.: 00.VSFT.0223/V
MODELLO: MODEL: DBB-898-TRU-HR-150-Q300RF3_Q_D			REV.: 02 A DATA: DATE: 27/06/2024
20013 Magenta (MI) - Italy - Via Novara, 10/B Tel. 02 97.29.86.63 r.a. - Fax 02 97.29.18.55 E-mail: indra@indra.it - http://www.indra.it	CODICE: CODE: 00.VSFT.0223/V		NOTE / NOTES: *Rev01: updated drawing* *Rev02: updated drawing*
SCALA: SCALE: N/A	FOGLIO: SHEET: 1/1	MATERIALE: MATERIAL: See Table	
DISEGNATO DA: DRAWN BY: D.S	CONTROLLATO DA: CONTROLLED BY: M.M	PESO: WEIGHT: 350 kg (max)	
DATA: DATE: 20/05/2024	REVISIONATO DA: REVISED BY: S.M	RICHIESTO DA: REQUESTED BY: G.G	

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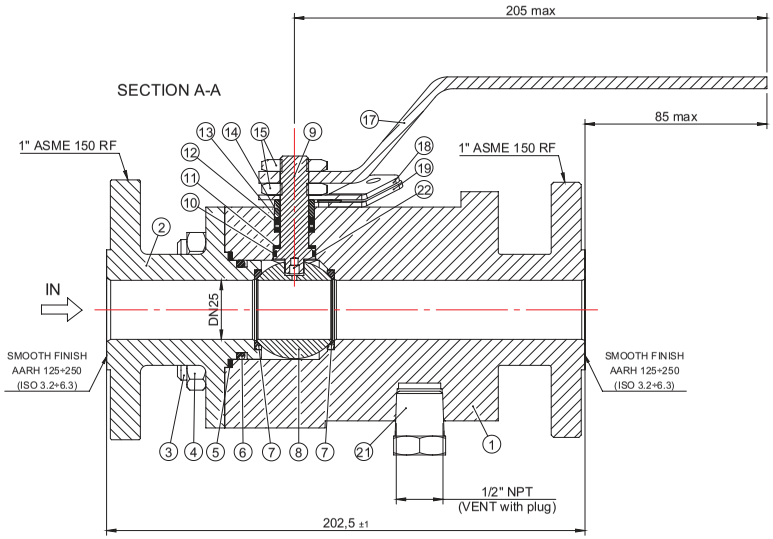
A4 - ORIZ.

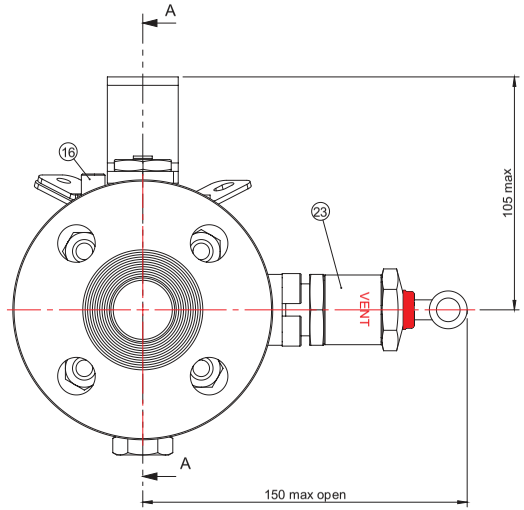
TAG No.	Cust. Item	Data Sheet	PIPING Class	SAP CODE	Indra Part Number	Operating Temperature °C	Design Pressure barg Min / Max
BLPH-MV-035 BLPH-MV-264 BLPH-MV-388 BLPH-MV-424 BLPH-MV-432 BLPH-MV-441	190	DA03C01RFH	03HSS	VLBBNN07240600	00.VSFT.0223/V	-27 / 65	40 / 42,2

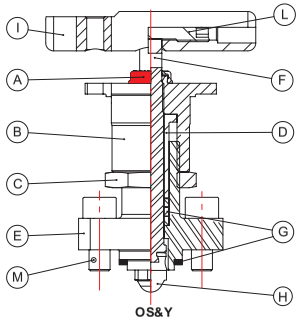
SBB BALL VALVE		
Item	**Description**	**Material**
1	VALVE BODY	ASTM A350 LF2 Cl.1 NACE
2	CLOSER	ASTM A350 LF2 Cl.1 NACE
3	STUD BOLT	ASTM A193 B7M + HDG
4	NUT	ASTM A194 Gr. 2HM + HDG
5	CLOSER SEAL RING	Graphite
6	CLOSER O-RING	FKM AED
7	SEAT	PEEK
8	BALL	ASTM A479 316/316L NACE
9	STEM	ASTM A479 316/316L NACE
10	STEM O-RING	FKM AED
11	STEM THRUST WASHER	PEEK
12	STEM SEAL RING	Graphite
13	STEM RING	St.St. 316/316L
14	STEM COMPRESSION RING	St.St. 316/316L
15	HANDLE LOCKING NUT	St.St. 316/316L
16	STOP PIN	St.St. 316/316L
17	HANDLE	St.St. 316
18	LEVER LOCKING PLATE	St.St. 316
19	LOCKING PLATE	St.St. 316
20	LOCKING PLATE BOLT	St.St. 316
21	PLUG 1/2" NPT	ASTM A350 LF2
22	ANTISTATIC DEVICE SPRING	ELGILOY R30003
23	**O.S.&Y. BONNET ASSEMBLY (VENT)**	
A	DUST CUP	Plastic
B	COMPRESSION NUT	St.St. 316L
C	LOCKING NUT	St.St. 316/316L
D	FOLLOWER	St.St. 316/316L
E	BONNET BODY	ASTM A350 LF2 Cl.1 NACE
F	STEM	ASTM A479 316/316L NACE
G	PACKING	Graphite
H	TIP	ASTM A479 316/316L NACE
I	TEE-BAR	St.St. 316L
L	TEE-BAR SCREW	St.St. 316L
M	BOLTING	ASTM A193 B7M + HDG

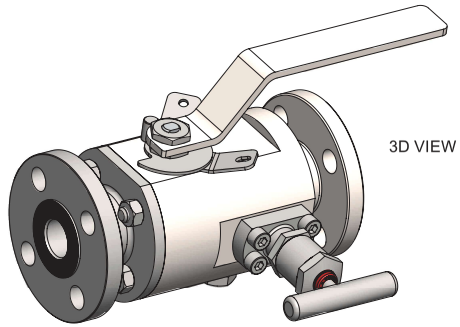
SPECIFICATION

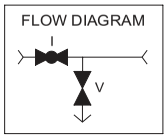
1. Construction: 1 Ball Isolate, 1 Needle Vent
2. Inlet: 1" Cl.150 RF (ASME B16.5)
3. Outlet: 1" Cl.150 RF (ASME B16.5)
4. Vent: 1/2" NPT Female (ASME B1.20.1)
5. Design Code: ASME B16.34 / B16.5 / ASME B1.20.1
6. Bore Size: Ball DN25, Needle 5mm
7. Antistatic device
8. Anti-blow out stem
9. Design Temperature: -46°C / +100°C
10. Pressure Test: API 598, API 6D
11. Fire Safe: API 607 / ISO 10497, API 6FA
12. Impact Test at -46°C
13. Cavity Relief Pressure test
14. PMI: PMI Test on wetted parts (excluded carbon steel)
15. Antistatic Test
16. Hardness Test on wetted parts
17. Corrosion Allowance 3mm
18. Bidirectional valve
19. Painting: Treatment according to spec. 123A90-DDL-MAT-SP-60006,
    Valve: System SYS-1, Color RAL 9002
    Lever: System SYS-1, Color RAL 9005











All dimensions are in mm

indra VALVES - ITALY
20013 Magenta (MI) - Italy - Via Novara, 10/B
Tel. 02 97.29.86.63 r.a. - Fax 02 97.29.18.55
E-mail: indra@indra.it - http://www.indra.it

TITOLO: TITLE:	SBB BALL VALVE FLANGED - FLANGED	DISEGNO: DWG.:	00.VSF.2697/V
MODELLO: MODEL:	SBB-798-25-F150RF3_F_D	REV.: 03 A	DATA: DATE: 26/07/2024
CODICE: CODE:	00.VSF.2697/V	NOTE / NOTES:	*Rev03: updated drawing*
SCALA: SCALE: N/A	FOGLIO: SHEET: 1/1	MATERIALE: MATERIAL:	See Table
DISEGNATO DA: DRAWN BY: D.R	CONTROLLATO DA: CONTROLLED BY: M.C	PESO: WEIGHT:	10,8 kg (max)
DATA: DATE: 16/05/2024	REVISIONATO DA: REVISED BY: D.S	RICHIESTO DA: REQUESTED BY:	G.G

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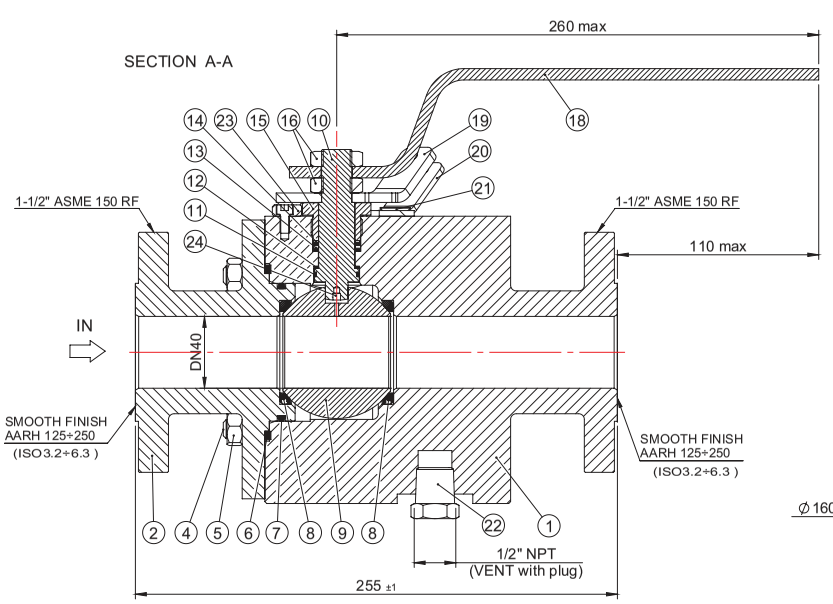
A4 - ORIZ.

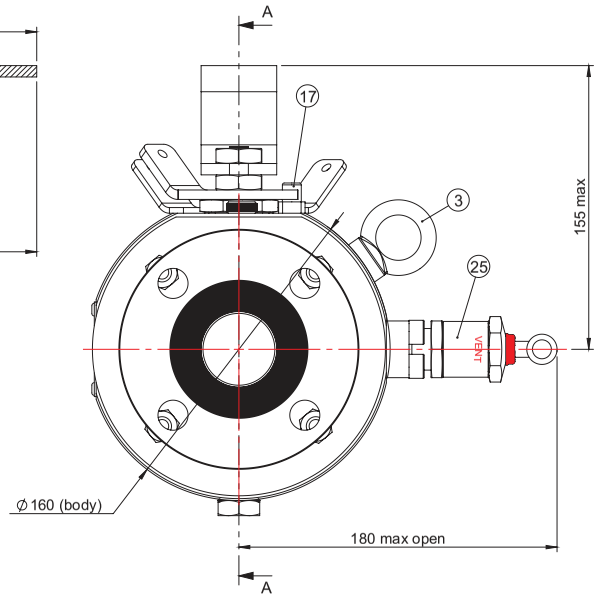
TAG No.	Cust. Item	Data Sheet	PIPING Class	SAP CODE	Indra Part Number	Operating Temperature °C	Design Pressure barg Min / Max
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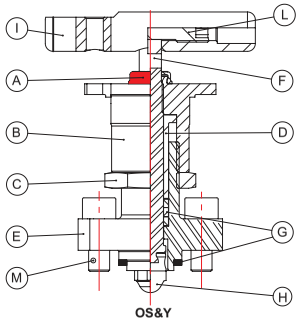
SBB BALL VALVE		
Item	**Description**	**Material**
1	VALVE BODY	ASTM A350 LF2 Cl.1 NACE
2	CLOSER	ASTM A350 LF2 Cl.1 NACE
3	EYEBOLT	St.St. 316
4	STUD BOLT	ASTM A193 B7M + HDG
5	NUT	ASTM A194 Gr.2HM + HDG
6	CLOSER SEAL RING	Graphite
7	CLOSER O-RING	FKM AED
8	SEAT	PEEK
9	BALL	ASTM A479 316/316L NACE
10	STEM	ASTM A479 316/316L NACE
11	STEM O-RING	FKM AED
12	STEM THRUST WASHER	PEEK
13	STEM SEAL RING	Graphite
14	STEM RING	St.St. 316L
15	STEM COMPRESSION RING	St.St. 316L
16	HANDLE LOCKING NUT	St.St. 316L
17	STOP PIN	St.St. 316L
18	HANDLE	St.St. 316
19	LEVER LOCKING PLATE	St.St. 316
20	LOCKING PLATE	St.St. 316
21	LOCKING PLATE BOLT	St.St. 316
22	PLUG 1/2" NPT	ASTM A350 LF2
23	ECCENTRIC	St.St. 316
24	ANTISTATIC DEVICE SPRING	ELGILOY R30003
25	**O.S.&Y. BONNET ASSEMBLY (VENT)**	
A	DUST CUP	Plastic
B	COMPRESSION NUT	St.St. 316L
C	LOCKING NUT	St.St. 316L
D	FOLLOWER	St.St. 316/316L
E	BONNET BODY	ASTM A350 LF2 Cl.1 NACE
F	STEM	ASTM A479 316/316L NACE
G	PACKING	Graphite
H	TIP	ASTM A479 316/316L NACE
I	TEE-BAR	St.St. 316L
L	TEE-BAR SCREW	St.St. 316L
M	BOLTING	ASTM A193 B7M + HDG

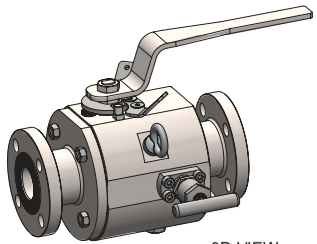
SPECIFICATION

1. Construction: 1 Ball Isolate, 1 Needle Vent
2. Inlet: 1-1/2" Cl.150 RF (ASME B16.5)
3. Outlet: 1-1/2" Cl.150 RF (ASME B16.5)
4. Vent: 1/2" NPT-Female (ASME B1.20.1)
5. Design Code: ASME B16.34 / B16.5 / B1.20.1
6. Bore Size: Ball DN40, Needle 5mm
7. Antistatic device
8. Anti-blow out stem
9. Design Temperature: -46°C / +100°C
10. Pressure Test: API 598, API 6D
11. Corrosion Allowance 3mm
12. Impact Test at -46°C
13. PMI: PMI Test on wetted parts (excluded carbon steel)
14. Cavity Relief Pressure Test
15. Antistatic Test
16. Fire Safe: API 607 / ISO10497 / API 6FA
17. Hardness Test on body, closure and wetted parts
18. Bidirectional valve
19. Painting: Treatment according to spec. 123A90-DDL-MAT-SP-60006,
    Valve: System SYS-1, Color RAL 9002
    Lever: System SYS-1, Color RAL 9005

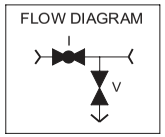








3D VIEW



All dimensions are in mm

TITOLO: TITLE:	SBB BALL VALVE FLANGED - FLANGED		DISEGNO: DWG.: 00.VSF.2699/V
MODELLO: MODEL:	SBB-798-40-H150RF3_H_D		REV.: 03 A DATA: 26/07/2024
CODICE: CODE:	00.VSF.2699/V		NOTE / NOTES: *Rev03: updated drawing*
SCALA: SCALE: N/A	FOGLIO: SHEET: 1/1	MATERIALE: MATERIAL: See Table	
DISEGNATO DA: DRAWN BY: D.S	CONTROLLATO DA: CONTROLLED BY: D.R	PESO: WEIGHT: 26,4 kg (max)	
DATA: DATE: 17/05/2024	REVISIONATO DA: REVISED BY: D.S	RICHIESTO DA: REQUESTED BY: G.G	

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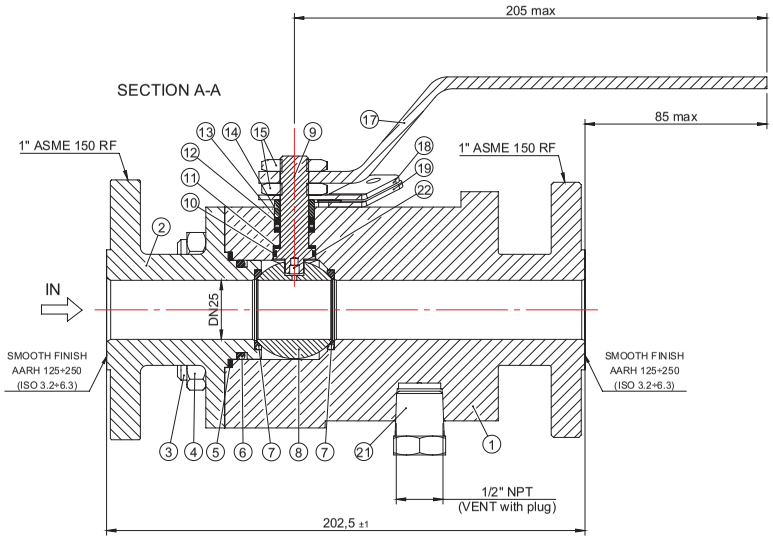
A4 - ORIZ.

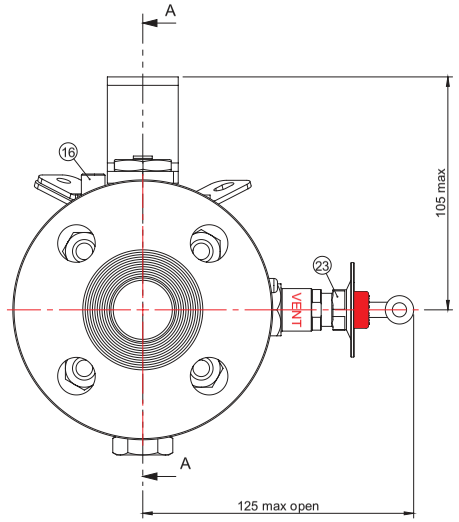
TAG No.	Cust. Item	Data Sheet	PIPING Class	SAP CODE	Indra Part Number	Operating Temperature °C	Design Pressure barg Min / Max
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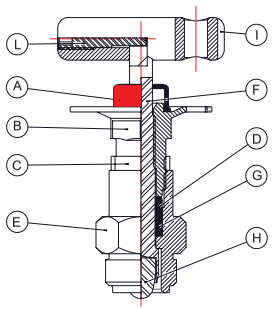
SBB BALL VALVE		
Item	**Description**	**Material**
1	VALVE BODY	ASTM A182 F316/316L NACE
2	CLOSER	ASTM A182 F316/316L NACE
3	STUD BOLT	ASTM A193 B8M Cl. 2
4	NUT	ASTM A194 Gr. 8M
5	CLOSER SEAL RING	Graphite
6	CLOSER O-RING	FKM AED
7	SEAT	PEEK
8	BALL	ASTM A479 316/316L NACE
9	STEM	ASTM A479 316/316L NACE
10	STEM O-RING	FKM AED
11	STEM THRUST WASHER	PEEK
12	STEM SEAL RING	Graphite
13	STEM RING	St.St. 316/316L
14	STEM COMPRESSION RING	St.St. 316/316L
15	HANDLE LOCKING NUT	St.St. 316/316L
16	STOP PIN	St.St. 316/316L
17	HANDLE	St.St. 316
18	LEVER LOCKING PLATE	St.St. 316
19	LOCKING PLATE	St.St. 316
20	LOCKING PLATE BOLT	St.St. 316
21	PLUG 1/2" NPT	ASTM A479 316L
22	ANTISTATIC DEVICE SPRING	ELGILOY R30003
23	**BONNET ASSEMBLY (VENT)**	
A	DUST CUP	Plastic
B	COMPRESSION NUT	St.St. 316L
C	LOCKING NUT	St.St. 316/316L
D	FOLLOWER	St.St. 316/316L
E	BONNET BODY	ASTM A479 316/316L NACE
F	STEM	ASTM A479 316/316L NACE
G	PACKING	Graphite
H	TIP	ASTM A479 316/316L NACE
I	TEE-BAR	St.St. 316L
L	TEE-BAR SCREW	St.St. 316L
M	BOLTING	ASTM A193 B8M Cl.2

SPECIFICATION

1. Construction: 1 Ball Isolate, 1 Needle Vent
2. Inlet: 1" Cl.150 RF (ASME B16.5)
3. Outlet: 1" Cl.150 RF (ASME B16.5)
4. Vent: 1/2" NPT Female (ASME B1.20.1)
5. Design Code: ASME B16.34 / B16.5 / ASME B1.20.1
6. Bore Size: Ball DN25, Needle 5mm
7. Antistatic device
8. Anti-blow out stem
9. Design Temperature: -29°C / +100°C
10. Pressure Test: API 598, API 6D
11. Fire Safe: API 607 / ISO 10497, API 6FA
12. Fugitive Emission Certificate according to EN ISO 15848-1
13. Fugitive Emission Test according to ISO 15848-2
14. Dye Penetrant Test on body and closure
15. PMI: PMI Test on body, closure and wetted parts
16. Hardness Test on body, closure and wetted parts
17. Cavity Relief Pressure test
18. Antistatic Test
19. Hydrogen Service
20. High Pressure Gas Test with Helium
21. Bidirectional valve
22. Painting: Treatment according to spec. 123A90-DDL-MAT-SP-60006,
    Valve: System SYS-6A, Color RAL 9002
    Lever: System SYS-6A, Color RAL 9005

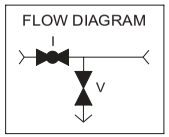




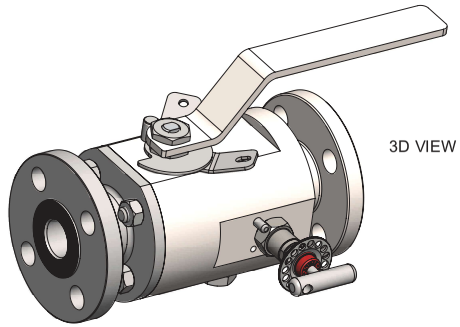


BONNET ASSEMBLY

FLOW DIAGRAM



All dimensions are in mm



3D VIEW

indra VALVES - ITALY
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Tel. 02 97.29.86.63 r.a. - Fax 02 97.29.18.55
E-mail: indra@indra.it - http://www.indra.it

TITOLO: TITLE:	SBB BALL VALVE FLANGED - FLANGED	DISEGNO: DWG.:	00.VSF.2701/V
MODELLO: MODEL:	SBB-798-HR-25-F150RF3_F_D	REV.: 03 A	DATA: DATE: 26/07/2024
CODICE: CODE:	00.VSF.2701/V	NOTE / NOTES:	*Rev03: updated drawing*
SCALA: SCALE: N/A	FOGLIO: SHEET: 1/1	MATERIALE: MATERIAL:	See Table
DISEGNATO DA: DRAWN BY: D.R	CONTROLLATO DA: CONTROLLED BY: M.C	PESO: WEIGHT:	10,3 kg (max)
DATA: DATE: 17/05/2024	REVISIONATO DA: REVISED BY: D-S	RICHIESTO DA: REQUESTED BY:	G.G

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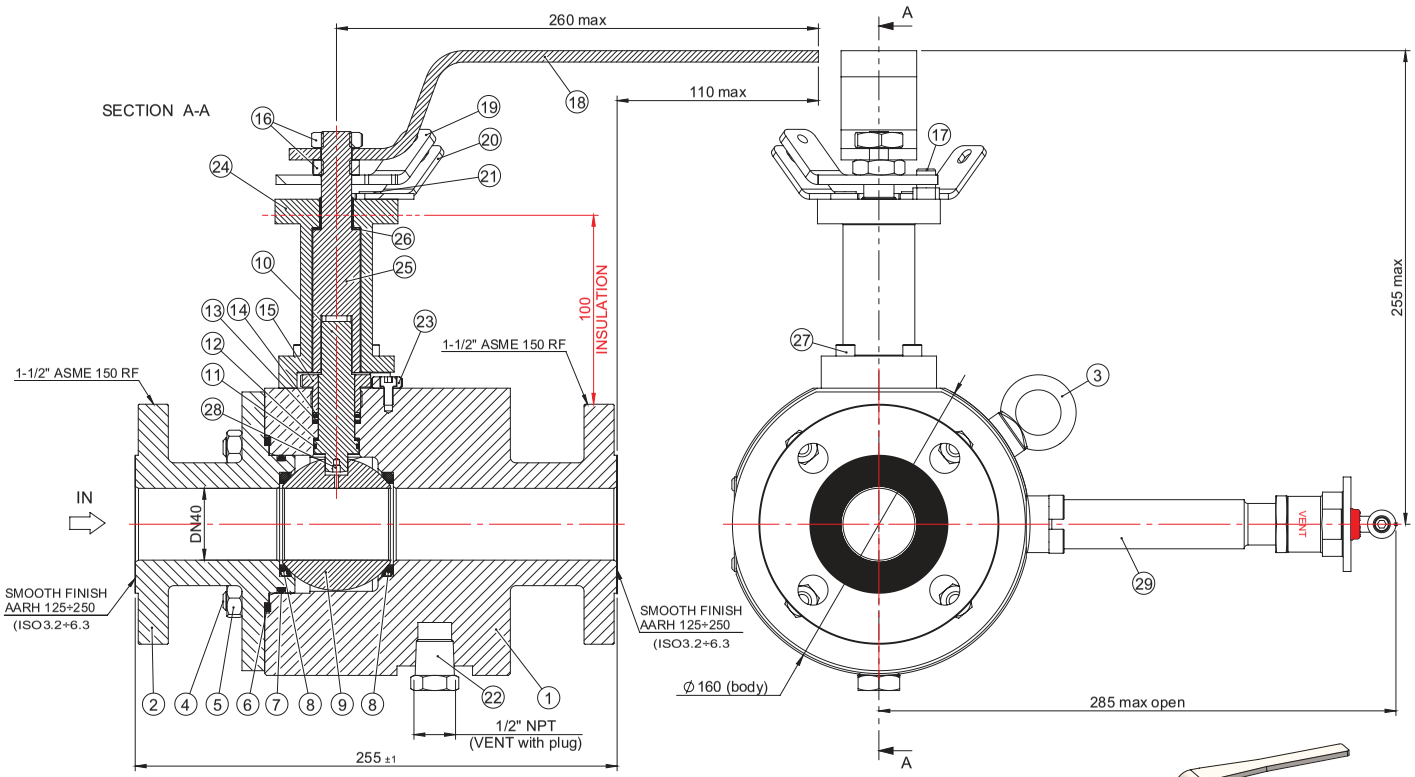
A4 - ORIZ.

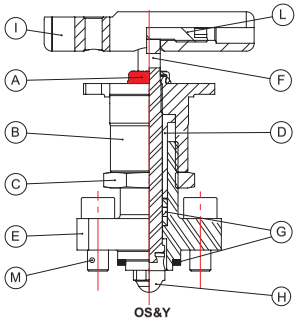
TAG No.	Cust. Item	Data Sheet	PIPING Class	SAP CODE	Indra Part Number	Operating Temperature °C	Design Pressure barg Min / Max
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SBB BALL VALVE		
Item	**Description**	**Material**
1	VALVE BODY	ASTM A182 F55 NACE
2	CLOSER	ASTM A182 F55 NACE
3	EYEBOLT	St.St. 316
4	STUD BOLT	ASTM A193 B7M + HDG
5	NUT	ASTM A194 Gr.2HM + HDG
6	CLOSER SEAL RING	Graphite
7	CLOSER O-RING	FKM AED
8	SEAT	PEEK
9	BALL	ASTM A479 F55 NACE
10	STEM	ASTM A479 F55 NACE
11	STEM O-RING	FKM AED
12	STEM THRUST WASHER	PEEK
13	STEM SEAL RING	Graphite
14	STEM RING	St.St. 316L
15	STEM COMPRESSION RING	St.St. 316L
16	HANDLE LOCKING NUT	St.St. 316L
17	STOP PIN	St.St. 316L
18	HANDLE	St.St. 316
19	LEVER LOCKING PLATE	St.St. 316
20	LOCKING PLATE	St.St. 316
21	LOCKING PLATE BOLT	St.St. 316
22	PLUG 1/2" NPT	SUPERDUPLEX F55
23	ECCENTRIC	St.St. 316
24	BRACKET	ASTM A479 316/316L NACE
25	STEM EXTENSION	ASTM A479 F55 NACE
26	BRACKET BEARING	Polyamide
27	BRACKET BOLTING	ASTM A193 B7M + HDG
28	ANTISTATIC DEVICE SPRING	ELGILOY R30003
29	**O.S.&Y. BONNET ASSEMBLY (VENT)**	
A	DUST CUP	Plastic
B	COMPRESSION NUT	St.St. 316L
C	LOCKING NUT	St.St. 316L
D	FOLLOWER	St.St. 316/316L
E	BONNET BODY	ASTM A479 F55 NACE
F	STEM	ASTM A479 F55 NACE
G	PACKING	Graphite
H	TIP	ASTM A479 F55 NACE
I	TEE-BAR	St.St. 316L
L	TEE-BAR SCREW	St.St. 316L
M	BOLTING	ASTM A193 B7M + HDG

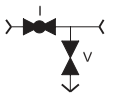
SPECIFICATION

1. Construction: 1 Ball Isolate, 1 Needle Vent
2. Inlet: 1-1/2" Cl.150 RF (ASME B16.5
3. Outlet: 1-1/2" Cl.150 RF (ASME B16.5)
4. Vent: 1/2" NPT-Female (ASME B1.20.1)
5. Design Code: ASME B16.34 / B16.5 / B1.20.1
6. Bore Size: Ball DN40, Needle 5mm
7. Antistatic device
8. Anti-blow out stem
9. Design Temperature: -29°C / +100°C
10. Pressure Test: API 598, API 6D
11. Lever and bonnet are suitable for insulation up to 100mm
12. PMI: PMI Test on body, closure and wetted parts
13. Cavity Relief Pressure Test
14. Antistatic Test
15. Fire Safe: API 607 / ISO10497 / API 6FA
16. Impact Test on raw material of body and closure at -50°C
17. Hardness Test on body, closure and wetted parts
18. Bidirectional valve

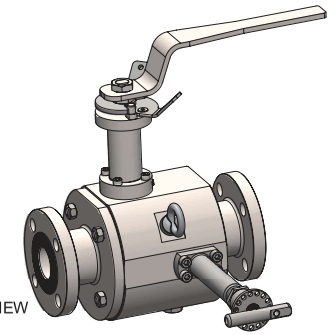




FLOW DIAGRAM



All dimensions are in mm



3D VIEW

indra VALVES - ITALY 20013 Magenta (MI) - Italy - Via Novara, 10/B Tel. 02 97.29.86.63 r.a. - Fax 02 97.29.18.55 E-mail: indra@indra.it - http://www.indra.it	TITOLO: TITLE: SBB BALL VALVE FLANGED - FLANGED		DISEGNO: DWG.: 00.VSF.2698
	MODELLO: MODEL: SBB-798-40-H150RF3_H_D		REV.: 02 A DATA: DATE: 26/07/2024
	CODICE: CODE: 00.VSF.2698		NOTE / NOTES: *Rev02: Updated drawing*
SCALA: SCALE: N/A	FOGLIO: SHEET: 1/1	MATERIALE: MATERIAL: See Table	
DISEGNATO DA: DRAWN BY: D.S	CONTROLLATO DA: CONTROLLED BY: D.R	PESO: WEIGHT: 28 kg (max)	
DATA: DATE: 17/05/2024	REVISIONATO DA: REVISED BY: D.S	RICHIESTO DA: REQUESTED BY: G.G	

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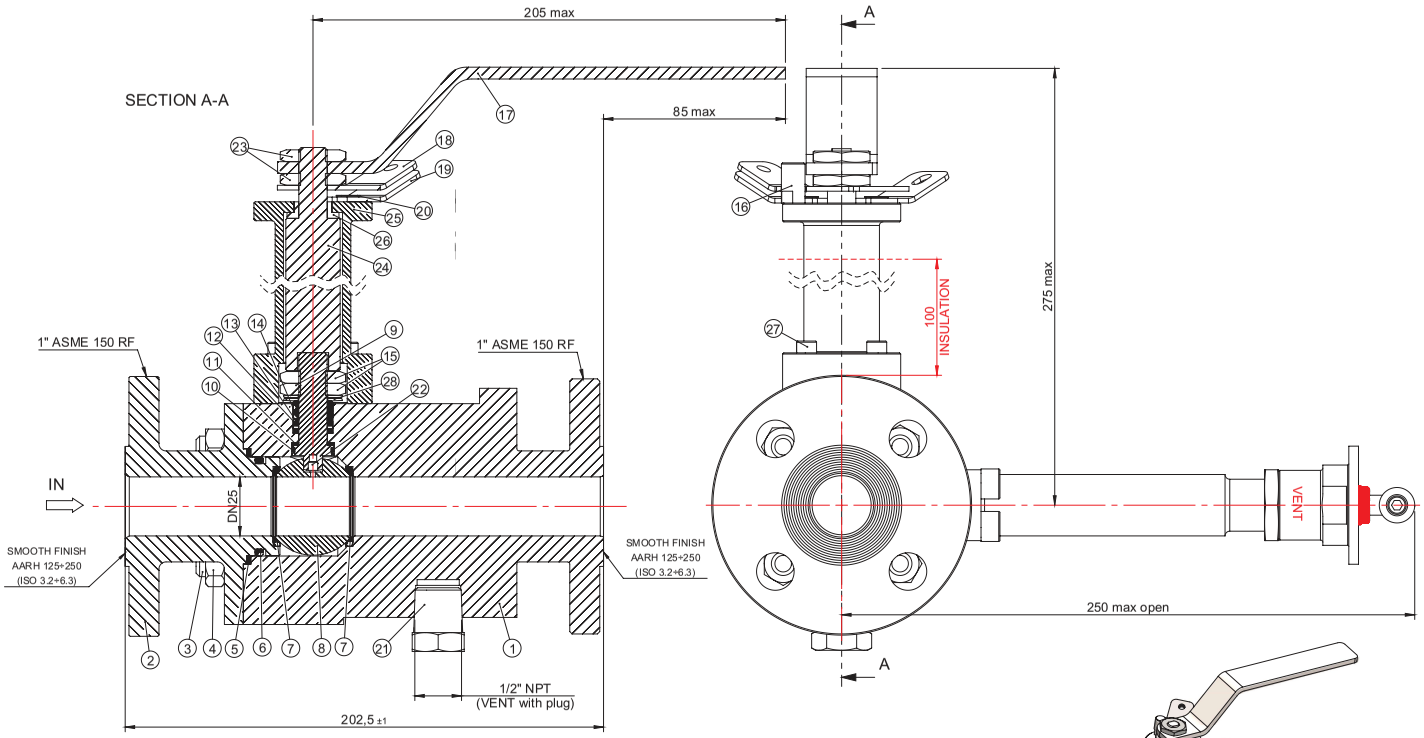
A4 - ORIZ.

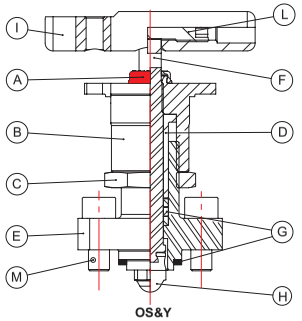
TAG No.	Cust. Item	Data Sheet	PIPING Class	SAP CODE	Indra Part Number	Operating Temperature °C	Design Pressure barg Min / Max
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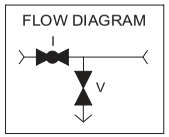
SBB BALL VALVE		
Item	**Description**	**Material**
1	VALVE BODY	ASTM A182 F316/316L NACE
2	CLOSER	ASTM A182 F316/316L NACE
3	STUD BOLT	ASTM A193 B8M cl. 2
4	NUT	ASTM A194 Gr. 8M
5	CLOSER SEAL RING	Graphite
6	CLOSER O-RING	FKM AED
7	SEAT	PEEK
8	BALL	ASTM A479 316/316L NACE
9	STEM	ASTM A479 316/316L NACE
10	STEM O-RING	FKM AED
11	STEM THRUST WASHER	PEEK
12	STEM SEAL RING	Graphite
13	STEM RING	St.St. 316/316L
14	STEM COMPRESSION RING	St.St. 316/316L
15	STEM LOCKING NUT	St.St. 316/316L
16	STOP PIN	St.St. 316/316L
17	HANDLE	St.St. 316
18	LEVER LOCKING PLATE	St.St. 316
19	LOCKING PLATE	St.St. 316
20	LOCKING PLATE BOLT	St.St. 316
21	PLUG 1/2" NPT	ASTM A479 316L
22	ANTISTATIC DEVICE SPRING	ELGILOY R30003
23	HANDLE LOCKING NUT	St.St. 316/316L
24	STEM EXTENSION	ASTM A479 316/316L NACE
25	BRACKET	ASTM A479 316/316L NACE
26	BRACKET BEARING	PTFE
27	BRACKET BOLTING	ASTM A193 B8M Cl.2
28	CUP SPRING	St.St.
29	**O.S.&Y. BONNET ASSEMBLY (VENT)**	
A	DUST CUP	Plastic
B	COMPRESSION NUT	St.St. 316L
C	LOCKING NUT	St.St. 316/316L
D	FOLLOWER	St.St. 316/316L
E	BONNET BODY	ASTM A479 316/316L NACE
F	STEM	ASTM A479 316/316L NACE
G	PACKING	Graphite
H	TIP	ASTM A479 316/316L NACE
I	TEE-BAR	St.St. 316L
L	TEE-BAR SCREW	St.St. 316L
M	BOLTING	ASTM A193 B8M Cl.2

SPECIFICATION

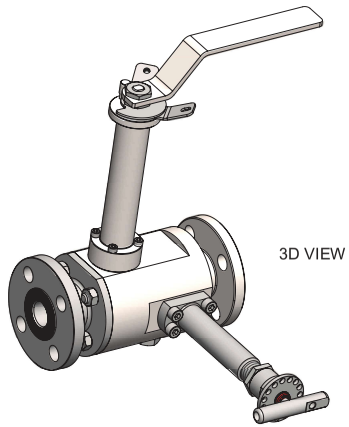
1. Construction: 1 Ball Isolate, 1 Needle Vent
2. Inlet: 1" Cl.150 RF (ASME B16.5)
3. Outlet: 1" Cl.150 RF (ASME B16.5)
4. Vent: 1/2" NPT Female (ASME B1.20.1)
5. Design Code: ASME B16.34 / B16.5 / ASME B1.20.1
6. Bore Size: Ball DN25, Needle 5mm
7. Antistatic device
8. Anti-blow out stem
9. Design Temperature: -29°C / +100°C
10. Pressure Test: API 598, API 6D
11. Fire Safe: API 607 / ISO 10497, API 6FA
12. Lever and Bonnet are suitable for insulation up to 100mm
13. Cavity Relief Pressure test
14. PMI: PMI Test on body, closure and wetted parts
15. Antistatic Test
16. Hardness Test on body, closures and wetted parts
17. Bidirectional valve
18. Painting: Treatment according to spec. 123A90-DDL-MAT-SP-60006,
    Valve: System SYS-6C, Color RAL 9002
    Lever: System SYS-6C, Color RAL 9005







All dimensions are in mm



3D VIEW

indra VALVES - ITALY
20013 Magenta (MI) - Italy - Via Novara, 10/B
Tel. 02 97.29.86.63 r.a. - Fax 02 97.29.18.55
E-mail: indra@indra.it - http://www.indra.it

TITOLO: TITLE:	SBB BALL VALVE FLANGED - FLANGED	DISEGNO: DWG.:	00.VSF.2696/V
MODELLO: MODEL:	SBB-798-25-F150RF3_F_D	REV.: 02 A	DATA: DATE: 26/07/2024
CODICE: CODE:	00.VSF.2696/V	NOTE / NOTES:	*Rev02: Updated drawing*
SCALA: SCALE: N/A	FOGLIO: SHEET: 1/1	MATERIALE: MATERIAL:	See Table
DISEGNATO DA: DRAWN BY: D.R	CONTROLLATO DA: CONTROLLED BY: M.C	PESO: WEIGHT:	12,5 kg (max)
DATA: DATE: 16/05/2024	REVISIONATO DA: REVISED BY: D.S	RICHIESTO DA: REQUESTED BY:	N.L

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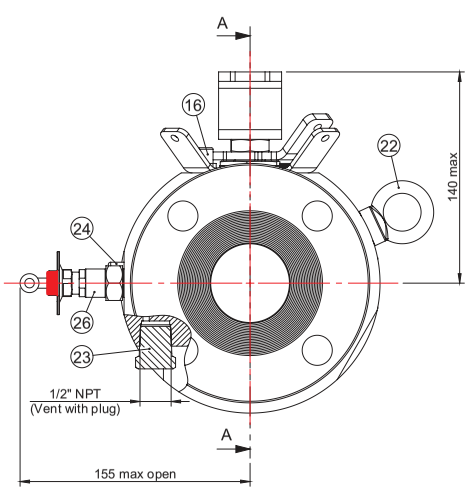
A4 - ORIZ.

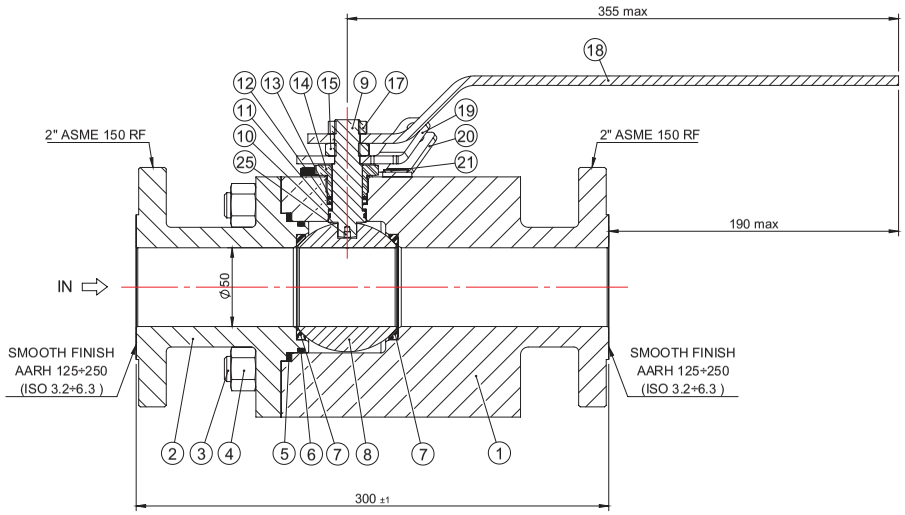
TAG No.	Cust. Item	Data Sheet	PIPING Class	SAP CODE	Indra Part Number	Operating Temperature °C	Design Pressure barg Min / Max
BLPH-MV-001	240	BS01C01RFS	01SS	VLBLNN01410100	00.VSF.2696/V	5 / 35	11 / 16,2

SBB BALL VALVE		
Item	**Description**	**Material**
1	VALVE BODY	ASTM A182 F316/316L NACE
2	CLOSURE	ASTM A182 F316/316L NACE
3	STUD BOLT	ASTM A193 B8M Cl.2
4	NUT	ASTM A194 Gr.8M
5	CLOSER SEAL RING	Graphite
6	CLOSER O-RING	FKM AED
7	SEAT	PEEK
8	BALL	ASTM A479 316/316L NACE
9	STEM	ASTM A479 316/316L NACE
10	STEM O-RING	FKM AED
11	STEM THRUST WASHER	PEEK
12	STEM SEAL RING	Graphite
13	STEM RING	St.St. 316/316L
14	STEM COMPRESSION RING	St.St. 316/316L
15	PACKING NUT LOCKING	St.St. 316/316L
16	STOP PIN	St.St. 316/316L
17	HANDLE LOCKING NUT	St.St. 316/316L
18	HANDLE	St.St. 316
19	LEVER LOCKING PLATE	St.St. 316
20	LOCKING PLATE	St.St. 316
21	LOCKING PLATE BOLT	St.St. 316
22	EYEBOLT	St.St. 316
23	PLUG 1/2" NPT	ASTM A479 316L
24	BONNET STOP PIN	St.St. 316L
25	ANTISTATIC DEVICE SPRING	ELGILOY R30003
26	**BONNET ASSEMBLY (VENT)**	
A	DUST CUP	Plastic
B	COMPRESSION NUT	St.St. 316L
C	LOCKING NUT	St.St. 316L
D	FOLLOWER	St.St. 316/316L
E	BONNET BODY	ASTM A479 316/316L NACE
F	STEM	ASTM A479 316/316L NACE
G	PACKING	Graphite
H	TIP	ASTM A479 316/316L NACE
I	TEE-BAR	St.St. 316L
L	TEE-BAR SCREW	St.St. 316L

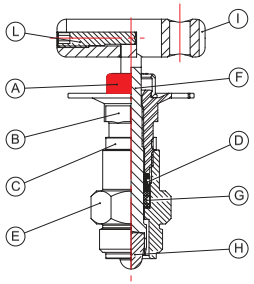
SPECIFICATION

1. Construction: 1 Ball Isolate, 1 Needle Vent
2. Inlet: 2" Cl. 150 RF (ASME B16.5
3. Outlet: 2" Cl. 150 RF (ASME B16.5
4. Vent: 1/2" NPT (ASME B1.20.1)
5. Design Code: ASME B16.34 / B16.5 / B1.20.1
6. Bore Size: Ball 50mm, Needle 5mm
7. Antistatic device
8. Anti-blow out stem
9. Design Temperature: -29°C / +100°C
10. Pressure Test: API 598, API 6D
11. Fugitive Emission Certificate according to EN ISO 15848-1
12. Fugitive Emission Test according to ISO 15848-2
13. Hydrogen Service
14. High Pressure Gas Test with Helium
15. Fire Safe: API 607 / ISO 10497 , API 6FA
16. PMI: PMI Test on body, closure and wetted parts
17. Hardness Test on body, closure and wetted parts
18. Dye Penetrant Test on body and closure
19. Cavity Relief Pressure Test
20. Antistatic Test
21. Bidirectional valve
22. Painting:
    Treatment according to spec. 123A90-DDL-MAT-SP-60006,
    Valve: System SYS-6A, Color RAL 9002
    Lever: System SYS-6A, Color RAL 9005

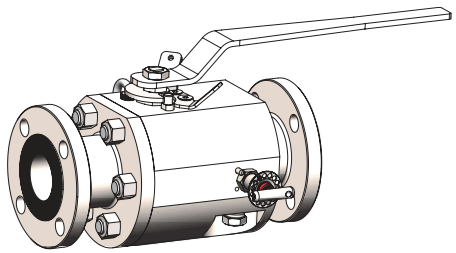




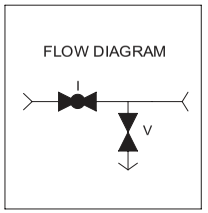
SECTION A-A



BONNET ASSEMBLY



3D VIEW



All dimensions are in mm

indra VALVES - ITALY	TITOLO: TITLE: SBB BALL VALVE FLANGED - FLANGED		DISEGNO: DWG.: 00.VSF.2702/V
20013 Magenta (MI) - Italy - Via Novara, 10/B Tel. 02 97.29.86.63 r.a. - Fax 02 97.29.18.55 E-mail: indra@indra.it - http://www.indra.it	MODELLO: MODEL: SBB-798-HR-50-J150RF3-J-D		REV.: 03 A DATA: DATE: 26/07/2024
	CODICE: CODE: 00.VSF.2702/V		NOTE / NOTES: *Rev03: updated drawing*
SCALA: SCALE: N/A	FOGLIO: SHEET: 1/1	MATERIALE: MATERIAL: See Table	
DISEGNATO DA: DRAWN BY: S.M	CONTROLLATO DA: CONTROLLED BY: D.R	PESO: WEIGHT: 31,5 kg (max)	
DATA: DATE: 15/05/2024	REVISIONATO DA: REVISED BY: D.S	RICHIESTO DA: REQUESTED BY: G.G	

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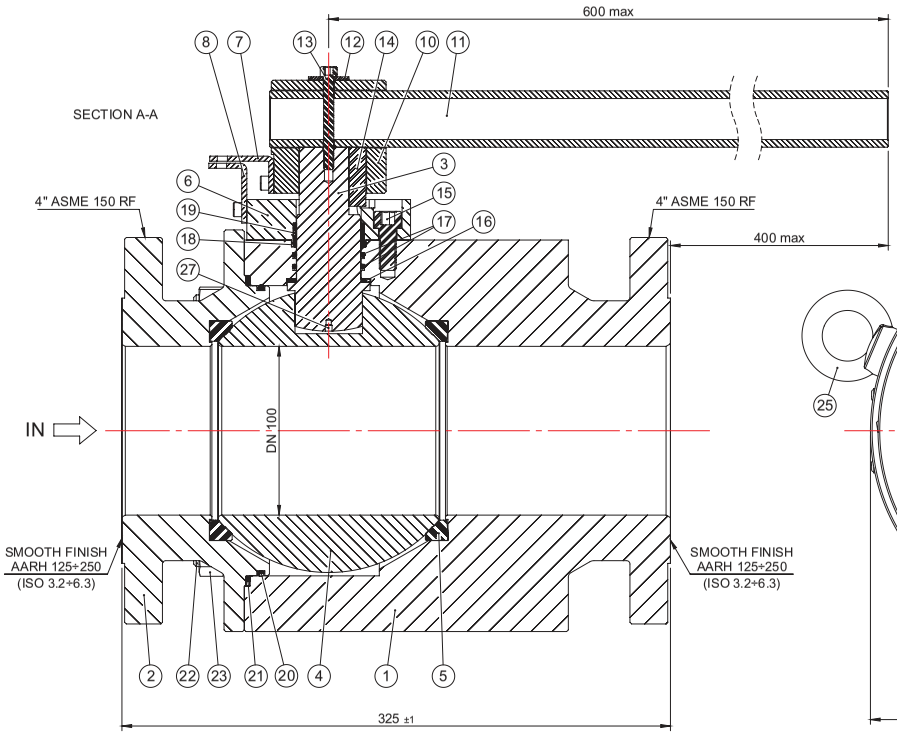
A4 - ORIZ.

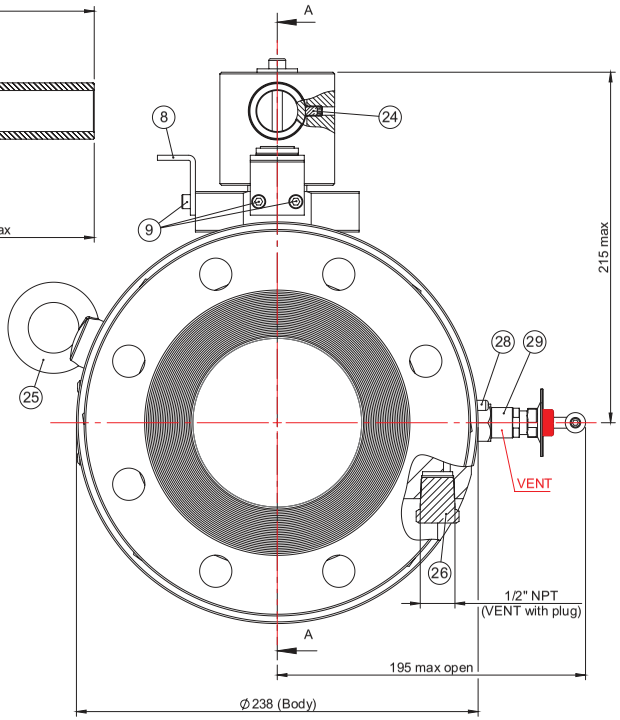
TAG No.	Cust. Item	Data Sheet	PIPING Class	SAP CODE	Indra Part Number	Operating Temperature °C	Design Pressure barg Min / Max
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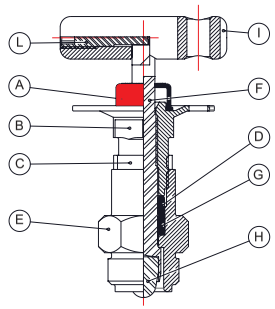
SBB BALL VALVE		
Item	Description	Material
1	BODY	ASTM A182 F316/316L NACE
2	CLOSURE	ASTM A182 F316/316L NACE
3	STEM	ASTM A479 316/316L NACE
4	BALL	ASTM A479 316/316L NACE
5	SEAT	RPTFE
6	COVER PLATE	ASTM A479 316/316L NACE
7	LEVER PLATE	St.St. 316
8	LOCKING PLATE	St.St. 316
9	PLATE BOLT	St.St. 316
10	LEVER	St.St. 316
11	LEVER PIPE	St.St. 316
12	LEVER BOLT WASHER	St.St. 316
13	LEVER PIPE BOLT	St.St. 316
14	STEM KEY	St.St. 316
15	COVER PLATE BOLT	ASTM A193 B8M Cl.2
16	STEM WASHER	316+PTFE
17	STEM O-RING	FKM AED
18	STEM GASKET	GRAPHITE
19	COVER PLATE BEARING	316+PTFE
20	CLOSURE O-RING	FKM AED
21	CLOSURE GASKET	GRAPHITE
22	BODY STUD	ASTM A193 B8M Cl.2
23	BODY NUT	ASTM A194 Gr.8M
24	LEVER BOLT	St.St. 316
25	LIFTING EYE BOLT	St.St. 316
26	PLUG 1/2" NPT	ASTM A479 316L
27	ANTISTATIC DEVICE SPRING	ELGILOY R30003
28	BONNET STOP PIN	St.St. 316L
29	**BONNET ASSEMBLY (VENT)**	
A	DUST CUP	Plastic
B	COMPRESSION NUT	St.St. 316L
C	LOCKING NUT	St.St. 316L
D	FOLLOWER	St.St. 316/316L
E	BONNET BODY	ASTM A479 316/316L NACE
F	STEM	ASTM A479 316/316L NACE
G	PACKING	Graphite
H	TIP	ASTM A479 316/316L NACE
I	TEE-BAR	St.St. 316L
L	TEE-BAR SCREW	St.St. 316L

SPECIFICATION

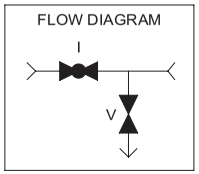
1. Construction: 1 Ball Isolate, 1 Needle Vent
2. Inlet: 4" CL. 150 RF (ASME B16.5)
3. Outlet: 4" CL. 150 RF (ASME B16.5)
4. Vent: 1/2" NPT Female (ASME B1.20.1)
5. Design Code: ASME B16.34, ASME B16.5, ASME B1.20.1, API 6D
6. Bore size: Ball DN100, Needle 5mm
7. Face to face dimension according to ASME B16.10
8. Antistatic device
9. Anti-blow out stem
10. Design Temperature: -29°C / +100°C
11. Pressure Test: API 598, API 6D
12. Dye Penetrant Test on body and closure
13. PMI: PMI Test on body, closure and wetted parts
14. High Pressure Gas Test with Helium
15. Cavity Relief Pressure Test
16. Antistatic Test
17. Hardness Test on body, closure and wetted parts
18. Hydrogen Service
19. Fugitive Emission Certificate according to ISO 15848-1
20. Fugitive Emission Test according to ISO 15848-2
21. Fire Safe: API 607 / ISO 10497, API 6FA
22. Bidirectional valve
23. Painting: Treatment according to spec. 123A90-DDL-MAT-SP-60006,
    Valve: System SYS-6A, Color RAL 9002
    Lever: System SYS-6A, Color RAL 9005



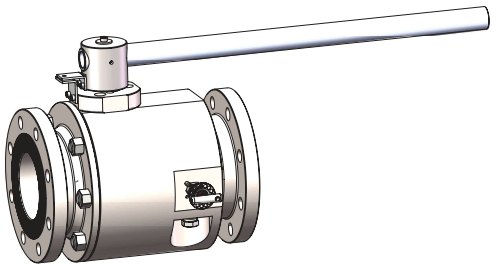




BONNET ASSEMBLY



All dimensions are in mm



3D VIEW

TITOLO: TITLE:	SBB BALL VALVE FLANGED - FLANGED		DISEGNO: DWG.: 00.VSF.2700/V
MODELLO: MODEL:	SBB-798-HR-100-N150RF3-N-D		REV.: 03 A DATA: DATE: 26/07/2024
CODICE: CODE:	00.VSF.2700/V		NOTE / NOTES: *Rev03: updated drawing*
SCALA: SCALE: N/A	FOGLIO: SHEET: 1/1	MATERIALE: MATERIAL: See Table	
DISEGNATO DA: DRAWN BY: M.C	CONTROLLATO DA: CONTROLLED BY: D.R	PESO: WEIGHT: 80 kg (max)	
DATA: DATE: 17/05/2024	REVISIONATO DA: REVISED BY: D.S	RICHIESTO DA: REQUESTED BY: G.G	

20013 Magenta (MI) - Italy - Via Novara, 10/B
Tel. 02 97.29.86.63 r.a. - Fax 02 97.29.18.55
E-mail: indra@indra.it - http://www.indra.it

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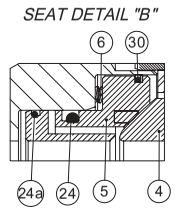
A4 - ORIZ.

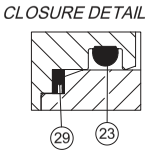
TAG No.	Cust. Item	Data Sheet	PIPING Class	SAP CODE	Indra Part Number	Operating Temperature °C	Design Pressure barg Min / Max
BLPH-MV-006 BLPH-MV-033 BLPH-MV-191 BLPH-MV-194 BLPH-MV-196 BLPH-MV-199 BLPH-MV-201	260	BA01C01RFHS	01HSS	VLBLNN01450400	00.VSF.2700/V	-27 / 25	10 / 16,2

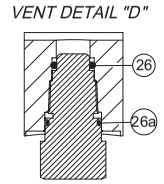
SB TRUNNION BALL VALVE		
Item	Description	Material
1	BODY	ASTM A182 F316/316L NACE
2	CLOSURE	ASTM A182 F316/316L NACE
3	STEM	ASTM A479 316/316L NACE
4	BALL	ASTM A479 316/316L NACE
5	SEAT + INSERT	ASTM A479 316/316L NACE + RPTFE
6	SEAT SPRING	ELGILOY R30003
7	BALL SUPPORT FLANGE PIN	St.St. 316/316L
8	GLANDE PLATE	ASTM A182 F316/316L NACE
9	FLANGE	ASTM A182 F316/316L NACE
10	BALL SUPPORT FLANGE	St.St. 316/316L
11	FLANGE PIN	St.St. 316/316L
12	STEM KEY	St.St. 316/316L
13	LIFTING EYE BOLT	St.St. 316
14	VALVE SUPPORT BOLT	St.St.316/316L
15	STEM BEARING	AISI 316 + PTFE
16	STEM WASHER	AISI 316 + PTFE
17	VALVE SUPPORT	AISI 316
18	BALL WASHER	AISI 316 + PTFE
18a	BALL BEARING	AISI 316 + PTFE
19	FLANGE BEARING	AISI 316 + PTFE
20	ANTISTATIC DEVICE SPRING	ELGILOY R30003
21	STEM O-RING	FKM AED
22	GLANDE PLATE O-RING	FKM AED
23	CLOSURE O-RING	FKM AED
24	SEAT O-RING PRIMARY	FKM AED
24a	SEAT O-RING SECONDARY	FKM AED
25	O-RING STEM LUBRICATOR	FKM AED
26	VENT O-RING PRIMARY	FKM AED
26a	VENT O-RING SECONDARY	FKM AED
27	GLANDE PLATE GASKET	GRAPHITE
28	STEM GASKET	GRAPHITE
29	CLOSURE GASKET	GRAPHITE
30	SEAT GASKET	GRAPHITE
31	BODY STUD	ASTM A193 B8M Cl.2
32	BODY NUT	ASTM A194 Gr.8M
33	GLANDE PLATE BOLT	ASTM A193 B8M Cl.2
34	FLANGE BOLT	ASTM A193 B8M Cl.2
35	STEM LUBRICATOR	St.St.316/316L
36	VENT BLEEDER	St.St.316/316L
37	SEAT LUBRICATOR	St.St.316/316L
37a	CHECK VALVE	St.St.316/316L
38	BODY DRAIN	St.St.316/316L
39	GEAR STUD	ASTM A193 B8M Cl.2
40	GEAR NUT	ASTM A194 Gr.8M
41	GEAR PIN	St.St. 316/316L
42	GEAR	DUCTILE IRON
43	HANDWHEEL	St.St. 316

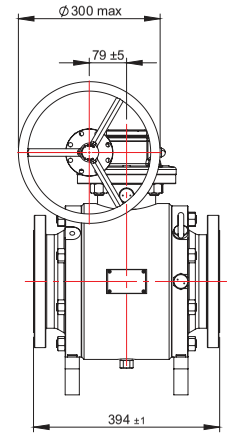
SPECIFICATION

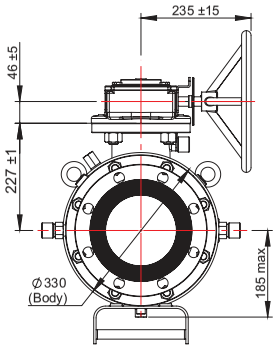
1. Construction: 1 Ball Isolate
2. Inlet: 6" CL. 150 RF (ASME B16.5)
3. Outlet: 6" CL. 150 RF (ASME B16.5)
4. Design Code: ASME B16.34/ASME B16.5/API 6D
5. Bore size: DN150
6. Face to face dimension according to ASME B16.10
7. Antistatic device
8. Anti-blow out stem
9. Design temperature: -29°C / +100°C
10. Pressure test: API 598, API 6D
11. PMI: PMI Test on body, closure and wetted parts
12. Bidirectional valve
13. Cavity Relieve Pressure Test
14. Antistatic Test
15. Fire Safe: API 607 / ISO 10497, API 6FA
16. Dye Penetrant Test on body and closure
17. High Pressure Gas Test with Helium
18. Fugitive Emission Test according to ISO 15848-2
19. Fugitive Emission Certificate according to ISO 15848-1
20. Hydrogen Service
21. Hardness Test on body, closure and wetted parts
22. Painting: treatment according to spec. 123A90-DDL-MAT-SP-60006,
    Valve: System SYS-6A, Color RAL 9002
    Gear: System SYS-6A, Color RAL 9005

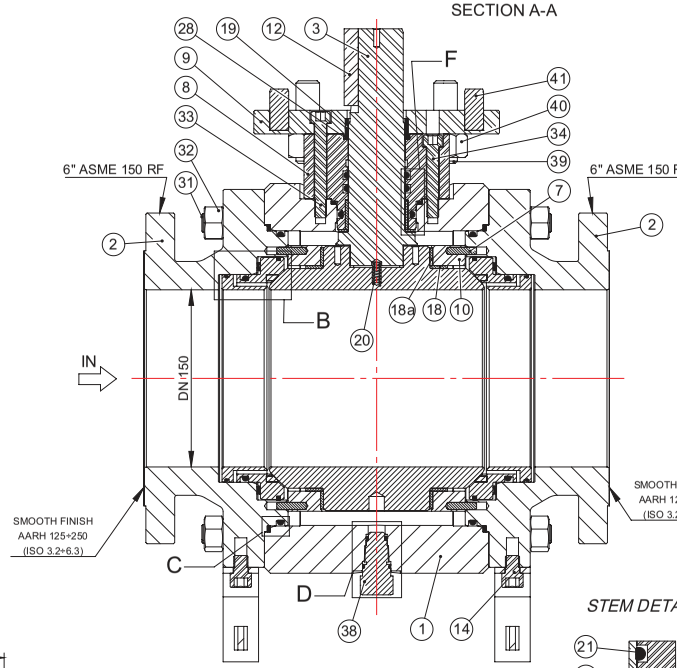


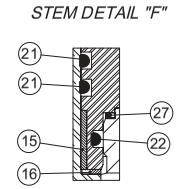


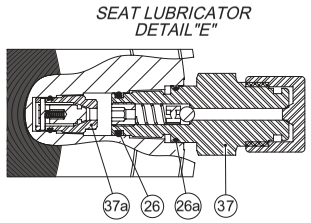


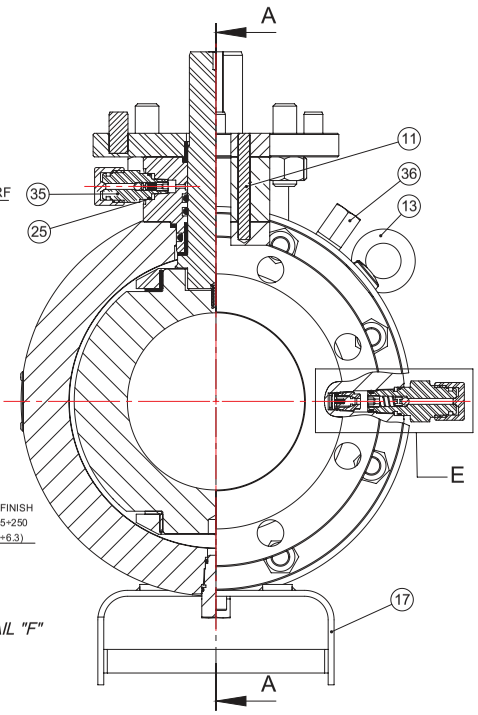


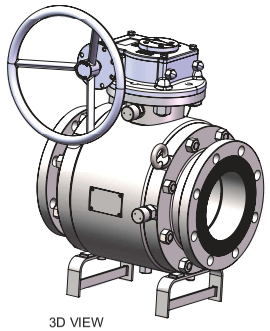


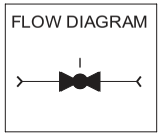












All dimensions are in mm

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TITOLO: TITLE:	SB TRUNNION BALL VALVE FLANGED - FLANGED	DISEGNO: DWG.:	00.VSFT.0224/V
MODELLO: MODEL:	SB-598-TRU-HR-150-Q150RF3-Q	REV.: 03 A	DATA: DATE: 25/07/2024
CODICE: CODE:	00.VSFT.0224/V	NOTE / NOTES:	*Rev03: updated drawing*
SCALA: SCALE: N/A	FOGLIO: SHEET: 1/1	MATERIALE: MATERIAL:	See Table
DISEGNATO DA: DRAWN BY: D.S	CONTROLLATO DA: CONTROLLED BY: D.R	PESO: WEIGHT:	180 Kg (max)
DATA: DATE: 20/05/2024	REVISIONATO DA: REVISED BY: D.S	RICHIESTO DA: REQUESTED BY:	G.G

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A4 - ORIZ.

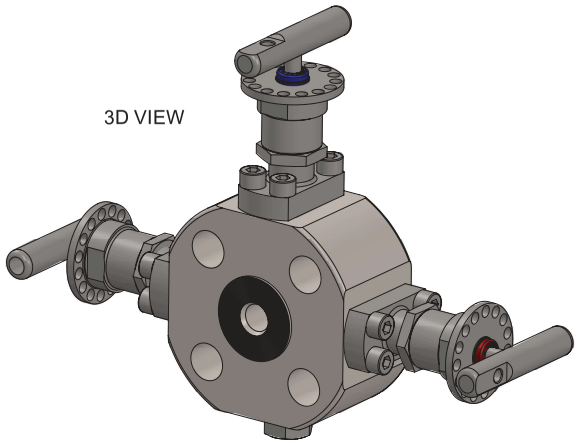
TAG No.	Cust. Item	Data Sheet	PIPING Class	SAP CODE	Indra Part Number	Operating Temperature °C	Design Pressure barg Min / Max
BLPH-MV-005	270	BA01C01RFHS	01HSS	VLBLNN01460600	00.VSFT.0224/V	-27 / 25	10 / 16,2

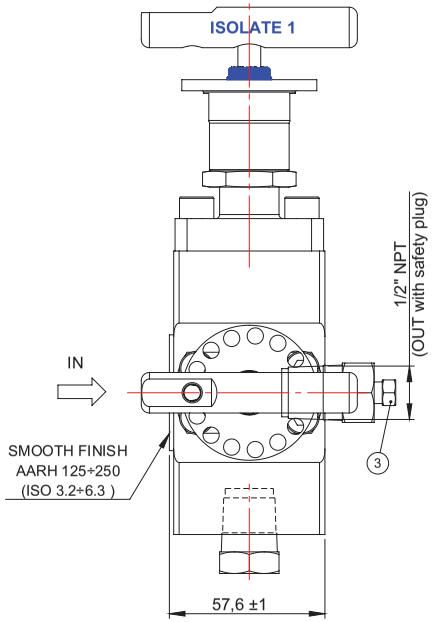
DBB MONOFLANGE VALVE		
Item	**Description**	**Material**
1	VALVE BODY	ASTM A182 F316/316L NACE
2	PLUG 1/2" NPT	ASTM A479 316L
3	SAFETY PLUG 1/2" NPT	ASTM A479 316L
4	**O.S.&Y. BONNET ASSEMBLY (ISOLATE, VENT)**	
A	DUST CUP	Plastic
B	COMPRESSION NUT	St.St. 316L
C	LOCKING NUT	St.St. 316/316L
D	FOLLOWER	St.St. 316/316L
E	BONNET BODY	ASTM A479 316/316L NACE
F	STEM	ASTM A479 316/316L NACE
G	PACKING	Graphite
H	TIP	Stellite
I	TEE-BAR	St.St. 316L
L	TEE-BAR SCREW	St.St. 316L
M	BOLTING	ASTM A193 B8M Cl.2

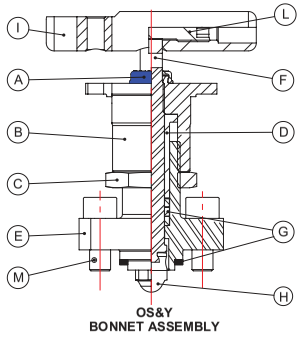
SPECIFICATION

1. Construction: 2 Needle Isolate, 1 Needle Vent
2. Inlet: 3/4" 300 RF (ASME B16.5)
3. Outlet: 1/2" NPT-Female (ASME B1.20.1)
4. Vent: 1/2" NPT-Female (ASME B1.20.1)
5. Pressure Test: API 598, API 6D
6. Design Code: ASME B16.5 / B31.3 / B1.20.1
7. Design Temperature: -46°C / +80°C
8. Pressure Test: API 598, API 6D
9. Fugitive Emission Test according to ISO 15848-2
10. High Pressure Gas Test with Helium
11. Fire Safe: API 607 / ISO 10497 , API 6FA
12. Fugitive Emission Certificate according to EN ISO 15848-1
14. Hydrogen Service
15. PMI: PMI Test on body and wetted parts
16. Dye Penetrant Test on body and bonnet body
17. Body and wetted parts in according to Norsok
18. Hardness Test on body and wetted parts
19. Painting: Treatment according to spec. 123A90-DDL-MAT-SP-60006, System SYS-6A, Color RAL 9002

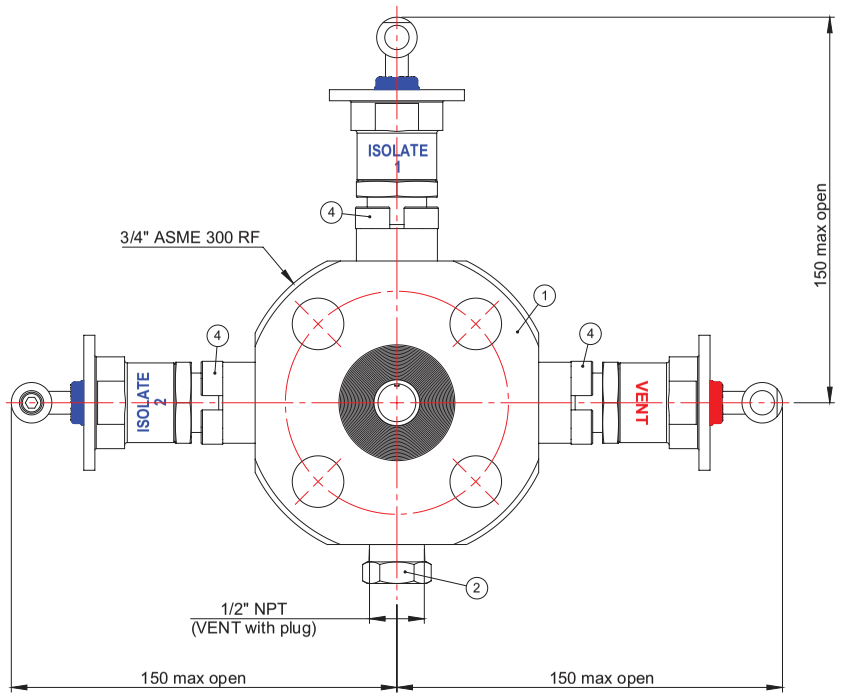
3D VIEW



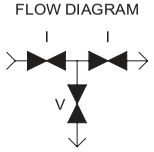




OS&Y
BONNET ASSEMBLY



FLOW DIAGRAM



All dimensions are in mm

TAG No.	Cust. Item	Data Sheet	PIPING Class	SAP CODE	Indra Part Number	Operating Temperature °C	Design Pressure barg Min / Max
BLPH-MV-013 - BLPH-MV-014 BLPH-MV-091 - BLPH-MV-092 BLPH-MV-096 - BLPH-MV-097 BLPH-MV-204 - BLPH-MV-205 BLPH-MV-282 - BLPH-MV-283 BLPH-MV-421 - BLPH-MV-422 BLPH-MV-438 - BLPH-MV-439	280	MD03C02YH	03HSS	VLBMNN00013Q0H	00.MNF.0604/V	-27 / 65	40 / 42,2

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TITOLO: TITLE:	DBB MONOFLANGE VALVE	DISEGNO: DWG.:	00.MNF.0604/V
MODELLO: MODEL:	DBB-737-HR-E300RF3-D-D	REV.: 02 A	DATA: DATE: 27/06/2024
CODICE: CODE:	00.MNF.0604/V	NOTE / NOTES:	*Rev01: Updated drawing* *Rev02: Updated drawing*
SCALA: SCALE: N/A	FOGLIO: SHEET: 1/1	MATERIALE: MATERIAL:	See Table
DISEGNATO DA: DRAWN BY: D.R	CONTROLLATO DA: CONTROLLED BY: M.C	PESO: WEIGHT:	5,8 kg (max)
DATA: DATE: 14/05/2024	REVISIONATO DA: REVISED BY: S.M	RICHIESTO DA: REQUESTED BY:	G.G

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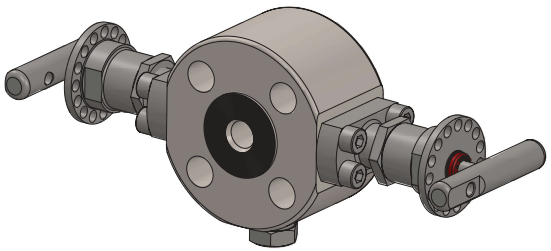
A4 - ORIZ.

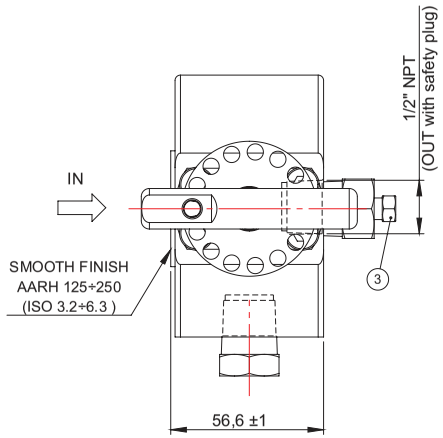
SBB MONOFLANGE VALVE		
Item	Description	Material
1	VALVE BODY	ASTM A182 F316/316L NACE
2	PLUG 1/2" NPT	ASTM A479 316L
3	SAFETY PLUG 1/2" NPT	ASTM A479 316L
4	**O.S.&Y. BONNET ASSEMBLY (ISOLATE, VENT)**	
A	DUST CUP	Plastic
B	COMPRESSION NUT	St.St. 316L
C	LOCKING NUT	St.St. 316/316L
D	FOLLOWER	St.St. 316/316L
E	BONNET BODY	ASTM A479 316/316L NACE
F	STEM	ASTM A479 316/316L NACE
G	PACKING	Graphite
H	TIP	Stellite
I	TEE-BAR	St.St. 316L
L	TEE-BAR SCREW	St.St. 316L
M	BOLTING	ASTM A193 B8M Cl.2

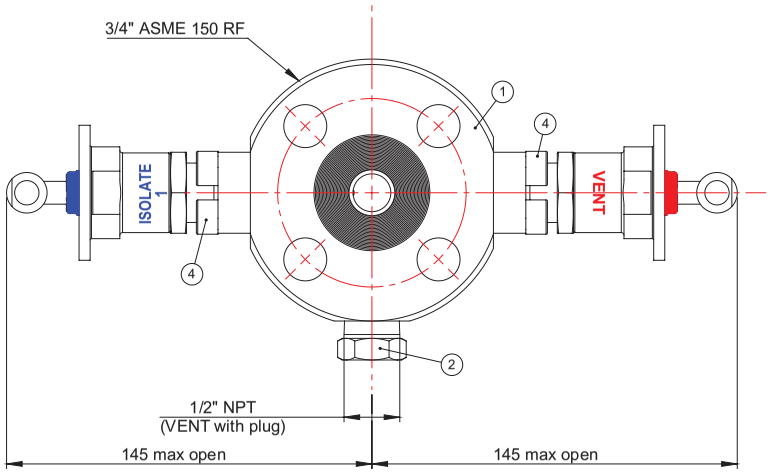
SPECIFICATION

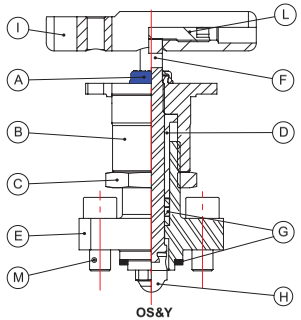
1. Construction: 1 Needle Isolate, 1 Needle Vent
2. Inlet: 3/4" 150 RF (ASME B16.5)
3. Outlet: 1/2" NPT-Female (ASME B1.20.1)
4. Vent: 1/2" NPT-Female (ASME B1.20.1)
5. Pressure Test: API 598, API 6D
6. Design Code: ASME B16.5 / B31.3 / B1.20.1
7. Design Temperature: -29°C / +100°C
8. Pressure Test: API 598, API 6D
9. Fugitive Emission Test according to ISO 15848-2
10. High Pressure Gas Test with Helium
11. Fire Safe: API 607 / ISO 10497 , API 6FA
12. Fugitive Emission Certificate according to EN ISO 15848-1
14. Hydrogen Service
15. PMI: PMI Test on body and wetted parts
16. Dye Penetrant Test on body and bonnet body
17. Body and wetted parts in according to Norsok
18. Hardness Test on body and wetted parts
19. Painting: Treatment according to spec. 123A90-DDL-MAT-SP-60006, System SYS-6A, Color RAL 9002

3D VIEW



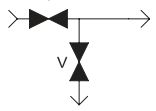






OS&Y
BONNET ASSEMBLY

FLOW DIAGRAM



All dimensions are in mm

TAG No.	Cust. Item	Data Sheet	PIPING Class	SAP CODE	Indra Part Number	Operating Temperature °C	Design Pressure barg Min / Max
BLPH-MV-025 BLPH-MV-038 BLPH-MV-213 BLPH-MV-407	290	MS01C02YH	01HSS	VLBNNN00023Q0H	00.MNF.0608/V	-27 / 25	10 / 16,2

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TITOLO: TITLE:	SBB MONOFLANGE VALVE	DISEGNO: DWG.:	00.MNF.0608/V
MODELLO: MODEL:	SBB-727-HR-E150RF3-D-D	REV.: 01 A	DATA: DATE: 21/06/2024
CODICE: CODE:	00.MNF.0608/V	NOTE / NOTES:	*Rev01: Updated drawing*
SCALA: SCALE: N/A	FOGLIO: SHEET: 1/1	MATERIALE: MATERIAL:	See Table
DISEGNATO DA: DRAWN BY: D.R	CONTROLLATO DA: CONTROLLED BY: M.C	PESO: WEIGHT:	4,3 kg (max)
DATA: DATE: 15/05/2024	REVISIONATO DA: REVISED BY: D.R	RICHIESTO DA: REQUESTED BY:	G.G

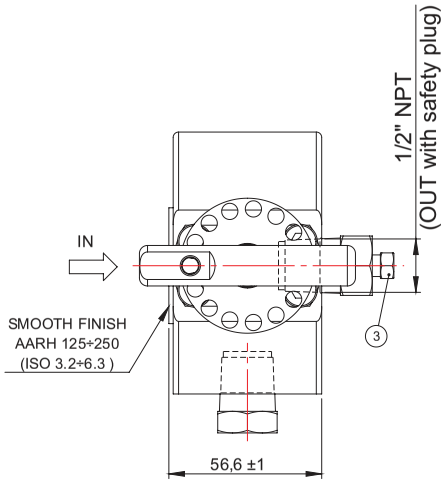
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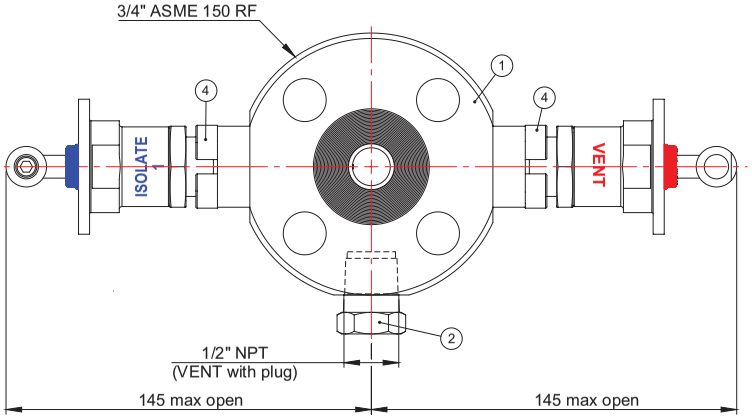
A4 - ORIZ.

SBB MONOFLANGE VALVE		
Item	Description	Material
1	VALVE BODY	ASTM A182 F316/316L NACE
2	PLUG 1/2" NPT	ASTM A479 316L
3	SAFETY PLUG 1/2" NPT	ASTM A479 316L
4	**O.S.&Y. BONNET ASSEMBLY (ISOLATE, VENT)**	
A	DUST CUP	Plastic
B	COMPRESSION NUT	St.St. 316L
C	LOCKING NUT	St.St. 316/316L
D	FOLLOWER	St.St. 316/316L
E	BONNET BODY	ASTM A479 316/316L NACE
F	STEM	ASTM A479 316/316L NACE
G	PACKING	Graphite
H	TIP	Stellite
I	TEE-BAR	St.St. 316L
L	TEE-BAR SCREW	St.St. 316L
M	BOLTING	ASTM A193 B8M Cl.2

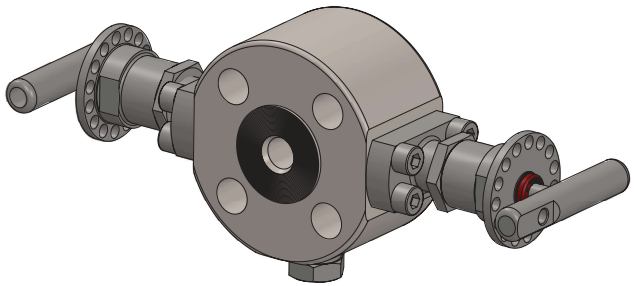
SPECIFICATION

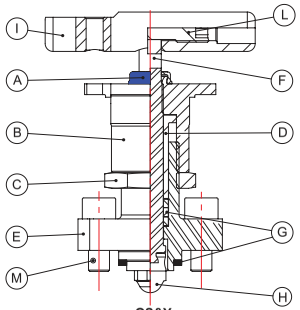
1. Construction: 1 Needle Isolate, 1 Needle Vent
2. Inlet: 3/4" 150 RF (ASME B16.5)
3. Outlet: 1/2" NPT-Female (ASME B1.20.1)
4. Vent: 1/2" NPT-Female (ASME B1.20.1)
5. Pressure Test: API 598, API 6D
6. Design Code: ASME B16.5 / B31.3 / B1.20.1
7. Design Temperature: -29°C / +100°C
8. Pressure Test: API 598, API 6D
9. PMI: PMI Test on body and wetted parts
10. Fire Safe: API 607 / ISO 10497 , API 6FA
11. Body and wetted parts in according to Norsok
12. Hardness Test on body and wetted parts
13. Painting: Treatment according to spec. 123A90-DDL-MAT-SP-60006, System SYS-6A, Color RAL 9002





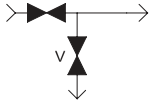
3D VIEW





OS&Y
BONNET ASSEMBLY

FLOW DIAGRAM



All dimensions are in mm

TAG No.	Cust. Item	Data Sheet	PIPING Class	SAP CODE	Indra Part Number	Operating Temperature °C	Design Pressure barg Min / Max
BLPH-MV-150 BLPH-MV-151	300	MS01C02Y	01SS	VLBNNN00033Q0H	00.MNF.0605/V	5 / 35	11 / 16,2

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E-mail: indra@indra.it - http://www.indra.it

TITOLO: TITLE:	SBB MONOFLANGE VALVE			DISEGNO: DWG.:	00.MNF.0605/V
MODELLO: MODEL:	SBB-727-E150RF3-D-D			REV.: 02	A DATA: 27/06/2024
CODICE: CODE:	00.MNF.0605/V			NOTE / NOTES: *Rev.01: Updated drawing* *Rev.02: Updated drawing*	
SCALA: SCALE:	N/A	FOGLIO: SHEET:	1/1	MATERIALE: MATERIAL:	See Table
DISEGNATO DA: DRAWN BY:	D.R	CONTROLLATO DA: CONTROLLED BY:	M.C	PESO: WEIGHT:	4,3 kg (max)
DATA: DATE:	15/05/2024	REVISIONATO DA: REVISED BY:	S.M	RICHIESTO DA: REQUESTED BY:	G.G

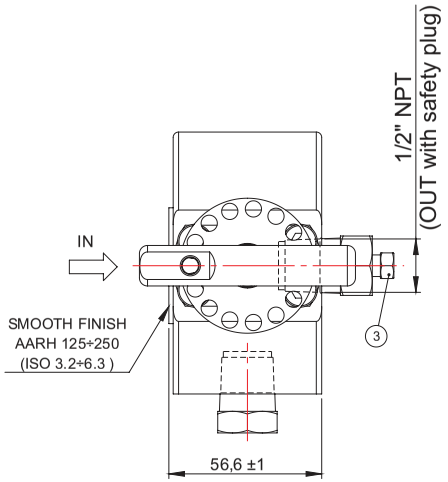
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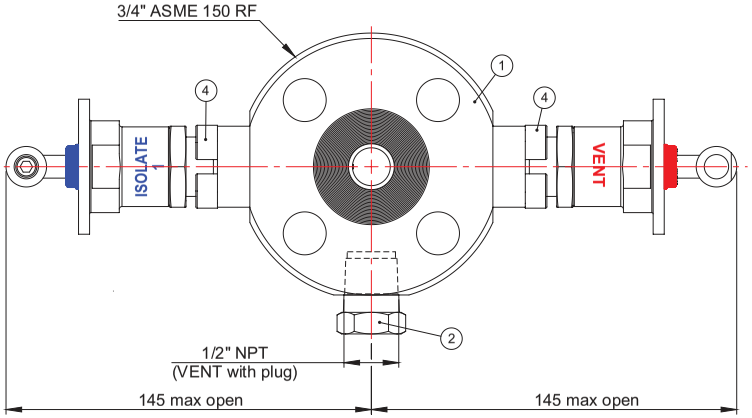
A4 - ORIZ.

SBB MONOFLANGE VALVE		
Item	Description	Material
1	VALVE BODY	ASTM A350 LF2 CL.1 NACE
2	PLUG 1/2" NPT	ASTM A350 LF2
3	SAFETY PLUG 1/2" NPT	ASTM A350 LF2
4	**O.S.&Y. BONNET ASSEMBLY (ISOLATE, VENT)**	
A	DUST CUP	Plastic
B	COMPRESSION NUT	St.St. 316L
C	LOCKING NUT	St.St. 316/316L
D	FOLLOWER	St.St. 316/316L
E	BONNET BODY	ASTM A350 LF2 CL.1 NACE
F	STEM	ASTM A479 316/316L NACE
G	PACKING	Graphite
H	TIP	Stellite
I	TEE-BAR	St.St. 316L
L	TEE-BAR SCREW	St.St. 316L
M	BOLTING	ASTM A320 L7M (zinc plated)

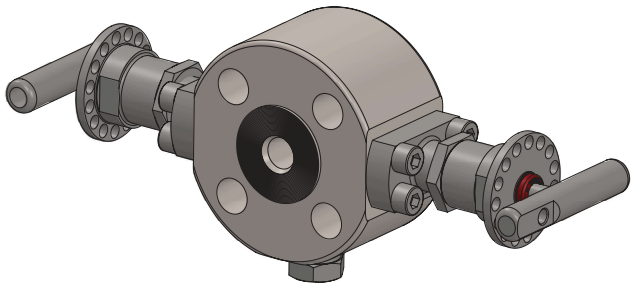
SPECIFICATION

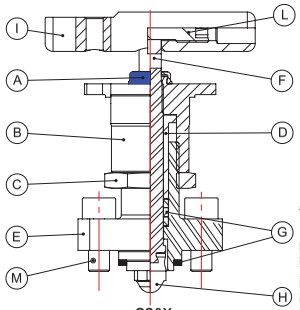
1. Construction: 1 Needle Isolate, 1 Needle Vent
2. Inlet: 3/4" 150 RF (ASME B16.5)
3. Outlet: 1/2" NPT-Female (ASME B1.20.1)
4. Vent: 1/2" NPT-Female (ASME B1.20.1)
5. Pressure Test: API 598, API 6D
6. Design Code: ASME B16.5 / B31.3 / B1.20.1
7. Design Temperature: -46°C / +100°C
8. Pressure Test: API 598, API 6D
9. PMI: PMI Test on wetted parts (excluded carbon steel)
10. Fire Safe: API 607 / ISO 10497 , API 6FA
11. Corrosion Allowance 3mm
12. Impact Test on raw material of body at -46°C
13. Hardness Test on body and wetted parts
14. Painting: Treatment according to spec. 123A90-DDL-MAT-SP-60006, System 1, Color RAL 9002





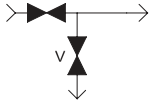
3D VIEW





OS&Y
BONNET ASSEMBLY

FLOW DIAGRAM



All dimensions are in mm

TAG No.	Cust. Item	Data Sheet	PIPING Class	SAP CODE	Indra Part Number	Operating Temperature °C	Design Pressure barg Min / Max
BLPH-MV-166 BLPH-MV-167 BLPH-MV-386	310	MS01B02Y	01CS	VLBNNN00063Q0H	00.MNF.0612/V	-10 /70	10 / 17,7

indra VALVES - ITALY
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Tel. 02 97.29.86.63 r.a. - Fax 02 97.29.18.55
E-mail: indra@indra.it - http://www.indra.it

TITOLO: TITLE:	SBB MONOFLANGE VALVE	DISEGNO: DWG.:	00.MNF.0612/V
MODELLO: MODEL:	SBB-727-E150RF3-D-D	REV.: 01 A	DATA: DATE: 27/06/2024
CODICE: CODE:	00.MNF.0612/V	NOTE / NOTES:	*Rev01: Updated drawing*
SCALA: SCALE: N/A	FOGLIO: SHEET: 1/1	MATERIALE: MATERIAL:	See Table
DISEGNATO DA: DRAWN BY: D.R	CONTROLLATO DA: CONTROLLED BY: M.C	PESO: WEIGHT:	4,3 kg (max)
DATA: DATE: 21/06/2024	REVISIONATO DA: REVISED BY: S.M	RICHIESTO DA: REQUESTED BY:	G.G

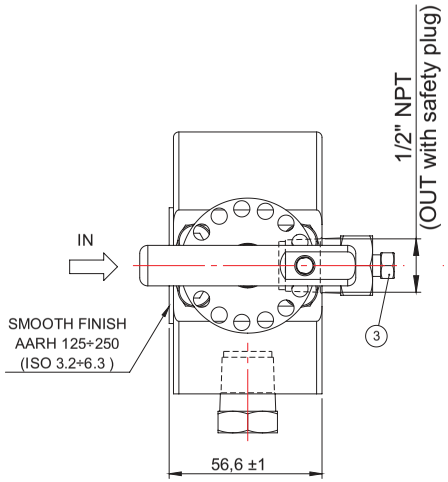
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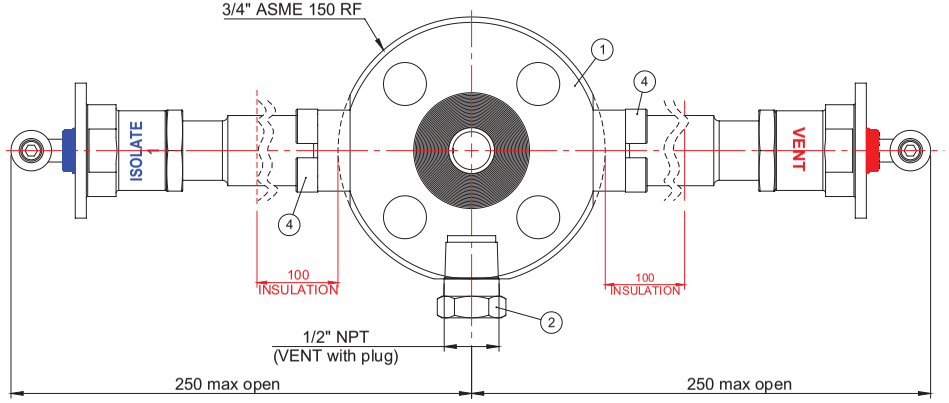
A4 - ORIZ.

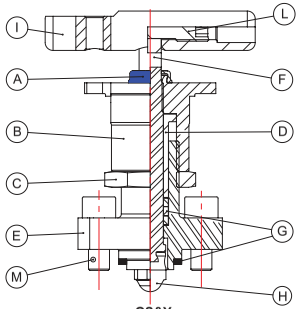
SBB MONOFLANGE VALVE		
Item	Description	Material
1	VALVE BODY	ASTM A350 LF2 CL.1 NACE
2	PLUG 1/2" NPT	ASTM A350 LF2
3	SAFETY PLUG 1/2" NPT	ASTM A350 LF2
4	**O.S.&Y. BONNET ASSEMBLY (ISOLATE, VENT)**	
A	DUST CUP	Plastic
B	COMPRESSION NUT	St.St. 316L
C	LOCKING NUT	St.St. 316/316L
D	FOLLOWER	St.St. 316/316L
E	BONNET BODY	ASTM A350 LF2 CL.1 NACE
F	STEM	ASTM A479 316/316L NACE
G	PACKING	Graphite
H	TIP	Stellite
I	TEE-BAR	St.St. 316L
L	TEE-BAR SCREW	St.St. 316L
M	BOLTING	ASTM A320 L7M (zinc plated)

SPECIFICATION

1. Construction: 1 Needle Isolate, 1 Needle Vent
2. Inlet: 3/4" 150 RF (ASME B16.5)
3. Outlet: 1/2" NPT-Female (ASME B1.20.1)
4. Vent: 1/2" NPT-Female (ASME B1.20.1)
5. Pressure Test: API 598, API 6D
6. Design Code: ASME B16.5 / B31.3 / B1.20.1
7. Design Temperature: -46°C / +100°C
8. Pressure Test: API 598, API 6D
9. PMI: PMI Test on wetted parts (excluded carbon steel)
10. Fire Safe: API 607 / ISO 10497 , API 6FA
11. Bonnets are suitable for insulation up to 100mm
12. Corrosion Allowance 3mm
13. Impact Test on raw material of body at -46°C
14. Hardness Test on body and wetted parts
15. Painting: Treatment according to spec. 123A90-DDL-MAT-SP-60006, System 9, Color RAL 9002

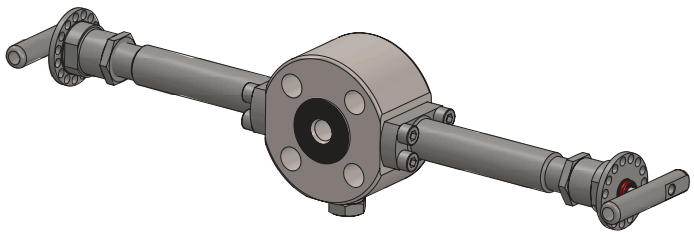


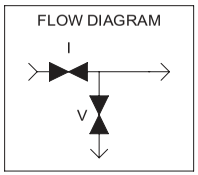




OS&Y
BONNET ASSEMBLY

3D VIEW





All dimensions are in mm

TAG No.	Cust. Item	Data Sheet	PIPING Class	SAP CODE	Indra Part Number	Operating Temperature °C	Design Pressure barg Min / Max
BLPH-MV-411	320	MS01B02Y	01CS	VLBNNN00063Q0H	00.MNF.0606/V	-10 /70	10 / 17,7

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E-mail: indra@indra.it - http://www.indra.it

TITOLO: TITLE:	SBB MONOFLANGE VALVE			DISEGNO: DWG.:	00.MNF.0606/V
MODELLO: MODEL:	SBB-727-E150RF3-D-D			REV.: 02	A DATA: 27/06/2024
CODICE: CODE:	00.MNF.0606/V			NOTE / NOTES: *Rev01: Updated drawing* *Rev02: Updated drawing*	
SCALA: SCALE:	N/A	FOGLIO: SHEET:	1/1	MATERIALE: MATERIAL:	See Table
DISEGNATO DA: DRAWN BY:	D.R	CONTROLLATO DA: CONTROLLED BY:	M.C	PESO: WEIGHT:	5 kg (max)
DATA: DATE:	15/05/2024	REVISIONATO DA: REVISED BY:	S.M	RICHIESTO DA: REQUESTED BY:	G.G

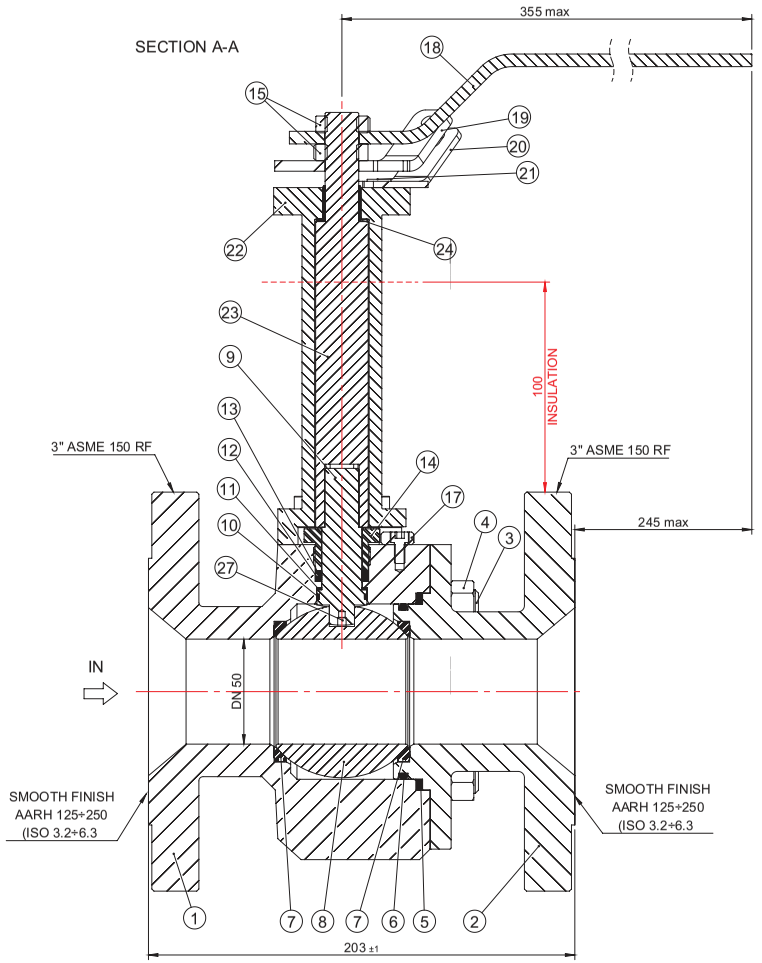
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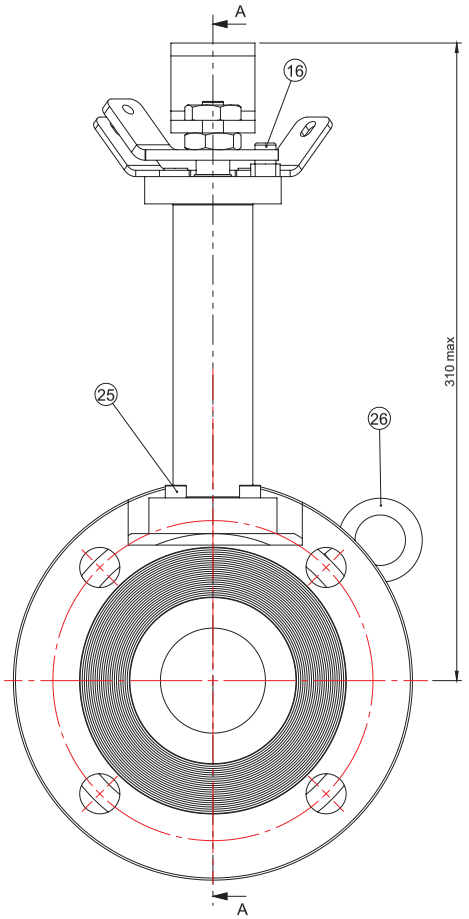
A4 - ORIZ.

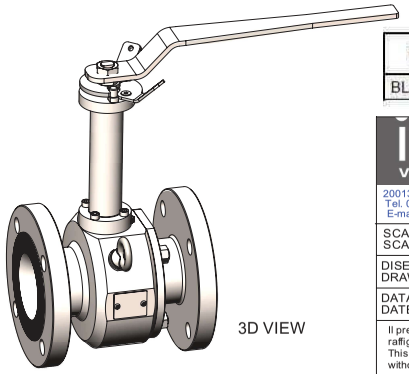
SB BALL VALVE		
Item	**Description**	**Material**
1	VALVE BODY	ASTM A350 LF2 CL.1 NACE
2	CLOSER	ASTM A350 LF2 CL.1 NACE
3	STUD BOLT	ASTM A193 B7M + HDG
4	NUT	ASTM A194 Gr.2HM + HDG
5	CLOSER SEAL RING	GRAPHITE
6	CLOSER O-RING	FKM AED
7	SEAT	RPTFE
8	BALL	ASTM A479 316/316L NACE
9	STEM	ASTM A479 316/316L NACE
10	STEM O-RING	FKM AED
11	STEM THRUST WASHER	PEEK
12	STEM SEAL RING	GRAPHITE
13	STEM RING	St.St. 316/316L
14	STEM COMPRESSION RING	St.St. 316/316L
15	HANDLE LOCKING NUT	St.St. 316/316L
16	STOP PIN	St.St. 316/316L
17	ECCENTRIC	St.St. 316
18	HANDLE	St.St. 316
19	LEVER LOCKING PLATE	St.St. 316
20	LOCKING PLATE	St.St. 316
21	LOCKING PLATE BOLT	St.St. 316
22	BRACKET	ASTM A350 LF2 CL.1 NACE
23	STEM EXTENSION	ASTM A479 316/316L NACE
24	BRACKET BEARING	PTFE
25	BRACKET BOLTING	ASTM A193 B7M + HDG
26	EYEBOLT	C.S.
27	ANTISTATIC DEVICE SPRING	ELGILOY R30003

SPECIFICATION

1. Construction: 1 Ball Isolate
2. Inlet: 3" Cl.150 RF (ASME B16.5)
3. Outlet: 3" Cl.150 RF (ASME B16.5)
4. Design Code: ASME B16.34/B16.5
5. Bore Size: DN 50
6. Face to face dimension according to ASME B16.10
7. Antistatic device
8. Anti-blow out stem
9. Design temperature: -46°C / +100°C
10. Pressure test: API 598, API 6D
11. Corrosion Allowance 3mm
12. Lever is suitable for insulation up to 100mm
13. PMI: PMI Test on wetted parts (excluded carbon steel)
14. Hardness Test on body, closure and wetted parts
15. Bidirectional valve
16. Cavity Relief PressureTest
17. Antistatic Test
18. Fire Safe: API 607 / ISO 10497, API 6FA
19. Painting: treatment according to spec. 123A90-DDL-MAT-SP-60006,
    Valve: System SYS-9, Color RAL 9002
    Lever: System SYS-9, Color RAL 9005







3D VIEW

FLOW DIAGRAM



All dimensions are in mm

TAG No.	Cust. Item	Data Sheet	PIPING Class	SAP CODE	Indra Part Number	Operating Temperature °C	Design Pressure barg Min / Max
BLPH-MV-467	390	BC01B01RF	01CS	VBD0NN16610300	00.VSF.2716(T)	-10 /70	10 / 17,7

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TITOLO: TITLE:	SB BALL VALVE FLANGED - FLANGED	DISEGNO: DWG.:	00.VSF.2716/V
MODELLO: MODEL:	SB-598-50-L150RF3_L	REV.: 01 A	DATA: DATE: 26/06/2024
CODICE: CODE:	00.VSF.2716/V	NOTE / NOTES:	*Rev01: Updated drawing*
SCALA: SCALE: N/A	FOGLIO: SHEET: 1/1	MATERIALE: MATERIAL:	See Table
DISEGNATO DA: DRAWN BY: S.M	CONTROLLATO DA: CONTROLLED BY: D.R	PESO: WEIGHT:	25 kg (max)
DATA: DATE: 21/06/2024	REVISIONATO DA: REVISED BY: S.M	RICHIESTO DA: REQUESTED BY:	G.G

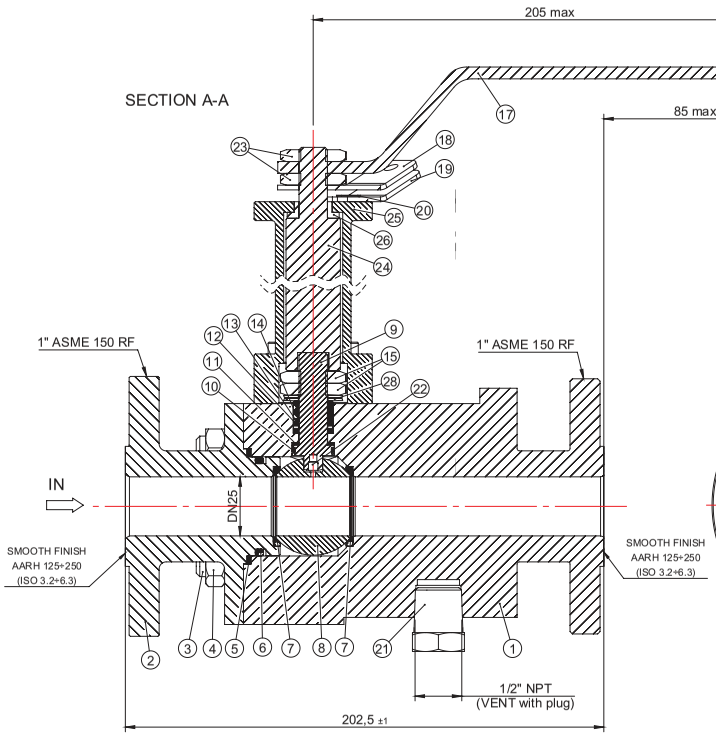
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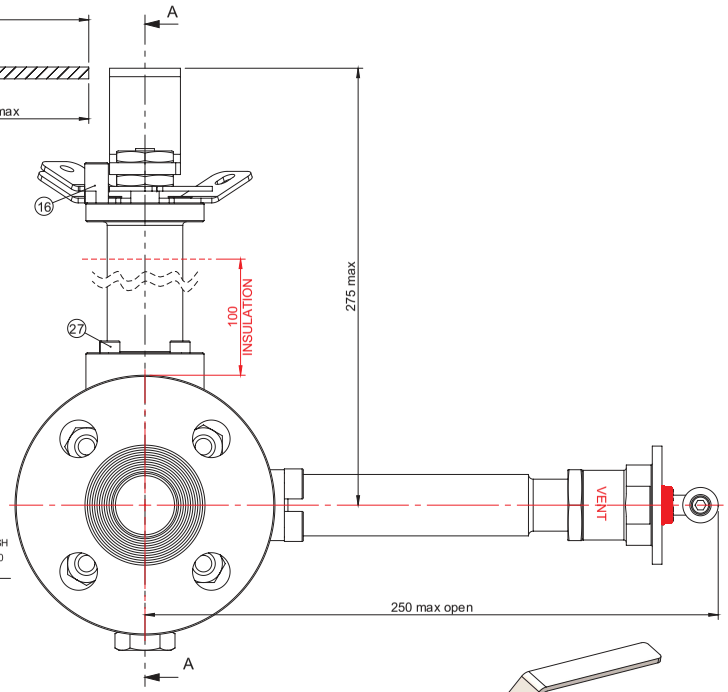
A4 - ORIZ.

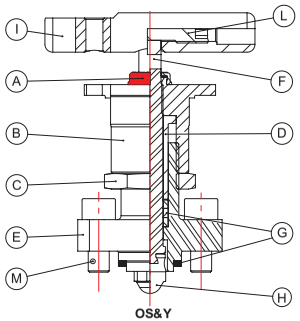
SBB BALL VALVE		
Item	**Description**	**Material**
1	VALVE BODY	ASTM A182 F55 NACE
2	CLOSER	ASTM A182 F55 NACE
3	STUD BOLT	ASTM A193 B7M + HDG
4	NUT	ASTM A194 Gr.2HM + HDG
5	CLOSER SEAL RING	Graphite
6	CLOSER O-RING	FKM AED
7	SEAT	PEEK
8	BALL	ASTM A479 F55 NACE
9	STEM	ASTM A479 F55 NACE
10	STEM O-RING	FKM AED
11	STEM THRUST WASHER	PEEK
12	STEM SEAL RING	Graphite
13	STEM RING	St.St. 316/316L
14	STEM COMPRESSION RING	St.St. 316/316L
15	STEM LOCKING NUT	St.St. 316/316L
16	STOP PIN	St.St. 316/316L
17	HANDLE	St.St. 316
18	LEVER LOCKING PLATE	St.St. 316
19	LOCKING PLATE	St.St. 316
20	LOCKING PLATE BOLT	St.St. 316
21	PLUG 1/2" NPT	SUPERDUPLEX F55
22	ANTISTATIC DEVICE SPRING	ELGILOY R30003
23	HANDLE LOCKING NUT	St.St. 316/316L
24	STEM EXTENSION	ASTM A479 F55 NACE
25	BRACKET	ASTM A479 316/316L NACE
26	BRACKET BEARING	PTFE
27	BRACKET BOLTING	ASTM A193 B7M + HDG
28	CUP SPRING	St.St.
29	**O.S.&Y. BONNET ASSEMBLY (VENT)**	
A	DUST CUP	Plastic
B	COMPRESSION NUT	St.St. 316L
C	LOCKING NUT	St.St. 316/316L
D	FOLLOWER	St.St. 316/316L
E	BONNET BODY	ASTM A479 F55 NACE
F	STEM	ASTM A479 F55 NACE
G	PACKING	Graphite
H	TIP	ASTM A479 F55 NACE
I	TEE-BAR	St.St. 316L
L	TEE-BAR SCREW	St.St. 316L
M	BOLTING	ASTM A193 B7M + HDG

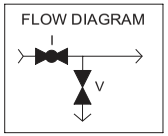
SPECIFICATION

1. Construction: 1 Ball Isolate, 1 Needle Vent
2. Inlet: 1" Cl.150 RF (ASME B16.5
3. Outlet: 1" Cl.150 RF (ASME B16.5
4. Vent: 1/2" NPT Female (ASME B1.20.1)
5. Design Code: ASME B16.34 / B16.5 / ASME B1.20.1
6. Bore Size: Ball DN25, Needle 5mm
7. Antistatic device
8. Anti-blow out stem
9. Design Temperature: -29°C / +100°C
10. Pressure Test: API 598, API 6D
11. Fire Safe: API 607 / ISO 10497, API 6FA
12. Lever and Bonnet are suitable for insulation up to 100mm
13. Cavity Relief Pressure test
14. PMI: PMI Test on body, closure and wetted parts
15. Antistatic Test
16. Hardness Test on body, closures and wetted parts
17. Impact Test on body and closer at -50°C

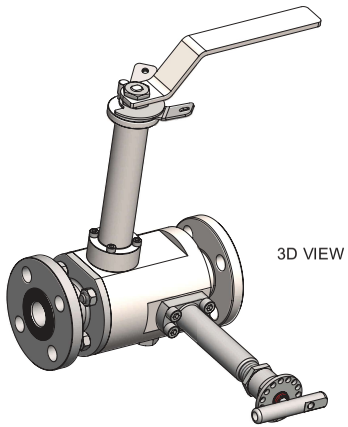








All dimensions are in mm



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TITOLO: TITLE:	SBB BALL VALVE FLANGED - FLANGED	DISEGNO: DWG.:	00.VSF.2784
MODELLO: MODEL:	SBB-798-25-F150RF3_F_D	REV.: 00 A	DATA: DATE: 03/07/2024
CODICE: CODE:	00.VSF.2784	NOTE / NOTES:	
SCALA: SCALE: N/A	FOGLIO: SHEET: 1/1	MATERIALE: MATERIAL: See Table	
DISEGNATO DA: DRAWN BY: D.R	CONTROLLATO DA: CONTROLLED BY: M.C	PESO: WEIGHT: 12,5 kg (max)	
DATA: DATE: 03/07/2024	REVISIONATO DA: REVISED BY: -	RICHIESTO DA: REQUESTED BY: G.G	

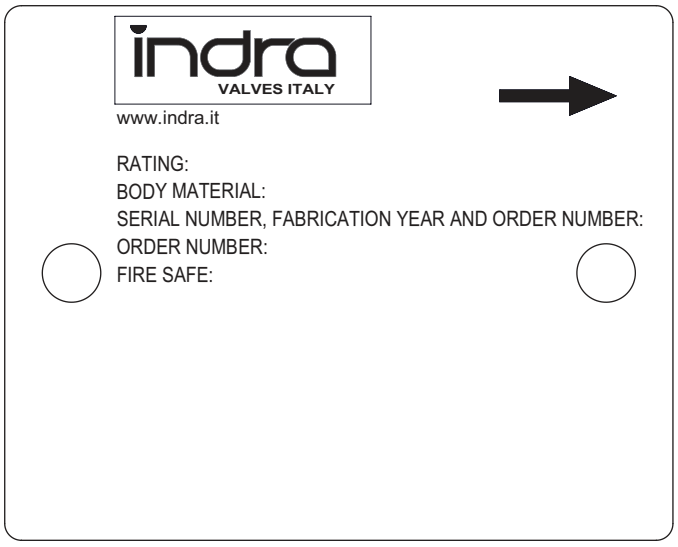
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A4 - ORIZ.

TAG No.	Cust. Item	Data Sheet	PIPING Class	SAP CODE	Indra Part Number	Operating Temperature °C	Design Pressure barg Min / Max
BLPH-MV-469	430	BS01F01RFS	01SD	VLBLNN01370100	00.VSF.2784/T	5 / 25	6 / 17,7
BLPH-MV-470	430	BS01F01RFS	01SD	VLBLNN01370100	00.VSF.2784/T	5 / 25	6 / 17,7
BLPH-MV-471	430	BS01F01RFS	01SD	VLBLNN01370100	00.VSF.2784/T	5 / 25	6 / 17,7

Tolleranze generali *Overall tollerances*	Quote critiche *Critical dimensions*
☐ ± 0,01 ☒ ± 0,1 ☐ ± 0,25	xxx
Non sono ammesse tolleranze al di fuori di quelle indicate Extra tollerances not admitted	

GENERIC NAMEPLATE





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TITOLO: TITLE:	ROSETTI_010531	DISEGNO: DWG.:	nameplate_ROSETTI_010531
MODELLO: MODEL:		REV.: 00 A	DATA: DATE: 30/05/2024
CODICE: CODE:	nameplate_ROSETTI_010531	NOTE / NOTES:	
SCALA: SCALE: 2.5:1	FOGLIO: SHEET: 1/1	MATERIALE: MATERIAL:	AISI 316L
DISEGNATO DA: DRAWN BY: D.S	CONTROLLATO DA: CONTROLLED BY: D.R	PESO: WEIGHT:	-
DATA: DATE: 30/05/2024	REVISIONATO DA: REVISED BY:	RICHIESTO DA: REQUESTED BY:	

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A4_V

PART 1 – DESIGN DOSSIER

CHAPTER 3

SECTION 4

DATA SHEETS

ROSETTI MARINO	
1	NO COMMENTS - APPROVED - WORK MAY PROCEED
2	MINOR COMMENTS - REVISE AND RESUBMIT - WORK MAY PROCEED
3	MAJOR COMMENTS – REJECTED – DO NOT PROCEED
4	APPROVAL NOT REQUIRED

NOTE: Approval doesn't relieve the supplier from mandatory compliance with contractual documents and specifications. Comments made do not imply acceptance of any cost or delivery impact.

Sign	Date
Mauro Liberato	27.11.24

Base Load Power Hub (BLPH)

BALL, SBB, DBB VALVES

DATA SHEET

Document Number: 1724000798-PP-DS-00004

Document Class: 3

02	19/11/2024	Issue for Information (IFI)	F.CRIMELLA	G.GRANATA	A.DE CARLI
01	11/09/2024	Issue for Information (IFI)	F.CRIMELLA	G.GRANATA	A.DE CARLI
00	07/08/2024	Issue for Information (IFI)	F.CRIMELLA	G.GRANATA	A.DE CARLI
Rev.	Date	Description	Prepared	Reviewed	Approved

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File: 1724000798-PP-DS-00004_2.*docx*

Revision / Change Log

Rev.	Description
0	Issue for Information (IFI)
1	Issue for Information (IFI)
2	Issue for Information (IFI)

HOLDS LIST

No.	Description
1	
2	
3	
4	

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1.1.2 Project Concept 6

2 INDRA VALVE LIST 9

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Figure 2 - Wind Park Details 6

Figure 3 – BLPH Concept 6

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1 INTRODUCTION

1.1. PROJECT OVERVIEW

Crosswind, a Shell and Eneco joint venture, was awarded the tender to develop the offshore Hollandse Kust Noord (HKN) wind farm, located 18.5km off the coast of Netherlands near the town of Egmond aan Zee. The consortium plans to have HKN operational in 2023 with an installed capacity of 759MW generating at least 3.3TWh per year. This is sufficient renewable power to supply more than 1 million Dutch households with green electricity.

Offshore wind farms produce intermittent electricity and balancing these dips and peaks and integrating this electricity into the national energy system requires new technologies. For this reason, the offshore wind farm will include several new technologies that could be implemented at full-scale in the future. The new technologies being explored include a floating solar park, a short-duration battery storage as well as long-term storage via green hydrogen produced by water electrolysis and subsequently consumed in a fuel cell. The combination of these individual measures, herein referred to as the Base Load Power Hub (BLPH) will ensure a continuous power supply regardless of the wind situation.

1.1.1 Project Location

The Hollandse Kust Noord (HKN) wind farm is located 18.5km off the coast of the Netherlands near the town of Egmond aan Zee.



Figure 1 HOLLANDSE KUST NOORD WIND PARK Location Map



Figure 2 - Wind Park Details

The wind farm will consist of No. 69 x 11.5MW wind turbine generators each to be installed on a dedicated monopile structure. A 70th monopile located on coordinates E 590719.1, N 5841602.3 is reserved for installing the platform accommodating the BLPH. The monopile structure was designed and installed by Van Oord Offshore Wind (VooW) and therefore not part of the BLPH scope.

1.1.2 Project Concept

All components included in the BLPH will be integrated onshore on a topsides and installed in an offshore location within the boundaries of the HKN wind farm. At its simplest, the BLPH will store energy during periods of high electricity generation from renewable sources (a wind turbine generator and the floating solar PV farm) and release it during periods of low generation. In practice. It is expected that the energy stored will supplement generation from renewable sources to ensure that at least 1.0MW of power is exported to the electrical grid regardless of wind/solar availability.

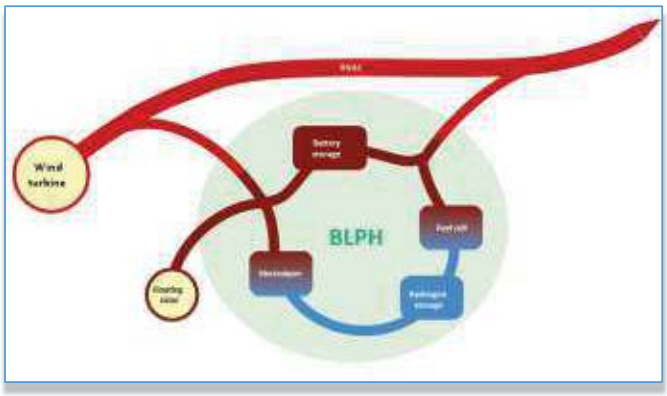


Figure 3 – BLPH Concept

Electricity in the BLPH will be stored in the form of electrons in a battery energy storage system (BESS) as well as converted into green hydrogen via water electrolysis. When the power output from the connecting wind turbine drops to below 1 MWe, the BLPH will return its stored energy to supplement the remaining power output. This will be by discharging the BESS, while stored hydrogen will be converted back into electricity using a fuel cell to extend the discharge duration.

The purpose of the BLPH s to function as a testbed for the integration of energy storage technologies with renewable generation. It is expected that equipment installed on the BLPH will operate as Normally Unmanned Installation for at least two (2) years with no or minimal maintenance and it will have its own independent control room with the ability to communicate with Crosswind's control room.

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	INDRA	CROSSWIND				
ITEM NR	MODEL	DWG CODE	SAP CODE	DATA SHEET 123A90-DDL-PP-DS-70003 REV.02	TAG VALVE	NOTES
10	SB-598-20-E150RF3_E	00.VSF.2684/V	VBC0NN06943Q00	BS01C01RF	**BLPH-MV-111**	-
20	SB-598-25-F150RF3_F	00.VSF.2687/V	VBC0NN06950100	BS01C01RF	**BLPH-MV-210**	-
20	SB-598-25-F150RF3_F	00.VSF.2687/V	VBC0NN06950100	BS01C01RF	**BLPH-MV-242**	-
20	SB-598-25-F150RF3_F	00.VSF.2687/V	VBC0NN06950100	BS01C01RF	**BLPH-MV-447**	-
20	SB-598-25-F150RF3_F	00.VSF.2687/V	VBC0NN06950100	BS01C01RF	**BLPH-MV-448**	-
20	SB-598-25-F150RF3_F	00.VSF.2687/V	VBC0NN06950100	BS01C01RF	**BLPH-MV-449**	-
20	SB-598-25-F150RF3_F	00.VSF.2687/V	VBC0NN06950100	BS01C01RF	**BLPH-MV-450**	-
20	SB-598-25-F150RF3_F	00.VSF.2687/V	VBC0NN06950100	BS01C01RF	**BLPH-MV-451**	-
20	SB-598-25-F150RF3_F	00.VSF.2687/V	VBC0NN06950100	BS01C01RF	**BLPH-MV-452**	-
20	SB-598-25-F150RF3_F	00.VSF.2687/V	VBC0NN06950100	BS01C01RF	**BLPH-MV-453**	-
20	SB-598-25-F150RF3_F	00.VSF.2687/V	VBC0NN06950100	BS01C01RF	**BLPH-MV-454**	-
20	SB-598-25-F150RF3_F	00.VSF.2687/V	VBC0NN06950100	BS01C01RF	**BLPH-MV-455**	-
20	SB-598-25-F150RF3_F	00.VSF.2687/V	VBC0NN06950100	BS01C01RF	**BLPH-MV-456**	-
20	SB-598-25-F150RF3_F	00.VSF.2687/V	VBC0NN06950100	BS01C01RF	**BLPH-MV-457**	-
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40	SB-598-HR-20-E150RF3_E	00.VSF.2693/V	VBC0NN24343Q00	BS01C01RFH	**BLPH-MV-024**	-
40	SB-598-HR-20-E150RF3_E	00.VSF.2693/V	VBC0NN24343Q00	BS01C01RFH	**BLPH-MV-028**	-
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70	SB-598-25-F150RF3_F	00.VSF.2688	VBC0NN24440100	BS01F01RF	**BLPH-MV-048**	Stem Extension 100mm
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80	SB-598-50-J150RF3_J	00.VSF.2692	VBC0NN24460200	BA01F01RF	**BLPH-MV-464**	Stem Extension 100mm
80	SB-598-50-J150RF3_J	00.VSF.2692	VBC0NN24460200	BA01F01RF	**BLPH-MV-465**	Stem Extension 100mm
90	SB-598-20-E150RF3_E	00.VSF.2686/V	VBC0NN24703Q00	BS01B01RF	**BLPH-MV-275**	-
100	SB-598-25-F150RF3_F	00.VSF.2770/V	VBC0NN24710100	BS01B01RF	**BLPH-MV-263**	-
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110	SB-598-25-F150RF3-F-LF2	00.VSF.2689/V	VBC0NN24710100	BS01B01RF	**BLPH-MV-417**	Stem Extension 100mm - LC
120	SB-598-40-H150RF3_H	00.VSF.2691/V	VBC0NN24721H00	BS01B01RF	**BLPH-MV-412**	Stem Extension 100mm - LO
130	SB-59X-PE80-20-E-E	00.VSF.2683	VBC0NN24893Q00	BA01P01KT	**BLPH-MV-214**	Stem Extension 100mm
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140	SB-598-HR-50-L150RF3_L	00.VSF.2695/V	VBD0NN16460300	BC01C01RFH	**BLPH-MV-402**	-
150	DBB-898-HR-25-F300RF3_F_D	00.VSF.2680/V	VLBBNN07190100	DA03C01RFH	**BLPH-MV-003**	LO
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170	DBB-898-HR-50-J300RF3_J_D	00.VSF.2682/V	VLBBNN07210200	DA03C01RFH	**BLPH-MV-019**	FB - LO
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180	DBB-898-HR-100-N300RF3_N	00.VSF.2679/V	VLBBNN07230400	DA03C01RFH	**BLPH-MV-387**	FB - LO
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250	SBB-798-HR-50-J150RF3-J-D	00.VSF.2702/V	VLBLNN01430200	BA01C01RFHS	**BLPH-MV-002**	FB - LO
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270	SB-598-TRU-HR-150-Q150RF3-Q	00.VSFT.0224/V	VLBLNN01460600	BA01C01RFHS	**BLPH-MV-005**	FB-LO
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280	DBB-737-HR-E300RF3-D-D	00.MNF.0604/V	VLBMNN00013Q0H	MD03C02YH	**BLPH-MV-282**	-
280	DBB-737-HR-E300RF3-D-D	00.MNF.0604/V	VLBMNN00013Q0H	MD03C02YH	**BLPH-MV-283**	-
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310	SBB-727-E150RF3-D-D	00.MNF.0612/V	VLBNNN00063Q0H	MS01B02Y	**BLPH-MV-166**	-
310	SBB-727-E150RF3-D-D	00.MNF.0612/V	VLBNNN00063Q0H	MS01B02Y	**BLPH-MV-167**	-
310	SBB-727-E150RF3-D-D	00.MNF.0612/V	VLBNNN00063Q0H	MS01B02Y	**BLPH-MV-386**	-
320	SBB-727-E150RF3-D-D	00.MNF.0606/V	VLBNNN00063Q0H	MS01B02Y	**BLPH-MV-411**	Stem Extension 100mm
321	SB-598-50-L150RF3-L-LF2	00.VSF.2716/V	VBD0NN16610300	BC01B01RF	**BLPH-MV-467**	Stem Extension 100mm
324	SBB-798-25-F150RF3-F-D-	00.VSF.2784(T)	VLBLNN01370100	BS01F01RFS	**BLPH-MV-469**	Stem Extension 100mm
324	SBB-798-25-F150RF3-F-D-	00.VSF.2784(T)	VLBLNN01370100	BS01F01RFS	**BLPH-MV-470**	Stem Extension 100mm
324	SBB-798-25-F150RF3-F-D-	00.VSF.2784(T)	VLBLNN01370100	BS01F01RFS	**BLPH-MV-471**	Stem Extension 100mm

indra VALVES - ITALY	**VALVE DATA SHEET**	VDS-01 Rev.1 02/08/2022

ORDER INFO

CUSTOMER:	**ROSETTI MARINO**	INDRA CODE:	**00.VSF.2684/V**
OFFER NUMBER:	**10531**	CUSTOMER CODE:	**VBC0NN06943Q00 (SAP CODE)**
END USER:	**PROGETTO CROSSWIND**	JOB NO:	

VALVE MODEL		**598**								**NOTE**
Piping Class / DESIGN TEMP. (°C)				*Min*	**-29**	*°C*	*Max*	**+100**	*°C*	
VALVE DESIGN		SB								
VALVE CONSTRUCTION		FLOATING BALL VALVE	SIDE ENTRY	SPLIT BODY TYPE☑						
DESIGN CODE		ASME B16.34	ASME B16.5							
END CONNECTIONS	*INLET*	FLANGED	3/4"	RF	R9					
	OUTLET	FLANGED	3/4"	RF	R9					
	BLEED	N/A								
BORE VALVE (DN-mm)		DN 20								
BORE VENT (DN-mm)		N/A								
SERVICE (STD / CRYOGENIC / HIGH TEMP)		STANDARD								
FACE TO FACE DIMENTIONS (mm)		117 mm	ASME B16.10							
DESIGN										
PORT DESIGN		FULL BORE								
RATING CLASS		ASME 150								
SEAT DESIGN		SOFT SEAT								
STEM DESIGN (STD / EXTENDED)		STANDARD								
CORROSION ALLOWANCE		YES	3mm							
WELD OVERLAY		NO								
OPERATOR		LEVER	St.st.316							
LOCKING SYSTEM		YES	without locking element							
NACE MR0175/ISO 15156		YES								
FUGITIVE EMISSION / CLASS		NO								
FIRE SAFE		YES	API 607 / ISO 10497 / API 6FA							
MATERIALS										
BODY		A182 F316/316L	NACE							
CLOSURES		A182 F316/316L	NACE							
BALL		A479 316/316L	NACE							
SEAT		PEEK								
SEAT SUPPORT		A182 F316/316L	NACE							
SEAT SPRING		N/A								
TRUNNION		N/A								
STEM		A479 316/316L	NACE							
BODY SEALS / GASKET		O-RING (FKM (AED))	RING (GRAPHITE)							
SEAT SUPPORT SEALS / GASKET		N/A	N/A							
STEM SEALS / GASKET		O-RING (FKM (AED))	RING (GRAPHITE)							
BOLT / NUT / BOLT COATING		A193 B8M	A194 Gr.8M							
OTHER		Non-wetted part in st.steel								6
TESTS										
REFERENCE PRESSURE TESTING		API 598, API 6D								
GAS TEST										
SUPPLEMENTARY TESTS		NDE (NDE OPERATORS QUALIFICATION EN ISO 9712 / SNT-TC 1A)								
		PMI: 100% Valve Body/Bonnet Body and Wetted parts in acc. a procedura PT-PMI rev.14								
MATERIAL TEST		Hardness test (100%) on body and wetted parts acc. to proc. PT-HT Rev.1								
NOTES:										
		1. Antistatic device								
		2. Anti-blow out stem								
		3. CAVITY RELIEF PRESSURE TEST(100 %) acc. to proc. PT-VSP-VSF								
		4. ANTI-STATIC TEST acc. to spec. BS EN 12266-PART. 2 TEST F21 (12V-ACCEPTANCE CRITERIA 10 Ohm)								
		5. STAINLESS STEEL NAMEPLATE (BODY) + ST.ST NAMEPLATE WITH STEEL WIRE								
		6. spring material ELGILOY R30003								
		7. Painting treatment according to spec. 123A90-DDL-MAT-SP-60006 - System: SYS-6A color: VALVE RAL 9002 - LEVER RAL 9005 - Level II Nace - Frosio Inspector acc. to spec. "123A90-DDL-MAT-SP-60006 sec.5.8" - Adhesion Test (Pull Off)								
		TAG: BLPH-MV-111								

Rev	*Date*	*Description*	*Verd*	*Chck*
0	*25/07/2024*	*Issue for order*	*L.D.G* LDG	*A.G.*

indra VALVES - ITALY	**VALVE DATA SHEET**	VDS-01 Rev.1 02/08/2022

ORDER INFO

CUSTOMER:	**ROSETTI MARINO**	INDRA CODE:	**00.VSF.2687/V**
OFFER NUMBER:	**10531**	CUSTOMER CODE:	**VBC0NN06950100 (SAP CODE)**
END USER:	**PROGETTO CROSSWIND**	JOB NO:	

VALVE MODEL		**598**							**NOTE**
Piping Class / DESIGN TEMP. (°C)				*Min*	**-29**	°C	*Max*	**+100** °C	
VALVE DESIGN		SB							
VALVE CONSTRUCTION		FLOATING BALL VALVE	SIDE ENTRY	SPLIT BODY TYPE					
DESIGN CODE		ASME B16.34	ASME B16.5						
END CONNECTIONS	*INLET*	FLANGED	1"	RF	R9				
	OUTLET	FLANGED	1"	RF	R9				
	BLEED	N/A							
BORE VALVE (DN-mm)		DN 25							
BORE VENT (DN-mm)		N/A							
SERVICE (STD / CRYOGENIC / HIGH TEMP)		STANDARD							
FACE TO FACE DIMENTIONS (mm)		127 mm	ASME B16.10						
DESIGN									
PORT DESIGN		FULL BORE							
RATING CLASS		ASME 150							
SEAT DESIGN		SOFT SEAT							
STEM DESIGN (STD / EXTENDED)		STANDARD							
CORROSION ALLOWANCE		YES	3mm						
WELD OVERLAY		NO							
OPERATOR		LEVER	St.st.316						
LOCKING SYSTEM		YES	without locking element						
NACE MR0175/ISO 15156		YES							
FUGITIVE EMISSION / CLASS		NO							
FIRE SAFE		YES	API 607 / ISO 10497 / API 6FA						
MATERIALS									
BODY		A182 F316/316L	NACE						
CLOSURES		A182 F316/316L	NACE						
BALL		A479 316/316L	NACE						
SEAT		RPTFE							
SEAT SUPPORT		A182 F316/316L	NACE						
SEAT SPRING		N/A							
TRUNNION		N/A							
STEM		A182 F316/316L	NACE						
BODY SEALS / GASKET		O-RING (FKM (AED))	RING (GRAPHITE)						
SEAT SUPPORT SEALS / GASKET		N/A	N/A						
STEM SEALS / GASKET		O-RING (FKM (AED))	RING (GRAPHITE)						
BOLT / NUT / BOLT COATING		A193 B8M Cl.2	A194 Gr.8M						
OTHER		Non-wetted part in st.steel							6
TESTS									
REFERENCE PRESSURE TESTING		API 598, API 6D							
GAS TEST									
SUPPLEMENTARY TESTS		NDE (NDE OPERATORS QUALIFICATION EN ISO 9712 / SNT-TC 1A)							
		PMI: 100% Valve Body/Bonnet Body and Wetted parts in acc. a procedura PT-PMI rev.14							
MATERIAL TEST		Hardness test (100%) on body and wetted parts acc. to proc. PT-HT Rev.1							
NOTES:									
		1. Antistatic device							
		2. Anti-blow out stem							
		3. CAVITY RELIEF PRESSURE TEST(100 %) acc. to proc. PT-VSP-VSF							
		4. ANTI-STATIC TEST acc. to spec. BS EN 12266-PART. 2 TEST F21 (12V-ACCEPTANCE CRITERIA 10 Ohm)							
		5. STAINLESS STEEL NAMEPLATE (BODY) + ST.ST NAMEPLATE WITH STEEL WIRE							
		6. spring material ELGILOY R30003							
		7. Painting treatment according to spec. 123A90-DDL-MAT-SP-60006 - System: SYS-6A color: VALVE RAL 9002 - LEVER RAL 9005 - Level II Nace - Frosio Inspector acc. to spec. "123A90-DDL-MAT-SP-60006 sec.5.8" - Adhesion Test (Pull Off)							
		TAG: BLPH-MV-210 , BLPH-MV-242, BLPH-MV-447, BLPH-MV-448, BLPH-MV-449, BLPH-MV-450, BLPH-MV-451, BLPH-MV-452, BLPH-MV-453, BLPH-MV-454, BLPH-MV-455, BLPH-MV-456, BLPH-MV-457, BLPH-MV-458, BLPH-MV-459							

Rev	*Date*	*Description*	*Verd*	*Chck*
0	*25/07/2024*	*Issue for order*	*L.D.G* LDG	*A.G.*

indra VALVES - ITALY	**VALVE DATA SHEET**	VDS-01 Rev.1 02/08/2022

ORDER INFO

CUSTOMER:	**ROSETTI MARINO**	INDRA CODE:	**00.VSF.2690/V**
OFFER NUMBER:	**10531**	CUSTOMER CODE:	**VBC0NN06961H00 (SAP CODE)**
END USER:	**PROGETTO CROSSWIND**	JOB NO:	

VALVE MODEL		**598**								**NOTE**
Piping Class / DESIGN TEMP. (°C)				*Min*	**-29**	*°C*	*Max*	**+100**	*°C*	
VALVE DESIGN		SB								
VALVE CONSTRUCTION		FLOATING BALL VALVE	SIDE ENTRY	SPLIT BODY TYPE						
DESIGN CODE		ASME B16.34	ASME B16.5							
END CONNECTIONS	*INLET*	FLANGED	1-1/2"	RF	R9					
	OUTLET	FLANGED	1-1/2"	RF	R9					
	BLEED	N/A								
BORE VALVE (DN-mm)		DN 40								
BORE VENT (DN-mm)		N/A								
SERVICE (STD / CRYOGENIC / HIGH TEMP)		STANDARD								
FACE TO FACE DIMENTIONS (mm)		165 mm	ASME B16.10							
DESIGN										
PORT DESIGN		FULL BORE								
RATING CLASS		ASME 150								
SEAT DESIGN		SOFT SEAT								
STEM DESIGN (STD / EXTENDED)		STANDARD								
CORROSION ALLOWANCE		YES	3mm							
WELD OVERLAY		NO								
OPERATOR		LEVER	St.st.316							
LOCKING SYSTEM		YES	without locking element							
NACE MR0175/ISO 15156		YES								
FUGITIVE EMISSION / CLASS		NO								
FIRE SAFE		YES	API 607 / ISO 10497 / API 6FA							
MATERIALS										
BODY		A182 F316/316L	NACE							
CLOSURES		A182 F316/316L	NACE							
BALL		A479 316/316L	NACE							
SEAT		RPTFE								
SEAT SUPPORT		A182 F316/316L	NACE							
SEAT SPRING		N/A								
TRUNNION		N/A								
STEM		A479 316/316L	NACE							
BODY SEALS / GASKET		O-RING (FKM (AED))	RING (GRAPHITE)							
SEAT SUPPORT SEALS / GASKET		N/A	N/A							
STEM SEALS / GASKET		O-RING (FKM (AED))	RING (GRAPHITE)							
BOLT / NUT / BOLT COATING		A193 B8M	A194 Gr.8M							
OTHER		Non-wetted part in st.steel								6
TESTS										
REFERENCE PRESSURE TESTING		API 598, API 6D								
GAS TEST										
SUPPLEMENTARY TESTS		NDE (NDE OPERATORS QUALIFICATION EN ISO 9712 / SNT-TC 1A)								
		PMI: 100% Valve Body/Bonnet Body and Wetted parts in acc. a procedura PT-PMI rev.14								
MATERIAL TEST		Hardness test (100%) on body and wetted parts acc. to proc. PT-HT Rev.1								
NOTES:										
		1. Antistatic device								
		2. Anti-blow out stem								
		3. CAVITY RELIEF PRESSURE TEST(100 %) acc. to proc. PT-VSP-VSF								
		4. ANTI-STATIC TEST acc. to spec. BS EN 12266-PART. 2 TEST F21 (12V-ACCEPTANCE CRITERIA 10 Ohm)								
		5. STAINLESS STEEL NAMEPLATE (BODY) + ST.ST NAMEPLATE WITH STEEL WIRE								
		6. spring material ELGILOY R30003								
		7. Painting treatment according to spec. 123A90-DDL-MAT-SP-60006 - System: SYS-6A color: VALVE RAL 9002 - LEVER RAL 9005 - Level II Nace - Frosio Inspector acc. to spec. "123A90-DDL-MAT-SP-60006 sec.5.8" - Adhesion Test (Pull Off)								
		TAG: BLPH-MV-149, BLPH-MV-270								

Rev	*Date*	*Description*	*Verd*	*Chck*
0	*25/07/2024*	*Issue for order*	*L.D.G* LDG	*A.G.*

indra VALVES - ITALY	**VALVE DATA SHEET**	VDS-01 Rev.1 02/08/2022

ORDER INFO

CUSTOMER:	**ROSETTI MARINO**	INDRA CODE:	**00.VSF.2693/V**
OFFER NUMBER:	**10531**	CUSTOMER CODE:	**VBC0NN24343Q00 (SAP CODE)**
END USER:	**PROGETTO CROSSWIND**	JOB NO:	

VALVE MODEL		**598**							**NOTE**
Piping Class / DESIGN TEMP. (°C)				*Min*	**-29**	*°C*	*Max*	**+100** *°C*	
VALVE DESIGN		SB							
VALVE CONSTRUCTION		FLOATING BALL VALVE	SIDE ENTRY	SPLIT BODY TYPE					
DESIGN CODE		ASME B16.34	ASME B16.5						
END CONNECTIONS	*INLET*	FLANGED	3/4"	RF	R9				
	OUTLET	FLANGED	3/4"	RF	R9				
	BLEED	N/A							
BORE VALVE (DN-mm)		DN 20							
BORE VENT (DN-mm)		N/A							
SERVICE (STD / CRYOGENIC / HIGH TEMP)		STANDARD	HYDROGEN						
FACE TO FACE DIMENTIONS (mm)		117 mm	ASME B16.10						
DESIGN									
PORT DESIGN		FULL BORE							
RATING CLASS		ASME 150							
SEAT DESIGN		SOFT SEAT							
STEM DESIGN (STD / EXTENDED)		STANDARD							
CORROSION ALLOWANCE		YES	3mm						
WELD OVERLAY		NO							
OPERATOR		LEVER	St.st.316						
LOCKING SYSTEM		YES	without locking element						
NACE MR0175/ISO 15156		YES							
FUGITIVE EMISSION / CLASS		YES	ISO 15848-1						8
FIRE SAFE		YES	API 607 / ISO 10497 / API 6FA						
MATERIALS									
BODY		A182 F316/316L	NACE						
CLOSURES		A182 F316/316L	NACE						
BALL		A479 316/316L	NACE						
SEAT		RPTFE							
SEAT SUPPORT		A182 F316/316L	NACE						
SEAT SPRING		N/A							
TRUNNION		N/A							
STEM		A182 F316/316L	NACE						
BODY SEALS / GASKET		O-RING (FKM (AED))	RING (GRAPHITE)						
SEAT SUPPORT SEALS / GASKET		N/A	N/A						
STEM SEALS / GASKET		O-RING (FKM (AED))	RING (GRAPHITE)						
BOLT / NUT / BOLT COATING		A193 B8M Cl.2	A194 Gr.8M						
OTHER		Non-wetted part in st.steel							6
TESTS									
REFERENCE PRESSURE TESTING		API 598, API 6D							
GAS TEST		(HELIUM) (1 FOR POSITION) acc. to proc. PGT-VSP-VSF/ITA-ENG (24-01216) Rev.0							
SUPPLEMENTARY TESTS		NDE (NDE OPERATORS QUALIFICATION EN ISO 9712 / SNT-TC 1A)							
		PMI: 100% Valve Body/Bonnet Body and Wetted parts in acc. a procedura PT-PMI rev.14							
MATERIAL TEST		Hardness test (100%) on body and wetted parts acc. to proc. PT-HT Rev.1							
		DYE PENETRANT ON BODY (100 %) acc. to proc. 'PT-DP-01							
		DYE PENETRANT ON BONNET BODY (100 %):							
NOTES:									
		1. Antistatic device							
		2. Anti-blow out stem							
		3. CAVITY RELIEF PRESSURE TEST(100 %) acc. to proc. PT-VSP-VSF							
		4. ANTI-STATIC TEST acc. to spec. BS EN 12266-PART. 2 TEST F21 (12V-ACCEPTANCE CRITERIA 10 Ohm)							
		5. STAINLESS STEEL NAMEPLATE (BODY) + ST.ST NAMEPLATE WITH STEEL WIRE							
		6. spring material ELGILOY R30003							
		7. Painting treatment according to spec. 123A90-DDL-MAT-SP-60006 - System: SYS-6A color: VALVE RAL 9002 - LEVER RAL 9005 - Level II Nace - Frosio Inspector acc. to spec. "123A90-DDL-MAT-SP-60006 sec.5.8" - Adhesion Test (Pull Off)							
		8. "3. PRODUCTION FUGGITIVE EMISSION TEST ACC.TO ISO 15848-2 (1 FOR POSITION) Acc. to procedure ""PFET_Rev.2-Procedura FET_EN"""							
		TAG: BLPH-MV-024, BLPH-MV-028							

Rev	*Date*	*Description*	*Verd*	*Chck*
0	*25/07/2024*	*Issue for order*	*L.D.G.* LDG	*A.G.*

indra VALVES - ITALY	**VALVE DATA SHEET**	VDS-01 Rev.1 02/08/2022

ORDER INFO

CUSTOMER:	**ROSETTI MARINO**	INDRA CODE:	**00.VSF.2694/V**
OFFER NUMBER:	**10531**	CUSTOMER CODE:	**VBC0NN24350100 (SAP CODE)**
END USER:	**PROGETTO CROSSWIND**	JOB NO:	

VALVE MODEL		**598**							**NOTE**
Piping Class / DESIGN TEMP. (°C)				*Min*	**-29**	*°C*	*Max*	**+100** *°C*	
VALVE DESIGN		SB							
VALVE CONSTRUCTION		FLOATING BALL VALVE	SIDE ENTRY	SPLIT BODY TYPE					
DESIGN CODE		ASME B16.34	ASME B16.5						
END CONNECTIONS	*INLET*	FLANGED	1"	RF	R9				
	OUTLET	FLANGED	1"	RF	R9				
	BLEED	N/A							
BORE VALVE (DN-mm)		DN 25							
BORE VENT (DN-mm)		N/A							
SERVICE (STD / CRYOGENIC / HIGH TEMP)		STANDARD	HYDROGEN						
FACE TO FACE DIMENTIONS (mm)		127 mm	ASME B16.10						
DESIGN									
PORT DESIGN		FULL BORE							
RATING CLASS		ASME 150							
SEAT DESIGN		SOFT SEAT							
STEM DESIGN (STD / EXTENDED)		STANDARD							
CORROSION ALLOWANCE		YES	3mm						
WELD OVERLAY		NO							
OPERATOR		LEVER	St.st.316						
LOCKING SYSTEM		YES	without locking element						
NACE MR0175/ISO 15156		YES							
FUGITIVE EMISSION / CLASS		YES	ISO 15848-1						8
FIRE SAFE		YES	API 607 / ISO 10497 / API 6FA						
MATERIALS									
BODY		A182 F316/316L	NACE						
CLOSURES		A182 F316/316L	NACE						
BALL		A479 316/316L	NACE						
SEAT		PEEK							
SEAT SUPPORT		A182 F316/316L	NACE						
SEAT SPRING		N/A							
TRUNNION		N/A							
STEM		A479 316/316L	NACE						
BODY SEALS / GASKET		O-RING (FKM (AED))	RING (GRAPHITE)						
SEAT SUPPORT SEALS / GASKET		N/A	N/A						
STEM SEALS / GASKET		O-RING (FKM (AED))	RING (GRAPHITE)						
BOLT / NUT / BOLT COATING		A193 B8M Cl.2	A194 Gr.8M						
OTHER		Non-wetted part in st.steel							6
TESTS									
REFERENCE PRESSURE TESTING		API 598, API 6D							
GAS TEST		(HELIUM) (1 FOR POSITION) acc. to proc. PGT-VSP-VSF/ITA-ENG (24-01216) Rev.0							
SUPPLEMENTARY TESTS		NDE (NDE OPERATORS QUALIFICATION EN ISO 9712 / SNT-TC 1A)							
		PMI: 100% Valve Body/Bonnet Body and Wetted parts in acc. a procedura PT-PMI rev.14							
MATERIAL TEST		Hardness test (100%) on body and wetted parts acc. to proc. PT-HT Rev.1							
		DYE PENETRANT ON BODY (100 %) acc. to proc. 'PT-DP-01							
		DYE PENETRANT ON BONNET BODY (100 %):							
NOTES:									
		1. Antistatic device							
		2. Anti-blow out stem							
		3. CAVITY RELIEF PRESSURE TEST(100 %) acc. to proc. PT-VSP-VSF							
		4. ANTI-STATIC TEST acc. to spec. BS EN 12266-PART. 2 TEST F21 (12V-ACCEPTANCE CRITERIA 10 Ohm)							
		5. STAINLESS STEEL NAMEPLATE (BODY) + ST.ST NAMEPLATE WITH STEEL WIRE							
		6. spring material ELGILOY R30003							
		7. Painting treatment according to spec. 123A90-DDL-MAT-SP-60006 - System: SYS-6A color: VALVE RAL 9002 - LEVER RAL 9005 - Level II Nace - Frosio Inspector acc. to spec. "123A90-DDL-MAT-SP-60006 sec.5.8" - Adhesion Test (Pull Off)							
		8. "3. PRODUCTION FUGGITIVE EMISSION TEST ACC.TO ISO 15848-2 (1 FOR POSITION) Acc. to procedure ""PFET_Rev.2-Procedura FET_EN"""							
		TAG: BLPH-MV-172, BLPH-MV-404, BLPH-MV-405, BLPH-MV-462, BLPH-MV-463							

Rev	*Date*	*Description*	*Verd*	*Chck*
0	*25/07/2024*	*Issue for order*	*L.D.G.* LDG	*A.G.*

indra VALVES - ITALY	**VALVE DATA SHEET**	VDS-01 Rev.1 02/08/2022

ORDER INFO

CUSTOMER:	**ROSETTI MARINO**	INDRA CODE:	**00.VSF.2685**
OFFER NUMBER:	**10531**	CUSTOMER CODE:	**VBC0NN24433Q00 (SAP CODE)**
END USER:	**PROGETTO CROSSWIND**	JOB NO:	

VALVE MODEL		**598**							**NOTE**
Piping Class / DESIGN TEMP. (°C)				*Min*	**-29**	°C	*Max*	**+100** °C	
VALVE DESIGN		SB							
VALVE CONSTRUCTION		FLOATING BALL VALVE	SIDE ENTRY	SPLIT BODY TYPE					
DESIGN CODE		ASME B16.34	ASME B16.5						
END CONNECTIONS	*INLET*	FLANGED	3/4"	RF	R9				
	OUTLET	FLANGED	3/4"	RF	R9				
	BLEED	N/A							
BORE VALVE (DN-mm)		DN 20							
BORE VENT (DN-mm)		N/A							
SERVICE (STD / CRYOGENIC / HIGH TEMP)		STANDARD							
FACE TO FACE DIMENTIONS (mm)		117 mm	ASME B16.10						
DESIGN									
PORT DESIGN		FULL BORE							
RATING CLASS		ASME 150							
SEAT DESIGN		SOFT SEAT							
STEM DESIGN (STD / EXTENDED)		STEM EXTENSION	100mm						7
CORROSION ALLOWANCE		NO							
WELD OVERLAY		NO							
OPERATOR		LEVER	St.st.316						
LOCKING SYSTEM		YES	without locking element						
NACE MR0175/ISO 15156		YES							
FUGITIVE EMISSION / CLASS		NO							
FIRE SAFE		YES	API 607 / ISO 10497 / API 6FA						
MATERIALS									
BODY		A182 F55	NACE / NORSOK						
CLOSURES		A182 F55	NACE / NORSOK						
BALL		A479 F55	NACE / NORSOK						
SEAT		PEEK							
SEAT SUPPORT		A479 F55	NACE / NORSOK						
SEAT SPRING		N/A							
TRUNNION		N/A							
STEM		A479 F55	NACE / NORSOK						
BODY SEALS / GASKET		O-RING (FKM (AED))	RING (GRAPHITE)						
SEAT SUPPORT SEALS / GASKET		N/A	N/A						
STEM SEALS / GASKET		O-RING (FKM (AED))	RING (GRAPHITE)						
BOLT / NUT / BOLT COATING		A193 B7M	A194 Gr.2HM	+HDG					
OTHER		Non-wetted part in st.steel							6
TESTS									
REFERENCE PRESSURE TESTING		API 598, API 6D							
GAS TEST									
SUPPLEMENTARY TESTS		NDE (NDE OPERATORS QUALIFICATION EN ISO 9712 / SNT-TC 1A)							
		PMI: 100% Valve Body/Bonnet Body and Wetted parts in acc. a procedura PT-PMI rev.14							
MATERIAL TEST		Hardness test (100%) on body and wetted parts acc. to proc. PT-HT Rev.1							
		IMPACT TEST ON BODY AND CLOSURES (-50°C)							
NOTES:									
		1. Antistatic device							
		2. Anti-blow out stem							
		3. CAVITY RELIEF PRESSURE TEST(100 %) acc. to proc. PT-VSP-VSF							
		4. ANTI-STATIC TEST acc. to spec. BS EN 12266-PART. 2 TEST F21 (12V-ACCEPTANCE CRITERIA 10 Ohm)							
		5. STAINLESS STEEL NAMEPLATE (BODY) + ST.ST NAMEPLATE WITH STEEL WIRE							
		6. spring material ELGILOY R30003							
		7. Lever is suitable for insulation up to 100mm to flange							
		TAG: BLPH-MV-044, BLPH-MV-054, BLPH-MV-241,							

Rev	*Date*	*Description*	*Verd*	*Chck*
0	*25/07/2024*	*Issue for order*	*L.D.G* LDG	*A.G.*

indra VALVES - ITALY	**VALVE DATA SHEET**	VDS-01 Rev.1 02/08/2022

ORDER INFO

CUSTOMER:	**ROSETTI MARINO**	INDRA CODE:	**00.VSF.2688**
OFFER NUMBER:	**10531**	CUSTOMER CODE:	**VBC0NN24440100 (SAP CODE)**
END USER:	**PROGETTO CROSSWIND**	JOB NO:	

VALVE MODEL		**598**							**NOTE**
Piping Class / DESIGN TEMP. (°C)				*Min*	**-29**	*°C*	*Max*	**+100** *°C*	
VALVE DESIGN		SB							
VALVE CONSTRUCTION		FLOATING BALL VALVE	SIDE ENTRY	SPLIT BODY TYPE					
DESIGN CODE		ASME B16.34	ASME B16.5						
END CONNECTIONS	*INLET*	FLANGED	1"	RF	R9				
	OUTLET	FLANGED	1"	RF	R9				
	BLEED	N/A							
BORE VALVE (DN-mm)		DN 25							
BORE VENT (DN-mm)		N/A							
SERVICE (STD / CRYOGENIC / HIGH TEMP)		STANDARD							
FACE TO FACE DIMENTIONS (mm)		127 mm	ASME B16.10						
DESIGN									
PORT DESIGN		FULL BORE							
RATING CLASS		ASME 150							
SEAT DESIGN		SOFT SEAT							
STEM DESIGN (STD / EXTENDED)		STEM EXTENSION	100mm						7
CORROSION ALLOWANCE		NO							
WELD OVERLAY		NO							
OPERATOR		LEVER	St.st.316						
LOCKING SYSTEM		YES	without locking element						
NACE MR0175/ISO 15156		YES							
FUGITIVE EMISSION / CLASS		NO							
FIRE SAFE		YES	API 607 / ISO 10497 / API 6FA						
MATERIALS									
BODY		A182 F55	NACE / NORSOK						
CLOSURES		A182 F55	NACE / NORSOK						
BALL		A479 F55	NACE / NORSOK						
SEAT		PEEK							
SEAT SUPPORT		A479 F55	NACE / NORSOK						
SEAT SPRING		N/A							
TRUNNION		N/A							
STEM		A479 F55	NACE / NORSOK						
BODY SEALS / GASKET		O-RING (FKM (AED))	RING (GRAPHITE)						
SEAT SUPPORT SEALS / GASKET		N/A	N/A						
STEM SEALS / GASKET		O-RING (FKM (AED))	RING (GRAPHITE)						
BOLT / NUT / BOLT COATING		A193 B7M	A194 Gr.2H	+HDG					
OTHER		Non-wetted part in st.steel							6
TESTS									
REFERENCE PRESSURE TESTING		API 598, API 6D							
GAS TEST									
SUPPLEMENTARY TESTS		NDE (NDE OPERATORS QUALIFICATION EN ISO 9712 / SNT-TC 1A)							
		PMI: 100% Valve Body/Bonnet Body and Wetted parts in acc. a procedura PT-PMI rev.14							
MATERIAL TEST		Hardness test (100%) on body and wetted parts acc. to proc. PT-HT Rev.1							
		IMPACT TEST ON BODY AND CLOSURES (-50°C)							
NOTES:									
		1. Antistatic device							
		2. Anti-blow out stem							
		3. CAVITY RELIEF PRESSURE TEST(100 %) acc. to proc. PT-VSP-VSF							
		4. ANTI-STATIC TEST acc. to spec. BS EN 12266-PART. 2 TEST F21 (12V-ACCEPTANCE CRITERIA 10 Ohm)							
		5. STAINLESS STEEL NAMEPLATE (BODY) + ST.ST NAMEPLATE WITH STEEL WIRE							
		6. spring material ELGILOY R30003							
		7. Lever is suitable for insulation up to 100mm to flange							
		TAG: BLPH-MV-048, BLPH-MV-051							

Rev	*Date*	*Description*	*Verd*	*Chck*
0	*25/07/2024*	*Issue for order*	*L.D.G.* LDG	*A.G.*

indra VALVES - ITALY	**VALVE DATA SHEET**	VDS-01 Rev.1 02/08/2022

ORDER INFO

CUSTOMER:	**ROSETTI MARINO**	INDRA CODE:	**00.VSF.2692**
OFFER NUMBER:	**10531**	CUSTOMER CODE:	**VBC0NN24460200 (SAP CODE)**
END USER:	**PROGETTO CROSSWIND**	JOB NO:	

VALVE MODEL		**598**							**NOTE**
Piping Class / DESIGN TEMP. (°C)				*Min*	**-29**	°C	*Max*	**+100**	°C	
VALVE DESIGN		SB								
VALVE CONSTRUCTION		FLOATING BALL VALVE	SIDE ENTRY	SPLIT BODY TYPE						
DESIGN CODE		ASME B16.34	ASME B16.5							
END CONNECTIONS	*INLET*	FLANGED	2"	RF	R9					
	OUTLET	FLANGED	2"	RF	R9					
	BLEED	N/A								
BORE VALVE (DN-mm)		DN 50								
BORE VENT (DN-mm)		N/A								
SERVICE (STD / CRYOGENIC / HIGH TEMP)		STANDARD								
FACE TO FACE DIMENTIONS (mm)		178 mm	ASME B16.10							
DESIGN										
PORT DESIGN		FULL BORE								
RATING CLASS		ASME 150								
SEAT DESIGN		SOFT SEAT								
STEM DESIGN (STD / EXTENDED)		STEM EXTENSION	100mm							7
CORROSION ALLOWANCE		NO								
WELD OVERLAY		NO								
OPERATOR		LEVER	St.st.316							
LOCKING SYSTEM		YES	without locking element							
NACE MR0175/ISO 15156		YES								
FUGITIVE EMISSION / CLASS		NO								
FIRE SAFE		YES	API 607 / ISO 10497 / API 6FA							
MATERIALS										
BODY		A182 F55	NACE							
CLOSURES		A182 F55	NACE							
BALL		A479 F55	NACE							
SEAT		PEEK								
SEAT SUPPORT		A182 F55	NACE							
SEAT SPRING		N/A								
TRUNNION		N/A								
STEM		A479 F55	NACE							
BODY SEALS / GASKET		O-RING (FKM (AED))	RING (GRAPHITE)							
SEAT SUPPORT SEALS / GASKET		N/A	N/A							
STEM SEALS / GASKET		O-RING (FKM (AED))	RING (GRAPHITE)							
BOLT / NUT / BOLT COATING		A193 B7M	A194 Gr.2HM	+HDG						
OTHER		Non-wetted part in st.steel								6
TESTS										
REFERENCE PRESSURE TESTING		API 598, API 6D								
GAS TEST										
SUPPLEMENTARY TESTS		NDE (NDE OPERATORS QUALIFICATION EN ISO 9712 / SNT-TC 1A)								
		PMI: 100% Valve Body/Bonnet Body and Wetted parts in acc. a procedura PT-PMI rev.14								
MATERIAL TEST		Hardness test (100%) on body and wetted parts acc. to proc. PT-HT Rev.1								
		IMPACT TEST ON BODY AND CLOSURES (-50°C)								
NOTES:										
		1. Antistatic device								
		2. Anti-blow out stem								
		3. CAVITY RELIEF PRESSURE TEST(100 %) acc. to proc. PT-VSP-VSF								
		4. ANTI-STATIC TEST acc. to spec. BS EN 12266-PART. 2 - TEST F21 (12V-ACCEPTANCE CRITERIA 10 Ohm)								
		5. STAINLESS STEEL NAMEPLATE (BODY) + ST.ST NAMEPLATE WITH STEEL WIRE								
		6. spring material ELGILOY R30003								
		7. Lever is suitable for insulation up to 100mm to flange.								
		TAG: BLPH-MV-464, BLPH-MV-465								

Rev	*Date*	*Description*	*Verd*	*Chck*
0	*25/07/2024*	*Issue for order*	*L.D.G* LDG	*A.G.*

indra VALVES - ITALY	**VALVE DATA SHEET**	VDS-01 Rev.1 02/08/2022

ORDER INFO

CUSTOMER:	**ROSETTI MARINO**	INDRA CODE:	**00.VSF.2686/V**
OFFER NUMBER:	**10531**	CUSTOMER CODE:	**VBC0NN24703Q00 (SAP CODE)**
END USER:	**PROGETTO CROSSWIND**	JOB NO:	

VALVE MODEL		**598**								**NOTE**
Piping Class / DESIGN TEMP. (°C)				*Min*	**-46**	*°C*	*Max*	**+100**	*°C*	
VALVE DESIGN		SB								
VALVE CONSTRUCTION		FLOATING BALL VALVE	SIDE ENTRY	SPLIT BODY TYPE☒						
DESIGN CODE		ASME B16.34	ASME B16.5							
END CONNECTIONS	*INLET*	FLANGED	3/4"	RF	R9					
	OUTLET	FLANGED	3/4"	RF	R9					
	BLEED	N/A								
BORE VALVE (DN-mm)		DN 20								
BORE VENT (DN-mm)		N/A								
SERVICE (STD / CRYOGENIC / HIGH TEMP)		STANDARD								
FACE TO FACE DIMENTIONS (mm)		117 mm	ASME B16.10							
DESIGN										
PORT DESIGN		FULL BORE								
RATING CLASS		ASME 150								
SEAT DESIGN		SOFT SEAT								
STEM DESIGN (STD / EXTENDED)		STANDARD								
CORROSION ALLOWANCE		YES	3mm							
WELD OVERLAY		NO								
OPERATOR		LEVER	St.st.316							
LOCKING SYSTEM		YES	without locking element							
NACE MR0175/ISO 15156		YES								
FUGITIVE EMISSION / CLASS		NO								
FIRE SAFE		YES	API 607 / ISO 10497 / API 6FA							
MATERIALS										
BODY		A350 LF2	NACE							
CLOSURES		A350 LF2	NACE							
BALL		A479 316/316L	NACE							
SEAT		RPTFE								
SEAT SUPPORT		A182 F316/316L	NACE							
SEAT SPRING		N/A								
TRUNNION		N/A								
STEM		A479 316/316L	NACE							
BODY SEALS / GASKET		O-RING (FKM (AED))	RING (GRAPHITE)							
SEAT SUPPORT SEALS / GASKET		N/A	N/A							
STEM SEALS / GASKET		O-RING (FKM (AED))	RING (GRAPHITE)							
BOLT / NUT / BOLT COATING		A193 B7M	A194 Gr.2HM	+HDG						
OTHER		Non-wetted part in st.steel								6
TESTS										
REFERENCE PRESSURE TESTING		API 598, API 6D								
GAS TEST										
SUPPLEMENTARY TESTS		NDE (NDE OPERATORS QUALIFICATION EN ISO 9712 / SNT-TC 1A)								
		PMI: 100% Valve Body/Bonnet Body and Wetted parts in acc. a procedura PT-PMI rev.14								
MATERIAL TEST		Hardness test (100%) on body and wetted parts acc. to proc. PT-HT Rev.1								
NOTES:										
		1. Antistatic device								
		2. Anti-blow out stem								
		3. CAVITY RELIEF PRESSURE TEST(100 %) acc. to proc. PT-VSP-VSF								
		4. ANTI-STATIC TEST acc. to spec. BS EN 12266-PART. 2 TEST F21 (12V-ACCEPTANCE CRITERIA 10 Ohm)								
		5. STAINLESS STEEL NAMEPLATE (BODY) + ST.ST NAMEPLATE WITH STEEL WIRE								
		6. spring material ELGILOY R30003								
		7. Painting treatment according to spec. 123A90-DDL-MAT-SP-60006 - System: SYS-6A color: VALVE RAL 9002 - LEVER RAL 9005 - Level II Nace - Frosio Inspector acc. to spec. "123A90-DDL-MAT-SP-60006 sec.5.8" - Adhesion Test (Pull Off)								
		TAG: BLPH-MV-275								

Rev	*Date*	*Description*	*Verd*	*Chck*
0	*25/07/2024*	*Issue for order*	*L.D.G* LDG	*A.G.*

indra VALVES - ITALY	**VALVE DATA SHEET**	VDS-01 Rev.1 02/08/2022

ORDER INFO

CUSTOMER:	**ROSETTI MARINO**	INDRA CODE:	**00.VSF.2770/V**
OFFER NUMBER:	**10531**	CUSTOMER CODE:	**VBC0NN24710100 (SAP CODE)**
END USER:	**PROGETTO CROSSWIND**	JOB NO:	

VALVE MODEL		**598**							**NOTE**
Piping Class / DESIGN TEMP. (°C)				*Min*	**-46**	*°C*	*Max*	**+100** *°C*	
VALVE DESIGN		SB							
VALVE CONSTRUCTION		FLOATING BALL VALVE	SIDE ENTRY	SPLIT BODY TYPE					
DESIGN CODE		ASME B16.34	ASME B16.5						
END CONNECTIONS	*INLET*	FLANGED	1"	RF	R9				
	OUTLET	FLANGED	1"	RF	R9				
	BLEED	N/A							
BORE VALVE (DN-mm)		DN 25							
BORE VENT (DN-mm)		N/A							
SERVICE (STD / CRYOGENIC / HIGH TEMP)		STANDARD	HYDROGEN						
FACE TO FACE DIMENTIONS (mm)		127mm	ASME B16.10						
DESIGN									
PORT DESIGN		FULL BORE							
RATING CLASS		ASME 150							
SEAT DESIGN		SOFT SEAT							
STEM DESIGN (STD / EXTENDED)		STANDARD							
CORROSION ALLOWANCE		YES	3mm						
WELD OVERLAY		NO							
OPERATOR		LEVER	St.st.316						
LOCKING SYSTEM		YES	without locking element						
NACE MR0175/ISO 15156		YES							
FUGITIVE EMISSION / CLASS		YES	ISO 15848-1						
FIRE SAFE		YES	API 607 / ISO 10497 / API 6FA						
MATERIALS									
BODY		A350 LF2	NACE						
CLOSURES		A350 LF2	NACE						
BALL		A479 316/316L	NACE						
SEAT		RPTFE							
SEAT SUPPORT		A479 316/316L	NACE						
SEAT SPRING		N/A							
TRUNNION		N/A							
STEM		A479 316/316L	NACE						
BODY SEALS / GASKET		O-RING (FKM (AED))	RING (GRAPHITE)						
SEAT SUPPORT SEALS / GASKET		N/A	N/A						
STEM SEALS / GASKET		O-RING (FKM (AED))	RING (GRAPHITE)						
BOLT / NUT / BOLT COATING		ASTM A193 B7M + HDG	A194 Gr.2HM	+HDG					
OTHER		Non-wetted part in st.steel							6
TESTS									
REFERENCE PRESSURE TESTING		API 598, API 6D							
GAS TEST		(HELIUM) (1 FOR POSITION) acc. to proc. PGT-VSP-VSF/ITA-ENG (24-01216) Rev.0							
SUPPLEMENTARY TESTS		NDE (NDE OPERATORS QUALIFICATION EN ISO 9712 / SNT-TC 1A) PMI: 100% Valve Body/Bonnet Body and Wetted parts in acc. a procedura PT-PMI rev.14 (CARBON STEEL EXCLUDED)							
MATERIAL TEST		Hardness test (100%) on body and wetted parts acc. to proc. PT-HT Rev.1							
NOTES:									
		1. Antistatic device							
		2. Anti-blow out stem							
		3. CAVITY RELIEF PRESSURE TEST(100 %) acc. to proc. PT-VSP-VSF							
		4. ANTI-STATIC TEST acc. to spec. BS EN 12266-PART. 2 TEST F21 (12V-ACCEPTANCE CRITERIA 10 Ohm) acc. to proc. ATP-00							
		5. STAINLESS STEEL NAMEPLATE (BODY) + ST.ST NAMEPLATE WITH STEEL WIRE							
		6. spring material ELGILOY R30003							
		7. Painting treatment according to spec. 123A90-DDL-MAT-SP-60006 - System: SYS-6A color: VALVE RAL 9002 - LEVER RAL 9005 - Level II Nace - Frosio Inspector acc. to spec. "123A90-DDL-MAT-SP-60006 sec.5.8" - Adhesion Test (Pull Off)							
		TAG: BLPH-MV-263, BLPH-MV-419							

Rev	*Date*	*Description*	*Verd*	*Chck*
0	*31/07/2024*	*Issue for order*	*M.S.*	*A.G.*

indra VALVES - ITALY	**VALVE DATA SHEET**	VDS-01 Rev.1 02/08/2022

ORDER INFO

CUSTOMER:	**ROSETTI MARINO**	INDRA CODE:	**00.VSF.2689/V**
OFFER NUMBER:	**10531**	CUSTOMER CODE:	**VBC0NN24710100 (SAP CODE)**
END USER:	**PROGETTO CROSSWIND**	JOB NO:	

VALVE MODEL		**598**								**NOTE**
Piping Class / DESIGN TEMP. (°C)				*Min*	**-46**	*°C*	*Max*	**+100**	*°C*	
VALVE DESIGN		SB								
VALVE CONSTRUCTION		FLOATING BALL VALVE	SIDE ENTRY	SPLIT BODY TYPE						
DESIGN CODE		ASME B16.34	ASME B16.5							
END CONNECTIONS	*INLET*	FLANGED	1"	RF	R9					
	OUTLET	FLANGED	1"	RF	R9					
	BLEED	N/A								
BORE VALVE (DN-mm)		DN 25								
BORE VENT (DN-mm)		N/A								
SERVICE (STD / CRYOGENIC / HIGH TEMP)		STANDARD								
FACE TO FACE DIMENTIONS (mm)		127 mm	ASME B16.10							
DESIGN										
PORT DESIGN		FULL BORE								
RATING CLASS		ASME 150								
SEAT DESIGN		SOFT SEAT								
STEM DESIGN (STD / EXTENDED)		STEM EXTENSION	100mm							8
CORROSION ALLOWANCE		YES	3mm							
WELD OVERLAY		NO								
OPERATOR		LEVER	St.st.316							
LOCKING SYSTEM		YES	without locking element							
NACE MR0175/ISO 15156		YES								
FUGITIVE EMISSION / CLASS		NO								
FIRE SAFE		YES	API 607 / ISO 10497 / API 6FA							
MATERIALS										
BODY		A350 LF2	NACE							
CLOSURES		A350 LF2	NACE							
BALL		A479 316/316L	NACE							
SEAT		RPTFE								
SEAT SUPPORT		A350 LF2	NACE							
SEAT SPRING		N/A								
TRUNNION		N/A								
STEM		A479 316/316L	NACE							
BODY SEALS / GASKET		O-RING (FKM (AED))	RING (GRAPHITE)							
SEAT SUPPORT SEALS / GASKET		N/A	N/A							
STEM SEALS / GASKET		O-RING (FKM (AED))	RING (GRAPHITE)							
BOLT / NUT / BOLT COATING		A193 B7M	A194 Gr.2H	+HDG						
OTHER		Non-wetted part in st.steel								6
TESTS										
REFERENCE PRESSURE TESTING		API 598, API 6D								
GAS TEST										
SUPPLEMENTARY TESTS		NDE (NDE OPERATORS QUALIFICATION EN ISO 9712 / SNT-TC 1A)								
		PMI: 100% Valve Body/Bonnet Body and Wetted parts in acc. a procedura PT-PMI rev.14								
MATERIAL TEST		Hardness test (100%) on body and wetted parts acc. to proc. PT-HT Rev.1								
NOTES:										
		1. Antistatic device								
		2. Anti-blow out stem								
		3. CAVITY RELIEF PRESSURE TEST(100 %) acc. to proc. PT-VSP-VSF								
		4. ANTI-STATIC TEST acc. to spec. BS EN 12266-PART. 2 TEST F21 (12V-ACCEPTANCE CRITERIA 10 Ohm)								
		5. STAINLESS STEEL NAMEPLATE (BODY) + ST.ST NAMEPLATE WITH STEEL WIRE								
		6. spring material ELGILOY R30003								
		7. Painting treatment according to spec. 123A90-DDL-MAT-SP-60006 - System: SYS-6A color: VALVE RAL 9002 - LEVER RAL 9005 - Level II Nace - Frosio Inspector acc. to spec. "123A90-DDL-MAT-SP-60006 sec.5.8" - Adhesion Test (Pull Off)								
		8. Lever is suitable for insulation up to 100mm to flange								
		TAG: BLPH-MV-417								

Rev	*Date*	*Description*	*Verd*	*Chck*
0	*25/07/2024*	*Issue for order*	*L.D.G* LDG	*A.G.*

indra VALVES - ITALY	**VALVE DATA SHEET**	VDS-01 Rev.1 02/08/2022

ORDER INFO

CUSTOMER:	**ROSETTI MARINO**	INDRA CODE:	**00.VSF.2691/V**
OFFER NUMBER:	**10531**	CUSTOMER CODE:	**VBC0NN24721H00 (SAP CODE)**
END USER:	**PROGETTO CROSSWIND**	JOB NO:	

VALVE MODEL		**598**								**NOTE**
Piping Class / DESIGN TEMP. (°C)				*Min*	**-46**	*°C*	*Max*	**+100**	*°C*	
VALVE DESIGN		SB								
VALVE CONSTRUCTION		FLOATING BALL VALVE	SIDE ENTRY	SPLIT BODY TYPE						
DESIGN CODE		ASME B16.34	ASME B16.5							
END CONNECTIONS	*INLET*	FLANGED	1-1/2"	RF	R9					
	OUTLET	FLANGED	1-1/2"	RF	R9					
	BLEED	N/A								
BORE VALVE (DN-mm)		DN 40								
BORE VENT (DN-mm)		N/A								
SERVICE (STD / CRYOGENIC / HIGH TEMP)		STANDARD								
FACE TO FACE DIMENTIONS (mm)		165 mm	ASME B16.10							
DESIGN										
PORT DESIGN		FULL BORE								
RATING CLASS		ASME 150								
SEAT DESIGN		SOFT SEAT								
STEM DESIGN (STD / EXTENDED)		STEM EXTENSION	100mm							8
CORROSION ALLOWANCE		YES	3mm							
WELD OVERLAY		NO								
OPERATOR		LEVER	St.st.316							
LOCKING SYSTEM		YES	without locking element							
NACE MR0175/ISO 15156		YES								
FUGITIVE EMISSION / CLASS		NO								
FIRE SAFE		YES	API 607 / ISO 10497 / API 6FA							
MATERIALS										
BODY		A350 LF2	NACE							
CLOSURES		A350 LF2	NACE							
BALL		A479 316/316L	NACE							
SEAT		RPTFE								
SEAT SUPPORT		A350 LF2	NACE							
SEAT SPRING		N/A								
TRUNNION		N/A								
STEM		A479 316/316L	NACE							
BODY SEALS / GASKET		O-RING (FKM (AED))	RING (GRAPHITE)							
SEAT SUPPORT SEALS / GASKET		N/A	N/A							
STEM SEALS / GASKET		O-RING (FKM (AED))	RING (GRAPHITE)							
BOLT / NUT / BOLT COATING		A193 B7M	A194 Gr.2HM	+HDG						
OTHER		Non-wetted part in st.steel								6
TESTS										
REFERENCE PRESSURE TESTING		API 598, API 6D								
GAS TEST										
SUPPLEMENTARY TESTS		NDE (NDE OPERATORS QUALIFICATION EN ISO 9712 / SNT-TC 1A)								
		PMI: 100% Valve Body/Bonnet Body and Wetted parts in acc. a procedura PT-PMI rev.14								
MATERIAL TEST		Hardness test (100%) on body and wetted parts acc. to proc. PT-HT Rev.1								
NOTES:										
		1. Antistatic device								
		2. Anti-blow out stem								
		3. CAVITY RELIEF PRESSURE TEST(100 %) acc. to proc. PT-VSP-VSF								
		4. ANTI-STATIC TEST acc. to spec. BS EN 12266-PART. 2 - TEST F21 (12V-ACCEPTANCE CRITERIA 10 Ohm)								
		5. STAINLESS STEEL NAMEPLATE (BODY) + ST.ST NAMEPLATE WITH STEEL WIRE								
		6. spring material ELGILOY R30003								
		7. Painting treatment according to spec. 123A90-DDL-MAT-SP-60006 - System: SYS-6A color: VALVE RAL 9002 - LEVER RAL 9005 - Level II Nace - Frosio Inspector acc. to spec. "123A90-DDL-MAT-SP-60006 sec.5.8" - Adhesion Test (Pull Off)								
		8. Lever is suitable for insulation up to 100mm to flange								
		TAG: BLPH-MV-412								

Rev	*Date*	*Description*	*Verd*	*Chck*
0	*25/07/2024*	*Issue for order*	*L.D.G* LDG	*A.G.*

indra VALVES - ITALY	**VALVE DATA SHEET**	VDS-01 Rev.1 02/08/2022

ORDER INFO

CUSTOMER:	**ROSETTI MARINO**	INDRA CODE:	**00.VSF.2683**
OFFER NUMBER:	**10531**	CUSTOMER CODE:	**VBC0NN24893Q00 (SAP CODE)**
END USER:	**PROGETTO CROSSWIND**	JOB NO:	

VALVE MODEL		**598**								**NOTE**
Piping Class / DESIGN TEMP. (°C)				*Min*	**5**	*°C*	*Max*	**50**	*°C*	
VALVE DESIGN		SB								
VALVE CONSTRUCTION		FLOATING BALL VALVE	SIDE ENTRY	SPLIT BODY TYPE						
DESIGN CODE		ASME B16.34	ASME B16.5							
END CONNECTIONS	*INLET*	FLANGED	3/4"	FF						
	OUTLET	FLANGED	3/4"	FF						
	BLEED	N/A								
BORE VALVE (DN-mm)		DN 20								
BORE VENT (DN-mm)		N/A								
SERVICE (STD / CRYOGENIC / HIGH TEMP)		STANDARD								
FACE TO FACE DIMENTIONS (mm)		117 mm	ASME B16.10							
DESIGN										
PORT DESIGN		FULL BORE								
RATING CLASS		ASME 150								
SEAT DESIGN		SOFT SEAT								
STEM DESIGN (STD / EXTENDED)		STEM EXTENSION								7
CORROSION ALLOWANCE		NO								
WELD OVERLAY		NO								
OPERATOR		LEVER	St.st.316							
LOCKING SYSTEM		YES	without locking element							
NACE MR0175/ISO 15156		YES								
FUGITIVE EMISSION / CLASS		NO								
FIRE SAFE		YES	API 607 / ISO 10497 / API 6FA							
MATERIALS										
BODY		B564 Hastelloy								
CLOSURES		B564 Hastelloy								
BALL		B574 Hastelloy								
SEAT		PEEK								
SEAT SUPPORT		B564 Hastelloy								
SEAT SPRING		N/A								
TRUNNION		N/A								
STEM		B574 Hastelloy								
BODY SEALS / GASKET		O-RING (FKM (AED))	RING (GRAPHITE)							
SEAT SUPPORT SEALS / GASKET		N/A	N/A							
STEM SEALS / GASKET		O-RING (FKM (AED))	RING (GRAPHITE)							
BOLT / NUT / BOLT COATING		A193 B8M	A194 Gr.8M							
OTHER		Non-wetted part in st.steel								6
TESTS										
REFERENCE PRESSURE TESTING		API 598, API 6D								
GAS TEST										
SUPPLEMENTARY TESTS		NDE (NDE OPERATORS QUALIFICATION EN ISO 9712 / SNT-TC 1A)								
		PMI: 100% Valve Body/Bonnet Body and Wetted parts in acc. a procedura PT-PMI rev.14								
MATERIAL TEST		Hardness test (100%) on body and wetted parts acc. to proc. PT-HT Rev.1								
NOTES:										
		1. Antistatic device								
		2. Anti-blow out stem								
		3. CAVITY RELIEF PRESSURE TEST(100 %) acc. to proc. PT-VSP-VSF								
		4,'ANTI-STATIC TEST acc. to spec. BS EN 12266-PART. 2 TEST F21 (12V-ACCEPTANCE CRITERIA 10 Ohm)								
		5. STAINLESS STEEL NAMEPLATE (BODY) + ST.ST NAMEPLATE WITH STEEL WIRE								
		6. spring material ELGILOY R30003								
		7. Lever is suitable for insulation up to 100mm to flange								
		TAG: BLPH-MV-214, BLPH-MV-400								

Rev	*Date*	*Description*	*Verd*	*Chck*
0	*25/07/2024*	*Issue for order*	*L.D.G* LDG	*A.G.*

indra VALVES - ITALY	**VALVE DATA SHEET**	VDS-01 Rev.1 02/08/2022

ORDER INFO

CUSTOMER:	**ROSETTI MARINO**	INDRA CODE:	**00.VSF.2695/V**
OFFER NUMBER:	**10531**	CUSTOMER CODE:	**VBD0NN16460300 (SAP CODE)**
END USER:	**PROGETTO CROSSWIND**	JOB NO:	

VALVE MODEL		**598**							**NOTE**
Piping Class / DESIGN TEMP. (°C)				*Min*	**-29**	*°C*	*Max*	**+100** *°C*	
VALVE DESIGN		SB							
VALVE CONSTRUCTION		FLOATING BALL VALVE	SIDE ENTRY	SPLIT BODY TYPE					
DESIGN CODE		ASME B16.34	ASME B16.5						
END CONNECTIONS	*INLET*	FLANGED	3"	RF	R9				
	OUTLET	FLANGED	3"	RF	R9				
	BLEED	N/A							
BORE VALVE (DN-mm)		DN 50							
BORE VENT (DN-mm)		N/A							
SERVICE (STD / CRYOGENIC / HIGH TEMP)		STANDARD	HYDROGEN						
FACE TO FACE DIMENTIONS (mm)		203mm	ASME B16.10						
DESIGN									
PORT DESIGN		REDUCED BORE							
RATING CLASS		ASME 150							
SEAT DESIGN		SOFT SEAT							
STEM DESIGN (STD / EXTENDED)		STANDARD							
CORROSION ALLOWANCE		YES	3mm						
WELD OVERLAY		NO							
OPERATOR		LEVER	St.st.316						
LOCKING SYSTEM		YES	without locking element						
NACE MR0175/ISO 15156		YES							
FUGITIVE EMISSION / CLASS		YES	ISO 15848-1						8
FIRE SAFE		YES	API 607 / ISO 10497 / API 6FA						
MATERIALS									
BODY		A182 F316/316L	NACE						
CLOSURES		A182 F316/316L	NACE						
BALL		A479 316/316L	NACE						
SEAT		RPTFE							
SEAT SUPPORT		A182 F316/316L	NACE						
SEAT SPRING		N/A							
TRUNNION		N/A							
STEM		A479 316/316L	NACE						
BODY SEALS / GASKET		O-RING (FKM (AED))	RING (GRAPHITE)						
SEAT SUPPORT SEALS / GASKET		N/A	N/A						
STEM SEALS / GASKET		O-RING (FKM (AED))	RING (GRAPHITE)						
BOLT / NUT / BOLT COATING		A193 B8M Cl.2	A194 Gr.8M						
OTHER		Non-wetted part in st.steel							6
TESTS									
REFERENCE PRESSURE TESTING		API 598, API 6D							
GAS TEST		(HELIUM) (1 FOR POSITION) acc. to proc. PGT-VSP-VSF/ITA-ENG (24-01216) Rev.0							
SUPPLEMENTARY TESTS		NDE (NDE OPERATORS QUALIFICATION EN ISO 9712 / SNT-TC 1A)							
		PMI: 100% Valve Body/Bonnet Body and Wetted parts in acc. a procedura PT-PMI rev.14							
MATERIAL TEST		Hardness test (100%) on body and wetted parts acc. to proc. PT-HT Rev.1							
		DYE PENETRANT ON BODY (100 %) acc. to proc. 'PT-DP-01							
		DYE PENETRANT ON BONNET BODY (100 %):							
NOTES:									
		1. Antistatic device							
		2. Anti-blow out stem							
		3. CAVITY RELIEF PRESSURE TEST(100 %) acc. to proc. PT-VSP-VSF							
		4. ANTI-STATIC TEST acc. to spec. BS EN 12266-PART. 2 TEST F21 (12V-ACCEPTANCE CRITERIA 10 Ohm)							
		5. STAINLESS STEEL NAMEPLATE (BODY) + ST.ST NAMEPLATE WITH STEEL WIRE							
		6. spring material ELGILOY R30003							
		7. Painting treatment according to spec. 123A90-DDL-MAT-SP-60006 - System: SYS-6A color: VALVE RAL 9002 - LEVER RAL 9005 - Level II Nace - Frosio Inspector acc. to spec. "123A90-DDL-MAT-SP-60006 sec.5.8" - Adhesion Test (Pull Off)							
		8. "3. PRODUCTION FUGGITIVE EMISSION TEST ACC.TO ISO 15848-2 (1 FOR POSITION) Acc. to procedure ""PFET_Rev.2-Procedura FET_EN"""							
		TAG: BLPH-MV-402,							

Rev	*Date*	*Description*	*Verd*	*Chck*
0	*25/07/2024*	*Issue for order*	*L.D.G.* LDG	*A.G.*

indra VALVES - ITALY	**VALVE DATA SHEET**	VDS-01 Rev.1 02/08/2022

ORDER INFO

CUSTOMER:	**ROSETTI MARINO**	INDRA CODE:	**00.VSF.2680/V**
OFFER NUMBER:	**10531**	CUSTOMER CODE:	**VLBBNN07190100 (SAP CODE)**
END USER:	**PROGETTO CROSSWIND**	JOB NO:	

VALVE MODEL		**898**							**NOTE**
Piping Class / DESIGN TEMP. (°C)				*Min*	**-46**	*°C*	*Max*	**+80** *°C*	
VALVE DESIGN		DBB							
VALVE CONSTRUCTION		FLOATING BALL VALVE	SIDE ENTRY	SPLIT BODY TYPE					
DESIGN CODE		ASME B16.34	ASME B16.5	ASME B1.20.1					
END CONNECTIONS	*INLET*	FLANGED	1"	RF	R9				
	OUTLET	FLANGED	1"	RF	R9				
	BLEED	THREADED (Female)	1/2"	NPT	with PLUG				
BORE VALVE (DN-mm)		DN 25							
BORE VENT (DN-mm)		5 mm							
SERVICE (STD / CRYOGENIC / HIGH TEMP)		STANDARD	HYDROGEN						
FACE TO FACE DIMENTIONS (mm)		264							
DESIGN									
PORT DESIGN		FULL BORE							
RATING CLASS		ASME 300							
SEAT DESIGN		SOFT SEAT							
STEM DESIGN (STD / EXTENDED)		STANDARD							
CORROSION ALLOWANCE		NO							
WELD OVERLAY		NO							
OPERATOR		LEVER	St.st.316						
LOCKING SYSTEM		YES	without locking element						
NACE MR0175/ISO 15156		YES							
FUGITIVE EMISSION / CLASS		YES	ISO 15848-1						4
FIRE SAFE		YES	API 607 / ISO 10497						
MATERIALS									
BODY		A182 F316/316L	NACE						
CLOSURES		A182 F316/316L	NACE						
BALL		A479 316/316L	NACE						
SEAT		PEEK							
SEAT SUPPORT		N/A							
SEAT SPRING		N/A							
TRUNNION		N/A							
STEM		A479 316/316L	NACE						
BODY SEALS / GASKET		O-RING (FKM (AED))	RING (GRAPHITE)						
SEAT SUPPORT SEALS / GASKET		N/A	N/A						
STEM SEALS / GASKET		O-RING (FKM (AED))	RING (GRAPHITE)						
BOLT / NUT / BOLT COATING		ASTM A193 B8M Cl.2	A194 Gr.8M						
OTHER		Non-wetted part in st.steel							6
TESTS									
REFERENCE PRESSURE TESTING		API 598, API 6D							
GAS TEST		(HELIUM) (1 FOR POSITION) acc. to proc. PGT-VSP-VSF/ITA-ENG (24-01216) Rev.0							
SUPPLEMENTARY TESTS		ANTISTATIC TEST acc. To BS EN 12266-PART. 2 TEST F21 (12V-ACCEPTANCE CRITERIA 10 Ohm)							
		CAVITY RELIEF PRESSURE TEST(100 %) acc. to proc. PT-VSP-VSF							
		NDE OPERATORS QUALIFICATION EN ISO 9712 / SNT-TC 1A)							
MATERIAL TEST		PMI: 100% Valve Body/Bonnet Body and Wetted parts in acc. to proc. PT-PMI rev.14							
		DYE PENETRANT ON BODY (100 %) acc. to proc. 'PT-DP-01							
		DYE PENETRANT ON BODY BONNET (100 %):							
		Hardness test (100%) on body and wetted parts acc. to proc. PT-HT Rev.1							
NOTES:									
		1. Antistatic device							
		2. Anti-blow out stem							
		3. Painting treatment according to spec. 123A90-DDL-MAT-SP-60006 - System: SYS-6A color: RAL 9002(VALVE); RAL 9005(LEVER) - Level II Nace - Frosio Inspector acc. to spec. "123A90-DDL-MAT-SP-60006 sec.5.8" Adhesion Test (Pull Off)							
		4. Production fuggitive emission test (1 for position) ISO 15848-2 acc. to proc. PFET_Rev.2-Procedura FET_EN							
		5. STAINLESS STEEL NAMEPLATE (BODY) + ST.ST NAMEPLATE WITH STEEL WIRE							
		6. SPRING MATERIAL : ELGILOY R30003							
		TAG: BLPH-MV-003, BLPH-MV-010, BLPH-MV-018, BLPH-MV-029, BLPH-MV-086, BLPH-MV-087, BLPH-MV-088 BLPH-MV-093, BLPH-MV-094, BLPH-MV-098, BLPH-MV-192, BLPH-MV-193, BLPH-MV-195, BLPH-MV-197 BLPH-MV-198, BLPH-MV-200, BLPH-MV-206, BLPH-MV-207, BLPH-MV-211, BLPH-MV-212, BLPH-MV-384 BLPH-MV-385, BLPH-MV-390, BLPH-MV-391, BLPH-MV-426, BLPH-MV-428, BLPH-MV-434, BLPH-MV-435, BLPH-MV-466							<1>

Rev	*Date*	*Description*	*Verd*	*Chck*
0	*24/07/2024*	*Issue for order*	*L.D.G.* LDG	*A.G.*
1	*10/09/2024*	*Added missing valve Tag*	*M.S.*	*A.G.*

indra VALVES - ITALY	**VALVE DATA SHEET**	VDS-01 Rev.1 02/08/2022

ORDER INFO

CUSTOMER:	**ROSETTI MARINO**	INDRA CODE:	**00.VSF.2681/V**
OFFER NUMBER:	**10531**	CUSTOMER CODE:	**VLBBNN07201H00 (SAP CODE)**
END USER:	**PROGETTO CROSSWIND**	JOB NO:	

VALVE MODEL		**898**							**NOTE**
Piping Class / DESIGN TEMP. (°C)				*Min*	**-46**	*°C*	*Max*	**+80**	*°C*	
VALVE DESIGN		DBB								
VALVE CONSTRUCTION		FLOATING BALL VALVE	SIDE ENTRY	SPLIT BODY TYPE						
DESIGN CODE		ASME B16.34	ASME B16.5	ASME B1.20.1						
END CONNECTIONS	*INLET*	FLANGED	1-1/2"	RF	R9					
	OUTLET	FLANGED	1-1/2""	RF	R9					
	BLEED	THREADED (Female)	1/2"	NPT	with PLUG					
BORE VALVE (DN-mm)		DN 40								
BORE VENT (DN-mm)		5 mm								
SERVICE (STD / CRYOGENIC / HIGH TEMP)		STANDARD	HYDROGEN							
FACE TO FACE DIMENTIONS (mm)		317								
DESIGN										
PORT DESIGN		FULL BORE								
RATING CLASS		ASME 300								
SEAT DESIGN		SOFT SEAT								
STEM DESIGN (STD / EXTENDED)		STANDARD								
CORROSION ALLOWANCE		NO								
WELD OVERLAY		NO								
OPERATOR		LEVER	St.st.316							
LOCKING SYSTEM		YES	without locking element							
NACE MR0175/ISO 15156		YES								
FUGITIVE EMISSION / CLASS		YES	ISO 15848-1							4
FIRE SAFE		YES	API 607 / ISO 10497							
MATERIALS										
BODY		A182 F316/316L	NACE							
CLOSURES		A182 F316/316L	NACE							
BALL		A479 316/316L	NACE							
SEAT		PEEK								
SEAT SUPPORT		N/A								
SEAT SPRING		N/A								
TRUNNION		N/A								
STEM		A479 316/316L	NACE							
BODY SEALS / GASKET		O-RING (FKM (AED))	RING (GRAPHITE)							
SEAT SUPPORT SEALS / GASKET		N/A	N/A							
STEM SEALS / GASKET		O-RING (FKM (AED))	RING (GRAPHITE)							
BOLT / NUT / BOLT COATING		ASTM A193 B8M Cl.2	A194 Gr.8M							
OTHER		Non-wetted part in st.steel								6
TESTS										
REFERENCE PRESSURE TESTING		API 598, API 6D								
GAS TEST		(HELIUM) (1 FOR POSITION) acc. to proc. PGT-VSP-VSF/ITA-ENG (24-01216) Rev.0								
SUPPLEMENTARY TESTS		ANTISTATIC TEST acc. To BS EN 12266-PART. 2 TEST F21 (12V-ACCEPTANCE CRITERIA 10 Ohm)								
		CAVITY RELIEF PRESSURE TEST(100 %) acc. to proc. PT-VSP-VSF								
		NDE OPERATORS QUALIFICATION EN ISO 9712 / SNT-TC 1A)								
MATERIAL TEST		PMI: 100% Valve Body/Bonnet Body and Wetted parts in acc. to proc. PT-PMI rev.14								
		DYE PENETRANT ON BODY (100 %) acc. to proc. 'PT-DP-01								
		DYE PENETRANT ON BODY BONNET (100 %):								
		Hardness test (100%) on body and wetted parts acc. to proc. PT-HT Rev.1								
NOTES:										
		1. Antistatic device								
		2. Anti-blow out stem								
		3. Painting treatment according to spec. 123A90-DDL-MAT-SP-60006 - System: SYS-6A color: RAL 9002(VALVE); RAL 9005(LEVER) - Level II Nace - Frosio Inspector acc. to spec. "123A90-DDL-MAT-SP-60006 sec.5.8" Adhesion Test (Pull Off)								
		4. Production fuggitive emission test (1 for position) ISO 15848-2 acc. to proc. PFET_Rev.2-Procedura FET_EN								
		5. STAINLESS STEEL NAMEPLATE (BODY) + ST.ST NAMEPLATE WITH STEEL WIRE								
		6. SPRING MATERIAL : ELGILOY R30003								
		TAG: BLPH-MV-032, BLPH-MV-266, BLPH-MV-389, BLPH-MV-416, BLPH-MV-433, BLPH-MV-442, BLPH-MV-468								<1>

Rev	*Date*	*Description*	*Verd*	*Chck*
0	*24/07/2024*	*Issue for order*	*L.D.G.* LDG	*A.G.*
1	*10/09/2024*	*Added missing valve Tag*	*M.S.*	*A.G.*

	VALVE DATA SHEET	VDS-01
		Rev.1
		02/08/2022

ORDER INFO

CUSTOMER:	**ROSETTI MARINO**	INDRA CODE:	**00.VSF.2682/V**
OFFER NUMBER:	**10531**	CUSTOMER CODE:	**VLBBNN07210200 (SAP CODE)**
END USER:	**PROGETTO CROSSWIND**	JOB NO:	

VALVE MODEL		898							NOTE
Piping Class / DESIGN TEMP. (°C)				Min	-46	°C	Max	+80	°C	
VALVE DESIGN		DBB								
VALVE CONSTRUCTION		FLOATING BALL VALVE	SIDE ENTRY	SPLIT BODY TYPE☑						
DESIGN CODE		ASME B16.34	ASME B16.5	ASME B1.20.1						
END CONNECTIONS	INLET	FLANGED	2"	RF	R9					
	OUTLET	FLANGED	2"	RF	R9					
	BLEED	THREADED (Female)	1/2"	NPT	with PLUG					
BORE VALVE (DN-mm)		DN 50								
BORE VENT (DN-mm)		5 mm								
SERVICE (STD / CRYOGENIC / HIGH TEMP)		STANDARD	HYDROGEN							
FACE TO FACE DIMENTIONS (mm)		366								
DESIGN										
PORT DESIGN		FULL BORE								
RATING CLASS		ASME 300								
SEAT DESIGN		SOFT SEAT								
STEM DESIGN (STD / EXTENDED)		STANDARD								
CORROSION ALLOWANCE		NO								
WELD OVERLAY		NO								
OPERATOR		LEVER	St.st.316							
LOCKING SYSTEM		YES	without locking element							
NACE MR0175/ISO 15156		YES								
FUGITIVE EMISSION / CLASS		YES	ISO 15848-1							4
FIRE SAFE		YES	API 607 / ISO 10497							
MATERIALS										
BODY		A182 F316/316L	NACE							
CLOSURES		A182 F316/316L	NACE							
BALL		A479 316/316L	NACE							
SEAT		PEEK								
SEAT SUPPORT		N/A								
SEAT SPRING		N/A								
TRUNNION		N/A								
STEM		A479 316/316L	NACE							
BODY SEALS / GASKET		O-RING (FKM (AED))	RING (GRAPHITE)							
SEAT SUPPORT SEALS / GASKET		N/A	N/A							
STEM SEALS / GASKET		O-RING (FKM (AED))	RING (GRAPHITE)							
BOLT / NUT / BOLT COATING		ASTM A193 B8M Cl.2	A194 Gr.8M							
OTHER		Non-wetted part in st.steel								6
TESTS										
REFERENCE PRESSURE TESTING		API 598, API 6D								
GAS TEST		(HELIUM) (1 FOR POSITION) acc. to proc. PGT-VSP-VSF/ITA-ENG (24-01216) Rev.0								
SUPPLEMENTARY TESTS		ANTISTATIC TEST acc. To BS EN 12266-PART. 2 TEST F21 (12V-ACCEPTANCE CRITERIA 10 Ohm)								
		CAVITY RELIEF PRESSURE TEST(100 %) acc. to proc. PT-VSP-VSF								
		NDE OPERATORS QUALIFICATION EN ISO 9712 / SNT-TC 1A)								
MATERIAL TEST		PMI: 100% Valve Body/Bonnet Body and Wetted parts in acc. to proc. PT-PMI rev.14								
		DYE PENETRANT ON BODY (100 %) acc. to proc. 'PT-DP-01								
		DYE PENETRANT ON BODY BONNET (100 %):								
		Hardness test (100%) on body and wetted parts acc. to proc. PT-HT Rev.1								
NOTES:										
		1. Antistatic device								
		2. Anti-blow out stem								
		3. Painting treatment according to spec. 123A90-DDL-MAT-SP-60006 - System: SYS-6A color: RAL 9002(VALVE); RAL 9005(LEVER) - Level II Nace - Frosio Inspector acc. to spec. "123A90-DDL-MAT-SP-60006 sec.5.8" Adhesion Test (Pull Off)								
		4. Production fuggitive emission test (1 for position) ISO 15848-2 acc. to proc. PFET_Rev.2-Procedura FET_EN								
		5. STAINLESS STEEL NAMEPLATE (BODY) + ST.ST NAMEPLATE WITH STEEL WIRE								
		6. SPRING MATERIAL : ELGILOY R30003								
		TAG: BLPH-MV-019								

Rev	Date	Description	Verd	Chck
0	24/07/2024	Issue for order	L.D.G. LDG	A.G.

indra VALVES - ITALY	**VALVE DATA SHEET**	VDS-01 Rev.1 02/08/2022

ORDER INFO

CUSTOMER:	**ROSETTI MARINO**	INDRA CODE:	**00.VSF.2679/V**
OFFER NUMBER:	**10531**	CUSTOMER CODE:	**VLBBNN07230400 (SAP CODE)**
END USER:	**PROGETTO CROSSWIND**	JOB NO:	

VALVE MODEL		**898**							**NOTE**
Piping Class / DESIGN TEMP. (°C)				*Min*	**-46**	°C	*Max*	**+80**	°C	
VALVE DESIGN		DBB								
VALVE CONSTRUCTION		FLOATING BALL VALVE	SIDE ENTRY	SPLIT BODY TYPE						
DESIGN CODE		ASME B16.34	ASME B16.5	ASME B1.20.1						
END CONNECTIONS	*INLET*	FLANGED	4"	RF	R9					
	OUTLET	FLANGED	4"	RF	R9					
	BLEED	THREADED (Female)	1/2"	NPT	with PLUG					
BORE VALVE (DN-mm)		DN 100								
BORE VENT (DN-mm)		5 mm								
SERVICE (STD / CRYOGENIC / HIGH TEMP)		STANDARD	HYDROGEN							
FACE TO FACE DIMENTIONS (mm)		527								
DESIGN										
PORT DESIGN		FULL BORE								
RATING CLASS		ASME 300								
SEAT DESIGN		SOFT SEAT								
STEM DESIGN (STD / EXTENDED)		STANDARD								
CORROSION ALLOWANCE		NO								
WELD OVERLAY		NO								
OPERATOR		GEAR	St.st.316							
LOCKING SYSTEM		YES	without locking element							
NACE MR0175/ISO 15156		YES								
FUGITIVE EMISSION / CLASS		YES	ISO 15848-1							4
FIRE SAFE		YES	API 607 / ISO 10497							
MATERIALS										
BODY		A182 F316/316L	NACE							
CLOSURES		A182 F316/316L	NACE							
BALL		A479 316/316L	NACE							
SEAT		RPTFE								
SEAT SUPPORT		N/A								
SEAT SPRING		N/A								
TRUNNION		N/A								
STEM		A479 316/316L	NACE							
BODY SEALS / GASKET		O-RING (FKM (AED))	RING (GRAPHITE)							
SEAT SUPPORT SEALS / GASKET		N/A	N/A							
STEM SEALS / GASKET		O-RING (FKM (AED))	RING (GRAPHITE)							
BOLT / NUT / BOLT COATING		ASTM A193 B8M Cl.2	A194 Gr.8M							
OTHER		Non-wetted part in st.steel								6
TESTS										
REFERENCE PRESSURE TESTING		API 598, API 6D								
GAS TEST		(HELIUM) (1 FOR POSITION) acc. to proc. PGT-VSP-VSF/ITA-ENG (24-01216) Rev.0								
SUPPLEMENTARY TESTS		ANTISTATIC TEST acc. To BS EN 12266-PART. 2 TEST F21 (12V-ACCEPTANCE CRITERIA 10 Ohm)								
		CAVITY RELIEF PRESSURE TEST(100 %) acc. to proc. PT-VSP-VSF								
		NDE OPERATORS QUALIFICATION EN ISO 9712 / SNT-TC 1A)								
MATERIAL TEST		PMI: 100% Valve Body/Bonnet Body and Wetted parts in acc. to proc. PT-PMI rev.14								
		DYE PENETRANT ON BODY (100 %) acc. to proc. 'PT-DP-01								
		DYE PENETRANT ON BODY BONNET (100 %):								
		Hardness test (100%) on body and wetted parts acc. to proc. PT-HT Rev.1								
NOTES:										
		1. Antistatic device								
		2. Anti-blow out stem								
		3. Painting treatment according to spec. 123A90-DDL-MAT-SP-60006 - System: SYS-6A color: RAL 9002(VALVE); RAL 9005(GEAR) - Level II Nace - Frosio Inspector acc. to spec. "123A90-DDL-MAT-SP-60006 sec.5.8" Adhesion Test (Pull Off)								
		4. Production fuggitive emission test (1 for position) ISO 15848-2 acc. to proc. PFET_Rev.2-Procedura FET_EN								
		5. STAINLESS STEEL NAMEPLATE (BODY) + ST.ST NAMEPLATE WITH STEEL WIRE								
		6. SPRING MATERIAL : ELGILOY R30003								
		TAG: BLPH-MV-034, BLPH-MV-222, BLPH-MV-387, BLPH-MV-423, BLPH-MV-431, BLPH-MV-440								

Rev	*Date*	*Description*	*Verd*	*Chck*
0	*24/07/2024*	*Issue for order*	*L.D.G.* LDG	*A.G.*

indra VALVES - ITALY	**VALVE DATA SHEET**	VDS-01 Rev.1 02/08/2022

ORDER INFO

CUSTOMER:	**ROSETTI MARINO**	INDRA CODE:	**00.VSFT.0223/V**
OFFER NUMBER:	**10531**	CUSTOMER CODE:	**VLBBNN07240600 (SAP CODE)**
END USER:	**PROGETTO CROSSWIND**	JOB NO:	

VALVE MODEL		**898**							**NOTE**
Piping Class / Datasheet / DESIGN TEMP. (°C)				*Min*	**-46**	°C	*Max*	**80** °C	
VALVE DESIGN		DBB							
VALVE CONSTRUCTION		TRUNNION BALL VALVE	SIDE ENTRY	SPLIT BODY TYPE☑					
DESIGN CODE		ASME B16.34	ASME B16.25						
END CONNECTIONS	*INLET*	FLANGED	6"	RF	R9				
	OUTLET	FLANGED	6"	RF	R9				
	BLEED	THREADED (Female)	1/2"	NPT	WITH PLUG				
BORE VALVE (DN-mm)		DN 150							
BORE VENT (DN-mm)		5 mm							11
SERVICE (STD / CRYOGENIC / HIGH TEMP)		STANDARD	HYDROGEN SERVICE						10
FACE TO FACE DIMENTIONS (mm)		691	Manufacturer STD						
DESIGN									
PORT DESIGN		FULL BORE							
RATING CLASS		ANSI 300							
SEAT DESIGN		SOFT SEAT							
STEM DESIGN (STD / EXTENDED)		STANDARD							
CORROSION ALLOWANCE		NO							
WELD OVERLAY		NO							
OPERATOR		GEAR	Handwheel in S.S. 316	T-bar in st.st.					9
LOCKING SYSTEM		YES	without locking element						
NACE MR0175/ISO 15156		YES							
FUGITIVE EMISSION / CLASS		YES							
FIRE SAFE		YES	API 607 / ISO 10497 / API 6FA						
MATERIALS									
BODY		A182 F316/316L	NACE						
CLOSURES		A182 F316/316L	NACE						
BALL		A479 316/316L	NACE						
SEAT		A479 316/316L	+RPTFE	NACE					
SEAT SPRING / ANTISITATIC DEVICE		ELGILOY R30003	ELGILOY R30003						6
TRUNNION		A182 F316/316L	NACE						
STEM		A479 316/316L	NACE						
BODY SEALS / GASKET		O-RING (FKM (AED))	RING (GRAPHITE)						
SEAT SUPPORT SEALS / GASKET		O-RING (FKM (AED))	RING (GRAPHITE)						
STEM SEALS / GASKET		O-RING (FKM (AED))	RING (GRAPHITE)						
BOLT / NUT / BOLT COATING		A193 B8M Cl.2	A194 Gr8M						
OTHER		St.St.							
TESTS									
REFERENCE PRESSURE TESTING		API 598, API 6D							
GAS TEST		(HELIUM) (1 FOR POSITION) acc. to proc. PGT-VSP-VSF/ITA-ENG (24-01216) Rev.0							
SUPPLEMENTARY TESTS		NDE (NDE OPERATORS QUALIFICATION EN ISO 9712 / SNT-TC 1A)							
MATERIAL TEST		Hardness test (100%) on body and wetted parts acc. to proc. PT-HT Rev.1							
		DYE PENETRANT ON BODY (100 %) acc. to proc. 'PT-DP-01							
		PMI: 100% Valve Body/Bonnet Body and Wetted parts in acc. a procedura PT-PMI rev.14 (CARBON STEEL EXCLUDED)							
NOTES:									
		1. Antistatic device							
		2. Anti-blow out stem							
		3. CAVITY RELIEF PRESSURE TEST(100 %) acc. to proc. PT-VSP-VSF							
		4. ANTI-STATIC TEST acc. to spec. BS EN 12266-PART. 2 TEST F21 (12V-ACCEPTANCE CRITERIA 10 Ohm) acc. to proc. ATP-00							
		5. STAINLESS STEEL NAMEPLATE (BODY) + ST.ST NAMEPLATE WITH STEEL WIRE							
		6. Spring material ELGILOY R30003							
		7. Painting treatment according to spec. 123A90-DDL-MAT-SP-60006 - System: SYS-6A color: VALVE RAL 9002 - GEAR RAL 9005 - Level II Nace - Frosio Inspector acc. to spec. "123A90-DDL-MAT-SP-60006 sec.5.8" - Adhesion Test (Pull Off)							
		8. PRODUCTION FUGGITIVE EMISSION TEST ACC.TO ISO 15848-2 (1 FOR POSITION) Acc. to procedure "PFET_Rev.2-Procedura FET_EN"							
		9 GEAR, MUST BE PRE-ARRANGED TO RECEIVE GREASE CASE MATERIAL DUCTILE IRON INPUT SHAFT: ST.ST. S316 HANDWHEEL MACHINED FROM SOLID ST.ST. CLOSING DIRECTION STAMPED ON THE HANDWHEEL							
		10. CONCENTRATION 100 % IN THE WORKING FLUID							
		11. Bonnet STANDARD							
		TAG: BLPH-MV-035, BLPH-MV-264, BLPH-MV-388, BLPH-MV-424, BLPH-MV-432, BLPH-MV-441							

Rev	*Date*	*Description*	*Verd*	*Chck*
0	*02/08/2024*	*Issue for order*	*M.S.*	*A.G.*

indra VALVES - ITALY	**VALVE DATA SHEET**	VDS-01 Rev.1 02/08/2022

ORDER INFO

CUSTOMER:	**ROSETTI MARINO**	INDRA CODE:	**00.VSF.2697/V**
OFFER NUMBER:	**10531**	CUSTOMER CODE:	**VLBLNN01280100 (SAP CODE)**
END USER:	**PROGETTO CROSSWIND**	JOB NO:	

VALVE MODEL		**798**							**NOTE**
Piping Class / DESIGN TEMP. (°C)				*Min*	**-46**	°C	*Max*	**+100** °C	<1>
VALVE DESIGN		SBB							
VALVE CONSTRUCTION		FLOATING BALL VALVE	SIDE ENTRY	SPLIT BODY TYPE					
DESIGN CODE		ASME B16.34	ASME B16.5	ASME B1.20.1					
END CONNECTIONS	*INLET*	FLANGED	1"	RF	R9				
	OUTLET	FLANGED	1"	RF	R9				<1>
	BLEED	THREADED (Female)	1/2"	NPT	F	PLUG			
BORE VALVE (DN-mm)		DN25							
BORE VENT (DN-mm)		5 mm							8
SERVICE (STD / CRYOGENIC / HIGH TEMP)		STANDARD							
FACE TO FACE DIMENTIONS (mm)		202,5	Manufacturer STD						
DESIGN									
PORT DESIGN		FULL BORE							
RATING CLASS		ASME 150							
SEAT DESIGN		SOFT SEAT							
STEM DESIGN (STD / EXTENDED)		STANDARD							
CORROSION ALLOWANCE		YES	3mm						
WELD OVERLAY		NO							
OPERATOR		LEVER	T-BAR	St. St.					
LOCKING SYSTEM		YES	without locking element						
NACE MR0175/ISO 15156		YES							
FUGITIVE EMISSION / CLASS		NO							
FIRE SAFE		YES	API 607 / ISO 10497 / API 6FA						
MATERIALS									
BODY		A350 LF2	NACE						
CLOSURES		A350 LF2	NACE						
BALL		A479 316/316L	NACE						
SEAT		PEEK							
SEAT SUPPORT		N/A							
SEAT SPRING		N/A							
TRUNNION		N/A							
STEM		A479 316/316L	NACE						
BODY SEALS / GASKET		O-RING (FKM (AED))	RING (GRAPHITE)						
SEAT SUPPORT SEALS / GASKET		N/A							
STEM SEALS / GASKET		O-RING (FKM (AED))	RING (GRAPHITE)						
BOLT / NUT / BOLT COATING		A193 B7M		A194 Gr.2HM + HDG					
OTHER		Non-wetted part in st.steel							6
TESTS									
REFERENCE PRESSURE TESTING		API 598, API 6D							
GAS TEST									
SUPPLEMENTARY TEST		NDE (NDE OPERATORS QUALIFICATION EN ISO 9712 / SNT-TC 1A)							
MATERIAL TEST		Hardness test (100%) on body and wetted parts acc. to proc. PT-HT Rev.1							
		PMI: 100% Valve Body/Bonnet Body and Wetted parts in acc. a procedura PT-PMI rev.14							
NOTE PER SCHEDA ARTICOLO:									
		1. Antistatic device							
		2. Anti-blow out stem							
		3. CAVITY RELIEF PRESSURE TEST(100 %) acc. to proc. PT-VSP-VSF							
		4. ANTI-STATIC TEST acc. to spec. BS EN 12266-PART. 2 TEST F21 (12V-ACCEPTANCE CRITERIA 10 Ohm)							
		5. STAINLESS STEEL NAMEPLATE (BODY) + ST.ST NAMEPLATE WITH STEEL WIRE							
		6. spring material ELGILOY R30003							
		7. Painting treatment according to spec. 123A90-DDL-MAT-SP-60006 - System: SYS-6A color: VALVE RAL 9002 - LEVER RAL 9005 - Level II Nace - Frosio Inspector acc. to spec. "123A90-DDL-MAT-SP-60006 sec.5.8" - Adhesion Test (Pull Off)							
		8. Bonnet OS&Y							
		TAG : BLPH-MV-269, BLPH-MV-271, BLPH-MV-409							

Rev	*Date*	*Description*	*Verd*	*Chck*
0	*25/07/2024*	*Issue for order*	*L.D.G.* IDG	*A.G.*
1	*10/09/2024*	*Modified end connections outlet and modified min. design temperature*	*M.S.*	*A.G.*

indra VALVES - ITALY	**VALVE DATA SHEET**	VDS-01 Rev.1 02/08/2022

ORDER INFO

CUSTOMER:	**ROSETTI MARINO**	INDRA CODE:	**00.VSF.2699/V**
OFFER NUMBER:	**10531**	CUSTOMER CODE:	**VLBLNN01291H00 (SAP CODE)**
END USER:	**PROGETTO CROSSWIND**	JOB NO:	

VALVE MODEL		**798**							**NOTE**
Piping Class / DESIGN TEMP. (°C)				*Min*	**-46**	*°C*	*Max*	**+100** *°C*	
VALVE DESIGN		SBB							
VALVE CONSTRUCTION		FLOATING BALL VALVE	SIDE ENTRY	SPLIT BODY TYPE					
DESIGN CODE		ASME B16.34	ASME B16.5	ASME B1.20.1					
END CONNECTIONS	*INLET*	FLANGED	1-1/2"	RF	R9				
	OUTLET	FLANGED	1-1/2"	RF	R9				
	BLEED	THREADED (Female)	1/2"	NPT	F	PLUG			
BORE VALVE (DN-mm)		DN40							
BORE VENT (DN-mm)		5 mm							8
SERVICE (STD / CRYOGENIC / HIGH TEMP)		STANDARD							
FACE TO FACE DIMENTIONS (mm)		255	Manufacturer STD						
DESIGN									
PORT DESIGN		FULL BORE							
RATING CLASS		ASME 150							
SEAT DESIGN		SOFT SEAT							
STEM DESIGN (STD / EXTENDED)		STANDARD							
CORROSION ALLOWANCE		YES	3mm						
WELD OVERLAY		NO							
OPERATOR		LEVER	T-BAR	St. St.					
LOCKING SYSTEM		YES	without locking element						
NACE MR0175/ISO 15156		YES							
FUGITIVE EMISSION / CLASS		NO							
FIRE SAFE		YES	API 607 / ISO 10497 / API 6FA						
MATERIALS									
BODY		A350 LF2	NACE						
CLOSURES		A350 LF2	NACE						
BALL		A479 316/316L	NACE						
SEAT		PEEK							
SEAT SUPPORT		N/A							
SEAT SPRING		N/A							
TRUNNION		N/A							
STEM		A479 316/316L	NACE						
BODY SEALS / GASKET		O-RING (FKM (AED))	RING (GRAPHITE)						
SEAT SUPPORT SEALS / GASKET		N/A							
STEM SEALS / GASKET		O-RING (FKM (AED))	RING (GRAPHITE)						
BOLT / NUT / BOLT COATING		A193 B7M		A194 Gr.2HM + HDG					
OTHER		Non-wetted part in st.steel							6
TESTS									
REFERENCE PRESSURE TESTING		API 598, API 6D							
GAS TEST									
SUPPLEMENTARY TEST		NDE (NDE OPERATORS QUALIFICATION EN ISO 9712 / SNT-TC 1A)							
MATERIAL TEST		Hardness test (100%) on body and wetted parts acc. to proc. PT-HT Rev.1							
		PMI: 100% Valve Body/Bonnet Body and Wetted parts in acc. a procedura PT-PMI rev.14							
		IMPACT TEST ON BODY AND CLOSURES (-50°C)							
NOTE PER SCHEDA ARTICOLO:									
		1. Antistatic device							
		2. Anti-blow out stem							
		3. CAVITY RELIEF PRESSURE TEST(100 %) acc. to proc. PT-VSP-VSF							
		4. ANTI-STATIC TEST acc. to spec. BS EN 12266-PART. 2 TEST F21 (12V-ACCEPTANCE CRITERIA 10 Ohm)							
		5. STAINLESS STEEL NAMEPLATE (BODY) + ST.ST NAMEPLATE WITH STEEL WIRE							
		6. spring material ELGILOY R30003							
		7. Painting treatment according to spec. 123A90-DDL-MAT-SP-60006 - System: SYS-6A color: VALVE RAL 9002 - LEVER RAL 9005 - Level II Nace - Frosio Inspector acc. to spec. "123A90-DDL-MAT-SP-60006 sec.5.8" - Adhesion Test (Pull Off)							
		8. Bonnet OS&Y							
		TAG : BLPH-MV-278							

Rev	*Date*	*Description*	*Verd*	*Chck*
0	*25/07/2024*	*Issue for order*	*L.D.G.*	*A.G.*

indra VALVES - ITALY	**VALVE DATA SHEET**	VDS-01 Rev.1 02/08/2022

ORDER INFO

CUSTOMER:	**ROSETTI MARINO**	INDRA CODE:	**00.VSF.2701/V**
OFFER NUMBER:	**10531**	CUSTOMER CODE:	**VLBLNN01320100 (SAP CODE)**
END USER:	**PROGETTO CROSSWIND**	JOB NO:	

VALVE MODEL		**798**							**NOTE**
Piping Class / DESIGN TEMP. (°C)				*Min*	**-29**	°C	*Max*	**+100** °C	
VALVE DESIGN		SBB							
VALVE CONSTRUCTION		FLOATING BALL VALVE	SIDE ENTRY	SPLIT BODY TYPE					
DESIGN CODE		ASME B16.34	ASME B16.5	ASME B1.20.1					
END CONNECTIONS	*INLET*	FLANGED	1"	RF	R9				
	OUTLET	FLANGED	1"	RF	R9				
	BLEED	THREADED (Female)	1/2"	NPT	F	PLUG			
BORE VALVE (DN-mm)		DN25							
BORE VENT (DN-mm)		5 mm							9
SERVICE (STD / CRYOGENIC / HIGH TEMP)		STANDARD	HYDROGEN						
FACE TO FACE DIMENTIONS (mm)		202,5	Manufacturer STD						
DESIGN									
PORT DESIGN		FULL BORE							
RATING CLASS		ASME 150							
SEAT DESIGN		SOFT SEAT							
STEM DESIGN (STD / EXTENDED)		STANDARD							
CORROSION ALLOWANCE		NO							
WELD OVERLAY		NO							
OPERATOR		LEVER	T-BAR	St. St.					
LOCKING SYSTEM		YES	without locking element						
NACE MR0175/ISO 15156		YES							
FUGITIVE EMISSION / CLASS		YES	ISO 15848-1						8
FIRE SAFE		YES	API 607 / ISO 10497 / API 6FA						
MATERIALS									
BODY		A182 F316/316L	NACE						
CLOSURES		A182 F316/316L	NACE						
BALL		A479 316/316L	NACE						
SEAT		PEEK							
SEAT SUPPORT		N/A							
SEAT SPRING		N/A							
TRUNNION		N/A							
STEM		A479 316/316L	NACE						
BODY SEALS / GASKET		O-RING (FKM (AED))	RING (GRAPHITE)						
SEAT SUPPORT SEALS / GASKET		N/A							
STEM SEALS / GASKET		O-RING (FKM (AED))	RING (GRAPHITE)						
BOLT / NUT / BOLT COATING		A193 B8M Cl.2	A194 Gr.8M						
OTHER		Non-wetted part in st.steel							6
TESTS									
REFERENCE PRESSURE TESTING		API 598, API 6D							
GAS TEST		(HELIUM) (1 FOR POSITION) acc. to proc. PGT-VSP-VSF/ITA-ENG (24-01216) Rev.0							
SUPPLEMENTARY TEST		NDE (NDE OPERATORS QUALIFICATION EN ISO 9712 / SNT-TC 1A)							
MATERIAL TEST		Hardness test (100%) on body and wetted parts acc. to proc. PT-HT Rev.1							
		PMI: 100% Valve Body/Bonnet Body and Wetted parts in acc. a procedura PT-PMI rev.14							
		DYE PENETRANT ON BODY (100 %) acc. to proc. 'PT-DP-01							
		DYE PENETRANT ON BONNET BODY (100 %):							
NOTE PER SCHEDA ARTICOLO:									
		1. Antistatic device							
		2. Anti-blow out stem							
		3. CAVITY RELIEF PRESSURE TEST(100 %) acc. to proc. PT-VSP-VSF							
		4. ANTI-STATIC TEST acc. to spec. BS EN 12266-PART. 2 TEST F21 (12V-ACCEPTANCE CRITERIA 10 Ohm)							
		5. STAINLESS STEEL NAMEPLATE (BODY) + ST.ST NAMEPLATE WITH STEEL WIRE							
		6. spring material ELGILOY R30003							
		7. Painting treatment according to spec. 123A90-DDL-MAT-SP-60006 - System: SYS-6A color: VALVE RAL 9002 - LEVER RAL 9005 - Level II Nace - Frosio Inspector acc. to spec. "123A90-DDL-MAT-SP-60006 sec.5.8" - Adhesion Test (Pull Off)							
		8. "3. PRODUCTION FUGGITIVE EMISSION TEST ACC.TO ISO 15848-2 (1 FOR POSITION) Acc. to procedure ""PFET_Rev.2-Procedura FET_EN"""							
		9. Bonnet STANDARD							
		TAG : BLPH-MV-007, BLPH-MV-009,							

Rev	*Date*	*Description*	*Verd*	*Chck*
0	*25/07/2024*	*Issue for order*	*L.D.G.* LDG	*A.G.*

indra VALVES - ITALY	**VALVE DATA SHEET**	VDS-01 Rev.1 02/08/2022

ORDER INFO

CUSTOMER:	**ROSETTI MARINO**	INDRA CODE:	**00.VSF.2698**
OFFER NUMBER:	**10531**	CUSTOMER CODE:	**VLBLNN01381H00 (SAP CODE)**
END USER:	**PROGETTO CROSSWIND**	JOB NO:	

VALVE MODEL		**798**							**NOTE**
Piping Class / DESIGN TEMP. (°C)				*Min*	**-29**	*°C*	*Max*	**+100** *°C*	
VALVE DESIGN		SBB							
VALVE CONSTRUCTION		FLOATING BALL VALVE	SIDE ENTRY	SPLIT BODY TYPE					
DESIGN CODE		ASME B16.34	ASME B16.5	ASME B1.20.1					
END CONNECTIONS	*INLET*	FLANGED	1-1/2"	RF	R9				
	OUTLET	FLANGED	1-1/2"	RF	R9				
	BLEED	THREADED (Female)	1/2"	NPT	F	PLUG			
BORE VALVE (DN-mm)		DN40							
BORE VENT (DN-mm)		5 mm							8
SERVICE (STD / CRYOGENIC / HIGH TEMP)		STANDARD							
FACE TO FACE DIMENTIONS (mm)		255	Manufacturer STD						<1>
DESIGN									
PORT DESIGN		FULL BORE							
RATING CLASS		ASME 150							
SEAT DESIGN		SOFT SEAT							
STEM DESIGN (STD / EXTENDED)		STEM EXTENSION	100mm						7
CORROSION ALLOWANCE		NO							
WELD OVERLAY		NO							
OPERATOR		LEVER	T-BAR	St. St.					
LOCKING SYSTEM		YES	without locking element						
NACE MR0175/ISO 15156		YES							
FUGITIVE EMISSION / CLASS		NO							
FIRE SAFE		YES	API 607 / ISO 10497 / API 6FA						
MATERIALS									
BODY		A182 F55	NACE						
CLOSURES		A182 F55	NACE						
BALL		A479 F55	NACE						
SEAT		PEEK							
SEAT SUPPORT		N/A							
SEAT SPRING		N/A							
TRUNNION		N/A							
STEM		A479 F55	NACE						
BODY SEALS / GASKET		O-RING (FKM (AED))	RING (GRAPHITE)						
SEAT SUPPORT SEALS / GASKET		N/A							
STEM SEALS / GASKET		O-RING (FKM (AED))	RING (GRAPHITE)						
BOLT / NUT / BOLT COATING		A193 B7M		A194 Gr.2HM + HDG					
OTHER		Non-wetted part in st.steel							6
TESTS									
REFERENCE PRESSURE TESTING		API 598, API 6D							
GAS TEST									
SUPPLEMENTARY TEST		NDE (NDE OPERATORS QUALIFICATION EN ISO 9712 / SNT-TC 1A)							
MATERIAL TEST		Hardness test (100%) on body and wetted parts acc. to proc. PT-HT Rev.1							
		PMI: 100% Valve Body/Bonnet Body and Wetted parts in acc. a procedura PT-PMI rev.14							
		IMPACT TEST ON BODY AND CLOSURES (-50°C)							
NOTE PER SCHEDA ARTICOLO:									
		1. Antistatic device							
		2. Anti-blow out stem							
		3. CAVITY RELIEF PRESSURE TEST(100 %) acc. to proc. PT-VSP-VSF							
		4. ANTI-STATIC TEST acc. to spec. BS EN 12266-PART. 2 TEST F21 (12V-ACCEPTANCE CRITERIA 10 Ohm)							
		5. STAINLESS STEEL NAMEPLATE (BODY) + ST.ST NAMEPLATE WITH STEEL WIRE							
		6. spring material ELGILOY R30003							
		7. Lever and Bonnet are suitable for insulation up to 100mm to flange							
		8. Bonnet OS&Y							
		TAG : BLPH-MV-043, BLPH-MV-050							

Rev	*Date*	*Description*	*Verd*	*Chck*
0	*25/07/2024*	*Issue for order*	*L.D.G.*	*A.G.*
1	*10/09/2024*	*Modified face to face dimentions*	*M.S.*	*A.G.*

indra VALVES - ITALY	**VALVE DATA SHEET**	VDS-01 Rev.1 02/08/2022

ORDER INFO

CUSTOMER:	**ROSETTI MARINO**	INDRA CODE:	**00.VSF.2696/V**
OFFER NUMBER:	**10531**	CUSTOMER CODE:	**VLBLNN01410100 (SAP CODE)**
END USER:	**PROGETTO CROSSWIND**	JOB NO:	

VALVE MODEL		**798**							**NOTE**
Piping Class / DESIGN TEMP. (°C)				*Min*	**-29**	*°C*	*Max*	**+100** *°C*	
VALVE DESIGN		SBB							
VALVE CONSTRUCTION		FLOATING BALL VALVE	SIDE ENTRY	SPLIT BODY TYPE					
DESIGN CODE		ASME B16.34	ASME B16.5	ASME B1.20.1					
END CONNECTIONS	*INLET*	FLANGED	1"	RF	R9				
	OUTLET	FLANGED	1"	RF	R9				<1>
	BLEED	THREADED (Female)	1/2"	NPT	F	PLUG			
BORE VALVE (DN-mm)		DN25							
BORE VENT (DN-mm)		5 mm							9
SERVICE (STD / CRYOGENIC / HIGH TEMP)		STANDARD							
FACE TO FACE DIMENTIONS (mm)		202,5	Manufacturer STD						
DESIGN									
PORT DESIGN		FULL BORE							
RATING CLASS		ASME 150							
SEAT DESIGN		SOFT SEAT							
STEM DESIGN (STD / EXTENDED)		STEM EXTENSION	100mm						8
CORROSION ALLOWANCE		NO							
WELD OVERLAY		NO							
OPERATOR		LEVER	T-BAR	St. St.					
LOCKING SYSTEM		YES	without locking element						
NACE MR0175/ISO 15156		YES							
FUGITIVE EMISSION / CLASS		NO							
FIRE SAFE		YES	API 607 / ISO 10497 / API 6FA						
MATERIALS									
BODY		A182 F316/316L	NACE						
CLOSURES		A182 F316/316L	NACE						
BALL		A479 316/316L	NACE						
SEAT		PEEK							
SEAT SUPPORT		N/A							
SEAT SPRING		N/A							
TRUNNION		N/A							
STEM		A479 316/316L	NACE						
BODY SEALS / GASKET		O-RING (FKM (AED))	RING (GRAPHITE)						
SEAT SUPPORT SEALS / GASKET		N/A							
STEM SEALS / GASKET		O-RING (FKM (AED))	RING (GRAPHITE)						
BOLT / NUT / BOLT COATING		A193 B8M Cl.2	A194 Gr.8M						
OTHER		Non-wetted part in st.steel							6
TESTS									
REFERENCE PRESSURE TESTING		API 598, API 6D							
GAS TEST									
SUPPLEMENTARY TEST		NDE (NDE OPERATORS QUALIFICATION EN ISO 9712 / SNT-TC 1A)							
MATERIAL TEST		Hardness test (100%) on body and wetted parts acc. to proc. PT-HT Rev.1							
		PMI: 100% Valve Body/Bonnet Body and Wetted parts in acc. a procedura PT-PMI rev.14							
NOTE PER SCHEDA ARTICOLO:									
		1. Antistatic device							
		2. Anti-blow out stem							
		3. CAVITY RELIEF PRESSURE TEST(100 %) acc. to proc. PT-VSP-VSF							
		4. ANTI-STATIC TEST acc. to spec. BS EN 12266-PART. 2 TEST F21 (12V-ACCEPTANCE CRITERIA 10 Ohm)							
		5. STAINLESS STEEL NAMEPLATE (BODY) + ST.ST NAMEPLATE WITH STEEL WIRE							
		6. spring material ELGILOY R30003							
		7. Painting treatment according to spec. 123A90-DDL-MAT-SP-60006 - System: SYS-6A color: VALVE RAL 9002 - LEVER RAL 9005 - Level II Nace - Frosio Inspector acc. to spec. "123A90-DDL-MAT-SP-60006 sec.5.8" - Adhesion Test (Pull Off)							
		8. Lever and Bonnet are suitable for insulation up to 100mm to flange							
		9. Bonnet OS&Y							
		TAG : BLPH-MV-001							

Rev	*Date*	*Description*	*Verd*	*Chck*
0	*25/07/2024*	*Issue for order*	*L.D.G.*	*A.G.*
1	*10/09/2024*	*Modified end connections outlet*	*M.S.*	*A.G.*

indra VALVES - ITALY	**VALVE DATA SHEET**	VDS-01 Rev.1 02/08/2022

ORDER INFO

CUSTOMER:	**ROSETTI MARINO**	INDRA CODE:	**00.VSF.2702/V**
OFFER NUMBER:	**10531**	CUSTOMER CODE:	**VLBLNN01430200 (SAP CODE)** <1>
END USER:	**PROGETTO CROSSWIND**	JOB NO:	

VALVE MODEL		**798**							**NOTE**
Piping Class / DESIGN TEMP. (°C)				*Min*	**-29**	°C	*Max*	**+100** °C	
VALVE DESIGN		SBB							
VALVE CONSTRUCTION		FLOATING BALL VALVE	SIDE ENTRY	SPLIT BODY TYPE					
DESIGN CODE		ASME B16.34	ASME B16.5	ASME B1.20.1					
END CONNECTIONS	*INLET*	FLANGED	2"	RF R9					
	OUTLET	FLANGED	2"	RF R9					
	BLEED	THREADED (Female)	1/2"	NPT F PLUG					
BORE VALVE (DN-mm)		DN50							
BORE VENT (DN-mm)		5 mm							9
SERVICE (STD / CRYOGENIC / HIGH TEMP)		STANDARD	HYDROGEN						
FACE TO FACE DIMENTIONS (mm)		300	Manufacturer STD						
DESIGN									
PORT DESIGN		FULL BORE							
RATING CLASS		ASME 150							
SEAT DESIGN		SOFT SEAT							
STEM DESIGN (STD / EXTENDED)		STANDARD							
CORROSION ALLOWANCE		NO							
WELD OVERLAY		NO							
OPERATOR		LEVER	T-BAR St. St.						
LOCKING SYSTEM		YES	without locking element						
NACE MR0175/ISO 15156		YES							
FUGITIVE EMISSION / CLASS		YES	ISO 15848-1						8
FIRE SAFE		YES	API 607 / ISO 10497 / API 6FA						
MATERIALS									
BODY		A182 F316/316L	NACE						
CLOSURES		A182 F316/316L	NACE						
BALL		A479 316/316L	NACE						
SEAT		PEEK							
SEAT SUPPORT		N/A							
SEAT SPRING		N/A							
TRUNNION		N/A							
STEM		A479 316/316L	NACE						
BODY SEALS / GASKET		O-RING (FKM (AED))	RING (GRAPHITE)						
SEAT SUPPORT SEALS / GASKET		N/A							
STEM SEALS / GASKET		O-RING (FKM (AED))	RING (GRAPHITE)						
BOLT / NUT / BOLT COATING		A193 B8M Cl.2	A194 Gr.8M						
OTHER		Non-wetted part in st.steel							6
TESTS									
REFERENCE PRESSURE TESTING		API 598, API 6D							
GAS TEST		(HELIUM) (1 FOR POSITION) acc. to proc. PGT-VSP-VSF/ITA-ENG (24-01216) Rev.0							
SUPPLEMENTARY TEST		NDE (NDE OPERATORS QUALIFICATION EN ISO 9712 / SNT-TC 1A)							
MATERIAL TEST		Hardness test (100%) on body and wetted parts acc. to proc. PT-HT Rev.1							
		PMI: 100% Valve Body/Bonnet Body and Wetted parts in acc. a procedura PT-PMI rev.14							
		DYE PENETRANT ON BODY (100 %) acc. to proc. 'PT-DP-01							
		DYE PENETRANT ON BONNET BODY (100 %):							
NOTE PER SCHEDA ARTICOLO:									
		1. Antistatic device							
		2. Anti-blow out stem							
		3. CAVITY RELIEF PRESSURE TEST(100 %) acc. to proc. PT-VSP-VSF							
		4. ANTI-STATIC TEST acc. to spec. BS EN 12266-PART. 2 TEST F21 (12V-ACCEPTANCE CRITERIA 10 Ohm)							
		5. STAINLESS STEEL NAMEPLATE (BODY) + ST.ST NAMEPLATE WITH STEEL WIRE							
		6. spring material ELGILOY R30003							
		7. Painting treatment according to spec. 123A90-DDL-MAT-SP-60006 - System: SYS-6A color: VALVE RAL 9002 - LEVER RAL 9005 - Level II Nace - Frosio Inspector acc. to spec. "123A90-DDL-MAT-SP-60006 sec.5.8" - Adhesion Test (Pull Off)							
		8. "3. PRODUCTION FUGGITIVE EMISSION TEST ACC.TO ISO 15848-2 (1 FOR POSITION) Acc. to procedure ""PFET_Rev.2-Procedura FET_EN"""							
		9. Bonnet STANDARD							
		TAG : BLPH-MV-002, BLPH-MV-016							

Rev	*Date*	*Description*	*Verd*	*Chck*
0	*25/07/2024*	*Issue for order*	*L.D.G.* LDG	*A.G.*
1	*10/09/2024*	*Modified SAP code*	*M.S.*	*A.G.*

indra VALVES - ITALY	**VALVE DATA SHEET**	VDS-01 Rev.1 02/08/2022

ORDER INFO

CUSTOMER:	**ROSETTI MARINO**	INDRA CODE:	**00.VSF.2700/V**
OFFER NUMBER:	**10531**	CUSTOMER CODE:	**VLBLNN01450400 (SAP CODE)**
END USER:	**PROGETTO CROSSWIND**	JOB NO:	

VALVE MODEL		**798**							**NOTE**
Piping Class / DESIGN TEMP. (°C)				*Min*	**-29**	°C	*Max*	**+100** °C	
VALVE DESIGN		SBB							
VALVE CONSTRUCTION		FLOATING BALL VALVE	SIDE ENTRY	SPLIT BODY TYPE					
DESIGN CODE		ASME B16.34	ASME B16.5	ASME B1.20.1					
END CONNECTIONS	*INLET*	FLANGED	4"	RF	R9				
	OUTLET	FLANGED	4"	RF	R9				
	BLEED	THREADED (Female)	1/2"	NPT	F	PLUG			
BORE VALVE (DN-mm)		DN100							
BORE VENT (DN-mm)		5 mm							9
SERVICE (STD / CRYOGENIC / HIGH TEMP)		STANDARD	HYDROGEN						
FACE TO FACE DIMENTIONS (mm)		325	Manufacturer STD						
DESIGN									
PORT DESIGN		FULL BORE							
RATING CLASS		ASME 150							
SEAT DESIGN		SOFT SEAT							
STEM DESIGN (STD / EXTENDED)		STANDARD							
CORROSION ALLOWANCE		NO							
WELD OVERLAY		NO							
OPERATOR		LEVER	T-BAR	St. St.					
LOCKING SYSTEM		YES	without locking element						
NACE MR0175/ISO 15156		YES							
FUGITIVE EMISSION / CLASS		YES	ISO 15848-1						8
FIRE SAFE		YES	API 607 / ISO 10497 / API 6FA						
MATERIALS									
BODY		A182 F316/316L	NACE						
CLOSURES		A182 F316/316L	NACE						
BALL		A479 316/316L	NACE						
SEAT		PEEK							
SEAT SUPPORT		N/A							
SEAT SPRING		N/A							
TRUNNION		N/A							
STEM		A479 316/316L	NACE						
BODY SEALS / GASKET		O-RING (FKM (AED))	RING (GRAPHITE)						
SEAT SUPPORT SEALS / GASKET		N/A							
STEM SEALS / GASKET		O-RING (FKM (AED))	RING (GRAPHITE)						
BOLT / NUT / BOLT COATING		A193 B8M Cl.2	A194 Gr.8M						
OTHER		Non-wetted part in st.steel							6
TESTS									
REFERENCE PRESSURE TESTING		API 598, API 6D							
GAS TEST		(HELIUM) (1 FOR POSITION) acc. to proc. PGT-VSP-VSF/ITA-ENG (24-01216) Rev.0							
SUPPLEMENTARY TEST		NDE (NDE OPERATORS QUALIFICATION EN ISO 9712 / SNT-TC 1A)							
MATERIAL TEST		Hardness test (100%) on body and wetted parts acc. to proc. PT-HT Rev.1							
		PMI: 100% Valve Body/Bonnet Body and Wetted parts in acc. a procedura PT-PMI rev.14							
		DYE PENETRANT ON BODY (100 %) acc. to proc. 'PT-DP-01							
		DYE PENETRANT ON BONNET BODY (100 %):							
NOTE PER SCHEDA ARTICOLO:									
		1. Antistatic device							
		2. Anti-blow out stem							
		3. CAVITY RELIEF PRESSURE TEST(100 %) acc. to proc. PT-VSP-VSF							
		4. ANTI-STATIC TEST acc. to spec. BS EN 12266-PART. 2 TEST F21 (12V-ACCEPTANCE CRITERIA 10 Ohm)							
		5. STAINLESS STEEL NAMEPLATE (BODY) + ST.ST NAMEPLATE WITH STEEL WIRE							
		6. spring material ELGILOY R30003							
		7. Painting treatment according to spec. 123A90-DDL-MAT-SP-60006 - System: SYS-6A color: VALVE RAL 9002 - LEVER RAL 9005 - Level II Nace - Frosio Inspector acc. to spec. "123A90-DDL-MAT-SP-60006 sec.5.8" - Adhesion Test (Pull Off)							
		8. "3. PRODUCTION FUGGITIVE EMISSION TEST ACC.TO ISO 15848-2 (1 FOR POSITION) Acc. to procedure ""PFET_Rev.2-Procedura FET_EN"""							
		9. Bonnet Standar							
		TAG : BLPH-MV-006, BLPH-MV-033, BLPH-MV-191, BLPH-MV-194, BLPH-MV-196, BLPH-MV-199, BLPH-MV-201							

Rev	*Date*	*Description*	*Verd*	*Chck*
0	*25/07/2024*	*Issue for order*	*L.D.G.*	*A.G.*

indra VALVES - ITALY	**VALVE DATA SHEET**	VDS-01 Rev.1 02/08/2022

ORDER INFO

CUSTOMER:	**ROSETTI MARINO**	INDRA CODE:	**00.VSFT.0224/V**
OFFER NUMBER:	**10531**	CUSTOMER CODE:	**VLBLNN01460600 (SAP CODE)**
END USER:	**PROGETTO CROSSWIND**	JOB NO:	

VALVE MODEL		**598**							**NOTE**
Piping Class / Datasheet / DESIGN TEMP. (°C)				*Min*	**-29**	*°C*	*Max*	**100** *°C*	
VALVE DESIGN		SB							
VALVE CONSTRUCTION		TRUNNION BALL VALVE	SIDE ENTRY	SPLIT BODY TYPE					
DESIGN CODE		ASME B16.34	ASME B16.25						
END CONNECTIONS	*INLET*	FLANGED	6"	RF	R9				
	OUTLET	FLANGED	6"	RF	R9				
	BLEED	N/A							
BORE VALVE (DN-mm)		DN 150							
BORE VENT (DN-mm)		N/A							
SERVICE (STD / CRYOGENIC / HIGH TEMP)		STANDARD	HYDROGEN SERVICE						10
FACE TO FACE DIMENTIONS (mm)		394	Manufacturer STD						
DESIGN									
PORT DESIGN		FULL BORE							
RATING CLASS		ANSI 150							
SEAT DESIGN		SOFT SEAT							
STEM DESIGN (STD / EXTENDED)		STANDARD							
CORROSION ALLOWANCE		NO							
WELD OVERLAY		NO							
OPERATOR		GEAR	Handwheel in S.S. 316			T-bar in st.st.			9
LOCKING SYSTEM		YES	without locking element						
NACE MR0175/ISO 15156		YES							
FUGITIVE EMISSION / CLASS		YES							
FIRE SAFE		YES	API 607 / ISO 10497 / API 6FA						
MATERIALS									
BODY		A182 F316/316L	NACE						
CLOSURES		A182 F316/316L	NACE						
BALL		A479 316/316L	NACE						
SEAT		A479 316/316L	+RPTFE	NACE					
SEAT SPRING / ANTISITATIC DEVICE		ELGILOY R30003	ELGILOY R30003						6
TRUNNION		A182 F316/316L	NACE						
STEM		A479 316/316L	NACE						
BODY SEALS / GASKET		O-RING (FKM (AED))	RING (GRAPHITE)						
SEAT SUPPORT SEALS / GASKET		O-RING (FKM (AED))	RING (GRAPHITE)						
STEM SEALS / GASKET		O-RING (FKM (AED))	RING (GRAPHITE)						
BOLT / NUT / BOLT COATING		A193 B8M Cl.2	A194 Gr8M						
OTHER		St.St.							
TESTS									
REFERENCE PRESSURE TESTING		API 598, API 6D							
GAS TEST		(HELIUM) (1 FOR POSITION) acc. to proc. PGT-VSP-VSF/ITA-ENG (24-01216) Rev.0							
SUPPLEMENTARY TESTS		NDE (NDE OPERATORS QUALIFICATION EN ISO 9712 / SNT-TC 1A)							
MATERIAL TEST		Hardness test (100%) on body and wetted parts acc. to proc. PT-HT Rev.1							
		DYE PENETRANT ON BODY (100 %) acc. to proc. 'PT-DP-01							
		PMI: 100% Valve Body/Bonnet Body and Wetted parts in acc. a procedura PT-PMI rev.14 (CARBON STEEL EXCLUDED)							
NOTES:									
		1. Antistatic device							
		2. Anti-blow out stem							
		3. CAVITY RELIEF PRESSURE TEST(100 %) acc. to proc. PT-VSP-VSF							
		4. ANTI-STATIC TEST acc. to spec. BS EN 12266-PART. 2 TEST F21 (12V-ACCEPTANCE CRITERIA 10 Ohm) acc. to proc. ATP-00							
		5. STAINLESS STEEL NAMEPLATE (BODY) + ST.ST NAMEPLATE WITH STEEL WIRE							
		6. Spring material ELGILOY R30003							
		7. Painting treatment according to spec. 123A90-DDL-MAT-SP-60006 - System: SYS-6A color: VALVE RAL 9002 - GEAR RAL 9005 - Level II Nace - Frosio Inspector acc. to spec. "123A90-DDL-MAT-SP-60006 sec.5.8" - Adhesion Test (Pull Off)							
		8. PRODUCTION FUGGITIVE EMISSION TEST ACC.TO ISO 15848-2 (1 FOR POSITION) Acc. to procedure "PFET_Rev.2-Procedura FET_EN"							
		9 GEAR, MUST BE PRE-ARRANGED TO RECEIVE GREASE CASE MATERIAL DUCTILE IRON INPUT SHAFT: ST.ST. S316 HANDWHEEL MACHINED FROM SOLID ST.ST. CLOSING DIRECTION STAMPED ON THE HANDWHEEL							
		10. CONCENTRATION 100 % IN THE WORKING FLUID							
		TAG: BLPH-MV-005							

Rev	*Date*	*Description*	*Verd*	*Chck*
0	*02/08/2024*	*Issue for order*	*M.S.*	*A.G.*

indra VALVES - ITALY	**VALVE DATA SHEET**	VDS-01 Rev.1 02/08/2022

ORDER INFO

CUSTOMER:	**ROSETTI MARINO**	INDRA CODE:	**00.MNF.0604/V**
OFFER NUMBER:	**10531**	CUSTOMER CODE:	**VLBMNN00013Q0H (SAP CODE)**
END USER:	**PROGETTO CROSSWIND**	JOB NO:	

VALVE MODEL		**737**							**NOTE**
Piping Class / DESIGN TEMP. (°C)				*Min*	**-46**	*°C*	*Max*	**80** °C	
VALVE DESIGN		DBB							
VALVE CONSTRUCTION		MONOFLANGE VALVE		INTEGRAL BODY TYPE					
DESIGN CODE		ASME B16.5	ASME B31.3	ASME B1.20.1					
END CONNECTIONS	*INLET*	FLANGED	3/4"	RF R9					
	OUTLET	THREADED (Female)	1/2"	NPT					
	BLEED	THREADED (Female)	1/2"	NPT with Plug					
BORE VALVE (DN-mm)		5 mm							
BORE VENT (DN-mm)		5 mm							
SERVICE (STD / CRYOGENIC / HIGH TEMP)		STANDARD	HYDROGEN						
FACE TO FACE DIMENTIONS (mm)		57,6	Manufacturer STD						
DESIGN									
RATING CLASS		ANSI 300							
BONNET for 1st isolate		OS&Y bolted Bonnet							
BONNET for 2nd isolate		OS&Y bolted Bonnet							
BONNET for vent		OS&Y bolted Bonnet							
SEAT DESIGN		METAL							
STEM DESIGN (STD / EXTENDED)		STANDARD							
CORROSION ALLOWANCE		NO							
WELD OVERLAY		NO							
OPERATOR		T-BAR	St. st						
LOCKING SYSTEM		YES	without padlock						
NACE MR0175/ISO 15156		YES							
FUGITIVE EMISSION / CLASS		YES	ISO 15848-1						**3**
FIRE SAFE		YES	API 607 / ISO 10497 / API 6FA						
MATERIALS									
BODY		A182 F316/316L							
SEAT HOUSING		A182 F316/316L							
BONNET BODY		A479 316/316L							
TIP		STELLITE 6							
STEM		A479 316/316L							
BODY SEALS		N/A							
STEM SEALS		RING (GRAPHITE)							
BOLT / NUT / BOLT COATING		A193 B8M Cl.2		only Bonnet					
OTHER		Non-wetted part in St. St.							
TESTS									
REFERENCE PRESSURE TESTING		API 598, API 6D							
GAS TEST		(HELIUM) (1 FOR POSITION) acc. to proc. PGT-VSP-VSF/ITA-ENG (24-01216) Rev.0							
SUPPLEMENTARY TESTS		NDE (NDE OPERATORS QUALIFICATION EN ISO 9712 / SNT-TC 1A)							
MATERIAL TESTS		PMI: 100% Valve Body/Bonnet Body and Wetted parts in acc. a procedura PT-PMI rev.14							
		DYE PENETRANT ON BODY (100 %) acc. to proc. 'PT-DP-01							
		DYE PENETRANT ON BODY BONNET (100 %):							
		Hardness test (100%) on body and wetted parts acc. to proc. PT-HT Rev.1							
NOTES:									
		1. Anti blow out stem							
		2. Painting treatment according to spec. 123A90-DDL-MAT-SP-60006 - System: SYS-6A color: RAL 9002 Level II Nace - Frosio Inspector acc. to spec. "123A90-DDL-MAT-SP-60006 sec.5.8" Adhesion Test (Pull Off)							
		3. PRODUCTION FUGGITIVE EMISSION TEST ACC.TO ISO 15848-2 (1 FOR POSITION) Acc. to procedure "PFET_Rev.2-Procedura FET_EN"							
		4. BODY AND WETTED PARTS ACCORDING TO NORSOK							
		5. STAINLESS STEEL NAMEPLATE (BODY) + ST.ST NAMEPLATE WITH STEEL WIRE							
		6. PLUG WITH SCREWS SAFETY OUT							
		7. TAG : BLPH-MV-013, BLPH-MV-014, BLPH-MV-091, BLPH-MV-092, BLPH-MV-096, BLPH-MV-097, BLPH-MV-204 BLPH-MV-205, BLPH-MV-282, BLPH-MV-283, BLPH-MV-421, BLPH-MV-422, BLPH-MV-438, BLPH-MV-439							

Rev	*Date*	*Description*	*Verd*	*Chck*
0	*24/07/2024*	*Issue for order*	*M.S.*	*A.G.*

indra VALVES - ITALY	**VALVE DATA SHEET**	VDS-01 Rev.1 02/08/2022

ORDER INFO

CUSTOMER:	**ROSETTI MARINO**	INDRA CODE:	**00.MNF.0608/V**
OFFER NUMBER:	**10531**	CUSTOMER CODE:	**VLBNNN00023Q0H (SAP CODE)**
END USER:	**PROGETTO CROSSWIND**	JOB NO:	

VALVE MODEL		**727**								**NOTE**
Piping Class / DESIGN TEMP. (°C)				*Min*	**-29**	*°C*	*Max*	**100**	*°C*	
VALVE DESIGN		SBB								
VALVE CONSTRUCTION		MONOFLANGE VALVE		INTEGRAL BODY TYPE						
DESIGN CODE		ASME B16.5	ASME B31.3	ASME B1.20.1						
END CONNECTIONS	*INLET*	FLANGED	3/4"	RF R9						
	OUTLET	THREADED (Female)	1/2"	NPT						
	BLEED	THREADED (Female)	1/2"	NPT with Plug						
BORE VALVE (DN-mm)		5 mm								
BORE VENT (DN-mm)		5 mm								
SERVICE (STD / CRYOGENIC / HIGH TEMP)		STANDARD	HYDROGEN							
FACE TO FACE DIMENTIONS (mm)		56,6	Manufacturer STD							
DESIGN										
RATING CLASS		ANSI 150								
BONNET for 1st isolate		OS&Y bolted Bonnet								
BONNET for 2nd isolate		N/A								
BONNET for vent		OS&Y bolted Bonnet								
SEAT DESIGN		METAL								
STEM DESIGN (STD / EXTENDED)		STANDARD								
CORROSION ALLOWANCE		NO								
WELD OVERLAY		NO								
OPERATOR		T-BAR	St. st							
LOCKING SYSTEM		YES	without padlock							
NACE MR0175/ISO 15156		YES								
FUGITIVE EMISSION / CLASS		YES	ISO 15848-1							**3**
FIRE SAFE		YES	API 607 / ISO 10497 / API 6FA							
MATERIALS										
BODY		A182 F316/316L	NACE							
SEAT HOUSING		A182 F316/316L	NACE							
BONNET BODY		A479 316/316L	NACE							
TIP		STELLITE 6								
STEM		A479 316/316L	NACE							
BODY SEALS		N/A								
STEM SEALS		RING (GRAPHITE)								
BOLT / NUT / BOLT COATING		A193 B8M Cl.2	only Bonnet							
OTHER		Non-wetted part in St. St.								
TESTS										
REFERENCE PRESSURE TESTING		API 598, API 6D								
GAS TEST		(HELIUM) (1 FOR POSITION) acc. to proc. PGT-VSP-VSF/ITA-ENG (24-01216) Rev.0								
SUPPLEMENTARY TESTS		NDE (NDE OPERATORS QUALIFICATION EN ISO 9712 / SNT-TC 1A)								
MATERIAL TESTS		PMI: 100% Valve Body/Bonnet Body and Wetted parts in acc. a procedura PT-PMI rev.14								
		DYE PENETRANT ON BODY (100 %) acc. to proc. 'PT-DP-01								
		DYE PENETRANT ON BONNET BODY (100 %):								
		Hardness test (100%) on body and wetted parts acc. to proc. PT-HT Rev.1								
NOTES:										
		1. Anti blow out stem								
		2. Painting treatment according to spec. 123A90-DDL-MAT-SP-60006 - System: SYS-6A color: RAL 9002 Level II Nace - Frosio Inspector acc. to spec. "123A90-DDL-MAT-SP-60006 sec.5.8" Adhesion Test (Pull Off)								
		3. PRODUCTION FUGGITIVE EMISSION TEST ACC.TO ISO 15848-2 (1 FOR POSITION) Acc. to procedure "PFET_Rev.2-Procedura FET_EN"								
		4. BODY AND WETTED PARTS ACCORDING TO NORSOK								
		5. STAINLESS STEEL NAMEPLATE (BODY) + ST.ST NAMEPLATE WITH STEEL WIRE								
		6. PLUG WITH SCREWS SAFETY OUT								
		TAG : BLPH-MV-025, BLPH-MV-038, BLPH-MV-213, BLPH-MV-407								

Rev	*Date*	*Description*	*Verd*	*Chck*
0	*24/07/2024*	*Issue for order*	*L.D.G.* LDG	*A.G.*

indra VALVES - ITALY	**VALVE DATA SHEET**	VDS-01 Rev.1 02/08/2022

ORDER INFO

CUSTOMER:	**ROSETTI MARINO**	INDRA CODE:	**00.MNF.0605/V**
OFFER NUMBER:	**10531**	CUSTOMER CODE:	**VLBNNN00033Q0H (SAP CODE)**
END USER:	**PROGETTO CROSSWIND**	JOB NO:	

VALVE MODEL		**727**							**NOTE**
Piping Class / DESIGN TEMP. (°C)				*Min*	**-29**	*°C*	*Max*	**+100**	*°C*
VALVE DESIGN		SBB							
VALVE CONSTRUCTION		MONOFLANGE VALVE		INTEGRAL BODY TYPE					
DESIGN CODE		ASME B16.5	ASME B31.3	ASME B1.20.1					
END CONNECTIONS	*INLET*	FLANGED	3/4"	RF R9					
	OUTLET	THREADED (Female)	1/2"	NPT					
	BLEED	THREADED (Female)	1/2"	NPT with Plug					
BORE VALVE (DN-mm)		5 mm							
BORE VENT (DN-mm)		5 mm							
SERVICE (STD / CRYOGENIC / HIGH TEMP)		STANDARD							
FACE TO FACE DIMENTIONS (mm)		56,6	Manufacturer STD						
DESIGN									
RATING CLASS		ANSI 150							
BONNET for 1st isolate		OS&Y bolted Bonnet							
BONNET for 2nd isolate		N/A							
BONNET for vent		OS&Y bolted Bonnet							
SEAT DESIGN		METAL							
STEM DESIGN (STD / EXTENDED)		STANDARD							
CORROSION ALLOWANCE		NO							
WELD OVERLAY		NO							
OPERATOR		T-BAR	St. st						
LOCKING SYSTEM		YES	without padlock						
NACE MR0175/ISO 15156		YES							
FUGITIVE EMISSION / CLASS		NO							
FIRE SAFE		YES	API 607 / ISO 10497 / API 6FA						
MATERIALS									
BODY		A182 F316/316L	NACE						
SEAT HOUSING		A182 F316/316L	NACE						
BONNET BODY		A479 316/316L	NACE						
TIP		STELLITE 6							
STEM		A479 316/316L	NACE						
BODY SEALS		N/A							
STEM SEALS		RING (GRAPHITE)							
BOLT / NUT / BOLT COATING		A193 B8M Cl.2		only Bonnet					
OTHER		Non-wetted part in St. St.							
TESTS									
REFERENCE PRESSURE TESTING		API 598, API 6D							
GAS TEST									
SUPPLEMENTARY TESTS		NDE (NDE OPERATORS QUALIFICATION EN ISO 9712 / SNT-TC 1A)							
MATERIAL TESTS		PMI: 100% Valve Body/Bonnet Body and Wetted parts in acc. to proc. PT-PMI rev.14							
		Hardness test (100%) on body and wetted parts acc. to proc. PT-HT Rev.1							
NOTES:									
		1. Anti blow out stem							
		2. Painting treatment according to spec. 123A90-DDL-MAT-SP-60006 - System: SYS-6A color: RAL 9002 Level II Nace - Frosio Inspector acc. to spec. "123A90-DDL-MAT-SP-60006 sec.5.8" Adhesion Test (Pull Off)							
		3. Bonnet orientation 180°							
		4. BODY AND WETTED PARTS ACCORDING TO NORSOK							
		5. STAINLESS STEEL NAMEPLATE (BODY) + ST.ST NAMEPLATE WITH STEEL WIRE							
		6. PLUG WITH SCREWS SAFETY OUT							
		TAG : BLPH-MV-150, BLPH-MV-151							

Rev	*Date*	*Description*	*Verd*	*Chck*
0	*24/07/2024*	*Issue for order*	*L.D.C* LDG	*A.G.*

indra VALVES - ITALY	**VALVE DATA SHEET**	VDS-01 Rev.1 02/08/2022

ORDER INFO

CUSTOMER:	**ROSETTI MARINO**	INDRA CODE:	**00.MNF.0612/V**
OFFER NUMBER:	**10531**	CUSTOMER CODE:	**VLBNNN00063Q0H (SAP CODE)**
END USER:	**PROGETTO CROSSWIND**	JOB NO:	

VALVE MODEL		**727**							**NOTE**
Piping Class / DESIGN TEMP. (°C)				*Min*	**-46**	*°C*	*Max*	**+100** *°C*	
VALVE DESIGN		SBB							
VALVE CONSTRUCTION		MONOFLANGE VALVE		INTEGRAL BODY TYPE					
DESIGN CODE		ASME B16.5	ASME B31.3	ASME B1.20.1					
END CONNECTIONS	*INLET*	FLANGED	3/4"	RF R9					
	OUTLET	THREADED (Female)	1/2"	NPT					
	BLEED	THREADED (Female)	1/2"	NPT with Plug					
BORE VALVE (DN-mm)		5 mm							
BORE VENT (DN-mm)		5 mm							
SERVICE (STD / CRYOGENIC / HIGH TEMP)		STANDARD							
FACE TO FACE DIMENTIONS (mm)		56,6	Manufacturer STD						
DESIGN									
RATING CLASS		ANSI 150							
BONNET for 1st isolate		OS&Y bolted Bonnet							
BONNET for 2nd isolate		N/A							
BONNET for vent		OS&Y bolted Bonnet							
SEAT DESIGN		METAL							
STEM DESIGN (STD / EXTENDED)		STANDARD							
CORROSION ALLOWANCE		YES	3mm						
WELD OVERLAY		NO							
OPERATOR		T-BAR	St. st						
LOCKING SYSTEM		YES	without padlock						
NACE MR0175/ISO 15156		YES							
FUGITIVE EMISSION / CLASS		NO							
FIRE SAFE		YES	API 607 / ISO 10497 / API 6FA						
MATERIALS									
BODY		A350 LF2	NACE						
SEAT HOUSING		A350 LF2	NACE						
BONNET BODY		A479 316/316L	NACE						
TIP		STELLITE 6							
STEM		A479 316/316L	NACE						
BODY SEALS		N/A							
STEM SEALS		RING (GRAPHITE)							
BOLT / NUT / BOLT COATING		A193 B8M Cl.2		only Bonnet					
OTHER		Non-wetted part in St. St.							
TESTS									
REFERENCE PRESSURE TESTING		API 598, API 6D							
GAS TEST									
SUPPLEMENTARY TESTS		NDE (NDE OPERATORS QUALIFICATION EN ISO 9712 / SNT-TC 1A)							
MATERIAL TESTS		PMI: 100% Valve Body/Bonnet Body and Wetted parts in acc. to proc. PT-PMI rev.14							
		Hardness test (100%) on body and wetted parts acc. to proc. PT-HT Rev.1							
NOTES:									
		1. Anti blow out stem							
		2. Painting treatment according to spec. 123A90-DDL-MAT-SP-60006 - System: SYS-6A color: RAL 9002 Level II Nace - Frosio Inspector acc. to spec. "123A90-DDL-MAT-SP-60006 sec.5.8" Adhesion Test (Pull Off)							
		3. Bonnet orientation 180°							
		4. BODY AND WETTED PARTS ACCORDING TO NORSOK							
		5. STAINLESS STEEL NAMEPLATE (BODY) + ST.ST NAMEPLATE WITH STEEL WIRE							
		6. PLUG WITH SCREWS SAFETY OUT							
		TAG : BLPH-MV-166, BLPH-MV-167, BLPH-MV-386							

Rev	*Date*	*Description*	*Verd*	*Chck*
0	*24/07/2024*	*Issue for order*	*L.D.G* LDG	*A.G.*

indra VALVES - ITALY	**VALVE DATA SHEET**	VDS-01 Rev.1 02/08/2022

ORDER INFO

CUSTOMER:	**ROSETTI MARINO**	INDRA CODE:	**00.MNF.0606/V**
OFFER NUMBER:	**10531**	CUSTOMER CODE:	**VLBNNN00063Q0H (SAP CODE)**
END USER:	**PROGETTO CROSSWIND**	JOB NO:	

VALVE MODEL		**727**							**NOTE**
Piping Class / DESIGN TEMP. (°C)				*Min*	**-46**	*°C*	*Max*	**+100**	*°C*
VALVE DESIGN		SBB							
VALVE CONSTRUCTION		MONOFLANGE VALVE		INTEGRAL BODY TYPE					
DESIGN CODE		ASME B16.5	ASME B31.3	ASME B1.20.1					
END CONNECTIONS	*INLET*	FLANGED	3/4"	RF R9					
	OUTLET	THREADED (Female)	1/2"	NPT					
	BLEED	THREADED (Female)	1/2"	NPT with Plug					
BORE VALVE (DN-mm)		5 mm							
BORE VENT (DN-mm)		5 mm							
SERVICE (STD / CRYOGENIC / HIGH TEMP)		STANDARD							
FACE TO FACE DIMENTIONS (mm)		56,6	Manufacturer STD						
DESIGN									
RATING CLASS		ANSI 150							
BONNET for 1st isolate		OS&Y bolted Bonnet							
BONNET for 2nd isolate		N/A							
BONNET for vent		OS&Y bolted Bonnet							
SEAT DESIGN		METAL							
STEM DESIGN (STD / EXTENDED)		STEM EXTENSION							
CORROSION ALLOWANCE		YES	3mm						
WELD OVERLAY		NO							
OPERATOR		T-BAR	St. st						
LOCKING SYSTEM		YES	without padlock						
NACE MR0175/ISO 15156		YES							
FUGITIVE EMISSION / CLASS		NO							
FIRE SAFE		YES	API 607 / ISO 10497 / API 6FA						
MATERIALS									
BODY		A350 LF2	NACE						
SEAT HOUSING		A350 LF2	NACE						
BONNET BODY		A479 316/316L	NACE						
TIP		STELLITE 6							
STEM		A479 316/316L	NACE						
BODY SEALS		N/A							
STEM SEALS		RING (GRAPHITE)							
BOLT / NUT / BOLT COATING		A193 B8M Cl.2		only Bonnet					
OTHER		Not-wetted part in St. St.							
TESTS									
REFERENCE PRESSURE TESTING		API 598, API 6D							
GAS TEST									
SUPPLEMENTARY TESTS		NDE (NDE OPERATORS QUALIFICATION EN ISO 9712 / SNT-TC 1A)							
MATERIAL TESTS		PMI: 100% Valve Body/Bonnet Body and Wetted parts in acc. to proc. PT-PMI rev.14							
		Hardness test (100%) on body and wetted parts acc. to proc. PT-HT Rev.1							
NOTES:									
		1. Anti blow out stem							
		2. Painting treatment according to spec. 123A90-DDL-MAT-SP-60006 - System: SYS-6A color: RAL 9002 Level II Nace - Frosio Inspector acc. to spec. "123A90-DDL-MAT-SP-60006 sec.5.8" Adhesion Test (Pull Off)							
		3. Bonnet orientation 180°							
		4. BODY AND WETTED PARTS ACCORDING TO NORSOK							
		5. STAINLESS STEEL NAMEPLATE (BODY) + ST.ST NAMEPLATE WITH STEEL WIRE							
		6. PLUG WITH SCREWS SAFETY OUT							
		TAG : BLPH-MV-411							

Rev	*Date*	*Description*	*Verd*	*Chck*
0	*24/07/2024*	*Issue for order*	*L.D.G* LDG	*A.G.*

indra VALVES - ITALY	**VALVE DATA SHEET**	VDS-01 Rev.1 02/08/2022

ORDER INFO

CUSTOMER:	**ROSETTI MARINO**	INDRA CODE:	**00.VSF.2716/V**
OFFER NUMBER:	**10531**	CUSTOMER CODE:	**VBD0NN16610300 (SAP CODE)**
END USER:	**PROGETTO CROSSWIND**	JOB NO:	

VALVE MODEL		**598**							**NOTE**
Piping Class / DESIGN TEMP. (°C)				*Min*	**-46**	*°C*	*Max*	**+100** *°C*	
VALVE DESIGN		SB							
VALVE CONSTRUCTION		FLOATING BALL VALVE	SIDE ENTRY	SPLIT BODY TYPE					
DESIGN CODE		ASME B16.34	ASME B16.5						
END CONNECTIONS	*INLET*	FLANGED	3"	RF	R9				
	OUTLET	FLANGED	3"	RF	R9				
	BLEED	N/A							
BORE VALVE (DN-mm)		DN 50							
BORE VENT (DN-mm)		N/A							
SERVICE (STD / CRYOGENIC / HIGH TEMP)		STANDARD	WASTE WATER (WW)						<2>
FACE TO FACE DIMENTIONS (mm)		203mm	ASME B16.10						
DESIGN									
PORT DESIGN		REDUCED BORE							
RATING CLASS		ASME 150							
SEAT DESIGN		SOFT SEAT							
STEM DESIGN (STD / EXTENDED)		STEM EXTENSION							8
CORROSION ALLOWANCE		YES	3mm						
WELD OVERLAY		NO							
OPERATOR		LEVER	St.st.316						
LOCKING SYSTEM		YES	without locking element						
NACE MR0175/ISO 15156		YES							
FUGITIVE EMISSION / CLASS		YES	ISO 15848-1						
FIRE SAFE		YES	API 607 / ISO 10497 / API 6FA						
MATERIALS									
BODY		A350 LF2	NACE						
CLOSURES		A350 LF2	NACE						
BALL		A479 316/316L	NACE						
SEAT		RPTFE							
SEAT SUPPORT		A479 316/316L	NACE						
SEAT SPRING		N/A							
TRUNNION		N/A							
STEM		A479 316/316L	NACE						
BODY SEALS / GASKET		O-RING (FKM (AED))	RING (GRAPHITE)						
SEAT SUPPORT SEALS / GASKET		N/A	N/A						
STEM SEALS / GASKET		O-RING (FKM (AED))	RING (GRAPHITE)						
BOLT / NUT / BOLT COATING		ASTM A193 B7M + HDG	A194 Gr.2HM	+HDG					
OTHER		Non-wetted part in st.steel							6
TESTS									
REFERENCE PRESSURE TESTING		API 598, API 6D							
GAS TEST									<1>
SUPPLEMENTARY TESTS		NDE (NDE OPERATORS QUALIFICATION EN ISO 9712 / SNT-TC 1A)							
		PMI: 100% Valve Body/Bonnet Body and Wetted parts in acc. a procedura PT-PMI rev.14 (CARBON STEEL EXCLUDED)							
MATERIAL TEST		Hardness test (100%) on body and wetted parts acc. to proc. PT-HT Rev.1							
NOTES:									
		1. Antistatic device							
		2. Anti-blow out stem							
		3. CAVITY RELIEF PRESSURE TEST(100 %) acc. to proc. PT-VSP-VSF							
		4. ANTI-STATIC TEST acc. to spec. BS EN 12266-PART. 2 TEST F21 (12V-ACCEPTANCE CRITERIA 10 Ohm) acc. to proc. ATP-00							
		5. STAINLESS STEEL NAMEPLATE (BODY) + ST.ST NAMEPLATE WITH STEEL WIRE							
		6. spring material ELGILOY R30003							
		7. Painting treatment according to spec. 123A90-DDL-MAT-SP-60006 - System: SYS-9 color: VALVE RAL 9002 - LEVER RAL 9005 - Level II Nace - Frosio Inspector acc. to spec. "123A90-DDL-MAT-SP-60006 sec.5.8" - Adhesion Test (Pull Off)							<1>
		8. EXTENDED STEM FOR INTERCEPTION 1 FOR INSULATION 100 MM FROM LINE FLANGE							<2>
		TAG: BLPH-MV-467							

Rev	*Date*	*Description*	*Verd*	*Chck*
0	*31/07/2024*	*Issue for order*	*M.S.*	*A.G.*
1	*10/09/2024*	*Modified painting system and deleted GAS TEST*	*M.S.*	*A.G.*
2	*25/09/2024*	*Modified fluid service and added TAG*	*M.S.*	*A.G.*

ORDER INFO

CUSTOMER:	**ROSETTI MARINO**	INDRA CODE:	**00.VSF.2784**
OFFER NUMBER:	**10531**	CUSTOMER CODE:	**VLBLNN01370100 (SAP CODE)**
END USER:	**PROGETTO CROSSWIND**	JOB NO:	

VALVE MODEL		**798**							**NOTE**
Piping Class / DESIGN TEMP. (°C)				*Min*	**-29**	*°C*	*Max*	**+100** *°C*	
VALVE DESIGN		SBB							
VALVE CONSTRUCTION		FLOATING BALL VALVE	SIDE ENTRY	SPLIT BODY TYPE					
DESIGN CODE		ASME B16.34	ASME B16.5	ASME B1.20.1					
END CONNECTIONS	*INLET*	FLANGED	1"	RF	R9				
	OUTLET	FLANGED	1"	RF	R9				
	BLEED	THREADED (Female)	1/2"	NPT	F	PLUG			
BORE VALVE (DN-mm)		DN25							
BORE VENT (DN-mm)		5 mm							8
SERVICE (STD / CRYOGENIC / HIGH TEMP)		STANDARD							
FACE TO FACE DIMENTIONS (mm)		202,5	Manufacturer STD						
DESIGN									
PORT DESIGN		FULL BORE							
RATING CLASS		ASME 150							
SEAT DESIGN		SOFT SEAT							
STEM DESIGN (STD / EXTENDED)		STEM EXTENSION	100mm						7
CORROSION ALLOWANCE		NO							
WELD OVERLAY		NO							
OPERATOR		LEVER	T-BAR	St. St.					
LOCKING SYSTEM		YES	without locking element						
NACE MR0175/ISO 15156		YES							
FUGITIVE EMISSION / CLASS		NO							
FIRE SAFE		YES	API 607 / ISO 10497 / API 6FA						
MATERIALS									
BODY		A182 F55	NACE						
CLOSURES		A182 F55	NACE						
BALL		A479 F55	NACE						
SEAT		PEEK							
SEAT SUPPORT		N/A							
SEAT SPRING		N/A							
TRUNNION		N/A							
STEM		A479 F55	NACE						
BODY SEALS / GASKET		O-RING (FKM (AED))	RING (GRAPHITE)						
SEAT SUPPORT SEALS / GASKET		N/A							
STEM SEALS / GASKET		O-RING (FKM (AED))	RING (GRAPHITE)						
BOLT / NUT / BOLT COATING		A193 B7M + HDG	A194 Gr.2HM + HDG						
OTHER		Non-wetted part in st.steel							6
TESTS									
REFERENCE PRESSURE TESTING		API 598, API 6D							
GAS TEST									
SUPPLEMENTARY TEST		NDE (NDE OPERATORS QUALIFICATION EN ISO 9712 / SNT-TC 1A)							
		Impact Test on body and closer at -50°C							
MATERIAL TEST		Hardness test (100%) on body and wetted parts acc. to proc. PT-HT Rev.1							
		PMI: 100% Valve Body/Bonnet Body and Wetted parts in acc. a procedura PT-PMI rev.14							
NOTE PER SCHEDA ARTICOLO:									
		1. Antistatic device							
		2. Anti-blow out stem							
		3. CAVITY RELIEF PRESSURE TEST(100 %) acc. to proc. PT-VSP-VSF							
		4. ANTI-STATIC TEST acc. to spec. BS EN 12266-PART. 2 TEST F21 (12V-ACCEPTANCE CRITERIA 10 Ohm)							
		5. STAINLESS STEEL NAMEPLATE (BODY) + ST.ST NAMEPLATE WITH STEEL WIRE							
		6. spring material ELGILOY R30003							
		7. Lever and Bonnet are suitable for insulation up to 100mm to flange							
		8. Bonnet OS&Y							
		TAG : BLPH-MV-469, BLPH-MV-470, BLPH-MV-471							

Rev	*Date*	*Description*	*Verd*	*Chck*
0	*11/09/2024*	*Issue for order*	*M.S.*	*A.G.*

PART 1 – DESIGN DOSSIER

CHAPTER 4

SECTION 5-1

NDE PROCEDURE

Base Load Power Hub (BLPH)

NDT PROCEDURE (INCL. PMI) – BALL, DBB & SBB, MONOFLANGE

Document Number: 1724000798-NDT-PRO-00006

Document Class: 2

ROSETTI MARINO

(1)	NO COMMENTS - APPROVED - WORK MAY PROCEED
2	MINOR COMMENTS - REVISE AND RESUBMIT - WORK MAY PROCEED
3	MAJOR COMMENTS – REJECTED – DO NOT PROCEED
4	APPROVAL NOT REQUIRED

NOTE: Approval doesn't relieve the supplier from mandatory compliance with contractual documents and specifications. Comments made do not imply acceptance of any cost or delivery impact.

Sign	Date
Comandini Massimo Level III NDT EN - ISO9712 WI CSWIP 3.1	16-11-2024

Rev.	Date	Description	Prepared	Reviewed	Approved
3	11/09/2024	Issue for Review (IFR)	F.CRIMELLA	G.GRANATA	A.DE CARLI
2	11/09/2024	Issue for Review (IFR)	F.CRIMELLA	G.GRANATA	A.DE CARLI
1	22/07/2024	Issue for Review (IFR)	F.CRIMELLA	G.GRANATA	A.DE CARLI
0	04/06/2024	Issue for Review (IFR)	F.CRIMELLA	G.GRANATA	A.DE CARLI

indra VALVES - ITALY

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File: 1724000798-NDT-PRO-00006_3.*docx*

Revision / Change Log

Rev.	Description
0	Issue for Review (IFR)
1	Issue for Review (IFR)
2	Issue for Review (IFR)
3	Issue for Review (IFR)

HOLDS LIST

No.	Description
1	
2	
3	
4	

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1 INTRODUCTION

1.1 PROJECT OVERVIEW

Crosswind, a Shell and Eneco joint venture, was awarded the tender to develop the offshore Hollandse Kust Noord (HKN) wind farm, located 18.5km off the coast of Netherlands near the town of Egmond aan Zee. The consortium plans to have HKN operational in 2023 with an installed capacity of 759MW generating at least 3.3TWh per year. This is sufficient renewable power to supply more than 1 million Dutch households with green electricity.

Offshore wind farms produce intermittent electricity and balancing these dips and peaks and integrating this electricity into the national energy system requires new technologies. For this reason, the offshore wind farm will include several new technologies that could be implemented at full-scale in the future. The new technologies being explored include a floating solar park, a short-duration battery storage as well as long-term storage via green hydrogen produced by water electrolysis and subsequently consumed in a fuel cell. The combination of these individual measures, herein referred to as the Base Load Power Hub (BLPH) will ensure a continuous power supply regardless of the wind situation.

1.1.1 Project Location

The Hollandse Kust Noord (HKN) wind farm is located 18.5km off the coast of the Netherlands near the town of Egmond aan Zee.

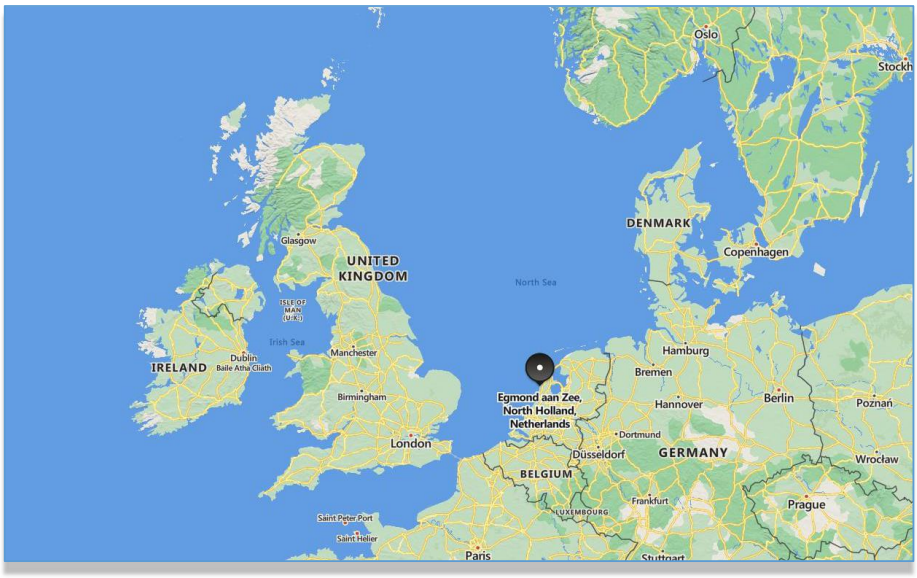


Figure 1 HOLLANDSE KUST NOORD WIND PARK Location Map

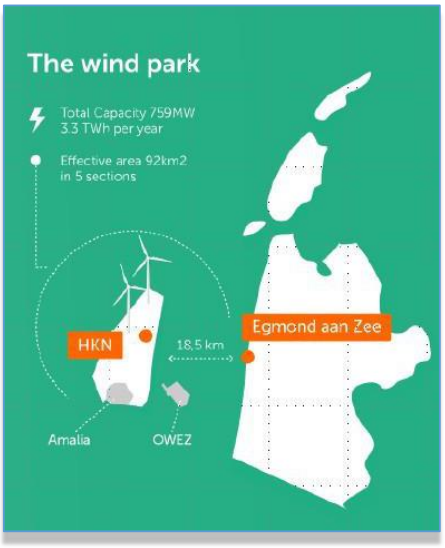


Figure 2 - Wind Park Details

The wind farm will consist of No. 69 x 11.5MW wind turbine generators each to be installed on a dedicated monopile structure. A 70th monopile located on coordinates E 590719.1, N 5841602.3 is reserved for installing the platform accommodating the BLPH. The monopile structure was designed and installed by Van Oord Offshore Wind (VooW) and therefore not part of the BLPH scope.

1.1.2 Project Concept

All components included in the BLPH will be integrated onshore on a topsides and installed in an offshore location within the boundaries of the HKN wind farm. At its simplest, the BLPH will store energy during periods of high electricity generation from renewable sources (a wind turbine generator and the floating solar PV farm) and release it during periods of low generation. In practice. It is expected that the energy stored will supplement generation from renewable sources to ensure that at least 1.0MW of power is exported to the electrical grid regardless of wind/solar availability.

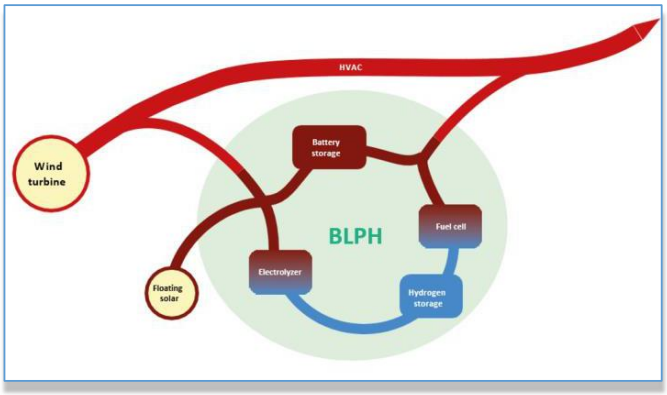


Figure 3 – BLPH Concept

Electricity in the BLPH will be stored in the form of electrons in a battery energy storage system (BESS) as well as converted into green hydrogen via water electrolysis. When the power output from the connecting wind turbine drops to below 1 MWe, the BLPH will return its stored energy to supplement the remaining power output. This will be by discharging the BESS, while stored hydrogen will be converted back into electricity using a fuel cell to extend the discharge duration.

The purpose of the BLPH s to function as a testbed for the integration of energy storage technologies with renewable generation. It is expected that equipment installed on the BLPH will operate as Normally Unmanned Installation for at least two (2) years with no or minimal maintenance and it will have its own independent control room with the ability to communicate with Crosswind's control room.

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2 DOCUMENT SCOPE

2.1 PROCEDURE OF TEST DYE PENETRANT

SCOPE AND FIELD OF APPLICATION

This procedure describes the performance method and acceptance criteria of colour contrast dye penetrant examination of forgings, welding and overlay. If the performance is enforced by third party, the latter must issue their own procedure, according to the indications reported in this document, and submit it in advance for approval. This procedure has been issued in accordance with the minimum contents required by: ASME V table T 621.

In agreement with table T 621 there is a distinction between the essential variables and not essential variables. Any change of value or value range, requires a requalification of the written procedure. Any change of essential and not essential variables requires the revision of the written procedure.

2.1 DEFINITIONS AND ABBREVIATIONS

COMPANY or Client (CPY):	Crosswind
CONTRACTOR (CTR):	ROSETTI MARINO S.p.A.
PROJECT:	HOLLANDSE KUST NOORD WIND PARK Project

Table 2 - Definitions and Abbreviations

GENERAL PROCEDURE FOR HARDNESS TEST

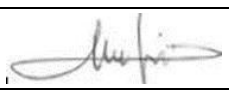
PROCEDURA DI PROVA DI DUREZZA

QUESTE ISTRUZIONI SONO DI PROPRIETA' DELLA INDRA S.R.L.

OGNI DIVULGAZIONE, RIPRODUZIONE O CESSIONE DI CONTENUTI A TERZI DEVE ESSERE AUTORIZZATA DALLA STESSA SOCIETA'.

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Revisione: 0 *Revision: 0*	Redazione *Created*	Approvazione *Approved*
Data: *Date:*	09/09/2024	09/09/2024
Nome: *Name:*	Chiara Poni	Aurelio Giunta
Firma: *Signature:*		

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1. SCOPO E CAMPO DI APPLICAZIONE

Lo scopo della presente procedura è quello di stabilire le modalità per l'esecuzione di prove di durezza, mediante apparecchiature portatili, su componenti finiti.

2. DOCUMENTI DI RIFERIMENTO

I documenti di riferimento sono:
- Manuale della qualità, ultima edizione.
- Procedura di gestione strumentazione (PG-07) ultima edizione.
- ASME Sez. II, ultima edizione.

3. APPARECCHIATURA

Per effettuare le prove di durezza verrà utilizzato un durometro a rimbalzo (Modello TH-110 Portable Hardness Tester 1600HV, S.N. 32159000013), con la possibilità di convertire i risultati nelle varie scale di durezza.

4. CALIBRAZIONE

4.1 Prima effettuare il controllo sul componente in questione lo strumento verrà verificato attraverso il suo blocco di riferimento S.N. 57061.

4.2 Le differenze tra il valore di lettura della media di N° 5 misurazioni effettuate sul blocco di riferimento S.N. 57061 e il valore riportato sul certificato del blocco saranno sottratte dalla media delle misurazioni effettuate sul componente in esame.

5. CONDIZIONI SUPERFICIALI

5.1 L'area di prova deve essere sufficientemente liscia per consentire la corretta esecuzione della prova.

5.2 La rugosità deve essere massimo 1.6 µm (ottenibile con mola a grana fine) e deve essere sufficientemente ampia da consentire il corretto appoggio del corpo di battuta (circa 20 x 20 mm).

5.3 Lo spessore del campione da testare non deve essere inferiore a 5 mm.

1. SCOPE AND FIELD OF APPLICATION

The purpose of this procedure is to establish the procedures for the execution of hardness testing on finished components using portable equipment.

2. REFERENCE DOCUMENTS

The reference documents are:
- Quality Manual, latest edition.
- Equipment management procedure (PG-07) latest edition.
- ASME Section II, latest edition.

3. EQUIPMENT

To carry out the tests a rebound hardness testing device will be used (Model TH-110 Portable Hardness Tester 1600HV, S.N. 32159000013), with the possibility of converting the results on the various hardness scale.

4. CALIBRATION

4.1 First carry out the check on the component in question, the instrument will be checked through its reference block S.N. 57061.

4.2 The differences between the value of the average of N° 5 measurements made on the reference block S.N. 57061 and the value shown on the certificate of the block will be subtracted from the average of the measurements made on the component in question.

5. SURFACE CONDITIONS

5.1 The test area must be smooth enough to allow the test to be carried out correctly.

5.2 The surface must have a maximum roughness of 1.6 µm (obtainable using a fine-grained wheel) and must be large enough to allow the impact body to rest correctly (about 20 x 20 mm).

5.3 The thickness of the sample to be tested should not be less than 5 mm.

5.4 I pezzi campione che hanno peso inferiore a 5 Kg. necessitano di appropriato sostegno per eseguire la prova.

5.5 I componenti che non soddisfano i requisiti 5.2 e 5.3 non possono essere testati in quanto il risultato di durezza non sarebbe attendibile.

6. ESECUZIONE DELLA PROVA

Come concordato con il cliente, la modalità di esecuzione del test prevede che, per ogni punto, dovrà essere registrato il valore medio di N. 5 prove.

7. CRITERI DI ACCETTABILITA'

Se non diversamente concordato con il cliente, i valori riscontrati dal controllo devono rispettare le normative di riferimento presenti nella ASME Sez. II in base al tipo di materiale.

8. DOCUMENTAZIONE

Se richiesto, l'operatore deve firmare e datare un certificato in grado di identificare ogni test effettuato. I valori delle durezze effettuate saranno registrati su un certificato INDRA od uno proposto dal cliente ed approvato dal RSQ (Responsabile del Sistema Qualità).

9. RESPONSABILITA' DEL PERSONALE

L'operatore ha ricevuto un'adeguata istruzione ed è responsabile per l'uso dello strumento, la manutenzione e la conduzione dei test. Il responsabile del sistema qualità (RSQ) è responsabile della corretta applicazione di questa procedura.

10. INDICE REVISIONI

Rev.0 Prima emissione

5.4 Sample pieces weighing less than 5 Kg. require appropriate support to carry out the test.

5.5 Components not compliant to requirements 5.2 and 5.3 shall not be tested since the obtained hardness would not be reliable.

6. TEST EXECUTION

As agreed with the costumer, the test execution method provides that, for each point, the average value of 5 tests must be recorded.

7. ACCEPTANCE CRITERIA

Unless otherwise agreed with the customer, values based on the control must comply with the relevant regulations of the ASME Sec. II according to the type of material.

8. DOCUMENTATION

If requested, the operator has to sign and date a report to identify each test. The values of hardness made will be recorded on a INDRA certificate or one proposed by the customer and approved by the QAM (Quality Assurance Management).

9. PERSONNEL RESPONSABILITY

The operators have to be suitably trained and are responsible for the instrument use and direction. Quality Assurance Manager (QAM) is responsible for the correct application of this procedure.

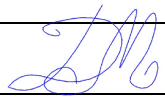
10. REVISIONS INDEX

Rev.0 First emission

Antistatic Test Procedure

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Revision: 0	Created	Checked
Date	15/11/2019	15/11/2019
Name	Merlo Damiano	Giunta Aurelio
Signature		

Purpose

The test shall confirm the electrical conductivity between the obturator and the valve body, according to standard BS EN 12266-2.

Test procedure

General

After carrying out the required pressure test and drying out the valve, the valve shall be operated at least five times and the electrical resistance of the obturator shall be determined for several intermediate positions in accordance to following point.

Test

The electrical resistance between the metal parts of the obturator and the valve body shall be measured using a power source not exceeding 12 V DC.

Acceptance criteria

All-metal construction

The electrical resistance shall not exceed 10 Ω

Composite construction (plastics/metal)

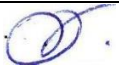
The electrical resistance shall not exceed 10^6 Ω

GENERAL PROCEDURE FOR LIQUID PENETRANT EXAMINATION BY COLOR CONTRAST WATER WASHABLE PENETRANT

PROCEDURA DI ESAME CON LIQUIDI PENETRANTI A CONTRASTO DI COLORE LAVABILI CON ACQUA

QUESTE ISTRUZIONI SONO DI PROPRIETA' DELLA INDRA S.R.L.
OGNI DIVULGAZIONE, RIPRODUZIONE O CESSIONE DI CONTENUTI A TERZI DEVE ESSERE AUTORIZZATA DALLA STESSA SOCIETA'.

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Revision: 0	Compiled	Verified	Approved
Date	06/09/2024	06/09/2024	06/09/2024
Name	C. Poni	N. Sacchetti	L. Nosotti
Signature			

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1. SCOPE AND FIELD OF APPLICATION

This procedure describes the performance method and acceptance criteria of colour contrast dye penetrant examination of forgings, welding and overlay. If the performance is enforced by third party, the latter must issue their own procedure, according to the indications reported in this document, and submit it in advance for approval. This procedure has been issued in accordance with the minimum contents required by: ASME V table T 621.
In agreement with table T 621 there is a distinction between the essential variables and not essential variables. Any change of value or value range, requires a requalification of the written procedure. Any change of essential and not essential variables requires the revision of the written procedure.

1. SCOPO E CAMPO DI APPLICAZIONE

La presente procedura descrive le modalità di esecuzione e i criteri di accettabilità del controllo con liquidi penetranti a contrasto di colore di fucinati, saldature e riporti. Se l'esecuzione è effettuata da terzi, questi ultimi devono emettere la propria procedura, secondo i criteri indicati in questo document, e sottoporla preventivamente per approvazione.
Questa procedura è stata redatta secondo i contenuti minimi richiesti da: ASME V, tabella T 621. Secondo la tabella T 621, viene effettuata una distinzione tra le variabili essenziali e variabili non essenziali. Ogni cambiamento di valori o range di valori richiede la riqualificazione della procedura scritta.

2. REFERENCE DOCUMENTS

2. DOCUMENTI DI RIFERIMENTO

ASME V Div.6: 2021	Liquid Penetrant Examination
ASME VIII Div.1 App.8: 2021	Methods for Liquid Penetrant Examination
ASTM E1417: 2021	Standard Practice for Liquid Penetrant Testing
ASTM E165: 2018	Standard Practice for Liquid Penetrant Testing for General Industry
ASME B16.34: 2020	Standard for Valves Flanged, Threaded and Welding End
R.P. SNT-TC-1A: 2020	Personnel Qualification and Certification in Non-destructive Testing.

3. PERSONNEL

Personnel performing this examination shall be qualified minimum as Level II in this method according to SNT-TC 1A.

4. PENETRANT TESTING PRODUCT

Penetrant, Cleaner and Developers
For the control shall be used products qualified in accordance with ASM 2644-QPL (MIL-I-25135), ASTM E165, ASTM E1417. Unless otherwise specified, it shall be used water or solvent removable penetrant. All used products shall not contain contaminating elements more 1% in weight of the dry residual. Contaminants are: Chlorine, Fluorine, Sulphur.
For above elements, producer shall be required a certificate statingthe presence and quantity of contaminating elements in the products.
The certificate should be containing the name of the product, the producer's name, the number of job of production, the results gotten by chemical analisys, the year of manufacturing and the expiry date.

The products used listed in the following table, they belong to the groups indicated according to the, ASTM E165, ASTM E1417 and ASME V classification and are certified by the manufacturer as approved after many years of experience and the supplier qualification.
It is not possible to use, for the same test, products of different groups/suppliers.
Fluorescent penetrant examination shall not follow a color contrast examination.
The batch number, the year of production and expiry date are shown on the product certificate of conformity.
The product certificates are stored in paper and digital form.

3. PERSONALE

I controlli effettuati secondo questa procedura sono eseguiti da personale qualificato in accordo al Livello II SNT-TC 1A.

4. PRODOTTI PER I LIQUIDI PENETRANTI

Penetrante, Pulitori e Rivelatori
Per il controllo verranno usati prodotti qualificati in accordo alla ASM 2644-QPL (MIL-I-25135), ASTM E165, ASTM E1417. Se non diversamente specificato, dovranno essere utilizzati penetranti rimovibili con acqua o con solvente.
Tutti i prodotti utilizzati non devono contenere contaminanti più del 1% residuo secco. I contaminanti sono: Cloro, Fluoro, Zolfo.
Per quanto sopra citato, deve essere richiesto al produttore un certificato sulla presenza e la quantità di contaminanti nei prodotti.
Il certificato deve indicare il nome del prodotto, il nome del produttore, il lotto di produzione, i risultati ottenuti dall'analisi chimica, l'anno di produzione e la data di scadenza.

I prodotti utilizzati elencati in tabella, sono appartenenti ai gruppi indicati secondo la classificazione, ASTM E165, ASTM E1417 ed ASME V e sono certificati dal produttore come approvati a seguito di pluriennale esperienza e qualifica del fornitore.
Non è possibile utilizzare per lo stesso test, prodotti di gruppi differenti o di diversi fornitori.
L'esame con liquidi penetranti fluorescenti non deve seguire un esame con contrasto di colore.
Sul certificato di conformità del prodotto è riportato il numero di lotto, l'anno di produzione e la data di scadenza.
I certificati sono archiviati in formato cartaceo e digitale.

		ELITE
TIPO II *Type II*	PULITORE *Cleaner*	BC1
Metodo A(1) *Method A(1)*	PENETRANTE *Penetrant*	08.122 K71B2
Forma d, e, f ***Form d, e, f***	RIVELATORE *Developer*	D112A
Sensibilità: *Sensitivity:*	ASTM E1417	Level: 2
	QPL-AMS2644-4	Level: 2
	EN ISO 3452-2	Level: 2

NOTE: Tipo I = penetrante fluorescente
Note: Type I = fluorescent penetrant

Tipo II = a contrasto di colore
Type II = visible penetrants

Forma d = a base solvente per tipo I
Form d = solvent-based for type I

Forma e = a base solvente per tipo II
Form e = solvent-based for type II

Forma f = applicazione speciale
Form f = special application

Metodo A = lavabile ad acqua
Method A = water washable

Metodo C = lavabile con solvente
Method C = solvent removable

(1) Doppio uso A e C
(1) Double use A and C

5. EQUIPMENT

Lighting means
It is necessary to periodically calibrate all white light lamp as black light lamp (PDT-074), operators should ensure that the luminous intensity of the parts being examined is adequate.

Digital Luxmeter
Other
- Bristle brushes and in good condition, if the dye penetranti s not applied using aerosol or immersion tanks.
- Clean, dry, lint-free clothes or paper.
- Metal brush or lamellar disc grinding wheel if required for surface preparation.

6. ENVIRONMENTAL CONDITIONS

The ambient where the examination is performed should be well aerated, a safe position for the sample and adequate light intensity according to the requirements of the following paragraphs shall be granted.
Minimum light intensity requested on the examination surface is ≥ 1076 lux (in accordance with ASME V Art.6 or ASTM E165, ASTM E1417).

7. PREPARATION OF SURFACES

The entire surface of the piece to be examined shall be cleaned from dirt, oil, grease, flakes, oxides, humidity, welding slivers, or other elements that could mask defects and absorb or contaminate the penetrant.
Cleaning operations could be carried out using cloths or paper soaked in an appropriate solvent.
The drying of the pieces may be done per normal evaporation, or with hot/cold air. Generally, the surface can be as welded, forged, swaged or cast. Grinding, machining, and any other preparation shall be applied on surface that show irregular conditions which can disturb the examination.
The cleaning of the preparation after final mechanical processing, must be carried out at 100% of the zones accessible with the use of a dedicated solvent.

8. APPLICATION OF PENETRANT

It is particularly important to verify that the temperature of components, of the liquid penetrant, of the compressed air and of the environment are within the range 10°C / 50°C.
If this doesn't occur, the whole process needs to be qualified as special procedure.

8.1 Penetrant application
The penetrant liquid can be applied with a brush, sprayed or by immersion.
Penetration time varies according to the material under examination and to the type of penetrant used.

5. APPARECCHIATURA

Mezzi di illuminazione (lampade)
È richiesta una taratura periodica sia delle lampade a luce bianca che di quelle a luce nera (PDT-074), e l'operatore deve assicurarsi che sulle parti da esaminare l'intensità luminosa sia adeguata.

Luxmetro digitale
Altro
- *Pennelli in setola e in buono stato, qualora il liquido penetrante non sia applicato usando bombolette spray o per immersione.*
- *Panni o carta puliti, asciutti e senza sfilacciature.*
- *Spazzola metallica o mola a disco lamellare, se necessarie, per la preparazione superficiale.*

6. CONDIZIONI AMBIENTALI

La postazione di lavoro dove vengono effettuati i controlli, deve essere ben aerata, deve garantire un posizionamento sicuro del pezzo da controllare e deve garantire una luminosità adeguata sulla superficie controllata.
L'illuminamento richiesto sulla superficie da controllare è ≥ 1076 lux (in accordo ad ASME V Art.6 o ASTM E165, ASTM E1417).

7. PREPARAZIONE DELLE SUPERFICI

L'intera superficie del pezzo da esaminare deve essere ripulita da sporcizia, olio, grasso, ossido, scaglie, umidità, residui di saldatura e spruzzi o altri elementi che possano occludere i difetti, assorbire o contaminare il penetrante.
La pulizia può essere effettuata mediante stracci o carta imbevuti del solvente idoneo.
L'asciugatura del pezzo può essere effettuata tramite normale evaporazione o con aria forzata calda/fredda.
In generale, le superfici possono essere saldate, forgiate, stampate, fuse. La molatura, la lavorazione di macchina e qualsiasi altra preparazione, devono essere applicate su superfici che presentano condizioni irregolari che possono disturbare l'esame.
La pulizia di preparazione dopo lavorazione meccanica finale deve essere eseguita al 100% delle zone accessibili, con l'utilizzo di solvente dedicato.

8. APPLICAZIONE DEL PENETRANTE

È particolarmente importante verificare che la temperatura dei pezzi, dei liquidi penetranti, dell'aria compressa e dell'ambiente, siano comprese tra 10°C e 50°C.
In caso diverso, l'intero processo è da qualificare specificatamente.

8.1 Applicazione del penetrante
Il liquido penetrante può essere applicato a pennello, a spruzzo o per immersione del pezzo.
Il tempo di penetrazione è in funzione del materiale da controllare e del tipo di penetrante usato.

The minimum time is 10 minutes (5 minutes for casts, welds and non-metal materials) both for liquids that can be removed with water and for those removable with solvents.

For special cases and for information on maximum penetration time, refer to the quoted standard and to the instructions provided by the supplier of the liquid.
In any case, max penetration time is 60 minutes.
During penetration, the surface under examination should be maintained "wet" in order to prevent the penetrating liquid from drying inside the discontinuities.

Il tempo minimo di penetrazione è 10 minuti (5 minuti per fusioni, saldature e materiali non metallici) sia per i liquidi asportabili con acqua che per quelli asportabili con solvente.

Per casi particolari, così come per i tempi massimi di penetrazione, riferirsi alla norma citata ed alle istruzioni del fornitore dei liquidi.
In ogni caso, il tempo massimo di penetrazione è 60 minuti.
Durante il tempo di penetrazione, la superficie in esame dovrà essere mantenuta "bagnata" in modo da evitare che il liquido penetrante si asciughi dentro le eventuali discontinuità.

8.2 Excess penetrant removal

8.2.1 Water washable penetrants

a) after the expire of the penetrating time, the penetrating liquid in excess should be removed from the surfacebeing examined using one or more of the systems listed here below:
   - by immersing the component in current/circulating water
   - by spraying the component with water at a low pressure (p ≤ 200 kPa).
     The water jet is showered and the minimum distance of the nozzle from the surface of the component should not be below 30 cm.

   The temperature of water should be within the range 10°C ÷ 43°C
b) Washing should be continued only until all the penetrant is removed from the surface under examination to avoid removing also the liquid that has penetrated in discontinuous areas.

8.2 Asportazione dell'eccesso di penetrante

8.2.1 Liquidi penetranti lavabili con acqua

a) Trascorso il tempo di penetrazione, il liquido penetrante in eccesso viene asportato dalla superficie di esame usando uno o più dei sistemi elencati di seguito:
   - immersione del pezzo in acqua corrente/agitata
   - spruzzatura con acqua a bassa pressione (p ≤ 200 kPa).
   Il getto d'acqua viene spruzzato e la distanza minima dell'ugello, dalla superficie del componente, non deve essere inferiore a 30 cm.

   La temperatura dell'acqua deve essere compresa tra 10°C ÷ 43°C
b) Il lavaggio dura il tempo strettamente necessario ad asportare il penetrante dalla superficie in esame per evitare che possa venir asportato anche quello penetrato nelle eventuali discontinuità.

8.3 Drying

Before the application of the developer, the surface under examination should be perfectly dried with clean cloths and/or absorbent paper and/or air blown at a low pressure with temperature no higher than 50°C.

8.3 Asciugatura delle superfici

Prima dell'applicazione del rivelatore, la superficie in esame deve essere perfettamente asciugata con stracci puliti e/o carta assorbente e/o aria soffiata a bassa pressione con temperatura non maggiore di 50°C.

8.4 Wet developer application

The developer should be applied as soon as possible after the removal of the penetrant (10 minutes max).
The developer should be sprayed in several light layers and not with a single and heavy layer, at a distance from the surface of 20-30 cm, in order to create a thin and consistent film with a thickness suited to create a good contrast with the dye liquid penetrant.

8.4 Applicazione del rivelatore

Il rivelatore va applicato nel più breve tempo possibile, dopo l'asportazione del penetrante (10 minuti max).
Il rivelatore va applicato a spruzzo (prima dell'applicazione il contenitore va agitato in modo da disperdere adeguatamente le particelle in sospensione), in più passate leggere piuttosto che in un'unica passata abbondante, da una distanza dalla superficie del pezzo di 20-30 cm, fino a creare un velo sottile ed uniforme, ma di spessore sufficiente a creare un buon contrasto per i liquidi a contrasto di colore.

8.5 Interpretation/Evaluation

This phase starts as soon as the developer has dried.

8.5.1 Visible liquid penetrants

The surface should be carefully examined after the application of the developer.
The examination must be extended over the whole developing time.

8.5 Ispezione

Il tempo di sviluppo inizia non appena il rivelatore sia asciugato.

8.5.1 Liquidi penetranti a contrasto di colore

La superficie deve essere esaminata attentamente subito dopo l'applicazione del rivelatore.
L'esame verrà poi continuato durane tutto il tempo di sviluppo.

The evaluation of results should be carried out after a minimum of 10 minutes and a maximum of 30 minutes from the completed application of the developer.

a) The surface should be adequately lighted during all the examination.
The minimum lighting intensity should be 1076 lux
For this scope a periodical calibration of the white light lamps is performed in order to obtain the required light intensity.
The light intensity is also verified with a luxmeter positioned on the surface to be tested and reading the obtained value.

b) The indications will appear as dye spots on a white background. Their information should be carefully followed so that it is possible to determine their cause.
In doubtful cases, i twill be necessary to carry out further examinations with other techniques or locally grinding of specific areas (provided that there is sufficient removable thickness) followed by a new re-test.

9. CRITERIA FOR APPROVAL/REFUSAL OF RESULTS

During the development phase, using a color contrast technique, a background tending to pale pink color control indicates that the removal of penetrant has not been performed correctly, for which the repetition of the test is necessary.

If in doubt could be necessary to proceed to further analysis by other techniques or to a local grinding (where the allowance permits), and subsequent re-test.

10. ACCEPTANCE CRITERIA

The following indications are not acceptable (see definitions at para.4):

- Linear indications
- Non-linear indications with a diameter above 5 mm
- Four or more non-linear indications in a line at a distance below 1.5 mm between the edges.

Indications with dimensions below 1.5 mm are not taken into consideration.
The above-described acceptance criteria are in compliance with standard ASME VIII Div.1 App.8 and ASME B16.34.

For information, some criteria more detailed are attached and can be used with client agreement.

See Annex B

La valutazione delle indicazioni non dovrà essere eseguita prima che siano trascorsi 10 minuti e non deve essere protratta oltre 30 minuti dal termine dell'applicazione del rivelatore.

a) È necessario che la superficie sia adeguatamente illuminata durante l'esame.
L'intensità minima di illuminazione deve essere pari a 1076 lux
A tale scopo viene eseguita una taratura periodica delle lampade a luce bianca, al fine di ottenere l'intensità luminosa richiesta.
Le condizioni di illuminamento vengono inoltre verificate con luxmetro, appoggiandolo sulla superficie di prova e leggendo la misura rilevata.
b) Le indicazioni appariranno come macchie di colore sullo sfondo bianco e la loro formazione andrà attentamente seguita, per individuarne la causa.
In casi dubbi, sarà necessario effettuare ulteriori esami con altre tecniche o molare localmente aree specifiche (a condizione che ci sia sovrametallo sufficiente) seguito da un nuovo controllo.

9. CRITERI PER APPROVAZIONE/RIFIUTO DEI RISULTATI

Durante la fase di sviluppo, nel caso di un controllo a contrasto di colore, uno sfondo tendente al colore rosa più o meno pallido, indica che l'asportazione del penetrante non è stata eseguita correttamente, per cui è necessaria la ripetizione del controllo.

In caso di dubbi si dovrà procedere ad ulteriori esami con altre tecniche o alla molatura locale (ove il sovrametallo lo permetta) e successiva ripetizione del controllo.

10. CRITERI DI ACCETTABILITA'

Non sono accettabili difetti che danno le seguenti indicazioni (vedi definizioni al par.4):

- *Indicazioni lineari*
- *Indicazioni tondeggianti superiori a 5 mm di diametro*
- *Quattro o più indicazioni tondeggianti allineate, distanziate meno di 1.5 mm tra i bordi.*

Non vengono prese in considerazione indicazioni di dimensioni inferiori a 1.5 mm.
I criteri di accettabilità sopra indicati, sono conformi all'ASME VIII Div.1 App.8 e ASME B16.34.

A titolo informativo, vengono allegati alcuni criteri più dettagliati e possono essere utilizzati in accordo con il cliente.

Vedi Allegato B

11. REPAIRS

For not finished components in production, it is possible to grind unacceptable defects provided that there is sufficient removable thickness.
Unacceptable defects on laminates and on drawn profiles, can be removed by eliminating the sections of defective material.
Welded additions are not permitted on forged, laminated, hot-drawn and rolled materials or on bolts.
All repaired areas should be re-inspected by qualified personnel following the procedures described above.

12. FINAL CLEANING

Cleaning of the component after examination shall be carried out when the residuals of the developer could impair subsequent operations on the components, for example during painting.
Final cleaning is always necessary for aluminum alloys that could be corroded by the residuals of the developer.
Special instructions shall be indicated when necessary.

13. RECORDING RESULTS

The test report (TR) is prepared in accordance with the attached form.

14. HEALTH AND SAFETY

Dye penetrant solutions have a low flash point and must not be heated or put in contact with a flame or hot surface. Avoid contact between skin and penetrant or developer, because such liquids are irritant of the skin. Workers have to respect regulations for their safety and for the environment.
Residual liquids (including washing water) must be disposed according to environmental regulations in force.

15. ATTACHMENT

15.1 Acceptance criteria ASME VIII App.8

15.2 Test Report

11. RIPARAZIONI

Nei pezzi non finiti di lavorazione, è ammessa l'asportazione di mola dei difetti inaccettabili, compatibilmente con il sovrametallo disponibile.
Difetti inaccettabili su laminati e trafilati possono essere asportati eliminando le porzioni di materiale difettoso.
Su fucinati, laminati, trafilati, rullati e bulloneria, non sono ammesse riparazioni mediante riporti di saldatura.
In ogni caso le zone riparate vanno ricontrollate da personale qualificato con le medesime modalità.

12. PULIZIA FINALE

La pulizia dei componenti dopo l'esame deve essere eseguita quando i residui di rivelatore possono provocare inconvenienti nelle successive operazioni sui pezzi, ad esempio durante la verniciatura.
La pulizia finale è sempre necessaria per i materiali in lega di alluminio, per i quali sussiste il pericolo di corrosione da parte dei residui di rivelatore.
Istruzioni specifiche devono essere indicate quando necessario, per materiali e/o impieghi particolari.

13. REGISTRAZIONE DEI RISULTATI

La stesura del rapporto di prova è eseguita in accordo al formato allegato.

14. PRECAUZIONE DI SICUREZZA

Le soluzioni del penetrante hanno un basso punto di infiammabilità e non devono venire riscaldati o esposti a fiamme libere o a superfici calde. Si deve evitare di esporre la pelle ad un contatto prolungato con il penetrante o il rivelatore, in quanto tali liquidi sono irritanti della pelle. L'operatore è responsabile per operare in piena conformità a quanto richiesto dalle disposizioni di legge vigenti.
I residui dei liquidi (incluse le acque di lavaggio) devono essere smaltiti secondo le vigenti norme ambientali.

15. ALLEGATI

15.1 Criteri di accettabilità ASME VIII App.8

15.2 Rapporto di Prova

ANNEX 15.1

Acceptance standards to ASME VIII Div.1 Appendix 8

Only indications with majors dimensions greater than 1/16 in (1.5 mm) shall be considered relevant.
All surfaces to be examined shall be free of:

a) Relevant linear indications
b) Relevant rounded indications greater than 3/16 in (5 mm)
c) Four or more relevant rounded indications in a line separated by 1/16 in (1.5 mm) or less (edge to edge).

Indications of any size are not permitted on seal contact surfaces.

Criteri di accettabilità secondo ASME VIII Div.1 Appendice 8

Solo le indicazioni con la dimensione maggiore, superiore a 1/16 in (1.5 mm) sono considerate rilevanti.
Tutte le superfici che devono essere esaminate devono essere esenti da:

a) Indicazioni lineari rilevanti
b) Indicazioni tondeggianti rilevanti più grandi di 3/16 in (5 mm)
c) Quattro o più indicazioni tondeggianti rilevanti allineate, separate da 1/16 in (1.5 mm) o meno.

Nessuna indicazione di nessuna dimensione è permessa o accettabile nelle zone di tenuta.

ANNEX 15.2

indra VALVES ITALY	**PENETRANT TEST REPORT (PT)**	**MD-02-29** rev.02 Date 28-11-2022

Customer:	Internal Indra Order No.:	Batch no.:
Customer Order No.:	Qty:	
Code:	Description:	
Acceptance Standards: ASME V Art.6 / ASME VIII Div.1 App.8		
Procedure: Indra Procedure PT-DP-01 Rev.03		
Equipment:		

Test Conditions:			
Test Surface:	EXTERNAL SIDE	INTERNAL SIDE	Surface Condition:
Penetrant Time: 20 min	Drying Time: 10 min	Development Time: 20 min	Cleaner:
Natural Light: > 1100 Lux			
Type of Penetrant			
Type of Developer			
Type of Removal			
Results:			
Note: The inspection was conducted 100% of the surface			

Operator: Nicholas Sacchetti (LEVEL 2 acc. EN 9712:2012)	Signature:	Approved: Lucia Nosotti (RSQ)	Signature:
INDRA Srl via Novara 10/B 20013 - Magenta (MI) ITALY iPhone: +39 97298663 www.indra.it	Approval of Customer:		Date:

TITOLO **Title**	**PROCEDURE OF POSITIVE MATERIAL IDENTIFICATION BY X-RAY FLUORESCENCE AND LIBS (OES)**
DISTRIBUITA A **Distributed to**	Carezzo R. Fagnani P. Giunta A. Petitti T. Rossini C.

REV. rev.	DATA date	NOME/FIRMA name/signature	NOME/FIRMA name/signature
14	20/09/2023	C. PONI	A. GIUNTA
REVISIONI revisions		PREPARATA DA prepared by	APPROVATA DA approved by

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REVISIONS INDEX		
Rev.	**Date**	**Description**
0	December '12	Emission
1	29 October '14	Tables of alloy element in cap.9.0
2	03 April 2015	Rev. tables of alloy element (cap. 9.0) Measurement tolerance (cap. 8.0)
3	04 June 2015	Rev. tables of alloy element (cap. 9.0)
4	02 May 2016	Acceptance criteria (cap. 9.0) Test report (cap. 10.0)
5	31 May 2016	Test report CVH
6	02 May 2019	General revision
7	23/04/2020	Add. SS304/L
8	24/05/2021	Updated material table
9	28/02/2022	Updated material table
10	19/09/2022	Rev. Test report (cap. 10.0)
11	30/11/2022	Rev. Table 1
12	18/05/2023	Rev. Table 1
13	15/09/2023	Rev. Table 1
14	20/09/2023	Rev. cap. 1.0, 3.0, 4.0, Table 1

0.0 SUMMARY

1.0 PURPOSE AND APPLICATION FIELD

2.0 REFERENCE DOCUMENTS

3.0 METHOD PRINCIPLE

4.0 EQUIPMENTS

5.0 PERSONNEL

6.0 SAMPLE SURFACE PREPARATION

7.0 TEST PROCEDURE

8.0 RESULT EXPRESSION

9.0 ACCEPTANCE CRITERIA

10.0 TEST REPORT

1.0 PURPOSE AND APPLICATION FIELD

This procedure describes the operation modalities for the "Non-Destructive Testing" of materials by the "on-site" Positive Material Identification using a portable X-Ray Fluorescence Instrument, and Laser Induced Breakdown Spectroscopy (LIBS), a type of atomic optical emission spectroscopy (OES).

With EDXRF analyzer is possible to verify a wide range of alloys since almost all element with an atomic number higher than 12 (Magnesium).

With LIBS analyzer is possible to verify carbon content too.

The analyzer automatically compensates for reducing many effects that would otherwise bias or distort sample analyses.

These effects include:

- Geometric effects caused by the sample's shape, surface texture, thickness and density.
- Spectroscopic interferences and other sample matrix effects.
- Critical absorption of the characteristic x-rays of one element by other elements in the sample, and secondary and tertiary x-ray excitation of one or more elements by other elements in the sample (only X-Ray instrument).

2.0 REFERENCE DOCUMENTS

- Equipment Operating Manual
- API 578 RP

3.0 METHOD PRINCIPLE

3.1 X-Ray Analyzer

Each of the atomic elements present in a sample produces a unique set of *characteristic x-rays* that is a fingerprint for that specific element. EDXRF analyzers determine the chemistry of a sample by measuring the spectrum of the characteristic x-rays emitted by the different elements in the sample when it is illuminated by high energy photons (x-rays).

Each element present in the sample emits its own unique fluorescent x-ray energy spectrum. By inducing and measuring a wide spectrum of the range of different characteristic fluorescent x-rays emitted by the different elements in the sample, XRF analyzers can determine the elements present in the sample and their relative concentrations, in other words, the elemental chemistry of the sample.

3.2 LIBS Analyzer

For LIBS analyzer, the wavelength (color) of specific lines reveals the elements present, and the intensity of the light at a given wavelength is related to the concentration of each element.

4.0 EQUIPMENT

4.1 X-Ray Analyzer

Main features of the portable X-Ray Fluorescence instrument (**NITON XL2 980 GOLDD**):

- Plays Non-destructive chemical analysis via simultaneous detection and quantification of fluorescent x-rays of multiple elements in test sample.
- X-ray fluorescence (XRF) is induced by miniaturized X-ray tube (35 kV 100 µA miniaturized low- power X-ray tube).
- The Instrument detector is a High-performance, thermo-electrically cooled, solid state detector system.
- Operating temperature range 20° to 122°F (-7° to 50°C).

3.2 LIBS Analyzer

Main features of the portable LIBS instrument (**SciAps HH-LIBS Z-902**):

- Plays Non-destructive chemical analysis with high energy pulsed laser.
- Operating laser temperature range 79° to 95°F (26° to 35°C).

5.0 PERSONNEL

The technicians that perform the analysis are trained and qualified according to the company quality system procedure. They also must observe the applicable safety standards.

6.0 SAMPLE SURFACE PREPARATION

The kind of preparation depends on the material to be examined, usually specific surface preparation could be omitted, even if it is advisable for improving analytical results.

In facts it is sufficient that the surface is free from grease, oil, paint, rust, dust and rough irregularities.

A portable smoothing machine could be used for sample surface preparation. The best paper granulometry should be about 60. The specimens also used for the calibration of the equipment are submitted to the above-mentioned surface preparation.

7.0 TEST PROCEDURE

The operations listed hereinafter are described in the Equipment Operating Manual.

The analysis starts with the "verification procedure" by using the instrument set up sample.

After this operation the equipment is ready for both identification analysis and anti-mixing control.

Calibration of PMI X-Ray Machine is done every 6 months using a verification block IARM 35KN certified 1.25Cr-0.5Mo.

LIBS instrument calibration certificate is Certificate Number: 230725-Z902-00943.

Calibration procedure used is: "Istruzione operativa: taratura pistola PMI Rev.2".

8.0 RESULTS EXPRESSION

On the display is visible the percentage results for each single element aside with direct alloy identification if the alloy is memorized in the instrument library.

PMI Machine limits of detection (only X-Ray) are listed below in ppm (mg/kg):

Time 60s per filter (A/S= Application specific) (N/A=Not Applicable)				
Matrix	**Al-based Alloys**	**Ti-based Alloys**	**Fe-based Alloys**	**Cu-based Alloys**
Sb	30	100	150	175
Sn	30	60	90	120
Pd	20	25	30	35
Ru	20	50	70	100
Mo	N/A	A/S	A/S	A/S
Nb	N/A	200	240	320
Zr	N/A	50	70	100
Bi	20	35	50	65
Pb	20	20	75	50
Se	N/A	20	20	25
W	50	150	200	220
Zn	30	40	60	300
Cu	30	75	110	N/A
Ni	50	150	220	110
Co	50	120	750	50
Fe	75	300	N/A	75
Mn	100	250	220	75
Cr	200	500	110	100
V	500	1300	150	150
Ti	1000	N/A	250	275
S	N/A	N/A	100	N/A
P	N/A	N/A	200	200
Si	700	750	425	425
Al	N/A	4000	3000	3000
Mg	7500	N/A	N/A	N/A

The measurement tolerance is determined with the standard deviation, range $\mu \pm 2\sigma$ (confidence interval 95%).

The instrument errors should eventually be verified and corrected using a different Certified Reference Materials.

9.0 ACCEPTANCE CRITERIA

The acceptance criteria will be per the ASME Boiler & Pressure Vessel Code, Section II, unless otherwise specified by the customer.

10.0 TEST REPORT

All results are given in the follow company docs.:

- MD/PMI-VSF
- MD/PMI-VSP
- MD/PMI-CVH

It shall contain information about the: customer, job number and position, tested samples, place where the test is performed, test specifications.

Usually, in addition to a declaration of correspondence / non correspondence to the declared material, the found values are reported for information.

The test report also contains the percentage results for each single element, according to **Table 1**, and refer to the rules stated therein.

Attachment 2 provide sample PMI Test Report.

When components of a valve are PMI tested, Valve nameplate is marked with indication of executed PMI test through stamping the note “AV” (Alloy Verified).

Table 1

Material	304/ 304L	316/ 316L	321	XM-19	Duplex F51	Duplex F55	Duplex F53	F44 (6Mo)	Inconel 625	Hastelloy C276	Incoloy 825	Inconel 718 (API 6A)	Monel K500	Monel 400	Alumin. Bronze C95800	Titanium Gr.2	Stellite 6	Carbon steel A105	Carbon steel LF2	Carbon steel 4130	Carbon steel 4140
ASTM / AMS	A182	A182	A182	A182	A182	A182	A182	A182	B564	B619	N08825	N07718	B865	B564	B148	R50400	-	A105	A350	A29	A29
C %	0.03 max	0.03 max	0.08 max	0.06 max	0.03 max	0.03 max	0.03 max	0.02 max	0.1 max	0.01 max	0.05 max	0.08 max	0.25 max	0.3 max	-	0.08 max	3 - 4	0.35 max	0.3 max	0.28 – 0.33	0.38 - 0.43
Cr %	18 - 20	16 - 18	17 - 19	20.5 – 23.5	21 - 23	24 - 26	24 - 26	19.5 – 20.5	20 - 23	14.5 – 16.5	19.5 - 23.5	17 - 21	-	-	-	-	26 - 32	0.3 max	0.3 max	0.8 – 1.1	0.8 – 1.1
Ni %	8 - 13	10 - 15	9 - 12	11.5 - 13.5	4.5 - 6.5	6 - 8	6 - 8	17.5 - 18.5	58.0 min	(**)	38 - 46	50 - 55	60 min	63 min	4 - 6	-	3 max	0.4 max	0.4 max	-	-
Mo %	-	2 - 3	-	1.5 - 3.0	2.5 - 3.5	3 - 4	3 - 4	6 – 6.5	8 – 10	15 – 17	2.5 - 3.5	2.8 - 3.3	-	-	-	-	1 max	0.12 max	0.12 max	0.15 – 0.25	0.15 –0.25
Mn %	2.00 max	2.00 max	2.00 max	4 - 6	2.00 max	1.00 max	1.20 max	1.00 max	0.50 max	1.00 max	1.00 max	0.35 max	-	2.00 max	0.8 – 1.5	-	-	0.6 - 1.05	0.6 - 1.35	0.4 – 0.6	0.75 - 1
Al %	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8.5–10-5	-	-	-	-	-	-
W %	-	-	-	-	-	0.5 - 1	-	-	-	3.0 – 4.5	-	< 0.1	-	-	-	-	3 - 6	-	-	-	-
Nb %	-	-	-	-	-	-	-	-	3.15 – 4.15	-	-	-	-	-	-	-	-	-	0.02 max	-	-
Fe %	-	-	-	-	-	-	-	-	5.0 max	4.0 – 7.0	-	-	-	-	-	-	-	-	-	-	-
Ti %	-	-	(***)	-	-	-	-	-	0.4 max	-	0.6 - 1.2	0.8 - 1.15	-	-	-	(**)	-	-	-	-	-
Co %	-	-	-	-	-	-	-	-	-	2.5 max	-	< 1.0	< 2.0	<2.0	-	-	BAL	-	-	-	-
Cu %	-	-	-	-	-	0.5 - 1	0.5 max	0.5 - 1	-	-	1.5 - 3.0	< 0.23	(**)	(**)	(**)	< 0.1	-	0.4 max	0.4 max	-	-
Sn %	-	-	-	-	-	-	-	-	-	-	-	< 0.1	-	-	< 0.1	< 0.1	-	-	-	-	-
Ta %	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

(**) The composition shall be determined arithmetically by difference with other detected elements

(***) Titanium content shall be not less than five times the carbon plus nitrogen detected content and not more than 0.70%

Attachment 2

indra VALVES ITALY	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : Data/*Date* :	MD/PMI-VSF Rev.4-Dec/2022

CLIENTE *Customer*		COMMESSA INDRA Indra Job No.		NR. D'ORDINE CLIENTE Customer Order No.		DEL Dated		POSIZIONE D'ORDINE CLIENTE *Customer Item*		POSIZIONE D'ORDINE INDRA *Indra Item*	
Percentuale particolari da testare *Percentage of elements to be tested*		(da arrotondare all' unità superiore) *(to be rounded at higher unit)*		CODICE *Code*		DESCRIZIONE *Description*		Quantità da produrre (pz.) *No. of pieces to be produced*			

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 72765

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)* Cr	Ni	Mo	W	Co	Ti	Cu	Sn	RISULTATO DEL PMI/ PMI result

NOTE / *Remarks* : PMI on body, wetted parts and plugs		
PMI Procedure:	Data prelievo componenti / *Date of components picking* :	Firma /*Signature*: ANDREA CHIODINI (ASSEMBLY OPERATOR)
Testing instrument: X-Ray analyzer NITON XL2 980 GOLDD	Data verifica componenti / *Date of components verification* :	Firma /*Signature*: THOMAS PETITTI (PMI OPERATOR)
Serial number: 85044 **Expiry calibration:** 13-Nov-2022	Data esecuzione PMI TEST / *Date of PMI TEST execution* :	Firma /*Signature*: (PMI INSPECTOR)

Mod. PT/PMI Rev.14

PART 1 – DESIGN DOSSIER

CHAPTER 5

SECTION 3

FUGITIVE TEST PROCEDURE

Base Load Power Hub (BLPH)

FUGITIVE TEST PROCEDURE

Document Number: 1724000798-QC-PRO-00008

ROSETTI MARINO

1	NO COMMENTS - APPROVED - WORK MAY PROCEED
2	MINOR COMMENTS - REVISE AND RESUBMIT - WORK MAY PROCEED
3	MAJOR COMMENTS – REJECTED – DO NOT PROCEED
4	APPROVAL NOT REQUIRED

NOTE: Approval doesn't relieve the supplier from mandatory compliance with contractual documents and specifications. Comments made do not imply acceptance of any cost or delivery impact.

Sign	Date
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Document Class: 2

Rev.	Date	Description	Prepared	Reviewed	Approved
3	31/07/2024	Accepted fo Construction (AFC)	F.CRIMELLA	G.GRANATA	A.DE CARLI
2	22/07/2024	Accepted fo Construction (AFC)	F.CRIMELLA	G.GRANATA	A.DE CARLI
1	07/06/2024	Issue for Review (IFR)	F.CRIMELLA	G.GRANATA	A.DE CARLI
0	03/06/2024	Issue for Review (IFR)	F.CRIMELLA	G.GRANATA	A.DE CARLI

indra VALVES - ITALY

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Revision / Change Log

Rev.	Description
0	Issue for Review (IFR)
1	Issue for Review (IFR)
2	Accepted for Construction (AFC)
3	Accepted for Construction (AFC)

HOLDS LIST

No.	Description
1	
2	
3	
4	

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1 INTRODUCTION

1.1 PROJECT OVERVIEW

Crosswind, a Shell and Eneco joint venture, was awarded the tender to develop the offshore Hollandse Kust Noord (HKN) wind farm, located 18.5km off the coast of Netherlands near the town of Egmond aan Zee. The consortium plans to have HKN operational in 2023 with an installed capacity of 759MW generating at least 3.3TWh per year. This is sufficient renewable power to supply more than 1 million Dutch households with green electricity.

Offshore wind farms produce intermittent electricity and balancing these dips and peaks and integrating this electricity into the national energy system requires new technologies. For this reason, the offshore wind farm will include several new technologies that could be implemented at full-scale in the future. The new technologies being explored include a floating solar park, a short-duration battery storage as well as long-term storage via green hydrogen produced by water electrolysis and subsequently consumed in a fuel cell. The combination of these individual measures, herein referred to as the Base Load Power Hub (BLPH) will ensure a continuous power supply regardless of the wind situation.

1.2 Project Location

The Hollandse Kust Noord (HKN) wind farm is located 18.5km off the coast of the Netherlands near the town of Egmond aan Zee.

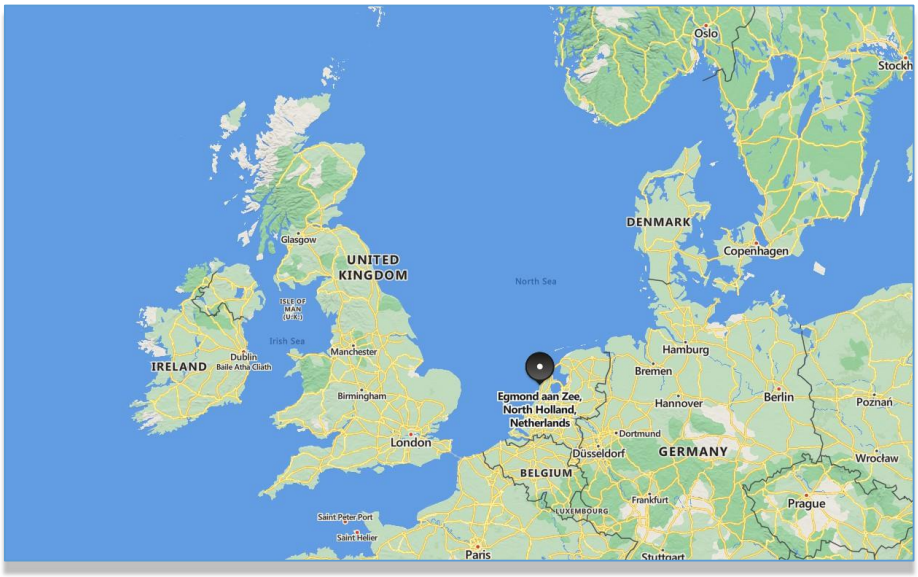


Figure 1 HOLLANDSE KUST NOORD WIND PARK Location Map

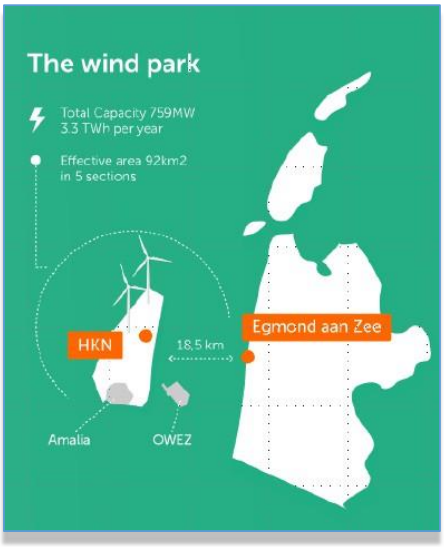


Figure 2 - Wind Park Details

The wind farm will consist of No. 69 x 11.5MW wind turbine generators each to be installed on a dedicated monopile structure. A 70th monopile located on coordinates E 590719.1, N 5841602.3 is reserved for installing the platform accommodating the BLPH. The monopile structure was designed and installed by Van Oord Offshore Wind (VooW) and therefore not part of the BLPH scope.

1.3 Project Concept

All components included in the BLPH will be integrated onshore on a topsides and installed in an offshore location within the boundaries of the HKN wind farm. At its simplest, the BLPH will store energy during periods of high electricity generation from renewable sources (a wind turbine generator and the floating solar PV farm) and release it during periods of low generation. In practice. It is expected that the energy stored will supplement generation from renewable sources to ensure that at least 1.0MW of power is exported to the electrical grid regardless of wind/solar availability.

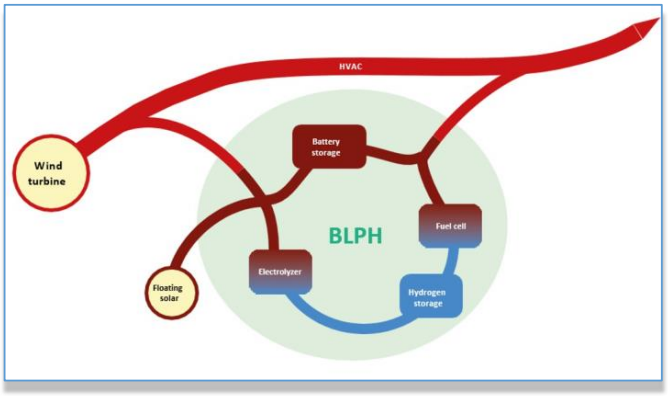


Figure 3 – BLPH Concept

Electricity in the BLPH will be stored in the form of electrons in a battery energy storage system (BESS) as well as converted into green hydrogen via water electrolysis. When the power output from the connecting wind turbine drops to below 1 MWe, the BLPH will return its stored energy to supplement the remaining power output. This will be by discharging the BESS, while stored hydrogen will be converted back into electricity using a fuel cell to extend the discharge duration.

The purpose of the BLPH s to function as a testbed for the integration of energy storage technologies with renewable generation. It is expected that equipment installed on the BLPH will operate as Normally Unmanned Installation for at least two (2) years with no or minimal maintenance and it will have its own independent control room with the ability to communicate with Crosswind's control room.

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2 DOCUMENT SCOPE

This document includes FET TEST PROCEDURE

2.1 DEFINITIONS AND ABBREVIATIONS

COMPANY or Client (CPY):	Crosswind
CONTRACTOR (CTR):	ROSETTI MARINO S.p.A.
PROJECT:	HOLLANDSE KUST NOORD WIND PARK Project

Table 2 - Definitions and Abbreviations

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FET-2

PRODUCTION VALVES

THESE INSTRUCTIONS BELONG TO INDRA S.R.L.
ANY DISCLOSURE, REPRODUCTION OR TRANSFER OF ANY THIRD-PARTY CONTENTS MUST BE AUTHORISED BY THIS COMPANY.

Revision: 0	Drawn up	Checked	Approved
Date	19/07/2024	19/07/2024	19/07/2024
Signature	C.Poni	M.Minora	A.Giunta

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1. INTRODUCTION

The objective of this document is to define the procedure on how to carry out the production test correctly.

This procedure complies with the requirements of ISO 15848-2

2. SCOPE

This document specifies testing procedures for evaluation of external leakage of valve stems and body joints.

3. NORMATIVE REFERENCES

ISO 15848-1:2015, *Industrial valves — Measurement, test and qualification procedures for fugitive emissions — Part 1: Classification system and qualification procedures for type testing of valves*

ISO 15848-2:2015, *Industrial valves — Measurement, test and qualification procedures for fugitive emissions — Part 2: Production acceptance test of valves*

4. PREPARING THE VALVE

4.1 Selecting the valve

- Only a fully assembled valve must be used for the test.

- At least one valve per batch, randomly selected from each production batch, must be tested for each valve type, pressure class and nominal size.

4.2 Preparation

Before carrying out the test, the valves must fulfil the following conditions:

a) The valve design must have been successfully tested according to ISO 15848-1.
b) The valves selected must have been successfully tested in line with the applicable production procedures and/or standards and/or customer specifications.
c) The inside of the valve must be dry and free from lubricant.
d) The valve and test equipment must be clean and free from water, oil and/or dust.
e) No protective coating must have been applied to the test valve.
f) The valves to be tested shall be set up in an area protected from draughts.

4.3 Adjusting the stem seal

The initial compression of the stem seals must be adjusted as set out in the production procedures.

5. SAFETY REQUIREMENTS DURING TESTING

High pressure levels of the test fluid combined with high temperatures require operators to apply appropriate safety measures when carrying out tests and measurements.

6. TEST CONDITIONS

6.1 Test fluid

The test fluid must be helium gas with a minimum purity of 97% by volume.

6.2 Test pressure

The test pressure must be 6 bar (1 bar = 0.1 MPa = 10^5 Pa) unless otherwise agreed.

6.3 Test temperature

The test must be performed at room temperature as specified in ISO 15848-1.

* *Room temperature: in the range of -29 °C to +40 °C (ISO 15848-1)*

6.4 Measuring the leak

Leaks must be measured using the sniffing method in compliance with ISO 15848-1: 2015 (Annex B) and values must be expressed in ppmv.

The sniffing method (with a measuring probe as shown in figure 1) enables the measurement of leakage from both the stem and body seals.

Leak Detector: Pfeiffer Vacuum ASM 340

Prober: Pfeiffer Vacuum Standard Sniffer Probe

1. Valve stem
2. Sniffers

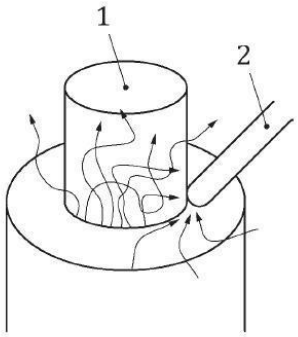


Figure 1

Sequence of operations for correctly measuring the leak:

a) Start the helium mass spectrometer as per manufacturer's instructions and wait until it has heated up.
b) Initial calibration of the leak detector shall be performed with an auto-calibration mode that use the certified internal calibrated leak. Only if requested, initial calibration shall be performed with the certified external calibrated leak.
c) Measure the ambient helium concentration.
Before each measurement, the ambient helium concentration around the source must be 5 ppmv ±0.3
The probe must be placed at 1 or 2 m from the source.
d) During the measurement, the probe must be placed as close as possible to the potential leakage point, which should never be more than 3 mm away.
e) Move the probe along the entire perimeter of the joint while observing the measured value given by the instrument. Adjust the speed with which the perimeter is scanned based on the instrument's response time.
f) If a higher leakage value is observed during the measurement, scan the perimeter where the leak is located more slowly until you find the point where the maximum leakage value is detected.
g) Record the maximum leakage value measured.
h) The different between this value and the ambient helium concentration value (measured as indicated in point b) determines the actual leakage value of the valve.

7. TEST PROCEDURE AND EVALUATION OF RESULTS

7.1 Measuring leaks from the stem seal

The procedure for measuring leaks from stem seals is as follows:

a) Half open the valve and pressurise it to the pressure value given in section 6.2. After the test pressure has stabilised, measure the leak using the method described in section 6.4.
b) Fully open and close the valve 5 times while keeping it under pressure.
c) Half open the valve and measure the stem seal leak again using the method described in section 6.4.
d) If the value measured is higher than the values given in Table 1 (for the relevant Class), the test has failed. In this case, the entire batch of valves must be rejected, and corrective actions must be taken.

Table 1

Class	Leak measured (ppmv)
A	≤50
B	≤100
C	≤200

7.2 Measuring leaks from the body seal

The procedure for measuring leaks from the body seal is as follows:

a) Half open the valve and pressurise it to the pressure value given in section 6.2. After the test pressure has stabilised, measure the leak using the method described in section 6.4.
b) If the value measured is higher than the values given in Table 2, the test has failed. In this case, the entire batch of valves must be rejected, and corrective actions must be taken.

Table 2

Leak Measured (ppmv)
≤50

8. TEST REPORT

indra VALVES & CONTROLS ITALY	***FUGITIVE EMISSION PRODUCTION TEST (ISO 15848-2)*** ***TEST REPORT*** ***- INDRA VALVES -***	**MD-02-20-IT-UK-FE** **Rev. 0** **Data: 10/10/2019**

Nr. Certificato / *Certificate No.* _____ **Data** / *Date :* _____ *Rev. 0*

Cliente / *Customer :* _____

Ordine Nr. / *Order Nr.* _____ **Data** / *Date :* _____

Ns. commessa Nr. / *Our job Nr.* _____ **Data** / *Date :* _____

Ns. D.D.T. Nr. / *Our advise note Nr.* _____ **Data** / *Date :* _____

CONDIZIONI DI PROVA / TEST CONDITIONS

TEST (according to ISO 15848-2)	TEMPERATURA DI PROVA (Test Temperature)	CLASSE DI PERDITA (Tightness class)	MAX. PERDITA AMMISSIBILE (ISO 15848-2) (Max allowable leakage)	FLUIDO DI PROVA (Test Fluid)	PRESSIONE DI PROVA (Test Pressure)	RUMORE DI FONDO (Backgrund noise)	ENDURANCE CLASS	MANOMETRO N° (Gauge ID)	DATA SCADENZA (Due Date)
Body / Closure seal	25° C	B	≤ 50 ppmv	Elium >97%	6 bar	4,7 ppmv	5 cycles	118735	23/10/2024
Body / Body bonnet seal			≤ 50 ppmv						
Stem seal			≤ 100 ppmv						
Gland Plate / Trunnion seal			≤ 50 ppmv						

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY) PRODUCED	QTA' (QTY) TESTED	VALVE TYPE	NPS	FLANGE TYPE	RATING		Ball valve: Body / Closure seal Leak detected (ppmv)	Ball valve: Stem seal Leak detected (ppmv)	Ball valve: Trunnion seal Leak detected (ppmv)	Ball valve: Gland Plate seal Leak detected (ppmv)	Needle valve: Stem seal Leak detected (ppmv)	Needle valve: Body bonnet seal Leak detected (ppmv)
											Value before cycles						
											Value after 5 cycles						
											Value before cycles						
											Value after 5 cycles						
											Value before cycles						
											Value after 5 cycles						
											Value before cycles						
											Value after 5 cycles						
											Value before cycles						
											Value after 5 cycles						

TEST RESULT: ☐ **SATISFACTORY** ☐ **NOT SATISFACTORY**

Strumentazione *(Equipment)* :
- Spettrometro di massa *(Mass Spectrometer)* : PFEIFFER VACUUM ASM 340 (SN.: HLD1901233)
  Minima perdita rilevabile *(Min. leak detectable)* : 5x10E-09 mbar*l/s (sniffing mode)
- Valore nominale fuga calibrata *(Calibrated leak nominal value)* : 6x10E-06 mbar*l/s (SN.: 40116306)

Ispettore / Inspector	*Si / Yes* ☐ *No / No* ☐
Nominativo / Name	*Timbro e Firma / Stamp and Signature*
Data / Date	

PROCEDURA DI TEST
(Test procedure)
PFET

COLLAUDATO DA: TESTED BY:	DATA / DATE: 12/03/2014	APPROVATO DA: APPROVED BY: **P. FAGNANI**	DATA / DATE: 12/03/2014

PART 1 – DESIGN DOSSIER

CHAPTER 5

SECTION 4

HYDROTEST E FINAL TEST PROCEDURE

ROSETTI MARINO

1	NO COMMENTS - APPROVED - WORK MAY PROCEED
2	MINOR COMMENTS - REVISE AND RESUBMIT - WORK MAY PROCEED
3	MAJOR COMMENTS – REJECTED – DO NOT PROCEED
4	APPROVAL NOT REQUIRED

NOTE: Approval doesn't relieve the supplier from mandatory compliance with contractual documents and specifications. Comments made do not imply acceptance of any cost or delivery impact.

Sign	Date
MAURO LIBERATO	10.09.24

Base Load Power Hub (BLPH)

HYDROTEST AND FINAL TEST PROCEDURE

Document Number: 1724000798-QC-PRO-00009

Document Class: 2

02	06/09/2024	Accepted for Construction (AFC)	F.CRIMELLA	G.GRANATA	A.DE CARLI
01	07/08/2024	Accepted for Construction (AFC)	F.CRIMELLA	G.GRANATA	A.DE CARLI
00	04/06/2024	Issue for Review (IFR)	F.CRIMELLA	G.GRANATA	A.DE CARLI
Rev.	Date	Description	Prepared	Reviewed	Approved

indra VALVES - ITALY

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Revision / Change Log

Rev.	Description
00	Issue for Review (IFR)
01	Accepted for Construction (AFC)
02	Accepted for Construction (AFC)

HOLDS LIST

No.	Description
1	
2	
3	
4	

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1 INTRODUCTION

1.1. PROJECT OVERVIEW

Crosswind, a Shell and Eneco joint venture, was awarded the tender to develop the offshore Hollandse Kust Noord (HKN) wind farm, located 18.5km off the coast of Netherlands near the town of Egmond aan Zee. The consortium plans to have HKN operational in 2023 with an installed capacity of 759MW generating at least 3.3TWh per year. This is sufficient renewable power to supply more than 1 million Dutch households with green electricity.

Offshore wind farms produce intermittent electricity and balancing these dips and peaks and integrating this electricity into the national energy system requires new technologies. For this reason, the offshore wind farm will include several new technologies that could be implemented at full-scale in the future. The new technologies being explored include a floating solar park, a short-duration battery storage as well as long-term storage via green hydrogen produced by water electrolysis and subsequently consumed in a fuel cell. The combination of these individual measures, herein referred to as the Base Load Power Hub (BLPH) will ensure a continuous power supply regardless of the wind situation.

1.1.1 Project Location

The Hollandse Kust Noord (HKN) wind farm is located 18.5km off the coast of the Netherlands near the town of Egmond aan Zee.

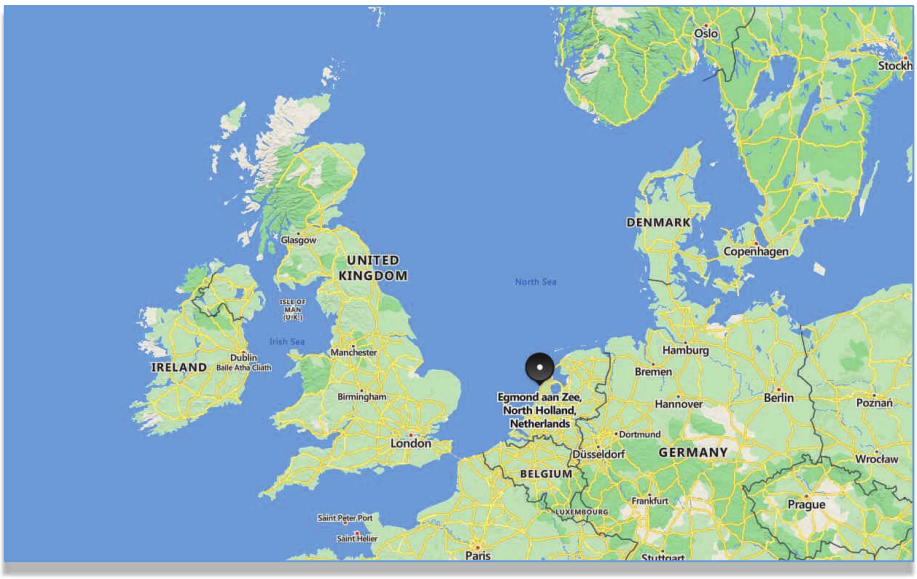


Figure 1 HOLLANDSE KUST NOORD WIND PARK Location Map



Figure 2 - Wind Park Details

The wind farm will consist of No. 69 x 11.5MW wind turbine generators each to be installed on a dedicated monopile structure. A 70th monopile located on coordinates E 590719.1, N 5841602.3 is reserved for installing the platform accommodating the BLPH. The monopile structure was designed and installed by Van Oord Offshore Wind (VooW) and therefore not part of the BLPH scope.

1.1.2 Project Concept

All components included in the BLPH will be integrated onshore on a topsides and installed in an offshore location within the boundaries of the HKN wind farm. At its simplest, the BLPH will store energy during periods of high electricity generation from renewable sources (a wind turbine generator and the floating solar PV farm) and release it during periods of low generation. In practice. It is expected that the energy stored will supplement generation from renewable sources to ensure that at least 1.0MW of power is exported to the electrical grid regardless of wind/solar availability.

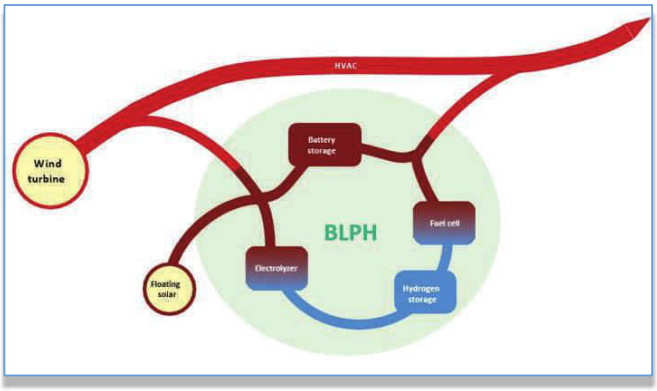


Figure 3 – BLPH Concept

Electricity in the BLPH will be stored in the form of electrons in a battery energy storage system (BESS) as well as converted into green hydrogen via water electrolysis. When the power output from the connecting wind turbine drops to below 1 MWe, the BLPH will return its stored energy to supplement the remaining power output. This will be by discharging the BESS, while stored hydrogen will be converted back into electricity using a fuel cell to extend the discharge duration.

The purpose of the BLPH s to function as a testbed for the integration of energy storage technologies with renewable generation. It is expected that equipment installed on the BLPH will operate as Normally Unmanned Installation for at least two (2) years with no or minimal maintenance and it will have its own independent control room with the ability to communicate with Crosswind's control room.

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INDRA	CROSSWIND				
MODEL	DWG CODE	SAP CODE	DATA SHEET 123A90-DDL-PP-DS-70003 REV.02	TAG VALVE	NOTES
SBB-798-25-F150RF3_F_D	00.VSF.2696/V	VLBLNN01410100	BS01C01RFS	**BLPH-MV-001**	Stem Extension 100mm
SBB-798-HR-50-J150RF3-J-D	00.VSF.2702/V	VLBLNN01430200	BA01C01RFHS	**BLPH-MV-002**	FB - LO
DBB-898-HR-25-F300RF3_F_D	00.VSF.2680/V	VLBBNN07190100	DA03C01RFH	**BLPH-MV-003**	LO
SB-598-TRU-HR-150-Q150RF3-Q	00.VSFT.0224/V	VLBLNN01460600	BA01C01RFHS	**BLPH-MV-005**	FB-LO
SBB-798-HR-100-N150RF3-N-D	00.VSF.2700/V	VLBLNN01450400	BA01C01RFHS	**BLPH-MV-006**	FB-LO
SBB-798-HR-25-F150RF3_F_D	00.VSF.2701/V	VLBLNN01320100	BS01C01RFHS	**BLPH-MV-007**	-
SBB-798-HR-25-F150RF3_F_D	00.VSF.2701/V	VLBLNN01320100	BS01C01RFHS	**BLPH-MV-009**	-
DBB-898-HR-25-F300RF3_F_D	00.VSF.2680/V	VLBBNN07190100	DA03C01RFH	**BLPH-MV-010**	FB - LO
DBB-737-HR-E300RF3-D-D	00.MNF.0604/V	VLBMNN00013Q0H	MD03C02YH	**BLPH-MV-013**	-
DBB-737-HR-E300RF3-D-D	00.MNF.0604/V	VLBMNN00013Q0H	MD03C02YH	**BLPH-MV-014**	-
SBB-798-HR-50-J150RF3-J-D	00.VSF.2702/V	VLBLNN01430200	BA01C01RFHS	**BLPH-MV-016**	LO
DBB-898-HR-25-F300RF3_F_D	00.VSF.2680/V	VLBBNN07190100	DA03C01RFH	**BLPH-MV-018**	FB - LO
DBB-898-HR-50-J300RF3_J_D	00.VSF.2682/V	VLBBNN07210200	DA03C01RFH	**BLPH-MV-019**	FB - LO
SB-598-HR-20-E150RF3_E	00.VSF.2693/V	VBC0NN24343Q00	BS01C01RFH	**BLPH-MV-024**	-
SBB-727-HR-E150RF3-D-D	00.MNF.0608/V	VLBNNN00023Q0H	MS01C02YH	**BLPH-MV-025**	-
SB-598-HR-20-E150RF3_E	00.VSF.2693/V	VBC0NN24343Q00	BS01C01RFH	**BLPH-MV-028**	-
DBB-898-HR-25-F300RF3_F_D	00.VSF.2680/V	VLBBNN07190100	DA03C01RFH	**BLPH-MV-029**	LO
DBB-898-HR-40-H300RF3_H_D	00.VSF.2681/V	VLBBNN07201H00	DA03C01RFH	**BLPH-MV-032**	FB - LO
SBB-798-HR-100-N150RF3-N-D	00.VSF.2700/V	VLBLNN01450400	BA01C01RFHS	**BLPH-MV-033**	FB - LO
DBB-898-HR-100-N300RF3_N	00.VSF.2679/V	VLBBNN07230400	DA03C01RFH	**BLPH-MV-034**	FB - LO
DBB-898-TRU-HR-150-Q300RF3_Q	00.VSFT.0223/V	VLBBNN07240600	DA03C01RFH	**BLPH-MV-035**	FB - LO
SBB-727-HR-E150RF3-D-D	00.MNF.0608/V	VLBNNN00023Q0H	MS01C02YH	**BLPH-MV-038**	-
SBB-798-40-H150RF3_H_D	00.VSF.2698	VLBLNN01381H00	BS01F01RFS	**BLPH-MV-043**	Stem Extension 100mm
SB-598-20-E150RF3_E	00.VSF.2685	VBC0NN24433Q00	BS01F01RF	**BLPH-MV-044**	Stem Extension 100mm
SB-598-25-F150RF3_F	00.VSF.2688	VBC0NN24440100	BS01F01RF	**BLPH-MV-048**	Stem Extension 100mm
SBB-798-40-H150RF3_H_D	00.VSF.2698	VLBLNN01381H00	BS01F01RFS	**BLPH-MV-050**	Stem Extension 100mm
SB-598-25-F150RF3_F	00.VSF.2688	VBC0NN24440100	BS01F01RF	**BLPH-MV-051**	Stem Extension 100mm
SB-598-20-E150RF3_E	00.VSF.2685	VBC0NN24433Q00	BS01F01RF	**BLPH-MV-054**	Stem Extension 100mm
DBB-898-HR-25-F300RF3_F_D	00.VSF.2680/V	VLBBNN07190100	DA03C01RFH	**BLPH-MV-086**	LO
DBB-898-HR-25-F300RF3_F_D	00.VSF.2680/V	VLBBNN07190100	DA03C01RFH	**BLPH-MV-087**	LO
DBB-898-HR-25-F300RF3_F_D	00.VSF.2680/V	VLBBNN07190100	DA03C01RFH	**BLPH-MV-088**	LO
DBB-737-HR-E300RF3-D-D	00.MNF.0604/V	VLBMNN00013Q0H	MD03C02YH	**BLPH-MV-091**	-
DBB-737-HR-E300RF3-D-D	00.MNF.0604/V	VLBMNN00013Q0H	MD03C02YH	**BLPH-MV-092**	-
DBB-898-HR-25-F300RF3_F_D	00.VSF.2680/V	VLBBNN07190100	DA03C01RFH	**BLPH-MV-093**	LO
DBB-898-HR-25-F300RF3_F_D	00.VSF.2680/V	VLBBNN07190100	DA03C01RFH	**BLPH-MV-094**	LO
DBB-737-HR-E300RF3-D-D	00.MNF.0604/V	VLBMNN00013Q0H	MD03C02YH	**BLPH-MV-096**	-
DBB-737-HR-E300RF3-D-D	00.MNF.0604/V	VLBMNN00013Q0H	MD03C02YH	**BLPH-MV-097**	-
DBB-898-HR-25-F300RF3_F_D	00.VSF.2680/V	VLBBNN07190100	DA03C01RFH	**BLPH-MV-098**	LO
SB-598-20-E150RF3_E	00.VSF.2684/V	VBC0NN06943Q00	BS01C01RF	**BLPH-MV-111**	-
SB-598-40-H150RF3_H	00.VSF.2690/V	VBC0NN06961H00	BS01C01RF	**BLPH-MV-149**	LO
SBB-727-E150RF3-D-D	00.MNF.0605/V	VLBNNN00033Q0H	MS01C02Y	**BLPH-MV-150**	-
SBB-727-E150RF3-D-D	00.MNF.0605/V	VLBNNN00033Q0H	MS01C02Y	**BLPH-MV-151**	-
new sheet	new sheet	VLBNNN00063Q0H	MS01B02Y	**BLPH-MV-166**	-
new sheet	new sheet	VLBNNN00063Q0H	MS01B02Y	**BLPH-MV-167**	-
SB-598-HR-25-F150RF3_F	00.VSF.2694/V	VBC0NN24350100	BS01C01RFH	**BLPH-MV-172**	LO
SBB-798-HR-100-N150RF3-N-D	00.VSF.2700/V	VLBLNN01450400	BA01C01RFHS	**BLPH-MV-191**	FB - LO
DBB-898-HR-25-F300RF3_F_D	00.VSF.2680/V	VLBBNN07190100	DA03C01RFH	**BLPH-MV-192**	LO
DBB-898-HR-25-F300RF3_F_D	00.VSF.2680/V	VLBBNN07190100	DA03C01RFH	**BLPH-MV-193**	LO
SBB-798-HR-100-N150RF3-N-D	00.VSF.2700/V	VLBLNN01450400	BA01C01RFHS	**BLPH-MV-194**	FB - LO
DBB-898-HR-25-F300RF3_F_D	00.VSF.2680/V	VLBBNN07190100	DA03C01RFH	**BLPH-MV-195**	LO
SBB-798-HR-100-N150RF3-N-D	00.VSF.2700/V	VLBLNN01450400	BA01C01RFHS	**BLPH-MV-196**	FB - LO
DBB-898-HR-25-F300RF3_F_D	00.VSF.2680/V	VLBBNN07190100	DA03C01RFH	**BLPH-MV-197**	LO
DBB-898-HR-25-F300RF3_F_D	00.VSF.2680/V	VLBBNN07190100	DA03C01RFH	**BLPH-MV-198**	LO
SBB-798-HR-100-N150RF3-N-D	00.VSF.2700/V	VLBLNN01450400	BA01C01RFHS	**BLPH-MV-199**	FB - LO
DBB-898-HR-25-F300RF3_F_D	00.VSF.2680/V	VLBBNN07190100	DA03C01RFH	**BLPH-MV-200**	LO
SBB-798-HR-100-N150RF3-N-D	00.VSF.2700/V	VLBLNN01450400	BA01C01RFHS	**BLPH-MV-201**	FB - LO
DBB-737-HR-E300RF3-D-D	00.MNF.0604/V	VLBMNN00013Q0H	MD03C02YH	**BLPH-MV-204**	-
DBB-737-HR-E300RF3-D-D	00.MNF.0604/V	VLBMNN00013Q0H	MD03C02YH	**BLPH-MV-205**	-
DBB-898-HR-25-F300RF3_F_D	00.VSF.2680/V	VLBBNN07190100	DA03C01RFH	**BLPH-MV-206**	LO
DBB-898-HR-25-F300RF3_F_D	00.VSF.2680/V	VLBBNN07190100	DA03C01RFH	**BLPH-MV-207**	LO
SB-598-25-F150RF3_F	00.VSF.2687/V	VBC0NN06950100	BS01C01RF	**BLPH-MV-210**	-
DBB-898-HR-25-F300RF3_F_D	00.VSF.2680/V	VLBBNN07190100	DA03C01RFH	**BLPH-MV-211**	LO
DBB-898-HR-25-F300RF3_F_D	00.VSF.2680/V	VLBBNN07190100	DA03C01RFH	**BLPH-MV-212**	FB - LO
SBB-727-HR-E150RF3-D-D	00.MNF.0608/V	VLBNNN00023Q0H	MS01C02YH	**BLPH-MV-213**	-
SB-59X-PE80-20-E-E	00.VSF.2683	VBC0NN24893Q00	BA01P01KT	**BLPH-MV-214**	Stem Extension 100mm

DBB-898-HR-100-N300RF3_N	00.VSF.2679/V	VLBBNN07230400	DA03C01RFH	**BLPH-MV-222**	FB - LO
SB-598-20-E150RF3_E	00.VSF.2685	VBC0NN24433Q00	BS01F01RF	**BLPH-MV-241**	Stem Extension 100mm
SB-598-25-F150RF3_F	00.VSF.2687/V	VBC0NN06950100	BS01C01RF	**BLPH-MV-242**	-
SB-598-25-F150RF3_F	00.VSF.2689/V	VBC0NN24710100	BS01B01RF	**BLPH-MV-263**	-
DBB-898-TRU-HR-150-Q300RF3_Q	00.VSFT.0223/V	VLBBNN07240600	DA03C01RFH	**BLPH-MV-264**	FB - LO
DBB-898-HR-40-H300RF3_H_D	00.VSF.2681/V	VLBBNN07201H00	DA03C01RFH	**BLPH-MV-266**	FB - LO
SBB-798-25-F150RF3_F_D	00.VSF.2697/V	VLBLNN01280100	BS01B01RFS	**BLPH-MV-269**	LO
SB-598-40-H150RF3_H	00.VSF.2690/V	VBC0NN06961H00	BS01C01RF	**BLPH-MV-270**	LO
SBB-798-25-F150RF3_F_D	00.VSF.2697/V	VLBLNN01280100	BS01B01RFS	**BLPH-MV-271**	LO
SB-598-20-E150RF3_E	00.VSF.2686/V	VBC0NN24703Q00	BS01B01RF	**BLPH-MV-275**	-
SBB-798-25-F150RF3_F_D	00.VSF.2697/V	VLBLNN01291H00	BS01B01RFS	**BLPH-MV-278**	FB-LO
DBB-737-HR-E300RF3-D-D	00.MNF.0604/V	VLBMNN00013Q0H	MD03C02YH	**BLPH-MV-282**	-
DBB-737-HR-E300RF3-D-D	00.MNF.0604/V	VLBMNN00013Q0H	MD03C02YH	**BLPH-MV-283**	-
DBB-898-HR-25-F300RF3_F_D	00.VSF.2680/V	VLBBNN07190100	DA03C01RFH	**BLPH-MV-384**	LO
DBB-898-HR-25-F300RF3_F_D	00.VSF.2680/V	VLBBNN07190100	DA03C01RFH	**BLPH-MV-385**	LO
new sheet	new sheet	VLBNNN00063Q0H	MS01B02Y	**BLPH-MV-386**	-
DBB-898-HR-100-N300RF3_N	00.VSF.2679/V	VLBBNN07230400	DA03C01RFH	**BLPH-MV-387**	FB - LO
DBB-898-TRU-HR-150-Q300RF3_Q	00.VSFT.0223/V	VLBBNN07240600	DA03C01RFH	**BLPH-MV-388**	FB - LO
DBB-898-HR-40-H300RF3_H_D	00.VSF.2681/V	VLBBNN07201H00	DA03C01RFH	**BLPH-MV-389**	FB - LO
DBB-898-HR-25-F300RF3_F_D	00.VSF.2680/V	VLBBNN07190100	DA03C01RFH	**BLPH-MV-390**	LO
DBB-898-HR-25-F300RF3_F_D	00.VSF.2680/V	VLBBNN07190100	DA03C01RFH	**BLPH-MV-391**	LO
SB-59X-PE80-20-E-E	00.VSF.2683	VBC0NN24893Q00	BA01P01KT	**BLPH-MV-400**	Stem Extension 100mm
SB-598-HR-50-L150RF3_L	00.VSF.2695/V	VBD0NN16460300	BC01C01RFH	**BLPH-MV-402**	-
SB-598-HR-25-F150RF3_F	00.VSF.2694/V	VBC0NN24350100	BS01C01RFH	**BLPH-MV-404**	-
SB-598-HR-25-F150RF3_F	00.VSF.2694/V	VBC0NN24350100	BS01C01RFH	**BLPH-MV-405**	-
SBB-727-HR-E150RF3-D-D	00.MNF.0608/V	VLBNNN00023Q0H	MS01C02YH	**BLPH-MV-407**	-
SBB-798-25-F150RF3_F_D	00.VSF.2697/V	VLBLNN01280100	BS01B01RFS	**BLPH-MV-409**	LC
SBB-727-E150RF3-D-D	00.MNF.0606/V	VLBNNN00063Q0H	MS01B02Y	**BLPH-MV-411**	Stem Extension 100mm
SB-598-40-H150RF3_H	00.VSF.2691/V	VBC0NN24721H00	BS01B01RF	**BLPH-MV-412**	Stem Extension 100mm - LO
DBB-898-HR-40-H300RF3_H_D	00.VSF.2681/V	VLBBNN07201H00	DA03C01RFH	**BLPH-MV-416**	FB - LO
new sheet	new sheet	VBC0NN24710100	BS01B01RF	**BLPH-MV-417**	Stem Extension 100mm - LC
SB-598-25-F150RF3_F	00.VSF.2689/V	VBC0NN24710100	BS01B01RF	**BLPH-MV-419**	LC
DBB-737-HR-E300RF3-D-D	00.MNF.0604/V	VLBMNN00013Q0H	MD03C02YH	**BLPH-MV-421**	-
DBB-737-HR-E300RF3-D-D	00.MNF.0604/V	VLBMNN00013Q0H	MD03C02YH	**BLPH-MV-422**	-
DBB-898-HR-100-N300RF3_N	00.VSF.2679/V	VLBBNN07230400	DA03C01RFH	**BLPH-MV-423**	FB - LO
DBB-898-TRU-HR-150-Q300RF3_Q	00.VSFT.0223/V	VLBBNN07240600	DA03C01RFH	**BLPH-MV-424**	FB - LO
DBB-898-HR-25-F300RF3_F_D	00.VSF.2680/V	VLBBNN07190100	DA03C01RFH	**BLPH-MV-426**	LO
DBB-898-HR-25-F300RF3_F_D	00.VSF.2680/V	VLBBNN07190100	DA03C01RFH	**BLPH-MV-428**	LO
DBB-898-HR-100-N300RF3_N	00.VSF.2679/V	VLBBNN07230400	DA03C01RFH	**BLPH-MV-431**	FB - LO
DBB-898-TRU-HR-150-Q300RF3_Q	00.VSFT.0223/V	VLBBNN07240600	DA03C01RFH	**BLPH-MV-432**	FB - LO
DBB-898-HR-40-H300RF3_H_D	00.VSF.2681/V	VLBBNN07201H00	DA03C01RFH	**BLPH-MV-433**	FB - LO
DBB-898-HR-25-F300RF3_F_D	00.VSF.2680/V	VLBBNN07190100	DA03C01RFH	**BLPH-MV-434**	LO
DBB-898-HR-25-F300RF3_F_D	00.VSF.2680/V	VLBBNN07190100	DA03C01RFH	**BLPH-MV-435**	LO
DBB-737-HR-E300RF3-D-D	00.MNF.0604/V	VLBMNN00013Q0H	MD03C02YH	**BLPH-MV-438**	-
DBB-737-HR-E300RF3-D-D	00.MNF.0604/V	VLBMNN00013Q0H	MD03C02YH	**BLPH-MV-439**	-
DBB-898-HR-100-N300RF3_N	00.VSF.2679/V	VLBBNN07230400	DA03C01RFH	**BLPH-MV-440**	FB - LO
DBB-898-TRU-HR-150-Q300RF3_Q	00.VSFT.0223/V	VLBBNN07240600	DA03C01RFH	**BLPH-MV-441**	FB - LO
DBB-898-HR-40-H300RF3_H_D	00.VSF.2681/V	VLBBNN07201H00	DA03C01RFH	**BLPH-MV-442**	FB - LO
SB-598-25-F150RF3_F	00.VSF.2687/V	VBC0NN06950100	BS01C01RF	**BLPH-MV-447**	-
SB-598-25-F150RF3_F	00.VSF.2687/V	VBC0NN06950100	BS01C01RF	**BLPH-MV-448**	-
SB-598-25-F150RF3_F	00.VSF.2687/V	VBC0NN06950100	BS01C01RF	**BLPH-MV-449**	-
SB-598-25-F150RF3_F	00.VSF.2687/V	VBC0NN06950100	BS01C01RF	**BLPH-MV-450**	-
SB-598-25-F150RF3_F	00.VSF.2687/V	VBC0NN06950100	BS01C01RF	**BLPH-MV-451**	-
SB-598-25-F150RF3_F	00.VSF.2687/V	VBC0NN06950100	BS01C01RF	**BLPH-MV-452**	-
SB-598-25-F150RF3_F	00.VSF.2687/V	VBC0NN06950100	BS01C01RF	**BLPH-MV-453**	-
SB-598-25-F150RF3_F	00.VSF.2687/V	VBC0NN06950100	BS01C01RF	**BLPH-MV-454**	-
SB-598-25-F150RF3_F	00.VSF.2687/V	VBC0NN06950100	BS01C01RF	**BLPH-MV-455**	-
SB-598-25-F150RF3_F	00.VSF.2687/V	VBC0NN06950100	BS01C01RF	**BLPH-MV-456**	-
SB-598-25-F150RF3_F	00.VSF.2687/V	VBC0NN06950100	BS01C01RF	**BLPH-MV-457**	-
SB-598-25-F150RF3_F	00.VSF.2687/V	VBC0NN06950100	BS01C01RF	**BLPH-MV-458**	-
SB-598-25-F150RF3_F	00.VSF.2687/V	VBC0NN06950100	BS01C01RF	**BLPH-MV-459**	-
SB-598-HR-25-F150RF3_F	00.VSF.2694/V	VBC0NN24350100	BS01C01RFH	**BLPH-MV-462**	-
SB-598-HR-25-F150RF3_F	00.VSF.2694/V	VBC0NN24350100	BS01C01RFH	**BLPH-MV-463**	-
SB-598-50-J150RF3_J	00.VSF.2692	VBC0NN24460200	BA01F01RF	**BLPH-MV-464**	Stem Extension 100mm
SB-598-50-J150RF3_J	00.VSF.2692	VBC0NN24460200	BA01F01RF	**BLPH-MV-465**	Stem Extension 100mm

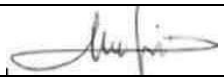
Prodotto / *Products*:

Valvole a Spillo
Valvole a Sfera serie "VSF"

Needle Type Valves
"VSF" Ball Valves Series

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Revisione: 0 *Revision: 0*	Redazione *Created*	Approvazione *Approved*
Data *Date*	25/07/2024	25/07/2024
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1. SCOPO

Lo scopo di questa procedura è di implementare la produttività attraverso una standardizzazione e semplificazione dei criteri di prova, stabilendo delle procedure di test ed ispezione valvole.

2. AMBITO DI APPLICAZIONE/NORMATIVE APPLICABILI

2.1) **AMBITO DI APPLICAZIONE**

Le tipologie di valvole prodotte, indicate nel titolo della procedura.

2.2) **NORMATIVE APPLICABILI**

2014/68/UE PED, se applicabile
P.E.R. 2016 (N°1105), se applicabile

Test Valvole a Sfera:
API 6D 25th Ed. – 2022
ASME B16.34 – 2020
ISO 5208 – 2015

Test Valvole a Spillo:
API 598 11th Ed. – 2023

Ispezioni:
API 598 11th Ed. – 2023

3. REQUISITI GENERALI

3.1) **TIPO DI PROVA**

3.1.1) **Prove idrauliche – Requisiti generali**

Tutte le prove idrauliche devono essere conformi ai requisiti della presente sezione.

- Le valvole devono essere assemblate e tutti gli accessori / raccordi/tappi/ingrassatori devono essere montati sulla valvola durante il collaudo.
- Le superfici esterne delle valvole devono essere esenti da qualsiasi tipo di rivestimento protettivo quali antiossidanti, verniciatura, ecc.
- Tutte le parti bagnate devono essere pulite, prive di ogni traccia di oli, grassi, vernici e sporcizia in genere.
- Le superfici di tenuta non devono essere ricoperte o impregnate con prodotti sigillanti, che potrebbero nascondere perdite nel corso del collaudo.
- Le valvole devono essere prive di aria o gas interni.
- Le valvole non devono essere sottoposte ad alcun urto o danneggiamento mentre sono in pressione durante il collaudo.
- In caso di perdite, la valvola viene portata al reparto di assemblaggio, dove viene smontata e analizzata per verificare la causa. Dopo aver verificato la perdita, la valvola verrà riparata.

1. PURPOSE

The purpose of this procedure is to contribute to the productivity through standardization and simplification of testing criteria, establishing valve test and inspection procedures.

2. SCOPE/APPLICABLE STANDARDS

2.1) **SCOPE**

Valve types produced, mentioned in the title of the procedure.

2.1) **APPLICABLE STANDARDS**

2014/68/UE PED, if applicable
P.E.R. 2016 (N°1105), if applicable

Ball Valve Testing:
API 6D 25th Ed. – 2022
ASME B16.34 – 2020
ISO 5208 – 2015

Needle Valve Testing:
API 598 11th Ed. – 2023

Valve Inspections:
API 598 11th Ed. – 2023

3. GENERAL REQUIREMENTS

3.1) **TEST TYPE**

3.1.1) **Hydrostatic Testing – General Requirements**

All hydrostatic tests shall be conformed to the requirements of this section.

- The valves shall be assembled, and all the accessories/fittings and any pressure boundary penetration shall be fitted on the valve during testing.
- Protective coatings, such as paint, shall not be applied to any external surface of the valves before the pressure tests are completed.
- All wetted areas shall be clean and free from any trace of oil, greases, paints or dirt.
- Pressure seal areas shall not be coated or soaked with any sealing products that may hide the leakage detection during the test.
- Valves shall be relieved of air or gas.
- Any impact or damage to the under-testing valve shall be prevented and avoided until the valve is under pressure.
- In case of leakage, the valve is taken to the assembly department. The valve is dismantled and analyzed to identify the cause. After the leakage has been verified, the valve will be repaired.

3.1.2) **Prove idrauliche – Criteri di accettabilità**
I criteri di accettabilità specificati di seguito, si applicano alle prove di corpo e seggi.

- Non sono ammesse perdite visibili (in accordo alla ISO 5208 Rate "A").
- Per le valvole a sfera metalliche, la massima perdita ammessa deve essere in accordo alla ISO 5208 Rate "C". Per convertire da mm^3/secondi a gocce/secondi durante il test idraulico, vedere ISO 5208 e fare riferimento alla Tabella 2.
- La pressione deve essere isolata dalla valvola durante il test idrostatico del corpo e deve essere stabilizzata prima dell'inizio della durata del test di pressione.

3.1.3) **Prove a gas – Requisiti generali**
Tutte le prove a gas devono essere conformi ai requisiti della presente sezione.

- Il test a gas deve essere effettuato a temperatura ambiente.
- La misurazione del periodo di tenuta non deve iniziare fino a quando non è stata raggiunta la pressione di test, le apparecchiature e i manometri di monitoraggio sono stati isolati dalla sorgente di pressione.
- Le superfici esterne delle valvole devono essere esenti da qualsiasi tipo di rivestimento protettivo quali antiossidanti, verniciatura, ecc.
- Tutte le parti bagnate devono essere pulite, prive di ogni traccia di oli, grassi, vernici e sporcizia in genere.
- Le superfici di tenuta non devono essere ricoperte o impregnate con prodotti sigillanti, che potrebbero nascondere perdite nel corso del collaudo.
- Le valvole non devono essere sottoposte ad alcun urto o danneggiamento mentre sono in pressione durante il collaudo.
- In caso di perdite, la valvola viene portata al reparto di assemblaggio, dove viene smontata e analizzata per verificare la causa. Dopo aver verificato la perdita, la valvola verrà riparata.

3.1.4) **Prove a gas – Criteri di accettabilità**
I criteri di accettabilità specificati di seguito, si applicano alle prove di corpo e seggi.

- Non sono ammesse perdite visibili (in accordo alla ISO 5208 Rate "A").
- Per le valvole a sfera metalliche, la massima Perdita ammessa (closure test) deve essere in accord alla ISO 5208 Rate "C". Per convertire da mm^3/secondi a gocce/secondi durante il test idraulico, vedere ISO 5208 e fare riferimento alla Tabella 2.

3.2) **FLUIDO DI PROVA**
I fluidi da utilizzare per l'esecuzione delle prove a pressione devono essere dei tipi seguenti:

• Liquido: acqua fresca, addizionata con inibitore della

3.1.2) **Hydrostatic Testing – Acceptance Criteria**
The acceptance criteria specified below, shall be apply to shell test and seat test.

- The equipment shall show no visible leakage (according to ISO 5208 Rate "A").
- For ball valves with "metal to metal" seat sealing, the maximum allowable leakage from seat and ball is defined according to ISO 5208 Rate "C". To convert from mm^3/seconds to drops/seconds during the water test, please see ISO 5208 and see Table 2 for reference.
- The supply pressure shall be isolated from the valve during hydrostatic shell testing and shall be stabilized prior to the start of pressure testing duration.

3.1.3) **Gas Testing – General Requirements**
All gas testing shall conform to the requirements of this section.

- Gas testing shall be performed at ambient temperature.
- Hold periods shall not start until the test article and the pressure measuring/recording equipment has been isolated from the pressure source and the pressure source bled to zero.
- Protective coatings, such as paint, shall not be applied to any external surface of the valves before the pressure tests are completed.
- All wetted areas shall be clean and free from any trace of oil, greases, paints or dirt.
- Pressure seal areas shall not be coated or soaked with any sealing products that may hide the leakage detection during the test.
- Any impact or damage to the under-testing valve shall be prevented and avoided until the valve is under pressure.
- In case of leakage, the valve is taken to the assembly department. The valve is dismantled and analyzed to identify the cause. After the leakage has been verified, the valve will be repaired.

3.1.4) **Gas Testing – Acceptance Criteria**
The acceptance criteria specified below, shall be apply to shell test and seat test.

- No visible leakage shall appear during the pressure-holding period (according to ISO 5208 Rate "A").
- For ball valves with "metal to metal" seat sealing, the maximum allowable leakage from seat and ball is defined according to ISO 5208 Rate "C". To convert from mm^3/seconds to drops/seconds during the water test, please see ISO 5208 and see Table 2 for reference.

3.2) **TEST FLUID**
The test fluids to be used for the execution of pressure tests shall be the following:

• Liquid: fresh water treated with a corrosion inhibitor,

corrosione, avente un contenuto di cloruri massimo di 30 ppm, mantenuta ad una temperatura compresa fra 7°C e 38°C.

• Gas per prova bassa pressione: aria disoleata o gas inerte.

3.3) **ORDINE DI ESECUZIONE PROVA**
Il collaudo delle valvole deve essere effettuato in accordo alla seguente sequenza di operazioni:

- BACKSEAT TEST – solo per valvole a spillo (verifica ad alta pressione della tenuta posteriore dello stelo)
- SHELL TEST (verifica della tenuta del corpo valvola)
- HIGH PRESSURE CLOSURE TEST – per tutte le tipologie di valvole (verifica ad alta pressione della tenuta dell'elemento di chiusura)
- CAVITY RELIEF TEST
- LOW PRESSURE CLOSURE TEST (ARIA) – solo per valvole a sfera "VSF" e opzionale per valvole a spillo (verifica a bassa pressione della tenuta dell'elemento di chiusura)
- BDP SHELL TEST – solo per valvole trunnion "VSFT" (per tappo di drenaggio del corpo)
- FUNCTIONAL TEST

Per le valvole con NPS minore o uguale a 4" BACKSEAT TEST e SHELL TEST possono essere eseguiti contestualmente.

4. METODO DI PROVA
I criteri di prova sono conformi alle normative citate al paragrafo 2.2).

Il modulo MD-02-05-IT-UK per valvole standard, modulo MD-02-09-IT-UK per valvole certificate PED, modulo MD-02-09-IT-UK-PER per valvole certificate PER, sono rapporti di prova INDRA compilati in conformità con questa procedura.

4.1) **BACKSEAT TEST – solo per valvole a spillo**

4.1.1) **Pressione**
La prova deve essere effettuata con acqua, ad una pressione non inferiore ad un 1.1 volte il valore di rating, a 100 °F (38 °C), facendo riferimento all'Allegato 1.

4.1.2) **Metodologia di esecuzione**
La prova deve essere effettuata con la valvola in condizione di completa apertura e con le estremità tappate.

4.1.3) **Durata**
La durata della prova non deve essere inferiore a quanto riportato in Tabella 1.

maximum chloride content of 30 ppm and temperature between 7°C and 38°C.

• Gas for Low pressure gas test: oil free air or inert gas.

3.3) **TEST EXECUTION ORDER**
The valve test shall be carried out according to the following sequence:

- BACKSEAT TEST – only for needle valves (high pressure check of backseat stem seal)
- SHELL TEST (in order to check the valve body seal)
- HIGH PRESSURE CLOSURE TEST – for all type of valves (high pressure check of closure members seal)

- CAVITY RELIEF TEST
- LOW PRESSURE CLOSURE TEST (AIR) – only for ball valves "VSF" and optional for needle valves (low pressure check of closure members seal)

- BDP SHELL TEST – only for trunnion ball valves "VSFT" (for Body Drain Plug)
- FUNCTIONAL TEST

For valves DN 4" NPS and smaller, the BACKSEAT TEST may be combined with SHELL TEST.

4. TEST METHOD
The test criteria are in compliance with applicable standards mentioned at paragraph 2.2).

MD-02-05-IT-UK form for standard valves, MD-02-09-IT-UK form for PED certified valves, MD-02-09-IT-UK-PER form for PER certified valves, are INDRA Test Reports compiled in accordance with this procedure.

4.1) **BACKSEAT TEST – only for needle valves**

4.1.1) **Pressure**
The test shall be performed with water, at a pressure no less than 1.1 times the rating pressure, at 100 °F (38 °C), with reference to Annex 1.

4.1.2) **Execution method**
The test must be performed with the valve in conditions of complete opening and with the ends plugged.

4.1.3) **Duration**
The test duration shall not be less not be less than as reported in Table 1.

4.1.4) **Requisiti generali**
- Testare ogni singola valvola.
- Nel corpo valvola non deve rimanere aria intrappolata.
- La pressione nel banco prova deve rimanere costante per l'intera durata del test.
- Non sono ammesse perdite visibili.

4.2) **SHELL TEST – per tutte le tipologie di valvole**

4.2.1) **Pressione**
La prova deve essere effettuata con acqua, ad una pressione non inferiore ad 1.5 volte il valore di rating, a 100°F (38°C), facendo riferimento all'Allegato 1.

4.2.2) **Metodologia di esecuzione**
La prova deve essere effettuata con la valvola in posizione semi aperta e con le estremità tappate.

4.2.3) **Durata**
La durata dei tempi di mantenimento della pressione è quella riportata in Tabella 1.

4.2.4) **Requisiti Generali**
- Testare ogni singola valvola.
- Nel corpo valvola non deve rimanere aria intrappolata.
- La pressione nel banco prova deve rimanere costante per l'intera durata del test.
- Non è permessa nessuna perdita esterna visibile dal corpo valvola e da tutte le sue connessioni inclusa l'assenza di danni strutturali permanenti.

- Solo per le valvole a spillo: eventuali perdite dalla tenuta dello stelo che possono verificarsi durante la prova di SHELL TEST non sono causa di scarto del campione provato. Tuttavia, le guarnizioni dello stelo devono essere in grado di garantire la tenuta sino al raggiungimento di una pressione pari al rispettivo rating valvola alla temperatura di 100 °F (38 °C).

- Per le valvole ad orifizio variabile, identificabili dal codice 00.VSP.OV.00XX, dopo la prova idraulica deve essere sempre eseguita una prova aggiuntiva con aria o gas inerte. Le modalità di esecuzione, la pressione e i tempi di collaudo rimangono quelli sopra indicati. Durante l'esecuzione di questa prova, a parziale modifica di quanto indicato al punto 4.2.2, l'otturatore del bonnet deve essere in posizione di totale chiusura. Ricoprire i punti di tenuta della valvola con opportuna schiuma per evidenziare perdite gassose.

4.1.4) **General requirements**
- Each valve shall be tested.
- Into the valve body shall not remain trapped air.
- Gauge pressure of test equipment shall not be dropped down.
- No visible leakage.

4.2) **SHELL TEST – for all type of valves**

4.2.1) **Pressure**
The test shall be performed with water, at a gauge pressure not less than 1.5 times the rating pressure, at 100°F (38°C), with reference to Annex 1.

4.2.2) **Execution method**
The test must be performed with the valve in conditions of partial opening and with the ends plugged.

4.2.3) **Duration**
The duration of pressure-holding periods shall be as reported in Table 1.

4.2.4) **General requirements**
- Each valve shall be tested.
- Into the valve body shall not remain trapped air.
- Gauge pressure of test equipment shall not be dropped down.
- No external visible leakage is permitted in the valve body and in all body joint connections including no evidence of structural damage.

- For needle valves only, stem seal leakage during SHELL TEST shall not be cause for rejection. However, stem seal shall be capable of retaining pressure at least equal to the 100 °F (38 °C) ratings without visible leakage.

- For the variable orifice type valves, identified with code 00.VSP.OV.00XX, after hydraulic test, it must always be performed an additional test with air and water. The execution method, the pressure and the time of testing remain as above described. During the execution of this test, in partial modofication to what indicated at the point 4.2.2, the shutter bonnet must be in closed position. Cover the points with proper valve sealing foam to highlight gaseous losses.

4.3) **HIGH PRESSURE CLOSURE TEST – per tutte le tipologie di valvole**

4.3.1) **Pressione**
La prova deve essere effettuata con acqua, ad una pressione non inferiore ad un 1.1 volte il valore di rating, a 100 °F (38 °C), facendo riferimento all'Allegato 1.

4.3.2) **Metodologia di esecuzione**
La prova deve essere effettuata con la valvola in posizione chiusa.

Per le valvole costituite da 2 o più valvole, come i manifold, la prova in pressione dovrebbe essere eseguita in successione su ciascuna delle valvole di chiusura, controllando le eventuali perdite di ciascuna valvola.

Per le valvole con medesima connessione sia in ingresso che in uscita (es. Flangiate-Flangiate, Filettate-Filettate, BW-BW, ecc.) la prova deve essere eseguita in entrambe le direzioni.

Per le valvole con connessione in ingresso diversa da quella in uscita (es. Flangiate-Filettate, BW-Filettate, ecc.) la prova sarà eseguita solo nella direzione indicata dalla freccia.

Monitorare la perdita dal lato opposto a quello in pressione.

Quindi ripetere il test applicando la pressione sull'altra estremità della valvola chiusa.

In caso di valvola unidirezionale, la pressione di prova deve essere applicata all'estremità appropriata della valvola.

4.3.3) **Durata**
La durata dei tempi di mantenimento della pressione è quella riportata in Tabella 1.

4.3.4) **Requisiti Generali**
- Testare ogni singola valvola.
- Nel corpo valvola non deve rimanere aria intrappolata.
- La pressione nel banco prova deve rimanere costante per l'intera durata del test.
- Non sono ammesse perdite visibili in corrispondenza degli elementi di tenuta (sfera/seggio) o da altri componenti di serraggio delle tenute interne.

- Per le valvole a sfera serie VSF con tenuta metallica è ammessa una perdita tra seggio e sfera entro i limiti definiti dalla Tabella 2. Le valvole a sfera con tenuta metallica sono identificabili dal digit "MS" (es. DBB-897-MS-10-I-L235…).

4.3) **HIGH PRESSURE CLOSURE TEST – for all type of valves**

4.3.1) **Pressure**
The test shall be performed with water, at a pressure no less than 1.1 times the rating pressure, at 100 °F (38 °C), with reference to Annex 1.

4.3.2) **Execution method**
The test must be performed with the valve in close position.

For valves with 2 or more valves applied, such as manifold, the pressure test should be performed in sequence on each valve, checking eventually leakages for each single valve.

For valves with the same inlet and outlet connection (for ex. Flanged-Flanged, Threaded-Threaded, BW-BW, etc.) the test shall be performed in both directions.

For valves with inlet connection different from the outlet one (for ex. Flanged-Threaded, BW- Threaded. etc.) the test will be performed only in the direction indicated by the arrow.

Monitor seat leakage from the respective downstream end of the valve.

Then repeat the test applying the pressure on the other end of the closed valve.

In case of unidirectional valve, the test pressure shall be applied to the appropriate end of the valve.

4.3.3) **Duration**
The duration of pressure-holding periods shall be as reported in Table 1.

4.3.4) **General requirements**
- Each valve shall be tested.
- Into the valve body shall not remain trapped air.
- Gauge pressure of test equipment shall not be dropped down.
- No visible leakage from closer or other internal seal tightening components.

- For ball valves with "metal to metal" seat sealing, the maximum allowable leakage from seat and ball is defined according to Table 2. "Metal to metal" ball valves can be identified by digit "MS" (Ex. DBB-897-MS-10-I-L235….).

4.4) **CAVITY RELIEF TEST**

a) Con la valvola in posizione parzialmente aperta, pressurizzare la valvola alla pressione di design.
b) Chiudere la valvola e sfiatare ciascuna estremità alla pressione atmosferica; attendere che le linee a monte e a valle del banco di collaudo siano completamente depressurizzate e scaricate (1 minuto).
c) Aprire la valvola e monitorare il rilascio del fluido di prova intrappolato nella cavità.

L'evidenza del fluido di prova intrappolato nella cavità deve essere motivo di rifiuto.

4.5) **LOW PRESSURE CLOSURE TEST – solo per valvole a sfera "VSF" e opzionale per valvole a spillo**

4.5.1) **Pressione**

La prova dei seggi a bassa pressione deve essere effettuata con aria, ad una pressione compresa tra 4÷7 bar.

4.5.2) **Metodologia di esecuzione**

La prova deve essere effettuata con la valvola in posizione chiusa.

Per le valvole con medesima connessione sia in ingresso che in uscita (es. Flangiate-Flangiate, Filettate-Filettate, BW-BW ecc.) la prova deve essere eseguita in entrambe le direzioni.

Per le valvole con connessione in ingresso diversa da quella in uscita (es. Flangiate-Filettate, BW-Filettate, ecc.) la prova sarà eseguita solo nella direzione indicate dalla freccia.

Monitorare la perdita dal lato opposto a quello in pressione.

Quindi ripetere il test applicando la pressione sull'altra estremità della valvola chiusa.

In caso di valvola unidirezionale, la pressione di prova deve essere applicata all'estremità appropriata della valvola.

4.5.3) **Durata**

La durata della prova non deve essere inferiore a quanto riportato in Tabella 1.

4.5.4) **Requisiti Generali**

- Testare ogni singola valvola.
- Assicurarsi che le superfici di tenuta della valvola siano pulite e non siano presenti eventuali tracce di olio lubrificante, grasso o sigillanti.
- La pressione nel banco prova deve rimanere costante per l'intera durata del test.
- Non sono ammesse perdite visibili in corrispondenza degli elementi di tenuta (sfera/seggio) o da altri componenti di serraggio delle tenute interne.
- Per le valvole a sfera serie VSF con tenuta metallica è

4.4) **CAVITY RELIEF TEST**

a) With the valve half-open, pressurize the valve to design pressure.
b) Close the valve and vent each end to atmospheric pressure; wait until the upstream and downstream lines of the test bench are completely depressurized and discharged (1 minute).
c) Open the valve to the half-open position and monitor for the release of test medium trapped in the cavity.

Evidence of the trapped pressurizing medium in the cavity shall be cause for rejection.

4.5) **LOW PRESSURE CLOSURE TEST – only for ball valves "VSF" and optional for needle valves**

4.5.1) **Pressure**

The low-pressure closure test shall be performed with air, with pressure value between 4÷7 bar.

4.5.2) **Execution method**

The test must be performed with the valve in close position.

For valves with the same inlet and outlet connection (for ex. Flanged-Flanged, Threaded-Threaded, BW-BW etc.) the test must be performed in both directions.

For valves with inlet connection different from outlet one (for ex. Flanged-Threaded, BW-Threaded, etc.) the test must be performed only in the direction indicated by the arrow.

Monitor seat leakage from the respective downstream end of the valve.

Then repeat the test applying the pressure on the other end of the closed valve.

In case of unidirectional valve, the test pressure shall be applied to the appropriate end of the valve.

4.5.3) **Duration**

The test duration shall not be less than as reported in Table 1.

4.5.4) **General requirements**

- Each valve shall be tested.
- Make sure that the valve sealing surfaces are clean and free from lubricating oil, grease, or sealants.
- Gauge pressure of test equipment shall not be dropped down.
- No visible leakage from closer or other internal seal tightening components.
- For ball valves with "metal to metal" seat sealing, the maximum allowable leakage from seat and ball is defined according to Table 2. "Metal to metal" ball

ammessa una perdita tra seggio e sfera entro i limiti definiti dalla Tabella 2. Le valvole a sfera con tenuta metallica sono identificabili dal digit "MS" (es. DBB-897-MS-10-I-L235…).

valves can be identified by digit "MS" (Ex. DBB-897-MS-10-I-L235….).

4.6) **BDP SHELL TEST – solo per valvole trunnion "VSFT"**

Lo scopo della prova è verificare la tenuta dei tappi di drenaggio/sfiato dopo il collaudo del corpo e del backseat. Al termine di queste prove, installare i tappi di drenaggio/sfiato sulla valvola.

Ripetere quindi la prova del corpo per verificare la tenuta dei tappi di drenaggio installati.

La prova deve essere eseguita utilizzando acqua come fluido di prova.

NOTA: nel caso in cui in commessa /scheda tecnica sia richiesto il Gas Test, andrà eseguito il test con le stesse modalità, fluido e durata del collaudo a gas, ma con i tappi di drenaggio/sfiato installati.

4.6) **BDP SHELL TEST – only for trunnion ball valves "VSFT"**

The purpose of the test is to verify the tightness of drain/vent plugs after shell and backseat tests. After these tests are complete, install the drain/vent plugs on the valve.

Repeat the shell test to verify the tightness of drain/vent plugs installed.

The test shall be carried out with water as test fluid.

NOTE: if the Gas Test is required, the test will be performed with the same methods, fluid and duration time as the gas test, but with drain/vent plugs installed.

4.7) **FUNCTIONAL TEST**

Ogni valvola deve essere testata con il suo dispositivo di azionamento (leva, volantino o riduttore) per garantire il raggiungimento di una corsa completa (da posizione completamente chiusa a posizione completamente aperta e viceversa) alla massima pressione differenziale che corrisponde alla pressione nominale della classe di pressione della valvola.

Al termine del test verificare l'allineamento della sfera con i seggi, in condizione di completa apertura e completa chiusura della valvola. Regolare la posizione dei fermi leva o del riduttore se necessario.

La prova deve essere eseguita utilizzando acqua come fluido di prova.

4.7) **FUNCTIONAL TEST**

Each valve shall be tested with its own operating device (lever, hand wheel or gear box) to ensure a complete stroke is achieved (from full closed to full open position and viceversa) at the maximum differential pressure corresponding to the nominal pressure of the valve pressure class.

Valve obturator alignment with seats in open condition and in close condition shall be verified and position travel stops of lever or of gear box shall be adjusted accurately.

The test shall be carried out with water as test fluid.

5. TIPOLOGIA E METODO DI ISPEZIONE E CONTROLLO

5.1) **ISPEZIONE VISIVA E MARCATURA**

- Le superfici dei corpi valvola devono essere esenti da graffiature, rigature o da qualsiasi altra imperfezione visibile.
- Le superfici a contatto con seggi e stelo, così come le superfici della sfera, devono essere prive di imperfezioni.
- Bave metalliche o spigoli taglienti devono essere rimossi in modo appropriato.
- I canali di passaggio del fluido devono avere una finitura uniforme ed essere esenti da bave.

5. TYPE AND METHOD OF INSPECTION

5.1) **VISUAL INSPECTION AND MARKING**

- The surfaces of valve bodies shall be free of scratch, scale and crack.
- The surface contacted with seat and stem, as well as the surface of ball, shall be free of scratch.
- Metal chips or cut edges shall be cleaned properly.
- Flow channel shall be surface finished and be fee of burrs.
- Valve specifications such as trade mark, class and pressure, size, material and others if applicable, shall

- I dettagli valvola, come logo produttore, classe e pressione, dimensione materiale e quant'altro applicabile, devono essere marcati su di una superficie esterna del corpo valvola.
- Le valvole che vengono testate in entrambe le direzioni (bidirezionali) non devono presentare alcuna marcatura relativa alla direzione di flusso.
- Effettuare il controllo visivo per il rilievo di eventuali irregolarità del profilo della filettatura.

5.2) **CONTROLLO DIMENSIONALE**

Il controllo dimensionale dei componenti valvola deve essere effettuato prima dell'assemblaggio degli stessi.

6. DESCRIZIONE REVISIONI

Rev.0 Prima emissione

be marked on the exterior surface of the valve body.
- Valves tested in both direction (bidirectional) don't have to show any flow direction marking.
- Perform the visual inspection for the detection of any irregularity of the thread profile.

5.2) **DIMENSIONAL INSPECTION**

Dimensional inspection shall be performed before the valve assembling.

6. REVISIONS DESCRIPTION

Rev.0 First issue

Tabella 1 / *Table 1*

DIMENSIONE VALVOLA *(VALVE SIZE)*		DURATA TEST (TEST DURATION)
NPS	DN	Minuti / *Minutes*
≤ 4	≤ 100	2
6 to 10	150 to 250	5

Tabella / *Table* 2

(solo per valvole Metal Seat / *only for Metal Seat Valves*)

DIMENSIONE VALVOLA *(VALVE SIZE)*		PERDITA MASSIMA AMMISSIBILE STANDARD *(STANDARD MAXIMUM ALLOWABLE LEAKAGE)* *		PERDITA MASSIMA AMMISSIBILE *(MAXIMUM ALLOWABLE LEAKAGE)* SECONDO API 6D – ACCORDING TO API 6D	
NPS	DN	n° bolle/minuto (max.)	secondi/goccia (min.)	cc / minuto** (max.)	secondi/goccia (min.)
½”	15	41	133	27	42
¾”	20	55	100	36	31
1”	25	69	80	45	25
1 ¼”	32	88	63	57,6	20
1 ½”	40	110	50	72	16
2”	50	137	40	90	13
3”	80	220	25	144	8

Nota: Salvo diversa indicazione in commessa, utilizzare lo Standard Indra come riferimento per la perdita ammissibile.

*In accordo con BS EN 12266-1 e ISO 5208 rate “C”. Per conversione da mm^3/sec. a gocce/sec. per prova ad acqua, e da mm^3/sec. a bolle/sec. per prova a gas vedi ISO 5208.
**Per eseguire questa misura utilizzare un misuratore di portata digitale.

Note: Unless otherwise specified in the order, please use the Indra Standard as reference for the maximum allowable leakage.

**According to BS EN 12266-1 and ISO 5208 rate “C”. In order to convert from mm^3/seconds to drops/seconds during the water test and from mm^3/seconds to n°bubble/seconds during gas test, please see ISO 5208.*
***For cc/minute evaluation, please use a digital flow meter.*

Allegato 1 / *Annex 1*

Pressioni di Collaudo / Test Pressures:

- *Shell Test*

Materiale		(Pressioni di rating come da ASME B16.34 x 1,5) [bar] (Pressure rating as per ASME B16.34 x 1,5) [bar]							
Nome	**UNS Number**	**150**	**300**	**600**	**900**	**1500**	**2500**	**6000 psi**	**10000 psi**
ASTM A105	UNS K03504	29,4	76,7	153,2	229,8	383,0	638,3	621	1034
ASTM A350 LF2	UNS K03011	29,4	76,7	153,2	229,8	383,0	638,3	621	1034
ASTM A182 F316/316L	UNS S31600	28,5	74,4	149,0	223,4	372,3	620,6	621	1034
ASTM A182 F316L	UNS S31603	23,9	62,1	124,1	186,2	310,2	517,1	621	1034
ASTM A182 F321	UNS S32100	29,7	77,6	155,1	232,7	387,9	646,4	621	1034
ASTM A182 F44	UNS S31254	30,0	77,6	155,1	232,7	387,9	646,4	621	1034
ASTM A182 F51	UNS S31803	30,0	77,6	155,1	232,7	387,9	646,4	621	1034
ASTM A182 F55	UNS S32760	30,0	77,6	155,1	232,7	387,9	646,4	621	1034
ASTM B564 N04400	UNS N04400	23,9	62,1	124,1	186,2	310,2	517,1	621	1034
ASTM B564 N06625	UNS N06625	30,0	77,6	155,1	232,7	387,9	646,4	621	1034
ASTM B574 N10276	UNS N10276	30,0	77,6	155,1	232,7	387,9	646,4	621	1034

- *Closure / BackSeat Test*

Materiale		(Pressioni di rating come da ASME B16.34 x 1,1) [bar] (Pressure rating as per ASME B16.34 x 1,1) [bar]							
Nome	**UNS Number**	**150**	**300**	**600**	**900**	**1500**	**2500**	**6000 psi**	**10000 psi**
ASTM A105	UNS K03504	21,6	56,2	112,3	168,5	280,8	468,1	455	758
ASTM A350 LF2	UNS K03011	21,6	56,2	112,3	168,5	280,8	468,1	455	758
ASTM A182 F316/316L	UNS S31600	20,9	54,6	109,2	163,8	273,0	455,1	455	758
ASTM A182 F316L	UNS S31603	17,5	45,5	91,0	136,5	227,5	379,2	455	758
ASTM A182 F321	UNS S32100	21,8	56,9	113,7	170,6	284,5	474,0	455	758
ASTM A182 F44	UNS S31254	22,0	56,9	113,7	170,6	284,5	474,0	455	758
ASTM A182 F51	UNS S31803	22,0	56,9	113,7	170,6	284,5	474,0	455	758
ASTM A182 F55	UNS S32760	22,0	56,9	113,7	170,6	284,5	474,0	455	758
ASTM B564 N04400	UNS N04400	17,5	45,5	91,0	136,5	227,5	379,2	455	758
ASTM B564 N06625	UNS N06625	22,0	56,9	113,7	170,6	284,5	474,0	455	758
ASTM B574 N10276	UNS N10276	22,0	56,9	113,7	170,6	284,5	474,0	455	758

Allegato 2 / *Annex 2*

Pressioni di collaudo / Test Pressures:

- *Shell Test*

(Pressure rating PSI x 1,5) [bar]

1000	3000	5000	6000	10000
103	310	517	621	1034

- *Closure / BackSeat Test*

(Pressure rating PSI x 1,1) [bar]

1000	3000	5000	6000	10000
76	227	379	455	758

Allegato 3 / *Annex 3*

Pressioni di collaudo / Test Pressures:

- *Shell Test*

(Pressure rating SCHEDULE x 1,5) [bar]

SCH. 40/40S	SCH. 80/80S	SCH.160	SCH. XXS
207	310	621	1034

- *Closure / BackSeat Test*

(Pressure rating SCHEDULE x 1,1) [bar]

SCH. 40/40S	SCH. 80/80S	SCH.160	SCH. XXS
152	227	455	758

Allegato 4 / *Annex 4*

MD-02-05-IT-UK

indra VALVES	**RAPPORTO DI COLLAUDO** ***TEST REPORT*** ***- INDRA VALVES -***	MD-02-05-IT-UK / P Rev. 24 Data: 24/03/2023

Nr. Certificato / *Certificate No.* _____ **Data** / *Date :* _____ *Rev. 0*

Cliente / *Customer :* _____

Ordine Nr. / *Order Nr.* _____ **Data** / *Date :* _____

Ns. commessa Nr. / *Our job Nr.* _____ **Data** / *Date :* _____

Ns. D.D.T. Nr. / *Our advise note Nr.* _____ **Data** / *Date :* _____

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST (according to API 598 & API 6D)	FLUIDO (Fluid)	DURATA (Duration)	PRESSIONE (Pressure)	MAX. PERDITA AMMISSIBILE (ISO 5208) (Max allowable leakage)	MANOMETRO N° (Gauge ID)	DATA SCADENZA (Due Date)
Shell test						
High pressure closure test						
Low pressure closure test (only for ball valves)						
Back seat test (only for needle valves)						

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY)		VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi)		High pressure closure test bar (psi)		Low pressure closure test bar (psi)		Back seat test bar (psi)		Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
					PRODUCED	TESTED						Pressure	Result	Pressure	Result	Pressure	Result	Pressure	Result				

Note / Remarks:

- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno

(Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)

- *N.L. = NO LEAKAGE (NESSUNA PERDITA)* *OK = LEAKAGE < MAX ALLOWABLE*

Ispettore / Inspector — *Si / Yes* / *No / No*

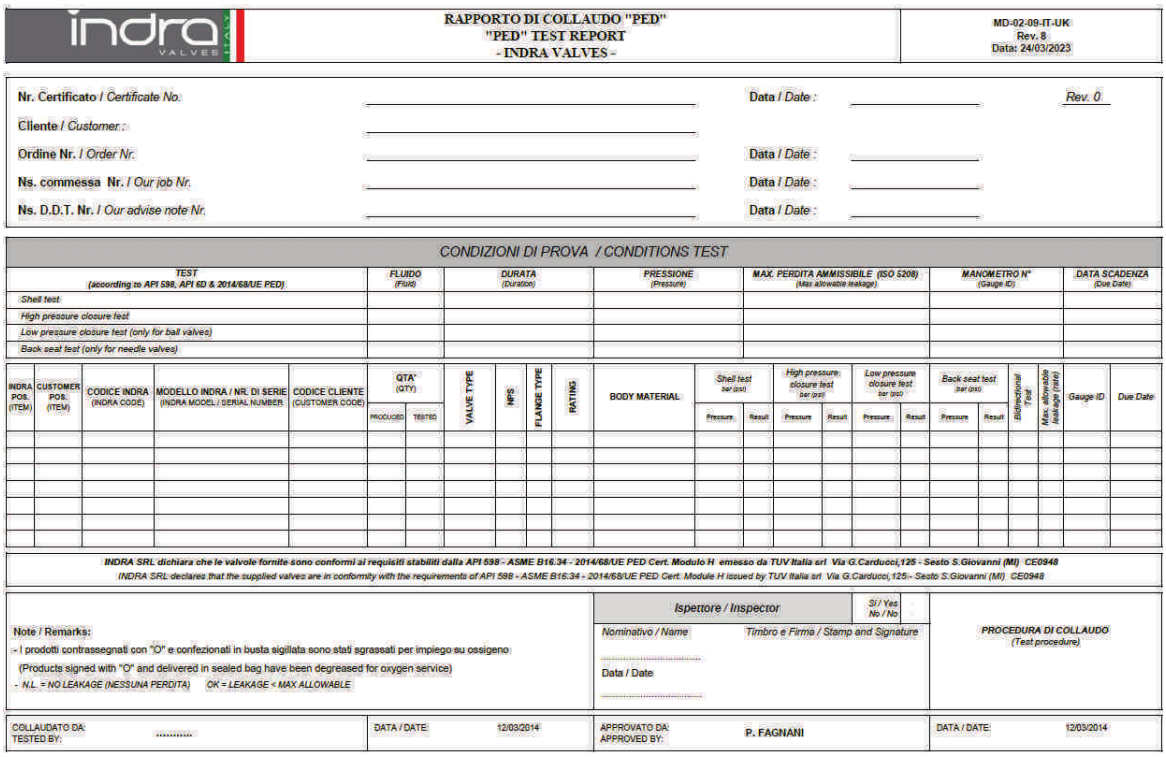
Nominativo / Name — *Timbro e Firma / Stamp and Signature*

Data / Date

PROCEDURA DI COLLAUDO
(Test procedure)

COLLAUDATO DA / TESTED BY:	DATA / DATE:	APPROVATO DA / APPROVED BY:	DATA / DATE:
.....	10/06/2022	P. FAGNANI	10/06/2022

MD-02-09-IT-UK



RAPPORTO DI COLLAUDO "PED"
"PED" TEST REPORT
- INDRA VALVES -

MD-02-09-IT-UK
Rev. 8
Data: 24/03/2023

Nr. Certificato / *Certificate No.* — Data / *Date* : — Rev. 0
Cliente / *Customer.* :
Ordine Nr. / *Order Nr.* — Data / *Date* :
Ns. commessa Nr. / *Our job Nr.* — Data / *Date* :
Ns. D.D.T. Nr. / *Our advise note Nr.* — Data / *Date* :

CONDIZIONI DI PROVA / *CONDITIONS TEST*

TEST (according to API 598, API 6D & 2014/68/UE PED)	FLUIDO (Fluid)	DURATA (Duration)	PRESSIONE (Pressure)	MAX. PERDITA AMMISSIBILE (ISO 5208) (Max allowable leakage)	MANOMETRO N° (Gauge ID)	DATA SCADENZA (Due Date)
Shell test						
High pressure closure test						
Low pressure closure test (only for ball valves)						
Back seat test (only for needle valves)						

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY) PRODUCED	QTA' (QTY) TESTED	VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi) Pressure	Shell test bar (psi) Result	High pressure closure test bar (psi) Pressure	High pressure closure test bar (psi) Result	Low pressure closure test bar (psi) Pressure	Low pressure closure test bar (psi) Result	Back seat test bar (psi) Pressure	Back seat test bar (psi) Result	Bidirectional Test	Max. allowable leakage (ml/m)	Gauge ID	Due Date

INDRA SRL dichiara che le valvole fornite sono conformi ai requisiti stabiliti dalla API 598 - ASME B16.34 - 2014/68/UE PED Cert. Modulo H emesso da TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948
INDRA SRL declares that the supplied valves are in conformity with the requirements of API 598 - ASME B16.34 - 2014/68/UE PED Cert. Module H issued by TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948

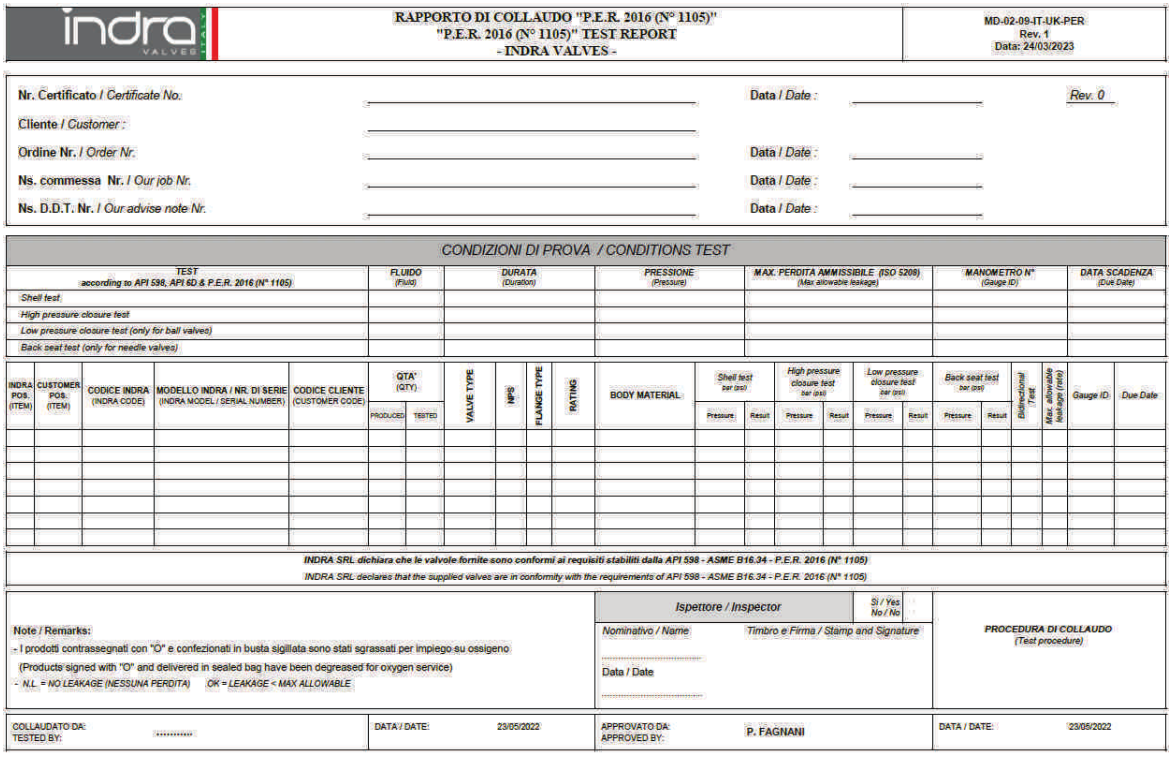
Note / Remarks:
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Ispettore / Inspector — *Si / Yes No / No*
Nominativo / Name — *Timbro e Firma / Stamp and Signature*
Data / Date

PROCEDURA DI COLLAUDO (Test procedure)

COLLAUDATO DA: TESTED BY:	DATA / DATE: 12/03/2014	APPROVATO DA: APPROVED BY: P. FAGNANI	DATA / DATE: 12/03/2014

MD-02-09-IT-UK-PER



RAPPORTO DI COLLAUDO "P.E.R. 2016 (N° 1105)"
"P.E.R. 2016 (N° 1105)" TEST REPORT
- INDRA VALVES -

MD-02-09-IT-UK-PER
Rev. 1
Data: 24/03/2023

Nr. Certificato / *Certificate No.* — Data / *Date* : — Rev. 0
Cliente / *Customer* :
Ordine Nr. / *Order Nr.* — Data / *Date* :
Ns. commessa Nr. / *Our job Nr.* — Data / *Date* :
Ns. D.D.T. Nr. / *Our advise note Nr.* — Data / *Date* :

CONDIZIONI DI PROVA / *CONDITIONS TEST*

TEST according to API 598, API 6D & P.E.R. 2016 (N° 1105)	FLUIDO (Fluid)	DURATA (Duration)	PRESSIONE (Pressure)	MAX. PERDITA AMMISSIBILE (ISO 5208) (Max allowable leakage)	MANOMETRO N° (Gauge ID)	DATA SCADENZA (Due Date)
Shell test						
High pressure closure test						
Low pressure closure test (only for ball valves)						
Back seat test (only for needle valves)						

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY) PRODUCED	QTA' (QTY) TESTED	VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi) Pressure	Shell test bar (psi) Result	High pressure closure test bar (psi) Pressure	High pressure closure test bar (psi) Result	Low pressure closure test bar (psi) Pressure	Low pressure closure test bar (psi) Result	Back seat test bar (psi) Pressure	Back seat test bar (psi) Result	Bidirectional Test	Max. allowable leakage (ml/m)	Gauge ID	Due Date

INDRA SRL dichiara che le valvole fornite sono conformi ai requisiti stabiliti dalla API 598 - ASME B16.34 - P.E.R. 2016 (N° 1105)
INDRA SRL declares that the supplied valves are in conformity with the requirements of API 598 - ASME B16.34 - P.E.R. 2016 (N° 1105)

Note / Remarks:
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Ispettore / Inspector — *Si / Yes No / No*
Nominativo / Name — *Timbro e Firma / Stamp and Signature*
Data / Date

PROCEDURA DI COLLAUDO (Test procedure)

COLLAUDATO DA: TESTED BY:	DATA / DATE: 23/05/2022	APPROVATO DA: APPROVED BY: P. FAGNANI	DATA / DATE: 23/05/2022

PART 1 – DESIGN DOSSIER

CHAPTER 5

SECTION 5

PACKING HANDLING SHIPPING PRESERVATION AND STORAGE PROCEDURE

Base Load Power Hub (BLPH)

PACKING, HANDLING, SHIPPING,

PRESERVATION AND STORAGE PROCEDURES

Document Number: 1724000798-QC-PRO-00008

Document Class: 3

ROSETTI MARINO

1	APPROVED - WORK MAY PROCEED
2N	REVISE AND RE-SUBMIT - DO NOT PROCEED
2Y	REVISE AND RE-SUBMIT - WORK MAY PROCEED
3	REJECTED
4	APPROVAL NOT REQUIRED

NOTE: Approval doesn't relieve the supplier from mandatory compliance with contractual documents and specifications. Comments made do not imply acceptance of any cost or delivery impact.

Sign	Date
	03/07/2024

Rev.	Date	Description	Prepared	Reviewed	Approved
2	02/07/2024	Issue for Information (IFI)	F.CRIMELLA	G.GRANATA	A.DE CARLI
1	26/06/2024	Issue for Information (IFI)	F.CRIMELLA	G.GRANATA	A.DE CARLI
0	03/06/2024	Issue for Information (IFI)	F.CRIMELLA	G.GRANATA	A.DE CARLI

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File: 1724000798-QC-PRO-00015_2.*docx*

Revision / Change Log

Rev.	Description
0	Issue for Information (IFI)
1	Issue for Information (IFI)
2	Issue for Information (IFI)

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1 INTRODUCTION

1.1 PROJECT OVERVIEW

Crosswind, a Shell and Eneco joint venture, was awarded the tender to develop the offshore Hollandse Kust Noord (HKN) wind farm, located 18.5km off the coast of Netherlands near the town of Egmond aan Zee. The consortium plans to have HKN operational in 2023 with an installed capacity of 759MW generating at least 3.3TWh per year. This is sufficient renewable power to supply more than 1 million Dutch households with green electricity.

Offshore wind farms produce intermittent electricity and balancing these dips and peaks and integrating this electricity into the national energy system requires new technologies. For this reason, the offshore wind farm will include several new technologies that could be implemented at full-scale in the future. The new technologies being explored include a floating solar park, a short-duration battery storage as well as long-term storage via green hydrogen produced by water electrolysis and subsequently consumed in a fuel cell. The combination of these individual measures, herein referred to as the Base Load Power Hub (BLPH) will ensure a continuous power supply regardless of the wind situation.

1.1.1 Project Location

The Hollandse Kust Noord (HKN) wind farm is located 18.5km off the coast of the Netherlands near the town of Egmond aan Zee.

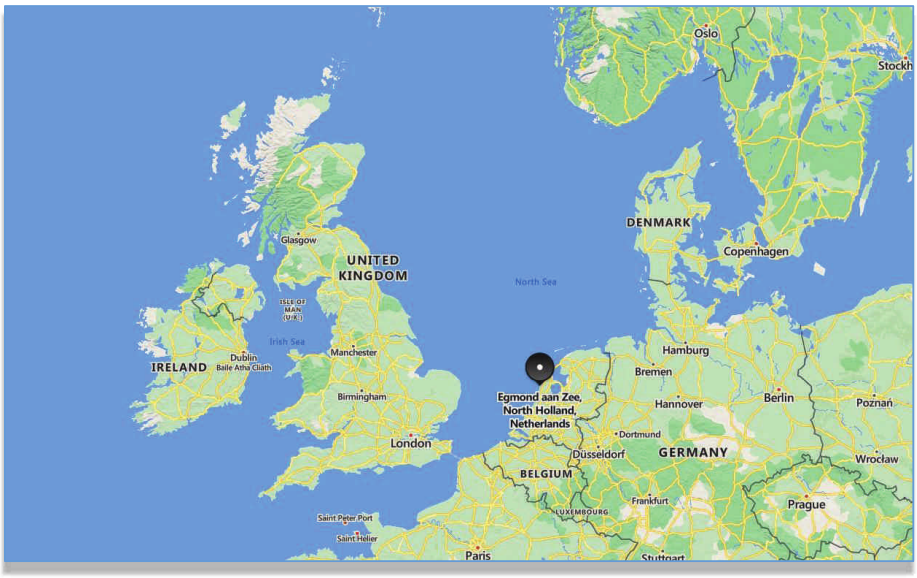


Figure 1 HOLLANDSE KUST NOORD WIND PARK Location Map



Figure 2 - Wind Park Details

The wind farm will consist of No. 69 x 11.5MW wind turbine generators each to be installed on a dedicated monopile structure. A 70th monopile located on coordinates E 590719.1, N 5841602.3 is reserved for installing the platform accommodating the BLPH. The monopile structure was designed and installed by Van Oord Offshore Wind (VooW) and therefore not part of the BLPH scope.

1.1.2 Project Concept

All components included in the BLPH will be integrated onshore on a topsides and installed in an offshore location within the boundaries of the HKN wind farm. At its simplest, the BLPH will store energy during periods of high electricity generation from renewable sources (a wind turbine generator and the floating solar PV farm) and release it during periods of low generation. In practice. It is expected that the energy stored will supplement generation from renewable sources to ensure that at least 1.0MW of power is exported to the electrical grid regardless of wind/solar availability.

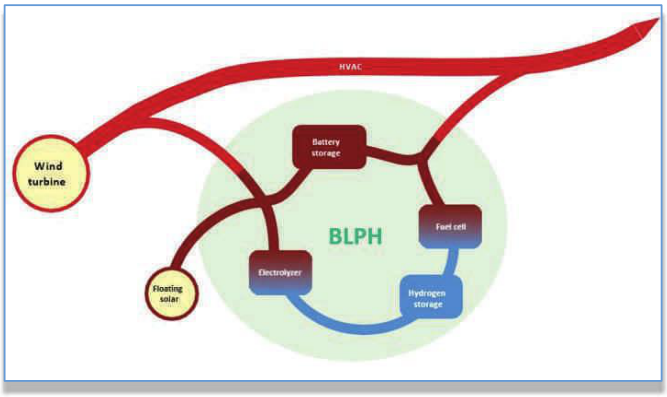


Figure 3 – BLPH Concept

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Electricity in the BLPH will be stored in the form of electrons in a battery energy storage system (BESS) as well as converted into green hydrogen via water electrolysis. When the power output from the connecting wind turbine drops to below 1 MWe, the BLPH will return its stored energy to supplement the remaining power output. This will be by discharging the BESS, while stored hydrogen will be converted back into electricity using a fuel cell to extend the discharge duration.

The purpose of the BLPH s to function as a testbed for the integration of energy storage technologies with renewable generation. It is expected that equipment installed on the BLPH will operate as Normally Unmanned Installation for at least two (2) years with no or minimal maintenance and it will have its own independent control room with the ability to communicate with Crosswind's control room.

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PRODUCTS:

"VSP" NEEDLE VALVES/MANIFOLDS
"VSF" BALL VALVES
"CVH" CHECK VALVES

INDEX

1) SCOPE
2) GENERAL REQUIREMENTS
3) HANDLING OF VALVES
4) PACKING/RESPONSIBILITY
5) MARKING OF CASE
6) PROTECTION WITH WATERPROOF BAGS (WHEN REQUESTED BY THE CUSTOMER)
7) STORAGE AND MAINTENANCE AT SITE

THESE INSTRUCTIONS ARE PROPERTY OF INDRA S.R.L.

ANY DIVULGATION, REPRODUCTION OR TRANSFER OF ANY THIRD PARTIES CONTENENTS MUST BE AUTHORIZED BY THE SAME COMPANY.

Revision: 8	Created	Checked	Approved
Date	27/11/2023	27/11/2023	27/11/2023
Signature	L.Imbriani	E. Ranzani	C. Cattaneo

1) SCOPE

This manual procedure deals with the procedures and methods to manage the handling, packaging, storage, preservation and delivery of the manufactured valves and valve components.
This procedure manual specifies the requirements and responsibilities that should be applied in order to prevent thermal diffusion, obstruction, damage and misuse of the valve.

2) GENERAL REQUIREMENTS

The solvents and/or corrosion inhibitors shall be used with adequate ventilation. Adequate ventilation is required for curing of corrosion inhibitors used, and to avoid formation of an explosive atmosphere. The partially cured film of corrosion inhibitors should not be exposed to ignition sources such as flares, flames, sparks, excessive heat, or torches.

3) HANDLING OF VALVES

Handling of valves shall be done using correct and proper handling equipment considering their capacity, limits and their maintenance conditions to avoid damages of the material itself and any potential cause of injury/harm to involved personnel. The valves shall be lifted using the established lifting points.

4) PACKING/RESPONSIBILITY

For the preparation of the goods for the shipment we must proceed as follows:

1. Take the delivery note

2. Proceed to pick up the material from the warehouse and tick off each item mentioned in the document

3. Check if on the delivery note there are special instructions for the packaging of the goods requested by the customer

4. Prepare the packaging for any item indicated in the delivery note (for example if on the delivery note there are three positions we must proceed to issue three different packaging)

5. Set the foaming machine; lower the bag, place it on the bottom of the box and press with the appropriate template to create a homogeneous and compact plan

6. Connections Protection:
Stick rubber or Plastic cups protection on Flanges & HUBs
Plastic Cap/Plug on non plugged threads

7. All uncoated metallic components are in in 316 minimum and do not required additional treatment/coating

8. Recheck that all the items indicated in the delivery note are present before storing the material in the box

9. Place the goods to be packed on a flat surface

10. With another bag of foam composing the upper layer which will take the shape of the product. After this operation make sure that the product is perfectly adherent to the bag in order to prevent that during the transport will be damaged because of bumps

11. Close the carton box, making sure that the layer of foam is completely fills the box

12. Close the box with tape above and below

13. After closing the package, attach the label on the package, add the reference /positions of the order, the weight

14. On the delivery note indicate the weight and dimensions of the shipment

5) MARKING OF CASE/CARTON BOXES

Our standard packing is carton boxes on pallets. The marks will be printed in black colour on DYMO labels and will be clearly legible. Minimum content of marking as follows:
- Consignee/delivery address

- Customer

- Purchase Order No.

- Item No.

- Case No. of

- Gross Weight (Kg)

- Net Weight (Kg)

- Dimensions : x x (cm)

When requested by the customer we can use wooden cases and all the markings shall be legible, permanent and not covered by banding or in any other way. Package shall be marked on at least two sides (long side and short side). All information will be fixed to each package in a Waterproof A4 size labels.

6) PROTECTION WITH WATERPROOF BAGS (WHEN REQUESTED BY THE CUSTOMER)

The protection is an action directed at satisfying the needs connected to the maintenance of the integrity of the contents and it is used to guarantee the insulation of the products against the action of atmospheric or degrading agents, such as water, water vapour, salt air, pressure/depression. In all this case, the choice is the waterproofing bag with vacuum.

The materials for fitted barriers are compounds of polyethylene and aluminium and are selected according to their degree of permeability to water vapour and their mechanical resistance. They have a low transpiration grade and are therefore the only not rigid products that allow the protective sheet to keep its vacuum status for long time. All this conforming to standards MIL/TL.

These coupled barriers that we called barrier bags, must be hermetically sealed and a depression must be created inside that will reduce the volume of air it containts and eliminate as much as possible the quantity of relative humidity in the barriers.

Inside the barrier certain amount of dessicant salts must be inserted, sufficient to keep the relative humidity below a certain level. The quantity must be calculated according to the climatic conditions that the package will be subject to, during the journey.

Climate conditions, place of departure, transport method, destination are all factors on which we base to calculate the units of dessicant salts to use, to maintain the humidity inside the vacuum barrier.

7) STORAGE AND MAINTENANCE AT SITE

Type of packing : - Carton boxes on pallet

- Wooden case

- Wooden case with bag barrier (fumigated HT-ISPM15)

- Seaworthy packing

Type of storage : Closed warehouse without humidity

Preservation Expiration: goods stored in their original packing in a dry, clean and safe area can guarantee the correct operation even after the expiring of the product's warranty period. Storage longer than the contractual warranty term it is up to the user's to preserve the goods properly as per common practice for storage & handling.

Due to the mechanical properties of the internal seals, the storage temperature must never be lower and maintained at -15°C.

PART 1 – DESIGN DOSSIER

CHAPTER 5

SECTION 10

INSTALLATION OPERATION AND MAINTENANCE MANUAL

Base Load Power Hub (BLPH)

INSTALLATION, OPERATION AND MAINTENANCE MANUAL

MANUAL VALVES – BALL, DBB & SBB, MONOFLANGE

Document Number: 1724000798-PP-LIS-00013

ROSETTI MARINO

1	NO COMMENTS - APPROVED - WORK MAY PROCEED
2	MINOR COMMENTS - REVISE AND RESUBMIT - WORK MAY PROCEED
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4	APPROVAL NOT REQUIRED

NOTE: Approval doesn't relieve the supplier from mandatory compliance with contractual documents and specifications. Comments made do not imply acceptance of any cost or delivery impact.

Sign	Date
Mauro Liberato	27.11.24

Document Class: 3

Rev.	Date	Description	Prepared	Reviewed	Approved
04	/11/2024	Issue for Information (IFI)	F.CRIMELLA	G.GRANATA	A.DE CARLI
03	23/09/2024	Issue for Information (IFI)	F.CRIMELLA	G.GRANATA	A.DE CARLI
02	17/09/2024	Issue for Information (IFI)	F.CRIMELLA	G.GRANATA	A.DE CARLI
01	29/07/2024	Issue for Information (IFI)	F.CRIMELLA	G.GRANATA	A.DE CARLI
00	04/06/2024	Issue for Information (IFI)	F.CRIMELLA	G.GRANATA	A.DE CARLI

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Revision / Change Log

Rev.	Description
00	Issue for Information (IFI)
01	Issue for Information (IFI)
02	Issue for Information (IFI)
03	Issue for Information (IFI)
04	Issue for Information (IFI)

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1.1.1 Project Location

The Hollandse Kust Noord (HKN) wind farm is located 18.5km off the coast of the Netherlands near the town of Egmond aan Zee.



Figure 1 HOLLANDSE KUST NOORD WIND PARK Location Map



Figure 2 - Wind Park Details

The wind farm will consist of No. 69 x 11.5MW wind turbine generators each to be installed on a dedicated monopile structure. A 70th monopile located on coordinates E 590719.1, N 5841602.3 is reserved for installing the platform accommodating the BLPH. The monopile structure was designed and installed by Van Oord Offshore Wind (VooW) and therefore not part of the BLPH scope.

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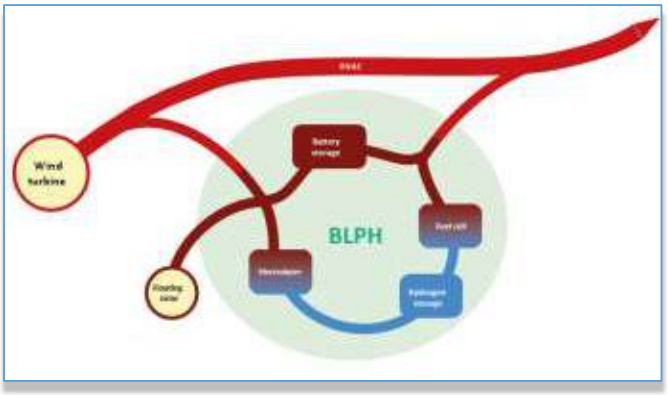


Figure 3 – BLPH Concept

Electricity in the BLPH will be stored in the form of electrons in a battery energy storage system (BESS) as well as converted into green hydrogen via water electrolysis. When the power output from the connecting wind turbine drops to below 1 MWe, the BLPH will return its stored energy to supplement the remaining power output. This will be by discharging the BESS, while stored hydrogen will be converted back into electricity using a fuel cell to extend the discharge duration.

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2 DOCUMENT SCOPE

This manual outlines the methods to be used for the storage, protection, installation, operation and maintenance of flanged-flanged, flanged-threaded and welded ball valves (SB-SBB-DB-DBB). The purpose of this manual is to maintain the best levels of performance of the valves over the long term, providing the user with instructions for the correct methods to be used for the storage, protection, installation, correct operation and maintenance of the valves.

2.1 DEFINITIONS AND ABBREVIATIONS

COMPANY or Client (CPY):	CW
CONTRACTOR (CTR):	RM
PROJECT:	HKN WIND PARK Project
ASME	THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS
SB	SINGLE BLOCK
DBB	DOUBLE BLOCK AND BLEED
DB	DOUBLE BLOCK
API	AMERICAN PETROLEUM INSTITUTE
PED	PRESSURE EQUIPMENT DIRECTIVE

Table 2 - Definitions and Abbreviations

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GENERAL INSTRUCTIONS FOR INSTALLATION, MAINTENANCE AND SAFETY FOR FLOATING BALL VALVES

SERIES SB-SBB-DB-DBB

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12.0	Drawing of the valve	12

WARNING:

Depressurize the circuit before carrying out any operations, especially in the presence of dangerous fluids. The pressure in the circuit must be the same as that of the outside environment.

Please refer to tag plate information for operating use.

1.0 Purpose of this manual

This manual outlines the methods to be used for the storage, protection, installation, operation and maintenance of flanged-flanged, flanged-threaded and welded ball valves (SB-SBB-DB-DBB). The purpose of this manual is to maintain the best levels of performance of the valves over the long term, providing the user with instructions for the correct methods to be used for the storage, protection, installation, correct operation and maintenance of the valves.

2.0 Limitations of use

- Must not exceed the admissible limits described on the plate
- the end user is responsible for equipping the line with adequate safety accessories to protect against exceeding the admissible limits.

Service: On/Off (fully open/fully closed)

Note: INDRA soft seal valves cannot be used as control valves.

Level of seal for new valves:

- Hydrostatic test on casing: Permitted leak: None
- Hydrostatic test on seats: Permitted leak: None
- Pneumatic test on seats (air 6±1 bar): Permitted leak: None

The rated values for INDRA valves are compliant with Standard ASME B16.34, based on the materials used. As an example, the rated pressure values at ambient temperature are provided for the main materials used. Different temperature conditions cause variations in the rated pressure values as set out in Standard B16.34 and on the information plate on the supplied product. The rated pressure/temperature values also depend on the seals used in making the product. For further details please contact INDRA S.r.l.

ASME B16.34 Material	Temperature	150#	300#	600#	900#	1500#	2500#
A105, A350 LF2	-29°C / +38°C	19.6	51.1	102.1	153.2	255.3	425.5
	+200°C	*13.8*	*43.8*	*87.6*	*131.4*	*219.0*	*365.0*
	+450°C	*4.6*	*23.0*	*46.0*	*69.0*	*115.0*	*191.7*
A276/A182 F316/F316L	-29°C / +38°C	19.0	49.6	99.3	148.9	248.2	413.7
	+200°C	*13.7*	*35.7*	*71.3*	*107.0*	*178.3*	*297.2*
	+450°C	*4.6*	*28.8*	*57.7*	*86.5*	*144.2*	*240.4*
A276/A182 F44/F51/F53/F55	-29°C / +38°C	20.0	51.7	103.4	155.1	258.6	430.9
	+200°C	*13.8*	*42.7*	*85.3*	*128.0*	*213.3*	*355.4*
	*+450°C**	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
B443/B446/B564 N06625 (Inconel 625)	-29°C / +38°C	20.0	51.7	103.4	155.1	258.6	430.9
	+200°C	*13.8*	*48.3*	*96.7*	*145.0*	*241.7*	*402.8*
	+450°C	*4.6*	*33.7*	*67.7*	*101.4*	*169.0*	*281.8*

B462/B564/B574/B575/B622 N10276 (Hastelloy C-276)	-29℃ / +38℃	20.0	51.7	103.4	155.1	258.6	430.9
	+200°C	*13.8*	*48.3*	*96.7*	*145.0*	*241.7*	*402.8*
	+450°C	*4.6*	*33.7*	*67.7*	*101.4*	*169.0*	*281.8*

** This material may become brittle after service at moderately elevated temperature. Should not be used over 315°C.*

All valves are tested in accordance with Standards API 598 and 2014/68/EU PED

- Hydraulic test on casing: The pressure used for the hydrostatic test on the valve casing is calculated at a value higher than or equal to 1.5 times the rated pressure at ambient temperature.
- Hydraulic test on seats: The pressure used for the hydrostatic test on the seats is calculated at 1.1 times the rated pressure at ambient temperature.
- Pneumatic test on seats (low pressure): The pressure values for the pneumatic test for the seats are as follows for all classes: 6 ±1 bar.
- Max. operating Temp. at rated pressure: See table below

RATING	**150#**	**300#**	**600#**	**900#**	**1500#**	**2500#**
Seat Material	PEEK			METAL SEAT/ GRAPHITE		
Max operating Temperature	*+200°C*			*+450°C*		

For pressure/temperature rating for valves compliant to API std design, refer to API 6A (contact INDRA technical office if necessary).

2.1 Temperature: Ambient and Process

It is important to maintain the valve, during all the stages of storage and operation, within the limits of the temperature range provided. The following tables represents the temperature range of the floating ball valves.

AMBIENT TEMPERATURE	
NON EAC (STANDARD)	**EAC**
-46°C +80°C	*-54°C +80°C*

PRODUCT	**CATEGORY**	**SEALING**	**NON EAC (STANDARD)**	**EAC**
VSF (BALL VALVES) (*)	**STANDARD**	*PEEK/FKM/GRAPHITE*	*-46°C +200°C*	*-54°C +200°C*
	CRYOGENIC	*KEL-F/GRAPHITE*	*-110°C +100°C*	
		KEL-F/Lip-Seal/ GRAPHITE	*-196°C +100°C*	
	HIGH TEMPERATURE	*Metal Seat/GRAPHITE*	*-46°C +450°C*	*-54°C +450°C*

(*) Includes Floating and Trunnion mounted ball valves.

The surface temperature of manual ball valves depends exclusively on the higher of the ambient or process temperature. Make sure that T is not higher than the minimum ignition temperature of the gas (considering an appropriate safety factor), which determines the temperature class of the area where the equipment will be installed.

The surface temperature of actuated ball valves depends on the greater of the ambient or process temperature increased by 60 ° C (possibility of maximum overheating due to friction and rubbing between the parts). Make sure that Tmax is not higher than the minimum ignition temperature of the gas (considering an appropriate safety factor), which determines the temperature class of the area where the equipment will be installed.

Manual Ball Valve				Actuated Ball Valve		
Class [Max temperature allowed]	Tmax Valve Surface	T process/amb.		Class [Max temperature allowed]	Tmax Valve Surface	T process/amb.
T6 [85°C]	75°C	75°C		T6 [85°C]	75°C	15°C
T5 [100°C]	90°C	90°C		T5 [100°C]	90°C	30°C
T4 [135°C]	125°C	125°C		T4 [135°C]	125°C	65°C
T3 [200°C]	190°C	190°C		T3 [200°C]	190°C	130°C
T2 [300°C]	290°C	290°C		T2 [300°C]	290°C	230°C
T1 [450°C]	440°C	440°C		T1 [450°C]	440°C	380°C

2.2 Precautions and limitations of use

Below is a list of possible hazardous conditions which, if not previously specified on the contractual documents, have not been considered during the design stage.

Caution! Possible hazardous conditions:

- **Acoustic vibrations and/or vibrations induced by flow;**
- **Ram;**
- **Chemical attack;**
- **Thermal expansion;**
- **Stray currents**
- **Pressure and thermal fatigue;**
- **Seismic loads;**
- **External corrosion;**
- **Contaminated fluid;**
- **Cavitation and flashing;**
- **External flame;**
- **External loads.**

Any hazardous conditions (e.g.: temperature and pressure gradients etc.) attributable to the operation of the component or system are in any case the responsibility of the user.

Precautions and additional information

The user should always check that the valves are not used for services at temperatures and pressure values that exceed the maximum values declared by the manufacturer and given on the valve information plate/label.

The user should always provide the necessary means to ensure that the valve is not installed for services that exceed the envisaged limits.

The valve may release any excess pressure present in the casing through the seats. Before carrying out any maintenance operations, carry out a full opening and closing maneuver (with the line not under pressure).

The user must provide suitable means to prevent rapid opening and/or closing actions from creating ram effects in the valve.

Split-body valves are sized for low stress factors caused by axial loads on the line. Please contact INDRA for special conditions.

The user must guarantee that for valves installed at the end of a line any opening of the valve does not cause fluid to be released freely into the environment.

Do not remove or replace or assemble any valve components with the valve under pressure or without having released any pressure trapped in the cavity of the casing (e.g. before removing the bleed plug, make sure there is no pressure inside the valve casing).

The valves should be used with clean fluids that are not abrasive and free of solid particles.

3.0 Storage and preservation

Ball valves must be delivered suitably packed in containers normally made from cardboard and wrapped in their standard packaging. It is also possible to apply customized packaging on the specific request of the customer. We recommend storing the valves in their packaging until they are installed.

Valves should be stored in a clean, dry and closed space.

Valves removed from their packaging before installation should be stored with the handle open (in line with the valve casing or in line with the main circuit).

Valves removed from their packaging should be stored in a clean and dry place. If left in the open, they should be protected against knocks. All valve connections, whether they are flanged or threaded, should be protected with specific plugs or adhesive discs and covered with anti-corrosion paint, as required.

WARNING: Do not use the handle to lift the valve during transport and handling. 

If the valves have to be stored for a long period on site prior to their installation, they should be kept covered and dry. It is mandatory that the end covers, and original packaging are kept in good condition. All the valves are supplied with end plugs, to protect the internal parts. These end plugs must not be removed during storage. If it is necessary for maintenance or inspection, care should be taken to replace them when the valves are returned to the store.

3.1 Scheduled maintenance during storage

In case of extended storage time, the valves should be inspected and checked as follows at least every 6 months:

- External surface inspection checking any alteration of the protective coating. In case of presence of rust and/or damaged paint work, the area should wire brushed and degreased using an appropriate chemical solvent.
- Inspection of the protective coating. In case of damages, it should be locally restored as per the applicable packing procedure.
- Removal of the end protection plugs and without moving the ball, inspection of the internal surfaces of the valve for the complete absence of dust, rust, foreign matter and the integrity of lubricant coat.
- Rotate the ball by completely opening and closing the valve.
- The ball must be kept always in the fully open position.
- Replace the protective end plugs.

4.0 Safety instructions

All installation and maintenance operations on the valve should be carried out by qualified personnel and with the circuit fully de-pressurized (the pressure in the circuit must be the same as that of the outside environment).

The valve and/or plugs on the vents should only be removed when the circuit is fully de-pressurized (the pressure in the circuit must be the same as that of the outside environment).

The bonnets (where present), and the associated anti-unscrewing pins, should not be removed from their housings on the valve casing.

The maximum torsion torque for operating the bonnet (where present), is 0.8 Nm (0.6 lb.ft)

Avoid subjecting the valve to knocks or impacts greater than 40 Nm (30 lb.ft).

The technical data given on the valve must always be legible. Paint or anything else that could obscure the technical data on the valve should be avoided

5.0 Operating instruction

VALVE OPERATION

Rotating the handle anti-clockwise by one quarter turn causes the ball to open the passage; the handle is in line with the valve casing or the main circuit. (Valve in OPEN position).
Rotating the handle clockwise by one quarter turn causes the ball to close the passage; the handle is perpendicular to the valve casing or the line of the main circuit. (Valve in CLOSED position).

WARNING: Handles locking device must be removed before operation (see para. 12) 

VENT

Rotating the wheel on the bonnet (T-Bar) or the handle anti-clockwise, causes the shutter in the bonnet to open the passage. Rotating the wheel (T-Bar) or the handle clockwise, causes the shutter in the bonnet to close the passage. (Approximately 5 full rotations are required to close the passage). Bonnets equipped with stainless steel anti-dust caps allow you to view the status of the bonnet (open or closed).

6.0 Installation instructions

All valve installation operations must be carried out by qualified personnel.

Installation should be carried out in such a way as to ensure the information provided on the valve casing remains visible:

- Manufacturer's name (INDRA)
- Product code
- Rating
- Material
- Manufacturing lot
- Additional labelling (if required)

Before installation check that the project data is compatible with the valve specifications, in particular: material, pressure, temperature, process fluid type.

Check that safety regulations for operators are observed before handling or installing the valve.

Check that the installation layout is suitable for the correct operation of the valve, avoiding any interference with pipes or other nearby components that could obstruct the correct operation of the valve.

Remove the valve from its packaging and inspect it for any damage that may have occurred during transport.

Check the condition of the valve before installation.

Make sure that the handle and any accessible seals are clean and free of any visible damage.

Connect the valve to the circuit, tightening the nuts on the flange and/or connecting the pipes to the threaded connections.

When the valve is open the lever is parallel to (in line with) the axis of the main channel of the valve and of the flow.

When the valve is closed the lever is orthogonal (at 90°) to the axis of the main channel of the valve and of the flow.

WARNINGS:

- **Do not install the valve if it has been visibly damaged by knocks. Inform the INDRA technical department immediately by sending an e-mail to: indra@indra.it with photographs attached.**
- **The valve can operate once it has been fully installed into the circuit.**
- **The valve must be operated in accordance with the procedures in point 4.0.**
- **The valve must be operated using its own handle. Avoid the use of screwdrivers, pipe wrenches, etc.**
- **Before connecting any measuring and/or monitoring instruments, the line must be bled in order to eliminate any residues created by mechanical processes or other residues which, if present, could interfere with the correct operation of the instrument downstream, as well as causing possible greater damage due to the presence of contaminant residues. We therefore recommend pressurizing and bleeding the circuit several times before and after the valve is installed. In the presence of process fluids with contaminant particles, it is essential to fit filters upstream of the valve. The necessary measuring and monitoring instruments should only be installed after having completed these operations.**

6.1 Instructions for Weld End valves (BW)

The execution of the permanent joint of the valve to the pipeline is entirely the responsibility of whoever installs the valve into the line.

It is not necessary to disassemble the valve during the phases of welding connection to the pipeline.

During the welding process, the valve must be kept in the fully open position, in order to avoid possible sticking or damage of internal seals caused by thermal conduction.

During the welding process (preheating, welding, heat treatment), the temperature of valves with soft seats should not exceed 93 C° in the area of the valve seats.

In the event of damage to external painting, it is essential to quickly repair any defects.

The welding activity must be conducted to prevent the introduction of debris and dirt into the line. Such debris could damage valve seals and seats.

WARNINGS:

- **Personnel involved in welding operations shall be provided and use all applicable personal safety devices needed to carry out each activity in safe conditions (shoes; clothing; gloves; glasses; mask; etc...).**
- **Particular attention must be paid during welding performed at considerable heights.**
- **Particular attention must be paid considering presence of hot surfaces (> 80°C).**

7.0 Maintenance instructions

The valves are designed and manufactured to provide continuous operation with little or no maintenance. However, the instructions provided below are useful for maintaining valve efficiency:

Periodically check the efficiency of the seals (no leaks).

In the event of a leak in the valve, it must be removed from the system, identifying the cause of the leak, and replacing the seal if necessary.

WARNINGS:

- **Before removal the valve should be opened and closed at least twice and then kept partially open. (handle at 45° with respect to the axis of the valve or line of the main pipe).**
- **Process fluids may potentially be toxic or hazardous, the user must therefore ensure that maintenance staff are aware of which fluids they may come into contact with and also that they use the required and suitable accident prevention and protection systems.**
- **Even when the valve is isolated from the line, the cavities of the valve casing may still contain trapped pressure, we therefore recommend checking that all pressure has been fully released from the valve casing using the vent, before any activities are carried out.**

8.0 Eliminating leaks

WARNING: The valve should only be removed or dismantled by trained personnel.

Valve series: SB-SBB-DB-DBB

Leaks from the valve control stem (Fig.1 component “A”).
[See Fig.1] - If the stem is the source of the leak, tighten nut (B) even further using a suitable wrench, after having loosened nut (D) or hex screw (E) for valves that have these.

Leak from the bonnet stem (Fig.1 component “C”).
[See Fig.2] - Fully open the bonnet by rotating wheel (1) anti-clockwise, remove the tightening screw on wheel (9), wheel (1) and anti-dust cap (2). Loosen and unscrew the locking nut (4) by 2-3 threads. Gradually tighten the compression nut (3), avoiding excessive movements, 1-2 mm max., until the leak has been eliminated (see torsion torque value table). Once the leak has been eliminated tighten the locking nut (4) once again, reposition the anti-dust cap (2) and the wheel (1), re-tighten the tightening screw on the wheel (9) and check that the leak has been eliminated.

WARNING: If the leak persists, contact INDRA for maintenance requests.

9.0 Removing SB-SBB-DB-DBB valves

For instructions on how to remove and reassemble the components of the KITS listed below, please refer to the Spare Parts Replacement Procedure documents:

KIT_RC_VSF_FB_01
KIT_RC_VSF_RB_01

The first module applies to full-bore ball valves, and the second to reduced-bore ball valves. These modules contain the necessary instructions for safely replacing the following spare parts:

2 metal spheres
2 PEEK seats
2 closure sealing rings in graphite
4 stem sealing rings in graphite
2 O-rings or 2 Lip Seals (per closure)
2 O-rings or 2 Lip Seals (per stem)
1 Bonnet
1 Protective cap

10.0 Torsion torque values for operating the bonnet

Maximum torque for bonnet maneuver: 0.8 Nm (0.6 lb.ft).

11.0 Tightening torque values for the seal compression nut

Seal compression nut tightening torque: 10 Nm (7.4 lb.ft).

12.0 Drawing of the valve

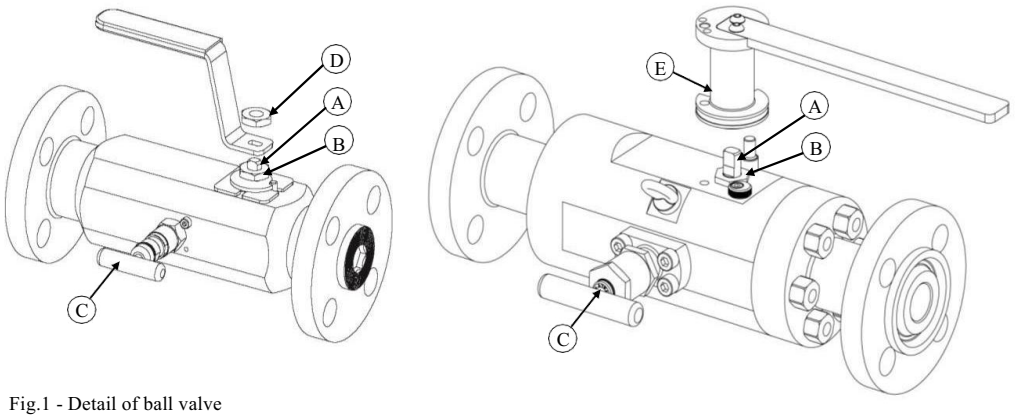
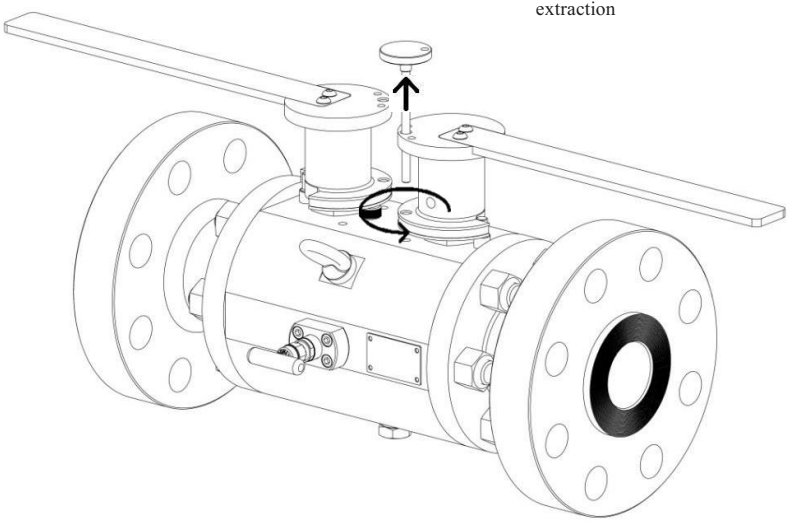


Fig.1 - Detail of ball valve
SB-SBB-DB-DBB

Fig.1A - Detail of ball valve
SB-SBB-DB-DBB with locking device

Anti-clockwise rotation for extraction



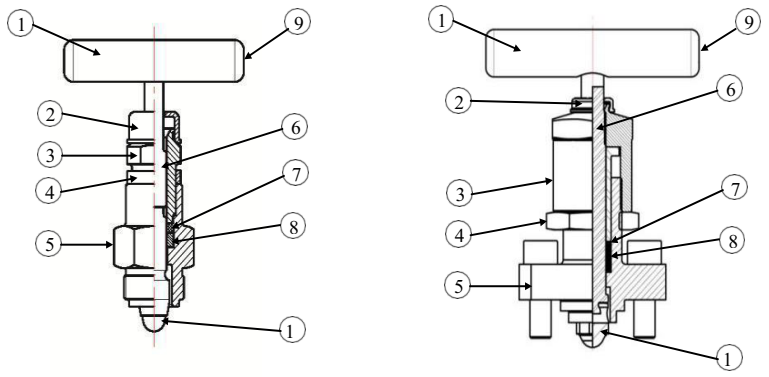


Fig. 2 Detail of bonnet components

INDRA Valves
Head Office: Via Novara 10B/C, Magenta 20013, Milan - Italy
Telephone No.: +39.02.97298663
Fax: +39.02.97291855
E-Mail: indra@indra.it
Website: http://www.indra.it

PART 1 – DESIGN DOSSIER

CHAPTER 4

SECTION 11

SPARE PART INDEX REGISTER (COMMISSIONING, 2 YEARS OPERATION, CAPITAL)

ROSETTI MARINO

1	NO COMMENTS - APPROVED - WORK MAY PROCEED
2	MINOR COMMENTS - REVISE AND RESUBMIT - WORK MAY PROCEED
3	MAJOR COMMENTS – REJECTED – DO NOT PROCEED
4	APPROVAL NOT REQUIRED

NOTE: Approval doesn't relieve the supplier from mandatory compliance with contractual documents and specifications. Comments made do not imply acceptance of any cost or delivery impact.

Sign	Date
Mauro Liberato	27.11.24

se Load Power Hub (BLPH)

SPARE PART INDEX REGISTER (COMMISSIONING, 2-YEARs OPERATION, CAPITAL) BALL, SBB, DBB VALVES

Document Number: 1724000798-COM-LIS-00014

Document Class: 2

Rev.	Date	Description	Prepared	Reviewed	Approved
02	26/11/2024	Accepted for Construction (AFC)	F.CRIMELLA	G.GRANATA	A.DE CARLI
01	23/10/2024	Accepted for Construction (AFC)	F.CRIMELLA	G.GRANATA	A.DE CARLI
00	07/10/2024	Issue for Review (IFR)	F.CRIMELLA	G.GRANATA	A.DE CARLI

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File: 1724000798-COM-LIS-00014_2.*docx*

Revision / Change Log

Rev.	Description
00	Issue for Review (IFR)
01	Accepted for Construction (AFC)
02	Accepted for Construction (AFC)

HOLDS LIST

No.	Description
1	
2	
3	
4	

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1 INTRODUCTION

1.1. PROJECT OVERVIEW

Crosswind, a Shell and Eneco joint venture, was awarded the tender to develop the offshore Hollandse Kust Noord (HKN) wind farm, located 18.5km off the coast of Netherlands near the town of Egmond aan Zee. The consortium plans to have HKN operational in 2023 with an installed capacity of 759MW generating at least 3.3TWh per year. This is sufficient renewable power to supply more than 1 million Dutch households with green electricity.

Offshore wind farms produce intermittent electricity and balancing these dips and peaks and integrating this electricity into the national energy system requires new technologies. For this reason, the offshore wind farm will include several new technologies that could be implemented at full-scale in the future. The new technologies being explored include a floating solar park, a short-duration battery storage as well as long-term storage via green hydrogen produced by water electrolysis and subsequently consumed in a fuel cell. The combination of these individual measures, herein referred to as the Base Load Power Hub (BLPH) will ensure a continuous power supply regardless of the wind situation.

1.1.1 Project Location

The Hollandse Kust Noord (HKN) wind farm is located 18.5km off the coast of the Netherlands near the town of Egmond aan Zee.



Figure 1 HOLLANDSE KUST NOORD WIND PARK Location Map



Figure 2 - Wind Park Details

The wind farm will consist of No. 69 x 11.5MW wind turbine generators each to be installed on a dedicated monopile structure. A 70th monopile located on coordinates E 590719.1, N 5841602.3 is reserved for installing the platform accommodating the BLPH. The monopile structure was designed and installed by Van Oord Offshore Wind (VooW) and therefore not part of the BLPH scope.

1.1.2 Project Concept

All components included in the BLPH will be integrated onshore on a topsides and installed in an offshore location within the boundaries of the HKN wind farm. At its simplest, the BLPH will store energy during periods of high electricity generation from renewable sources (a wind turbine generator and the floating solar PV farm) and release it during periods of low generation. In practice. It is expected that the energy stored will supplement generation from renewable sources to ensure that at least 1.0MW of power is exported to the electrical grid regardless of wind/solar availability.

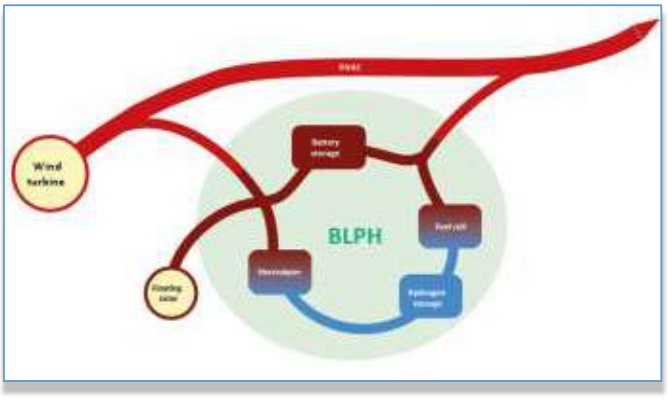


Figure 3 – BLPH Concept

Electricity in the BLPH will be stored in the form of electrons in a battery energy storage system (BESS) as well as converted into green hydrogen via water electrolysis. When the power output from the connecting wind turbine drops to below 1 MWe, the BLPH will return its stored energy to supplement the remaining power output. This will be by discharging the BESS, while stored hydrogen will be converted back into electricity using a fuel cell to extend the discharge duration.

The purpose of the BLPH s to function as a testbed for the integration of energy storage technologies with renewable generation. It is expected that equipment installed on the BLPH will operate as Normally Unmanned Installation for at least two (2) years with no or minimal maintenance and it will have its own independent control room with the ability to communicate with Crosswind's control room.

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SPARE PARTS LIST

ROSETTI MARINO

CROSSWIND

Document Title: **Commissioning and 2 years spare parts list**

The document relates to: **HOLLANDSE KUST NOORD WIND PARK Project - Base Load Power Hub (BLPH)**

Contract: **CW-I-WP4-2023-05**

Project ID: **123A90** | Doc. n°: **1724000798-COM-LIS-00014** | Rev.: **Accepted for Construction** | Rev. Date: 26/11/2024 | Status: **AFC** | Class: **2**

The equipment consists of the following units/components

Supplier: INDRA SRL | PO Number: 1721002632 | PO description: BALL VALVE | Contact name: MRS. GAIA GRANATA

Address: VIA NOVARA 10/B-C, MAGENTA (MI) - 20013, ITALY | Supplier telephone no: +39 035 584224 | Contact mobile no:

E-mail: g.granata@indra.it | WEBSITE: www.ind

General Information:

Quantity of parts FITTED / INSTALLED per unit/component	Tag No.	Tag description	Manufacturer model/Type no.	Manufacturer serial no.	Item Number (Sub-assembly/Individual item)	Description of recommended spare parts	Parts/drawing ref. Project Datasheet no.	Parts/drawing ref. Project Detail dwg. no.	Parts/drawing ref. Item ref.	Material	EC Exclusion Type (if applicable)	EC Exclusion Reference (if applicable)	Level (for spares)	Weight (net)	Weight (gross)	Volume	HS Code	ECCN Code	USA Content	Country of origin	Supplier part no.	Manufacturer part no.	Manufacturer name	Commissioning spares: Quantity ordered	2 Years spares: Quantity ordered	Remarks
No. of units																										
4	BLPH-MV-111	BALL VALVE	18-1198-25-210MV-I-00-FA	[TBA]	1	[TBA]																				
	BLPH-MV-210	BALL VALVE	18-1198-25-210MV-I-00-FA	[TBA]	15	[TBA]	B501C01RF	00.VSF.2684/V	5,6,7,10,12	As per GAD	N/A	N/A	N/A	-	-	-	8481900090	-		Italy	00.KIT.0416	00.KIT.0416	Indra	1	1	Kit valid also for code 00.VSF.2689/V and 00.VSF.2770/V and 00.VSF.2686/V
	BLPH-MV-242	BALL VALVE	18-1198-25-242MV-I-00-FA	[TBA]	2	[TBA]	B501C01RF	00.VSF.2687/V	5,6,7,10,12	As per GAD	N/A	N/A	N/A	-	-	-	8481900090	-		Italy	00.KIT.0416	00.KIT.0416	Indra	1	1	Kit valid also for code 00.VSF.2689/V and 00.VSF.2770/V and 00.VSF.2686/V
	BLPH-MV-149-270	BALL VALVE	18-1198-25-149MV-I-00-FA	[TBA]	2	[TBA]	B501C01RF	00.VSF.2690/V	5,6,7,10,12	As per GAD	N/A	N/A	N/A	-	-	-	8481900090	-		Italy	00.KIT.0420	00.KIT.0420	Indra	1	1	Kit valid also for code 00.VSF.2691/V
	BLPH-MV-024	BALL VALVE	18-1198-25-024MV-I-00-FA	[TBA]	2	[TBA]	B501C01RFH	00.VSF.2693/V	5,6,7,10,12	As per GAD	N/A	N/A	N/A	-	-	-	8481900090	-		Italy	00.KIT.0417	00.KIT.0417	Indra	1	1	
	BLPH-MV-028	BALL VALVE	18-1198-25-028MV-I-00-FA	[TBA]	5	[TBA]	B501C01RFH	00.VSF.2694/V	5,6,7,10,12	As per GAD	N/A	N/A	N/A	-	-	-	8481900090	-		Italy	00.KIT.0418	00.KIT.0418	Indra	1	1	
	BLPH-MV-172-044	BALL VALVE	18-1198-25-172MV-I-00-FA	[TBA]	3	[TBA]	B501F01RF	00.VSF.2685(T)	5,6,7,10,12	As per GAD	N/A	N/A	N/A	-	-	-	8481900090	-		Italy	00.KIT.0419	00.KIT.0419	Indra	1	1	
	BLPH-MV-044	BALL VALVE	18-1198-25-044MV-I-00-FA	[TBA]	2	[TBA]	B501F01RF	00.VSF.2688(T)	5,6,7,10,12	As per GAD	N/A	N/A	N/A	-	-	-	8481900090	-		Italy	00.KIT.0419	00.KIT.0419	Indra	1	1	
	BLPH-MV-054	BALL VALVE	18-1198-25-054MV-I-00-FA	[TBA]	2	[TBA]	BA01F01RF	00.VSF.2692(T)	5,6,7,10,12	As per GAD	N/A	N/A	N/A	-	-	-	8481900090	-		Italy	00.KIT.0421	00.KIT.0421	Indra	1	1	
	BLPH-MV-048	BALL VALVE	18-1198-25-048MV-I-00-FA	[TBA]	1	[TBA]	B501B01RH	00.VSF.2686/V	5,6,7,10,12	As per GAD	N/A	N/A	N/A	-	-	-	8481900090	-		Italy	00.KIT.0416	00.KIT.0416	Indra	0	0	Same Kit supplied for code 00.VSF.2687/V and 00.VSF.2684/V
	BLPH-MV-461	BALL VALVE	18-1198-25-461MV-I-00-FA	[TBA]	1	[TBA]	B501B01RH	00.VSF.2689/V	5,6,7,10,12	As per GAD	N/A	N/A	N/A	-	-	-	8481900090	-		Italy	00.KIT.0416	00.KIT.0416	Indra	0	0	Same Kit supplied for code 00.VSF.2687/V and 00.VSF.2684/V
	BLPH-MV-465	BALL VALVE	18-1198-25-465MV-I-00-FA	[TBA]	2	[TBA]	B501B01RH	00.VSF.2770/V	5,6,7,10,12	As per GAD	N/A	N/A	N/A	-	-	-	8481900090	-		Italy	00.KIT.0416	00.KIT.0416	Indra	0	0	Same Kit supplied for code 00.VSF.2687/V and 00.VSF.2684/V
	BLPH-MV-275	BALL VALVE	18-1198-25-275MV-I-00-FA	[TBA]	1	[TBA]	B501B01RH	00.VSF.2691/V	5,6,7,10,12	As per GAD	N/A	N/A	N/A	-	-	-	8481900090	-		Italy	00.KIT.0420	00.KIT.0420	Indra	0	0	Same Kit supplied for code 00.VSF.2690/V
	BLPH-MV-417	BALL VALVE	18-1198-25-417MV-I-00-FA	[TBA]	1	[TBA]	BA01P01KT	00.VSF.2683(T)	5,6,7,10,12	As per GAD	N/A	N/A	N/A	-	-	-	8481900090	-		Italy	00.KIT.0419	00.KIT.0419	Indra	1	1	
	BLPH-MV-263	BALL VALVE	18-1198-25-263MV-I-00-FA	[TBA]	2	[TBA]	BC01C01RFH	00.VSF.2695/V	5,6,7,10,12	As per GAD	N/A	N/A	N/A	-	-	-	8481900090	-		Italy	00.KIT.0422	00.KIT.0422	Indra	1	1	
	BLPH-MV-419	BALL VALVE	18-1198-25-419MV-I-00-FA	[TBA]	1	[TBA]	DA03C01RFH	00.VSF.2680/V	5,6,7,10,12	As per GAD	N/A	N/A	N/A	-	-	-	8481900090	-		Italy	00.KIT.0432	00.KIT.0432	Indra	1	3	
	BLPH-MV-412	BALL VALVE	18-1198-25-412MV-I-00-FA	[TBA]	2	[TBA]	DA03C01RFH	00.VSF.2681/V	6,7,8,11,13	As per GAD	N/A	N/A	N/A	-	-	-	8481900090	-		Italy	00.KIT.0433	00.KIT.0433	Indra	1	1	
	BLPH-MV-214	BALL VALVE	18-1198-25-214MV-I-00-FA	[TBA]	2	[TBA]	DA03C01RFH	00.VSF.2682/V	5,6,7,10,12	As per GAD	N/A	N/A	N/A	-	-	-	8481900090	-		Italy	00.KIT.0434	00.KIT.0434	Indra	1	1	
	BLPH-MV-460	BALL VALVE	18-1198-25-460MV-I-00-FA	[TBA]	1	[TBA]	DA03C01RF	00.VSF.2679/V	5,17,18,20,21	As per GAD	N/A	N/A	N/A	-	-	-	8481900090	-		Italy	00.KIT.0435	00.KIT.0435	Indra	1	1	
	BLPH-MV-402	BALL VALVE	18-1198-25-402MV-I-00-FA	[TBA]	1	[TBA]	DA03C01RFH	00.VSFT.0223/V	5,21,22,23,24,24a,26a-35a,27,28,29,30,43	As per GAD	N/A	N/A	N/A	-	-	-	8481900090	-		Italy	00.KIT.0436 / 00.KIT.0440	00.KIT.0436 / 00.KIT.0440	Indra	1	1	
	BLPH-MV-003	BALL VALVE	18-1198-25-003MV-I-00-FA	[TBA]	28	[TBA]	B501B01RFS	00.VSF.2697/V	5,6,7,10,12,G	As per GAD	N/A	N/A	N/A	-	-	-	8481900090	-		Italy	00.KIT.0425	00.KIT.0425	Indra	1	1	
	BLPH-MV-010	BALL VALVE	18-1198-25-010MV-I-00-FA	[TBA]	6	[TBA]	B501B01RFS	00.VSF.2699/V	6,7,8,11,13,G	As per GAD	N/A	N/A	N/A	-	-	-	8481900090	-		Italy	00.KIT.0426	00.KIT.0426	Indra	1	1	
	BLPH-MV-032	BALL VALVE	18-1198-25-032MV-I-00-FA	[TBA]	1	[TBA]	B501Q01RFHS	00.VSF.2701/V	5,6,7,10,12,G	As per GAD	N/A	N/A	N/A	-	-	-	8481900090	-		Italy	00.KIT.0427	00.KIT.0427	Indra	1	1	
	BLPH-MV-266	BALL VALVE	18-1198-25-266MV-I-00-FA	[TBA]	6	[TBA]	B501F01RFS	00.VSF.2698(T)	6,7,8,11,13,G	As per GAD	N/A	N/A	N/A	-	-	-	8481900090	-		Italy	00.KIT.0428	00.KIT.0428	Indra	1	1	
	BLPH-MV-019	BALL VALVE	18-1198-25-019MV-I-00-FA	[TBA]	1	[TBA]	B501Q01RFS	00.VSF.2696/V	5,6,7,10,12,G	As per GAD	N/A	N/A	N/A	-	-	-	8481900090	-		Italy	00.KIT.0429	00.KIT.0429	Indra	1	1	
	BLPH-MV-034	BALL VALVE	[TBA]	[TBA]	6	[TBA]	BA01C01RFHS	00.VSF.2702/V	5,6,7,10,12	As per GAD	N/A	N/A	N/A	-	-	-	8481900090	-		Italy	00.KIT.0430	00.KIT.0430	Indra	1	1	
	BLPH-MV-222	BALL VALVE	[TBA]	[TBA]	6	[TBA]	BA01C01RFHS	00.VSF.2700/V	5,17,18,20,21	As per GAD	N/A	N/A	N/A	-	-	-	8481900090	-		Italy	00.KIT.0431	00.KIT.0431	Indra	1	1	
	BLPH-MV-035	TRUNNION BV	[TBA]	[TBA]	6	[TBA]	BA01C01RFHS	00.VSFT.0224/V	5,21,22,23,24,24a,25,26,26a,27,28,29,30	As per GAD	N/A	N/A	N/A	-	-	-	8481900090	-		Italy	00.KIT.0424 / 00.KIT.0441	00.KIT.0424 / 00.KIT.0441	Indra	1	1	
	BLPH-MV-264	BALL VALVE	[TBA]	[TBA]	3	[TBA]	MD03C02YH	00.MNF.0604/V	G	As per GAD	N/A	N/A	N/A	-	-	-	8481900090	-		Italy	00.KIT.0439	00.KIT.0439	Indra	1	1	
	BLPH-MV-269	BALL VALVE	[TBA]	[TBA]	1	[TBA]	M501C02YH	00.MNF.0608/V	G	As per GAD	N/A	N/A	N/A	-	-	-	8481900090	-		Italy	00.KIT.0437	00.KIT.0437	Indra	0	0	Same Kit supplied for code00.MNF.0606/V
	BLPH-MV-271	BALL VALVE	[TBA]	[TBA]	2	[TBA]	M501C02Y	00.MNF.0605/V	G	As per GAD	N/A	N/A	N/A	-	-	-	8481900090	-		Italy	00.KIT.0437	00.KIT.0437	Indra	1	1	Kit valid also for code 00.MNF.0608/V and 00.MNF.0612/V
	BLPH-MV-278	BALL VALVE	[TBA]	[TBA]	2	[TBA]	M501B02Y	00.MNF.0606/V	G	As per GAD	N/A	N/A	N/A	-	-	-	8481900090	-		Italy	00.KIT.0438	00.KIT.0438	Indra	1	1	
	BLPH-MV-007	BALL VALVE	[TBA]	[TBA]	1	[TBA]	M501B02Y	00.MNF.0612/V	G	As per GAD	N/A	N/A	N/A	-	-	-	8481900090	-		Italy	00.KIT.0437	00.KIT.0437	Indra	0	0	Same Kit supplied for code00.MNF.0606/V
	BLPH-MV-009	BALL VALVE	[TBA]	[TBA]	2	[TBA]																				
	BLPH-MV-043	BALL VALVE	[TBA]	[TBA]	2	[TBA]																				
	BLPH-MV-050	BALL VALVE	[TBA]	[TBA]	1	[TBA]																				
	BLPH-MV-001	BALL VALVE	[TBA]	[TBA]	2	[TBA]																				
	BLPH-MV-002	BALL VALVE	[TBA]	[TBA]	7	[TBA]																				
	BLPH-MV-016	BALL VALVE	[TBA]	[TBA]	1	[TBA]																				
	BLPH-MV-006	BALL VALVE	[TBA]	[TBA]	14	[TBA]																				
	BLPH-MV-033	TRUNNION BV	[TBA]	[TBA]	4	[TBA]																				
	BLPH-MV-005	MONOFLANGE	[TBA]	[TBA]	2	[TBA]																				
	BLPH-MV-013	MONOFLANGE	[TBA]	[TBA]	1	[TBA]																				
	BLPH-MV-014	MONOFLANGE	[TBA]	[TBA]	3	[TBA]																				
	BLPH-MV-025-038	MONOFLANGE	[TBA]	[TBA]																						
	BLPH-MV-150	MONOFLANGE	[TBA]	[TBA]																						
	BLPH-MV-151	MONOFLANGE	[TBA]	[TBA]																						
	BLPH-MV-411	MONOFLANGE	[TBA]	[TBA]																						
	BLPH-MV-166	MONOFLANGE	[TBA]	[TBA]																						
	BLPH-MV-167	MONOFLANGE	[TBA]	[TBA]																						

PART 1 – DESIGN DOSSIER

CHAPTER 4

SECTION 11

SPARE PART INDEX REGISTER (COMMISSIONING, 2 YEARS OPERATION, CAPITAL)

ROSETTI MARINO

1	NO COMMENTS - APPROVED - WORK MAY PROCEED
2	MINOR COMMENTS - REVISE AND RESUBMIT - WORK MAY PROCEED
3	MAJOR COMMENTS – REJECTED – DO NOT PROCEED
4	APPROVAL NOT REQUIRED

NOTE: Approval doesn't relieve the supplier from mandatory compliance with contractual documents and specifications. Comments made do not imply acceptance of any cost or delivery impact.

Sign	Date
Mauro Liberato	16.04.25

e Load Power Hub (BLPH)

SPARE PART INDEX REGISTER (COMMISSIONING, 2-YEARs OPERATION, CAPITAL) BALL, SBB, DBB VALVES

Document Number: 1724000798-COM-LIS-00014

Document Class: 2

Rev.	Date	Description	Prepared	Reviewed	Approved
04	15/04/2025	Accepted for Construction (AFC)	F.CRIMELLA	G.GRANATA	A.DE CARLI
03	23/12/2024	Accepted for Construction (AFC)	F.CRIMELLA	G.GRANATA	A.DE CARLI
02	26/11/2024	Accepted for Construction (AFC)	F.CRIMELLA	G.GRANATA	A.DE CARLI
01	23/10/2024	Accepted for Construction (AFC)	F.CRIMELLA	G.GRANATA	A.DE CARLI
00	07/10/2024	Issue for Review (IFR)	F.CRIMELLA	G.GRANATA	A.DE CARLI

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Revision / Change Log

Rev.	Description
00	Issue for Review (IFR)
01	Accepted for Construction (AFC)
02	Accepted for Construction (AFC)
03	Accepted for Construction (AFC)
04	Accepted for Construction (AFC)

HOLDS LIST

No.	Description
1	
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3	
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1 INTRODUCTION

1.1. PROJECT OVERVIEW

Crosswind, a Shell and Eneco joint venture, was awarded the tender to develop the offshore Hollandse Kust Noord (HKN) wind farm, located 18.5km off the coast of Netherlands near the town of Egmond aan Zee. The consortium plans to have HKN operational in 2023 with an installed capacity of 759MW generating at least 3.3TWh per year. This is sufficient renewable power to supply more than 1 million Dutch households with green electricity.

Offshore wind farms produce intermittent electricity and balancing these dips and peaks and integrating this electricity into the national energy system requires new technologies. For this reason, the offshore wind farm will include several new technologies that could be implemented at full-scale in the future. The new technologies being explored include a floating solar park, a short-duration battery storage as well as long-term storage via green hydrogen produced by water electrolysis and subsequently consumed in a fuel cell. The combination of these individual measures, herein referred to as the Base Load Power Hub (BLPH) will ensure a continuous power supply regardless of the wind situation.

1.1.1 Project Location

The Hollandse Kust Noord (HKN) wind farm is located 18.5km off the coast of the Netherlands near the town of Egmond aan Zee.



Figure 1 HOLLANDSE KUST NOORD WIND PARK Location Map



Figure 2 - Wind Park Details

The wind farm will consist of No. 69 x 11.5MW wind turbine generators each to be installed on a dedicated monopile structure. A 70th monopile located on coordinates E 590719.1, N 5841602.3 is reserved for installing the platform accommodating the BLPH. The monopile structure was designed and installed by Van Oord Offshore Wind (VooW) and therefore not part of the BLPH scope.

1.1.2 Project Concept

All components included in the BLPH will be integrated onshore on a topsides and installed in an offshore location within the boundaries of the HKN wind farm. At its simplest, the BLPH will store energy during periods of high electricity generation from renewable sources (a wind turbine generator and the floating solar PV farm) and release it during periods of low generation. In practice. It is expected that the energy stored will supplement generation from renewable sources to ensure that at least 1.0MW of power is exported to the electrical grid regardless of wind/solar availability.

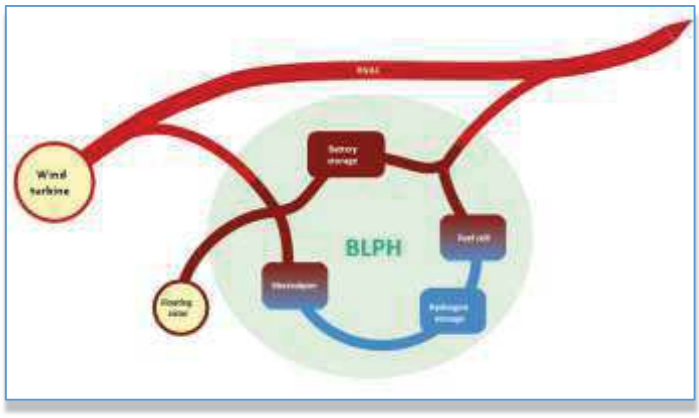


Figure 3 – BLPH Concept

Electricity in the BLPH will be stored in the form of electrons in a battery energy storage system (BESS) as well as converted into green hydrogen via water electrolysis. When the power output from the connecting wind turbine drops to below 1 MWe, the BLPH will return its stored energy to supplement the remaining power output. This will be by discharging the BESS, while stored hydrogen will be converted back into electricity using a fuel cell to extend the discharge duration.

The purpose of the BLPH s to function as a testbed for the integration of energy storage technologies with renewable generation. It is expected that equipment installed on the BLPH will operate as Normally Unmanned Installation for at least two (2) years with no or minimal maintenance and it will have its own independent control room with the ability to communicate with Crosswind's control room.

ROSETTI MARINO

SPARE PARTS LIST

CROSSWIND

Document Title	Commissioning and 2 years spare parts list
The document relates to	HOLLANDSE KUST NOORD WIND PARK Project - Base Load Power Hub (BLPH) — Contract: CW-I-WP4-2023-05
Project ID	123A90 — Doc. n° 1724000798-COM-LIS-00014 — Rev. 04 — Rev. Date 15/04/2025 — Status: AFC — Class 2

Supplier:	INDRA SRL	PO Number:	1721002632	PO description:	BALL VALVE
Address:	VIA NOVARA 10/B C MAGENTA (MI) - 20013 ITALY	Supplier telephone no:	+39 035 584224	Contact name:	MRS. GAIA GRANATA
		E mail:	g.granata@indra.it	Contact mobile no:	
				WEBSITE	www.ind

General Information:

The equipment consists of the following units/components

Unit	1 Tag no.	2 Tag description	3 Manufacturer model/type no.	4 Manufacturer serial no.	5 No. of units
1	BLPH-MV-111	BALL VALVE	[illegible]	105942	1
2	BLPH-MV-210 - BLPH-MV-242	BALL VALVE	[illegible]	105943-105957	15
3	BLPH-MV-149 - BLPH-MV-270	BALL VALVE	[illegible]	105958-105959	2
4	BLPH-MV-024 - BLPH-MV-028	BALL VALVE	[illegible]	105960-105961	2
5	BLPH-MV-172 - BLPH-MV-404	BALL VALVE	[illegible]	105962-105966	5
6	BLPH-MV-044 - BLPH-MV-054	BALL VALVE	[illegible]	105967-105969	3
7	BLPH-MV-048 - BLPH-MV-051	BALL VALVE	[illegible]	105970-105971	2
8	BLPH-MV-464 - BLPH-MV-465	BALL VALVE	[illegible]	105972-105973	2
9	BLPH-MV-275	BALL VALVE	[illegible]	105974	1
10	BLPH-MV-417	BALL VALVE	[illegible]	105977	1
11	BLPH-MV-263 - BLPH-MV-419	BALL VALVE	[illegible]	105975-105976	2
12	BLPH-MV-412	BALL VALVE	[illegible]	105978	1
13	BLPH-MV-214 - BLPH-MV-400	BALL VALVE	[illegible]	105979-105980	2
14	BLPH-MV-402	BALL VALVE	[illegible]	105981	1
15	BLPH-MV-003 - BLPH-MV-010	BALL VALVE	[illegible]	105982-106009	28
16	BLPH-MV-032 - BLPH-MV-266	BALL VALVE	[illegible]	106010-106015	6
17	BLPH-MV-019	BALL VALVE	[illegible]	106017	1
18	BLPH-MV-034 - BLPH-MV-	BALL VALVE	[illegible]	106018-106023	6
19	BLPH-MV-035 - BLPH-MV-	TRUNNION BV	[illegible]	106042-106047	6
20	BLPH-MV-269 - BLPH-MV-271	BALL VALVE	[illegible]	106024-106026	3
21	BLPH-MV-278	BALL VALVE	[illegible]	106027	1
22	BLPH-MV-007 - BLPH-MV-009	BALL VALVE	[illegible]	106028-106029	2
23	BLPH-MV-043 - BLPH-MV-050	BALL VALVE	[illegible]	106030-106031	2
24	BLPH-MV-001	BALL VALVE	[illegible]	106032	1
25	BLPH-MV-002 - BLPH-MV-016	BALL VALVE	[illegible]	106033-106034	2
26	BLPH-MV-006 - BLPH-MV-033	BALL VALVE	[illegible]	106035-106041	7
27	BLPH-MV-005	TRUNNION BV	[illegible]	106048	1
28	BLPH-MV-013 - BLPH-MV-014	MONOFLANGE	[illegible]	106049-106062	14
29	BLPH-MV-025 - BLPH-MV-038	MONOFLANGE	[illegible]	106063-106066	4
30	BLPH-MV-150 - BLPH-MV-151	MONOFLANGE	[illegible]	106067-106068	2
31	BLPH-MV-411	MONOFLANGE	[illegible]	106072	1
32	BLPH-MV-166 - BLPH-MV-167	MONOFLANGE	[illegible]	106069-106071	3

6 — Spare parts per unit/component (MATERIALS DATA)

Item Number	Unit marked (x)	7 Total number of identical spares installed	8 Description of recommended spare parts	9 Project Datasheet no.	10 Project Detail dwg. no.	11 Item ref.	12 Material	13 Certificate Type (if applicable)	14 Certificate Reference (if applicable)	15 Shelf life (years)	16 Weight (net)	17 Weight (gross)	18 Volume	19 HS Code	20 ECCN Code	21 % US Content	22 Country of origin	23 Supplier part no.	24 Manufacturer part no.	25 Manufacturer name	26 Commissioning spares – Quantity ordered	27 2 Years spares – Quantity ordered	28 Remarks
1	BLPH-MV-111	1	SOFT spare part kit for floating (O-Rings, Gaskets, Seat rings)	BS01C01RF	00.VSF.2684/V	5,6,7,10,12	As per GAD	N/A	N/A	N/A	-	-	-	8481900090	-		Italy	00.KIT.0416	00.KIT.0416	Indra	1	1	Kit valid also for code 00.VSF.2689/V and 00.VSF.2770/V and 00.VSF.2686/V
2	BLPH-MV-210 - BLPH-MV-242	15	SOFT spare part kit for floating (O-Rings, Gaskets, Seat rings)	BS01C01RF	00.VSF.2687/V	5,6,7,10,12	As per GAD	N/A	N/A	N/A	-	-	-	8481900090	-		Italy	00.KIT.0416	00.KIT.0416	Indra	1	1	Kit valid also for code 00.VSF.2689/V and 00.VSF.2770/V and 00.VSF.2686/V
3	BLPH-MV-149 - BLPH-MV-270	2	SOFT spare part kit for floating (O-Rings, Gaskets, Seat rings)	BS01C01RF	00.VSF.2690/V	5,6,7,10,12	As per GAD	N/A	N/A	N/A	-	-	-	8481900090	-		Italy	00.KIT.0420	00.KIT.0420	Indra	1	1	Kit valid also for code 00.VSF.2691/V
4	BLPH-MV-024 - BLPH-MV-028	2	SOFT spare part kit for floating (O-Rings, Gaskets, Seat rings)	BS01C01RFH	00.VSF.2693/V	5,6,7,10,12	As per GAD	N/A	N/A	N/A	-	-	-	8481900090	-		Italy	00.KIT.0417	00.KIT.0417	Indra	1	1	
5	BLPH-MV-172 - BLPH-MV-404	5	SOFT spare part kit for floating (O-Rings, Gaskets, Seat rings)	BS01C01RFH	00.VSF.2694/V	5,6,7,10,12	As per GAD	N/A	N/A	N/A	-	-	-	8481900090	-		Italy	00.KIT.0418	00.KIT.0418	Indra	1	1	
6	BLPH-MV-044 - BLPH-MV-054	3	SOFT spare part kit for floating (O-Rings, Gaskets, Seat rings)	BS01F01RF	00.VSF.2685(T)	5,6,7,10,12	As per GAD	N/A	N/A	N/A	-	-	-	8481900090	-		Italy	00.KIT.0419	00.KIT.0419	Indra	1	1	
7	BLPH-MV-048 - BLPH-MV-051	2	SOFT spare part kit for floating (O-Rings, Gaskets, Seat rings)	BS01F01RF	00.VSF.2688(T)	5,6,7,10,12	As per GAD	N/A	N/A	N/A	-	-	-	8481900090	-		Italy	00.KIT.0419	00.KIT.0419	Indra	1	1	
8	BLPH-MV-464 - BLPH-MV-465	2	SOFT spare part kit for floating (O-Rings, Gaskets, Seat rings)	BA01F01RF	00.VSF.2692(T)	5,6,7,10,12	As per GAD	N/A	N/A	N/A	-	-	-	8481900090	-		Italy	00.KIT.0421	00.KIT.0421	Indra	1	1	
9	BLPH-MV-275	1	SOFT spare part kit for floating (O-Rings, Gaskets, Seat rings)	BS01R01RF	00.VSF.2686/V	5,6,7,10,12	As per GAD	N/A	N/A	N/A	-	-	-	8481900090	-		Italy	00.KIT.0416	00.KIT.0416	Indra	0	0	Same Kit supplied for code 00.VSF.2687/V and 00.VSF.2684/V
10	BLPH-MV-417	1	SOFT spare part kit for floating (O-Rings, Gaskets, Seat rings)	BS01R01RF	00.VSF.2689/V	5,6,7,10,12	As per GAD	N/A	N/A	N/A	-	-	-	8481900090	-		Italy	00.KIT.0416	00.KIT.0416	Indra	0	0	Same Kit supplied for code 00.VSF.2687/V and 00.VSF.2684/V
11	BLPH-MV-263 - BLPH-MV-419	2	SOFT spare part kit for floating (O-Rings, Gaskets, Seat rings)	BS01R01RF	00.VSF.2770/V	5,6,7,10,12	As per GAD	N/A	N/A	N/A	-	-	-	8481900090	-		Italy	00.KIT.0416	00.KIT.0416	Indra	0	0	Same Kit supplied for code 00.VSF.2687/V and 00.VSF.2684/V
12	BLPH-MV-412	1	SOFT spare part kit for floating (O-Rings, Gaskets, Seat rings)	BS01B01RF	00.VSF.2691/V	5,6,7,10,12	As per GAD	N/A	N/A	N/A	-	-	-	8481900090	-		Italy	00.KIT.0420	00.KIT.0420	Indra	0	0	Same Kit supplied for code 00.VSF.2690/V
13	BLPH-MV-214 - BLPH-MV-400	2	SOFT spare part kit for floating (O-Rings, Gaskets, Seat rings)	BA01P01KT	00.VSF.2683(T)	5,6,7,10,12	As per GAD	N/A	N/A	N/A	-	-	-	8481900090	-		Italy	00.KIT.0419	00.KIT.0419	Indra	1	1	
14	BLPH-MV-402	1	SOFT spare part kit for floating (O-Rings, Gaskets, Seat rings)	BC01C01RFH	00.VSF.2695/V	5,6,7,10,12	As per GAD	N/A	N/A	N/A	-	-	-	8481900090	-		Italy	00.KIT.0422	00.KIT.0412	Indra	1	1	
15	BLPH-MV-003 - BLPH-MV-010	28	SOFT spare part kit for floating (O-rings, Gaskets, Stem packing of Needle, Seat Rings)	DA03C01RFH	00.VSF.2680/V	5,6,7,10,12	As per GAD	N/A	N/A	N/A	-	-	-	8481900090	-		Italy	00.KIT.0432	00.KIT.0432	Indra	1	3	
16	BLPH-MV-032 - BLPH-MV-266	6	SOFT spare part kit for floating (O-rings, Gaskets, Stem packing of Needle, Seat Rings)	DA03C01RFH	00.VSF.2681/V	6,7,8,11,13	As per GAD	N/A	N/A	N/A	-	-	-	8481900090	-		Italy	00.KIT.0433	00.KIT.0433	Indra	1	1	
17	BLPH-MV-019	1	SOFT spare part kit for floating (O-rings, Gaskets, Stem packing of Needle, Seat Rings)	DA03C01RFH	00.VSF.2682/V	5,6,7,10,12	As per GAD	N/A	N/A	N/A	-	-	-	8481900090	-		Italy	00.KIT.0434	00.KIT.0434	Indra	1	1	
18	BLPH-MV-034 - BLPH-MV-	6	SOFT spare part kit for floating (O-rings, Gaskets, Stem packing of Needle, Seat Rings)	DA03C01RFH	00.VSF.2679/V	5,17,18,20,21	As per GAD	N/A	N/A	N/A	-	-	-	8481900090	-		Italy	00.KIT.0435	00.KIT.0435	Indra	1	1	
19	BLPH-MV-035 - BLPH-MV-	6	SOFT spare part kit for floating (O-rings, Gaskets, Stem packing of Needle, Seat Rings)	DA03C01RFH	00.VSFT.0223/V	5,21,22,23,24,24a,26a 35a,27,28,29,30,43	As per GAD	N/A	N/A	N/A				8481900090			Italy	00.KIT.0436 / 00.KIT.0440	00.KIT.0436 / 00.KIT.0440	Indra	1	1	
20	BLPH-MV-269 - BLPH-MV-271	3	SOFT spare part kit for floating (O-rings, Gaskets, Stem packing of Needle, Seat Rings)	BS01B01RFS	00.VSF.2697/V	5,6,7,10,12,G	As per GAD	N/A	N/A	N/A				8481900090			Italy	00.KIT.0425	00.KIT.0425	Indra	1	1	
21	BLPH-MV-278	1	SOFT spare part kit for floating (O-rings, Gaskets, Stem packing of Needle, Seat Rings)	BS01B01RFS	00.VSF.2699/V	6,7,8,11,13,G	As per GAD	N/A	N/A	N/A				8481900090			Italy	00.KIT.0426	00.KIT.0426	Indra	1	1	
22	BLPH-MV-007 - BLPH-MV-009	2	SOFT spare part kit for floating (O-rings, Gaskets, Stem packing of Needle, Seat Rings)	DS01C01RFHS	00.VSF.2701/V	5,6,7,10,12,G	As per GAD	N/A	N/A	N/A				8481900090			Italy	00.KIT.0427	00.KIT.0427	Indra	1	1	
23	BLPH-MV-043 - BLPH-MV-050	2	SOFT spare part kit for floating (O-rings, Gaskets, Stem packing of Needle, Seat Rings)	BS01F01RFS	00.VSF.2698(T)	6,7,8,11,13,G	As per GAD	N/A	N/A	N/A	-	-	-	8481900090	-		Italy	00.KIT.0428	00.KIT.0428	Indra	1	1	
24	BLPH-MV-001	1	SOFT spare part kit for floating (O-rings, Gaskets, Stem packing of Needle, Seat Rings)	BS01C01RFS	00.VSF.2696/V	5,6,7,10,12,G	As per GAD	N/A	N/A	N/A	-	-	-	8481900090	-		Italy	00.KIT.0429	00.KIT.0429	Indra	1	1	
25	BLPH-MV-002 - BLPH-MV-016	2	SOFT spare part kit for floating (O-rings, Gaskets, Stem packing of Needle, Seat Rings)	BA01C01RFHS	00.VSF.2702/V	5,6,7,10,12	As per GAD	N/A	N/A	N/A	-	-	-	8481900090	-		Italy	00.KIT.0430	00.KIT.0430	Indra	1	1	
26	BLPH-MV-006 - BLPH-MV-033	7	SOFT spare part kit for floating (O-rings, Gaskets, Stem packing of Needle, Seat Rings)	BA01C01RFHS	00.VSF.2700/V	5,17,18,20,21	As per GAD	N/A	N/A	N/A	-	-	-	8481900090	-		Italy	00.KIT.0431	00.KIT.0431	Indra	1	1	
27	BLPH-MV-005	1	SOFT spare part kit for trunnion (O-Rings, Gaskets)	BA01C01RFHS	00.VSFT.0224/V	5,21,22,23,24,24a,25,26,26a, 27,28,29,30	As per GAD	N/A	N/A	N/A	-	-	-	8481900090	-		Italy	00.KIT.0424 / 00.KIT.0441	00.KIT.0424 / 00.KIT.0441	Indra	1	1	
28	BLPH-MV-013 - BLPH-MV-014	14	Stem Packing only	MD03C02YH	00.MNF.0604/V	G	As per GAD	N/A	N/A	N/A	-	-	-	8481900090	-		Italy	00.KIT.0439	00.KIT.0439	Indra	1	1	
29	BLPH-MV-025 - BLPH-MV-038	4	Stem Packing only	MS01C02YH	00.MNF.0608/V	G	As per GAD	N/A	N/A	N/A	-	-	-	8481900090	-		Italy	00.KIT.0437	00.KIT.0437	Indra	0	0	Same Kit supplied for code00.MNF.0606/V
30	BLPH-MV-150 - BLPH-MV-151	2	Stem Packing only	MS01C02Y	00.MNF.0605/V	G	As per GAD	N/A	N/A	N/A	-	-	-	8481900090	-		Italy	00.KIT.0437	00.KIT.0437	Indra	1	1	Kit valid also for code 00.MNF.0608/V and 00.MNF.0612/V
31	BLPH-MV-411	1	Stem Packing only	MS01B02Y	00.MNF.0606/V	G	As per GAD	N/A	N/A	N/A	-	-	-	8481900090	-		Italy	00.KIT.0438	00.KIT.0438	Indra	1	1	
32	BLPH-MV-166 - BLPH-MV-167	3	Stem Packing only	MS01B02Y	00.MNF.0612/V	G	As per GAD	N/A	N/A	N/A	-	-	-	8481900090	-		Italy	00.KIT.0437	00.KIT.0437	Indra	0	0	Same Kit supplied for code00.MNF.0606/V
33																							
34																							
35																							

PART 2 – CERTIFICATION DOSSIER

CHAPTER 1

SECTION 2

INTERNAL AND EXTERNAL INSPECTION CERTIFICATES/REPORTS (VENDORS)

SEE CHAPTER 3 SECTION 4

PART 2 – CERTIFICATION DOSSIER

CHAPTER 2

SECTION 2

MATERIALS CERTIFICATES (INCLUDING CONSUMABLES, SUCH AS ELECTRODES AND PAINT)

ROSETTI MARINO ITEM 10

COD.VBC0NN06943Q00

TAG: BLPH-MV-111

INDRA ITEM 10

COD. 00.VSF.2684/V

indra VALVES - ITALY

Certificazione dei materiali
EN 10204 3.1 come da allegati

Material certification
EN 10204 3.1 as per attachments

MD-02-04-IT-UK / VSF
Rev. 16
Data: 08-Nov-2018
CM/IT/UK

Nr. *No.* **24-1874** — **Data / *Date :*** **30-Sep-2024**

Cliente / *Customer* **ROSETTI MARINO SPA**

Vs. ordine Nr. / *Your order Nr.* **1724000798 REV.2** — **Data / *Date :*** **26-Jun-2024**

Ns. commessa Nr. / *Our job Nr.* **24 01216** — **Data / *Date :*** **3-Jul-2024**

Ns. D.D.T. Nr. / *Our advise note Nr.* — **Data / *Date :***

Ordine di produzione / Production order number : 24 01216/10 - 434829

Lotto / Material batch number : 434829

Pos. Cliente Customer Item	*Pos. Indra Indra Item*	*Codice / Code*		*Q.tà / Q.ty*	*Nr. di serie Serial Number*	*Descrizione /Description*
		Ns./ Our	*Vs. / Your*			
10	10	00.VSF.2684/V	VBC0NN06943Q00	1	105942	INDRA BALL VALVE SB-598-20-E150RF3-E-DLF-DL-CA3-N-RG-L1-TG-TGW-TV-PMI2-PD2-BI-CR-TA-FS-SPC1

Elenco / List

Componente / *Component*	Colata / Heat	Materiale *Material*	Numero del certificato Certificate number
Corpo Valvola / Valve Body	434829	AISI 316/316L NACE	MEST154678/2023/ - UT23006747
Closure E150RF3	436801	AISI 316/316L NACE	MEST100392/2023/ - UT23004311
Tirante / Stud bolt	572929	ASTM A193 B8M Cl.2	2402480
Dado / Nut	160903S05	ASTM A194 Gr.8M	5066
Stelo antiespulsione sfera / Ball stem	E30822	AISI 316/316L NACE	173501
Sfera / Ball	372009	AISI 316/316L NACE	2023008125

NOTE / **REMARKS :** TAG: BLPH-MV-111

PREPARATO DA: **ELEONORA RANZANI**
PREPARED BY: **DOCUMENTION MANAGER**

APPROVATO DA: **LUCIA NOSOTTI**
APPROVED BY: **QUALITY ASSURANCE MANAGER**

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x CROSSWIND
16/10/24 R

CORPO VALVOLA / VALVE BODY

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST154678 / 2023 /
Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: N. AF 23 03438
Bestell
Your order
Commande

Conferma ordine nr: MI23009312
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24000102
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato - Solubilizzato Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage

SPECIFICHE : Anforderungen / Requirements / Exigences	Note: Aufzeichnungen / Notes / Notes
AV 316L VALVES A 1.4401/1.4404 A	
MDS S01 5 316 A (0)	(0)Norsok-standard M-630 Edition 6, October 2013
AD 2000-M. W 2 2022 1.4401 A (1)	(1)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
AD 2000-M. W 2 2022 1.4404 A (2)	(2)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
API 6A 21 ANNEX M (3)	(3)Errata 1, April 2019-Errata 2, June 2020-Add. 1, July 2020
API 6D 25 ANNEX H (4)	(4)Revision November 2021
ASME SA182 2021 S31600/03 A (5)	(5)Section II Part A 2021 EDITION For products machined directly from bar refer to ASME SA479.
ASME SA276 2021 S31600/03 A (6)	(6)Section II Part A 2021 EDITION
ASME SA479 2021 S31600/03 A (7)	(7)Section II Part A 2021 EDITION
ASTM A182 2023 S31600/03 A (8)	(8)For products machined directly from bar refer also to ASTM A479.
ASTM A262 PR. E 2015 316/316L (9)	(9)Reapproved 2021
ASTM A276 2023 S31600/03 A	
ASTM A370 2022 .	
ASTM A479 2023A S31600/03 A	
ASTM E381 2022 .	
ASTM E562 2019 . (A)	(A)19E01
EN 10088 PART 3 2014 1.4401 A	
EN 10088 PART 3 2014 1.4404 A	
EN 10222 PART 5 2017 1.4401 A	
EN 10222 PART 5 2017 1.4404 A	
EN 10272 2016. 1.4401 A	
EN 10272 2016. 1.4404 A	
ISO 148-1 2016 .	
ISO 6892-1 2019 .	
NACE MR0103 2015 S31600/03 A (B)	(B)ANSI/NACE MR0103/ISO 17945 November 23, 2015
NACE MR0175 4 S31600/03 A (C)	(C)ANSI/NACE MR0175/ISO 15156-3:2020 Fourth edition, approved 21 Sep 2022

		Tolleranza: k12 Toleranz/Allowance/Tolerance					
Pos. nr. Pos. nr. Item nr. Nr. de poste	Oggetto Gegenstand Product description Descrip. du produit	Dimensioni - mm Abmessungen Dimension Dimension	Lunghezza - mm Länge Length Longueur	Colata Schmelze Heat Coulée	Pezzi Stückzahl Pieces Pièces	Peso - KG Gewicht Weight Poids	Lotto nr. Losnr. Lot nr. Lot nr.
0030	Tondo	110,000	5662/ 5732	434829	4	1727,0	107809800

INDRA s.r.l.
COPIA CONFORME ALL'ORIGINALE
VERIFIED TRUE COPY OF ORIGINAL

xCROSSWIND 16/10/24

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 10/01/2024 VCQ012 - MEST154678	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 1 di 7

CORPO VALVOLA / VALVE BODY

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST154678 / 2023 /

Cliente / Besteller/Purchaser/Client:
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr. / Bestell / Your order / Commande: N. AF 23 03438

Conferma ordine nr. / Werks/Our Order/Ref nr.: MI23009312

Avviso di Spedizione / Lieferanzeige/Packing list/B.L.: A-MI24000102

Stato di fornitura / Lieferzustand / Delivery state / Etat de livraison: Fucinato - Solubilizzato Pelato

Tipo di Elaborazione / Erschmelzungsart / Melting process / Mode d'elaboration: E+AOD

Qualità / Werkstoff/Grade/Nuance: 1.4401/1.4404/316/316L

Marca / Markenbezeichnung / Brand / Nuance: MVAPML (MAXIVAL)

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice: AV

Punzone del Collaudatore / Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur: MR

Punzonatura / Kennzeichnung / Marking / Marquage: 1.4401/1.4404/316/316L

TEST ALLO STATO DI FORNITURA
Test on delivery condition — Prüefung auf lieferbereitem produkt — test a l'etat de fourniture — Prueba sobre el material así come entregado

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess / Breite Diam Dicke / Width Diam Thickness / Larg diam epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement A5 %		Strizione Einschnürung Reduction of area Striction Z %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Hearte Hardness Durete HB		
Valori richiesti / Anforderungen/Required values / Valeurs démandées		min / max		205	240	510 / 690	45	-	-	-	-			- / 215		
A	10	20	L	273	308	573	58		63					169		
H	10	20	L	276	311	579	57		62					171		

TEST ALLO STATO DI FORNITURA
Test on delivery condition / Prüefung auf lieferbereitem produkt / Test a l'etat de fourniture / Prueba sobre el material así come entregado

TEST		min	max	
H	Dimensioni grano x ASTM E112			4
H	Ferrite delta %			0,5 %

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess / Breite Diam Dicke / Width Diam Thickness / Larg diam epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti / Anforderungen/Required values / Valeurs démandées		min / max		60	60	60	-	-	-	-	-	-
E	10X10	-196	L	257	258	255	2,395	2,382	2,308	80	80	80

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess / Breite Diam Dicke / Width Diam Thickness / Larg. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Hearte Hardness Durete		
Valori richiesti / Anforderungen/Required values / Valeurs démandées		min / max		205	-	515	-	40	-	50	-			-		
D	12,5	20	L	268		568		58		69						

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Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST154678 / 2023 /
Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: N. AF 23 03438
Bestell
Your order
Commande

Conferma ordine nr: MI23009312
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24000102
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato - Solubilizzato Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probesteb Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais. mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs demandées		min		60	60	60	-	-	-	-	-	-
		max										
F	10X10	-196	T	64	67	70	0,672	0,703	0,725	40	40	40

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probesteb Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais. mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion			Shear Shear		
Valori richiesti Anforderungen/Required values Valeurs demandées		min		100	100	100	-	-	-	-	-	-
		max										
J	10X10	20	L	280	285	286						
K	10X10	20	L	271	279	280						

Tensile testing according to ISO 6892-1
Impact testing according to ISO 148-1
Mechanical properties according to ASTM A370.
Ferrite content tested according to ASTM E562.

Analisi chimica
Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat Schmelze/Coulée																
	min	23,0	-	-	-	16,50	2,00	10,00	-	-	-	-	-	-	-	-
	max	28,0	0,030	1,00	2,00	18,00	2,50	13,00	-	0,045	0,030	0,100	-	-	-	-
	PRE		C %	Si %	Mn %	Cr %	Mo %	Ni %	Co %	P %	S %	N %				
434829	24,5		0,015	0,49	1,78	16,73	2,05	10,15	0,097	0,031	0,029	0,060				

Colata /Heat Schmelze/Coulée								
	min	14,0	-	-	-	-	-	-
	max	20,0	-	-	-	-	-	-
	Ni+(2*Mo)							
434829	14,3							

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 10/01/2024	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité	Direzione Prodotto Produktmanagement/Product Management/Direction Produit	Pagina
VCQ012 - MEST154678	R.BERTELLI	P.MESSORI	3 di 7

CORPO VALVOLA / VALVE BODY

Acciaierie Valbruna S.p.A.

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CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST154678 / 2023 /
Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: N. AF 23 03438
Bestell
Your order
Commande

Conferma ordine nr: MI23009312
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24000102
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato - Solubilizzato Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'essayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

Furnace calibrated according to API 6A REV 21th ED ANNEX M.
Furnace calibrated according to API 6D REV 25th ED ANNEX H.
Macroetch test per ASTM E381: acceptable.
Reduction ratio = 28,8 : 1
MATERIAL ET INSPECTED ACCORDING TO EN 10088-3 TAB.1
UT ACC. TO EN 10308 Cl.3
Treatment made on date 12/10/2021 in continuous
furnace FCB calibration expiry date 30/03/2022
Solution annealed 1080°C for 160'(total time)/ water cooled
ET ACC. TO EN 10088-3 TAB.1
"Issued in agreement with TÜV SÜD Industrie Service GMBH
(07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by
Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

Allegati / Anlagen / Enclosure / Attachments :
UT23006747 GT23001953

Sono state soddisfatte tutte le condizioni richieste
Die gestellten Anforderungen sind lt. Anlage erfüllt
The material has been furnished in accordance with the requirements
Le materiel à été trouvé conforme aux exigences

Controllo antimescolanza con tecnica XRF/OES portatile : OK
Verwechslungprüfung: durch XRF/QES Gerät geführt : OK
Antimixing testing performed with XRF/OES portable : OK
Contrôle antimélange svt technique XRF/QES portable : OK

Controllo visivo e dimensionale: soddisfa le esigenze
Besichtigung und Ausmessung: ohne Beanstandung
Visual inspection and dimensional checks:satisfactory
Contrôle visuel et dimensions: satisfaisant

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 10/01/2024 VCQ012 - MEST154678	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité **R.BERTELLI**	Direzione Prodotto Produktmanagement/Product Management/Direction Produit **P.MESSORI**	Pagina 4 di 7

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Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST154678 / 2023 /
Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: N. AF 23 03438
Bestell
Your order
Commande

Conferma ordine nr: MI23009312
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24000102
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato - Solubilizzato Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD`S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

W9F9F49ACE011248788AB CDEF123345689A

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CORPO VALVOLA / VALVE BODY

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		CONTROLLO CON ULTRASUONI *Ultrasonic testing - Ultraschallprüfung - Controle par ultrasons*	

mod. UT02 MEST154678 / 2023 /

Cliente : INDRA S.R.L. *Customer*	**Lotto nr : 107809800** *Mill order*

MARCA *Grade*	DIMENSIONI - mm *Size*	COLATA *Heat*	BARRE *Bars*	PESO *Weight*	LUNGHEZZA - mm *Length*	
MVAPML	Tondo 110,000	434829	N. 4	KG : 1727,0	5662	5732

T. TERMICO *Heat Treatement*	ESECUZIONE *Condition*	RUGOSITA' *Roughness*	TOLLERANZA *Tolerance*
Solubilizzato	Pelato	µm	k12

Istruzione : PROC CND 040 *Work Instruction*		**Criteri Accettabilità : A388/API 6A PSL3-EN 10308CL.3-ASME B16.34/IV** Acceptance Criteria

ELETTRONICA : Olympus Quickscan LT *Equipment*	
ACCOPPIANTE : ACQUA + 0253 SA *Couplant*	**VEL.CONTROLLO : 267 mm/sec** *Testing Speed*

TRASDUTTORI *Probes*	TIPO ONDA *Type of wave*	FREQUENZA (MHZ) *Frequency*	DIMENSIONI (MM) *Dimension*	ANGOLO *Angle*	TARATURA *Calibration*
64EL. 2.25MHZ	LONG.	2,25	128X25	0°	DAC

CONTROLLO AUTOMATICO [X] *Automatic inspection*	CONTROLLO MANUALE *Manual inspection*

NOTE :
Notes

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16/10/23 R

CONFORME [X] *Compliant*	CONFORME IN DEROGA [ ] *See Deviation*	NON CONFORME[ ] *Not Compliant*

ISPEZIONATO DA Inspected by	VERIFICATO DA Verified by	APPROVATO DA Approved by	COLLAUDATORE Inspector - Abnahmesachsverst - Inspecteur
FIRMA 01/08/2023 Date - Date	FIRMA	**P.Belloli** ISO 9712 LEV. 3 IND1900997 FIRMA P.Belloli	

Operatori, strumenti e documenti di riferimento, utilizzati per il collaudo del materiale, sono identificati, controllati e/o calibrati in accordo alle norme EN, ISO e ASTM, richiamate nelle pratiche operative e istruzioni di pertinenza / *Operators, Equipment and reference documents, used for material inspection, are identified, checked and/or calibrated in accordance with EN/ISO or ASTM standards, reported in relevant documents.*

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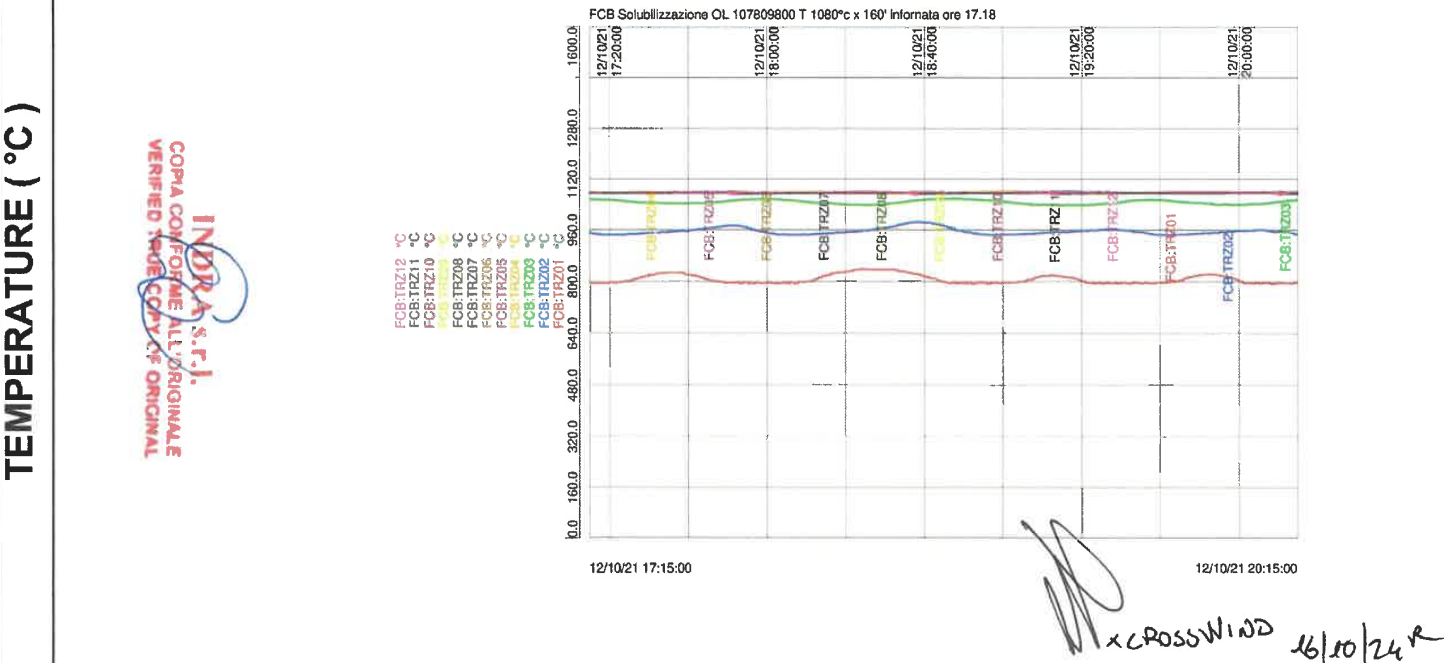
CERTIFICATO Certificate - Zeugnis - Certificat **N° GT23001953** **Pag 7 di 7**

Diagrammi di trattamento termico **MEST154678 / 2023 /**

Heat Treatment charts - Waermebehandlungs diagramm - Diagramme de traitement thermique

N° LOTTO : 107809800 Lot Number	**Note Dettaglio :** Detail Notes	**Note:** Notes

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Approved by:

CLOSURE E150RF3

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CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST100392 / 2023 /

Cliente / Besteller/Purchaser/Client:
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF23 02111
Bestell / Your order / Commande

Conferma ordine nr: MI23005930
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23004672
Lieferanzeige/Packing list/B.L.

Stato di fornitura / Lieferzustand / Delivery state / Etat de livraison: Fucinato - Solubilizzato Pelato

Tipo di Elaborazione / Erschmelzungsart / Melting process / Mode d'elaboration: E+AOD

Qualità / Werkstoff/Grade/Nuance: 1.4401/1.4404/316/316L

Marca / Markenbezeichnung / Brand / Nuance: MVAPML (MAXIVAL)

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice: AV

Punzone del Collaudatore / Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur: MR

Punzonatura / Kennzeichnung / Marking / Marquage: 1.4401/1.4404/316/316L

SPECIFICHE : / Anforderungen / Requirements / Exigences	Note: / Aufzeichnungen / Notes / Notes
AV 316L VALVES A 1.4401/1.4404 A	
MDS S01 5 316 A (0)	(0)Norsok-standard M-630 Edition 6, October 2013
AD 2000-M. W 2 01/20 1.4401 A (1)	(1)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
AD 2000-M. W 2 01/20 1.4404 A (2)	(2)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
API 6A 21 ANNEX M (3)	(3)Errata 1, April 2019-Errata 2, June 2020-Add. 1, July 2020
API 6D 25 ANNEX H (4)	(4)Revision November 2021
ASME SA182 2021 S31600/03 A (5)	(5)Section II Part A 2021 EDITION For products machined directly from bar refer to ASME SA479.
ASME SA276 2021 S31600/03 A (6)	(6)Section II Part A 2021 EDITION
ASME SA479 2021 S31600/03 A (7)	(7)Section II Part A 2021 EDITION
ASTM A182 2023 S31600/03 A (8)	(8)For products machined directly from bar refer also to ASTM A479.
ASTM A262 PR. E 2015 316/316L (9)	(9)Reapproved 2021
ASTM A276 2017 S31600/03 A	
ASTM A370 2022 .	
ASTM A479 2023A S31600/03 A	
ASTM E381 2022 .	
ASTM E562 2019 . (A)	(A)19E01
EN 10088 PART 3 2014 1.4401 A	
EN 10088 PART 3 2014 1.4404 A	
EN 10222 PART 5 2017 1.4401 A	
EN 10222 PART 5 2017 1.4404 A	
EN 10272 2016. 1.4401 A	
EN 10272 2016. 1.4404 A	
ISO 148-1 2016 .	
ISO 6892-1 2019 .	
NACE MR0103 2015 S31600/03 A (B)	(B)ANSI/NACE MR0103/ISO 17945 November 23, 2015
NACE MR0175 2015 S31600/03 A (C)	(C)ANSI/NACE MR0175/ISO 15156-3, third edition November 23,2015

		Tolleranza: k12 Toleranz/Allowance/Tolerance					
Pos. nr. Pos. nr Item nr. Nr. de poste	Oggetto Gegenstand Product description Descrip. du produit	Dimensioni - mm Abmessungen Dimension Dimension	Lunghezza - mm Länge Length Longueur	Colata Schmelze Heat Coulée	Pezzi Stückzahl Pieces Pieces	Peso - KG Gewicht Weight Poids	Lotto nr. Losnr Lot nr. Lot nr.
0100	Tondo	100,000	5321/ 5656	436801	2	681,0	301712220

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Vicenza, 02/08/2023 VCQ012 - MEST100392	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 1 di 7

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Telefono 0471.924111 - Fax 0471.924497

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Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF23 02111
Bestell
Your order
Commande

Conferma ordine nr: MI23005930
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23004672
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato - Solubilizzato Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

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Marchi di Fabbrica:
Zeichen des Herstellwerkes
Trade marks
Sigles de l'usine productrice

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Stempel des Werksachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage

TEST ALLO STATO DI FORNITURA
Test on delivery condition Prüefung auf lieferbereitem produkt test a l'etat de fourniture Prueba sobre el material así come entregado

1) L=longitudinale/längs, T=trasversale/quer, C=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Specs Breite Diam. Dicke Width Diam. Thickness Larg diam epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement A5 %		Strizione Einschnürung Reduction of area Striction Z %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Hearte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs démandées		min		205	240	510	45	-	-	-	-			-		
		max				690								215		
A	10	20	L	278	312	577	54		66					168		

TEST ALLO STATO DI FORNITURA
Test on delivery condition / Prüefung auf lieferbereitem produkt / Test a l'etat de fourniture / Prueba sobre el material así come entregado

TEST		min	max	
A	Dimensioni grano x ASTM E112			3
A	Ferrite delta %			1,2 %

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, C=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Specs Breite Diam. Dicke Width Diam. Thickness Larg diam epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagerbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs démandées		min		60	60	60	-	-	-	-	-	-
		max										
F	10X10	-196	L	276	270	271	2,210	2,223	2,234	70	70	70

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, C=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Specs Breite Diam. Dicke Width Diam. Thickness Larg diam epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Hearte Hardness Durete		
Valori richiesti Anforderungen/Required values Valeurs démandées		min		205	-	515	-	40	-	50	-			-		
		max														
D	12,5	20	L	278		582		55		73						

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 02/08/2023	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité	Direzione Prodotto Produktmanagement/Product Management/Direction Produit	Pagina
VCQ012 - MEST100392	R.BERTELLI	P.MESSORI	2 di 7

CLOSURE E150RF3

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST100392 / 2023 /

Cliente / Besteller/Purchaser/Client:
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF23 02111
Bestell / Your order / Commande

Conferma ordine nr: MI23005930
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23004672
Lieferanzeige/Packing list/B.L.

Stato di fornitura: Fucinato - Solubilizzato Pelato
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Herstellwerkes / Trade marks / Sigles de l'usine productrice: AV

Punzone del Collaudatore / Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur: MR

Punzonatura / Kennzeichnung / Marking / Marquage: 1.4401/1.4404/316/316L

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti / Anforderungen/Required values / Valeurs demandées		min		60	60	60	-	-	-	-	-	-
		max										
G	10X10	-196	T	64	67	60	0,590	0,576	0,598	30	30	30

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion			Shear Shear		
Valori richiesti / Anforderungen/Required values / Valeurs demandées		min		100	100	100	-	-	-	-	-	-
		max										
E	10X10	20	L	305	308	304						

Tensile testing according to ISO 6892-1

Impact testing according to ISO 148-1

Mechanical properties according to ASTM A370.

Ferrite content tested according to ASTM E562.

Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat Schmelze/Coulée																
	min	23,0	-	-	-	16,50	2,00	10,00	-	-	-	-	-	-	-	-
	max	28,0	0,030	1,00	2,00	18,00	2,50	13,00	-	0,045	0,030	0,100	-	-	-	-
	PRE		C %	Si %	Mn %	Cr %	Mo %	Ni %	Co %	P %	S %	N %				
436801	24,9		0,016	0,71	1,84	16,82	2,10	10,07	0,093	0,027	0,023	0,074				

Colata /Heat Schmelze/Coulée																
	min	14,0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	max	20,0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Ni+(2*Mo)															
436801	14,3															

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Vicenza, 02/08/2023	Direzione Qualità / Qualitätsmanagement/Quality Management/Gestion Qualité	Direzione Prodotto / Produktmanagement/Product Management/Direction Produit	Pagina
VCQ012 - MEST100392	R.BERTELLI	P.MESSORI	3 di 7

CLOSURE E150RF3

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36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
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Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST100392 / 2023 /

Cliente / Besteller/Purchaser/Client:
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr / Bestell / Your order / Commande: AF23 02111

Conferma ordine nr / Werks/Our Order/Ref nr.: MI23005930

Avviso di Spedizione / Lieferanzeige/Packing list/B.L.: A-MI23004672

Stato di fornitura / Lieferzustand / Delivery state / Etat de livraison: Fucinato - Solubilizzato Pelato

Tipo di Elaborazione / Erschmelzungsart / Melting process / Mode d'elaboration: E+AOD

Qualità / Werkstoff/Grade/Nuance: 1.4401/1.4404/316/316L

Marca / Markenbezeichnung / Brand / Nuance: MVAPML (MAXIVAL)

Produttore / Hersteller/Ken/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice: AV

Punzone del Collaudatore / Stempel des Werksachverständigen / Inspector's stamp/Poinçon de l'assayeur: MR

Punzonatura / Kennzeichnung / Marking / Marquage: 1.4401/1.4404/316/316L

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

Furnace calibrated according to API 6A REV 21th ED ANNEX M.
Furnace calibrated according to API 6D REV 25th ED ANNEX H.
Macroetch test per ASTM E381: acceptable.
Reduction ratio = 28,3 : 1
ET ACC. TO EN 10088-3 TAB.1
UT ACC. TO A388/API 6A PSL3-EN 10308cl.3-ASME B16.34/IV
Treatment made on date 17/03/2023 in continuous furnace
FCB calibration expiry date 14/08/2023,.
Solution annealed 1080°C for 150'(total time)/water cooled.
"Issued in agreement with TÜV SÜD Industrie Service GMBH (07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

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16/10/24

Allegati / Anlagen / Enclosure / Attachments :
UT23004311 GT23001184

Sono state soddisfatte tutte le condizioni richieste / Die gestellten Anforderungen sind it. Anlage erfüllt / The material has been furnished in accordance with the requirements / Le materiel à été trouvé conforme aux exigences

Controllo antimescolanza con tecnica XRF/OES portatile : OK / Verwechslungprüfung: durch XRF/QES Gerät geführt : OK / Antimixing testing performed with XRF/OES portable : OK / Contrôle antimélange svt technique XRF/QES portable : OK

Controllo visivo e dimensionale: soddisfa le esigenze / Besichtigufg und Ausmessung: ohne Beanstandung / Visual inspection and dimensional checks:satisfactory / Contrôle visuel et dimensions: satisfaisant

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 02/08/2023 VCQ012 - MEST100392	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité **R.BERTELLI**	Direzione Prodotto Produktmanagement/Product Management/Direction Produit **P.MESSORI**	Pagina 4 di 7

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
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Cliente / Besteller/Purchaser/Client:
INDRA S.R.L.
VIA NOVARA, 10/B-C
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Ordine nr: AF23 02111
Bestell / Your order / Commande

Conferma ordine nr: MI23005930
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Avviso di Spedizione: A-MI23004672
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Stato di fornitura: Fucinato - Solubilizzato Pelato
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Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
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Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore:
Hersteller/Item/Usine productrice
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung / Marking / Marquage

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD`S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

WAP29CC8657EAE0EB73FB73FC840EAF83C

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 02/08/2023 VCQ012 - MEST100392	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 5 di 7

	Acciaierie Valbruna S.p.A. 36100 VICENZA (Italia) - Viale della scienza, 25 z.i. Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4	**CERTIFICATO** Certificate - Zeugnis - Certificat **N° UT23004311**	Pag 6 di 7
		CONTROLLO CON ULTRASUONI *Ultrasonic testing - Ultraschallprüfung - Controle par ultrasons*	

mod. UT02

MEST100392 / 2023 /

Cliente : INDRA S.R.L. *Customer*				**Lotto nr : 301712220** *Mill order*	
MARCA *Grade*	**DIMENSIONI - mm** *Size*	**COLATA** *Heat*	**BARRE** *Bars*	**PESO** *Weight*	**LUNGHEZZA - mm** *Length*
MVAPML	Tondo 100,000	436801	N. 2	KG : 681,0	5321 / 5656

T. TERMICO *Heat Treatement*	**ESECUZIONE** *Condition*	**RUGOSITA'** *Roughness*	**TOLLERANZA** *Tolerance*
Solubilizzato	Pelato		k12

Istruzione : PROC CND 016 *Work Instruction*		**Criteri Accettabilità : A388/API 6A PSL3-EN 10308 cl.3-ASME B16.34/IV** Acceptance Criteria

ELETTRONICA : GE USIP 40
Equipment

ACCOPPIANTE : ACQUA + 0253 SA
Couplant

VEL.CONTROLLO : 30 m/min
Testing Speed

TRASDUTTORI *Probes*	**TIPO ONDA** *Type of wave*	**FREQUENZA (MHZ)** *Frequency*	**DIMENSIONI (MM)** *Dimension*	**ANGOLO** *Angle*	**TARATURA** *Calibration*
P12-2.5MHZ	LONGITUDINALE	2.5	12	0°	DAC

CONTROLLO AUTOMATICO [X] *Automatic inspection*	**CONTROLLO MANUALE** *Manual inspection*

NOTE :
Notes

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CONFORME [X] *Compliant*	**CONFORME IN DEROGA [ ]** *See Deviation*	**NON CONFORME[ ]** *Not Compliant*

ISPEZIONATO DA Inspected by	**VERIFICATO DA** Verified by	**APPROVATO DA** Approved by	**COLLAUDATORE** Inspector - Abnahmesachsverst - Inspecteur
		P.Belloli ISO 9712 LEV. 3 IND1900997	
FIRMA 01/08/2023 Date - Date	**FIRMA**	**FIRMA** P.Belloli	

Operatori, strumenti e documenti di riferimento, utilizzati per il collaudo del materiale, sono identificati, controllati e/o calibrati in accordo alle norme EN, ISO e ASTM, richiamate nelle pratiche operative e istruzioni di pertinenza / *Operators, Equipment and reference documents, used for material inspection, are identified, checked and/or calibrated in accordance with EN/ISO or ASTM standards, reported in relevant documents.*

Acciaierie Valbruna S.p.A.
36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4

CERTIFICATO Certificate - Zeugnis - Certificat **N° GT23001184** **Pag 7 di 7**

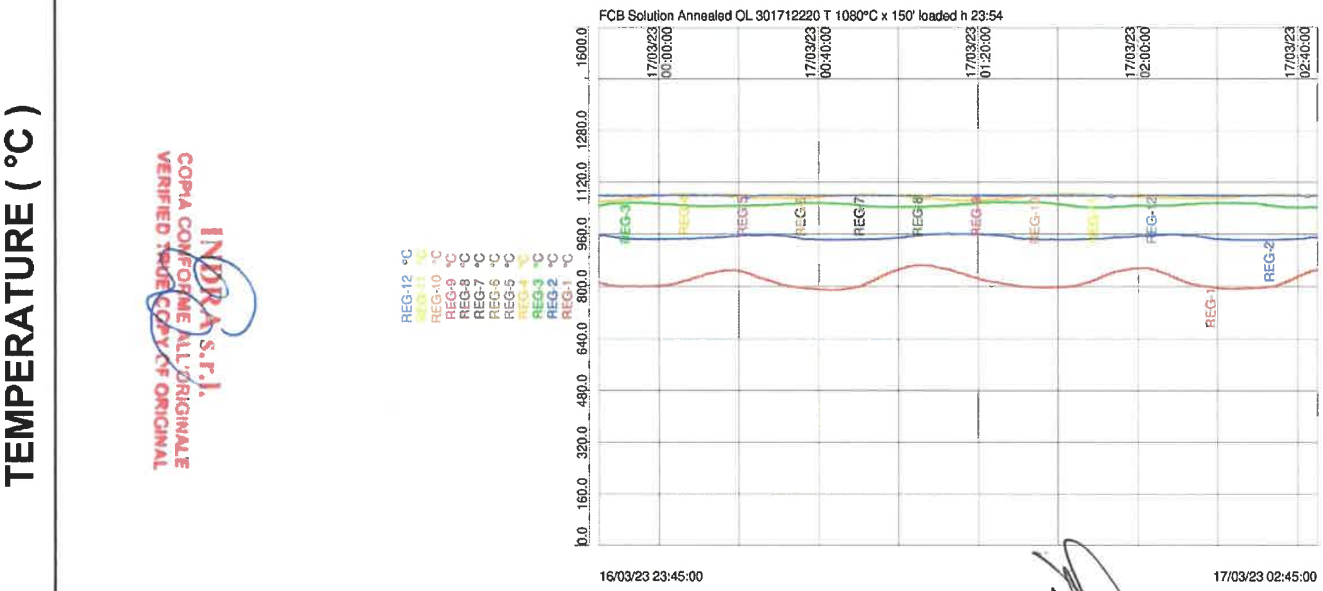
Diagrammi di trattamento termico

MEST100392 / 2023 /

Heat Treatment charts - Waermebehandlungs diagramm - Diagramme de traitement thermique

N° LOTTO : 301712220 Lot Number	Note Dettaglio : Detail Notes	Note: Notes

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Approved by:

TIRANTE / STUD BOLT

IPL S.r.l.
BULLONERIA - TIRANTERIA
SPECIALE E STANDARD

Via Papa Giovanni Paolo I, 306
21040 UBOLDO (VA)

Customer: **INDRA SRL**
C.SO XXII MARZO, 8
20135 MILANO (MI)

Date, 11-09-24 **Our Ref.** DDT 3209 / OC 1696 **of** 11-09-24 **Your Ref.** AF24 02662 01-08-24

CERTIFICATE UNI EN 10204 - 3.1 N.2402480

ITEM		QUANTITY	HEAT TREATMENT	PROTECTION	LOT nr.	HEAT nr.
TIR.82010030	STUDBOLT UNI6610/DIN976B - A/SA193-320 B8M CL.2 M 10 x 30	85,00	carb. sol. tr. + strain hard.		834976	572929

101.99.0962SS

MECHANICAL PROPERTIES

values	R (MPa)	Rs 0,2 (MPa)	A4 (%)	Z (%)	HB (min-max)
required	760 min	655 min	15 min.	45 min.	321 max
actual	785	684	28,0	69,0	240

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CHEMICAL COMPOSITION

values	C (%)	Mn (%)	Si (%)	P (%)	S (%)	Ni (%)	Cr (%)	Mo (%)	N (%)
required	0,08 max	2,00 max	1,00 max	0,045 max	0,030 max	10,00 - 14,00	16,00 - 18,00	2,00 - 3,00	
actual	0,014	1,830	0,370	0,027	0,027	10,13	17,03	2,080	

remarks: chemical and mechanical values, at delivery condition, are quoted by the relevant steel work certificate. VISUAL AND DIMENSIONAL TEST SATISFACTORY
According to: ASME II part. A ed. 2021

ACROSS WIND
16/10/24

If not mentioned the above test are performed at room temperature.
We certify that the fasteners were manufactured, sampled, tested and inspected in accordance with the specification and are consistent with order prescriptions.
Quality assurance system in accordance to European Directive 2014/68/EU annex I par. 4.3 (PED) and AD 2000 Merkblatt W0.
Certificates 0045/202/WZ1921/23 and TN/AD2000-W0/1921/23 TÜV NORD Systems GmbH & Co. KG.

IPL S.R.L.
RSQ A. Grisetti

DADO / NUT

t·e·c·n·o BOLT

CERTIFICATE	
Nr. 5066	26-07-24
Page 1/1	

INDRA SRL
VIA NOVARA 10/B-C
20013 MAGENTA MI
ITALIA

EN ISO 10204 3.1
CERTIFIED MATERIAL TEST REPORT

Your order: AF24 01970 24-06-24 Delivery note: 2000 26-07-24

Item	Materials	Description	Sizes	Batch	Heat		Quantity
9	ASTM A 194 Gr.8M 980.99.0002 Pos. 170 - 180 - 190 - 200 - 210 - 220 - 230 - 240 - 300	Dado UNI 5588/DIN 934 ASTM A 194 Gr.8M M Esagonale	10	64533	160903S05	N.	380



VOCE DOGANALE 73181900

MERCE DI ORIGINE ITALIA

CHEMICAL ANALYSIS

9		%C %	%Mn %	%P %	%S %	%Si %	%Cr %	%Ni %	%Mo %
	REQ. MIN.						16	10	2
	REQ. MAX.	0,08	2	0,045	0,030	1	18	14	3
	ACT.VAL.	0.033	0.950	0.033	0.002	0.340	16.400	10.050	2.020

MECHANICAL PROPERTIES

9		H HB	P.L. KN
	REQ. MIN.	126	
	REQ. MAX.	300	
	ACT. VAL.	147-156	29.9

We state that the material or fasteners, or both, were manufactered, sampled, tested and inspected in accordance with the specification and any supplementary requirements designated in the purchase/sales order and it was found to meet those requirements

tecnoBOLT s.r.l. - 20822 Seveso (MB) ITALY - way vignone n.7 - info@tecnobolt.com - www.tecnobolt.com

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STELO SFERA / BALL STEM

Rodacciai

23842 Bosisio Parini (LC) – Via Giuseppe Roda 1 – Italia
Tel. +39 031878111 – Fax +39 031878312
www.rodacciai.com – info@rodacciai.com

Azienda con sistema di gestione certificato da IGQ secondo UNI EN ISO 9001:2015

The Company's Quality Management System is certified by IGQ according to UNI EN ISO 9001:2015

CERTIFICATO DI CONTROLLO Inspection Certif N. 173501 Date 13/11/2023

Secondo According to . . . . . EN 10204:2004 3.1

ORDINE - Order
N. 23/3822 Date 10/11/2023

D.d.T. - Delivery note
N. 11634/04 Date 13/11/2023

Weight KG 128,00 **Odp. Nr.** 2022/A/13380
Tolerance ISO286-2 h9 + 0,000 - 0,043 mm **Bars Length** 3.000 - 3.050 mm

QUALITA' - Grade

STANDARD	EN 10088-3:2014	X2CrNiMo17-12-2	1.4404 / 316L
STANDARD	EN 10088-3:2023	X5CrNiMo17-12-2	1.4401 / 316

Mark RODACCIAI . . . . . 316 PLUS
PROFILO - Shape . . . . . ROUND
DIMENSIONE - Size . . . . . mm 18,00
ESECUZIONE - Form of delivery . . . . . ROUGH GROU.

COLATA - Heat E30822

ANALISI CHIMICA DI COLATA - Cast analysis % by mass

C	Mn	Si	S	P	Cr	Ni	Mo	Cu	Co	N
0,020	1,540	0,554	0,0290	0,031	16,620	10,020	2,030	0,441	0,280	0,0520

CARATTERISTICHE MECCANICHE ALLO STATO DI FORNITURA
Mechanical properties of the delivered material

		Tested
Tensile Strength	Rm (MPa)	695,3
Proof Stress	Rp (1) (MPa)	648,0
Proof Stress	Rp (0,2) (MPa)	580,7
Elongation	A 4 (%)	44,3
Elongation	A 5 (%)	41,1
Hardness	HBW	211,0
Reduction of area	Z (%)	68,0

NOTE - Notes

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Processo di Fusione: E + A. O. D.
Prova di Corrosione Intergranularena: ASTM A262-15 "E"
Trattamento termico: Temperatura di Solubilizzazione 1060°C
Tempo Mantenimento: 4 Ore, Raffreddamento in Acqua
Materiale conforme a: ASTM A276-16a / A479-16a / A182-24
ASME: SA479; SA276; SA182 - UNS 31600 - 31630 AISI 316-316L

Pag. 1 / Segue

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Rodacciai

23842 Bosisio Parini (LC) – Via Giuseppe Roda 1 – Italia
Tel. +39 031878111 – Fax +39 031878312
www.rodacciai.com – info@rodacciai.com

Azienda con sistema di gestione certificato da IGQ secondo UNI EN ISO 9001:2015

The Company's Quality Management System is certified by IGQ according to UNI EN ISO 9001:2015

Segue certificato di controllo N. 173501 Date 13/11/2023
Inspection Certificate's continuance

NOTE - Notes

Materiale Conforme a NACE MR-0175/ISO 15156-3:2015
NACE MR-103/ISO 17495-1:2016
Corrosione Intercristallina EN ISO 3651-2:98 Met.A

Melting Process: E + A. O. D
Intergranular corrosion tested to ASTM A262-15 "E"
Heat treatment: annealed temperature 1060°C
Soaking time: 4 Hours, Cooling in water
Material Compliant to: ASTM A276-16a / A479-16a / A182-24
ASME: SA479; SA276; SA182 - UNS 31600 - 31630 AISI 316-316L
According to: NACE MR-0175 / ISO 15156-3:2015
NACE MR-103/ISO 17495-1:2016
Intergranular Corrosion according to EN ISO 3651-2:98 Met.A

Surface quality condition 2H conforming also to EN 10277 class 3

We certify hereby, that the above mentioned products are consistent with the order prescriptions.
This certificate was generated by data system acc. to EN 10204, it is not necessary to be signed for validity.

Materiale conforme alle seguenti direttive/regolamenti europee:
- Regolamento REACH 2006/1907/CE e tutti successivi aggiornamenti, compresa la modifica M80 Direttiva Delegata 2022/1632, e SVHC Candidate List aggiornata al 17/01/2023.
- Direttiva ROHS 2011/657UE e tutti i successivi aggiornamenti, compresa la modifica M80 attraverso la Direttiva Delegata 2022/1632, e Decreto Legislativo 27 del 04/03/2014.
- Direttiva RAEE 2012/19/UE e tutti successivi aggiornamenti, compresa la modifica M1 attraverso la Direttiva 2018/849.
- Direttiva ELV (End-of-Life Vehicles) 2000/53/CE e tutti i successivi aggiornamenti, compresa la modifica M15 attraverso la Direttiva 2020/363
- Contaminazione Radioattiva, Direttiva 2013/59/EURATOM e Decreto Legislativo N.101 del 31 Luglio 2020.
- Canadian List 168 aggiornata al 16/03/2022.
- Minerali di Conflitto, Regolamento (UE) 2017/821 e tutti i successivi aggiornamenti, compresa la modifica M1 attraverso il Regolamento Delegato 2020/1588, e Dodd-Frank Wall Street Reform and Consumer Protection Act Section 1502.

Material conforming to the following European directives/regulation:
- REACH regulation 2006/1907/EC and all subsequent updates, including modification M80 Delegate Directive, and SVHC Candidate List updated to 01/17/2023.
- ROHS Directive 2011/65/EU and all subsequent updates, including the M80 amendment through the Delegated Directive 2022/1632, and Italian Legislative Decree 27 of 03/04/2014.
- WEEE Directive 2012/19/EU and all subsequent updates, including the M1 amendment through Directive 2018/849.
- ELV (End-of-Life Vehicles) Directive 2000/53/EC and all subsequent updates, including the modification M15 through Directive 2020/363
- Radioactive Contamination, Directive 2013/59/EURATOM and Italian Legislative Decree No. 101 of 31 July 2020.
- Canadian List 168 updated 03/16/2022.
- Conflict Minerals, Regulation (EU) 2017/821 and all subsequent updates, including amendment M1 through Delegated Regulation 2020/1588, and Dodd-Frank Wall Street Reform and Consumer Protection Act Section 1502.



Pag. 2 / 2 RODACCIAI: The Work Inspector
Alessia Porta

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COGNE ACCIAI SPECIALI S.p.a.

ITALY - 11100 AOSTA - VIA PARAVERA, 16
TEL.+39.0165.3021 - FAX.+39.0165.302296
CAP. SOC. 250.000.000 EUR INT. VERS.
C.F. 02187380967
VAT: IT00571320076 - R.E.A. n. AO-50474

Company with Management Systems certified according to ISO 9001, ITAF 16949, EN 9100, ISO 14001 and ISO 45001.

INSPECTION CERTIFICATE 3.1 (EN 10204:2004)
DOCUMENT NUMBER 2023008125

SFERA / BALL

CUSTOMER'S ORDER:	mail		
MANUFACTURER'S WORKS:	AOSTA, VIA PARAVERA 16 - ITALY		
PRODUCER OF THE DOC:	QUALITY DEPARTMENT		
MANUFACTURER'S WORKS ORDER NO:	0001137664 / 000020		
MARK OF THE MANUFACTURER:	COGNE		
DISPATCH NOTE:	81578978 / 000020 WEIGHT: 476 KG / 1049 LB		
INTERNAL SPEC:	AD2000MERKBLATTW10	TECHNICAL RULE:	AD2000
PRODUCT:	PEL PEELED ROUND BARS TOLERANCE: ISOK11		
SURFACE FINISH:	2B Cold Finished		
PRODUCT DELIVERY CONDITION:	RS SOLUTION ANNEALED		
PRODUCT DIMENSIONS (mm):	42,000 (1,654 in)	LENGTH (mm)	06000 06200 (00236 00244 in)
GRADE:	316L-S31600/31603-1.4404/1.4401	INTERNAL GRADE:	F316L IMCO
IDENTIFICATION HEAT NO:	372009	IDENTIFICATION LOT NO:	963880
MARKING OF THE PRODUCT:	1.4404	TEST PIECE N:	388

AISI 316/316L - UNS S31600/S31603 - 1.4404/1.4401
STEELMAKING EAF + AOD + CONTINUOUS CASTING
REFERENCE FOR APPLICABLE ASME STANDARD: SECTION II PART A ED. 2015-2017-2019-2021
THE MATERIAL IS PRODUCED ACCORDING TO SPECIFICATION AD2000-MERKBLATT W2/W10
DOCUMENT ISSUED IN AGREEMENT WITH TUEV BAYERN(11.1972) WAVING OF COUNTERSIGNING (SEE TUEV BAYERN LETTER DATED 17.01.80).
REFERENCE NORMS: EN 10088-3 2014, EN 10272 2016, ASTM A276/A276M, ASTM A479/A479M, ASTM A193 B8MCLASSE 1D, ASME SA276/SA276M, ASME SA479/SA479M, AMS 5653J, AMS 5648M, ISO15156-3/NACE MR0175 2015, NACE MR0103/ISO 17945, NORSOK M630 MDSS01 REV5.
REFERENCE NORMS FOR CHEMICAL COMPOSITION AND MECHANICAL PROPERTIES: ASTM A182, ASME SA182.
REFERENCE NORMS ONLY FOR CHEMICAL COMPOSITION: EN 10222-5 2017,ASTM A403-07a, ASTM A484-18a,ASTM A314-08, AMS-QQ-S-763D.
ASME SECT.II PART A EDITION 2015-2017-2019-2021
MATERIAL ACCORDING TO NACE MR0103/ISO 17945
HOT ROLLED
REDUCTION RATIO 16,8

CHEMICAL LADLE ANALYSIS ACCORDING TO ASTM A751 - EN ISO 14284
Control lot No. - Weight :020000951998 - 86.971 KG - 191.735 LB

ELEMENTS	C	Si	Mn	P	S	N	Cr	Mo	Ni	Cu
MEASUREMENT UNIT	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w
OBTAINED	0,016	0,41	1,81	0,024	0,025	0,071	16,89	2,10	10,25	0,39

ELEMENTS	Co
MEASUREMENT UNIT	% w/w
OBTAINED	0,12

HARDNESS TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000952723 - 2.519 KG - 5.553 LB
SPECIFICATION ENISO6506 HARDNESS TEST HB TESTING METHOD: 10/3000
OBTAINED 157

DATE 14.02.2023

BARBARA VIETTI MV(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne

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IMPACT TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000952723 - 2.519 KG - 5.553 LB
SPECIFICATION EN ISO 148-1-KV2 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 20
MEASUREMENT UNIT J
OBTAINED 441 429 433 438 430 440 428 442 442

TENSILE TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000952723 - 2.519 KG - 5.553 LB
SPECIFICATION EN-ISO6892-1 DIRECTION OF THE TEST PIECE: L

	RM	RP02	A5	Z	RP1
MEASUREMENT UNIT	MPA	MPA	% 5.0 D	%	NMM
OBTAINED	567	273	58,1	77,4	313
	577	281	52,0	72,5	317
	568	266	58,9	80,2	312

GRAIN SIZE
Control lot No. - Weight :020000952723 - 2.519 KG - 5.553 LB
SPECIFICATION ASTME112 --
OBTAINED 6

CORROSION TEST ACCORDING TO ASTM A262 PRACTICE E EN ISO 3651-2 PRACTICE A: SATISFACTORY.
MATERIAL ACCORDING TO ASME SEC. II Ed. 2015
IMPACT TEST
Control lot No. - Weight :020000952723 - 2.519 KG - 5.553 LB
SPECIFICATION EN ISO 148-1 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 196-
MEASUREMENT UNIT J
OBTAINED 185 200 188 196 192 176 198 188 173

TENSILE TEST
Control lot No. - Weight :020000952723 - 2.519 KG - 5.553 LB
SPECIFICATION ASTMA370-E8-0.5"SPEC DIRECTION OF THE TEST PIECE: L

	RMB	RP02B	ZB	AL2B
MEASUREMENT UNIT	KSI	KSI	%	% 4,0 D
OBTAINED	84	38	79,4	58,9
	83	38	72,4	63,9
	83	39	79,8	64,1

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The products delivered are conforming to EN10088-5 and bear the CE marking on the basis of the test results here reported and the continuous surveillance, assessment and approval by MPA NRW

DATE 14.02.2023 BARBARA VIETTI MV(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne

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VAT: IT00571320076 - R.E.A. n. AO-50474

Company with Management Systems certified according to ISO 9001, ITAF 16949, EN 9100, ISO 14001 and ISO 45001.

SFERA / BALL

(certificate no. 0432-CPR-00166-01)
Material produced according to the system #Regulation 305/2011/EU of the European Parliament and of the Council of 9 March 2011#
ULTRASONIC TEST ACCORDING TO EN 10308 Class.3: SATISFACTORY
EDDY CURRENT INSPECTION OF SURFACE ACCORDING TO EN 10277 CLASS 4.
DIMENSIONAL CONTROL ACCORDING TO EN 10278: SATISFACTORY.
NO WELDING REPAIR ON THE MATERIAL.
ANTIMIXING TEST BY PORTABLE SPECTROMETRE: CONFORMING
MARKING: SYMBOL OF THE MANUF. WORK, MATERIAL N. , CAST N., LOT N., RECEIVING AGENT STAMP
COUNTRY OF MELTING AND ORIGIN: ITALY, THE MATERIAL COMPLIES WITH FAR DFARS
252.225-7009 ALT 1.
THE PRODUCT SATISFIES THE DIRECTIVES: 2015/863/EU (ROHS3) - 2011/65/EU (ROHS2) - 2000/53/EU - 2002/95/EU(RoHS) - 2003/11/EU-
2005/618/EU AND PED 2014/68/EU.
ALL THE NORMS MENTIONED ARE INTENDED IN THEIR LAST REVISION AT THE DATE OF ISSUE OF THIS DOCUMENT.
MATERIAL ACCORDING TO NACE MR0103/ISO 17945
INSPECTOR'S STAMP LF
QUALITY SYSTEM CERTIFIED BY KIWA CERMET ACCORDING TO UNI EN ISO 9001:2015 -IATF 16949:2016 (THE LAST ONE ONLY FOR WIRE ROD AND HOT ROLLED-PEELED-GROUND STAINLESS STEEL BARS).
THE MATERIAL IS FREE OF ANY MERCURY, MERCURY COMPOUNDS AND OR RADIUM CONTAMINATION AT TIME OF SHIPMENT AND WAS PRODUCED WITHOUT USING OZONE DEPLETING SUBSTANCES OF CLASS I AND II.
RADIOACTIVITY CONTROL PERFORMED WITH A GAMMA SPECTROMETER: ASTM E181.
GAMMA ACTIVITY ON THE PRODUCTS BELOW 0.1 BQ/G ACCORDING TO EU RESOLUTION 2013/59/EURATOM , IAEA RS-G-1.7 AND IAEA SSG-17.

CE 0432

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16/10/24

DATE 14.02.2023

BARBARA VIETTI MV(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE

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ROSETTI MARINO ITEM 20

COD. VBC0NN06950100

TAG: BLPH-MV-210, BLPH-MV-242,

BLPH-MV-447, BLPH-MV-448, BLPH-MV-449, BLPH-MV-450, BLPH-MV-451, BLPH-MV-452, BLPH-MV-453, BLPH-MV-454, BLPH-MV-455, BLPH-MV-456, BLPH-MV-457, BLPH-MV-458 BLPH-MV-459

INDRA ITEM 20

COD. 00.VSF.2687/V

indra VALVES - ITALY

Certificazione dei materiali
EN 10204 3.1 come da allegati

Material certification
EN 10204 3.1 as per attachments

MD-02-04-IT-UK / VSF
Rev. 16
Data: 08-Nov-2018
CM/IT/UK

Nr. / *No.* **24-1875** — **Data** / *Date :* **30-Sep-2024**

Cliente / *Customer* **ROSETTI MARINO SPA**

Vs. ordine Nr. / *Your order Nr.* **1724000798 REV.2** — **Data** / *Date :* **26-Jun-2024**

Ns. commessa Nr. / *Our job Nr.* **24 01216** — **Data** / *Date :* **3-Jul-2024**

Ns. D.D.T. Nr. / *Our advise note Nr.* — **Data** / *Date :*

Ordine di produzione / Production order number : 24 01216/20 - 434829

Lotto / Material batch number : 434829

Pos. Cliente Customer Item	Pos. Indra Indra Item	Codice / Code		Q.tà / Q.ty	Nr. di serie Serial Number	Descrizione /Description
		Ns./ Our	Vs. / Your			
20	20	00.VSF.2687/V	VBC0NN06950100	15	From 105943 to 105957	INDRA BALL VALVE SB-598-25-F150RF3-F-DLF-DL-CA3-N-RG-L1-TG-TGW-TV-PMI2-PD2-BI-CR-TA-FS-SPC1

Elenco / List

Componente / *Component*	Colata / Heat	Materiale *Material*	Numero del certificato Certificate number
Corpo Valvola / Valve Body	434829	AISI 316/316L NACE	MEST154678/2023/ - UT23006747
Closure F150RF3	434829	AISI 316/316L NACE	MEST154678/2023/ - UT23006747
Tirante / Stud bolt	572929	ASTM A193 B8M Cl.2	2402480
Dado / Nut	160903S05	ASTM A194 Gr.8M	5066
Stelo antiespulsione sfera / Ball stem	E30822	AISI 316/316L NACE	173501
Sfera / Ball	072244	AISI 316/316L NACE	2020018438

NOTE / **REMARKS :** TAG: BLPH-MV-210, BLPH-MV-242, BLPH-MV-447, BLPH-MV-448, BLPH-MV-449, BLPH-MV-450, BLPH-MV-451, BLPH-MV-452, BLPH-MV-453, BLPH-MV-454, BLPH-MV-455, BLPH-MV-456, BLPH-MV-457, BLPH-MV-458, BLPH-MV-459

PREPARATO DA: **ELEONORA RANZANI**
PREPARED BY: **DOCUMENTION MANAGER**

APPROVATO DA: **LUCIA NOSOTTI**
APPROVED BY: **QUALITY ASSURANCE MANAGER**

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Tel. +39 02 97298663 r.a. - Fax +39 02 97291855
E-mail: indra@indra.it - http://www.indra.it

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CORPO VALVOLA / VALVE BODY - CLOSURE F150RF3

Acciaierie Valbruna S.p.A.

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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST154678 / 2023 /
Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: N. AF 23 03438
Bestell
Your order
Commande

Conferma ordine nr: MI23009312
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24000102
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato - Solubilizzato Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werksachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage

SPECIFICHE : Anforderungen / Requirements / Exigences	Note: Aufzeichnungen / Notes / Notes
AV 316L VALVES A 1.4401/1.4404 A	
MDS S01 5 316 A (0)	(0)Norsok-standard M-630 Edition 6, October 2013
AD 2000-M. W 2 2022 1.4401 A (1)	(1)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
AD 2000-M. W 2 2022 1.4404 A (2)	(2)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
API 6A 21 ANNEX M (3)	(3)Errata 1, April 2019-Errata 2, June 2020-Add. 1, July 2020
API 6D 25 ANNEX H (4)	(4)Revision November 2021
ASME SA182 2021 S31600/03 A (5)	(5)Section II Part A 2021 EDITION For products machined directly from bar refer to ASME SA479.
ASME SA276 2021 S31600/03 A (6)	(6)Section II Part A 2021 EDITION
ASME SA479 2021 S31600/03 A (7)	(7)Section II Part A 2021 EDITION
ASTM A182 2023 S31600/03 A (8)	(8)For products machined directly from bar refer also to ASTM A479.
ASTM A262 PR. E 2015 316/316L (9)	(9)Reapproved 2021
ASTM A276 2023 S31600/03 A	
ASTM A370 2022 .	
ASTM A479 2023A S31600/03 A	
ASTM E381 2022 .	
ASTM E562 2019 . (A)	(A)19E01
EN 10088 PART 3 2014 1.4401 A	
EN 10088 PART 3 2014 1.4404 A	
EN 10222 PART 5 2017 1.4401 A	
EN 10222 PART 5 2017 1.4404 A	
EN 10272 2016. 1.4401 A	
EN 10272 2016. 1.4404 A	
ISO 148-1 2016 .	
ISO 6892-1 2019 .	
NACE MR0103 2015 S31600/03 A (B)	(B)ANSI/NACE MR0103/ISO 17945 November 23, 2015
NACE MR0175 4 S31600/03 A (C)	(C)ANSI/NACE MR0175/ISO 15156-3:2020 Fourth edition, approved 21 Sep 2022.

		Tolleranza: k12 Toleranz/Allowance/Tolerance					
Pos. nr. Pos. nr. Item nr. Nr. de poste	Oggetto Gegenstand Product description Descrip. du produit	Dimensioni - mm Abmessungen Dimension Dimension	Lunghezza - mm Länge Length Longueur	Colata Schmelze Heat Coulée	Pezzi Stückzahl Pieces Pieces	Peso - KG Gewicht Weight Poids	Lotto nr. Losnr. Lot nr. Lot nr.
0030	Tondo	110,000	5662/ 5732	434829	4	1727,0	107809800

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16/12/24 R

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 10/01/2024 VCQ012 - MEST154678	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité **R.BERTELLI**	Direzione Prodotto Produktmanagement/Product Management/Direction Produit **P.MESSORI**	Pagina 1 di 7

CORPO VALVOLA / VALVE BODY - CLOSURE F150RF3

Acciaierie Valbruna S.p.A.

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In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST154678 / 2023 /
Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: N. AF 23 03438
Bestell
Your order
Commande

Conferma ordine nr: MI23009312
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24000102
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato - Solubilizzato Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore:
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage

TEST ALLO STATO DI FORNITURA
Test on delivery condition Prüefung auf lieferbereitem produkt test a l'etat de fourniture Prueba sobre el material asi come entregado

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais. mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement A5 %		Strizione Einschnürung Reduction of area Striction Z %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		205	240	510 690	45	-	-	-	-			-	215	
A	10	20	L	273	308	573	58		63					169		
H	10	20	L	276	311	579	57		62					171		

TEST ALLO STATO DI FORNITURA
Test on delivery condition / Prüefung auf lieferbereitem produkt / Test a l'etat de fourniture / Prueba sobre el material asi come entregado

TEST		min	max	
H	Dimensioni grano x ASTM E112			4
H	Ferrite delta %			0,5 %

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais. mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		60	60	60	-	-	-	-	-	-
E	10X10	-196	L	257	258	255	2,395	2,382	2,308	80	80	80

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais. mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		205	-	515	-	40	-	50	-			-		
D	12,5	20	L	268		568		58		69						

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 10/01/2024 VCQ012 - MEST154678	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 2 di 7

CORPO VALVOLA / VALVE BODY - CLOSURE F150RF3

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST154678 / 2023 /
Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: N. AF 23 03438
Bestell
Your order
Commande

Conferma ordine nr: MI23009312
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24000102
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato - Solubilizzato Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam Thickness Larg. diam epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		60	60	60	-	-	-	-	-	-
F	10X10	-196	T	64	67	70	0,672	0,703	0,725	40	40	40

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam Thickness Larg. diam epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion			Shear Shear		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		100	100	100	-	-	-	-	-	-
J	10X10	20	L	280	285	286						
K	10X10	20	L	271	279	280						

Tensile testing according to ISO 6892-1
Impact testing according to ISO 148-1
Mechanical properties according to ASTM A370.
Ferrite content tested according to ASTM E562.

Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat Schmelze/Coulée																
	min 23,0	-	-	-	-	16,50	2,00	10,00	-	-	-	-	-	-	-	-
	max 28,0	0,030	1,00	2,00	18,00	2,50	13,00	-	0,045	0,030	0,100	-	-	-	-	
	PRE	C %	Si %	Mn %	Cr %	Mo %	Ni %	Co %	P %	S %	N %					
434829	24,5	0,015	0,49	1,78	16,73	2,05	10,15	0,097	0,031	0,029	0,060					

Colata /Heat Schmelze/Coulée								
	min 14,0	-	-	-	-	-	-	-
	max 20,0	-	-	-	-	-	-	-
	Ni+(2*Mo)							
434829	14,3							

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16/10/24

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 10/01/2024 VCQ012 - MEST154678	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 3 di 7

CORPO VALVOLA / VALVE BODY - CLOSURE F150RF3

Acciaierie Valbruna S.p.A.

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Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST154678 / 2023 /

Cliente / Besteller/Purchaser/Client:
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: N. AF 23 03438
Bestell Your order Commande

Conferma ordine nr: MI23009312
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24000102
Lieferanzeige/Packing list/B.L.

Stato di fornitura: Fucinato - Solubilizzato Pelato
Lieferzustand Delivery state Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart Melting process Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung Brand / Nuance

Produttore:
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes Trade marks Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werksachverständigen Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung Marking Marquage

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	SATISFACTORY

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	SATISFACTORY

Furnace calibrated according to API 6A REV 21th ED ANNEX M.
Furnace calibrated according to API 6D REV 25th ED ANNEX H.
Macroetch test per ASTM E381: acceptable.
Reduction ratio = 28,8 : 1
MATERIAL ET INSPECTED ACCORDING TO EN 10088-3 TAB.1
UT ACC. TO EN 10308 Cl.3
Treatment made on date 12/10/2021 in continuous
furnace FCB calibration expiry date 30/03/2022
Solution annealed 1080°C for 160'(total time)/ water cooled
ET ACC. TO EN 10088-3 TAB.1
"Issued in agreement with TÜV SÜD Industrie Service GMBH
(07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by
Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

Allegati / Anlagen / Enclosure / Attachments :
UT23006747 GT23001953

Sono state soddisfatte tutte le condizioni richieste
Die gestellen Anforderungen sind it. Anlage erfüllt
The material has been furnished in accordance with the requirements
Le materiel à été trouvé conforme aux exigences

Controllo antimescolanza con tecnica XRF/OES portatile : OK
Verwechslungprüfung: durch XRF/OES Gerät geführt : OK
Antimixing testing performed with XRF/OES portable : OK
Contrôle antimélange svt technique XRF/OES portable : OK

Controllo visivo e dimensionale: soddisfa le esigenze
Besichtigung und Ausmessung: ohne Beanstandung
Visual inspection and dimensional checks:satisfactory
Contrôle visuel et dimensions: satisfaisant

2 CROSSINGS 16/10/24

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 10/01/2024 VCQ012 - MEST154678	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 4 di 7

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CORPO VALVOLA / VALVE BODY - CLOSURE F150RF3

Acciaierie Valbruna S.p.A.

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Certificato nr. / Prüfung/Test/Essai: MEST154678 / 2023 /

Cliente / Besteller/Purchaser/Client:
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr. / Bestell / Your order / Commande: N. AF 23 03438

Conferma ordine nr. / Werks/Our Order/Ref nr.: MI23009312

Avviso di Spedizione / Lieferanzeige/Packing list/B.L.: A-MI24000102

Stato di fornitura / Lieferzustand / Delivery state / Etat de livraison: Fucinato - Solubilizzato Pelato

Tipo di Elaborazione / Erschmelzungsart / Melting process / Mode d'elaboration: E+AOD

Qualità / Werkstoff/Grade/Nuance: 1.4401/1.4404/316/316L

Marca / Markenbezeichnung / Brand / Nuance: MVAPML (MAXIVAL)

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice: AV

Punzone del Collaudatore / Stempel des Werksachverständigen / Inspector's stamp/Poinçon de l'assayeur: MR

Punzonatura / Kennzeichnung / Marking / Marquage: 1.4401/1.4404/316/316L

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD'S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

WBPJF49ACE01234678ABCDEF123456899A

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16/10/2024

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 10/01/2024 VCQ012 - MEST154678	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 5 di 7

CORPO VALVOLA / VALVE BODY - CLOSURE F150RF3

	Acciaierie Valbruna S.p.A. 36100 VICENZA (Italia) - Viale della scienza, 25 z.i. Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4	**CERTIFICATO** Certificate - Zeugnis - Certificat **N° UT23006747**	**Pag 6 di 7**
		CONTROLLO CON ULTRASUONI *Ultrasonic testing - Ultraschallprüfung - Controle par ultrasons*	

mod. UT02 MEST154678 / 2023 /

Cliente : INDRA S.R.L. *Customer*	**Lotto nr : 107809800** *Mill order*

MARCA *Grade*	DIMENSIONI - mm *Size*	COLATA *Heat*	BARRE *Bars*	PESO *Weight*	LUNGHEZZA - mm *Length*	
MVAPML	Tondo 110,000	434829	N. 4	KG : 1727,0	5662	5732

T. TERMICO *Heat Treatement*	ESECUZIONE *Condition*	RUGOSITA' *Roughness*	TOLLERANZA *Tolerance*
Solubilizzato	Pelato	µm	k12

Istruzione : PROC CND 040 *Work Instruction*	**Criteri Accettabilità : A388/API 6A PSL3-EN 10308CL.3-ASME B16.34/IV** Acceptance Criteria

ELETTRONICA : Olympus Quickscan LT
Equipment

ACCOPPIANTE : ACQUA + 0253 SA
Couplant

VEL.CONTROLLO : 267 mm/sec
Testing Speed

TRASDUTTORI *Probes*	TIPO ONDA *Type of wave*	FREQUENZA (MHZ) *Frequency*	DIMENSIONI (MM) *Dimension*	ANGOLO *Angle*	TARATURA *Calibration*
64EL. 2.25MHZ	LONG.	2,25	128X25	0°	DAC

CONTROLLO AUTOMATICO [X] *Automatic inspection*	CONTROLLO MANUALE *Manual inspection*

NOTE :
Notes

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16/10/24

CONFORME [X] *Compliant*	CONFORME IN DEROGA [ ] *See Deviation*	NON CONFORME [ ] *Not Compliant*

ISPEZIONATO DA Inspected by	VERIFICATO DA Verified by	APPROVATO DA Approved by	COLLAUDATORE Inspector - Abnahmesachsverst - Inspecteur
FIRMA 01/08/2023 Date - Date	FIRMA	**P.Belloli** ISO 9712 LEV. 3 IND1900997 FIRMA	

Operatori, strumenti e documenti di riferimento, utilizzati per il collaudo del materiale, sono identificati, controllati e/o calibrati in accordo alle norme EN, ISO e ASTM, richiamate nelle pratiche operative e istruzioni di pertinenza / *Operators, Equipment and reference documents, used for material inspection, are identified, checked and/or calibrated in accordance with EN/ISO or ASTM standards, reported in relevant documents*

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Acciaierie Valbruna S.p.A.
36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4

CERTIFICATO Certificate - Zeugnis - Certificat **N° GT23001953** **Pag 7 di 7**

Diagrammi di trattamento termico **MEST154678 / 2023 /**

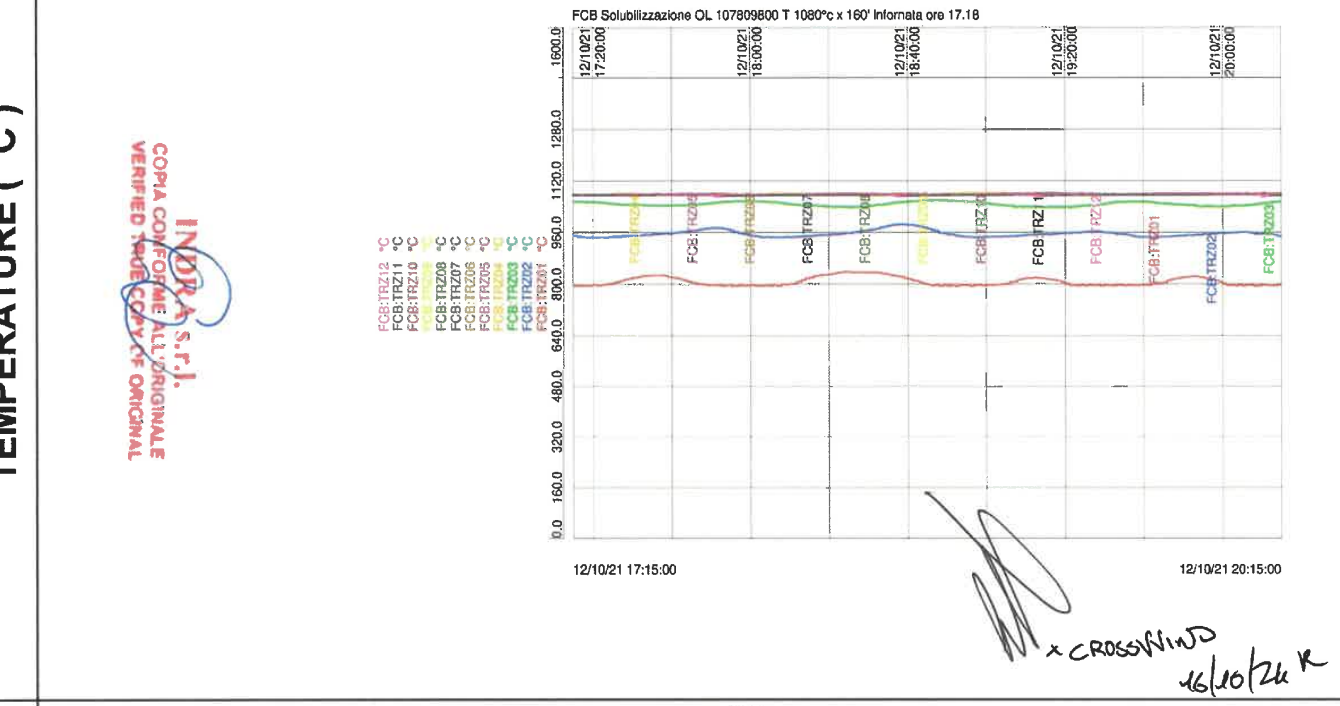
Heat Treatment charts - Waermebehandlungs diagramm - Diagramme de traitement thermique

N° LOTTO : 107809800
Lot Number

Note Dettaglio :
Detail Notes

Note:
Notes

TEMPERATURE (°C)



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x CROSSWIND 16/10/24 R

TIME (HOURS)

Approved by:

TIRANTE / STUD BOLT

IPL S.r.l.
BULLONERIA - TIRANTERIA
SPECIALE E STANDARD

Via Papa Giovanni Paolo I, 306
21040 UBOLDO (VA)

Customer: **INDRA SRL**
C.SO XXII MARZO, 8
20135 MILANO (MI)

Date, 11-09-24 **Our Ref.** DDT 3209 / OC 1696 **of** 11-09-24 **Your Ref.** AF24 02662 01-08-24

CERTIFICATE UNI EN 10204 - 3.1 N.2402480

ITEM		QUANTITY	HEAT TREATMENT	PROTECTION	LOT nr.	HEAT nr.
TIR.82010030	STUDBOLT UNI6610/DIN976B - A/SA193-320 B8M CL.2 M 10 x 30	85,00	carb. sol. tr. + strain hard.		834976	572929

101.99.0962SS

MECHANICAL PROPERTIES

values	R (MPa)	Rs 0,2 (MPa)	A4 (%)	Z (%)	HB (min-max)
required	760 min	655 min	15 min.	45 min.	321 max
actual	785	684	28,0	69,0	240

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CHEMICAL COMPOSITION

values	C (%)	Mn (%)	Si (%)	P (%)	S (%)	Ni (%)	Cr (%)	Mo (%)	N (%)
required	0,08 max	2,00 max	1,00 max	0,045 max	0,030 max	10,00 - 14,00	16,00 - 18,00	2,00 - 3,00	
actual	0,014	1,830	0,370	0,027	0,027	10,13	17,03	2,080	

remarks: chemical and mechanical values, at delivery condition, are quoted by the relevant steel work certificate. VISUAL AND DIMENSIONAL TEST SATISFACTORY
According to: ASME II part. A ed. 2021

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If not mentioned the above test are performed at room temperature.
We certify that the fasteners were manufactured, sampled, tested and inspected in accordance with the specification and are consistent with order prescriptions.
Quality assurance system in accordance to European Directive 2014/68/EU annex I par. 4.3 (PED) and AD 2000 Merkblatt W0.
Certificates 0045/202/WZ1921/23 and TN/AD2000-W0/1921/23 TÜV NORD Systems GmbH & Co. KG.

IPL S.R.L.
RSQ A. Grisetti

DADO / NUT

t·e·c·n·o BOLT

CERTIFICATE

Nr. 5066	26-07-24

Page 1/1

INDRA SRL
VIA NOVARA 10/B-C
20013 MAGENTA MI
ITALIA

EN ISO 10204 3.1
CERTIFIED MATERIAL TEST REPORT

Your order: AF24 01970 24-06-24 Delivery note: 2000 26-07-24

Item	Materials	Description	Sizes	Batch	Heat		Quantity
9	ASTM A 194 Gr.8M 980.99.0002 Pos. 170 - 180 - 190 - 200 - 210 - 220 - 230 - 240 - 300	Dado UNI 5588/DIN 934 ASTM A 194 Gr.8M M Esagonale	10	64533	160903S05	N.	380



VOCE DOGANALE 73181900

MERCE DI ORIGINE ITALIA

CHEMICAL ANALYSIS

9		%C %	%Mn %	%P %	%S %	%Si %	%Cr %	%Ni %	%Mo %
	REQ. MIN.						16	10	2
	REQ. MAX.	0,08	2	0,045	0,030	1	18	14	3
	ACT.VAL.	0.033	0.950	0.033	0.002	0.340	16.400	10.050	2.020

MECHANICAL PROPERTIES

9		H HB	P.L. KN
	REQ. MIN.	126	
	REQ. MAX.	300	
	ACT. VAL.	147-156	29.9

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16/10/24 R

We state that the material or fasteners, or both, were manufactered, sampled, tested and inspected in accordance with the specification and any supplementary requirements designated in the purchase/sales order and it was found to meet those requirements

tecnoBOLT s.r.l. - 20822 Seveso (MB) ITALY - way vignone n.7 - info@tecnobolt.com - www.tecnobolt.com

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STELO SFERA / BALL STEM

Rodacciai

23842 Bosisio Parini (LC) – Via Giuseppe Roda 1 – Italia
Tel. +39 031878111 – Fax +39 031878312
www.rodacciai.com – info@rodacciai.com

Azienda con sistema di gestione certificato da IGQ secondo UNI EN ISO 9001:2015

The Company's Quality Management System is certified by IGQ according to UNI EN ISO 9001:2015

CERTIFICATO DI CONTROLLO Inspection Certif N. 173501 Date 13/11/2023

Secondo According to . . . . . EN 10204:2004 3.1

ORDINE - Order N. 23/3822 Date 10/11/2023

D.d.T. - Delivery note N. 11634/04 Date 13/11/2023

Weight KG 128,00 **Odp. Nr.** 2022/A/13380
Tolerance ISO286-2 h9 + 0,000 - 0,043 mm **Bars Length** 3.000 - 3.050 mm

QUALITA' - Grade

STANDARD	EN 10088-3:2014	X2CrNiMo17-12-2	1.4404 / 316L
STANDARD	EN 10088-3:2023	X5CrNiMo17-12-2	1.4401 / 316

Mark RODACCIAI . . . . . 316 PLUS
PROFILO - Shape . . . . . ROUND
DIMENSIONE - Size . . . . . mm 18,00
ESECUZIONE - Form of delivery . . . . . ROUGH GROU.

COLATA - Heat E30822

ANALISI CHIMICA DI COLATA - Cast analysis % by mass

C	Mn	Si	S	P	Cr	Ni	Mo	Cu	Co	N
0,020	1,540	0,554	0,0290	0,031	16,620	10,020	2,030	0,441	0,280	0,0520

CARATTERISTICHE MECCANICHE ALLO STATO DI FORNITURA
Mechanical properties of the delivered material

		Tested
Tensile Strength	Rm (MPa)	695,3
Proof Stress	Rp (1) (MPa)	648,0
Proof Stress	Rp (0,2) (MPa)	580,7
Elongation	A 4 (%)	44,3
Elongation	A 5 (%)	41,1
Hardness	HBW	211,0
Reduction of area	Z (%)	68,0

NOTE - Notes

x CROSSED OUT 16/10/24

Processo di Fusione: E + A. O. D.
Prova di Corrosione Intergranularena: ASTM A262-15 "E"
Trattamento termico: Temperatura di Solubilizzazione 1060°C
Tempo Mantenimento: 4 Ore, Raffreddamento in Acqua
Materiale conforme a: ASTM A276-16a / A479-16a / A182-24
ASME: SA479; SA276; SA182 - UNS 31600 - 31630 AISI 316-316L

Pag. 1 / Segue

INDRA s.r.l.
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Rodacciai

23842 Bosisio Parini (LC) – Via Giuseppe Roda 1 – Italia
Tel. +39 031878111 – Fax +39 031878312
www.rodacciai.com – info@rodacciai.com

Azienda con sistema di gestione certificato da IGQ
secondo UNI EN ISO 9001:2015

The Company's Quality Management System
is certified by IGQ according to UNI EN ISO 9001:2015

Segue certificato di controllo N. 173501 Date 13/11/2023
Inspection Certificate's continuance

NOTE - Notes

Materiale Conforme a NACE MR-0175/ISO 15156-3:2015
NACE MR-103/ISO 17495-1:2016
Corrosione Intercristallina EN ISO 3651-2:98 Met.A

Melting Process: E + A. O. D
Intergranular corrosion tested to ASTM A262-15 "E"
Heat treatment: annealed temperature 1060°C
Soaking time: 4 Hours, Cooling in water
Material Compliant to: ASTM A276-16a / A479-16a / A182-24
ASME: SA479; SA276; SA182 - UNS 31600 - 31630 AISI 316-316L
According to: NACE MR-0175 / ISO 15156-3:2015
NACE MR-103/ISO 17495-1:2016
Intergranular Corrosion according to EN ISO 3651-2:98 Met.A

Surface quality condition 2H conforming also to EN 10277 class 3

We certify hereby, that the above mentioned products are consistent with the order prescriptions.
This certificate was generated by data system acc. to EN 10204, it is not necessary to be signed for validity.

Materiale conforme alle seguenti direttive/regolamenti europee:
. Regolamento REACH 2006/1907/CE e tutti successivi aggiornamenti, compresa la modifica M80 Direttiva Delegata 2022/1632, e SVHC Candidate List aggiornata al 17/01/2023.
. Direttiva ROHS 2011/657UE e tutti i successivi aggiornamenti, compresa la modifica M80 attraverso la Direttiva Delegata 2022/1632, e Decreto Legislativo 27 del 04/03/2014.
. Direttiva RAEE 2012/19/UE e tutti successivi aggiornamenti, compresa la modifica M1 attraverso la Direttiva 2018/849.
. Direttiva ELV (End-of-Life Vehicles) 2000/53/CE e tutti i successivi aggiornamenti, compresa la modifica M15 attraverso la Direttiva 2020/363
. Contaminazione Radioattiva, Direttiva 2013/59/EURATOM e Decreto Legislativo N.101 del 31 Luglio 2020.
. Canadian List 168 aggiornata al 16/03/2022.
. Minerali di Conflitto, Regolamento (UE) 2017/821 e tutti i successivi aggiornamenti, compresa la modifica M1 attraverso il Regolamento Delegato 2020/1588, e Dodd-Frank Wall Street Reform and Consumer Protection Act Section 1502.

Material conforming to the following European directives/regulation:
. REACH regulation 2006/1907/EC and all subsequent updates, including modification M80 Delegate Directive, and SVHC Candidate List updated to 01/17/2023.
. ROHS Directive 2011/65/EU and all subsequent updates, including the M80 amendment through the Delegated Directive 2022/1632, and Italian Legislative Decree 27 of 03/04/2014.
. WEEE Directive 2012/19/EU and all subsequent updates, including the M1 amendment through Directive 2018/849.
. ELV (End-of-Life Vehicles) Directive 2000/53/EC and all subsequent updates, including the modification M15 through Directive 2020/363
. Radioactive Contamination, Directive 2013/59/EURATOM and Italian Legislative Decree No. 101 of 31 July 2020.
. Canadian List 168 updated 03/16/2022.
. Conflict Minerals, Regulation (EU) 2017/821 and all subsequent updates, including amendment M1 through Delegated Regulation 2020/1588, and Dodd-Frank Wall Street Reform and Consumer Protection Act Section 1502.

Pag. 2 / 2 RODACCIAI: The Work Inspector
Alessia Porta

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COGNE ACCIAI SPECIALI S.p.a.

ITALY - 11100 AOSTA - VIA PARAVERA, 16
TEL.+39.0165.3021 - FAX.+39.0165.302296
CAP. SOC. 200.000.000 EUR INT. VERS.
C.F. 02187360967
VAT: IT00571320076 - R.E.A. n. AO-50474

Company with Management Systems certified according to ISO 9001, IATF 16949, EN 9100 and ISO 14001.

SFERA / BALL

CUSTOMER'S ORDER:	254		
MANUFACTURER'S WORKS:	AOSTA, VIA PARAVERA 16 - ITALY		
PRODUCER OF THE DOC:	QUALITY DEPARTMENT		
MANUFACTURER'S WORKS ORDER NO:	0001118068 / 000010		
MARK OF THE MANUFACTURER:	COGNE		
DISPATCH NOTE:	81346050 / 000010 WEIGHT: 232 KG / 512 LB		
THE CERTIFIED PRODUCTS ARE COMPLYING TO THE PURCHASE ORDER, EXCEPT FOR EXEMPTIONS AGREED WITH THE CUSTOMER, IF ANY.			
INTERNAL SPEC:	STOCKBARREW2	TECHNICAL RULE:	AD2000
PRODUCT:	PEL PEELED ROUND BARS TOLERANCE: ISOK11		
SURFACE FINISH:	2B Cold Finished		
PRODUCT DELIVERY CONDITION:	RS SOLUTION ANNEALED		
PRODUCT DIMENSIONS (mm):	45,000 (1,772 in)	LENGTH (mm)	06000 06200 (00236 00244 in)
GRADE:	AISI 316/316L EN1.4401/4404	INTERNAL GRADE:	F316L IMCO
IDENTIFICATION HEAT NO:	072244	IDENTIFICATION LOT NO:	201970
MARKING OF THE PRODUCT:	1.4404	TEST PIECE N:	197

REFERENCE NORMS: EN 10088-3 2014, EN 10272 2016, ASTM A276/A276M, ASTM A479/A479M, ASTM A193 B8MCLASSE 1D, ASME SA276/SA276M, ASME SA479/SA479M, AMS 5653J, AMS 5648M, ISO15156-3/NACE MR0175 2015, NACE MR0103/ISO 17945, NORSOK M630 MDSS01 REV5.
REFERENCE NORMS FOR CHEMICAL COMPOSITION AND MECHANICAL PROPERTIES: ASTM A182, ASME SA182.
REFERENCE NORMS ONLY FOR CHEMICAL COMPOSITION: EN 10222-5 2017,ASTM A403-07a, ASTM A484-18a,ASTM A314-08, AMS-QQ-S-763D.
ASME SECT.II PART A EDITION 2015-2017-2019
THE PRODUCT IS CONFORMING TO THE CONTRACT AGREEMENT AND TO THE RULE AD2000-MERKBLATT W0/W2.
ASTM A484 DOES NOT APPLY FOR SIZE AND LENGTH TOLERANCES.
STEELMAKING EAF + AOD + CONTINUOUS CASTING
REFERENCE NORM ASME BPVC.II.A-2015.
HOT ROLLED
REDUCTION RATIO 14,8

CHEMICAL LADLE ANALYSIS ACCORDING TO ASTM A751 - EN ISO 14284
Control lot No. - Weight :020000828767 - 83.288 KG - 183.616 LB

ELEMENTS	C	Si	Mn	P	S	N	Cr	Mo	Ni	Cu
OBTAINED	0,015	0,34	1,74	0,027	0,024	0,080	16,78	2,05	10,21	0,41

ELEMENTS	Co
OBTAINED	0,16

HARDNESS TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000828961 - 2.300 KG - 5.071 LB
SPECIFICATION ENISO6506 HARDNESS TEST HB TESTING METHOD: 10/3000
OBTAINED 171

IMPACT TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000828961 - 2.300 KG - 5.071 LB
SPECIFICATION EN ISO 148-1-KV2 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 20
MEASUREMENT UNIT J

OBTAINED	430	432	440	430	439	434	434	440	438	433
	431	439								

DATE 18.05.2020 BARBARA VIETTI MV(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne
REVIEW DATE 01.12.2021 N. REVIEW 1

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Company with Management Systems certified according to ISO 9001, IATF 16949, EN 9100 and ISO 14001.

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TENSILE TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000828961 - 2.300 KG - 5.071 LB
SPECIFICATION EN-ISO6892-1 DIRECTION OF THE TEST PIECE: L

	RM	RP02	A5	Z	RP1
MEASUREMENT UNIT	MPA	MPA	% 5.0 D	%	NMM
OBTAINED	578	286	56,1	80,5	321
	592	287	55,6	80,1	321
	582	274	54,2	79,4	306
	585	274	55,6	81,2	312

GRAIN SIZE
Control lot No. - Weight :020000828961 - 2.300 KG - 5.071 LB
SPECIFICATION ASTME112 --
OBTAINED 5 7

MATERIAL IN COMPLIANCE WITH THE NORSOK M-630 MDS S01
IMPACT TEST
Control lot No. - Weight :020000828961 - 2.300 KG - 5.071 LB
SPECIFICATION EN ISO 148-1 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 196-
MEASUREMENT UNIT J

OBTAINED	181	183	188	177	175	200	188	174	194	183
	197	173								

TENSILE TEST
Control lot No. - Weight :020000828961 - 2.300 KG - 5.071 LB
SPECIFICATION ASTMA370-E8-0.5"SPEC DIRECTION OF THE TEST PIECE: L

	RMB	RP02B	ZB	AL2B
MEASUREMENT UNIT	KSI	KSI	%	% 4,0 D
OBTAINED	85	40	80,7	59,7
	85	42	81,2	60,3
	86	42	81,3	60,1
	85	41	81,0	58,6

COUNTRY OF MELTING AND ORIGIN: ITALY, THE MATERIAL COMPLIES WITH FAR DFARS 252.225-7009 ALT 1.
The products delivered are conforming to EN10088-5 and bear the CE marking on the basis of the test results here reported and the continuous surveillance, assessment and approval by MPA NRW (certificate no. 0432-CPR-00166-01)
Material produced according to the system #Regulation 305/2011/EU of the European Parliament and of the Council of 9 March 2011#
DOCUMENT ISSUED IN AGREEMENT WITH TUEV BAYERN(11.1972) WAVING OF COUNTERSIGNING (SEE TUEV BAYERN LETTER DATED 17.01.80).
MARKING: SYMBOL OF THE MANUF. WORK, MATERIAL N. , CAST N., LOT N., RECEIVING AGENT STAMP
CORROSION TEST ACCORDING TO ASTM A262 PRACTICE E EN ISO 3651-2 PRACTICE A: SATISFACTORY.

DATE 18.05.2020 BARBARA VIETTI MV(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne
REVIEW DATE 01.12.2021 N. REVIEW 1

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Company with Management Systems certified according to ISO 9001, IATF 16949, EN 9100 and ISO 14001.

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ANTIMIXING TEST BY PORTABLE SPECTROMETRE: CONFORMING
EDDY CURRENT INSPECTION OF SURFACE ACCORDING TO EN 10277 CLASS 4.
DIMENSIONAL CONTROL ACCORDING TO EN 10278: SATISFACTORY.
NO WELDING REPAIR ON THE MATERIAL.
ULTRASONIC TEST ACCORDING TO EN 10308 Class.3: SATISFACTORY
QUALITY SYSTEM CERTIFIED TO UNI EN ISO 9001:2015 -IATF 16949:2016 (THE LAST ONE ONLY FOR WIRE ROD AND HOT ROLLED-PEELED-GROUND STAINLESS STEEL BARS).
MATERIAL ACCORDING TO NORSOK M630 EDITION 6.
INSPECTOR'S STAMP LF
THE PRODUCT SATISFIES THE DIRECTIVES: 2015/863/EU (ROHS3) - 2011/65/EU (ROHS2) - 2000/53/EU - 2002/95/EU(RoHS) - 2003/11/EU-2005/618/EU AND PED 2014/68/EU.
THE MATERIAL IS FREE OF ANY MERCURY, MERCURY COMPOUNDS AND OR RADIUM CONTAMINATION AT TIME OF SHIPMENT AND WAS PRODUCED WITHOUT USING OZONE DEPLETING SUBSTANCES OF CLASS I AND II.
RADIOACTIVITY CONTROL PERFORMED WITH A GAMMA SPECTROMETER: ASTM E181.
GAMMA ACTIVITY ON THE PRODUCTS BELOW 0.1 BQ/G ACCORDING TO EU RESOLUTION 2013/59/EURATOM , IAEA RS-G-1.7 AND IAEA SSG-17.

CE 0432

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16/10/2020

DATE 18.05.2020 BARBARA VIETTI MV(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne
REVIEW DATE 01.12.2021 N. REVIEW 1

ROSETTI MARINO ITEM 30

COD. VBC0NN06961H00

TAG: BLPH-MV-149, BLPH-MV-270

INDRA ITEM 30

COD. 00.VSF.2690/V

indra VALVES - ITALY	***Certificazione dei materiali*** ***EN 10204 3.1 come da allegati*** ***Material certification*** ***EN 10204 3.1 as per attachments***	**MD-02-04-IT-UK / VSF** **Rev. 16** **Data: 08-Nov-2018** **CM/IT/UK**

Nr. *No.* **24-1876** **Data / *Date :*** **30-Sep-2024**

Cliente / *Customer* **ROSETTI MARINO SPA**

Vs. ordine Nr. / *Your order Nr.* **1724000798 REV.2** **Data / *Date :*** **26-Jun-2024**

Ns. commessa Nr. / *Our job Nr.* **24 01216** **Data / *Date :*** **3-Jul-2024**

Ns. D.D.T. Nr. / *Our advise note Nr.* **Data / *Date :***

Ordine di produzione / Production order number : 24 01216/30 - 287185 (SN 105958)

Lotto / Material batch number : 287185 (SN 105958)

Ordine di produzione / Production order number : 24 01216/30 - 433737 (SN 105959)

Lotto / Material batch number : 433737 (SN 105959)

Pos. Cliente Customer Item	*Pos. Indra Indra Item*	*Codice / Code*		*Q.tà / Q.ty*	*Nr. di serie Serial Number*	*Descrizione /Description*
		Ns./ Our	*Vs. / Your*			
30	30	00.VSF.2690/V	VBC0NN06961H00	2	105958,105959	INDRA BALL VALVE SB-598-40-H150RF3-H-DLF-DL-CA3-N-RG-L1-TG-TGW-TV-PMI2-PD2-BI-CR-TA-FS-SPC1

Elenco / List

Componente / *Component*	Colata / Heat	Materiale *Material*	Numero del certificato Certificate number
Corpo Valvola / Valve Body (SN 105958)	287185	AISI 316/316L NACE	MEST091410/2023/ - UT23003877
Corpo Valvola / Valve Body (SN 105959)	433737	AISI 316/316L NACE	MEST007061/2024/ - UT24000303
Closure H150RF3	437589	AISI 316/316L NACE	MEST027755/2024/ - UT24001290
Tirante / Stud bolt	942054	ASTM A193 B8M Cl.2	5066
Dado / Nut	160903S05	ASTM A194 Gr.8M	5066
Stelo antiespulsione sfera / Ball stem	E30822	AISI 316/316L NACE	173501
Sfera / Ball	870156	AISI 316/316L NACE	2019003303 - N.US.155/19

NOTE / **REMARKS :** TAG: BLPH-MV-149, BLPH-MV-270

PREPARATO DA: **ELEONORA RANZANI**
PREPARED BY: **DOCUMENTION MANAGER**

APPROVATO DA: **LUCIA NOSOTTI**
APPROVED BY: **QUALITY ASSURANCE MANAGER**

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Tel. +39 02 97298663 r.a. - Fax +39 02 97291855
E-mail: indra@indra.it - http://www.indra.it

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16/10/24

CORPO VALVOLA / VALVE BODY (SN 105958)

Acciaierie Valbruna S.p.A.

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Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. Prüfung/Test/Essai: MEST091410 / 2023 /

Cliente / Besteller/Purchaser/Client:
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: N. AF23 01871
Bestell / Your order / Commande

Conferma ordine nr: MI23005210
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23004231
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Lieferzustand / Delivery state / Etat de livraison: Fucinato - Solubilizzato Pelato

Tipo di Elaborazione: Erschmelzungsart / Melting process / Mode d'elaboration: E+AOD

Qualità: Werkstoff/Grade/Nuance: 1.4401/1.4404/316/316L

Marca: Markenbezeichnung / Brand / Nuance: MVAPML (MAXIVAL)

Produttore : Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice: AV

Punzone del Collaudatore: Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur: MR

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung / Marking / Marquage

SPECIFICHE : Anforderungen / Requirements / Exigences	Note: Aufzeichnungen / Notes / Notes
AV 316L VALVES A 1.4401/1.4404 A	
MDS S01 5 316 A (0)	(0)Norsok-standard M-630 Edition 6, October 2013
AD 2000-M. W 2 01/20 1.4401 A (1)	(1)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
AD 2000-M. W 2 01/20 1.4404 A (2)	(2)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
API 6A 21 ANNEX M (3)	(3)Errata 1, April 2019-Errata 2, June 2020-Add. 1, July 2020
API 6D 25 ANNEX H (4)	(4)Revision November 2021
ASME SA182 2021 S31600/03 A (5)	(5)Section II Part A 2021 EDITION For products machined directly from bar refer to ASME SA479.
ASME SA276 2021 S31600/03 A (6)	(6)Section II Part A 2021 EDITION
ASME SA479 2021 S31600/03 A (7)	(7)Section II Part A 2021 EDITION
ASTM A182 2023 S31600/03 A (8)	(8)For products machined directly from bar refer also to ASTM A479.
ASTM A262 PR. E 2015 316/316L (9)	(9)Reapproved 2021
ASTM A276 2017 S31600/03 A	
ASTM A370 2022 .	
ASTM A479 2023A S31600/03 A	
ASTM E381 2022 .	
ASTM E562 2019 . (A)	(A)19E01
EN 10088 PART 3 2014 1.4401 A	
EN 10088 PART 3 2014 1.4404 A	
EN 10222 PART 5 2017 1.4401 A	
EN 10222 PART 5 2017 1.4404 A	
EN 10272 2016. 1.4401 A	
EN 10272 2016. 1.4404 A	
ISO 148-1 2016 .	
ISO 6892-1 2019 .	
NACE MR0103 2015 S31600/03 A (B)	(B)ANSI/NACE MR0103/ISO 17945 November 23, 2015
NACE MR0175 2015 S31600/03 A (C)	(C)ANSI/NACE MR0175/ISO 15156-3, third edition November 23,2015

		Tolleranza: k12 (Toleranz/Allowance/Tolerance)					
Pos. nr. (Pos. nr. / Item nr. / Nr. de poste)	Oggetto (Gegenstand / Product description / Descrip. du produit)	Dimensioni - mm (Abmessungen / Dimension / Dimension)	Lunghezza - mm (Länge / Length / Longueur)	Colata (Schmelze / Heat / Coulée)	Pezzi (Stückzahl / Pieces / Piezas)	Peso - KG (Gewicht / Weight / Poids)	Lotto nr. (Losnr. / Lot nr. / Lot nr.)
0130	Tondo	160,000	4901/ 4901	287185	1	786,0	228507830

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16/10/24

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 11/07/2023	Direzione Qualità (Qualitätsmanagement/Quality Management/Gestion Qualité)	Direzione Prodotto (Produktmanagement/Product Management/Direction Produit)	Pagina
VCQ012 - MEST091410	R.BERTELLI	P.MESSORI	1 di 7

CORPO VALVOLA / VALVE BODY (SN 105958)

Acciaierie Valbruna S.p.A.

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In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST091410 / 2023 /
Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: N. AF23 01871
Bestell
Your order
Commande

Conferma ordine nr: MI23005210
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23004231
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato - Solubilizzato Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage

TEST ALLO STATO DI FORNITURA
Test on delivery condition Prüefung auf lieferbereitem produkt test a l'etat de fourniture Prueba sobre el material asi come entregado

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement A5 %		Strizione Einschnürung Reduction of area Striction Z %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs démandées		min		205	240	510	45	-	-	-	-			-		
		max				690								215		
A	10	20	L	241	271	548	59		70					141		
I	10	20	L	244	276	553	56		70					144		

TEST ALLO STATO DI FORNITURA
Test on delivery condition / Prüefung auf lieferbereitem produkt / Test a l'etat de fourniture / Prueba sobre el material asi come entregado

TEST		min	max	
I	Dimensioni grano x ASTM E112			3
I	Ferrite delta %			1,1 %

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs démandées		min		60	60	60	-	-	-	-	-	-
		max										
E	10X10	-196	L	239	218	222	2,210	2,130	2,155	65	60	60

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete		
Valori richiesti Anforderungen/Required values Valeurs démandées		min		205	-	515	-	40	-	50	-			-		
		max														
C	12,5	20	L	247		545		63		73						

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 11/07/2023	Direzione Qualità	Direzione Prodotto	Pagina
VCQ012 - MEST091410	Qualitätsmanagement/Quality Management/Gestion Qualité	Produktmanagement/Product Management/Direction Produit	2 di 7
	R.BERTELLI	P.MESSORI	

CORPO VALVOLA / VALVE BODY (SN 105958)

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST091410 / 2023 /

Cliente / Besteller/Purchaser/Client:
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: N. AF23 01871
Bestell / Your order / Commande

Conferma ordine nr: MI23005210
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23004231
Lieferanzeige/Packing list/B.L.

Stato di fornitura: Fucinato - Solubilizzato Pelato
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore:
Hersteller/Item/Usine productrice
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werksachverständigen / Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung / Marking / Marquage

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg dem Spess. Breite Diam. Dicke Width Diam. Thickness Larg. dem. epais. mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		60	60	60	-	-	-	-	-	-
F	10X10	-196	T	98	82	83	0,803	0,761	0,783	50	45	45

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg dem Spess. Breite Diam. Dicke Width Diam. Thickness Larg. dem. epais. mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion			Shear Shear		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		100	100	100	-	-	-	-	-	-
D	10X10	20	L	307	319	312						
J	10X10	20	L	303	311	308						

Tensile testing according to ISO 6892-1
Impact testing according to ISO 148-1
Mechanical properties according to ASTM A370.
Ferrite content tested according to ASTM E562.

Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat / Schmelze/Coulée																
	min	23,0	-	-	-	16,50	2,00	10,00	-	-	-	-	-	-	-	-
	max	28,0	0,030	1,00	2,00	18,00	2,50	13,00	-	0,045	0,030	0,100	-	-	-	-
	PRE		C %	Si %	Mn %	Cr %	Mo %	Ni %	Co %	P %	S %	N %				
287185	24,9		0,016	0,40	1,68	16,85	2,07	10,00	0,155	0,028	0,028	0,077				

Colata /Heat / Schmelze/Coulée								
	min	14,0	-	-	-	-	-	-
	max	20,0	-	-	-	-	-	-
	Ni+(2*Mo)							
287185	14,1							

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 11/07/2023	Direzione Qualità / Qualitätsmanagement/Quality Management/Gestion Qualité	Direzione Prodotto / Produktmanagement/Product Management/Direction Produit	Pagina
VCQ012 - MEST091410	R.BERTELLI	P.MESSORI	3 di 7

CORPO VALVOLA / VALVE BODY (SN 105958)

Acciaierie Valbruna S.p.A.

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CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST091410 / 2023 /

Cliente / Besteller/Purchaser/Client:
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: N. AF23 01871
Bestell / Your order / Commande

Conferma ordine nr: MI23005210
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23004231
Lieferanzeige/Packing list/B.L.

Stato di fornitura: Fucinato - Solubilizzato Pelato
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung / Marking / Marquage

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

Furnace calibrated according to API 6A REV 21th ED ANNEX M.
Furnace calibrated according to API 6D REV 25th ED ANNEX H.
Macroetch test per ASTM E381: acceptable.
Reduction ratio = 10,6 : 1
Solution annealed 1080°C for 5h/water cooled.
Treatment made on date 28/05/23 in batch furnace
M2A calibration expiry date 18/05/24
ET ACC. TO EN 10088-3 TAB.1
UT ACC. TO A388/API 6A PSL3-EN 10308cl.3-ASME B16.34/IV
"Issued in agreement with TÜV SÜD Industrie Service GMBH (07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

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Allegati / Anlagen / Enclosure / Attachments :
UT23003877 GT23001048

Sono state soddisfatte tutte le condizioni richieste
Die gestellen Anforderungen sind it. Anlage erfüllt
The material has been furnished in accordance with the requirements
Le materiel à été trouvé conforme aux exigences

Controllo antimescolanza con tecnica XRF/OES portatile : OK
Verwechslungprüfung: durch XRF/QES Gerät geführt : OK
Antimbing testing performed with XRF/OES portable : OK
Contrôle antimélange svt technique XRF/QES portable : OK

Controllo visivo e dimensionale: soddisfa le esigenze
Besichtigufig und Ausmessung: ohne Beanstandung
Visual inspection and dimensional checks:satisfactory
Contrôle visuel et dimensions: satisfaisant

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

CORPO VALVOLA / VALVE BODY (SN 105958)

Acciaierie Valbruna S.p.A.

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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST091410 / 2023 /

Cliente / Besteller/Purchaser/Client:
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr. / Bestell / Your order / Commande: N. AF23 01871

Conferma ordine nr. / Werks/Our Order/Ref nr.: MI23005210

Avviso di Spedizione / Lieferanzeige/Packing list/B.L.: A-MI23004231

Stato di fornitura / Lieferzustand / Delivery state / Etat de livraison: Fucinato - Solubilizzato Pelato

Tipo di Elaborazione / Erschmelzungsart / Melting process / Mode d'elaboration: E+AOD

Qualità / Werkstoff/Grade/Nuance: 1.4401/1.4404/316/316L

Marca / Markenbezeichnung / Brand / Nuance: MVAPML (MAXIVAL)

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice: AV

Punzone del Collaudatore / Stempel des Werksachverständigen / Inspector's stamp/Poinçon de l'assayeur: MR

Punzonatura / Kennzeichnung / Marking / Marquage: 1.4401/1.4404/316/316L

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD`S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

WBFBACDEEEEEDCDDDEEEEDDDDDCCCCCCCC

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16/10/2023

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 11/07/2023 VCQ012 - MEST091410	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 5 di 7

CORPO VALVOLA / VALVE BODY (SN 105958)

	Acciaierie Valbruna S.p.A. 36100 VICENZA (Italia) - Viale della scienza, 25 z.i. Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4	**CERTIFICATO** Certificate - Zeugnis - Certificat **N° UT23003877**	**Pag 6 di 7**
		CONTROLLO CON ULTRASUONI *Ultrasonic testing - Ultraschallprüfung - Controle par ultrasons*	

mod. UT02 MEST091410 / 2023 /

Cliente : INDRA S.R.L. *Customer*				**Lotto nr : 228507830** *Mill order*		
MARCA *Grade*	**DIMENSIONI - mm** *Size*	**COLATA** *Heat*	**BARRE** *Bars*	**PESO** *Weight*	**LUNGHEZZA - mm** *Length*	
MVAPML	Tondo 160,000	287185	N. 1	KG : 786,0	4901	4901

T. TERMICO *Heat Treatement*	**ESECUZIONE** *Condition*	**RUGOSITA'** *Roughness*	**TOLLERANZA** *Tolerance*
Solubilizzato	Pelato	µm	k12

Istruzione : PROC CND 040 *Work Instruction*		**Criteri Accettabilità : ASTM A388** Acceptance Criteria

ELETTRONICA : Olympus Quickscan LT *Equipment*					
ACCOPPIANTE : ACQUA + 0253 SA *Couplant*				**VEL.CONTROLLO : 183 mm/sec** *Testing Speed*	
TRASDUTTORI *Probes*	**TIPO ONDA** *Type of wave*	**FREQUENZA (MHZ)** *Frequency*	**DIMENSIONI (MM)** *Dimension*	**ANGOLO** *Angle*	**TARATURA** *Calibration*
64EL. 2.25MHZ	LONG.	2,25	128X25	0°	DAC

CONTROLLO AUTOMATICO [X] *Automatic inspection*	**CONTROLLO MANUALE** *Manual inspection*

NOTE :
Notes

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16/10/24

CONFORME [X] *Compliant*	**CONFORME IN DEROGA [ ]** *See Deviation*	**NON CONFORME [ ]** *Not Compliant*

ISPEZIONATO DA Inspected by	**VERIFICATO DA** Verified by	**APPROVATO DA** Approved by **G.Parlato** ISO 9712 LEV. 2 IND1901054	**COLLAUDATORE** Inspector - Abnahmesachsverst - Inspecteur
FIRMA 11/07/2023 Date - Date	**FIRMA**	**FIRMA**	

Operatori, strumenti e documenti di riferimento, utilizzati per il collaudo del materiale, sono identificati, controllati e/o calibrati in accordo alle norme EN, ISO e ASTM, richiamate nelle pratiche operative e istruzioni di pertinenza / *Operators, Equipment and reference documents, used for material inspection, are identified, checked and/or calibrated in accordance with EN/ISO or ASTM standards, reported in relevant documents.*

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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4

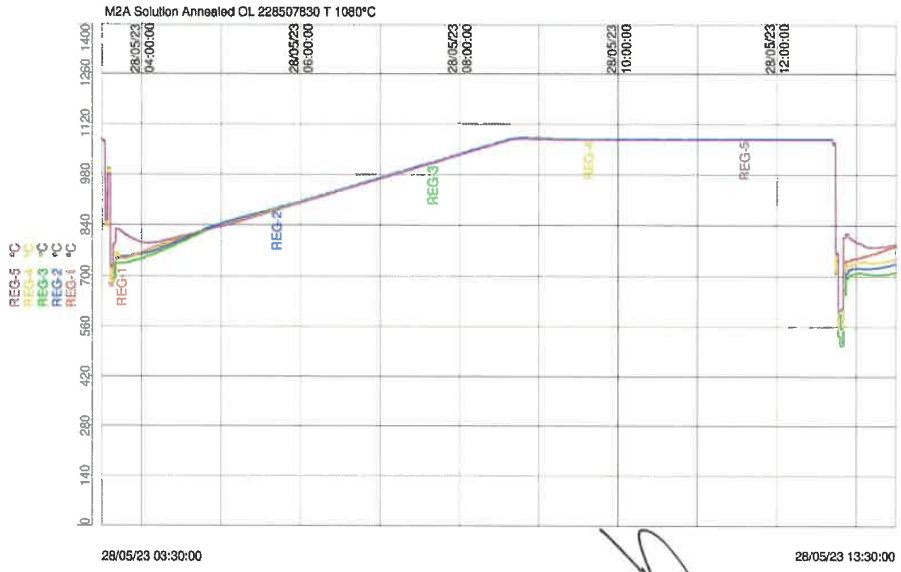
CERTIFICATO Certificate - Zeugnis - Certificat **N° GT23001048** Pag 7 di 7

Diagrammi di trattamento termico **MEST091410 / 2023 /**

Heat Treatment charts - Waermebehandlungs diagramm - Diagramme de traitement thermique

N° LOTTO : 228507830	Note Dettaglio :	Note:
Lot Number	Detail Notes	Notes

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	Approved by:	

CORPO VALVOLA / VALVE BODY (SN 105959)

Acciaierie Valbruna S.p.A.

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Telefono 0444.968211 - Fax 0444.963836
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Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST007061 / 2024 /
Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 00016
Bestell
Your order
Commande

Conferma ordine nr: MI24000193
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24000311
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato - Solubilizzato Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Ilem/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore:
Stempel des Werksachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/4/316/L
Kennzeichnung
Marking
Marquage

SPECIFICHE :	Note:
Anforderungen / Requirements / Exigences	Aufzeichnungen / Notes / Notes
VALVES STOCK 2018 1.4404/316L A	
MDS S01 5 316 A (0)	(0)Norsok-standard M-630 Edition 6, October 2013
AISI . 316	
AISI . 316L	
AMS 5648 M S31600 A	
AMS 5653 J S31603 A	
AMS-QQ-S-763 D 316 A	
AMS-QQ-S-763 D 316L A	
ASME SA182 2019 S31600 A (1)	(1)Section II Part A 2019 EDITION For products machined directly from bar refer to ASME SA479.
ASME SA182 2019 S31603 A (2)	(2)Section II Part A 2019 EDITION For products machined directly from bar refer to ASME SA479.
ASME SA193 2019 B8M CLASS 1 (3)	(3)Section II Part A 2019 EDITION
ASME SA276 2019 S31600 A (4)	(4)Section II Part A 2019 EDITION
ASME SA276 2019 S31603 A (5)	(5)Section II Part A 2019 EDITION
ASME SA320 2019 B8M CLASS 1 (6)	(6)Section II Part A 2019 EDITION
ASME SA479 2019 S31600 A (7)	(7)Section II Part A 2019 EDITION
ASME SA479 2019 S31603 A (8)	(8)Section II Part A 2019 EDITION
ASTM A182 2020 S31600 A (9)	(9)For products machined directly from bar refer also to ASTM A479.
ASTM A182 2020 S31603 (A)	(A)For products machined directly from bar refer also to ASTM A479.
ASTM A193 2019 B8M CLASS 1	
ASTM A262 PR. E 2015 316/316L (B)	(B)Reapproved 2021
ASTM A276 2017 S31600 A	
ASTM A276 2017 S31603 A	
ASTM A320 2018 B8M CLASS 1 CLASS1	
ASTM A370 2020 .	
ASTM A479 2020 S31600 A	
ASTM A479 2020 S31603 A	
ASTM E10 2018 .	
ASTM E8 2016A .	
DIN 17440 96 1.4401 A	
DIN 17440 96 1.4404 A	
EN 10088-3 2014 1.4401 A	
EN 10088-3 2014 1.4404 A	
EN 10222-5 2017 1.4401 A	
EN 10222-5 2017 1.4404 A	
EN 10272 2016 1.4401 A	
EN 10272 2016 1.4404 A	
ISO 148-1 2016 .	
ISO 6506-1 2014 .	
ISO 6892-1 2019 .	
NACE MR0103 2015 S31600 A (C)	(C)ANSI/NACE MR0103/ISO 17945 November 23, 2015
NACE MR0103 2015 S31603 A (D)	(D)ANSI/NACE MR0103/ISO 17945 November 23, 2015
NACE MR0175 2015 S31600 A (E)	(E)ANSI/NACE MR0175/ISO 15156-3, third edition November 23,2015
NACE MR0175 2015 S31603 A (F)	(F)ANSI/NACE MR0175/ISO 15156-3, third edition November 23,2015
QQ-S-763 F 316 A	
QQ-S-763 F 316L A	

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 17/01/2024	Direzione Qualità	Direzione Prodotto	Pagina
VCQ012 - MEST007061	Qualitätsmanagement/Quality Management/Gestion Qualité	Produktmanagement/Product Management/Direction Produit	1 di 5
	R.BERTELLI	P.MESSORI	

CORPO VALVOLA / VALVE BODY (SN 105959)

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST007061 / 2024 /

Cliente / Besteller/Purchaser/Client:
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 00016
Bestell / Your order / Commande

Conferma ordine nr: MI24000193
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24000311
Lieferanzeige/Packing list/B.L.

Stato di fornitura: Fucinato - Solubilizzato Pelato
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/4/316/L
Kennzeichnung / Marking / Marquage

Pos. nr.	Oggetto	Tolleranza: k12 Dimensioni - mm	Lunghezza - mm	Colata	Pezzi	Peso - KG	Lotto nr.
Pos. nr. / Item nr. / Nr. de poste	Gegenstand / Product description / Descrip. du produit	Toleranz/Allowance/Tolerance: Abmessungen / Dimension / Dimension	Länge / Length / Longueur	Schmelze / Heat / Coulée	Stückzahl / Pieces / Pieces	Gewicht / Weight / Poids	Losnr. / Lot nr. / Lot nr.
0050	Tondo	150,000	3825/ 5115	433737	3	1826,0	118913140

TEST ALLO STATO DI FORNITURA

Test on delivery condition / Prüefung auf lieferbereitem produkt / test a l'etat de fourniture / Prueba sobre el material así come entregado

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab: Specimen/Eprouvette Larg.diam.Spess. / Breite Diam. Dicke / Width Diam. Thickness / Larg. diam. epais. mm	°C	Posiz. Saggio: Probenlage / Location / Emplacement	Snervamento: Streckgrenze / Yield Stress / Limite elastique Rp 0,2% N/mm2	Snervamento: Streckgrenze / Yield Stress / Limite elastique Rp 1% N/mm2	Resistenza: Zugfestigkeit / Tensile strength / Resistance à traction Rm N/mm2	Allungamento: Bruchdehnung / Elongation / Allongement A5 %		Strizione: Einschnürung / Reduction of area / Striction Z %		Resilienza: Kerbschlagarbeit / Impact Value / Resilience KV2 J			Durezza: Haerte / Hardness / Durete HB		
Valori richiesti / Anforderungen/Required values / Valeurs demandées		min		205	240	510	45	-	-	-	100			-		
		max				690								215		
A	10	20	L	267	315	566	62		75		259	258	260	170		
B	10	20	L	274	313	569	59		69		262	259	265	166		

TEST ALLO STATO DI FORNITURA

Test on delivery condition / Prüefung auf lieferbereitem produkt / Test a l'etat de fourniture / Prueba sobre el material así come entregado

TEST		min	max	
B	Dimensioni grano x ASTM E112			4

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab: Specimen/Eprouvette Larg.diam.Spess. / Breite Diam. Dicke / Width Diam. Thickness / Larg. diam. epais. mm	°C	Posiz. Saggio: Probenlage / Location / Emplacement	Snervamento: Streckgrenze / Yield Stress / Limite elastique Rp 0,2% N/mm2	Snervamento: Streckgrenze / Yield Stress / Limite elastique	Resistenza: Zugfestigkeit / Tensile strength / Resistance à traction Rm N/mm2	Allungamento: Bruchdehnung / Elongation / Allongement E 4d %		Strizione: Einschnürung / Reduction of area / Striction RA %		Resilienza: Kerbschlagarbeit / Impact Value / Resilience KV2			Durezza: Haerte / Hardness / Durete HB		
Valori richiesti / Anforderungen/Required values / Valeurs demandées		min		210	-	520	-	40	-	50	-			140		
		max				793								223		
C	12,5	20	L	267		560		62		75				167		

Mechanical properties according to ASTM A370.
Brinnell hardness according to ASTM E10
Tensile testing according to ASTM E8
Impact testing according to ISO 148-1
Brinnell hardness according to ISO 6506-1
Tensile testing according to ISO 6892-1

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16/10/24

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 17/01/2024	Direzione Qualità / Qualitätsmanagement/Quality Management/Gestion Qualité	Direzione Prodotto / Produktmanagement/Product Management/Direction Produit	Pagina
VCQ012 - MEST007061	R.BERTELLI	P.MESSORI	2 di 5

CORPO VALVOLA / VALVE BODY (SN 105959)

Acciaierie Valbruna S.p.A.

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CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST007061 / 2024 /

Cliente / Besteller/Purchaser/Client:
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 00016
Bestell / Your order / Commande

Conferma ordine nr: MI24000193
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24000311
Lieferanzeige/Packing list/B.L.

Stato di fornitura / Lieferzustand / Delivery state / Etat de livraison: Fucinato - Solubilizzato Pelato

Tipo di Elaborazione / Erschmelzungsart / Melting process / Mode d'elaboration: E+AOD

Qualità / Werkstoff/Grade/Nuance: 1.4401/1.4404/316/316L

Marca / Markenbezeichnung / Brand / Nuance: MVAPML (MAXIVAL)

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice: AV

Punzone del Collaudatore / Stempel des Werksachverständigen / Inspector's stamp/Poinçon de l'assayeur: MR

Punzonatura / Kennzeichnung / Marking / Marquage: 1.4401/4/316/L

Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata / Heat / Schmelze/Coulée	C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	P %	S %	N %
min -	-	-	1,25	16,50	2,00	-	10,00	-	-	-
max 0,030	1,00	2,00	18,00	2,50	1,00	13,00	0,040	0,030	0,100	-
433737	0,015	0,48	1,65	16,98	2,12	0,41	10,11	0,032	0,028	0,082

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Reduction ratio = 14,0 : 1
Material solution annealed 1060°C for 2.5h/water cooled.

Allegati / Anlagen / Enclosure / Attachments :
UT24000303

Sono state soddisfatte tutte le condizioni richieste / Die gestellen Anforderungen sind lt. Anlage erfüllt / The material has been furnished in accordance with the requirements / Le materiel il été trouvé conforme aux exigences

Controllo antimescolanza con tecnica XRF/OES portatile : OK / Verwechslungprüfung: durch XRF/QES Gerät geführt : OK / Antimbing testing performed with XRF/OES portable : OK / Contrôle antimélange svt technique XRF/QES portable : OK

Controllo visivo e dimensionale: soddisfa le esigenze / Besichtigung und Ausmessung: ohne Beanstandung / Visual inspection and dimensional checks:satisfactory / Contrôle visuel et dimensions: satisfaisant

Melted, poured and manufactured in Italy — No welding or weld repair — Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

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Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST007061 / 2024 /
Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 00016
Bestell
Your order
Commande

Conferma ordine nr: MI24000193
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24000311
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato - Solubilizzato Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore:
Stempel des Werksachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/4/316/L
Kennzeichnung
Marking
Marquage

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD'S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

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16/10/24

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 17/01/2024 VCQ012 - MEST007061	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 4 di 5

CORPO VALVOLA / VALVE BODY (SN 105959)

	Acciaierie Valbruna S.p.A. 36100 VICENZA (Italia) - Viale della scienza, 25 z.i. Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4	**CERTIFICATO** Certificate - Zeugnis - Certificat **N° UT24000303**	**Pag 5 di 5**
		CONTROLLO CON ULTRASUONI *Ultrasonic testing - Ultraschallprüfung - Controle par ultrasons*	

mod. UT02 MEST007061 / 2024 /

Cliente : INDRA S.R.L. *Customer*				**Lotto nr : 118913140** *Mill order*	
MARCA *Grade*	**DIMENSIONI - mm** *Size*	**COLATA** *Heat*	**BARRE** *Bars*	**PESO** *Weight*	**LUNGHEZZA - mm** *Length*
MVAPML	Tondo 150,000	433737	N. 3	KG : 1826,0	3825 / 5115

T. TERMICO *Heat Treatement*	**ESECUZIONE** *Condition*	**RUGOSITA'** *Roughness*	**TOLLERANZA** *Tolerance*
Solubilizzato	Pelato		k12

Istruzione : PROC CND 040 *Work Instruction*		**Criteri Accettabilità : ASTM A388** Acceptance Criteria

ELETTRONICA : Olympus Quickscan LT
Equipment

ACCOPPIANTE : ACQUA + 0253 SA
Couplant

VEL.CONTROLLO : 396 m/min
Testing Speed

TRASDUTTORI *Probes*	**TIPO ONDA** *Type of wave*	**FREQUENZA (MHZ)** *Frequency*	**DIMENSIONI (MM)** *Dimension*	**ANGOLO** *Angle*	**TARATURA** *Calibration*
64EL. 2.25MHZ	LONG.	2,25	128X25	0°	DAC

CONTROLLO AUTOMATICO [X] *Automatic inspection*	**CONTROLLO MANUALE** *Manual inspection*

NOTE :
Notes

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×CROSSWIND
16/10/2024

CONFORME [X] *Compliant*	**CONFORME IN DEROGA [ ]** *See Deviation*	**NON CONFORME [ ]** *Not Compliant*

ISPEZIONATO DA Inspected by	**VERIFICATO DA** Verified by	**APPROVATO DA** Approved by	**COLLAUDATORE** Inspector - Abnahmesachsverst - Inspecteur
		S.Stefani ISO 9712 LEV. 2 IND1901845	
FIRMA 21/12/2020 Date - Date	**FIRMA**	**FIRMA**	

Operatori, strumenti e documenti di riferimento, utilizzati per il collaudo del materiale, sono identificati, controllati e/o calibrati in accordo alle norme EN, ISO e ASTM, richiamate nelle pratiche operative e istruzioni di pertinenza / *Operators, Equipment and reference documents, used for materiel inspection, are identified, checked and/or calibrated in accordance with EN/ISO or ASTM standards, reported in relevant documents.*

CLOSURE H150RF3

Acciaierie Valbruna S.p.A.

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Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST027755 / 2024 /
Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 00586
Bestell
Your order
Commande

Conferma ordine nr: MI24001511
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24001330
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Laminato - Solubilizzato Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung
Marking
Marquage

SPECIFICHE : Anforderungen / Requirements / Exigences	Note: Aufzeichnungen / Notes / Notes
VAL STOCK W2 A/1 1.4404/316L A	
MDS S01 5 316 A (0)	(0)Norsok-standard M-630 Edition 6, October 2013
MDS S17 1 316 A (1)	(1)Norsok-standard M-630: 2020 (2020-09-30)
AD 2000-M. W 2 2022 1.4401 A (2)	(2)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
AD 2000-M. W 2 2022 1.4404 A (3)	(3)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
AISI . 316/316L	
AMS-QQ-S-763 D 316/316L A	
ASME SA182 2023 S31600/03 A (4)	(4)Section II Part A 2023 EDITION For products machined directly from bar refer to ASME SA479.
ASME SA193 2023 B8M CLASS 1 (5)	(5)Section II Part A 2023 EDITION
ASME SA276 2023 S31600/03 A (6)	(6)Section II Part A 2023 EDITION
ASME SA320 2021 B8M CLASS 1 (7)	(7)Section II Part A 2021 EDITION
ASME SA479 2023 S31600/03 A (8)	(8)Section II Part A 2023 EDITION
ASTM A182 2023 S31600/03 A (9)	(9)For products machined directly from bar refer also to ASTM A479.
ASTM A193 2023 B8M CLASS 1	
ASTM A262 PR. E 2015 316/316L (A)	(A)Reapproved 2021
ASTM A276 2024 S31600/03 A	
ASTM A320 2022 B8M CLASS 1 CLASS1	
ASTM A370 2022 .	
ASTM A479 2023A S31600/03 A	
ASTM E10 2023 .	
ASTM E8 2022 .	
EN 10088 PART 3 2014 1.4401 A	
EN 10088 PART 3 2014 1.4404 A	
EN 10272 2016. 1.4401 A	
EN 10272 2016. 1.4404 A	
ISO 148-1 2016 .	
ISO 3651-2 98 METHOD A T1	
ISO 6506-1 2014 .	
ISO 6892-1 2019 .	
NACE MR0103 2015 S31600/03 A (B)	(B)ANSI/NACE MR0103/ISO 17945 November 23, 2015
NACE MR0175 4 S31600/03 A (C)	(C)ANSI/NACE MR0175/ISO 15156-3:2020 Fourth edition, approved 21 Sep 2022.
QQ-S-763 F 316/316L A	
ACH CO . .	
KV L -196C . ISO 148-1	
KV T -196C . ISO 148-1	

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16/10/24

		Tolleranza: k12 Toleranz/Allowance/Tolerance					
Pos. nr. Pos. nr Item nr. Nr. de poste	Oggetto Gegenstand Product description Descrip. du produit	Dimensioni - mm Abmessungen Dimension Dimension	Lunghezza - mm Lange Length Longueur	Colata Schmelze Heat Coulée	Pezzi Stückzahl Pieces Pièces	Peso - KG Gewicht Weight Poids	Lotto nr. Losnr Lot nr Lot nr.
0030	Tondo	155,000	2408/ 2408	437589	1	372,0	327508600

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 28/02/2024 VCQ008 - MEST027755	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité **R.BERTELLI**	Direzione Prodotto Produktmanagement/Product Management/Direction Produit **P.MESSORI**	Pagina 1 di 6

CLOSURE H150RF3

Acciaierie Valbruna S.p.A.

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In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST027755 / 2024 /

Cliente / Besteller/Purchaser/Client:
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr. / Bestell / Your order / Commande: AF24 00586

Conferma ordine nr. / Werks/Our Order/Ref nr.: MI24001511

Avviso di Spedizione / Lieferanzeige/Packing list/B.L.: A-MI24001330

Stato di fornitura / Lieferzustand / Delivery state / Etat de livraison: Laminato - Solubilizzato Pelato

Tipo di Elaborazione / Erschmelzungsart / Melting process / Mode d'elaboration: E+AOD

Qualità / Werkstoff/Grade/Nuance: 1.4401/1.4404/316/316L

Marca / Markenbezeichnung / Brand / Nuance: MVAPML (MAXIVAL)

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice: AV

Punzone del Collaudatore / Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur: MR

Punzonatura / Kennzeichnung / Marking / Marquage: 1.4401/1.4404

TEST ALLO STATO DI FORNITURA

Test on delivery condition / Prüefung auf lieferbereitem produkt / test a l'etat de fourniture / Prueba sobre el material así come entregado

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais. mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement A5 %		Strizione Einschnürung Reduction of area Striction Z %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti / Anforderungen/Required values / Valeurs demandées		min		200	235	500	40	-	-	-	-			-		
		max				700									215	
A	10	20	L	267	312	571	59		69					160		
I	10	20	L	272	314	576	58		67					165		

TEST ALLO STATO DI FORNITURA

Test on delivery condition / Prüefung auf lieferbereitem produkt / Test a l'etat de fourniture / Prueba sobre el material así come entregado

TEST		min	max	
I	Dimensioni grano x ASTM E112			4

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais. mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti / Anforderungen/Required values / Valeurs demandées		min		-	-	-	-	-	-	-	-	-
		max										
B	10X10	-196	L	219	221	227	1,925	1,788	1,900	74	69	72

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais. mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti / Anforderungen/Required values / Valeurs demandées		min		210	-	520	-	40	-	50	-			-		
		max				790									223	
C	12,5	20	L	263		560		62		70				158		

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 28/02/2024	Direzione Qualità / Qualitätsmanagement/Quality Management/Gestion Qualité	Direzione Prodotto / Produktmanagement/Product Management/Direction Produit	Pagina
VCQ008 - MEST027755	R.BERTELLI	P.MESSORI	2 di 6

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST027755 / 2024 /

Cliente / Besteller/Purchaser/Client:
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 00586
Bestell / Your order / Commande

Conferma ordine nr: MI24001511
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24001330
Lieferanzeige/Packing list/B.L.

Stato di fornitura: Laminato - Solubilizzato Pelato
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore:
Hersteller/Item/Usine productrice
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung / Marking / Marquage

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Hearte Hardness Durete		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		205	-	515	-	40	-	50	-			-		
D	12,5	20	T	257		557		55		65						

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		-	-	-	-	-	-	-	-	-
E	10X10	-196	T	97	97	99	0,748	0,855	0,493	25	25	21

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion			Shear Shear		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		100	100	100	-	-	-	-	-	-
H	10X10	20	L	270	278	282						
J	10X10	20	L	276	272	285						

Tensile testing according to ISO 6892-1
Impact testing according to ISO 148-1
Mechanical properties according to ASTM A370.
Brinnell hardness according to ASTM E10
Tensile testing according to ASTM E8
Brinnell hardness according to ISO 6506-1

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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST027755 / 2024 /

Cliente / Besteller/Purchaser/Client:
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr. / Bestell / Your order / Commande: AF24 00586

Conferma ordine nr. / Werks/Our Order/Ref nr.: MI24001511

Avviso di Spedizione / Lieferanzeige/Packing list/B.L.: A-MI24001330

Stato di fornitura / Lieferzustand / Delivery state / Etat de livraison: Laminato - Solubilizzato Pelato

Tipo di Elaborazione / Erschmelzungsart / Melting process / Mode d'elaboration: E+AOD

Qualità / Werkstoff/Grade/Nuance: 1.4401/1.4404/316/316L

Marca / Markenbezeichnung / Brand / Nuance: MVAPML (MAXIVAL)

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice: AV

Punzone del Collaudatore / Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur: MR

Punzonatura / Kennzeichnung / Marking / Marquage: 1.4401/1.4404

Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata / Heat / Schmelze/Coulée	C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	Co %	P %	S %	N %				
min -	-	-	-	18,50	2,00	-	10,00	-	-	-	-	-	-	-	-
max 0,030	1,00	2,00	18,00	2,50	1,00	13,00	-	0,045	0,030	0,100	-	-	-	-	
437589	0,016	0,46	1,69	17,05	2,10	0,60	10,73	0,104	0,030	0,022	0,077				

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

Reduction ratio = 12,8 : 1
Solution annealed 1080°C for 3,5 h/water cooled.
SURFACE QUALITY GUARANTEE BY ET INSPECTION (max defect depth 1% DIAMETER)
UT ACC. TO ASTM A388
"Issued in agreement with TÜV SÜD Industrie Service GMBH
(07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by
Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

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Allegati / Anlagen / Enclosure / Attachments :
UT24001290

Sono state soddisfatte tutte le condizioni richieste
Die gestellten Anforderungen sind lt. Anlage erfüllt
The material has been furnished in accordance with the requirements
Le materiel à été trouvé conforme aux exigences

Controllo antimescolanza con tecnica XRF/OES portatile : OK
Verwechslungprüfung: durch XRF/OES Gerät geführt : OK
Antimixing testing performed with XRF/OES portable : OK
Contrôle antimélange svt technique XRF/QES portable : OK

Controllo visivo e dimensionale: soddisfa le esigenze
Besichtigufg und Ausmessung: ohne Beanstandung
Visual inspection and dimensional checks:satisfactory
Contrôle visuel et dimensions: satisfaisant

16/10/24

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 28/02/2024 VCQ008 - MEST027755	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité **R.BERTELLI**	Direzione Prodotto Produktmanagement/Product Management/Direction Produit **P.MESSORI**	Pagina 4 di 6

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST027755 / 2024 /

Cliente / Bésteller/Purchaser/Client:
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 00586
Bestell / Your order / Commande

Conferma ordine nr: MI24001511
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24001330
Lieferanzeige/Packing list/B.L.

Stato di fornitura / Lieferzustand / Delivery state / Etat de livraison: Laminato - Solubilizzato Pelato

Tipo di Elaborazione / Erschmelzungsart / Melting process / Mode d'elaboration: E+AOD

Qualità / Werkstoff/Grade/Nuance: 1.4401/1.4404/316/316L

Marca / Markenbezeichnung / Brand / Nuance: MVAPML (MAXIVAL)

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice: AV

Punzone del Collaudatore / Stempel des Werksachverständigen / Inspector's stamp/Poinçon de l'assayeur: MR

Punzonatura / Kennzeichnung / Marking / Marquage: 1.4401/1.4404

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD`S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 28/02/2024 VCQ008 - MEST027755	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 5 di 6

CLOSURE H150RF3

	Acciaierie Valbruna S.p.A. 36100 VICENZA (Italia) - Viale della scienza, 25 z.i. Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4	**CERTIFICATO** Certificate - Zeugnis - Certificat **N° UT24001290**	Pag 6 di 6
		CONTROLLO CON ULTRASUONI *Ultrasonic testing - Ultraschallprüfung - Controle par ultrasons*	

mod. UT02 MEST027755 / 2024 /

Cliente : INDRA S.R.L. *Customer*				**Lotto nr : 327508600** *Mill order*		
MARCA *Grade*	**DIMENSIONI - mm** *Size*	**COLATA** *Heat*	**BARRE** *Bars*	**PESO** *Weight*	**LUNGHEZZA - mm** *Length*	
MVAPML	Tondo 155,000	437589	N. 1	KG : 372,0	2408	2408

T. TERMICO *Heat Treatement*	**ESECUZIONE** *Condition*	**RUGOSITA'** *Roughness*	**TOLLERANZA** *Tolerance*
Solubilizzato	Pelato		k12

Istruzione : PROC CND 040 *Work Instruction*		**Criteri Accettabilità : ASTM A388** Acceptance Criteria

ELETTRONICA : Olympus Quickscan LT
Equipment

ACCOPPIANTE : ACQUA + 0253 SA
Couplant

VEL.CONTROLLO : 339 mm/sec
Testing Speed

TRASDUTTORI *Probes*	**TIPO ONDA** *Type of wave*	**FREQUENZA (MHZ)** *Frequency*	**DIMENSIONI (MM)** *Dimension*	**ANGOLO** *Angle*	**TARATURA** *Calibration*
64EL. 2.25MHZ	LONG.	2,25	128X25	0°	DAC

CONTROLLO AUTOMATICO [X] *Automatic inspection*	**CONTROLLO MANUALE** *Manual inspection*

NOTE :
Notes

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CONFORME [X] *Compliant*	**CONFORME IN DEROGA [ ]** *See Deviation*	**NON CONFORME[ ]** *Not Compliant*

ISPEZIONATO DA Inspected by **FIRMA**	**VERIFICATO DA** Verified by **FIRMA**	**APPROVATO DA** Approved by **S.Stefani** ISO 9712 LEV. 2 IND1901845 **FIRMA**	**COLLAUDATORE** Inspector - Abnahmesachsverst - Inspecteur

Date - Date **03/01/2024**

Operatori, strumenti e documenti di riferimento, utilizzati per il collaudo del materiale, sono identificati, controllati e/o calibrati in accordo alle norme EN, ISO e ASTM, richiamate nelle pratiche operative e istruzioni di pertinenza / *Operators, Equipment and reference documents, used for material inspection, are identified, checked and/or calibrated in accordance with EN/ISO or ASTM standards, reported in relevant documents.*

TIRANTE / STUD BOLT t·e·c·n·o BOLT

CERTIFICATE

Nr. 5066 **26-07-24**

INDRA SRL
VIA NOVARA 10/B-C
20013 MAGENTA MI
ITALIA

EN ISO 10204 3.1
CERTIFIED MATERIAL TEST REPORT

Your order: AF24 01730 21-05-24 Delivery note: 2000 26-07-24

Item	Materials	Description	Sizes	Batch	Heat		Quantity
4	ASTM A 193 B8M cl.2 101.99.0939SS. Pos.40 CKD/CM/09/11/2021	Tirante DIN 976/UNI 6610 ASTM A 193 B8M cl.2 M	10X35	8312	942054	N.	4

CHEMICAL ANALYSIS

4		%C %	%Mn %	%P %	%S %	%Si %	%Cr %	%Ni %	%Mo %	%H.T. CST+SH
	REQ. MIN.						16	10	2	
	REQ. MAX.	0,080	2	0,045	0,030	1	18	14	3	
	ACT.VAL.	0,009	1,303	0,0276	0,024	0,466	16,682	10,071	2,048	CST+SH

MECHANICAL PROPERTIES

4		UTS MPa	YS0,2 MPa	E %	R.A. %	H HB
	REQ. MIN.	760	655	15	45	
	REQ. MAX.					321
	ACT. VAL.	928	841	17	67	273





We state that the material or fasteners, or both, were manufactered, sampled, tested and inspected in accordance with the specification and any supplementary requirements designated in the purchase/sales order and it was found to meet those requirements

tecnoBOLT s.r.l. - 20822 Seveso (MB) ITALY - way vignone n.7 - info@tecnobolt.com - www.tecnobolt.com



TIRANTE / STUD BOLT

t.e.c.n.o BOLT

CERTIFICATE

Nr. 5066 **26-07-24**

INDRA SRL
VIA NOVARA 10/B-C
20013 MAGENTA MI
ITALIA

EN ISO 10204 3.1
CERTIFIED MATERIAL TEST REPORT

Your order: AF24 01730 21-05-24 Delivery note: 2000 26-07-24

Item	Materials	Description	Sizes	Batch	Heat		Quantity
5	ASTM A 193 B8M cl.2 101.99.0939SS. Pos.60 CKD/CM/09/11/2021	Tirante DIN 976/UNI 6610 ASTM A 193 B8M cl.2 M	10X35	8312	942054	N.	4

CHEMICAL ANALYSIS

5		%C %	%Mn %	%P %	%S %	%Si %	%Cr %	%Ni %	%Mo %	%H.T. CST+SH
	REQ. MIN.						16	10	2	
	REQ. MAX.	0,080	2	0,045	0,030	1	18	14	3	
	ACT.VAL.	0,009	1,303	0,0276	0,024	0,466	16,682	10,071	2,048	CST+SH

MECHANICAL PROPERTIES

5		UTS MPa	YS0,2 MPa	E %	R.A. %	H HB
	REQ. MIN.	760	655	15	45	
	REQ. MAX.					321
	ACT. VAL.	928	841	17	67	273

CROSSWIND

16/10/24

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We state that the material or fasteners, or both, were manufactered, sampled, tested and inspected in accordance with the specification and any supplementary requirements designated in the purchase/sales order and it was found to meet those requirements

TIRANTE / STUD BOLT t.e.c.n.o BOLT

CERTIFICATE

Nr. 5066 **26-07-24**

Page 3/4

INDRA SRL
VIA NOVARA 10/B-C
20013 MAGENTA MI
ITALIA

EN ISO 10204 3.1
CERTIFIED MATERIAL TEST REPORT

Your order: AF24 01730 21-05-24 Delivery note: 2000 26-07-24

Item	Materials	Description	Sizes	Batch	Heat		Quantity
6	ASTM A 193 B8M cl.2 101.99.0939SS. Pos.20 CKD/CM/09/11/2021	Tirante DIN 976/UNI 6610 ASTM A 193 B8M cl.2 M	10X35	8312	942054	N.	2

CHEMICAL ANALYSIS

6		%C %	%Mn %	%P %	%S %	%Si %	%Cr %	%Ni %	%Mo %	%H.T. CST+SH
	REQ. MIN.						16	10	2	
	REQ. MAX.	0,080	2	0,045	0,030	1	18	14	3	
	ACT.VAL.	0,009	1,303	0,0276	0,024	0,466	16,682	10,071	2,048	CST+SH

xCROSSWIND

MECHANICAL PROPERTIES

6		UTS MPa	YS0,2 MPa	E %	R.A. %	H HB
	REQ. MIN.	760	655	15	45	
	REQ. MAX.					321
	ACT. VAL.	928	841	17	67	273

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tecnoBOLT s.r.l. - 20822 Seveso (MB) ITALY - way vignone n.7 - info@tecnobolt.com - www.tecnobolt.com

TIRANTE / STUD BOLT

t·e·c·n·o BOLT

CERTIFICATE

Nr. 5066	26-07-24

Page 4/4

INDRA SRL
VIA NOVARA 10/B-C
20013 MAGENTA MI
ITALIA

EN ISO 10204 3.1
CERTIFIED MATERIAL TEST REPORT

Your order: AF24 01730 21-05-24 Delivery note: 2000 26-07-24

Item	Materials	Description	Sizes	Batch	Heat		Quantity
8	ASTM A 193 B8M cl.2 101.99.0939SS. Pos.490 CKD/CM/09/11/2021	Tirante DIN 976/UNI 6610 ASTM A 193 B8M cl.2 M	10X35	8312	942054	N.	20

CHEMICAL ANALYSIS

8		%C %	%Mn %	%P %	%S %	%Si %	%Cr %	%Ni %	%Mo %	%H.T. CST+SH
	REQ. MIN.						16	10	2	
	REQ. MAX.	0,080	2	0,045	0,030	1	18	14	3	
	ACT.VAL.	0,009	1,303	0,0276	0,024	0,466	16,682	10,071	2,048	CST+SH

MECHANICAL PROPERTIES

8		UTS MPa	YS0,2 MPa	E %	R.A. %	H HB
	REQ. MIN.	760	655	15	45	
	REQ. MAX.					321
	ACT. VAL.	928	841	17	67	273

CROSSNIND

16/10/24

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We state that the material or fasteners, or both, were manufactered, sampled, tested and inspected in accordance with the specification and any supplementary requirements designated in the purchase/sales order and it was found to meet those requirements

DADO / NUT

t·e·c·n·o BOLT

CERTIFICATE

Nr. 5066	26-07-24

Page 1/1

INDRA SRL
VIA NOVARA 10/B-C
20013 MAGENTA MI
ITALIA

EN ISO 10204 3.1
CERTIFIED MATERIAL TEST REPORT

Your order: AF24 01970 24-06-24 Delivery note: 2000 26-07-24

Item	Materials	Description	Sizes	Batch	Heat		Quantity
9	ASTM A 194 Gr.8M 980.99.0002 Pos. 170 - 180 - 190 - 200 - 210 - 220 - 230 - 240 - 300	Dado UNI 5588/DIN 934 ASTM A 194 Gr.8M M Esagonale	10	64533	160903S05	N.	380



VOCE DOGANALE 73181900

MERCE DI ORIGINE ITALIA

CHEMICAL ANALYSIS

9		%C %	%Mn %	%P %	%S %	%Si %	%Cr %	%Ni %	%Mo %
	REQ. MIN.						16	10	2
	REQ. MAX.	0,08	2	0,045	0,030	1	18	14	3
	ACT.VAL.	0.033	0.950	0.033	0.002	0.340	16.400	10.050	2.020

MECHANICAL PROPERTIES

9		H HB	P.L. KN
	REQ. MIN.	126	
	REQ. MAX.	300	
	ACT. VAL.	147-156	29.9

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We state that the material or fasteners, or both, were manufactered, sampled, tested and inspected in accordance with the specification and any supplementary requirements designated in the purchase/sales order and it was found to meet those requirements

tecnoBOLT s.r.l. - 20822 Seveso (MB) ITALY - way vignone n.7 - info@tecnobolt.com - www.tecnobolt.com

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STELO SFERA / BALL STEM

Rodacciai

23842 Bosisio Parini (LC) – Via Giuseppe Roda 1 – Italia
Tel. +39 031878111 – Fax +39 031878312
www.rodacciai.com – info@rodacciai.com

Azienda con sistema di gestione certificato da IGQ secondo UNI EN ISO 9001:2015

The Company's Quality Management System is certified by IGQ according to UNI EN ISO 9001:2015

CERTIFICATO DI CONTROLLO Inspection Certif N. 173501 Date 13/11/2023

Secondo According to . . . . . EN 10204:2004 3.1

ORDINE - Order N. 23/3822 Date 10/11/2023

D.d.T. - Delivery note N. 11634/04 Date 13/11/2023

Weight KG 128,00 **Odp. Nr.** 2022/A/13380
Tolerance ISO286-2 h9 + 0,000 - 0,043 mm **Bars Length** 3.000 - 3.050 mm

QUALITA' - Grade

STANDARD	EN 10088-3:2014	X2CrNiMo17-12-2	1.4404 / 316L
STANDARD	EN 10088-3:2023	X5CrNiMo17-12-2	1.4401 / 316

Mark RODACCIAI . . . . . 316 PLUS
PROFILO - Shape . . . . . ROUND
DIMENSIONE - Size . . . . . mm 18,00
ESECUZIONE - Form of delivery . . . . . ROUGH GROU.

COLATA - Heat E30822

ANALISI CHIMICA DI COLATA - Cast analysis % by mass

C	Mn	Si	S	P	Cr	Ni	Mo	Cu	Co	N
0,020	1,540	0,554	0,0290	0,031	16,620	10,020	2,030	0,441	0,280	0,0520

CARATTERISTICHE MECCANICHE ALLO STATO DI FORNITURA
Mechanical properties of the delivered material

		Tested
Tensile Strength	Rm (MPa)	695,3
Proof Stress	Rp (1) (MPa)	648,0
Proof Stress	Rp (0,2) (MPa)	580,7
Elongation	A 4 (%)	44,3
Elongation	A 5 (%)	41,1
Hardness	HBW	211,0
Reduction of area	Z (%)	68,0

NOTE - Notes

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Processo di Fusione: E + A. O. D.
Prova di Corrosione Intergranularena: ASTM A262-15 "E"
Trattamento termico: Temperatura di Solubilizzazione 1060°C
Tempo Mantenimento: 4 Ore, Raffreddamento in Acqua
Materiale conforme a: ASTM A276-16a / A479-16a / A182-24
ASME: SA479; SA276; SA182 - UNS 31600 - 31630 AISI 316-316L

Pag. 1 / Segue

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Segue certificato di controllo N. 173501 Date 13/11/2023
Inspection Certificate's continuance

NOTE - Notes

Materiale Conforme a NACE MR-0175/ISO 15156-3:2015
NACE MR-103/ISO 17495-1:2016
Corrosione Intercristallina EN ISO 3651-2:98 Met.A

Melting Process: E + A. O. D
Intergranular corrosion tested to ASTM A262-15 "E"
Heat treatment: annealed temperature 1060°C
Soaking time: 4 Hours, Cooling in water
Material Compliant to: ASTM A276-16a / A479-16a / A182-24
ASME: SA479; SA276; SA182 - UNS 31600 - 31630 AISI 316-316L
According to: NACE MR-0175 / ISO 15156-3:2015
NACE MR-103/ISO 17495-1:2016
Intergranular Corrosion according to EN ISO 3651-2:98 Met.A

Surface quality condition 2H conforming also to EN 10277 class 3

We certify hereby, that the above mentioned products are consistent with the order prescriptions.
This certificate was generated by data system acc. to EN 10204, it is not necessary to be signed for validity.

Materiale conforme alle seguenti direttive/regolamenti europee:
. Regolamento REACH 2006/1907/CE e tutti successivi aggiornamenti, compresa la modifica M80 Direttiva Delegata 2022/1632, e SVHC Candidate List aggiornata al 17/01/2023.
. Direttiva ROHS 2011/65/UE e tutti i successivi aggiornamenti, compresa la modifica M80 attraverso la Direttiva Delegata 2022/1632, e Decreto Legislativo 27 del 04/03/2014.
. Direttiva RAEE 2012/19/UE e tutti successivi aggiornamenti, compresa la modifica M1 attraverso la Direttiva 2018/849.
. Direttiva ELV (End-of-Life Vehicles) 2000/53/CE e tutti i successivi aggiornamenti, compresa la modifica M15 attraverso la Direttiva 2020/363
. Contaminazione Radioattiva, Direttiva 2013/59/EURATOM e Decreto Legislativo N.101 del 31 Luglio 2020.
. Canadian List 168 aggiornata al 16/03/2022.
. Minerali di Conflitto, Regolamento (UE) 2017/821 e tutti i successivi aggiornamenti, compresa la modifica M1 attraverso il Regolamento Delegato 2020/1588, e Dodd-Frank Wall Street Reform and Consumer Protection Act Section 1502.

Material conforming to the following European directives/regulation:
. REACH regulation 2006/1907/EC and all subsequent updates, including modification M80 Delegate Directive, and SVHC Candidate List updated to 01/17/2023.
. ROHS Directive 2011/65/EU and all subsequent updates, including the M80 amendment through the Delegated Directive 2022/1632, and Italian Legislative Decree 27 of 03/04/2014.
. WEEE Directive 2012/19/EU and all subsequent updates, including the M1 amendment through Directive 2018/849.
. ELV (End-of-Life Vehicles) Directive 2000/53/EC and all subsequent updates, including the modification M15 through Directive 2020/363
. Radioactive Contamination, Directive 2013/59/EURATOM and Italian Legislative Decree No. 101 of 31 July 2020.
. Canadian List 168 updated 03/16/2022.
. Conflict Minerals, Regulation (EU) 2017/821 and all subsequent updates, including amendment M1 through Delegated Regulation 2020/1588, and Dodd-Frank Wall Street Reform and Consumer Protection Act Section 1502.

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16/10/24

Pag. 2 / 2 RODACCIAI: The Work Inspector
Alessia Porta

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ITALY - 11100 AOSTA - VIA PARAVERA, 16
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CAP. SOC. 140.000.000 EUR INT. VERS.
C.F. 02187360967
VAT: IT00571320076 - R.E.A. n. AO-50474

Company with Management Systems certified according to ISO 9001, IATF 16949, EN 9100 and ISO 14001.

INSPECTION CERTIFICATE 3.1 (EN 10204:2004)
DOCUMENT NUMBER 2019003303

SFERA / BALL

CUSTOMER'S ORDER:	139		
MANUFACTURER'S WORKS:	AOSTA, VIA PARAVERA 16 - ITALY		
PRODUCER OF THE DOC:	QUALITY DEPARTMENT		
MANUFACTURER'S WORKS ORDER NO: 1116858 /10	MARK OF THE MANUFACTURER:	COGNE	
DISPATCH NOTE:	81333422 /10	WEIGHT: 346 KG	
THE CERTIFIED PRODUCTS ARE COMPLYING TO THE PURCHASE ORDER			
INTERNAL SPEC:	A182FORGEDW2	TECHNICAL RULE:	AD2000
PRODUCT:	52616 PEL PEELED ROUND BARS	TOLERANCE: ISOK11	
SURFACE FINISH:	2B Cold Finished		
PRODUCT DELIVERY CONDITION:	RS SOLUTION ANNEALED		
PRODUCT DIMENSIONS (mm):	100,000	LENGTH (mm)	04000 /06200
GRADE:	AISI 316/316L EN1.4401/4404	INTERNAL GRADE:	F316L IMCO
IDENTIFICATION HEAT NO:	870156	IDENTIFICATION LOT NO:	821200
MARKING OF THE PRODUCT:	1.4404	TEST PIECE N:	120

THE PRODUCT IS CONFORMING TO THE CONTRACT AGREEMENT AND TO THE RULE AD2000-MERKBLATT W0/W2.
REFERENCE NORMS: EN 10088-3 2014, EN 10272 2016, ASTM A276/A276M-17, ASTM A479/A479M-18, ASTM A193 B8MCLASSE 1D-17, ASME SA276/SA276M-17, ASME SA479/SA479M-17, AMS 5653J, AMS 5648M, ISO15156-3/NACE MR0175 2015, NACE MR0103/ISO 17945, NORSOK M630 MDSS01 REV5.
REFERENCE NORMS FOR CHEMICAL COMPOSITION AND MECHANICAL PROPERTIES: ASTM A182, ASME SA182.
REFERENCE NORMS ONLY FOR CHEMICAL COMPOSITION: EN 10222-5 2017,ASTM A403-07a, ASTM A484-18a,ASTM A314-08, AMS-QQ-S-763D.
ASTM A484 DOES NOT APPLY FOR SIZE AND LENGTH TOLERANCES.
MATERIAL IN COMPLIANCE WITH THE NORSOK M-630 MDS S01
STEELMAKING EAF + AOD + CONTINUOUS CASTING
HOT FORGED
REDUCTION RATIO 5,9

CHEM. COMP. (%W/W) - LADLE ANALYSIS ACCORDING TO ASTME1019-A751-E1086-E415-A580
Control lot No. - Weight :020000758871 - 82.994 KG

ELEMENTS	C	Si	Mn	P	S	N	Cr	Mo	Ni	Cu
OBTAINED	0,018	0,35	1,81	0,023	0,026	0,084	16,72	2,03	10,02	0,28

ELEMENTS	Co
OBTAINED	0,18

HARDNESS TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000759112 - 7.483 KG
SPECIFICATION ENISO6506 HARDNESS TEST HB TESTING METHOD: 10/3000
OBTAINED 178

IMPACT TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000759112 - 7.483 KG
SPECIFICATION EN ISO 148-1-KV2 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 20
MEASUREMENT UNIT J

OBTAINED									
434	432	430	436	430	430	438	440	438	434
437	434								

DATE 23.01.2019 BARBARA VIETTI MV(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne

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TENSILE TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000759112 - 7.483 KG
SPECIFICATION EN-ISO6892-1 DIRECTION OF THE TEST PIECE: L

	RM	RP02	A5	Z	RP1
MEASUREMENT UNIT	MPA	MPA	% 5.0 D	%	MPA
OBTAINED	600	250	59,7	77,9	310
	606	255	58,3	75,7	299
	604	263	57,2	77,9	310
	596	258	57,4	76,7	299

GRAIN SIZE
Control lot No. - Weight :020000759112 - 7.483 KG
SPECIFICATION ASTME112 --

OBTAINED	4	6

IMPACT TEST
Control lot No. - Weight :020000759112 - 7.483 KG
SPECIFICATION EN ISO 148-1 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 196-
MEASUREMENT UNIT J

OBTAINED	187	199	200	194	180	194	175	189	179	187
	187	179								

TENSILE TEST
Control lot No. - Weight :020000759112 - 7.483 KG
SPECIFICATION ASTMA370-E8-0.5"SPEC DIRECTION OF THE TEST PIECE: L

	RMB	RP02B	ZB	AL2B
MEASUREMENT UNIT	KSI	KSI	%	% 4,0 D
OBTAINED	88	37	75,4	61,5
	87	36	77,6	60,1
	86	36	76,3	62,5
	87	36	77,2	62,1

CORROSION TEST ACCORDING TO ASTM A262 PRACTICE E EN ISO 3651-2 PRACTICE A: SATISFACTORY.
ROTARY HEAD EDDY CURRENT AND VISUAL INSPECTION OF SURFACE ACCORDING TO EN 10277-1 Class4: SATISFACTORY.
DIMENSIONAL CONTROL ACCORDING TO EN 10278 :SATISFACTORY.
UT ACCODING TO EN 10308 Cl 4,
EQUIVALENT TO SEP 1920 GROUP 3 CLASS C (CLASS B FOR Ø > 75 MM) AND ASTM A388 FBH 5 (ONLY FOR Ø> 100 MM): CONFORM.
ANTIMIX TEST WITH PORTABLE SPECTROMETER: SATISFACTORY.
NO WELDING REPAIR ON THE MATERIAL
THE PRODUCT SATISFIES CE DIRECTIVES: 2011/65 (ROHS2) - 2000/53 - 2002/95(RoHS) - 2003/11 - 2005/618 AND PED 2014/68/EU.
THE MATERIAL IS FREE OF ANY MERCURY, MERCURY COMPOUNDS AND OR RADIUM CONTAMINATION AT TIME OF SHIPMENT AND WAS PRODUCED WITHOUT USING OZONE DEPLETING SUBSTANCES OF CLASS I AND II.

DATE 23.01.2019 BARBARA VIETTI MV(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne

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Company with Management Systems certified according to ISO 9001, IATF 16949, EN 9100 and ISO 14001.

MARKING: SYMBOL OF THE MANUF. WORK, MATERIAL N. , CAST N., LOT N., RECEIVING AGENT STAMP
DOCUMENT ISSUED IN AGREEMENT WITH TUEV BAYERN(11.1972) WAVING OF COUNTERSIGNING (SEE TUEV BAYERN LETTER DATED 17.01.80).
ALL THE NORMS MENTIONED ARE INTENDED IN THEIR LAST REVISION AT THE DATE OF ISSUE OF THIS DOCUMENT.
THE PRODUCT IS CONFORMING TO THE REQUIREMENTS AND COMPLIES WITH GRADE F316L ACCORDING TO ASTM A182 REGARDING CHEMICAL COMPOSITION AND MECHANICAL PROPERTIES.
COUNTRY OF ORIGIN: ITALY, THE MATERIAL COMPLIES WITH FAR DFARS
252.225-7009 ALT 1.
HARDNESS: 174-174-187HB
INSPECTOR'S STAMP LF
HAMMER FORGED BARS

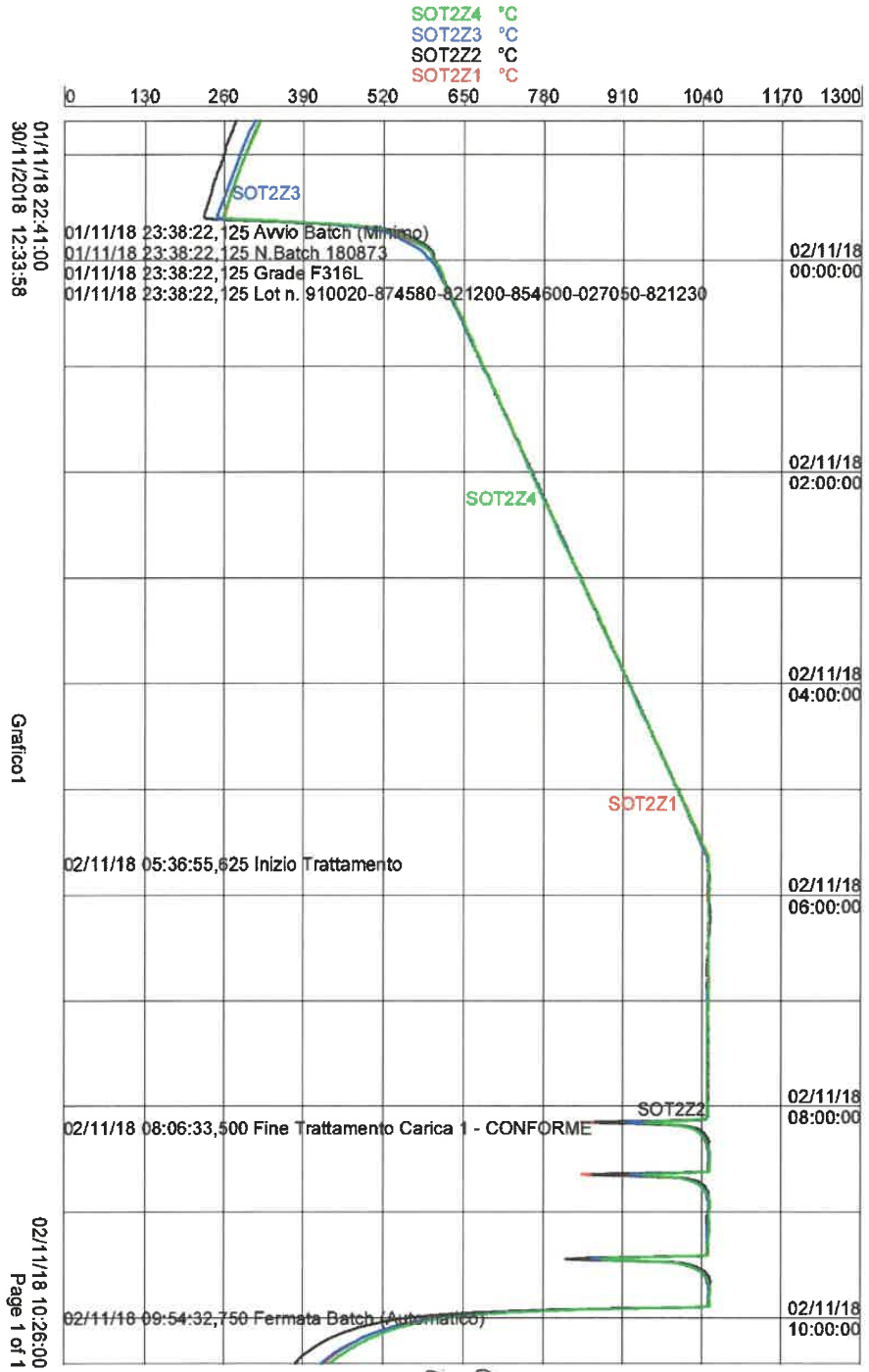
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CERTIFICATO DI COLLAUDO ULTRASUONI
CERTIFICAT DE CONTROLE PAR ULTRASONS
ULTRASCHALL PRUEFZEUGNIS
REPORT OF ULTRASONIC INSPECTION
ОТЧЕТ ОБ УЛЬТРАЗВУКОВОМ КОНТРОЛЕ

N. US.
155/19

CLIENTE *CLIENTSGG* *BESTELLER* *CUSTOMER* ЗАКАЗЧИК			*CONFERMA* *CONFIRMATION* *AUFTRAGSBESTRAKTIGUNG* *CONFIRMATION* ПОДТВЕРЖД. ЗАКАЗА		
MARCA *NUANCES* *WERKESTOFF* *GRADE* МАРКА	F316L W.No 1.4404		*ORDINE* *COMMANDE* *AUFTRAG* *ORDER* ЗАКАЗ		
SPECIFICA *SPECIFICATION* *PRUKEVORSCHRIFT* *SPECIFICATION* ТЕХ. ТРЕБОВАНИЯ	API 6A PSL3		*COLATA* *COULEE* *SCHMELZE* *HEAT* ПЛАВКА	870156	*SCHEDA* *LOT* *LAUFKARTE* *LOT* ПАРТИЯ 821200
PRODOTTO *PRODUIT* *ERZEUGNISFORM* *PRODUCT* ИЗДЕЛИЕ	ROUND BARS 100 mm		*STATO DI LAVORAZIONE* *STADE DU PRODUIT* *LIEFERZUSTAND* *WORKING STEP* ОБРАБОТКА	PEELED	
TIPO DI APPARECCHIO *TIPE D'APPAREILPARUS* *PRUEFGERAT TYP* *INSTRUMENT TYPE* ТИП АППАРАТА	USM36	18107589	*COSTRUTTORE* *CONSTRUCTEUR* *BAUART* *MAKE* ИЗГОТОВИТЕЛЬ	KRAUTKRAMER	
TIPO DI SONDA *TIPE DE PALPEUR* *PRUFKOPT* *PROBETYPE* ТИП ЗОНДА	B2SE MSEB4S-E		*FREQUENZA* *FREQUENCE* *FREQUENZ* *FREQUENCY* ЧАСТОТА	2 MHz 4 MHz	

DIREZIONE D'ESAME
DIRECTION D'EXAMEN
PRUEFRICHTUNG
SCANNING DIRECTION
НАПРАВЛЕНИЕ ПРИ

- [X] *RADIALE - RADIAL*
- [X] *ASSIALE - AXIAL*
- [ ] *SONDE ANGOLATE - ANGLE BEAMS*

- [ ] *MATRICOLA BLOCCO CAMPIONE*
  DENTIFICATION BLOC DE REFERENCE MUSTER BLOCK
  MUSTER BLOCK
  TEST BLOCK NR
  № ОБРАЗЦА ДЛЯ ИСПЫТАНИЯ

- [ ] *AVG SCALE*
  ECRANS ABAQUES AVG
  AVG SKALEN
  AVG SCALE
  ШКАЛА *AVG*
- [X] *AVG DIAGRAMMI*
  DIAGRAMMES AVG
  AVG DIAGRAMM
  AVG DIAGRAM
  ДИАГРАММЫ *AVG*
- [ ] V1
- [ ] V2

RISULTATODELL'ESAME
RESULTAT DE L' ESSAI
PRUEFERGERBNISSE
RESULT OF THE TEST
РЕЗУЛЬТАТ

EXAM DATA : 21/01/2019
INSPECTED N. BARS 17

THE MATERIAL IS IN ACCORDANCE TO THE FOLLOWING SPECIFICATIONS:

API 6A PSL3

L'ISPETTORE CND ZUSTANDER CND L'INSPECTEUR CND CND INSPECTOR ИНСПЕКТОР НРК BAISOTTI MARCO Liv.II - ISO9712 N° Cert.20741/PND/C	**III LIV.CND** **III УРОВЕНЬ НРК** OLIVERO DIMITRI Liv.III - ISO9712 N° Cert.24100/PND/C		**DATA** DATUM DATE DATE ДАТА 23/01/2019

(Mod. Certus Rev. 6)

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ROSETTI MARINO ITEM 40

COD. VBC0NN24343Q00

TAG: BLPH-MV-024, BLPH-MV-028

INDRA ITEM 40

COD. 00.VSF.2693/V

indra VALVES - ITALY	***Certificazione dei materiali*** ***EN 10204 3.1 come da allegati*** ***Material certification*** ***EN 10204 3.1 as per attachments***	**MD-02-04-IT-UK / VSF** **Rev. 16** **Data: 08-Nov-2018** **CM/IT/UK**

Nr. *No.* **24-1877** — **Data /** *Date :* **30-Sep-2024**

Cliente / *Customer* **ROSETTI MARINO SPA**

Vs. ordine Nr. / *Your order Nr.* **1724000798 REV.2** — **Data /** *Date :* **26-Jun-2024**

Ns. commessa Nr. / *Our job Nr.* **24 01216** — **Data /** *Date :* **3-Jul-2024**

Ns. D.D.T. Nr. / *Our advise note Nr.* — **Data /** *Date :*

Ordine di produzione / Production order number : 24 01216/40 - 434829

Lotto / Material batch number : 434829

Pos. Cliente Customer Item	*Pos. Indra Indra Item*	*Codice / Code*		*Q.tà / Q.ty*	*Nr. di serie Serial Number*	*Descrizione /Description*
		Ns./ Our	*Vs. / Your*			
40	40	00.VSF.2693/V	VBC0NN24343Q00	2	105960,105961	INDRA BALL VALVE SB-598-HR-20-E150RF3-E-DLF-DL-CA3-N-RG-L1-TG-TGW-TV-DP-PMI2-PD2-BI-GT-CR-TA-FE2-FS-FE-SPC1

Elenco / List

Componente / *Component*	Colata / Heat	Materiale *Material*	Numero del certificato Certificate number
Corpo Valvola / Valve Body	434829	AISI 316/316L NACE	MEST154678/2023/ - UT23006747
Closure E150RF3	436801	AISI 316/316L NACE	MEST100392/2023/ - UT23004311
Tirante / Stud bolt	572929	ASTM A193 B8M Cl.2	2402480
Dado / Nut	160903S05	ASTM A194 Gr.8M	5066
Stelo antiespulsione sfera / Ball stem	E30822	AISI 316/316L NACE	173501
Sfera / Ball	372009	AISI 316/316L NACE	2023008125

NOTE / **REMARKS :** TAG: BLPH-MV-024, BLPH-MV-028

PREPARATO DA: **ELEONORA RANZANI** — PREPARED BY: **DOCUMENTION MANAGER**

APPROVATO DA: **LUCIA NOSOTTI** — APPROVED BY: **QUALITY ASSURANCE MANAGER**

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Tel. +39 02 97298663 r.a. - Fax +39 02 97291855
E-mail: indra@indra.it - http://www.indra.it

x CROSSWIND
16/10/24

CORPO VALVOLA / VALVE BODY

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST154678 / 2023 /
Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: N. AF 23 03438
Bestell
Your order
Commande

Conferma ordine nr: MI23009312
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24000102
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato - Solubilizzato Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkseachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage

SPECIFICHE : Anforderungen / Requirements / Exigences	Note: Aufzeichnungen / Notes / Notes
AV 316L VALVES A 1.4401/1.4404 A	
MDS S01 5 316 A (0)	(0)Norsok-standard M-630 Edition 6, October 2013
AD 2000-M. W 2 2022 1.4401 A (1)	(1)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
AD 2000-M. W 2 2022 1.4404 A (2)	(2)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
API 6A 21 ANNEX M (3)	(3)Errata 1, April 2019-Errata 2, June 2020-Add. 1, July 2020
API 6D 25 ANNEX H (4)	(4)Revision November 2021
ASME SA182 2021 S31600/03 A (5)	(5)Section II Part A 2021 EDITION For products machined directly from bar refer to ASME SA479.
ASME SA276 2021 S31600/03 A (6)	(6)Section II Part A 2021 EDITION
ASME SA479 2021 S31600/03 A (7)	(7)Section II Part A 2021 EDITION
ASTM A182 2023 S31600/03 A (8)	(8)For products machined directly from bar refer also to ASTM A479.
ASTM A262 PR. E 2015 316/316L (9)	(9)Reapproved 2021
ASTM A276 2023 S31600/03 A	
ASTM A370 2022 .	
ASTM A479 2023A S31600/03 A	
ASTM E381 2022 .	
ASTM E562 2019 . (A)	(A)19ED1
EN 10088 PART 3 2014 1.4401 A	
EN 10088 PART 3 2014 1.4404 A	
EN 10222 PART 5 2017 1.4401 A	
EN 10222 PART 5 2017 1.4404 A	
EN 10272 2016. 1.4401 A	
EN 10272 2016. 1.4404 A	
ISO 148-1 2016 .	
ISO 6892-1 2019 .	
NACE MR0103 2015 S31600/03 A (B)	(B)ANSI/NACE MR0103/ISO 17945 November 23, 2015
NACE MR0175 4 S31600/03 A (C)	(C)ANSI/NACE MR0175/ISO 15156-3:2020 Fourth edition, approved 21 Sep 2022.

		Tolleranza: k12 Toleranz/Allowance/Tolerance					
Pos. nr. Pos nr. Item nr. Nr. de poste	Oggetto Gegenstand Product description Descrip. du produit	Dimensioni - mm Abmessungen Dimension Dimension	Lunghezza - mm Länge Length Longueur	Colata Schmelze Heat Coulée	Pezzi Stückzahl Pieces Pieces	Peso - KG Gewicht Weight Poids	Lotto nr. Losnr. Lot nr. Lot nr.
0030	Tondo	110,000	5662/ 5732	434829	4	1727,0	107809800

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 10/01/2024 VCQ012 - MEST154678	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 1 di 7

CORPO VALVOLA / VALVE BODY

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST154678 / 2023 /

Cliente / Besteller/Purchaser/Client:
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr / Bestell / Your order / Commande: N. AF 23 03438

Conferma ordine nr / Werks/Our Order/Ref nr.: MI23009312

Avviso di Spedizione / Lieferanzeige/Packing list/B.L.: A-MI24000102

Stato di fornitura / Lieferzustand / Delivery state / Etat de livraison: Fucinato - Solubilizzato Pelato

Tipo di Elaborazione / Erschmelzungsart / Melting process / Mode d'elaboration: E+AOD

Qualità / Werkstoff/Grade/Nuance: 1.4401/1.4404/316/316L

Marca / Markenbezeichnung / Brand / Nuance: MVAPML (MAXIVAL)

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Herstellwerkes / Trade marks / Sigles de l'usine productrice: AV

Punzone del Collaudatore / Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur: MR

Punzonatura / Kennzeichnung / Marking / Marquage: 1.4401/1.4404/316/316L

TEST ALLO STATO DI FORNITURA
Test on delivery condition — Prüefung auf lieferbereitem produkt — test a l'etat de fourniture — Prueba sobre el material asi come entregado

1) L=longitudinale/lengs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess / Breite Diam Dicke / Width Diam Thickness / Larg diam epais mm	°C	Posiz. Saggio / Probenlage / Location / Emplacement 1)	Snervamento / Streckgrenze / Yield Stress / Limite elastique Rp 0,2% N/mm2	Snervamento / Streckgrenze / Yield Stress / Limite elastique Rp 1% N/mm2	Resistenza / Zugfestigkeit / Tensile strength / Resistance à traction Rm N/mm2	Allungamento / Bruchdehnung / Elongation / Allongement A5 %		Strizione / Einschnürung / Reduction of area / Striction Z %		Resilienza / Kerbschlagarbeit / Impact Value / Resilience			Durezza / Heerte / Hardness / Durete HB		
Valori richiesti / Anforderungen/Required values / Valeurs demandées		min		205	240	510	45	-	-	-	-			-		
		max				690								215		
A	10	20	L	273	308	573	58		63					169		
H	10	20	L	276	311	579	57		62					171		

TEST ALLO STATO DI FORNITURA
Test on delivery condition / Prüefung auf lieferbereitem produkt / Test a l'etat de fourniture / Prueba sobre el material asi come entregado

TEST		min	max	
H	Dimensioni grano x ASTM E112			4
H	Ferrite delta %			0,5 %

Charpy per ISO 148-1

1) L=longitudinale/lengs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess / Breite Diam Dicke / Width Diam Thickness / Larg diam epais mm	°C	Posiz. Saggio / Probenlage / Location / Emplacement 1)	Resilienza / Kerbschlagarbeit / Impact Value / Resilience KV2 J			Espansione laterale / Lateral Expansion / Lateral ex mm			Shear / Shear / % Shear %		
Valori richiesti / Anforderungen/Required values / Valeurs demandées		min		60	60	60	-	-	-	-	-	-
		max										
E	10X10	-196	L	257	258	255	2,395	2,382	2,308	80	80	80

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/lengs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess / Breite Diam Dicke / Width Diam Thickness / Larg. diam. epais mm	°C	Posiz. Saggio / Probenlage / Location / Emplacement 1)	Snervamento / Streckgrenze / Yield Stress / Limite elastique Rp 0,2% N/mm2	Snervamento / Streckgrenze / Yield Stress / Limite elastique	Resistenza / Zugfestigkeit / Tensile strength / Resistance à traction Rm N/mm2	Allungamento / Bruchdehnung / Elongation / Allongement E 4d %		Strizione / Einschnürung / Reduction of area / Striction RA %		Resilienza / Kerbschlagarbeit / Impact Value / Resilience			Durezza / Heerte / Hardness / Durete		
Valori richiesti / Anforderungen/Required values / Valeurs demandées		min		205	-	515	-	40	-	50	-			-		
		max														
D	12,5	20	L	268		568		58		69						

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Vicenza, 10/01/2024	Direzione Qualità / Qualitätsmanagement/Quality Management/Gestion Qualité	Direzione Prodotto / Produktmanagement/Product Management/Direction Produit	Pagina
VCQ012 - MEST154678	R.BERTELLI	P.MESSORI	2 di 7

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Certificato nr. / Prüfung/Test/Essai: MEST154678 / 2023 /

Cliente / Besteller/Purchaser/Client:
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr. / Bestell / Your order / Commande: N. AF 23 03438

Conferma ordine nr. / Werks/Our Order/Ref nr.: MI23009312

Avviso di Spedizione / Lieferanzeige/Packing list/B.L.: A-MI24000102

Stato di fornitura / Lieferzustand / Delivery state / Etat de livraison: Fucinato - Solubilizzato Pelato

Tipo di Elaborazione / Erschmelzungsart / Melting process / Mode d'elaboration: E+AOD

Qualità / Werkstoff/Grade/Nuance: 1.4401/1.4404/316/316L

Marca / Markenbezeichnung / Brand / Nuance: MVAPML (MAXIVAL)

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice: AV

Punzone del Collaudatore / Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur: MR

Punzonatura / Kennzeichnung / Marking / Marquage: 1.4401/1.4404/316/316L

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Speciman/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale - Lateral Expansion - Lateral ex mm			Shear - Shear - % Shear %		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		60	60	60	-	-	-	-	-	-
F	10X10	-196	T	64	67	70	0,672	0,703	0,725	40	40	40

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Speciman/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale - Lateral Expansion -			Shear - Shear -		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		100	100	100	-	-	-	-	-	-
J	10X10	20	L	280	285	286						
K	10X10	20	L	271	279	280						

Tensile testing according to ISO 6892-1

Impact testing according to ISO 148-1

Mechanical properties according to ASTM A370.

Ferrite content tested according to ASTM E562.

Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata / Heat Schmelze/Coulée															
	min 23,0	-	-	-	-	16,50	2,00	10,00	-	-	-	-	-	-	-
	max 28,0	0,030	1,00	2,00	18,00	2,50	13,00	-	0,045	0,030	0,100	-	-	-	-
	PRE	C %	Si %	Mn %	Cr %	Mo %	Ni %	Co %	P %	S %	N %				
434829	24,5	0,015	0,49	1,78	16,73	2,05	10,15	0,097	0,031	0,029	0,060				

Colata / Heat Schmelze/Coulée								
min 14,0	-	-	-	-	-	-	-	
max 20,0	-	-	-	-	-	-	-	
	Ni+(2*Mo)							
434829	14,3							

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Ordine nr: N. AF 23 03438
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Commande

Conferma ordine nr: MI23009312
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24000102
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato - Solubilizzato Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	SATISFACTORY

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	SATISFACTORY

Furnace calibrated according to API 6A REV 21th ED ANNEX M.
Furnace calibrated according to API 6D REV 25th ED ANNEX H.
Macroetch test per ASTM E381: acceptable.
Reduction ratio = 28,8 : 1
MATERIAL ET INSPECTED ACCORDING TO EN 10088-3 TAB.1
UT ACC. TO EN 10308 Cl.3
Treatment made on date 12/10/2021 in continuous
furnace FCB calibration expiry date 30/03/2022
Solution annealed 1080°C for 160'(total time)/ water cooled
ET ACC. TO EN 10088-3 TAB.1
"Issued in agreement with TÜV SÜD Industrie Service GMBH
(07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by
Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

Allegati / Anlagen / Enclosure / Attachments :
UT23006747 GT23001953

Sono state soddisfatte tutte le condizioni richieste
Die gestellen Anforderungen sind it. Anlage erfüllt
The material has been furnished in accordance with the requirements
Le materiel à eté trouvé conforme aux exigences

Controllo antimescolanza con tecnica XRF/OES portatile : OK
Verwechslungprüfung: durch XRF/QES Gerät geführt : OK
Antimixing testing performed with XRF/OES portable : OK
Contrôle antimélange svt technique XRF/QES portable : OK

Controllo visivo e dimensionale: soddisfa le esigenze
Besichtigung und Ausmessung: ohne Beanstandung
Visual inspection and dimensional checks:satisfactory
Contrôle visuel et dimensions: satisfaisant

CROSSWIND 16/10/24

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 10/01/2024 VCQ012 - MEST154678	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 4 di 7

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VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: N. AF 23 03438
Bestell / Your order / Commande

Conferma ordine nr: MI23009312
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24000102
Lieferanzeige/Packing list/B.L.

Stato di fornitura: Fucinato - Solubilizzato Pelato
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werksachverständigen / Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung / Marking / Marquage

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD`S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

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Vicenza, 10/01/2024 VCQ012 - MEST154678	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 5 di 7

CORPO VALVOLA / VALVE BODY

	Acciaierie Valbruna S.p.A. 36100 VICENZA (Italia) - Viale della scienza, 25 z.i. Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4	**CERTIFICATO** Certificate - Zeugnis - Certificat **N° UT23006747**	Pag 6 di 7
		CONTROLLO CON ULTRASUONI *Ultrasonic testing - Ultraschallprüfung - Controle par ultrasons*	

mod. UT02 MEST154678 / 2023 /

Cliente : INDRA S.R.L. *Customer*				**Lotto nr : 107809800** *Mill order*		
MARCA *Grade*	**DIMENSIONI - mm** *Size*	**COLATA** *Heat*	**BARRE** *Bars*	**PESO** *Weight*	**LUNGHEZZA - mm** *Length*	
MVAPML	Tondo 110,000	434829	N. 4	KG : 1727,0	5662	5732

T. TERMICO *Heat Treatement*	**ESECUZIONE** *Condition*	**RUGOSITA'** *Roughness*	**TOLLERANZA** *Tolerance*
Solubilizzato	Pelato	µm	k12

Istruzione : PROC CND 040 *Work Instruction*	**Criteri Accettabilità : A388/API 6A PSL3-EN 10308CL.3-ASME B16.34/IV** Acceptance Criteria

ELETTRONICA : Olympus Quickscan LT *Equipment*	
ACCOPPIANTE : ACQUA + 0253 SA *Couplant*	**VEL.CONTROLLO : 267 mm/sec** *Testing Speed*

TRASDUTTORI *Probes*	**TIPO ONDA** *Type of wave*	**FREQUENZA (MHZ)** *Frequency*	**DIMENSIONI (MM)** *Dimension*	**ANGOLO** *Angle*	**TARATURA** *Calibration*
64EL. 2.25MHZ	LONG.	2,25	128X25	0°	DAC

CONTROLLO AUTOMATICO [X] *Automatic inspection*	**CONTROLLO MANUALE** *Manual inspection*

NOTE :
Notes

CONFORME [X] *Compliant*	**CONFORME IN DEROGA [ ]** *See Deviation*	**NON CONFORME[ ]** *Not Compliant*

ISPEZIONATO DA Inspected by	**VERIFICATO DA** Verified by	**APPROVATO DA** Approved by	**COLLAUDATORE** Inspector - Abnahmesachsverst - Inspecteur
FIRMA 01/08/2023 Date - Date	**FIRMA**	**P.Belloli** ISO 9712 LEV. 3 IND1900997 **FIRMA** P.Belloli	

Operatori, strumenti e documenti di riferimento, utilizzati per il collaudo del materiale, sono identificati, controllati e/o calibrati in accordo alle norme EN, ISO e ASTM, richiamate nelle pratiche operative e istruzioni di pertinenza / *Operators, Equipment and reference documents, used for material inspection, are identified, checked and/or calibrated in accordance with EN/ISO or ASTM standards, reported in relevant documents*

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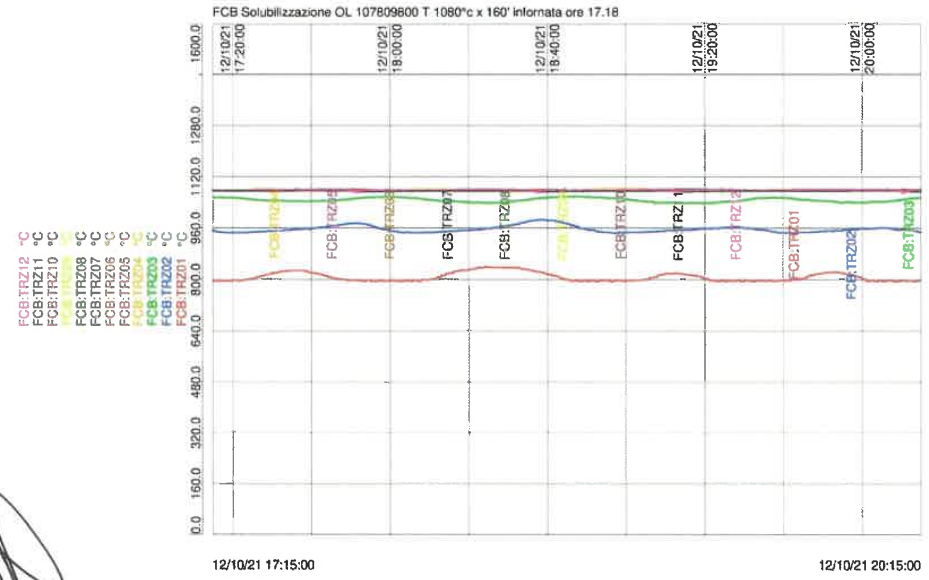
CERTIFICATO Certificate - Zeugnis - Certificat **N° GT23001953** **Pag 7 di 7**

Diagrammi di trattamento termico **MEST154678 / 2023 /**

Heat Treatment charts - Waermebehandlungs diagramm - Diagramme de traitement thermique

N° LOTTO : 107809800	Note Dettaglio :	Note:
Lot Number	Detail Notes	Notes

TEMPERATURE (°C)



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A CROSOVINO
16/10/24

TIME (HOURS)

Approved by:

CLOSURE E150RF3

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST100392 / 2023 /
Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF23 02111
Bestell
Your order
Commande

Conferma ordine nr: MI23005930
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23004672
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato - Solubilizzato Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage

SPECIFICHE : Anforderungen / Requirements / Exigences	Note: Aufzeichnungen / Notes / Notes
AV 316L VALVES A 1.4401/1.4404 A	
MDS S01 5 316 A (0)	(0)Norsok-standard M-630 Edition 6, October 2013
AD 2000-M. W 2 01/20 1.4401 A (1)	(1)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
AD 2000-M. W 2 01/20 1.4404 A (2)	(2)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
API 6A 21 ANNEX M (3)	(3)Errata 1, April 2019-Errata 2, June 2020-Add. 1, July 2020
API 6D 25 ANNEX H (4)	(4)Revision November 2021
ASME SA182 2021 S31600/03 A (5)	(5)Section II Part A 2021 EDITION For products machined directly from bar refer to ASME SA479.
ASME SA276 2021 S31600/03 A (6)	(6)Section II Part A 2021 EDITION
ASME SA479 2021 S31600/03 A (7)	(7)Section II Part A 2021 EDITION
ASTM A182 2023 S31600/03 A (8)	(8)For products machined directly from bar refer also to ASTM A479.
ASTM A262 PR. E 2015 316/316L (9)	(9)Reapproved 2021
ASTM A276 2017 S31600/03 A	
ASTM A370 2022 .	
ASTM A479 2023A S31600/03 A	
ASTM E381 2022 .	
ASTM E562 2019 . (A)	(A)19E01
EN 10088 PART 3 2014 1.4401 A	
EN 10088 PART 3 2014 1.4404 A	
EN 10222 PART 5 2017 1.4401 A	
EN 10222 PART 5 2017 1.4404 A	
EN 10272 2016. 1.4401 A	
EN 10272 2016. 1.4404 A	
ISO 148-1 2016 .	
ISO 6892-1 2019 .	
NACE MR0103 2015 S31600/03 A (B)	(B)ANSI/NACE MR0103/ISO 17945 November 23, 2015
NACE MR0175 2015 S31600/03 A (C)	(C)ANSI/NACE MR0175/ISO 15156-3, third edition November 23,2015

		Tolleranza: k12 Toleranz/Allowance/Tolerance					
Pos. nr. Pos. nr Item nr. Nr. de poste	Oggetto Gegenstand Product description Descrip. du produit	Dimensioni - mm Abmessungen Dimension Dimension	Lunghezza - mm Länge Length Longueur	Colata Schmelze Heat Coulée	Pezzi Stückzahl Pieces Pieces	Peso - KG Gewicht Weight Poids	Lotto nr. Losnr Lot nr Lot nr.
0100	Tondo	100,000	5321/ 5656	436801	2	681,0	301712220

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 02/08/2023 VCQ012 - MEST100392	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 1 di 7

CLOSURE E150RF3

Acciaierie Valbruna S.p.A.

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INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF23 02111
Bestell
Your order
Commande

Conferma ordine nr: MI23005930
Works/Our Order/Ref nr.

Avviso di Spedizione: A-MI23004672
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato - Solubilizzato Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage

TEST ALLO STATO DI FORNITURA
Test on delivery condition Prüefung auf lieferbereitem produkt test a l'etat de fourniture Prueba sobre el material asi come entregado

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probestage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement A5 %		Strizione Einschnürung Reduction of area Striction Z %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Heerte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		205	240	510 690	45	-	-	-	-			-	215	
A	10	20	L	278	312	577	54		66					168		

TEST ALLO STATO DI FORNITURA
Test on delivery condition / Prüefung auf lieferbereitem produkt / Test a l'etat de fourniture / Prueba sobre el material asi come entregado

TEST		min	max	
A	Dimensioni grano x ASTM E112			3
A	Ferrite delta %			1,2 %

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probestage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear % Shear % Shear		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		60	60	60	-	-	-	-	-	-
F	10X10	-196	L	276	270	271	2,210	2,223	2,234	70	70	70

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probestage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Heerte Hardness Durete		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		205	-	515	-	40	-	50	-			-		
D	12,5	20	L	278		582		55		73						

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10/10/24

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 02/08/2023	Direzione Qualità	Direzione Prodotto	Pagina
VCQ012 - MEST100392	Qualitätsmanagement/Quality Management/Gestion Qualité	Produktmanagement/Product Management/Direction Produit	2 di 7
	R.BERTELLI	P.MESSORI	

Acciaierie Valbruna S.p.A.

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Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST100392 / 2023 /

Cliente / Besteller/Purchaser/Client:
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr / Bestell / Your order / Commande: AF23 02111

Conferma ordine nr / Werks/Our Order/Ref nr.: MI23005930

Avviso di Spedizione / Lieferanzeige/Packing list/B.L.: A-MI23004672

Stato di fornitura / Lieferzustand / Delivery state / Etat de livraison: Fucinato - Solubilizzato Pelato

Tipo di Elaborazione / Erschmelzungsart / Melting process / Mode d'elaboration: E+AOD

Qualità / Werkstoff/Grade/Nuance: 1.4401/1.4404/316/316L

Marca / Markenbezeichnung / Brand / Nuance: MVAPML (MAXIVAL)

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice: AV

Punzone del Collaudatore / Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur: MR

Punzonatura / Kennzeichnung / Marking / Marquage: 1.4401/1.4404/316/316L

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab / Specimen/Eprouvette / Larg.diam.Spess. / Breite Diam. Dicke / Width Diam. Thickness / Larg. diam. epais. mm	°C	Posiz. Saggio / Probenlage / Location / Emplacement 1)	Resilienza / Kerbschlagarbeit / Impact Value / Resilience KV2 J			Espansione laterale / Lateral Expansion / Lateral ex mm			Shear / Shear / % Shear %		
Valori richiesti / Anforderungen/Required values / Valeurs demandées		min		60	60	60	-	-	-	-	-	-
		max										
G	10X10	-196	T	64	67	60	0,590	0,576	0,598	30	30	30

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab / Specimen/Eprouvette / Larg.diam.Spess. / Breite Diam. Dicke / Width Diam. Thickness / Larg. diam. epais. mm	°C	Posiz. Saggio / Probenlage / Location / Emplacement 1)	Resilienza / Kerbschlagarbeit / Impact Value / Resilience KV2 J			Espansione laterale / Lateral Expansion			Shear / Shear		
Valori richiesti / Anforderungen/Required values / Valeurs demandées		min		100	100	100	-	-	-	-	-	-
		max										
E	10X10	20	L	305	308	304						

Tensile testing according to ISO 6892-1

Impact testing according to ISO 148-1

Mechanical properties according to ASTM A370.

Ferrite content tested according to ASTM E562.

Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat / Schmelze/Coulée		PRE	C %	Si %	Mn %	Cr %	Mo %	Ni %	Co %	P %	S %	N %
	min 23,0	-	-	-	-	16,50	2,00	10,00	-	-	-	-
	max 28,0	0,030	1,00	2,00	18,00	2,50	13,00	-	0,045	0,030	0,100	-
436801		24,9	0,016	0,71	1,84	16,82	2,10	10,07	0,093	0,027	0,023	0,074

Colata /Heat / Schmelze/Coulée		Ni+(2*Mo)
	min 14,0	-
	max 20,0	-
436801		14,3

CROSS WIND
16/10/23

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 02/08/2023 VCQ012 - MEST100392	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 3 di 7

CLOSURE E150RF3

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

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INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF23 02111
Bestell
Your order
Commande

Conferma ordine nr: MI23005930
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23004672
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato - Solubilizzato Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

Furnace calibrated according to API 6A REV 21th ED ANNEX M.
Furnace calibrated according to API 6D REV 25th ED ANNEX H.
Macroetch test per ASTM E381: acceptable.
Reduction ratio = 28,3 : 1
ET ACC. TO EN 10088-3 TAB.1
UT ACC. TO A388/API 6A PSL3-EN 10308cl.3-ASME B16.34/IV
Treatment made on date 17/03/2023 in continuous furnace
FCB calibration expiry date 14/08/2023,.
Solution annealed 1080°C for 150'(total time)/water cooled.
"Issued in agreement with TÜV SÜD Industrie Service GMBH (07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

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16/10/24

Allegati / Anlagen / Enclosure / Attachments :
UT23004311 GT23001184

Sono state soddisfatte tutte le condizioni richieste
Die gestellten Anforderungen sind lt. Anlage erfüllt
The material has been furnished in accordance with the requirements
Le materiel à été trouvé conforme aux exigences

Controllo antimescolanza con tecnica XRF/OES portatile : OK
Verwechslungprüfung: durch XRF/OES Gerät geführt : OK
Antimixing testing performed with XRF/OES portable : OK
Contrôle antimélange svt technique XRF/OES portable : OK

Controllo visivo e dimensionale: soddisfa le esigenze
Besichtigung und Ausmessung: ohne Beanstandung
Visual inspection and dimensional checks:satisfactory
Contrôle visuel et dimensions: satisfaisant

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

Vicenza, 02/08/2023 VCQ012 - MEST100392	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité **R.BERTELLI**	Direzione Prodotto Produktmanagement/Product Management/Direction Produit **P.MESSORI**	Pagina 4 di 7

CLOSURE E150RF3

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Lieferzustand
Delivery state
Etat de livraison

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Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Liefermerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD`S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

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Vicenza, 02/08/2023 VCQ012 - MEST100392	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 5 di 7

CLOSURE E150RF3

	Acciaierie Valbruna S.p.A. 36100 VICENZA (Italia) - Viale della scienza, 25 z.i. Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4	**CERTIFICATO** Certificate - Zeugnis - Certificat **N° UT23004311**	Pag 6 di 7
		CONTROLLO CON ULTRASUONI *Ultrasonic testing - Ultraschallprüfung - Controle par ultrasons*	

mod. UT02

MEST100392 / 2023 /

Cliente : INDRA S.R.L. *Customer*				**Lotto nr : 301712220** *Mill order*	
MARCA *Grade*	**DIMENSIONI - mm** *Size*	**COLATA** *Heat*	**BARRE** *Bars*	**PESO** *Weight*	**LUNGHEZZA - mm** *Length*
MVAPML	Tondo 100,000	436801	N. 2	KG : 681,0	5321 / 5656

T. TERMICO *Heat Treetement*	**ESECUZIONE** *Condition*	**RUGOSITA'** *Roughness*	**TOLLERANZA** *Tolerance*
Solubilizzato	Pelato		k12

Istruzione : PROC CND 016 *Work Instruction*		**Criteri Accettabilità : A388/API 6A PSL3-EN 10308 cl.3-ASME B16.34/IV** Acceptance Criteria

ELETTRONICA : GE USIP 40
Equipment

ACCOPPIANTE : ACQUA + 0253 SA
Couplant

VEL.CONTROLLO : 30 m/min
Testing Speed

TRASDUTTORI *Probes*	**TIPO ONDA** *Type of wave*	**FREQUENZA (MHZ)** *Frequency*	**DIMENSIONI (MM)** *Dimension*	**ANGOLO** *Angle*	**TARATURA** *Calibration*
P12-2.5MHZ	LONGITUDINALE	2.5	12	0°	DAC

CONTROLLO AUTOMATICO [X] *Automatic inspection*	**CONTROLLO MANUALE** *Manual inspection*

NOTE :
Notes

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16/10/2023

CONFORME [X] *Compliant*	**CONFORME IN DEROGA [ ]** *See Deviation*	**NON CONFORME [ ]** *Not Compliant*

ISPEZIONATO DA Inspected by	**VERIFICATO DA** Verified by	**APPROVATO DA** Approved by	**COLLAUDATORE** Inspector - Abnahmesachsverst - Inspecteur
FIRMA 01/08/2023 Date - Date	**FIRMA**	**P.Belloli** ISO 9712 LEV. 3 IND1900997 **FIRMA**	

Operatori, strumenti e documenti di riferimento, utilizzati per il collaudo del materiale, sono identificati, controllati e/o calibrati in accordo alle norme EN, ISO e ASTM, richiamate nelle pratiche operative e istruzioni di pertinenza / *Operators, Equipment and reference documents, used for material inspection, are identified, checked and/or calibrated in accordance with EN/ISO or ASTM standards, reported in relevant documents.*

Acciaierie Valbruna S.p.A.
36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4

CERTIFICATO Certificate - Zeugnis - Certificat **N° GT23001184** **Pag 7 di 7**

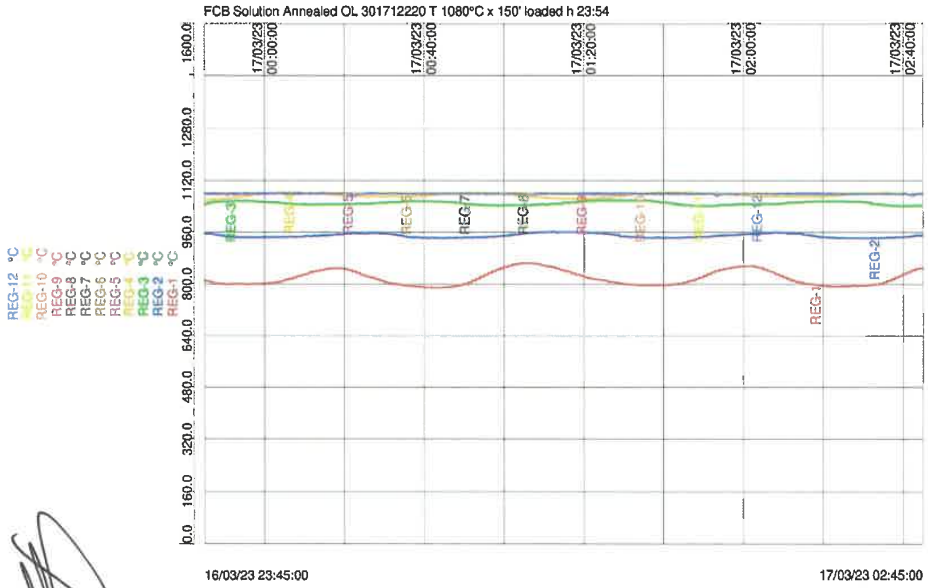
Diagrammi di trattamento termico

MEST100392 / 2023 /

Heat Treatment charts - Waermebehandlungs diagramm - Diagramme de traitement thermique

N° LOTTO : 301712220 Lot Number	Note Dettaglio : Detail Notes	Note: Notes

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TEMPERATURE (°C)

TIME (HOURS)

Approved by:

TIRANTE / STUD BOLT

IPL S.r.l.
BULLONERIA - TIRANTERIA
SPECIALE E STANDARD

Via Papa Giovanni Paolo I, 306
21040 UBOLDO (VA)

Customer: **INDRA SRL**
C.SO XXII MARZO, 8
20135 MILANO (MI)

Date, 11-09-24 **Our Ref.** DDT 3209 / OC 1696 **of** 11-09-24 **Your Ref.** AF24 02662 01-08-24

CERTIFICATE UNI EN 10204 - 3.1 N.2402480

ITEM		QUANTITY	HEAT TREATMENT	PROTECTION	LOT nr.	HEAT nr.
TIR.82010030	STUDBOLT UNI6610/DIN976B - A/SA193-320 B8M CL.2 M 10 x 30	85,00	carb. sol. tr. + strain hard.		834976	572929

101.99.0962SS

MECHANICAL PROPERTIES

values	R (MPa)	Rs 0,2 (MPa)	A4 (%)	Z (%)	HB (min-max)
required	760 min	655 min	15 min.	45 min.	321 max
actual	785	684	28,0	69,0	240

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CHEMICAL COMPOSITION

values	C (%)	Mn (%)	Si (%)	P (%)	S (%)	Ni (%)	Cr (%)	Mo (%)	N (%)
required	0,08 max	2,00 max	1,00 max	0,045 max	0,030 max	10,00 - 14,00	16,00 - 18,00	2,00 - 3,00	
actual	0,014	1,830	0,370	0,027	0,027	10,13	17,03	2,080	

remarks: chemical and mechanical values, at delivery condition, are quoted by the relevant steel work certificate. VISUAL AND DIMENSIONAL TEST SATISFACTORY
According to: ASME II part. A ed. 2021

CROSSWIND
16/10/24

If not mentioned the above test are performed at room temperature.
We certify that the fasteners were manufactured, sampled, tested and inspected in accordance with the specification and are consistent with order prescriptions.
Quality assurance system in accordance to European Directive 2014/68/EU annex I par. 4.3 (PED) and AD 2000 Merkblatt W0.
Certificates 0045/202/WZ1921/23 and TN/AD2000-W0/1921/23 TÜV NORD Systems GmbH & Co. KG.

IPL S.R.L.
RSQ A. Grisetti

DADO / NUT

t·e·c·n·o BOLT

CERTIFICATE

Nr. 5066	26-07-24

Page 1/1

INDRA SRL
VIA NOVARA 10/B-C
20013 MAGENTA MI
ITALIA

EN ISO 10204 3.1
CERTIFIED MATERIAL TEST REPORT

Your order: AF24 01970 24-06-24 Delivery note: 2000 26-07-24

Item	Materials	Description	Sizes	Batch	Heat		Quantity
9	ASTM A 194 Gr.8M 980.99.0002 Pos. 170 - 180 - 190 - 200 - 210 - 220 - 230 - 240 - 300	Dado UNI 5588/DIN 934 ASTM A 194 Gr.8M M Esagonale	10	64533	160903S05	N.	380



VOCE DOGANALE 73181900

MERCE DI ORIGINE ITALIA

CHEMICAL ANALYSIS

9		%C %	%Mn %	%P %	%S %	%Si %	%Cr %	%Ni %	%Mo %
	REQ. MIN.						16	10	2
	REQ. MAX.	0,08	2	0,045	0,030	1	18	14	3
	ACT.VAL.	0.033	0.950	0.033	0.002	0.340	16.400	10.050	2.020

MECHANICAL PROPERTIES

9		H HB	P.L. KN
	REQ. MIN.	126	
	REQ. MAX.	300	
	ACT. VAL.	147-156	29.9

We state that the material or fasteners, or both, were manufactered, sampled, tested and inspected in accordance with the specification and any supplementary requirements designated in the purchase/sales order and it was found to meet those requirements

tecnoBOLT s.r.l. - 20822 Seveso (MB) ITALY - way vignone n.7 - info@tecnobolt.com - www.tecnobolt.com

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CROSSWIND
16/10/24

STELO SFERA / BALL STEM

Rodacciai

23842 Bosisio Parini (LC) – Via Giuseppe Roda 1 – Italia
Tel. +39 031878111 – Fax +39 031878312
www.rodacciai.com – info@rodacciai.com

Azienda con sistema di gestione certificato da IGQ secondo UNI EN ISO 9001:2015

The Company's Quality Management System is certified by IGQ according to UNI EN ISO 9001:2015

CERTIFICATO DI CONTROLLO Inspection Certif N. 173501 Date 13/11/2023

Secondo According to . . . . . EN 10204:2004 3.1

ORDINE - Order N. 23/3822 Date 10/11/2023

D.d.T. - Delivery note N. 11634/04 Date 13/11/2023

Weight KG 128,00 **Odp. Nr.** 2022/A/13380
Tolerance ISO286-2 h9 + 0,000 - 0,043 mm **Bars Length** 3.000 - 3.050 mm

QUALITA' - Grade

STANDARD	EN 10088-3:2014	X2CrNiMo17-12-2	1.4404 / 316L
STANDARD	EN 10088-3:2023	X5CrNiMo17-12-2	1.4401 / 316

Mark RODACCIAI . . . . . 316 PLUS
PROFILO - Shape . . . . . ROUND
DIMENSIONE - Size . . . . . mm 18,00
ESECUZIONE - Form of delivery . . . . . ROUGH GROU.

COLATA - Heat E30822

ANALISI CHIMICA DI COLATA - Cast analysis % by mass

C	Mn	Si	S	P	Cr	Ni	Mo	Cu	Co	N
0,020	1,540	0,554	0,0290	0,031	16,620	10,020	2,030	0,441	0,280	0,0520

CARATTERISTICHE MECCANICHE ALLO STATO DI FORNITURA
Mechanical properties of the delivered material

		Tested
Tensile Strength	Rm (MPa)	695,3
Proof Stress	Rp (1) (MPa)	648,0
Proof Stress	Rp (0,2) (MPa)	580,7
Elongation	A 4 (%)	44,3
Elongation	A 5 (%)	41,1
Hardness	HBW	211,0
Reduction of area	Z (%)	68,0

NOTE - Notes

Processo di Fusione: E + A. O. D.
Prova di Corrosione Intergranularena: ASTM A262-15 "E"
Trattamento termico: Temperatura di Solubilizzazione 1060°C
Tempo Mantenimento: 4 Ore, Raffreddamento in Acqua
Materiale conforme a: ASTM A276-16a / A479-16a / A182-24
ASME: SA479; SA276; SA182 - UNS 31600 - 31630 AISI 316-316L

Pag. 1 / Segue

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The Company's Quality Management System is certified by IGQ according to UNI EN ISO 9001:2015

Segue certificato di controllo N. 173501 Date 13/11/2023
Inspection Certificate's continuance

NOTE - Notes

Materiale Conforme a NACE MR-0175/ISO 15156-3:2015
NACE MR-103/ISO 17495-1:2016
Corrosione Intercristallina EN ISO 3651-2:98 Met.A

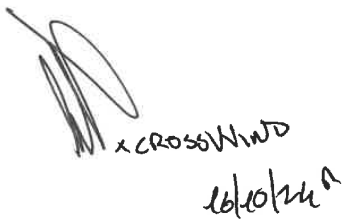
Melting Process: E + A. O. D
Intergranular corrosion tested to ASTM A262-15 "E"
Heat treatment: annealed temperature 1060°C
Soaking time: 4 Hours, Cooling in water
Material Compliant to: ASTM A276-16a / A479-16a / A182-24
ASME: SA479; SA276; SA182 - UNS 31600 - 31630 AISI 316-316L
According to: NACE MR-0175 / ISO 15156-3:2015
NACE MR-103/ISO 17495-1:2016
Intergranular Corrosion according to EN ISO 3651-2:98 Met.A

Surface quality condition 2H conforming also to EN 10277 class 3

We certify hereby, that the above mentioned products are consistent with the order prescriptions.
This certificate was generated by data system acc. to EN 10204, it is not necessary to be signed for validity.

Materiale conforme alle seguenti direttive/regolamenti europee:
- Regolamento REACH 2006/1907/CE e tutti successivi aggiornamenti, compresa la modifica M80 Direttiva Delegata 2022/1632, e SVHC Candidate List aggiornata al 17/017/2023.
- Direttiva ROHS 2011/657UE e tutti i successivi aggiornamenti, compresa la modifica M80 attraverso la Direttiva Delegata 2022/1632, e Decreto Legislativo 27 del 04/03/2014.
- Direttiva RAEE 2012/19/UE e tutti successivi aggiornamenti, compresa la modifica M1 attraverso la Direttiva 2018/849.
- Direttiva ELV (End-of-Life Vehicles) 2000/53/CE e tutti i successivi aggiornamenti, compresa la modifica M15 attraverso la Direttiva 2020/363
- Contaminazione Radioattiva, Direttiva 2013/59/EURATOM e Decreto Legislativo N.101 del 31 Luglio 2020.
- Canadian List 168 aggiornata al 16/03/2022.
- Minerali di Conflitto, Regolamento (UE) 2017/821 e tutti i successivi aggiornamenti, compresa la modifica M1 attraverso il Regolamento Delegato 2020/1588, e Dodd-Frank Wall Street Reform and Consumer Protection Act Section 1502.

Material conforming to the following European directives/regulation:
- REACH regulation 2006/1907/EC and all subsequent updates, including modification M80 Delegate Directive, and SVHC Candidate List updated to 01/17/2023.
- ROHS Directive 2011/65/EU and all subsequent updates, including the M80 amendment through the Delegated Directive 2022/1632, and Italian Legislative Decree 27 of 03/04/2014.
- WEEE Directive 2012/19/EU and all subsequent updates, including the M1 amendment through Directive 2018/849.
- ELV (End-of-Life Vehicles) Directive 2000/53/EC and all subsequent updates, including the modification M15 through Directive 2020/363
- Radioactive Contamination, Directive 2013/59/EURATOM and Italian Legislative Decree No. 101 of 31 July 2020.
- Canadian List 168 updated 03/16/2022.
- Conflict Minerals, Regulation (EU) 2017/821 and all subsequent updates, including amendment M1 through Delegated Regulation 2020/1588, and Dodd-Frank Wall Street Reform and Consumer Protection Act Section 1502.



Pag. 2 / 2 RODACCIAI: The Work Inspector
Alessia Porta

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CAP. SOC. 250.000.000 EUR INT. VERS.
C.F. 02187360967
VAT: IT00571320078 - R.E.A. n. AO-50474

Company with Management Systems
certified according to ISO 9001, ITAF 16949,
EN 9100, ISO 14001 and ISO 45001.

INSPECTION CERTIFICATE 3.1 (EN 10204:2004)

DOCUMENT NUMBER 2023008125

CUSTOMER'S ORDER:	mail		
MANUFACTURER'S WORKS:	AOSTA, VIA PARAVERA 16 - ITALY		
PRODUCER OF THE DOC:	QUALITY DEPARTMENT		
MANUFACTURER'S WORKS ORDER NO:	0001137664 / 000020		
MARK OF THE MANUFACTURER:	**COGNE**		
DISPATCH NOTE:	81578978 / 000020 WEIGHT: 476 KG / 1049 LB		
INTERNAL SPEC:	AD2000MERKBLATTW10	TECHNICAL RULE:	AD2000
PRODUCT:	PEL PEELED ROUND BARS TOLERANCE: ISOK11		
SURFACE FINISH:	2B Cold Finished		
PRODUCT DELIVERY CONDITION:	RS SOLUTION ANNEALED		
PRODUCT DIMENSIONS (mm):	42,000 (1,654 in)	LENGTH (mm)	06000 06200 (00236 00244 in)
GRADE:	316L-S31600/31603-1.4404/1.4401	INTERNAL GRADE:	F316L IMCO
IDENTIFICATION HEAT NO:	372009	IDENTIFICATION LOT NO:	963880
MARKING OF THE PRODUCT:	1.4404	TEST PIECE N:	388

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AISI 316/316L - UNS S31600/S31603 - 1.4404/1.4401
STEELMAKING EAF + AOD + CONTINUOUS CASTING
REFERENCE FOR APPLICABLE ASME STANDARD: SECTION II PART A ED. 2015-2017-2019-2021
THE MATERIAL IS PRODUCED ACCORDING TO SPECIFICATION AD2000-MERKBLATT W2/W10
DOCUMENT ISSUED IN AGREEMENT WITH TUEV BAYERN(11.1972) WAVING OF COUNTERSIGNING (SEE TUEV BAYERN LETTER DATED 17.01.80).
REFERENCE NORMS: EN 10088-3 2014, EN 10272 2016, ASTM A276/A276M, ASTM A479/A479M, ASTM A193 B8MCLASSE 1D, ASME SA276/SA276M, ASME SA479/SA479M, AMS 5653J, AMS 5648M, ISO15156-3/NACE MR0175 2015, NACE MR0103/ISO 17945, NORSOK M630 MDSS01 REV5.
REFERENCE NORMS FOR CHEMICAL COMPOSITION AND MECHANICAL PROPERTIES: ASTM A182, ASME SA182.
REFERENCE NORMS ONLY FOR CHEMICAL COMPOSITION: EN 10222-5 2017,ASTM A403-07a, ASTM A484-18a,ASTM A314-08, AMS-QQ-S-763D.
ASME SECT.II PART A EDITION 2015-2017-2019-2021
MATERIAL ACCORDING TO NACE MR0103/ISO 17945
HOT ROLLED
REDUCTION RATIO 16,8

CHEMICAL LADLE ANALYSIS ACCORDING TO ASTM A751 - EN ISO 14284
Control lot No. - Weight :020000951998 - 86.971 KG - 191.735 LB

ELEMENTS	C	Si	Mn	P	S	N	Cr	Mo	Ni	Cu
MEASUREMENT UNIT	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w
OBTAINED	0,016	0,41	1,81	0,024	0,025	0,071	16,89	2,10	10,25	0,39

ELEMENTS	Co
MEASUREMENT UNIT	% w/w
OBTAINED	0,12

HARDNESS TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000952723 - 2.519 KG - 5.553 LB
SPECIFICATION ENISO6506 HARDNESS TEST HB TESTING METHOD: 10/3000
OBTAINED 157

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16/10/24 P

DATE 14.02.2023 BARBARA VIETTI MV(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne

COGNE ACCIAI SPECIALI S.p.a.
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Company with Management Systems certified according to ISO 9001, ITAF 16949, EN 9100, ISO 14001 and ISO 45001.

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IMPACT TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000952723 - 2.519 KG - 5.553 LB
SPECIFICATION EN ISO 148-1-KV2 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 20
MEASUREMENT UNIT J
OBTAINED 441 429 433 438 430 440 428 442 442

TENSILE TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000952723 - 2.519 KG - 5.553 LB
SPECIFICATION EN-ISO6892-1 DIRECTION OF THE TEST PIECE: L

	RM	RP02	A5	Z	RP1
MEASUREMENT UNIT	MPA	MPA	% 5.0 D	%	NMM
OBTAINED	567	273	58,1	77,4	313
	577	281	52,0	72,5	317
	568	266	58,9	80,2	312

GRAIN SIZE
Control lot No. - Weight :020000952723 - 2.519 KG - 5.553 LB
SPECIFICATION ASTME112 --
OBTAINED 6

CORROSION TEST ACCORDING TO ASTM A262 PRACTICE E EN ISO 3651-2 PRACTICE A: SATISFACTORY.
MATERIAL ACCORDING TO ASME SEC. II Ed. 2015
IMPACT TEST
Control lot No. - Weight :020000952723 - 2.519 KG - 5.553 LB
SPECIFICATION EN ISO 148-1 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 196-
MEASUREMENT UNIT J
OBTAINED 185 200 188 196 192 176 198 188 173

TENSILE TEST
Control lot No. - Weight :020000952723 - 2.519 KG - 5.553 LB
SPECIFICATION ASTMA370-E8-0.5"SPEC DIRECTION OF THE TEST PIECE: L

	RMB	RP02B	ZB	AL2B
MEASUREMENT UNIT	KSI	KSI	%	% 4,0 D
OBTAINED	84	38	79,4	58,9
	83	38	72,4	63,9
	83	39	79,8	64,1

The products delivered are conforming to EN10088-5 and bear the CE marking on the basis of the test results here reported and the continuous surveillance, assessment and approval by MPA NRW

DATE 14.02.2023 BARBARA VIETTI MV(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne

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(certificate no. 0432-CPR-00166-01)
Material produced according to the system #Regulation 305/2011/EU of the European Parliament and of the Council of 9 March 2011#
ULTRASONIC TEST ACCORDING TO EN 10308 Class.3: SATISFACTORY
EDDY CURRENT INSPECTION OF SURFACE ACCORDING TO EN 10277 CLASS 4.
DIMENSIONAL CONTROL ACCORDING TO EN 10278: SATISFACTORY.
NO WELDING REPAIR ON THE MATERIAL.
ANTIMIXING TEST BY PORTABLE SPECTROMETRE: CONFORMING
MARKING: SYMBOL OF THE MANUF. WORK, MATERIAL N. , CAST N., LOT N., RECEIVING AGENT STAMP
COUNTRY OF MELTING AND ORIGIN: ITALY, THE MATERIAL COMPLIES WITH FAR DFARS
252.225-7009 ALT 1.
THE PRODUCT SATISFIES THE DIRECTIVES: 2015/863/EU (ROHS3) - 2011/65/EU (ROHS2) - 2000/53/EU - 2002/95/EU(RoHS) - 2003/11/EU-
2005/618/EU AND PED 2014/68/EU.
ALL THE NORMS MENTIONED ARE INTENDED IN THEIR LAST REVISION AT THE DATE OF ISSUE OF THIS DOCUMENT.
MATERIAL ACCORDING TO NACE MR0103/ISO 17945
INSPECTOR'S STAMP LF
QUALITY SYSTEM CERTIFIED BY KIWA CERMET ACCORDING TO UNI EN ISO 9001:2015 -IATF 16949:2016 (THE LAST ONE ONLY FOR WIRE ROD AND HOT ROLLED-PEELED-GROUND STAINLESS STEEL BARS).
THE MATERIAL IS FREE OF ANY MERCURY, MERCURY COMPOUNDS AND OR RADIUM CONTAMINATION AT TIME OF SHIPMENT AND WAS PRODUCED WITHOUT USING OZONE DEPLETING SUBSTANCES OF CLASS I AND II.
RADIOACTIVITY CONTROL PERFORMED WITH A GAMMA SPECTROMETER: ASTM E181.
GAMMA ACTIVITY ON THE PRODUCTS BELOW 0.1 BQ/G ACCORDING TO EU RESOLUTION 2013/59/EURATOM , IAEA RS-G-1.7 AND IAEA SSG-17.

CE 0432

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DATE 14.02.2023

BARBARA VIETTI MV(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE

-Cogne

ROSETTI MARINO ITEM 50

COD. VBC0NN24350100

TAG: BLPH-MV-172, BLPH-MV-404, BLPH-MV-405, BLPH-MV-462, BLPH-MV-463

INDRA ITEM 50

COD. 00.VSF.2694/V

indra VALVES - ITALY	***Certificazione dei materiali*** ***EN 10204 3.1 come da allegati*** ***Material certification*** ***EN 10204 3.1 as per attachments***	**MD-02-04-IT-UK / VSF** **Rev. 16** **Data: 08-Nov-2018** **CM/IT/UK**

Nr. *No.* **24-1833** — **Data /** *Date :* **23-Sep-2024**

Cliente / *Customer* **ROSETTI MARINO SPA**

Vs. ordine Nr. / *Your order Nr.* **1724000798 REV.2** — **Data /** *Date :* **26-Jun-2024**

Ns. commessa Nr. / *Our job Nr.* **24 01216** — **Data /** *Date :* **3-Jul-2024**

Ns. D.D.T. Nr. / *Our advise note Nr.* — **Data /** *Date :*

Ordine di produzione / Production order number : 24 01216/50 - 433747 (SN FROM 105962 TO 105964)

Lotto / Material batch number : 433747 (SN FROM 105962 TO 105964)

Ordine di produzione / Production order number : 24 01216/50 - 434671 (SN FROM 105965 TO 105966)

Lotto / Material batch number : 434671 (SN FROM 105965 TO 105966)

Pos. Cliente Customer Item	*Pos. Indra Indra Item*	*Codice / Code*		*Q.tà / Q.ty*	*Nr. di serie Serial Number*	*Descrizione /Description*
		Ns./ Our	*Vs. / Your*			
50	50	00.VSF.2694/V	VBC0NN24350100	5	From 105962 to 105966	INDRA BALL VALVE SB-598-HR-25-F150RF3-F-DLF-DL-N-PG-L1-TG-TGW-TV-DP-PMI2-PD2-BI-GT-CR-TA-FE2-FS-FE-SPC1

Elenco / List

Componente / *Component*	Colata / Heat	Materiale *Material*	Numero del certificato Certificate number
Corpo Valvola / Valve Body (SN FROM 105962 TO 105964)	433747	AISI 316/316L NACE	MEST136935/2023/ - UT23005931
Corpo Valvola / Valve Body (SN FROM 105965 TO 105966)	434671	AISI 316/316L NACE	MEST058702/2023/ - UT23002485
Closure F150RF3	434829	AISI 316/316L NACE	MEST154678/2023/ - UT23006747
Tirante / Stud bolt	281154	ASTM A193 B8M Cl.2	5086
Dado / Nut	160903S05	ASTM A194 Gr.8M	5066
Stelo antiespulsione sfera / Ball stem	E30822	AISI 316/316L NACE	173501
Sfera / Ball	072244	AISI 316/316L NACE	2020018438

NOTE / **REMARKS :** TAG :BLPH-MV-172, BLPH-MV-404, BLPH-MV-405, BLPH-MV-462, BLPH-MV-463

PREPARATO DA: **ELEONORA RANZANI**
PREPARED BY: **DOCUMENTION MANAGER**

APPROVATO DA: **LUCIA NOSOTTI**
APPROVED BY: **QUALITY ASSURANCE MANAGER**

20013 Magenta (MI) Italy - Via Novara, 10/B-C
Tel. +39 02 97298663 r.a. - Fax +39 02 97291855
E-mail: indra@indra.it - http://www.indra.it

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CORPO VALVOLA / VALVE BODY (SN FROM 105962 TO 105964)

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST136935 / 2023 /
Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: N. AF23 02948
Bestell
Your order
Commande

Conferma ordine nr: MI23008232
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23006322
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato - Solubilizzato Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage

SPECIFICHE :	Note:
Anforderungen / Requirements / Exigences	Aufzeichnungen / Notes / Notes
AV 316L VALVES A 1.4401/1.4404 A	
MDS S01 5 316 A (0)	(0)Norsok-standard M-630 Edition 6, October 2013
AD 2000-M. W 2 2022 1.4401 A (1)	(1)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
AD 2000-M. W 2 2022 1.4404 A (2)	(2)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
API 6A 21 ANNEX M (3)	(3)Errata 1, April 2019-Errata 2, June 2020-Add. 1, July 2020
API 6D 25 ANNEX H (4)	(4)Revision November 2021
ASME SA182 2021 S31600/03 A (5)	(5)Section II Part A 2021 EDITION For products machined directly from bar refer to ASME SA479.
ASME SA276 2021 S31600/03 A (6)	(6)Section II Part A 2021 EDITION
ASME SA479 2021 S31600/03 A (7)	(7)Section II Part A 2021 EDITION
ASTM A182 2023 S31600/03 A (8)	(8)For products machined directly from bar refer also to ASTM A479.
ASTM A262 PR. E 2015 316/316L (9)	(9)Reapproved 2021
ASTM A276 2023 S31600/03 A	
ASTM A370 2022 .	
ASTM A479 2023A S31600/03 A	
ASTM E381 2022 .	
ASTM E562 2019 . (A)	(A)19E01
EN 10088 PART 3 2014 1.4401 A	
EN 10088 PART 3 2014 1.4404 A	
EN 10222 PART 5 2017 1.4401 A	
EN 10222 PART 5 2017 1.4404 A	
EN 10272 2016. 1.4401 A	
EN 10272 2016. 1.4404 A	
ISO 148-1 2016 .	
ISO 6892-1 2019 .	
NACE MR0103 2015 S31600/03 A (B)	(B)ANSI/NACE MR0103/ISO 17945 November 23, 2015
NACE MR0175 4 S31600/03 A (C)	(C)ANSI/NACE MR0175/ISO 15156-3:2020 Fourth edition, approved 21 Sep 2022.

		Tolleranza: k12 Toleranz/Allowance/Tolerance					
Pos. nr. Pos. nr. Item nr. Nr de poste	Oggetto Gegenstand Product description Descrip. du produit	Dimensioni - mm Abmessungen Dimension Dimension	Lunghezza - mm Lange Length Longueur	Colata Schmelze Heat Coulée	Pezzi Stückzahl Pieces Pieces	Peso - KG Gewicht Weight Poids	Lotto nr. Losnr. Lot nr Lot nr
0010	Tondo	110,000	5400/ 5882	433747	4	1693,0	225708840

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 08/11/2023 VCQ052 - MEST136935	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 1 di 7

CORPO VALVOLA / VALVE BODY (SN FROM 105962 TO 105964)

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In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST136935 / 2023 /

Cliente / Besteller/Purchaser/Client:
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: N. AF23 02948
Bestell / Your order / Commande

Conferma ordine nr: MI23008232
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23006322
Lieferanzeige/Packing list/B.L.

Stato di fornitura: Fucinato - Solubilizzato Pelato
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore:
Hersteller/Item/Usine productrice
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werksachverständigen / Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung / Marking / Marquage

TEST ALLO STATO DI FORNITURA
Test on delivery condition — Prüefung auf lieferbereitem produkt — test a l'etat de fourniture — Prueba sobre el material así come entregado

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg dem Spess. Breite Dem. Dicke Width Dem. Thickness Larg diem epas mm	°C		Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement A5 %		Strizione Einschnürung Reduction of area Striction Z %		Resilienza Kerbschlagerbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti / Anforderungen/Required values / Valeurs demandées		min / max			205	240	510 / 690	45	-	-	-	-			- / 215		
A	10	20	L		269	303	573	55		76					159		
I	10	20	L		265	299	579	57		74					158		

TEST ALLO STATO DI FORNITURA
Test on delivery condition / Prüefung auf lieferbereitem produkt / Test a l'etat de fourniture / Prueba sobre el material así come entregado

TEST		min	max	
A	Dimensioni grano x ASTM E112			4
A	Ferrite delta %			1,0 %

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg dem Spess. Breite Dem. Dicke Width Dem. Thickness Larg diem epas mm	°C		Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti / Anforderungen/Required values / Valeurs demandées		min / max			60	60	60	-	-	-	-	-	-
B	10X10	-196	L		128	135	122	1,012	1,036	1,074	50	50	50

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg dem Spess. Breite Dem. Dicke Width Dem. Thickness Larg diem epas mm	°C		Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagerbeit Impact Value Resilience		Durezza Haerte Hardness Durete		
Valori richiesti / Anforderungen/Required values / Valeurs demandées		min / max			205	-	515	-	40	-	50	-		-		
C	12,5	20	L		275		571		54		69					

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Vicenza, 08/11/2023 VCQ052 - MEST136935	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 2 di 7

CORPO VALVOLA / VALVE BODY (SN FROM 105962 TO 105964)

Acciaierie Valbruna S.p.A.

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In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST136935 / 2023 /

Cliente / Besteller/Purchaser/Client:
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr / Bestell/Your order/Commande: N. AF23 02948

Conferma ordine nr / Werks/Our Order/Ref nr.: MI23008232

Avviso di Spedizione / Lieferanzeige/Packing list/B.L.: A-MI23006322

Stato di fornitura / Lieferzustand/Delivery state/Etat de livraison: Fucinato - Solubilizzato Pelato

Tipo di Elaborazione / Erschmelzungsart/Melting process/Mode d'elaboration: E+AOD

Qualità / Werkstoff/Grade/Nuance: 1.4401/1.4404/316/316L

Marca / Markenbezeichnung/Brand / Nuance: MVAPML (MAXIVAL)

Produttore / Hersteller/Ilam/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Lieferwerkes/Trade marks/Sigles de l'usine productrice: AV

Punzone del Collaudatore / Stempel des Werkssachverständigen/Inspector's stamp/Poinçon de l'assayeur: MR

Punzonatura / Kennzeichnung/Marking/Marquage: 1.4401/1.4404/316/316L

Charpy per ISO 148-1

1) L=longitudinale/lengs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab (Specimen/Eprouvette, Larg.diam Spess., Breite Diam. Dicke, Width Diam. Thickness, Larg. diam epais) mm	°C	Posiz. Saggio (Probestage/Location/Emplacement)	Resilienza (Kerbschlagarbeit/Impact Value/Resilience) KV2 J			Espansione laterale (Lateral Expansion) Lateral ex mm			Shear % Shear %		
Valori richiesti (Anforderungen/Required values/Valeurs demandées)		min / max		60	60	60	-	-	-	-	-	-
D	10X10	-196	T	80	81	77	0,536	0,564	0,548	30	30	30

Charpy per ISO 148-1

1) L=longitudinale/lengs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab (Specimen/Eprouvette, Larg.diam Spess., Breite Diam. Dicke, Width Diam. Thickness, Larg. diam epais) mm	°C	Posiz. Saggio (Probestage/Location/Emplacement)	Resilienza (Kerbschlagarbeit/Impact Value/Resilience) KV2 J			Espansione laterale (Lateral Expansion)			Shear (Shear)		
Valori richiesti (Anforderungen/Required values/Valeurs demandées)		min / max		100	100	100	-	-	-	-	-	-
H	10X10	20	L	236	232	225						
J	10X10	20	L	240	238	231						

Tensile testing according to ISO 6892-1

Impact testing according to ISO 148-1

Mechanical properties according to ASTM A370.

Ferrite content tested according to ASTM E562.

Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat / Schmelze/Coulée																	
	min	23,0	-	-	-	16,50	2,00	10,00	-	-	-	-	-	-	-	-	-
	max	28,0	0,030	1,00	2,00	18,00	2,50	13,00	-	0,045	0,030	0,100	-	-	-	-	
	PRE		C %	Si %	Mn %	Cr %	Mo %	Ni %	Co %	P %	S %	N %					
433747	24,8		0,018	0,51	1,70	16,72	2,07	10,18	0,118	0,030	0,021	0,075					

Colata /Heat / Schmelze/Coulée								
	min	14,0	-	-	-	-	-	-
	max	20,0	-	-	-	-	-	-
	Ni+(2*Mo)							
433747	14,3							

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 08/11/2023	Direzione Qualità (Qualitätsmanagement/Quality Management/Gestion Qualité)	Direzione Prodotto (Produktmanagement/Product Management/Direction Produit)	Pagina
VCQ052 - MEST136935	R.BERTELLI	P.MESSORI	3 di 7

CORPO VALVOLA / VALVE BODY (SN FROM 105962 TO 105964)

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

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In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
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Certificato nr. MEST136935 / 2023 /
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Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: N. AF23 02948
Bestell
Your order
Commande

Conferma ordine nr: MI23008232
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23006322
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato - Solubilizzato Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

Furnace calibrated according to API 6A REV 21th ED ANNEX M.
Furnace calibrated according to API 6D REV 25th ED ANNEX H.
Macroetch test per ASTM E381: acceptable.
Reduction ratio = 28,8 : 1
ET ACC. TO EN 10088-3 TAB.1
UT ACC. TO:A388/API 6A PSL3-EN 10308cl.3-ASME B16.34/IV
Treatment made on date 21/07/2023 in continuous furnace
FCB calibration expiry date 14/08/2023.
Solution annealed 1080°C for 160'(total time)/water cooled.
"Issued in agreement with TÜV SÜD Industrie Service GMBH (07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

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Allegati / Anlagen / Enclosure / Attachments :
UT23005931 GT23001694

Sono state soddisfatte tutte le condizioni richieste	Controllo antimiscelanza con tecnica XRF/OES portatile : OK	Controllo visivo e dimensionale: soddisfa le esigenze
Die gestellen Anforderungen sind it. Anlage erfüllt	Verwechslungprüfung: durch XRF/QES Gerät geführt : OK	Besichtigung und Ausmessung: ohne Beanstandung
The material has been furnished in accordance with the requirements	Antimixing testing performed with XRF/OES portable : OK	Visual inspection and dimensional checks:satisfactory
Le materiel il eté trouvé conforme aux exigences	Contrôle antimélange svt technique XRF/QES portable : OK	Contrôle visuel et dimensions: satisfaisant

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 08/11/2023 VCQ052 - MEST136935	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 4 di 7

CORPO VALVOLA / VALVE BODY (SN FROM 105962 TO 105964)

Acciaierie Valbruna S.p.A.

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Avviso di Spedizione: A-MI23006322
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Lieferzustand / Delivery state / Etat de livraison: Fucinato - Solubilizzato Pelato

Tipo di Elaborazione: Erschmelzungsart / Melting process / Mode d'elaboration: E+AOD

Qualità: Werkstoff/Grade/Nuance: 1.4401/1.4404/316/316L

Marca: Markenbezeichnung / Brand / Nuance: MVAPML (MAXIVAL)

Produttore : Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice: AV

Punzone del Collaudatore: Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur: MR

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung / Marking / Marquage

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD`S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

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CORPO VALVOLA / VALVE BODY (SN FROM 105962 TO 105964)

	Acciaierie Valbruna S.p.A. 36100 VICENZA (Italia) - Viale della scienza, 25 z.i. Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4	**CERTIFICATO** Certificate - Zeugnis - Certificat **N° UT23005931**	**Pag 6 di 7**
		CONTROLLO CON ULTRASUONI *Ultrasonic testing - Ultraschallprüfung - Controle par ultrasons*	

mod. UT02 MEST136935 / 2023 /

Cliente : INDRA S.R.L. *Customer*	**Lotto nr : 225708840** *Mill order*

MARCA *Grade*	DIMENSIONI - mm *Size*	COLATA *Heat*	BARRE *Bars*	PESO *Weight*	LUNGHEZZA - mm *Length*	
MVAPML	Tondo 110,000	433747	N. 4	KG : 1693,0	5400	5882

T. TERMICO *Heat Treatement*	ESECUZIONE *Condition*	RUGOSITA' *Roughness*	TOLLERANZA *Tolerance*
Solubilizzato	Pelato	µm	k12

Istruzione : PROC CND 040 *Work Instruction*		**Criteri Accettabilità : ASTM A388** Acceptance Criteria

ELETTRONICA : Olympus Quickscan LT
Equipment

ACCOPPIANTE : ACQUA + 0253 SA
Couplant

VEL.CONTROLLO : 252 m/min
Testing Speed

TRASDUTTORI *Probes*	TIPO ONDA *Type of wave*	FREQUENZA (MHZ) *Frequency*	DIMENSIONI (MM) *Dimension*	ANGOLO *Angle*	TARATURA *Calibration*
64EL. 2.25MHZ	LONG.	2,25	128X25	0°	DAC

CONTROLLO AUTOMATICO [X] *Automatic inspection*	CONTROLLO MANUALE *Manual inspection*

NOTE :
Notes

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CONFORME [X] *Compliant*	CONFORME IN DEROGA [ ] *See Deviation*	NON CONFORME [ ] *Not Compliant*

ISPEZIONATO DA Inspected by	VERIFICATO DA Verified by	APPROVATO DA Approved by	COLLAUDATORE Inspector - Abnahmesachsverst - Inspecteur
FIRMA 10/10/2023 Date - Date	FIRMA	**G.Parlato** ISO 9712 LEV. 2 IND1901054 FIRMA	

Operatori, strumenti e documenti di riferimento, utilizzati per il collaudo del materiale, sono identificati, controllati e/o calibrati in accordo alle norme EN, ISO e ASTM, richiamate nelle pratiche operative e istruzioni di pertinenza / *Operators, Equipment and reference documents, used for materiel inspection, are identified, checked and/or calibrated in accordance with EN/ISO or ASTM standards, reported in relevant documents*

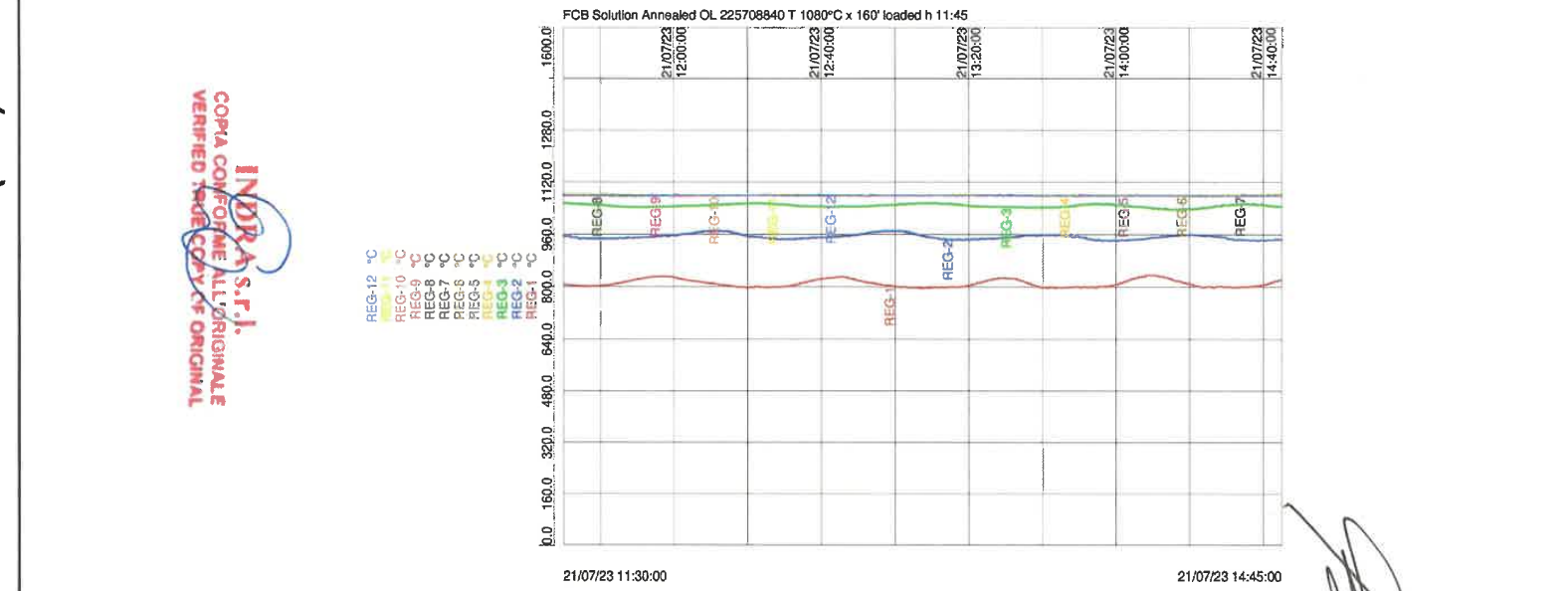
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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4

CERTIFICATO Certificate - Zeugnis - Certificat **N° GT23001694** **Pag 7 di 7**

Diagrammi di trattamento termico **MEST136935 / 2023 /**

Heat Treatment charts - Waermebehandlungs diagramm - Diagramme de traitement thermique

N° LOTTO : 225708840	Note Dettaglio :	Note:
Lot Number	Detail Notes	Notes



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Approved by:

CORPO VALVOLA / VALVE BODY (SN FROM 105965 TO 105966)

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST058702 / 2023 /
Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF23 01145
Bestell
Your order
Commande

Conferma ordine nr: MI23003338
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23002711
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato - Solubilizzato Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Liefernwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werksachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage

SPECIFICHE :	Note:
Anforderungen / Requirements / Exigences	Aufzeichnungen / Notes / Notes
AV 316L VALVES A 1.4401/1.4404 A	
MDS S01 5 316 A (0)	(0)Norsok-standard M-630 Edition 6, October 2013
AD 2000-M. W 2 01/20 1.4401 A (1)	(1)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
AD 2000-M. W 2 01/20 1.4404 A (2)	(2)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
API 6A 21 ANNEX M (3)	(3)Errata 1, April 2019-Errata 2, June 2020-Add. 1, July 2020
API 6D 25 ANNEX H (4)	(4)Revision November 2021
ASME SA182 2021 S31600/03 A (5)	(5)Section II Part A 2021 EDITION For products machined directly from bar refer to ASME SA479.
ASME SA276 2021 S31600/03 A (6)	(6)Section II Part A 2021 EDITION
ASME SA479 2021 S31600/03 A (7)	(7)Section II Part A 2021 EDITION
ASTM A182 2022A S31600/03 A (8)	(8)For products machined directly from bar refer also to ASTM A479.
ASTM A262 PR. E 2015 316/316L (9)	(9)Reapproved 2021
ASTM A276 2017 S31600/03 A	
ASTM A370 2022 .	
ASTM A479 2021 S31600/03 A	
ASTM E381 2022 .	
ASTM E562 2019 . (A)	(A)19E01
EN 10088 PART 3 2014 1.4401 A	
EN 10088 PART 3 2014 1.4404 A	
EN 10222 PART 5 2017 1.4401 A	
EN 10222 PART 5 2017 1.4404 A	
EN 10272 2016. 1.4401 A	
EN 10272 2016. 1.4404 A	
ISO 148-1 2016 .	
ISO 6892-1 2019 .	
NACE MR0103 2015 S31600/03 A (B)	(B)ANSI/NACE MR0103/ISO 17945 November 23, 2015
NACE MR0175 2015 S31600/03 A (C)	(C)ANSI/NACE MR0175/ISO 15156-3, third edition November 23,2015

		Tolleranza: k12 Toleranz/Allowance/Tolerance					
Pos. nr. Pos. nr. Item nr. Nr. de poste	Oggetto Gegenstand Product description Descrip. du produit	Dimensioni - mm Abmessungen Dimension Dimension	Lunghezza - mm Lange Length Longueur	Colata Schmelze Heat Coulée	Pezzi Stückzahl Pieces Pieces	Peso - KG Gewicht Weight Poids	Lotto nr. Losnr Lot nr. Lot nr.
0020	Tondo	120,000	5343/ 5945	434671	2	1016,0	131522180

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 03/05/2023 VCQ012 - MEST058702	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 1 di 7

CORPO VALVOLA / VALVE BODY (SN FROM 105965 TO 105966)

Acciaierie Valbruna S.p.A.

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Certificato nr. MEST058702 / 2023 /
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Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF23 01145
Bestell
Your order
Commande

Conferma ordine nr: MI23003338
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23002711
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato - Solubilizzato Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werksachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage

TEST ALLO STATO DI FORNITURA
Test on delivery condition Prüefung auf lieferbereitem produkt test a l'etat de fourniture Prueba sobre el material así come entregado

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement A5 %		Strizione Einschnürung Reduction of area Striction Z %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs demandées		min		205	240	510	45	-	-	-	-			-		
		max				690									215	
A	10	20	L	294	329	575	55		69					158		
I	10	20	L	285	323	570	57		68					159		

TEST ALLO STATO DI FORNITURA
Test on delivery condition / Prüefung auf lieferbereitem produkt / Test a l'etat de fourniture / Prueba sobre el material así come entregado

TEST		min	max	
I	Dimensioni grano x ASTM E112			2
I	Ferrite delta %			1,8 %

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs demandées		min		60	60	60	-	-	-	-	-	-
		max										
E	10X10	-196	L	220	215	215	1,987	1,978	1,956	70	70	70

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete		
Valori richiesti Anforderungen/Required values Valeurs demandées		min		205	-	515	-	40	-	50	-			-		
		max														
C	12,5	20	L	278		572		60		79						

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 03/05/2023	Direzione Qualità	Direzione Prodotto	Pagina
VCQ012 - MEST058702	Qualitätsmanagement/Quality Management/Gestion Qualité	Produktmanagement/Product Management/Direction Produit	2 di 7
	R.BERTELLI	P.MESSORI	

CORPO VALVOLA / VALVE BODY (SN FROM 105965 TO 105966)

Acciaierie Valbruna S.p.A.

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CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST058702 / 2023 /

Cliente / Besteller/Purchaser/Client:
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr / Bestell / Your order / Commande: AF23 01145

Conferma ordine nr / Werks/Our Order/Ref nr.: MI23003338

Avviso di Spedizione / Lieferanzeige/Packing list/B.L.: A-MI23002711

Stato di fornitura / Lieferzustand / Delivery state / Etat de livraison: Fucinato - Solubilizzato Pelato

Tipo di Elaborazione / Erschmelzungsart / Melting process / Mode d'elaboration: E+AOD

Qualità / Werkstoff/Grade/Nuance: 1.4401/1.4404/316/316L

Marca / Markenbezeichnung / Brand / Nuance: MVAPML (MAXIVAL)

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice: AV

Punzone del Collaudatore / Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur: MR

Punzonatura / Kennzeichnung / Marking / Marquage: 1.4401/1.4404/316/316L

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam Thickness Larg diam epais mm	°C		Posiz. Saggio Probestage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max			60	60	60	-	-	-	-	-	-
F	10X10	-196	T		75	73	66	0,489	0,555	0,526	30	30	30

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg diam epais mm	°C		Posiz. Saggio Probestage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion			Shear Shear		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max			100	100	100	-	-	-	-	-	-
D	10X10	20	L		270	268	275						
J	10X10	20	L		262	259	254						

Tensile testing according to ISO 6892-1

Impact testing according to ISO 148-1

Mechanical properties according to ASTM A370.

Ferrite content tested according to ASTM E562.

Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat Schmelze/Coulée																
	min	23,0	-	-	-	16,50	2,00	10,00	-	-	-	-	-	-	-	-
	max	28,0	0,030	1,00	2,00	18,00	2,50	13,00	-	0,045	0,030	0,100	-	-	-	-
	PRE		C %	Si %	Mn %	Cr %	Mo %	Ni %	Co %	P %	S %	N %				
434671	24,7		0,018	0,59	1,78	16,78	2,05	10,25	0,106	0,027	0,021	0,074				

Colata /Heat Schmelze/Coulée																
	min	14,0														
	max	20,0														
	Ni+(2*Mo)															
434671	14,4															

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Vicenza, 03/05/2023	Direzione Qualità / Qualitätsmanagement/Quality Management/Gestion Qualité	Direzione Prodotto / Produktmanagement/Product Management/Direction Produit	Pagina
VCQ012 - MEST058702	R.BERTELLI	P.MESSORI	3 di 7

CORPO VALVOLA / VALVE BODY (SN FROM 105965 TO 105966)

Acciaierie Valbruna S.p.A.

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Nach/According to/Selon

Certificato nr. MEST058702 / 2023 /
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Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF23 01145
Bestell
Your order
Commande

Conferma ordine nr: MI23003338
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23002711
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato - Solubilizzato Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werksachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

Furnace calibrated according to API 6A REV 21th ED ANNEX M.
Furnace calibrated according to API 6D REV 25th ED ANNEX H.
Macroetch test per ASTM E381: acceptable.
Reduction ratio = 21,5 : 1
ET ACC. TO EN 10088-3 TAB.1
UT ACC. TO A388/API 6A PSL3-EN 10308cl.3-ASME B16.34/IV
Treatment made on date 23/05/2022 in continuous furnace
FCB calibration expiry date 29/09/2022.
Solution annealed 1080°C for 170'(total time)/water cooled.
"Issued in agreement with TÜV SÜD Industrie Service GMBH (07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

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Allegati / Anlagen / Enclosure / Attachments :
UT23002485 GT23000674

Sono state soddisfatte tutte le condizioni richieste
Die gestellen Anforderungen sind lt. Anlage erfüllt
The material has been furnished in accordance with the requirements
Le materiel à eté trouvé conforme aux exigences

Controllo antimescolanza con tecnica XRF/OES portatile : OK
Verwechslungprüfung: durch XRF/OES Gerät geführt : OK
Antimixing testing performed with XRF/OES portable : OK
Contrôle antimélange svt technique XRF/QES portable : OK

Controllo visivo e dimensionale: soddisfa le esigenze
Besichtigung und Ausmessung ohne Beanstandung
Visual inspection and dimensional checks:satisfactory
Contrôle visuel et dimensionnel satisfaisant

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

CROSSWIND
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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 03/05/2023 VCQ012 - MEST058702	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité **R.BERTELLI**	Direzione Prodotto Produktmanagement/Product Management/Direction Produit **P.MESSORI**	Pagina 4 di 7

CORPO VALVOLA / VALVE BODY (SN FROM 105965 TO 105966)

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Conferma ordine nr: MI23003338
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23002711
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Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
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Marca: MVAPML (MAXIVAL)
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Brand / Nuance

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Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD`S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

W3P3D8D4A17C295A5F4A0018B5B18C29039

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CORPO VALVOLA / VALVE BODY (SN FROM 105965 TO 105966)

	Acciaierie Valbruna S.p.A. 36100 VICENZA (Italia) - Viale della scienza, 25 z.i. Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4	**CERTIFICATO** Certificate - Zeugnis - Certificat **N° UT23002485**	Pag 6 di 7
		CONTROLLO CON ULTRASUONI *Ultrasonic testing - Ultraschallprüfung - Controle par ultrasons*	

mod. UT02 MEST058702 / 2023 /

Cliente : INDRA S.R.L. *Customer*	**Lotto nr : 131522180** *Mill order*

MARCA *Grade*	DIMENSIONI - mm *Size*	COLATA *Heat*	BARRE *Bars*	PESO *Weight*	LUNGHEZZA - mm *Length*	
MVAPML	Tondo 120,000	434671	N. 2	KG : 1016,0	5343	5945

T. TERMICO *Heat Treatement*	ESECUZIONE *Condition*	RUGOSITA' *Roughness*	TOLLERANZA *Tolerance*
Solubilizzato	Pelato	µm	k12

Istruzione : PROC CND 040 *Work Instruction*	**Criteri Accettabilità : ASTM A388** Acceptance Criteria

ELETTRONICA : Olympus Quickscan LT
Equipment

ACCOPPIANTE : ACQUA + 0253 SA
Couplant

VEL.CONTROLLO : 228 mm/sec
Testing Speed

TRASDUTTORI *Probes*	TIPO ONDA *Type of wave*	FREQUENZA (MHZ) *Frequency*	DIMENSIONI (MM) *Dimension*	ANGOLO *Angle*	TARATURA *Calibration*
64EL. 2.25MHZ	LONG.	2,25	128X25	0°	DAC

CONTROLLO AUTOMATICO *Automatic inspection* [X]	CONTROLLO MANUALE *Manual inspection*

NOTE :
Notes

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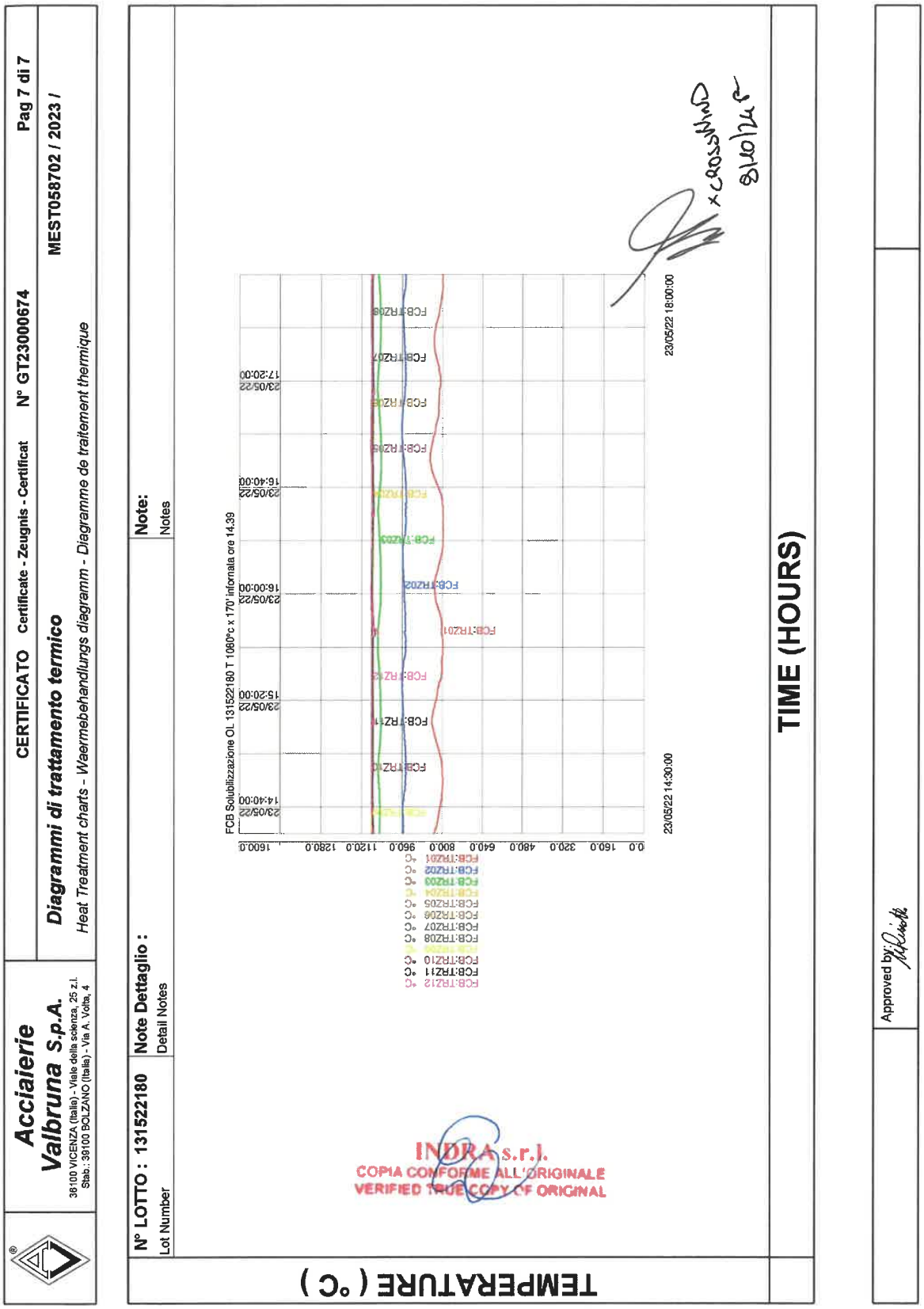
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9/10/22

CONFORME [X] *Compliant*	CONFORME IN DEROGA [ ] *See Deviation*	NON CONFORME [ ] *Not Compliant*

ISPEZIONATO DA Inspected by	VERIFICATO DA Verified by	APPROVATO DA Approved by	COLLAUDATORE Inspector - Abnahmesachsverst - Inspecteur
		G.Parlato ISO 9712 LEV. 2 IND1901054	
FIRMA 09/11/2022 Date - Date	**FIRMA**	**FIRMA**	

Operatori, strumenti e documenti di riferimento, utilizzati per il collaudo del materiale, sono identificati, controllati e/o calibrati in accordo alle norme EN, ISO e ASTM, richiamate nelle pratiche operative e istruzioni di pertinenza / *Operators, Equipment and reference documents, used for material inspection, are identified, checked and/or calibrated in accordance with EN/ISO or ASTM standards, reported in relevant documents.*

CORPO VALVOLA / VALVE BODY (SN FROM 105965 TO 105966)



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Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST154678 / 2023 /
Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: N. AF 23 03438
Bestell
Your order
Commande

Conferma ordine nr: MI23009312
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24000102
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato - Solubilizzato Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage

SPECIFICHE : Anforderungen / Requirements / Exigences	Note: Aufzeichnungen / Notes / Notes
AV 316L VALVES A 1.4401/1.4404 A	
MDS S01 5 316 A (0)	(0)Norsok-standard M-630 Edition 8, October 2013
AD 2000-M. W 2 2022 1.4401 A (1)	(1)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
AD 2000-M. W 2 2022 1.4404 A (2)	(2)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
API 6A 21 ANNEX M (3)	(3)Errata 1, April 2019-Errata 2, June 2020-Add. 1, July 2020
API 6D 25 ANNEX H (4)	(4)Revision November 2021
ASME SA182 2021 S31600/03 A (5)	(5)Section II Part A 2021 EDITION For products machined directly from bar refer to ASME SA479.
ASME SA276 2021 S31600/03 A (6)	(6)Section II Part A 2021 EDITION
ASME SA479 2021 S31600/03 A (7)	(7)Section II Part A 2021 EDITION
ASTM A182 2023 S31600/03 A (8)	(8)For products machined directly from bar refer also to ASTM A479.
ASTM A262 PR. E 2015 316/316L (9)	(9)Reapproved 2021
ASTM A276 2023 S31600/03 A	
ASTM A370 2022 .	
ASTM A479 2023A S31600/03 A	
ASTM E381 2022 .	
ASTM E562 2019 . (A)	(A)19E01
EN 10088 PART 3 2014 1.4401 A	
EN 10088 PART 3 2014 1.4404 A	
EN 10222 PART 5 2017 1.4401 A	
EN 10222 PART 5 2017 1.4404 A	
EN 10272 2016. 1.4401 A	
EN 10272 2016. 1.4404 A	
ISO 148-1 2016 .	
ISO 6892-1 2019 .	
NACE MR0103 2015 S31600/03 A (B)	(B)ANSI/NACE MR0103/ISO 17945 November 23, 2015
NACE MR0175 4 S31600/03 A (C)	(C)ANSI/NACE MR0175/ISO 15156-3:2020 Fourth edition, approved 21 Sep 2022.

		Tolleranza: k12 Toleranz/Allowance/Tolerance					
Pos. nr. Pos. nr. Item nr. Nr. de poste	Oggetto Gegenstand Product description Descrip. du produit	Dimensioni - mm Abmessungen Dimension Dimension	Lunghezza - mm Länge Length Longueur	Colata Schmelze Heat Coulée	Pezzi Stückzahl Pieces Pieces	Peso - KG Gewicht Weight Poids	Lotto nr. Losnr. Lot nr. Lot nr.
0030	Tondo	110,000	5662/ 5732	434829	4	1727,0	107809800

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 10/01/2024 VCQ012 - MEST154678	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 1 di 7

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Nach/According to/Selon

Certificato nr. MEST154678 / 2023 /
Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: N. AF 23 03438
Bestell
Your order
Commande

Conferma ordine nr: MI23009312
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24000102
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato - Solubilizzato Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage

TEST ALLO STATO DI FORNITURA
Test on delivery condition Prüefung auf lieferbereitem produkt test a l'etat de fourniture Prueba sobre el material así come entregado

1) L=longitudinale/lings, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement A5 %		Strizione Einschnürung Reduction of area Striction Z %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs demandées		min		205	240	510	45	-	-	-	-			-		
		max				690									215	
A	10	20	L	273	308	573	58		63					169		
H	10	20	L	276	311	579	57		62					171		

TEST ALLO STATO DI FORNITURA
Test on delivery condition / Prüefung auf lieferbereitem produkt / Test a l'etat de fourniture / Prueba sobre el material así come entregado

TEST		min	max	
H	Dimensioni grano x ASTM E112			4
H	Ferrite delta %			0,5 %

Charpy per ISO 148-1

1) L=longitudinale/lings, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expension Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs demandées		min		60	60	60	-	-	-	-	-	-
		max										
E	10X10	-196	L	257	258	255	2,395	2,382	2,308	80	80	80

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/lings, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete		
Valori richiesti Anforderungen/Required values Valeurs demandées		min		205	-	515	-	40	-	50	-			-		
		max														
D	12,5	20	L	268		568		58		69						

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 10/01/2024	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité	Direzione Prodotto Produktmanagement/Product Management/Direction Produit	Pagina
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CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST154678 / 2023 /
Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: N. AF 23 03438
Bestell
Your order
Commande

Conferma ordine nr: MI23009312
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24000102
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato - Solubilizzato Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore:
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs démandées		min		60	60	60	-	-	-	-	-	-
		max										
F	10X10	-196	T	64	67	70	0,672	0,703	0,725	40	40	40

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion			Shear Shear		
Valori richiesti Anforderungen/Required values Valeurs démandées		min		100	100	100	-	-	-	-	-	-
		max										
J	10X10	20	L	280	285	286						
K	10X10	20	L	271	279	280						

Tensile testing according to ISO 6892-1
Impact testing according to ISO 148-1
Mechanical properties according to ASTM A370.
Ferrite content tested according to ASTM E562.

Analisi chimica
Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat Schmelze/Coulée																
	min	23,0	-	-	-	16,50	2,00	10,00	-	-	-	-	-	-	-	-
	max	28,0	0,030	1,00	2,00	18,00	2,50	13,00	-	0,045	0,030	0,100	-	-	-	-
	PRE		C %	Si %	Mn %	Cr %	Mo %	Ni %	Co %	P %	S %	N %				
434829	24,5		0,015	0,49	1,78	16,73	2,05	10,15	0,097	0,031	0,029	0,060				

Colata /Heat Schmelze/Coulée								
	min	14,0	-	-	-	-	-	-
	max	20,0	-	-	-	-	-	-
	Ni+(2*Mo)							
434829	14,3							

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Vicenza, 10/01/2024	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité	Direzione Prodotto Produktmanagement/Product Management/Direction Produit	Pagina
VCQ012 - MEST154678	R.BERTELLI	P.MESSORI	3 di 7

CLOSURE F150RF3

Acciaierie Valbruna S.p.A.

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Certificato nr. / Prüfung/Test/Essai: MEST154678 / 2023 /

Cliente / Besteller/Purchaser/Client:
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: N. AF 23 03438
Bestell / Your order / Commande

Conferma ordine nr: MI23009312
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24000102
Lieferanzeige/Packing list/B.L.

Stato di fornitura: Fucinato - Solubilizzato Pelato
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore:
Hersteller/Item/Usine productrice
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung / Marking / Marquage

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

Furnace calibrated according to API 6A REV 21th ED ANNEX M.
Furnace calibrated according to API 6D REV 25th ED ANNEX H.
Macroetch test per ASTM E381: acceptable.
Reduction ratio = 28,8 : 1
MATERIAL ET INSPECTED ACCORDING TO EN 10088-3 TAB.1
UT ACC. TO EN 10308 Cl.3
Treatment made on date 12/10/2021 in continuous
furnace FCB calibration expiry date 30/03/2022
Solution annealed 1080°C for 160'(total time)/ water cooled
ET ACC. TO EN 10088-3 TAB.1
"Issued in agreement with TÜV SÜD Industrie Service GMBH
(07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by
Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

Allegati / Anlagen / Enclosure / Attachments :
UT23006747 GT23001953

Sono state soddisfatte tutte le condizioni richieste
Die gestellen Anforderungen sind it. Anlage erfüllt
The material has been furnished in accordance with the requirements
Le materiel à été trouvé conforme aux exigences

Controllo antimescolanza con tecnica XRF/OES portatile : OK
Verwechslungprüfung: durch XRF/OES Gerät geführt : OK
Antimixing testing performed with XRF/OES portable : OK
Contrôle antimélange svt technique XRF/OES portable : OK

Controllo visivo e dimensionale: soddisfa le esigenze
Besichtigufg und Ausmessung: ohne Beanstandung
Visual inspection and dimensional checks:satisfactory
Contrôle visuel et dimensions: satisfaisant

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 10/01/2024	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité	Direzione Prodotto Produktmanagement/Product Management/Direction Produit	Pagina 4 di 7
VCQ012 - MEST154678	R.BERTELLI	P.MESSORI	

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In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST154678 / 2023 /

Cliente / Besteller/Purchaser/Client:
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr. / Bestell / Your order / Commande: N. AF 23 03438

Conferma ordine nr. / Werks/Our Order/Ref nr.: MI23009312

Avviso di Spedizione / Lieferanzeige/Packing list/B.L.: A-MI24000102

Stato di fornitura / Lieferzustand / Delivery state / Etat de livraison: Fucinato - Solubilizzato Pelato

Tipo di Elaborazione / Erschmelzungsart / Melting process / Mode d'elaboration: E+AOD

Qualità / Werkstoff/Grade/Nuance: 1.4401/1.4404/316/316L

Marca / Markenbezeichnung / Brand / Nuance: MVAPML (MAXIVAL)

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice: AV

Punzone del Collaudatore / Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur: MR

Punzonatura / Kennzeichnung / Marking / Marquage: 1.4401/1.4404/316/316L

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD`S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

WSPW48ACED1124B79BABCDEF123345689A

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 10/01/2024 VCQ012 - MEST154678	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 5 di 7

CLOSURE F150RF3

	Acciaierie Valbruna S.p.A. 36100 VICENZA (Italia) - Viale della scienza, 25 z.i. Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4	**CERTIFICATO** Certificate - Zeugnis - Certificat **N° UT23006747**	**Pag 6 di 7**
		CONTROLLO CON ULTRASUONI *Ultrasonic testing - Ultraschallprüfung - Controle par ultrasons*	

mod. UT02 MEST154678 / 2023 /

Cliente : INDRA S.R.L. *Customer*				**Lotto nr : 107809800** *Mill order*		
MARCA *Grade*	**DIMENSIONI - mm** *Size*	**COLATA** *Heat*	**BARRE** *Bars*	**PESO** *Weight*	**LUNGHEZZA - mm** *Length*	
MVAPML	Tondo 110,000	434829	N. 4	KG : 1727,0	5662	5732

T. TERMICO *Heat Treatement*	**ESECUZIONE** *Condition*	**RUGOSITA'** *Roughness*	**TOLLERANZA** *Tolerance*
Solubilizzato	Pelato	µm	k12

Istruzione : PROC CND 040 *Work Instruction*		**Criteri Accettabilità : A388/API 6A PSL3-EN 10308CL.3-ASME B16.34/IV** Acceptance Criteria

ELETTRONICA : Olympus Quickscan LT *Equipment*	
ACCOPPIANTE : ACQUA + 0253 SA *Couplant*	**VEL.CONTROLLO : 267 mm/sec** *Testing Speed*

TRASDUTTORI *Probes*	**TIPO ONDA** *Type of wave*	**FREQUENZA (MHZ)** *Frequency*	**DIMENSIONI (MM)** *Dimension*	**ANGOLO** *Angle*	**TARATURA** *Calibration*
64EL. 2.25MHZ	LONG.	2,25	128X25	0°	DAC

CONTROLLO AUTOMATICO [X] *Automatic inspection*	**CONTROLLO MANUALE** *Manual inspection*

NOTE :
Notes

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CONFORME [X] *Compliant*	**CONFORME IN DEROGA [ ]** *See Deviation*	**NON CONFORME[ ]** *Not Compliant*

ISPEZIONATO DA Inspected by	**VERIFICATO DA** Verified by	**APPROVATO DA** Approved by **P.Belloli** ISO 9712 LEV. 3 IND1900997	**COLLAUDATORE** Inspector - Abnahmesachsverst - Inspecteur
FIRMA 01/08/2023 Date - Date	**FIRMA**	**FIRMA** P.Belloli	

Operatori, strumenti e documenti di riferimento, utilizzati per il collaudo del materiale, sono identificati, controllati e/o calibrati in accordo alle norme EN, ISO e ASTM, richiamate nelle pratiche operative e istruzioni di pertinenza / *Operators, Equipment and reference documents, used for material inspection, are identified, checked and/or calibrated in accordance with EN/ISO or ASTM standards, reported in relevant documents.*

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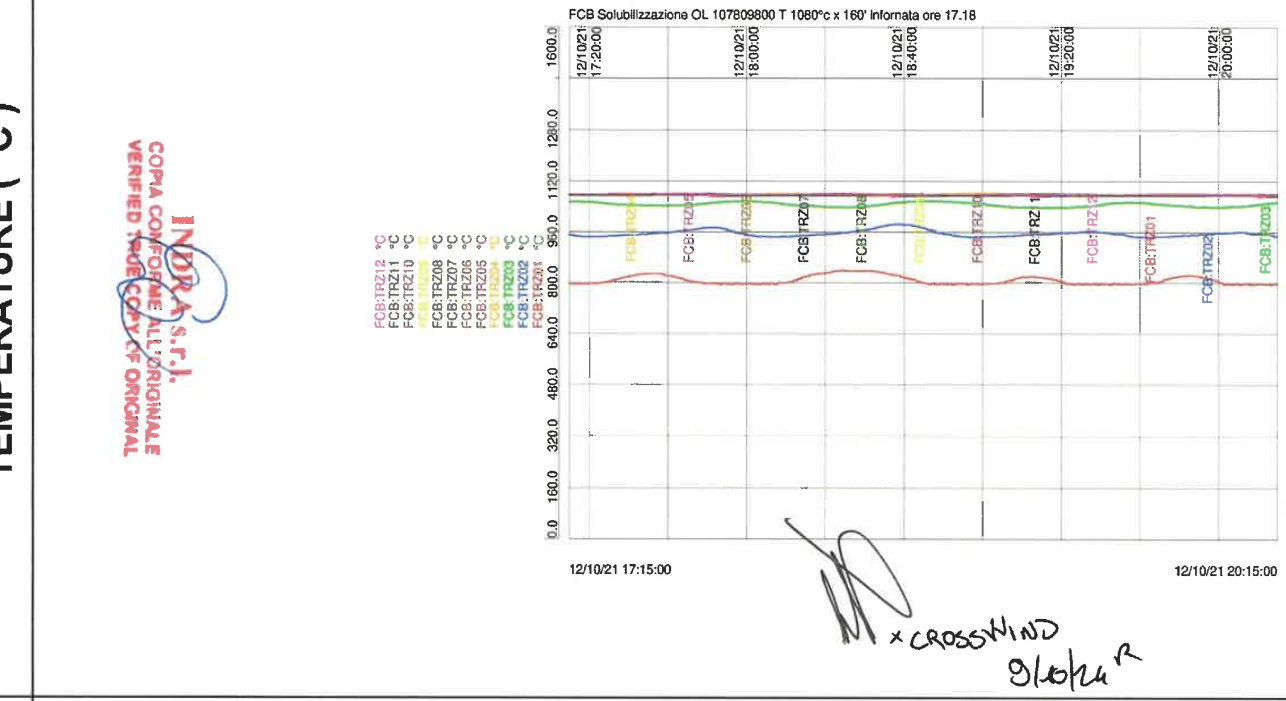
Acciaierie Valbruna S.p.A.
36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4

CERTIFICATO Certificate - Zeugnis - Certificat **N° GT23001953**

Diagrammi di trattamento termico **MEST154678 / 2023 /**

Heat Treatment charts - Waermebehandlungs diagramm - Diagramme de traitement thermique

N° LOTTO : 107809800 Lot Number	**Note Dettaglio :** Detail Notes	**Note:** Notes



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Approved by:

TIRANTE / STUD BOLT

t·e·c·n·o BOLT

CERTIFICATE

Nr. 5086 | **05-08-24**

Page 1/1

INDRA SRL
VIA NOVARA 10/B-C
20013 MAGENTA MI
ITALIA

EN ISO 10204 3.1
CERTIFIED MATERIAL TEST REPORT

Your order: AF24 01970 24-06-24 Delivery note: 2072 05-08-24

Item	Materials	Description	Sizes	Batch	Heat		Quantity
1	ASTM A 193 B8M cl.2 101.99.0962SS	Tirante DIN 976/UNI 6610 ASTM A 193 B8M cl.2 M	10X30	66451	281154	N.	330

Pos. 110 - 120 - 130 - 140 - 150 - 160 - 165 VOCE DOGANALE 73181900 MERCE DI ORIGINE:ITALIA

CHEMICAL ANALYSIS

1		%C %	%Mn %	%P %	%S %	%Si %	%Cr %	%Ni %	%Mo %	%H.T. CST+SH
	REQ. MIN.						16	10	2	
	REQ. MAX.	0,080	2	0,045	0,030	1	18	14	3	
	ACT.VAL.	0,015	1,520	0,032	0,022	0,540	16,530	10,130	2,060	CST+SH

MECHANICAL PROPERTIES

1		UTS MPa	YS0,2 MPa	E %	R.A. %	H HB
	REQ. MIN.	760	655	15	45	
	REQ. MAX.					321
	ACT. VAL.	851	738	20,1	52	258

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We state that the material or fasteners, or both, were manufactered, sampled, tested and inspected in accordance with the specification and any supplementary requirements designated in the purchase/sales order and it was found to meet those requirements

tecnoBOLT s.r.l. - 20822 Seveso (MB) ITALY - way vignone n.7 - info@tecnobolt.com - www.tecnobolt.com

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t·e·c·n·o BOLT

CERTIFICATE

Nr. 5066	26-07-24

Page 1/1

INDRA SRL
VIA NOVARA 10/B-C
20013 MAGENTA MI
ITALIA

EN ISO 10204 3.1
CERTIFIED MATERIAL TEST REPORT

Your order: AF24 01970 24-06-24 Delivery note: 2000 26-07-24

Item	Materials	Description	Sizes	Batch	Heat		Quantity
9	ASTM A 194 Gr.8M 980.99.0002 Pos. 170 - 180 - 190 - 200 - 210 - 220 - 230 - 240 - 300	Dado UNI 5588/DIN 934 ASTM A 194 Gr.8M M Esagonale	10	64533	160903S05	N.	380



VOCE DOGANALE 73181900

MERCE DI ORIGINE ITALIA

CHEMICAL ANALYSIS

9		%C %	%Mn %	%P %	%S %	%Si %	%Cr %	%Ni %	%Mo %
	REQ. MIN.						16	10	2
	REQ. MAX.	0,08	2	0,045	0,030	1	18	14	3
	ACT.VAL.	0.033	0.950	0.033	0.002	0.340	16.400	10.050	2.020

MECHANICAL PROPERTIES

9		H HB	P.L. KN
	REQ. MIN.	126	
	REQ. MAX.	300	
	ACT. VAL.	147-156	29.9

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We state that the material or fasteners, or both, were manufactered, sampled, tested and inspected in accordance with the specification and any supplementary requirements designated in the purchase/sales order and it was found to meet those requirements

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STELO SFERA / BALL STEM

Rodacciai

23842 Bosisio Parini (LC) – Via Giuseppe Roda 1 – Italia
Tel. +39 031878111 – Fax +39 031878312
www.rodacciai.com – info@rodacciai.com

Azienda con sistema di gestione certificato da IGQ
secondo UNI EN ISO 9001:2015

The Company's Quality Management System
is certified by IGQ according to UNI EN ISO 9001:2015

CERTIFICATO DI CONTROLLO Inspection Certif N. 173501 Date 13/11/2023

Secondo According to . . . . . EN 10204:2004 3.1

ORDINE - Order N. 23/3822 Date 10/11/2023

D.d.T. - Delivery note N. 11634/04 Date 13/11/2023

Weight KG 128,00 **Odp. Nr.** 2022/A/13380
Tolerance ISO286-2 h9 + 0,000 - 0,043 mm **Bars Length** 3.000 - 3.050 mm

QUALITA' - Grade

STANDARD	EN 10088-3:2014	X2CrNiMo17-12-2	1.4404 / 316L
STANDARD	EN 10088-3:2023	X5CrNiMo17-12-2	1.4401 / 316

Mark RODACCIAI . . . . . 316 PLUS
PROFILO - Shape . . . . . ROUND
DIMENSIONE - Size . . . . . mm 18,00
ESECUZIONE - Form of delivery . . . . . ROUGH GROU.

COLATA - Heat E30822

ANALISI CHIMICA DI COLATA - Cast analysis % by mass

C	Mn	Si	S	P	Cr	Ni	Mo	Cu	Co	N
0,020	1,540	0,554	0,0290	0,031	16,620	10,020	2,030	0,441	0,280	0,0520

CARATTERISTICHE MECCANICHE ALLO STATO DI FORNITURA
Mechanical properties of the delivered material

		Tested
Tensile Strength	Rm (MPa)	695,3
Proof Stress	Rp (1) (MPa)	648,0
Proof Stress	Rp (0,2) (MPa)	580,7
Elongation	A 4 (%)	44,3
Elongation	A 5 (%)	41,1
Hardness	HBW	211,0
Reduction of area	Z (%)	68,0

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NOTE - Notes

Processo di Fusione: E + A. O. D.
Prova di Corrosione Intergranularena: ASTM A262-15 "E"
Trattamento termico: Temperatura di Solubilizzazione 1060°C
Tempo Mantenimento: 4 Ore, Raffreddamento in Acqua
Materiale conforme a: ASTM A276-16a / A479-16a / A182-24
ASME: SA479; SA276; SA182 - UNS 31600 - 31630 AISI 316-316L

Pag. 1 / Segue

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STELO SFERA / BALL STEM

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Azienda con sistema di gestione certificato da IGQ secondo UNI EN ISO 9001:2015

The Company's Quality Management System is certified by IGQ according to UNI EN ISO 9001:2015

Segue certificato di controllo N. 173501 Date 13/11/2023
Inspection Certificate's continuance

NOTE - Notes

Materiale Conforme a NACE MR-0175/ISO 15156-3:2015
NACE MR-103/ISO 17495-1:2016
Corrosione Intercristallina EN ISO 3651-2:98 Met.A

Melting Process: E + A. O. D
Intergranular corrosion tested to ASTM A262-15 "E"
Heat treatment: annealed temperature 1060°C
Soaking time: 4 Hours, Cooling in water
Material Compliant to: ASTM A276-16a / A479-16a / A182-24
ASME: SA479; SA276; SA182 - UNS 31600 - 31630 AISI 316-316L
According to: NACE MR-0175 / ISO 15156-3:2015
NACE MR-103/ISO 17495-1:2016
Intergranular Corrosion according to EN ISO 3651-2:98 Met.A

Surface quality condition 2H conforming also to EN 10277 class 3

We certify hereby, that the above mentioned products are consistent with the order prescriptions.
This certificate was generated by data system acc. to EN 10204, it is not necessary to be signed for validity.

Materiale conforme alle seguenti direttive/regolamenti europee:
- Regolamento REACH 2006/1907/CE e tutti successivi aggiornamenti, compresa la modifica M80 Direttiva Delegata 2022/1632, e SVHC Candidate List aggiornata al 17/01/2023.
- Direttiva ROHS 2011/657UE e tutti i successivi aggiornamenti, compresa la modifica M80 attraverso la Direttiva Delegata 2022/1632, e Decreto Legislativo 27 del 04/03/2014.
- Direttiva RAEE 2012/19/UE e tutti successivi aggiornamenti, compresa la modifica M1 attraverso la Direttiva 2018/849.
- Direttiva ELV (End-of-Life Vehicles) 2000/53/CE e tutti i successivi aggiornamenti, compresa la modifica M15 attraverso la Direttiva 2020/363
- Contaminazione Radioattiva, Direttiva 2013/59/EURATOM e Decreto Legislativo N.101 del 31 Luglio 2020.
- Canadian List 168 aggiornata al 16/03/2022.
- Minerali di Conflitto, Regolamento (UE) 2017/821 e tutti i successivi aggiornamenti, compresa la modifica M1 attraverso il Regolamento Delegato 2020/1588, e Dodd-Frank Wall Street Reform and Consumer Protection Act Section 1502.

Material conforming to the following European directives/regulation:
- REACH regulation 2006/1907/EC and all subsequent updates, including modification M80 Delegate Directive, and SVHC Candidate List updated to 01/17/2023.
- ROHS Directive 2011/65/EU and all subsequent updates, including the M80 amendment through the Delegated Directive 2022/1632, and Italian Legislative Decree 27 of 03/04/2014.
- WEEE Directive 2012/19/EU and all subsequent updates, including the M1 amendment through Directive 2018/849.
- ELV (End-of-Life Vehicles) Directive 2000/53/EC and all subsequent updates, including the modification M15 through Directive 2020/363
- Radioactive Contamination, Directive 2013/59/EURATOM and Italian Legislative Decree No. 101 of 31 July 2020.
- Canadian List 168 updated 03/16/2022.
- Conflict Minerals, Regulation (EU) 2017/821 and all subsequent updates, including amendment M1 through Delegated Regulation 2020/1588, and Dodd-Frank Wall Street Reform and Consumer Protection Act Section 1502.

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Pag. 2 / 2 RODACCIAI: The Work Inspector
Alessia Porta

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COGNE ACCIAI SPECIALI S.p.a.
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CAP. SOC. 200.000.000 EUR INT. VERS.
C.F. 02187360067
VAT: IT00571320076 - R.E.A. n. AO-50474

Company with Management Systems certified according to ISO 9001, IATF 16949, EN 9100 and ISO 14001.

INSPECTION CERTIFICATE 3.1 (EN 10204:2004)
DOCUMENT NUMBER 2020018438

SFERA / BALL

CUSTOMER'S ORDER:	254		
MANUFACTURER'S WORKS:	AOSTA, VIA PARAVERA 16 - ITALY		
PRODUCER OF THE DOC:	QUALITY DEPARTMENT		
MANUFACTURER'S WORKS ORDER NO:	0001118068 / 000010		
MARK OF THE MANUFACTURER:	COGNE		
DISPATCH NOTE:	81346050 / 000010 WEIGHT: 232 KG / 512 LB		
THE CERTIFIED PRODUCTS ARE COMPLYING TO THE PURCHASE ORDER, EXCEPT FOR EXEMPTIONS AGREED WITH THE CUSTOMER, IF ANY.			
INTERNAL SPEC:	STOCKBARREW2	TECHNICAL RULE:	AD2000
PRODUCT:	PEL PEELED ROUND BARS TOLERANCE: ISOK11		
SURFACE FINISH:	2B Cold Finished		
PRODUCT DELIVERY CONDITION:	RS SOLUTION ANNEALED		
PRODUCT DIMENSIONS (mm):	45,000 (1,772 in)	LENGTH (mm)	06000 06200 (00236 00244 in)
GRADE:	AISI 316/316L EN1.4401/4404	INTERNAL GRADE:	F316L IMCO
IDENTIFICATION HEAT NO:	072244	IDENTIFICATION LOT NO:	201970
MARKING OF THE PRODUCT:	1.4404	TEST PIECE N:	197

REFERENCE NORMS: EN 10088-3 2014, EN 10272 2016, ASTM A276/A276M, ASTM A479/A479M, ASTM A193 B8MCLASSE 1D, ASME SA276/SA276M, ASME SA479/SA479M, AMS 5653J, AMS 5648M, ISO15156-3/NACE MR0175 2015, NACE MR0103/ISO 17945, NORSOK M630 MDSS01 REV5.
REFERENCE NORMS FOR CHEMICAL COMPOSITION AND MECHANICAL PROPERTIES: ASTM A182, ASME SA182.
REFERENCE NORMS ONLY FOR CHEMICAL COMPOSITION: EN 10222-5 2017,ASTM A403-07a, ASTM A484-18a,ASTM A314-08, AMS-QQ-S-763D.
ASME SECT.II PART A EDITION 2015-2017-2019
THE PRODUCT IS CONFORMING TO THE CONTRACT AGREEMENT AND TO THE RULE AD2000-MERKBLATT W0/W2.
ASTM A484 DOES NOT APPLY FOR SIZE AND LENGTH TOLERANCES.
STEELMAKING EAF + AOD + CONTINUOUS CASTING
REFERENCE NORM ASME BPVC.II.A-2015.
HOT ROLLED
REDUCTION RATIO 14,8

CHEMICAL LADLE ANALYSIS ACCORDING TO ASTM A751 - EN ISO 14284
Control lot No. - Weight :020000828767 - 83.288 KG - 183.616 LB

ELEMENTS	C	Si	Mn	P	S	N	Cr	Mo	Ni	Cu
OBTAINED	0,015	0,34	1,74	0,027	0,024	0,080	16,78	2,05	10,21	0,41

ELEMENTS	Co
OBTAINED	0,16

HARDNESS TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000828961 - 2.300 KG - 5.071 LB
SPECIFICATION ENISO6506 HARDNESS TEST HB TESTING METHOD: 10/3000
OBTAINED 171

IMPACT TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000828961 - 2.300 KG - 5.071 LB
SPECIFICATION EN ISO 148-1-KV2 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 20
MEASUREMENT UNIT J

OBTAINED	430	432	440	430	439	434	434	440	438	433
	431	439								

DATE 18.05.2020 BARBARA VIETTI MV(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne
REVIEW DATE 01.12.2021 N. REVIEW 1

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9/10/24 R

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TENSILE TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000828961 - 2.300 KG - 5.071 LB
SPECIFICATION EN-ISO6892-1 DIRECTION OF THE TEST PIECE: L

	RM	RP02	A5	Z	RP1
MEASUREMENT UNIT	MPA	MPA	% 5.0 D	%	NMM
OBTAINED	578	286	56,1	80,5	321
	592	287	55,6	80,1	321
	582	274	54,2	79,4	306
	585	274	55,6	81,2	312

GRAIN SIZE
Control lot No. - Weight :020000828961 - 2.300 KG - 5.071 LB
SPECIFICATION ASTME112 --
OBTAINED 5 7

MATERIAL IN COMPLIANCE WITH THE NORSOK M-630 MDS S01
IMPACT TEST
Control lot No. - Weight :020000828961 - 2.300 KG - 5.071 LB
SPECIFICATION EN ISO 148-1 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 196-
MEASUREMENT UNIT J

OBTAINED	181	183	188	177	175	200	188	174	194	183
	197	173								

TENSILE TEST
Control lot No. - Weight :020000828961 - 2.300 KG - 5.071 LB
SPECIFICATION ASTMA370-E8-0.5"SPEC DIRECTION OF THE TEST PIECE: L

	RMB	RP02B	ZB	AL2B
MEASUREMENT UNIT	KSI	KSI	%	% 4,0 D
OBTAINED	85	40	80,7	59,7
	85	42	81,2	60,3
	86	42	81,3	60,1
	85	41	81,0	58,6

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9/10/24 R

COUNTRY OF MELTING AND ORIGIN: ITALY, THE MATERIAL COMPLIES WITH FAR DFARS 252.225-7009 ALT 1.
The products delivered are conforming to EN10088-5 and bear the CE marking on the basis of the test results here reported and the continuous surveillance, assessment and approval by MPA NRW (certificate no. 0432-CPR-00166-01)
Material produced according to the system #Regulation 305/2011/EU of the European Parliament and of the Council of 9 March 2011#
DOCUMENT ISSUED IN AGREEMENT WITH TUEV BAYERN(11.1972) WAVING OF COUNTERSIGNING (SEE TUEV BAYERN LETTER DATED 17.01.80).
MARKING: SYMBOL OF THE MANUF. WORK, MATERIAL N. , CAST N., LOT N., RECEIVING AGENT STAMP
CORROSION TEST ACCORDING TO ASTM A262 PRACTICE E EN ISO 3651-2 PRACTICE A: SATISFACTORY.

DATE 18.05.2020 BARBARA VIETTI MV(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne
REVIEW DATE 01.12.2021 N. REVIEW 1

INDRA S.r.l.
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Company with Management Systems certified according to ISO 9001, IATF 16949, EN 9100 and ISO 14001.

SFERA / BALL

ANTIMIXING TEST BY PORTABLE SPECTROMETRE: CONFORMING
EDDY CURRENT INSPECTION OF SURFACE ACCORDING TO EN 10277 CLASS 4.
DIMENSIONAL CONTROL ACCORDING TO EN 10278: SATISFACTORY.
NO WELDING REPAIR ON THE MATERIAL.
ULTRASONIC TEST ACCORDING TO EN 10308 Class.3: SATISFACTORY
QUALITY SYSTEM CERTIFIED TO UNI EN ISO 9001:2015 -IATF 16949:2016 (THE LAST ONE ONLY FOR WIRE ROD AND HOT ROLLED-PEELED-GROUND STAINLESS STEEL BARS).
MATERIAL ACCORDING TO NORSOK M630 EDITION 6.
INSPECTOR'S STAMP LF
THE PRODUCT SATISFIES THE DIRECTIVES: 2015/863/EU (ROHS3) - 2011/65/EU (ROHS2) - 2000/53/EU - 2002/95/EU(RoHS) - 2003/11/EU-2005/618/EU AND PED 2014/68/EU.
THE MATERIAL IS FREE OF ANY MERCURY, MERCURY COMPOUNDS AND OR RADIUM CONTAMINATION AT TIME OF SHIPMENT AND WAS PRODUCED WITHOUT USING OZONE DEPLETING SUBSTANCES OF CLASS I AND II.
RADIOACTIVITY CONTROL PERFORMED WITH A GAMMA SPECTROMETER: ASTM E181.
GAMMA ACTIVITY ON THE PRODUCTS BELOW 0.1 BQ/G ACCORDING TO EU RESOLUTION 2013/59/EURATOM , IAEA RS-G-1.7 AND IAEA SSG-17.

CE 0432

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x CROSSWIND
9/10/24 R

DATE 18.05.2020 BARBARA VIETTI MV(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne
REVIEW DATE 01.12.2021 N. REVIEW 1

ROSETTI MARINO ITEM 60

COD. VBC0NN24433Q00

TAG: BLPH-MV-044, BLPH-MV-054, BLPH-MV-241

INDRA ITEM 60

COD. 00.VSF.2685(T)

indra VALVES - ITALY	***Certificazione dei materiali*** ***EN 10204 3.1 come da allegati*** ***Material certification*** ***EN 10204 3.1 as per attachments***	**MD-02-04-IT-UK / VSF** **Rev. 16** **Data: 08-Nov-2018** **CM/IT/UK**

Nr. *No.* **24-1998** **Data / *Date :*** **16-Oct-2024**

Cliente / *Customer* **ROSETTI MARINO SPA**

Vs. ordine Nr. / *Your order Nr.* **1724000798 REV.2** **Data / *Date :*** **26-Jun-2024**

Ns. commessa Nr. / *Our job Nr.* **24 01216** **Data / *Date :*** **3-Jul-2024**

Ns. D.D.T. Nr. / *Our advise note Nr.* **Data / *Date :***

Ordine di produzione / Production order number : 24 01216/60 - 301850

Lotto / Material batch number : 301850

Pos. Cliente Customer Item	*Pos. Indra Indra Item*	*Codice / Code*		*Q.tà / Q.ty*	*Nr. di serie Serial Number*	*Descrizione /Description*
		Ns./ Our	*Vs. / Your*			
60	60	00.VSF.2685(T)	VBC0NN24433Q00	3	105967,105968 105969	INDRA BALL VALVE SB-598-20-E150RF3-E-F55F-F55-N-K-PG-ESX100-L1-TG-TGW-IT2-PMI2-PD2-BI-CR-TA-FS-SPC1-SPC2

Elenco / List

Componente / *Component*	Colata / Heat	Materiale *Material*	Numero del certificato Certificate number
Corpo Valvola / Valve Body	301850	F55 NACE	2024012940 - N.US.592/24
Closure E150RF3	400186	F55 NACE	FA0300091081 00 / V0 - 480652
Tirante / Stud bolt	BE1859	ASTM A193 B7M + HDG	5117
Dado / Nut	BD4437	ASTM A194 Gr.2HM + HDG	5166
Stelo antiespulsione sfera / Ball stem	408456	F55 NACE	534228 Rev.1 - FA0300149014 00 / V0
Sfera / Ball	276345	F55 NACE	2022031406 - N.US.1034/22

NOTE / **REMARKS :** TAG: BLPH-MV-044, BLPH-MV-054, BLPH-MV-241

PREPARATO DA: **ELEONORA RANZANI**
PREPARED BY: **DOCUMENTION MANAGER**

APPROVATO DA: **LUCIA NOSOTTI**
APPROVED BY: **QUALITY ASSURANCE MANAGER**

20013 Magenta (MI) Italy - Via Novara, 10/B-C
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E-mail: indra@indra.it - http://www.indra.it

CROSSWIND
30/10/24

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C.F. 02187360967
VAT: IT00571320076 - R.E.A. n. AO-50474

Company with Management Systems
certified according to ISO 9001, IFAF 16949,
EN 9100, ISO 14001 and ISO 45001.

INSPECTION CERTIFICATE 3.1 (EN 10204:2004)

CUSTOMER:	C.S.C. SPA		
CUSTOMER'S ORDER:	A2024295SSS		
MANUFACTURER'S WORKS:	AOSTA, VIA PARAVERA 16 - ITALY		
PRODUCER OF THE DOC:	QUALITY DEPARTMENT		
MANUFACTURER'S WORKS ORDER NO:	0025316710 / 000030		
MARK OF THE MANUFACTURER:	**COGNE**		
DISPATCH NOTE:	0081600654 / 000010 WEIGHT: 2398 KG / 5287 LB		
INTERNAL SPEC:	NORSOKREV5		
PRODUCT:	SPE ROUGHPEELED ROUND BARS TOLERANCE: + 1,500 - 0,0000 (+ 0,0591 - 0 in)		
SURFACE FINISH:	1X Hot Finished		
PRODUCT DELIVERY CONDITION:	RS SOLUTION ANNEALED		
PRODUCT DIMENSIONS (mm):	115,000 (4,528 in)	LENGTH (mm)	04000 06000 (00157 00236 in)
GRADE:	F55 UNSS32760 1.4501	INTERNAL GRADE:	329S
IDENTIFICATION HEAT NO:	301850	IDENTIFICATION LOT NO:	993480
MARKING OF THE PRODUCT:	1.4501	TEST PIECE N:	348

STEELMAKING EAF + AOD
HEAT TREATMENT: SOLUTION ANNEALING AT 1120°C + WATER QUENCHING DOWN TO 260°C.MIN.SOAKING TIME 1,5 Min./mm THICKNESS.
ASTM G48 A/ASTM A923 C TESTING CONDITIONS: Sample surface 120 GRIT, Solution 100g FeCl3.6H2O+900ml H20, T 50°C, 24h, no pitting at 20X. UNIT OF MEASURE: G/M2
MELTING PROCESS UHP + AOD + INGOT CASTING
HEAT TREATMENT PERFORMED IN CALIBRATED FURNACES ACCORDING TO INTERNAL PROCEDURE PR-GDQ.ITT COMPLYING WITH API6A Annex M Ed. 21st, API 6D annex H Ed. 25th & API 6DSS annex J Ed.3rd.
HOT FORGED
REDUCTION RATIO 29,8

CHEMICAL LADLE ANALYSIS ACCORDING TO ASTM A751 - EN ISO 14284
Control lot No. - Weight :020000985645 - 91.260 KG - 201.190 LB

ELEMENTS	C	Si	Mn	P	S	N	Cr	Mo	Ni	Cu
MEASUREMENT UNIT	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w
OBTAINED	0,013	0,39	0,65	0,020	0,0008	0,26	24,99	3,69	6,89	0,59

ELEMENTS	W	CV_F8
MEASUREMENT UNIT	% w/w	% w/w
OBTAINED	0,53	41

CV_F8 = CR+(3.3*MO)+(16*N2)

HARDNESS TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000986845 - 8.006 KG - 17.650 LB
SPECIFICATION ENISO6506 HARDNESS TEST HB TESTING METHOD: 10/3000
OBTAINED 254

IMPACT TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000986845 - 8.006 KG - 17.650 LB
SPECIFICATION EN ISO 148-1-KV2 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 20
MEASUREMENT UNIT J
OBTAINED 436 431 430

DATE 18.03.2024 MORABITO ROSA CF(QUALITY CERTIFICATOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne

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Company with Management Systems certified according to ISO 9001, ITAF 16949, EN 9100, ISO 14001 and ISO 45001.

TENSILE TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000986845 - 8.006 KG - 17.650 LB
SPECIFICATION ASTMA370/E8-0.5"SPEC DIRECTION OF THE TEST PIECE: L

MEASUREMENT UNIT	Rm MPA	Rp02% MPA	Z %	Al2 % 4,0 D
OBTAINED	782	555	74,6	43,3

CORROSION
Control lot No. - Weight :020000986845 - 8.006 KG - 17.650 LB
SPECIFICATION ASTM G48 A
OBTAINED 0,02769

FERRITE %
Control lot No. - Weight :020000986845 - 8.006 KG - 17.650 LB
SPECIFICATION ASTME562 --
OBTAINED 51,24

MICROSTRUCTURE
Control lot No. - Weight :020000986845 - 8.006 KG - 17.650 LB
SPECIFICATION -- --
OBTAINED SATISFACTORY -

LATERAL EXPANSION
Control lot No. - Weight :020000986845 - 8.006 KG - 17.650 LB
SPECIFICATION ASTMA370 --
OBTAINED 0,5 0,4 0,6

SHEAR %
Control lot No. - Weight :020000986845 - 8.006 KG - 17.650 LB
SPECIFICATION ASTMA370 --
OBTAINED 50 50 60

FURNACE CALIBRATION ACCORDING TO API 6A ANNEX M Ed. 21th and API 6D ANNEX H Ed. 25th.
FERRITE CONTENT DETERMINED ACCORDING TO ASTM E 562 WITH 16 POINTS PER FIELD AND MINIMUM 30 FIELDS
HARDNESS TEST
Control lot No. - Weight :020000986845 - 8.006 KG - 17.650 LB
SPECIFICATION ASTMA370-E18 HARDNESS TEST HRC TESTING METHOD:
OBTAINED 21

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INSPECTION CERTIFICATE 3.1 (EN 10204:2004)
DOCUMENT NUMBER 2024012940

IMPACT TEST
Control lot No. - Weight :020000986845 - 8.006 KG - 17.650 LB
SPECIFICATION ASTM A370-E23 TYPE A DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 50-
MEASUREMENT UNIT J
OBTAINED 203 214 243

IMPACT TEST
Control lot No. - Weight :020000986845 - 8.006 KG - 17.650 LB
SPECIFICATION ASTM A370-E23 TYPE A DIRECTION OF THE TEST PIECE: T
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 50-
MEASUREMENT UNIT J
OBTAINED 88 81 85

TENSILE TEST
Control lot No. - Weight :020000986845 - 8.006 KG - 17.650 LB
SPECIFICATION ASTMA370-E8-0.5"SPEC DIRECTION OF THE TEST PIECE: T

	TS	YS02	EL	RA	A12 B
MEASUREMENT UNIT	KSI	KSI	%	%	%
			5.0 D		4,0 D
OBTAINED	115	82	35,5	73,6	41,6

TENSILE TEST
Control lot No. - Weight :020000986845 - 8.006 KG - 17.650 LB
SPECIFICATION EN-ISO6892-1 DIRECTION OF THE TEST PIECE: L

	Rm_C	Rp02_C	A	Z_C
MEASUREMENT UNIT	MPA	MPA	%	%
			5.0 D	
OBTAINED	790	555	39,4	71,5

REFERENCE NORMS:EN 10088-3(14), EN 10272(16),ASTM A276(23) ASME SA276(21),ASTM A479(23) ASME SA479(21),ISO 15156-3(20)/NACE MR0175(21), ISO 17945(15)/NACE MR0103(15),NORSOK M-650 REV.4/M-630, MDS D57 REV.5. REFERENCE NORMS FOR CHEMICAL ANALYSIS, MECHANICAL PROPERTIES, HEAT TREATMENT: ASTM A182(23)/ASME SA182(21), API 6A-PSL3
REFERENCE NORMS ONLY FOR CHEMICAL COMPOSITION: EN 10222-5(17), ASTM A484(23).
VISUAL INSPECTION OF SURFACE AND DIMENSIONAL CONTROL ACCORDING TO EN 10221 CLASS C AND EN 10060: SATISFACTORY.
METALLOGRAPHIC INSPECTION ACCORDING TO ASTM A923 METHOD A: SATISFACTORY.
IMPACT TEST VALUES AT -46°C ARE NOT LESS THAN THOSE AT -50°C HERE STATED.
QTC ON PROLONGATION OF BARS TESTS AT MID RADIUS (CENTER POS. FOR SIZES <2 INCHES).
ASTM A484 DOES NOT APPLY FOR SIZE AND LENGTH TOLERANCES.
MARKING: PRODUCER LOGO, MATERIAL NO, HEAT NO, LOT NR.
WHERE NOT SPECIFIED ALL THE NORMS MENTIONED ARE INTENDED IN THEIR LAST REVISION AT THE DATE OF ISSUE OF THIS DOCUMENT.
COUNTRY OF MELTING AND ORIGIN: ITALY, THE MATERIAL COMPLIES WITH FAR DFARS 252.225-7009 ALT 1.
THE PRODUCT SATISFIES THE DIRECTIVES: 2015/863/EU (ROHS3) - 2011/65/EU (ROHS2) - 2000/53/EU - 2002/95/EU(RoHS) - 2003/11/EU-

DATE 18.03.2024 MORABITO ROSA CF(QUALITY CERTIFICATOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne

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Company with Management Systems certified according to ISO 9001, ITAF 16949, EN 9100, ISO 14001 and ISO 45001.

2005/618/EU AND PED 2014/68/EU.
THE MATERIAL IS FREE OF ANY MERCURY, MERCURY COMPOUNDS AND OR RADIUM CONTAMINATION AT TIME OF SHIPMENT AND WAS PRODUCED WITHOUT USING OZONE DEPLETING SUBSTANCES OF CLASS I AND II.
ULTRASONIC TEST ACCORDING TO EN 10308 CLASS 3, EQUIVALENT TO ASTM A388 FBH 5 : SATISFACTORY
CORROSION TEST ACCORDING TO ASTM A262 Method E EN ISO 3651-2 A: SATISFACTORY. NO CRACKS AT 20X MAGNIFICATION

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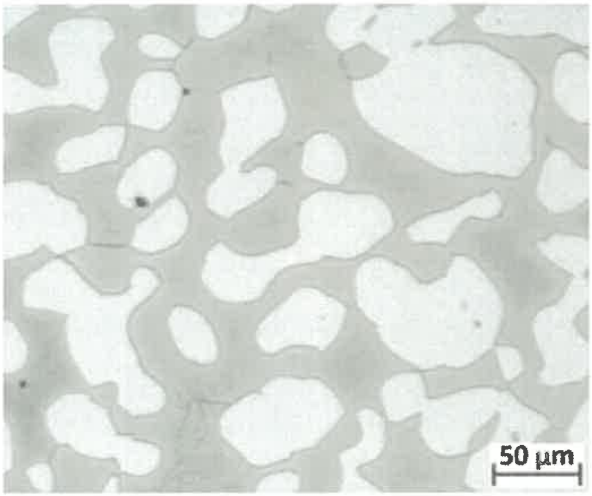
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МИКРОСЪЁМКА

All.N 1

MARCA *NUANCES* *WERKESTOFF* *GRADE* *МАРКА*	329S	*LOTTO DI CONTROLLO* *LOT DE CONTRÔLE* *LAUFKARTE* *CONTROL LOT* *ПАРТИЯ КОНТРОЛЯ*	020000986845
COLATA *COULEE* *SCHMELZE* *HEAT* *ПЛАВКА*	301850	*REAGENTE* *RÉACTIF* *REAGENS* *ETCHANT* *РЕАГЕНТ*	20 % NaOH electrolyte
TIPO DI APPARECCHIO *TIPE D'APPAREIL* *PRUEFGERAT TYP* *INSTRUMENT TYPE* *ТИП АППАРАТА*	Microscopio:	**Leica DM2700M s/n 430371**	
INGRANDIMENTO *AGRANDISSEMENT* *VERGRÖSSERUNG* *ENLARGEMENT* *УВЕЛИЧЕНИЕ*	**400 X**		
DIREZIONE D'ESAME *DIRECTION D'EXAMEN* *PRUEFRICHTUNG* *SCANNING DIRECTION* *НАПРАВЛЕНИЕ ПРИ ИССЛЕДОВАНИИ*	☐ **LONGITUDINALE - LONGITUDINAL - ПРОДОЛЬНОЕ** ☒ **TRASVERSALE – TRANSVERSAL – KREUZEND-ПОПЕРЕЧНОЕ**		

PHOTO (ELECTRONIC IMAGE) – ФОТОСНИМКИ (ЭЛЕКТРОННОЕ ИЗОБРАЖЕНИЕ)



NOTE: ПРИМЕЧАНИЯ:	FIRMA / SIGNATURE / ПОДПИСЬ UNTERSCHRIFT / SIGNATURE	DATA / DATE / ДАТА DATUM / DATE
"Free from Intermetallic Phases"	C. Del Guerra	05/03/24

Mod.Micro Rev.5

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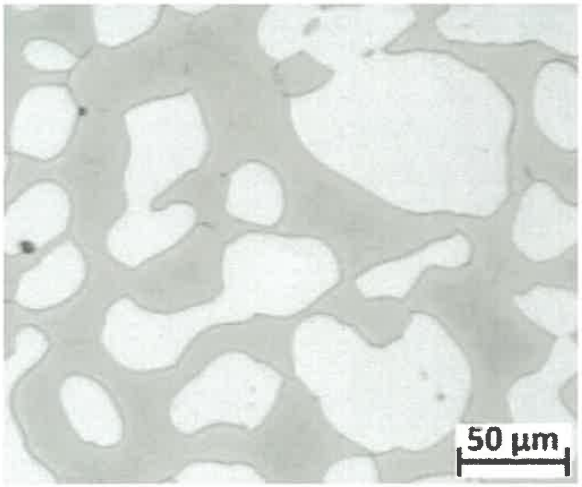
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I-11100 AOSTA

MICROPHOTO
МИКРОСЪЁМКА

All.N 2

MARCA *NUANCES* *WERKESTOFF* *GRADE* *МАРКА*	329S	*LOTTO DI CONTROLLO* *LOT DE CONTRÔLE* *LAUFKARTE* *CONTROL LOT* *ПАРТИЯ КОНТРОЛЯ*	020000986845
COLATA *COULEE* *SCHMELZE* *HEAT* *ПЛАВКА*	301850	*REAGENTE* *RÉACTIF* *REAGENS* *ETCHANT* *РЕАГЕНТ*	20 % NaOH electrolyte
TIPO DI APPARECCHIO *TYPE D'APPAREIL* *PRUEFGERAT TYP* *INSTRUMENT TYPE* *ТИП АППАРАТА*	Microscopio:	**Leica DM2700M s/n 430371**	
INGRANDIMENTO *AGRANDISSEMENT* *VERGRÖSSERUNG* *ENLARGEMENT* *УВЕЛИЧЕНИЕ*		**500 X**	
DIREZIONE D'ESAME *DIRECTION D'EXAMEN* *PRUEFRICHTUNG* *SCANNING DIRECTION* *НАПРАВЛЕНИЕ ПРИ ИССЛЕДОВАНИИ*	☐ **LONGITUDINALE - LONGITUDINAL - ПРОДОЛЬНОЕ** ☒ **TRASVERSALE – TRANSVERSAL – KREUZEND-ПОПЕРЕЧНОЕ**		

PHOTO (ELECTRONIC IMAGE) – ФОТОСНИМКИ (ЭЛЕКТРОННОЕ ИЗОБРАЖЕНИЕ)



NOTE:
ПРИМЕЧАНИЯ:
"Free from Intermetallic Phases"

FIRMA / UNTERSCHRIFT SIGNATURE / SIGNATURE ПОДПИСЬ	DATA / DATUM DATE / DATE ДАТА
C. Del Guerra	05/03/24

Mod.Micro Rev.5

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CERTIFICATO DI COLLAUDO ULTRASUONI
CERTIFICAT DE CONTROLE PAR ULTRASONS
ULTRASCHALL PRUEFZEUGNIS
REPORT OF ULTRASONIC INSPECTION
ОТЧЕТ ОБ УЛЬТРАЗВУКОВОМ КОНТРОЛЕ

N. US.
592/24

CLIENTE / *CLIENTSGG* / *BESTELLER* / *CUSTOMER* / ЗАКАЗЧИК			*CONFERMA* / *CONFIRMATION* / *AUFTRAGSBESTRAKTIGUNG* / *CONFIRMATION* / ПОДТВЕРЖД. ЗАКАЗА		
MARCA / *NUANCES* / *WERKESTOFF* / *GRADE* / МАРКА	329S W.No 1.4501		*ORDINE* / *COMMANDE* / *AUFTRAG* / *ORDER* / ЗАКАЗ		
SPECIFICA / *SPECIFICATION* / *PRUKEVORSCHRIFT* / *SPECIFICATION* / ТЕХ. ТРЕБОВАНИЯ	EN10228-4 cl3		*COLATA* / *COULEE* / *SCHMELZE* / *HEAT* / ПЛАВКА	301850	*SCHEDA* / *LOT* / *LAUFKARTE* / *LOT* / ПАРТИЯ 993480
PRODOTTO / *PRODUIT* / *ERZEUGNISFORM* / *PRODUCT* / ИЗДЕЛИЕ	ROUND BARS 115 mm		*STATO DI LAVORAZIONE* / *STADE DU PRODUIT* / *LIEFERZUSTAND* / *WORKING STEP* / ОБРАБОТКА	PEELED	
TIPO DI APPARECCHIO / *TIPE D'APPAREILPARUS* / *PRUEFGERAT TYP* / *INSTRUMENT TYPE* / ТИП АППАРАТА	USN60 L SW	16L021RC	*COSTRUTTORE* / *CONSTRUCTEUR* / *BAUART* / *MAKE* / ИЗГОТОВИТЕЛЬ	KRAUTKRAMER	
TIPO DI SONDA / *TIPE DE PALPEUR* / *PRUFKOPT* / *PROBETYPE* / ТИП ЗОНДА	B2S-E		*FREQUENZA* / *FREQUENCE* / *FREQUENZ* / *FREQUENCY* / ЧАСТОТА	2 MHz S/N	57745-76867

DIREZIONE D'ESAME / *DIRECTION D'EXAMEN* / *PRUEFRICHTUNG* / *SCANNING DIRECTION* / НАПРАВЛЕНИЕ ПРИ

- [X] *RADIALE - RADIAL*
- [ ] *ASSIALE - AXIAL*
- [ ] *SONDE ANGOLATE - ANGLE BEAMS*

- [ ] *MATRICOLA BLOCCO CAMPIONE* / *DENTIFICATION BLOC DE REFERENCE MUSTER BLOCK* / *MUSTER BLOCK* / *TEST BLOCK NR* / № ОБРАЗЦА ДЛЯ ИСПЫТАНИЯ

AVG SCALE / *ECRANS ABAQUES AVG* / *AVG SKALEN* / *AVG SCALE* / ШКАЛА *AVG*

- [ ] *AVG DIAGRAMMI* / *DIAGRAMMES AVG* / *AVG DIAGRAMM* / *AVG DIAGRAM* / ДИАГРАММЫ *AVG*
- [ ] V1
- [ ] V2

RISULTATODELL'ESAME / RESULTAT DE L' ESSAI / PRUEFERGERBNISSE / RESULT OF THE TEST / РЕЗУЛЬТАТ ИСПЫТАНИЯ

EXAM DATA : 15/03/2024
INSPECTED N. BARS 16

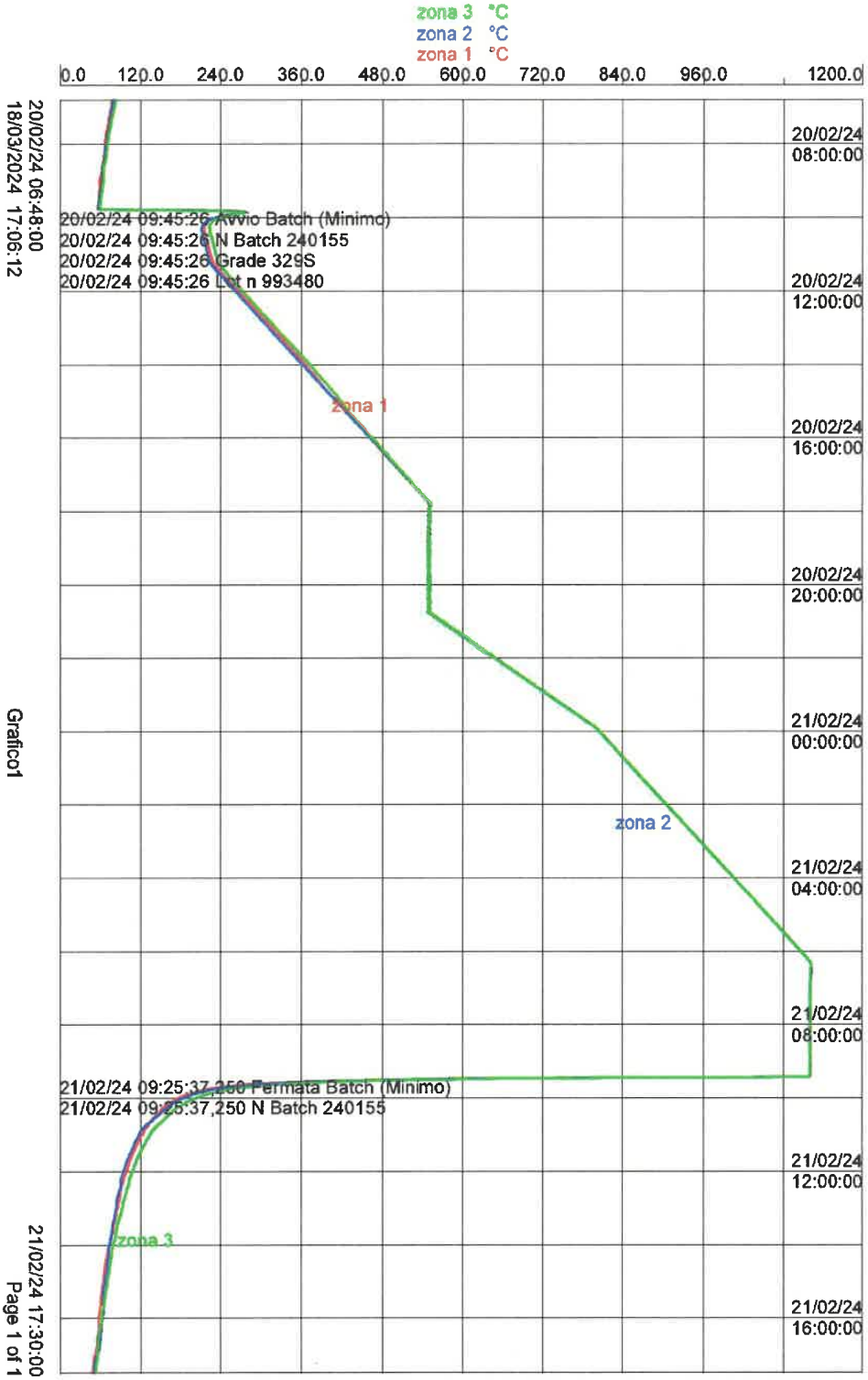
THE MATERIAL IS IN ACCORDANCE TO THE FOLLOWING SPECIFICATIONS:

EN10228-4 cl3

L'ISPETTORE CND ZUSTANDER CND / L'INSPECTEUR CND / CND INSPECTOR / ИНСПЕКТОР НРК NADALIN SIMONE Liv.II - ISO 9712 N° Cert.32040/PND/C	**III LIV.CND** / III УРОВЕНЬ НРК BAISOTTI MARCO Liv.III - ISO 9712 N° Cert.34194/PND/C		**DATA** DATUM / DATE DATE / ДАТА 18/03/2024

(Mod. Certus Rev. 6)

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BGH Edelstahl Freital GmbH

BGH Edelstahl Freital GmbH - Am Stahlwerk 1 - 01705 Freital

I.W.S. International Welding Supplier SAS
Via Kennedy 42
20078 San Colombano al Lambro (MI)
Italien

Ansprechpartner Contact
Telefon Phone
E-Mail E-Mail
Datum Date 25.11.2019

Bescheinigung zur Materialidentität
Certificate Of Material Identity

Bescheinigungs-Nr.
certificate number

FA0300091081 00 / V0

Bestell-Nr. / order no.	Auftragsnummer / purchase order no.	Prüfbescheinigung (Anlage) / test certificate no. (attachment)
50/19	AB03522097 / 1	480652

Werkstoff / material	Die Lieferung entspricht den vereinbarten Lieferbedingungen. / The delivery corresponds to the agreed terms of delivery.
UNS S32760, X2CrNiMoCuWN25-7-4	

Erzeugnis / product
Stab rund, gewalzt, geschält / Round bars, rolled, peeled

Anforderungen / requirements
NORSOK MDS - D 57 Rev. 5 10/13, DIN EN 10088 -3 12/14

Schmelze / heat	Anzahl / quantity	Gewicht (kg) / weight (kg)	Abmessung / dimension
400186	7	2888	114,30 RD (4780 - 5270mm)

Wir bestätigen, dass die gelieferten Teile aus der oben genannten Nummer der Prüfbescheinigung entnommen wurden. / We herewith confirm that the delivered parts were part of the certification stated above.			
Ausgewiesen durch	DIN EN 10204-01/05 3.1	Certified by	DIN EN 10204-01/05 3.1

Stempelung / stamping	Wert / value
INDRA s.r.l. COPIA CONFORME ALL'ORIGINALE VERIFIED TRUE COPY OF ORIGINAL	

Betriebsbeauftragter / authorized representative
Homm BGH Q18

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BGH Edelstahl Freital GmbH

BGH Edelstahl Freital GmbH Am Stahlwerk 1 01705 Freital

BGH Edelstahl Freital GmbH
Handelslager

Hüttenstraße

01705 Freital
Deutschland

Zeugnis-Nr. **480652**
Certificate no.
No. de certificat

Bescheinigung über Werkstoffprüfung nach DIN EN 10204
Certificate of material tests according to DIN EN 10204 **3.1**
Certificat des essais des matériaux selon DIN EN 10204

Die Lieferung entspricht den vereinbarten Lieferbedingungen.
Delivery in accordance with the agreed terms of delivery.
La livraison correspond aux conditions de livraison convenues.

Zeichen des Lieferwerkes
Trade mark
Signe du fournisseur

Stempel des Werkssachverständigen
Inspector's stamp
Poincon de l'inspecteur

BGH Q408

Kunden-Bestell-Nr. **246087006**
Customer order no.
Cde. no. du client

BGH-Auftrags-Nr. **07220101/246087**
BGH works no.
BGH référence

Erzeugnisform Product	Stab, rund, geschält round bars,peeled
Werkstoff / Quality	UNS S32760
Anforderungen Requirements	UNS S32760 ASTM A 276 /A276M -17 UNS S32760 ASTM A 479 /A479M -18 UNS S32760 ASME BPVC II. A SA- 479 /SA-479M 2017 UNS S32760 ASME BPVC II. A SA- 276 2017 1.4501 X2CrNiMoCuWN25-7-4 DIN EN 10088 -3 12/14 1.4501 X 2 CrNiMoCuWN 25-7-4 DIN EN 10272 10/16 UNS S32760 NORSOK M 630 Edition 6 10/13 UNS S32760 NORSOK MDS - D 57 Rev. 5 10/13 UNS S32760 ANSI/NACE MR 0175/ISO15156-3 2015 UNS S32760 ANSI/NACE MR 0103 /ISO17945: 2015 1.4501 X2CrNiMoCuWN25-7-4 TL 119 / BR 4501 4/Rev. 3 10.2010 F55 (UNS S32760) ASTM A182/A182M - aktuelle Ausgabe (nur Chemische Zusammensetzung und mechanische Eigenschaften) F55 (UNS S32760) ASME BPVC.II.A SA 182 /182M - aktuelle Ausgabe (nur Chemische Zusammensetzung und mechanische Eigenschaften) Gefertigt nach QTR_F_B_32760 nach Norsok M-650 Edition 4 F55 (UNS S32760) ASTM A182/A182M - Lat. Rev. (Chemical Composition and mechanical properties only) F55 (UNS S32760) ASME BPVC.II.A SA 182 /182M - Lat. Rev. (Chemical Composition and mechanical properties only) Manufactured acc. to QTR_F_B_32760 acc. to Norsok M-650 Edition 4

Besichtigung und Maßnachprüfung Inspection and dimensional control Inspection et contrôle de dimension	Erschmelzung/Nachbehandlung Melting process/secondary refining Mode d'élaboration/traitement ultérieur	Verwechslungsprüfung (spectroanalytisch) identification test (spectral-analysis) examination d' identification(analyse spectrale)
ohne Beanstandung without objection	E- VOD	ohne Beanstandung without objection

Pos. Item Poste	Anzahl Quantity Quantité	Abmessung Dimension Dimensions	Gewicht Weight Poids	Schmelz-Nr. Heat-No. No. de coulée
1	12	114,30 RD	4678 kg	400186

Schmelze Heat %	C	Si	Mn	P	S	Cr	Mo	Ni	Cu	N	W	PRE
400186	0,020	0,24	0,54	0,022	0,0003	25,80	3,47	7,55	0,60	0,2470	0,530	41,203

Wärmebehandlungszustand
Condition of heat treat
lösungsgeglüht
solution annealed

Probe-Nr. Test-No.	Lage loc.	Temp. °C	Rp0,2 N/mm²		Rm N/mm²	A5/A4 %	Z %	Kerbschlagarbeit Impact value J	Probenform Shape of test piece Charpy-V °C	Härte Hardness HRC /HBW
Soll/Req.+	L	RT	>=530		>=730	>=25		>=100	RT	
+	L	RT			<=930				-50	<=32 /<=290
*	L	RT	>=550		>=750	>=25	>=45	>=45	-46	
*	L	RT			<=895					
*	T	RT	>=550		>=750	>=25		>=45	-46	

Anlagen
Encl.
Annexe
US-Protokoll/UT report
Glühbesch./Heat treatment cer.
Gefügeaufnahme/micrograph

Freital,den
Place and date
Lieu et date
05.11.2019

Abnahmebeauftragter
Inspector representative
Inspecteur de réception
Pfennig

Das Zeugnis wurde maschinell erstellt und ist auch ohne Unterschrift gültig.

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BGH Edelstahl Freital GmbH
Handelslager

Hüttenstraße

01705 Freital
Deutschland

Zeugnis-Nr. **480652**
Certificate no.
No. de certificat

Bescheinigung über Werkstoffprüfung nach DIN EN 10204
Certificate of material tests according to DIN EN 10204 **3.1**
Certificat des essais des matériaux selon DIN EN 10204

Die Lieferung entspricht den vereinbarten Lieferbedingungen.
Delivery in accordance with the agreed terms of delivery.
La livraison correspond aux conditions de livraison convenues.

Zeichen des Lieferwerkes
Trade mark
Signe du fournisseur

Stempel des Werkssachverständigen
Inspector's stamp
Poincon de l'inspecteur

BGH Q408

Kunden-Bestell-Nr. **246087006**
Customer order no.
Cde. no. du client

BGH-Auftrags-Nr. **07220101/246087**
BGH works no.
BGH référence

020KM1	+	L	RT	591		812	38/-	78	312	332	334	RT	22/242
020KM1	+	L							326	322	309	-50	
020KM1	*	L	RT	580		797	-/43	79	296	320	326	-46	
020KM1	*	T	RT	604		826	-/29	67	198	127	161	-46	
020KM2	+	L	RT	597		817	38/-	77	338	324	327	RT	
020KM2	+	L							330	323	328	-50	

\+ Erprobung nach/testing acc. to DIN EN ISO 6892-1 / DIN EN ISO 148-1
Prüfort/test location: 12,5 mm
* Erprobung nach/testing acc. to ASTM/ASME A 370
Prüfort/test location: D/4 - mid radius

Umformgrad/reduction ratio: 13:1

Korros.-Test ASTM G48 Meth.A: 50°C/24h: kein Lochfraß/no pitting is observed
corrosion test Meth.A: Gewichtsverlust/weight loss: 0,029 g/m²
Proben gebeizt/Samples pickles (20% HNO3 + 5% HF, 60 °C, 5 Minuten/minutes)

Deltaferrit/ferrite delta ASTM E562: Ätzmittel/Etchant:: V2A + 30 % NaOH
Rand - near surface: 48% ; relative Genauigkeit/relative accuracy: 7%
D/4 - mid radius: 48% ; relative Genauigkeit/relative accuracy: 8%
Prüfung/testing: 30 Felder/16 Punkt (30 fields of 16 points)

IK-Beständigkeit/intercrystalline corrosion DIN EN ISO 3651-2 Prüfv./Meth. C:
ohne Beanstandung/without objection.
Sensibilisierungbehandlung/Sensibilisation treatment: 700°C 30min Wasser/water
Prüfdauer/time of testing: 20h

Material wurde nicht reparaturgeschweißt.
Material frei von Sigma- und anderen schädlichen Phasen.
Gefüge frei von Korngrenzenkarbiden,
-nitriden und anderen intermetallischen/schädlichen Phasen
Das Material ist frei von Quecksilber.
Stahlhersteller des Ausgangsmaterials: BGH Edelstahl Freital GmbH.

Material no weld repaired.
Material free from sigma and other harmful phases.
Microstructure free from grain boundary carbides
nitrides or any intermetallic or other detrimental phases.
Material is free from mercury.

Anlagen Encl. Annexe: US-Protokoll/UT report; Glühbesch./Heat treatment cer.; Gefügeaufnahme/micrograph	Freital,den Place and date Lieu et date 05.11.2019	Abnahmebeauftragter Inspector representative Inspecteur de réception **Pfennig**
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Wärmebehandlungsbescheinigung
Heat treatment certificate
Attestation de traitement thermique

BGH

BGH Edelstahl Freital GmbH

Kunden-Bestell-Nr. / Customer order no. / Cde. no. du client	BGH-Auftrags-Nr. / BGH works no. / BGH référence	Zeugnis-Nr. / Certificate no. / No. de certificat
246087006	**07220101**	**480652**

Wärmebehandlungszustand: / Condition of heat treatment: / État de traitement thermique:	**lösungsgeglüht / solution annealed / recuit de mise en solution**
Datum: / Date: / Date:	**09.10.2019**
Ofen-Nr.: / Furnace no.: / No. du four:	**722**
Aufheizzeit: / Heating up time: / Temps de montée en température:	**3 h**
Haltetemperatur: / Holding temperature: / Température de maintien:	**1110 °C**
Haltezeit: / Holding time: / Temps de maintien	**3 h**
Abkühlmedium: / Quenching medium: / Moyen de refroidissement:	**Wasser / water / eau**
Datum: / Date: / Date:	
Ofen-Nr.: / Furnace no.: / No. du four:	
Haltezeit: / Holding time: / Temps de maintien:	
Abkühlmedium: / Quenching medium: / Moyen de refroidissement:	
Wärmebehandlungs-Nr.: / Heat treatment lot no.: / No. du lot de traitement thermique:	**722/6691 (020KM)**

Diagramm: / Diagram: / Diagramme: X	Datum: / Date: / Date: 06.11.2019	Abnahmebeauftragter / Inspector representative / Inspecteur de réception: **KUNZ** BGH Q413

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Page ' ''

Ultraschallprüfung
Ultrasonic testing

DIN EN 10204-01/05 3.1

BGH

BGH Edelstahl Freital GmbH

Kunden-Bestell-Nr. **246087006**
Customer order no.
Cde. no. du client

BGH-Auftrags-Nr. **072201-01**
BGH works no.
BGH référence

Zeugnis-Nr. **480652**
Certificate no.
No. de certificat

Erzeugnisform : Stab, rund, geschält
Product : round bars,peeled

Werkstoff/Quality : UNS S32760 Schmelze: 400186
Abmessung/Dimension: 114,30 RD
Anzahl/Quantity : 12 Gewicht /Weight : 4678 kg
Wärmebehandlungszustand : lösungsgeglüht
Condition of heat treat : solution annealed

Prüfrichtlinie
Specification

A388/A 388 M (latest Revision)
DIN EN 10308 03/02
Tab.1-Typ1a(vollst.)Tab.3-Qual.-kl.3

Bearbeitungszustand : geschält
Machining condition peeled

Prüfgerät : Deutsch-RPTS-Echograph 1155
Test equipment

Prüfkopf : 24x STS10WB4C
Probe

Kopplungsmittel : Wasser
Coupling medium water

Prüfumfang : vollständig
Extent of examination completely

Einschallrichtung : senkrecht und in Winkeleinschallung 40°
Direction of incidence perpendicular and angle beam 40°

Registriergrenze : Prüfung und Justierung erfolgten gemäß obiger Spezifikation.
Registration level Test and adjustment according to above mentioned specification.

Befund : keine registrierpflichtigen Anzeigen
Result no reportable indications

Prüfdatum : 03.11.2019
Examination date

Freital,den Place and date Lieu et date 06.11.19	Prüfer Testing operator Opérateur	Abnahmebeauftragter Inspector representative Inspecteur de réception Kunz Stufe 2 ISO 9712 BGH Q413	Überwacher Supervisor Surveilleur

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BGH Edelstahl Freital GmbH
Handelslager

Hüttenstraße

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Deutschland

Zeugnis-Nr. **480652**
Certificate no.
No. de certificat

Bescheinigung über Werkstoffprüfung nach DIN EN 10204
Certificate of material tests according to DIN EN 10204 **3.1**
Certificat des essais des matérieux selon DIN EN 10204

Die Lieferung entspricht den vereinbarten Lieferbedingungen.
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Zeichen des Lieferwerkes
Trade mark
Signe du fournisseur

Stempel des Werkssachverständigen
Inspector's stamp
Poincon de l'inspecteur

BGH Q408

Kunden-Bestell-Nr. **246087006**
Customer order no.
Cde. no. du client

BGH-Auftrags-Nr. **07220101/246087**
BGH works no.
BGH référence

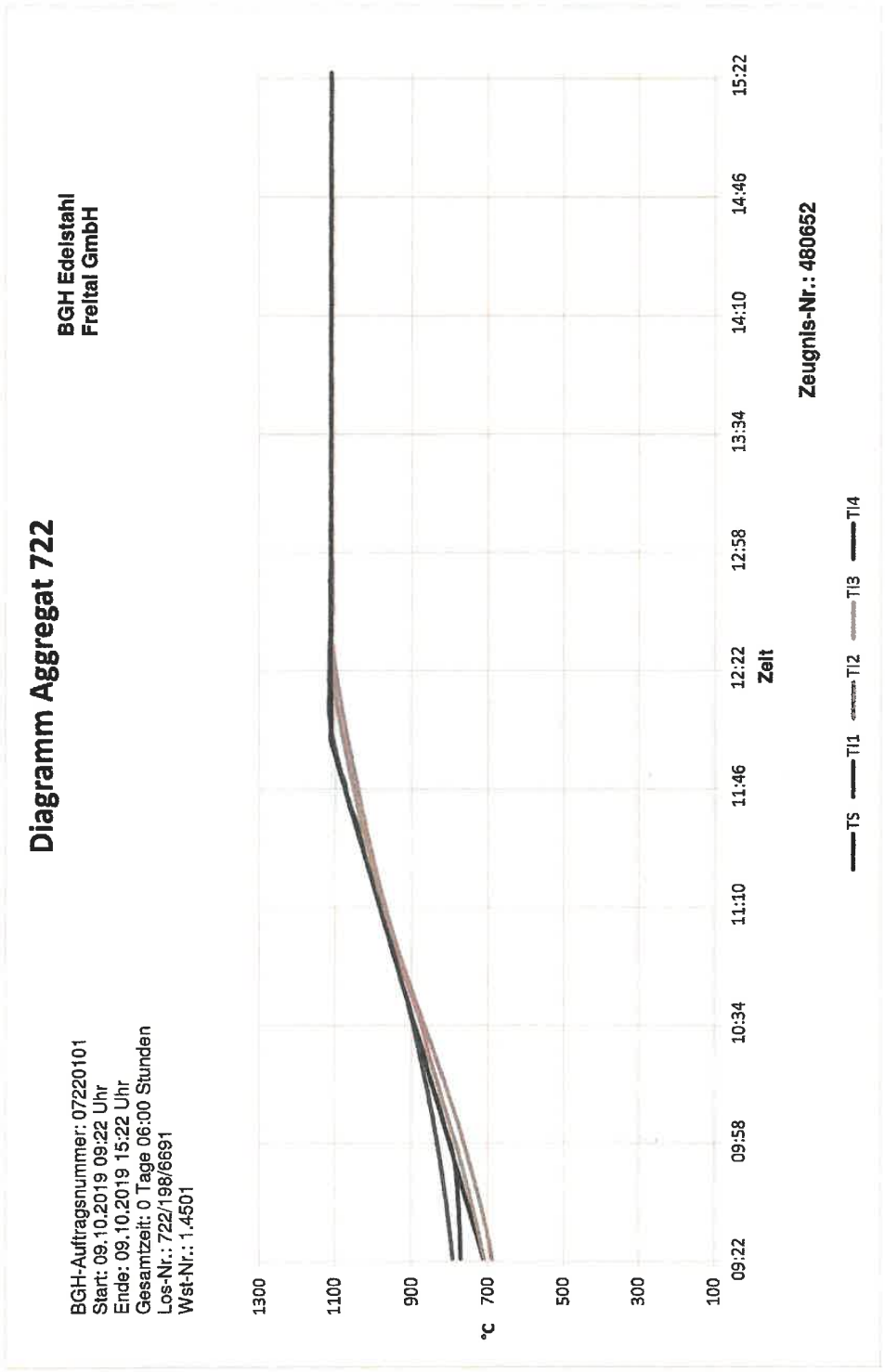
Steel manufacturer of starting material: BGH Edelstahl Freital GmbH.

Fertigung nach QM-System ISO 9001: 2015/ QM system in effect is ISO 9001: 2015
Zertifiziert nach / certificated AD2000 W0.
Kontrolle auf Radioaktivität ohne Befund, der Messwert liegt unter der Nachweisgrenze von 0,1 Bq/g.
Radioactivity inspection without objection, the measured value is below the detection limit of 0.1 Bq/g.

Anlagen Encl. Annexe: US-Protokoll/UT report; Glühbesch./Heat treatment cer.; Gefügeaufnahme/micrograph	Freital,den Place and date Lieu et date: 05.11.2019	Abnahmebeauftragter Inspector representative Inspecteur de réception: **Pfennig**

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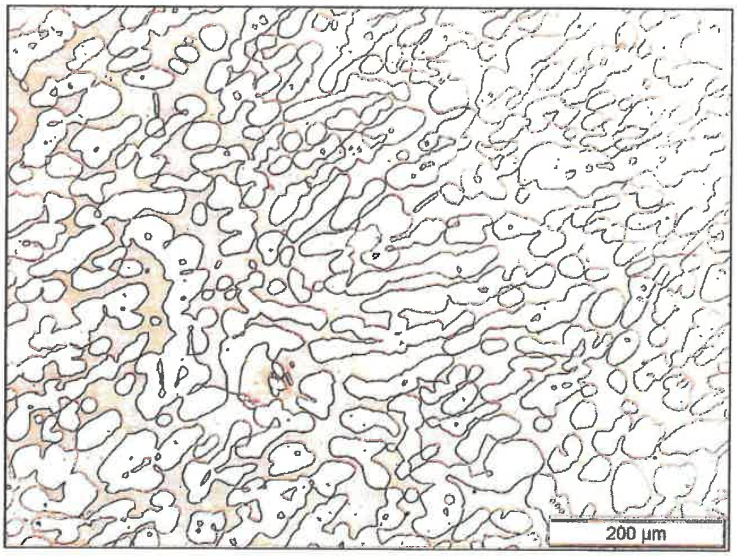


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Gefügeaufnahmen zum Zertificat Nr. / Microstructure to certificate No.: 480652

Besteller/Purchaser:	BGH Edelstahl Freital GmbH
Bestell-nr./Order-No.:	246087006
Werkstoff/Quality:	UNS S32760
Chargen-nr./Cast-No.:	400186
Erzeugnisform/Product:	Stab, rund, geschält / round bars,peeled
Abmessung/Dimension:	114,30 RD
Komm.-nr./Work-No.:	07220101

Proben-nr./Test-No.: 020KM1 mid radius



100:1



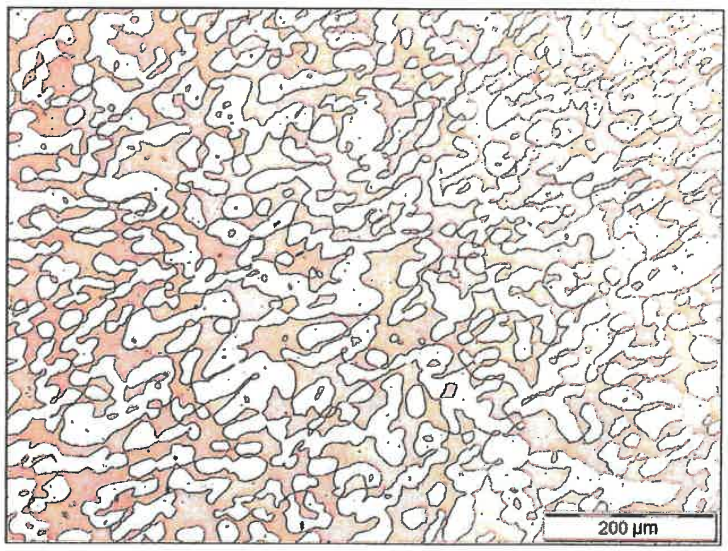
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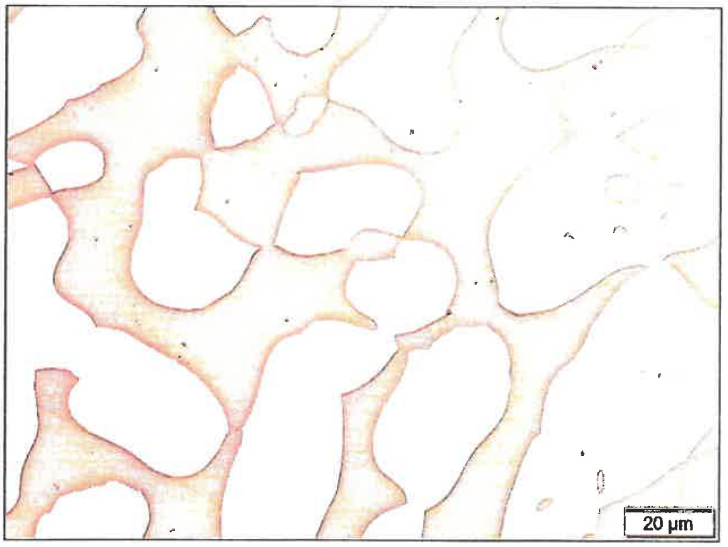
Gefügeaufnahmen zum Zertificat Nr. / Microstructure to certificate No.: 480652

Besteller/Purchaser:	BGH Edelstahl Freital GmbH
Bestell-nr./Order-No.:	246087006
Werkstoff/Quality:	UNS S32760
Chargen-nr./Cast-No.:	400186
Erzeugnisform/Product:	Stab, rund, geschält / round bars,peeled
Abmessung/Dimension:	114,30 RD
Komm.-nr./Work-No.:	07220101

Proben-nr./Test-No.: 020KM1 near surface



100:1



500:1

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TIRANTE / STUD BOLT t·e·c·n·o BOLT

CERTIFICATE	
Nr. 5117	03-09-24
Page 1/1	

INDRA SRL
VIA NOVARA 10/B-C
20013 MAGENTA MI
ITALIA

EN ISO 10204 3.1
CERTIFIED MATERIAL TEST REPORT

Your order: AF24 02329 REV.02 16-07-24 Delivery note: 2175 03-09-24

Item	Materials	Description	Sizes	Batch	Heat	Quantity
1	ASTM A 193 B7M 980.99.0260CS Pos.220, 230, 240, 340 CKD/SM/18/03/2022	Tirante DIN 976/UNI 6610 ASTM A 193 B7M M HDG	10X30	8582	BE1859 N.	30

CHEMICAL ANALYSIS

1		%C %	%Mn %	%P %	%S %	%Si %	%Cr %	%Mo %	%H.T. Q+T
	REQ. MIN.	0,37	0,65			0,15	0,75	0,15	T=1100 F
	REQ. MAX.	0,49	1,10	0,035	0,040	0,35	1,20	0,25	
	ACT.VAL.	0,420	0,830	0,010	0,026	0,230	1,040	0,180	Q+T

MECHANICAL PROPERTIES

1		UTS MPa	YS0,2 MPa	E %	R.A. %	H HB	I.T. °C Kv J-22 C
	REQ. MIN.	860	720	16	50		
	REQ. MAX.					321	
	ACT. VAL.	1000	804	22,6	61	298	N.A.

INDRA s.r.l.
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We state that the material or fasteners, or both, were manufactered, sampled, tested and inspected in accordance with the specification and any supplementary requirements designated in the purchase/sales order and it was found to meet those requirements

DADO / NUT

t·e·c·n·o BOLT

CERTIFICATE

Nr. 5166	18-09-24

Page 1/1

INDRA SRL
VIA NOVARA 10/B-C
20013 MAGENTA MI
ITALIA

EN ISO 10204 3.1
CERTIFIED MATERIAL TEST REPORT

Your order: AF24 02329 REV.02 16-07-24 Delivery note: 2307 18-09-24

Item	Materials	Description	Sizes	Batch	Heat		Quantity
3	ASTM A 194 Gr.2HM 980.99.0188 Pos.170, 180, 190, 330 CKD/DR/30/05/16	Dado UNI 5588/DIN 934 ASTM A 194 Gr.2HM M Esagonale HDG	10	8581	BD4437	N.	70

VOCE DOGANALE 73181900

MERCE DI ORIGINE ITALIANA

CHEMICAL ANALYSIS

3		%C %	%Mn %	%P %	%S %	%Si %	%H.T. Q+T	%Ni %	%Cr %	%Mo %
	REQ. MIN.	0,40					T=850 F			
	REQ. MAX.		1	0,040	0,050	0,40				
	ACT.VAL.	0,435	0,790	0,007	0,029	0,230	Q+T	0,070	0,190	0,020

MECHANICAL PROPERTIES

3		H HRC	P.L. N/mm
	REQ. MIN.		1205
	REQ. MAX.		
	ACT. VAL.	32-34	1205

INDRA s.r.l.
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We state that the material or fasteners, or both, were manufactered, sampled, tested and inspected in accordance with the specification and any supplementary requirements designated in the purchase/sales order and it was found to meet those requirements

tecnoBOLT s.r.l. - 20822 Seveso (MB) ITALY - way vignone n.7 - info@tecnobolt.com - www.tecnobolt.com

BGH

BGH Edelstahl Freital GmbH

BGH Edelstahl Freital GmbH Am Stahlwerk 1 01705 Freital

BGH Edelstahl Freital GmbH
Handelslager

Hüttenstraße

01705 Freital
Deutschland

Zeugnis-Nr. Certificate no. No. de certificat **534228** **Rev.1** **24.10.2023**

Bescheinigung über Werkstoffprüfung nach DIN EN 10204
Certificate of material tests according to DIN EN 10204 **3.1**
Certificat des essais des matériaux selon DIN EN 10204

Die Lieferung entspricht den vereinbarten Lieferbedingungen.
Delivery in accordance with the agreed terms of delivery.
La livraison correspond aux conditions de livraison convenues.

Zeichen des Lieferwerkes Trade mark Signe du fournisseur
Stempel des Werkssachverständigen Inspector's stamp Poinçon de l'inspecteur

BGH Q441

Kunden-Bestell-Nr. Customer order no. Cde. no. du client **274466001**

BGH-Auftrags-Nr. BGH works no. BGH référence **39346002/274466**

Erzeugnisform / Product	Stab, rund, geschält round bars,peeled
Werkstoff / Quality	UNS S32760
Anforderungen / Requirements	UNS S32760 NORSOK M 630 :2020 UNS S32760 NORSOK MDS - D 57 Rev.6 :2020 UNS S32760 ASTM A 479 /A479M -21 UNS S32760 ASME BPVC II. A SA- 479 /SA-479M -2021 UNS S32760 ASTM A 276 - 17 UNS S32760 ASME BPVC II. A SA- 276 -2021 1.4501 X2CrNiMoCuWN25-7-4 DIN EN 10088 -3 12/14 1.4501 X 2 CrNiMoCuWN 25-7-4 DIN EN 10272 10/16 UNS S32760 ANSI/NACE MR 0175 /ISO15156-3 2015 UNS S32760 ANSI/NACE MR 0103 /ISO17945: 2015 1) F55 (UNS S32760) ASTM A182/A182M - aktuelle Ausgabe (nur Chemische Zusammensetzung und mechanische Eigenschaften) Gefertigt nach QTR BGH_F_E_32760 Rev. 3 nach Norsok M-650 Edition 4 F55 (UNS S32760) ASTM A182/A182M - Lat. Rev. (Chemical Composition and mechanical properties only) Manufactured acc. to QTR BGH_F_E_32760 rev. 3 acc. to Norsok M-650 Edition 4

Besichtigung und Maßnachprüfung Inspection and dimensional control Inspection et contrôle de dimension	Erschmelzung/Nachbehandlung Meltingprocess/secondary refining Mode d'élaboration/traitement ultérieur	Verwechslungsprüfung (spectroanalytisch) Identification test (spectral-analysis) examination d' identification(analyse spectrale)
ohne Beanstandung without objection	E- VOD	ohne Beanstandung without objection

Pos. Item Poste	Anzahl Quantity Quantité	Abmessung Dimension Dimensions	Gewicht Weight Poids	Schmelz-Nr. Heat-No. No. de coulée
1	3 Bd	22,22 RD	2068 kg	408456

Schmelze Heat	C	Si	Mn	P	S	Cr	Mo	Ni	Cu	N	W	PRE
408456	0,016	0,27	0,54	0,021	0,0010	25,80	3,55	7,62	0,580	0,2350	0,530	41,275
	PREN 42,15											

Wärmebehandlungszustand / Condition of heat treat: **lösungsgeglüht / solution annealed**

Probe-Nr. Test-No.	Lage loc.	Temp. °C	Rp0,2 N/mm²		Rm N/mm²	A5/A4 %	Z %	Kerbschlagarbeit Impact value J			Probenform Shape of test piece Charpy-V °C	Härte Hardness HRC /HBW
Soll/Req.+	L	RT	>=530		>=730	>=25		>=100			RT	
+	L	RT			<=930						-50	<=32 /<=290
*	L	RT	>=550		>=750	>=25	>=45	>=65			-46	
*	L	RT			<=895							
023IV1 +	L	RT	619		850	35/-	79	318	326	305	RT	27
023IV1 +	L							267	290	275	-50	

Anlagen / End. / Annexe	Freital,den Place and date Lieu et date	Abnahmebeauftragter Inspector representative Inspecteur de réception
US-Protokoll/UT report Glühbesch./Heat treatment cer. Gefügeaufnahme/micrograph	09.10.2023	Schwaar

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BGH Edelstahl Freital GmbH

BGH Edelstahl Freital GmbH Am Stahlwerk 1 01705 Freital

BGH Edelstahl Freital GmbH
Handelslager

Hüttenstraße

01705 Freital
Deutschland

Zeugnis-Nr. **534228** **Rev.1** **24.10.2023**
Certificate no.
No. de certificat

Bescheinigung über Werkstoffprüfung nach DIN EN 10204
Certificate of material tests according to DIN EN 10204 **3.1**
Certificat des essais des matériaux selon DIN EN 10204

Die Lieferung entspricht den vereinbarten Lieferbedingungen.
Delivery in accordance with the agreed terms of delivery.
La livraison correspond aux conditions de livraison convenues.

Zeichen des Lieferwerkes
Trade mark
Signe du fournisseur

Stempel des Werkssachverständigen
Inspector's stamp
Poincon de l'inspecteur

BGH Q441

Kunden-Bestell-Nr. **274466001**
Customer order no.
Cde. no. du client

BGH-Auftrags-Nr. **39346002/274466**
BGH works no.
BGH référence

023IV1	*	L	RT	611		850	--/39	78	290	308	297	-46	274
023IV2	+	L	RT	624		857	35/-	78	315	321	309	RT	
023IV2	+	L							271	288	280	-50	

+) Erprobung nach/Examination acc. to DIN EN ISO 6892-1 / DIN EN ISO 148-1
*) Erprobung nach/Examination acc. to ASTM/ASME A 370

Prüfort/test location: D/2 - mid thickness

Ferritgehaltmessung nach/Ferrite content measurement acc. to ISO 17781:
Zählverfahren: systematisches manuelles Punktzählverfahren nach ASTM E562
Method of counting: systematic manual point count acc. to ASTM E562
Probenlage Rand bis Kern, quer (Schliffgröße je 25x15mm)
Sample locaction surface to center, transverse (microsections 25x15 mm each)
Ätzmittel/Etchant: V2A + 30 % NaOH
Vergrößerung/Magnification: 200:1
Quadratgitter 5 x 5 Punkte, 30 Felder/Square grid 5 x 5 points, 30 fields

	Rand-near surf.	D/4-mid rad.	D/2-mid thickness
Deltaferrit/ferrite delta ASTM E 562:	55%	52%	53%
relat.Genauigkeit/relative accuracy:	7%	8%	8%

Gefügeuntersuchung nach/Microstructure examination acc. to ISO 17781:
Probenlage Rand bis Kern, quer (Schliffgröße je 25x15mm)/
Sample locaction surface to center, transverse (microsections 25x15 mm each)
Ätzmittel/Etchant: V2A + 30 % NaOH
Vergrößerung/Magnification: 500:1
Befund: keine intermetallischen Phasen oder Ausscheidungen
Findings: no intermetallic phases or precipitates

Korrosionsprüfung nach ISO 17781 / ASTM G48 Verfahren A:/
Corrosion test acc. to ISO 17781 / ASTM G48 method A:
Probenlage und -größe: ganzer Durchmesser x 6 mm x 50 mm/
Specimen location and size: full diameter x 6 mm x 50 mm
Oberfläche geschliffen P220 und gebeizt/Surface ground P220 and pickled
Temperatur/Temperature: 50 °C, Dauer/duration: 24 h/hrs
kein Lochfraß bei 20facher Vergrößerung/No pitting at 20x magnification.
Masseverlust/weight loss: 0,026 g/m²
Masse vor/Weight before - nach Test/after test: 74,1872 - 74,1871 g

Anlagen / Encl. / Annexe	Freital,den / Place and date / Lieu et date	Abnahmebeauftragter / Inspector representative / Inspecteur de réception
US-Protokoll/UT report Glühbesch./Heat treatment cer. Gefügeaufnahme/micrograph	09.10.2023	Schwaar

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Zeugnis-Nr. Certificate no. No. de certificat **534228** **Rev.1** **24.10.2023**

Bescheinigung über Werkstoffprüfung nach DIN EN 10204
Certificate of material tests according to DIN EN 10204 **3.1**
Certificat des essais des matériaux selon DIN EN 10204

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Stempel des Werkssachverständigen / Inspector's stamp / Poincon de l'inspecteur

BGH Q441

Kunden-Bestell-Nr. / Customer order no. / Cde. no. du client **274466001**

BGH-Auftrags-Nr. / BGH works no. / BGH référence **39346002/274466**

IK-Beständigkeit/intercrystalline corrosion DIN EN ISO 3651-2, Verfahren C:
ohne Befund/without objection
Probenvorbereitung/preparation of test specimen: 700°C 30' Wasser/water
Prüfdauer/time of testing: 20h

Material wurde nicht reparaturgeschweißt./Material no weld repaired.

Das Material ist frei von Quecksilber./Material is free from mercury.

Umformgrad/reduction ratio: 40:1

Stahlhersteller des Ausgangsmaterials: BGH Edelstahl Freital GmbH (Deutschland)
Steel manufacturer of starting material: BGH Edelstahl Freital GmbH (Germany)

Fertigung nach QM-System ISO 9001: 2015/ QM system in effect is ISO 9001: 2015
Zertifiziert nach / certificated AD2000 W0.

Kontrolle auf Radioaktivität ohne Befund, der Messwert liegt unter der Nachweisgrenze von 0,1 Bq/g.
Radioactivity inspection without objection, the measured value is below the detection limit of 0.1 Bq/g.

Anlagen / End. / Annexe	Freital,den / Place and date / Lieu et date	Abnahmebeauftragter / Inspector representative / Inspecteur de réception
US-Protokoll/UT report Glühbesch./Heat treatment cer. Gefügeaufnahme/micrograph	09.10.2023	Schwaar

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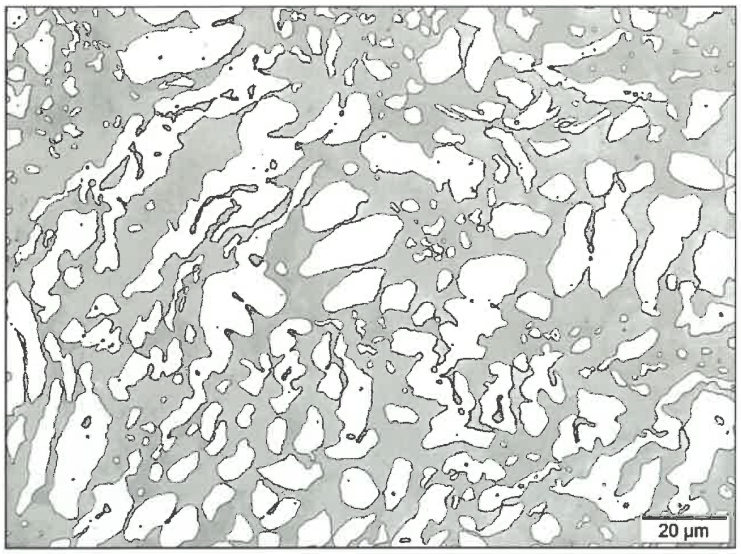
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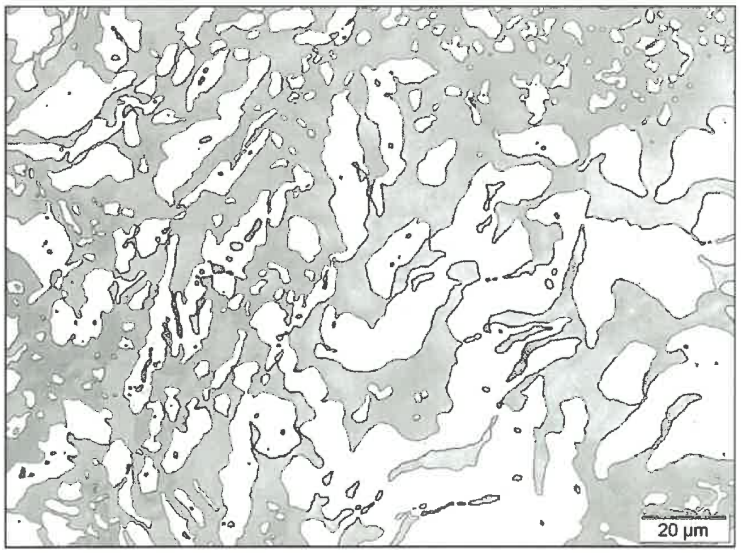
Gefügeaufnahmen zum Zertificat Nr. / Microstructure to certificate No.: **534228**

Besteller/Purchaser:	**BGH Edelstahl Freital GmbH**
Bestell-nr./Order-No.:	**274466001**
Werkstoff/Quality:	**UNS S32760**
Chargen-nr./Cast-No.:	**408456**
Erzeugnisform/Product:	**Stab, rund, geschält / round bars,peeled**
Abmessung/Dimension:	**22,22 RD**
Komm.-nr./Work-No.:	**39346002**

Proben-nr./Test-No.: **023IV1**



500:1 near surface



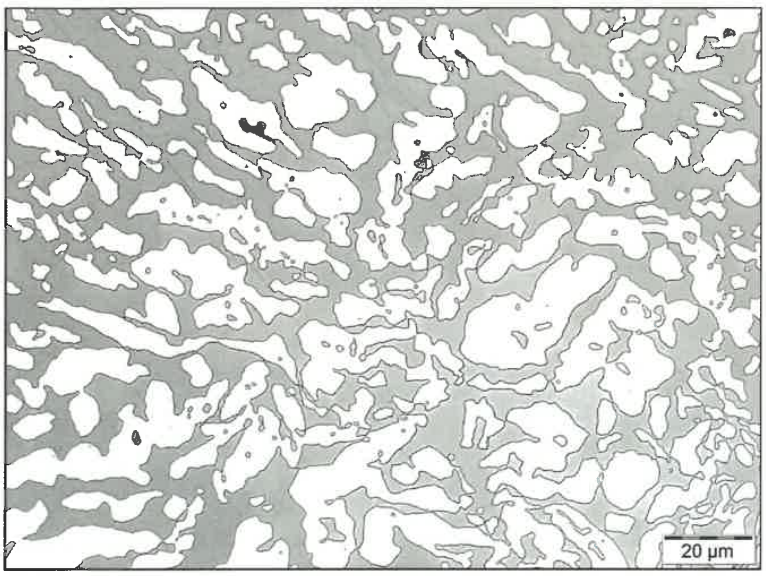
500:1 mid radius

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Gefügeaufnahmen zum Zertificat Nr. / Microstructure to certificate No.: **534228**

Besteller/Purchaser:	**BGH Edelstahl Freital GmbH**
Bestell-nr./Order-No.:	**274466001**
Werkstoff/Quality:	**UNS S32760**
Chargen-nr./Cast-No.:	**408456**
Erzeugnisform/Product:	**Stab, rund, geschält / round bars,peeled**
Abmessung/Dimension:	**22,22 RD**
Komm.-nr./Work-No.:	**39346002**

Proben-nr./Test-No.: **023IV1**



500:1 mid thickness

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Wärmebehandlungsbescheinigung
Heat treatment certificate
Attestation de traitement thermique

BGH

BGH Edelstahl Freital GmbH

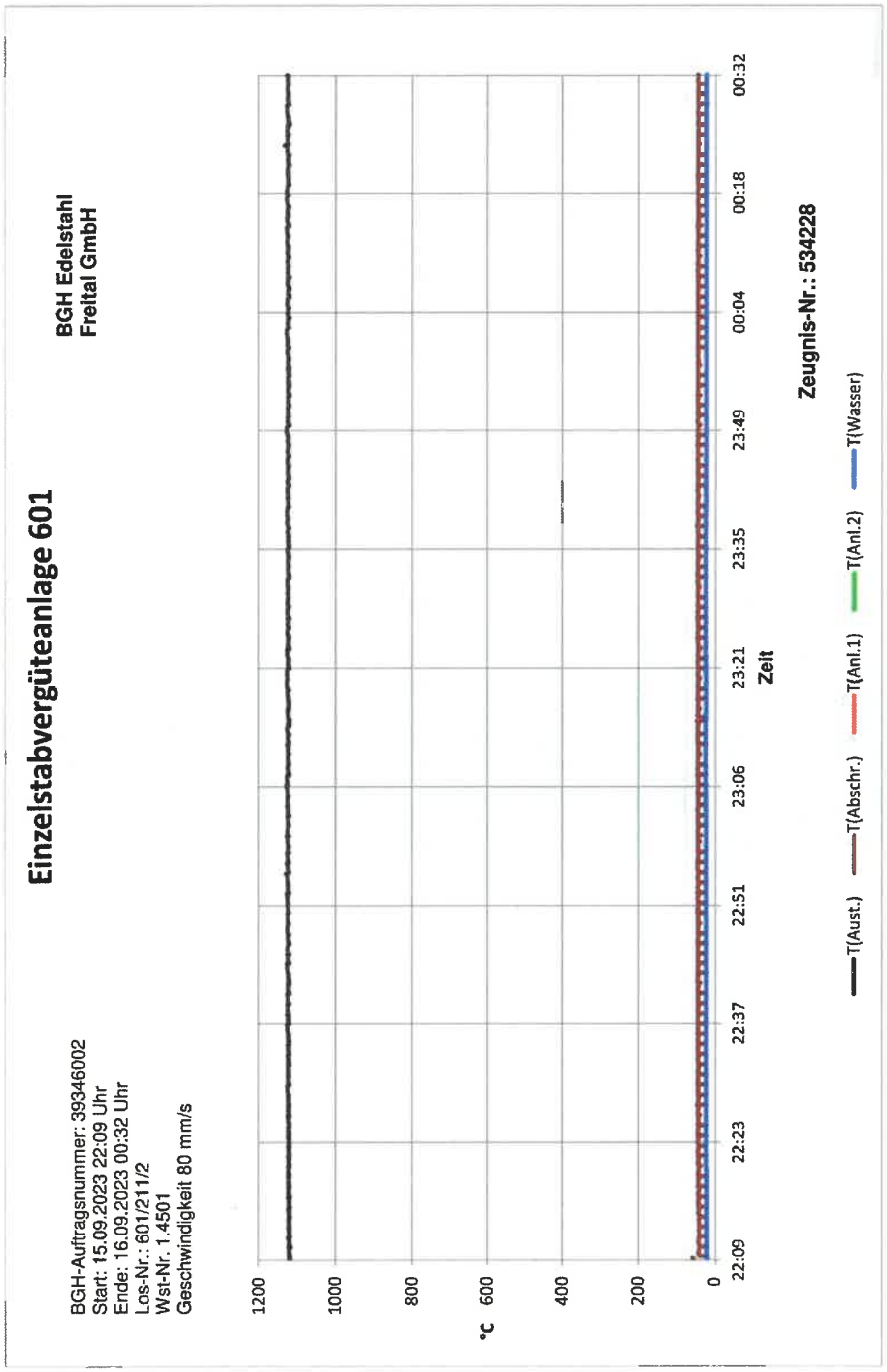
Kunden-Bestell-Nr. Customer order no. Cde. no. du client	BGH-Auftrags-Nr. BGH works no. BGH référence	Zeugnis-Nr. Certificate no. No. de certificat
274466001	**39346002**	**534228**

Wärmebehandlungszustand: Condition of heat treatment: État de traitement thermique:	**lösungsgeglüht** **solution annealed** **recuit de mise en solution**
	Heat treated at Induction line
Datum: Date: Date:	**16.09.2023**
Ofen-Nr.: Furnace no.: No. du four:	**601**
Aufheizzeit: Heating up time: Temps de montée en température:	
Haltetemperatur: Holding temperature: Température de maintien:	**1120 °C**
Haltezeit: Holding time: Temps de maintien	**108 s**
Abkühlmedium: Quenching medium: Moyen de refroidissement:	**Wasser / water / eau**
Datum: Date: Date:	
Ofen-Nr.: Furnace no.: No. du four:	
Haltezeit: Holding time: Temps de maintien:	
Abkühlmedium: Quenching medium: Moyen de refroidissement:	
Wärmebehandlungs-Nr.: Heat treatment lot no.: No. du lot de traitement thermique:	**023IV**

Diagramm: Diagram: Diagramme:	Datum: Date: Date:	Abnahmebeauftragter Inspector representative Inspecteur de réception
X	09.10.2023	**HIEMANN, E.** BGH Q413

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Ultraschallprüfung
Ultrasonic testing

DIN EN 10204-01/05 3.1

BGH

BGH Edelstahl Freital GmbH

Kunden-Bestell-Nr. / Customer order no. / Cde. no. du client: **274466001**
BGH-Auftrags-Nr. / BGH works no. / BGH référence: **393460-02**
Zeugnis-Nr. / Certificate no. / No. de certificat: **534228**

Erzeugnisform / Product	: Stab, rund, geschält / round bars, peeled
Werkstoff/Quality	: UNS S32760 Schmelze: 408456
Abmessung/Dimension:	22,22 RD
Anzahl/Quantity	: 3 Bd Gewicht /Weight : 2068 kg
Wärmebehandlungszustand / Condition of heat treat	: lösungsgeglüht / solution annealed

Prüfrichtlinie
Specification

A388/A 388 M (latest Revision)
(KSR/FBH max. 1,5 mm)
DIN EN 10308 03/02
Tab.1-Typ1a(vollst.)Tab.3-Qual.-kl.3

Bearbeitungszustand / Machining condition	: geschält / peeled
Prüfgerät / Test equipment	: GE ROWA B4
Prüfkopf / Probe	: 4 Arrays á 90° - Radius: 35 mm 20 Elemente - 10 MHz
Kopplungsmittel / Coupling medium	: Wasser / water
Prüfumfang / Extent of examination	: vollständig / completely
Einschallrichtung / Direction of incidence	: senkrecht und in Winkeleinschallung 40° / perpendicular and angle beam 40°
Registriergrenze / Registration level	: Prüfung und Justierung erfolgten gemäß obiger Spezifikation. / Test and adjustment according to above mentioned specification.
Befund / Result	: keine registrierpflichtigen Anzeigen / no reportable indications
Prüfdatum / Examination date	: 02.10.2023

Freital, den Place and date Lieu et date	Prüfer Testing operator Opérateur	Abnahmebeauftragter Inspector representative Inspecteur de réception	Überwacher Supervisor Surveilleur
09.10.23	Philipp, F. Stufe 2 ISO 9712	Müller, G. BGH Q432	

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BGH Edelstahl Freital GmbH

BGH Edelstahl Freital GmbH - Am Stahlwerk 1 - 01705 Freital

C.S.C. SpA
Zeugnisadresse
Via Lago Maggiore 7
36015 Schio (VI)
Italy

Ansprechpartner Contact
Telefon Phone
E-Mail E-Mail
Datum Date 24.10.2023

Bescheinigung zur Materialidentität
Certificate Of Material Identity

Bescheinigungs-Nr.
certificate number

FA0300149014 00 / V0

Bestell-Nr. / order no.	Auftragsnummer / purchase order no.	Prüfbescheinigung (Anlage) / test certificate no. (attachment)
A20231087SSS R. 1	AB03545391 / 4	534228

Werkstoff / material	Die Lieferung entspricht den vereinbarten Lieferbedingungen. / The delivery corresponds to the agreed terms of delivery.
X2CrNiMoCuWN25-7-4, UNS S32760, X 2 CrNiMoCuWN 25-7-4, UNS S32760	

Erzeugnis / product	
Stab rund, gewalzt, geschält	Round bars, rolled, peeled

Anforderungen / requirements
DIN EN 10088 -3 12/14, ANSI/NACE MR 0175/ISO15156-3 2015, DIN EN 10272 10/16, NACE MR 0103 2015, ASTM A 276 /A276M -17, NORSOK M 630 :2020, NORSOK MDS - D 57 Rev.6 :2020, ASTM A 479 /A479M -21, ASME BPVC II. A SA- 276 -2021, ASME BPVC II. A SA- 479 /SA-479M -2021

Schmelze / heat	Anzahl / quantity	Gewicht (kg) / weight (kg)	Abmessung / dimension
408456	0	148	22,22 RD (3160 - 4350mm)

Wir bestätigen, dass die gelieferten Teile aus der oben genannten Nummer der Prüfbescheinigung entnommen wurden.	We herewith confirm that the delivered parts were part of the certification stated above.
Ausgewiesen durch: DIN EN 10204-01/05 3.1	Certified by: DIN EN 10204-01/05 3.1

Stempelung / stamping	Wert / value

Betriebsbeauftragter / authorized representative

Schwaar

BGH Q32

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CAP. SOC. 250.000.000 EUR INT. VERS.
C.F. 02187360987
VAT: IT00571320076 - R.E.A. n. AO-50474

Company with Management Systems certified according to ISO 9001, ITAF 16949, EN 9100, ISO 14001 and ISO 45001.

INSPECTION CERTIFICATE 3.1 (EN 10204:2004)
DOCUMENT NUMBER 2022031406

CUSTOMER:	INDRA SRL		
CUSTOMER'S ORDER:	AF22 02760		
MANUFACTURER'S WORKS:	AOSTA, VIA PARAVERA 16 - ITALY		
PRODUCER OF THE DOC:	QUALITY DEPARTMENT		
MANUFACTURER'S WORKS ORDER NO:	0001132213 / 000060		
MARK OF THE MANUFACTURER:	**COGNE**		
DISPATCH NOTE:	81515136 / 000030 WEIGHT: 268 KG / 591 LB		
THE CERTIFIED PRODUCTS ARE COMPLYING TO THE PURCHASE ORDER, EXCEPT FOR EXEMPTIONS AGREED WITH THE CUSTOMER, IF ANY.			
INTERNAL SPEC:	NORSOKREV5		
PRODUCT:	PEL PEELED ROUND BARS TOLERANCE: ISOK11		
SURFACE FINISH:	2B Cold Finished		
PRODUCT DELIVERY CONDITION:	RS SOLUTION ANNEALED		
PRODUCT DIMENSIONS (mm):	50,000 (1,969 in)	LENGTH (mm)	04000 06200 (00157 00244 in)
GRADE:	F55 UNSS32760 1.4501	INTERNAL GRADE:	329S
IDENTIFICATION HEAT NO:	276345	IDENTIFICATION LOT NO:	093270
MARKING OF THE PRODUCT:	1.4501	TEST PIECE N:	327

REFERENCE NORMS:EN 10088-3, EN 10272, ASTM A276/ASME SA276, ASTM A479/ASME SA479, ISO15156-3/NACE MR0175, NACE MR0103, API 6A-PSL3, NORSOK M-650 REV.4/M-630, MDS D57 REV.5.
REFERENCE NORMS ONLY FOR CHEMICAL COMPOSITION: EN 10222-5, ASTM A182/ASME SA182, ASTM A484.
HEAT TREATMENT: SOLUBILIZATION 1100 ° C 1.5 min / mm COOLING WATER TEMPERATURE BELOW 260 °C (FURNACE THERMOCOUPLES)
ASTM G48 A/ASTM A923 C TESTING CONDITIONS: Sample surface 120 GRIT, Solution 100g FeCl3.6H2O+900ml H20, T 50°C, 24h, no pitting at 20X.
STEELMAKING EAF + AOD + CONTINUOUS CASTING
HOT ROLLED
REDUCTION RATIO 25,9

CHEMICAL LADLE ANALYSIS ACCORDING TO ASTM A751 - EN ISO 14284
Control lot No. - Weight :020000911065 - 85.577 KG - 188.662 LB

ELEMENTS	C	Si	Mn	P	S	N	Cr	Mo	Ni	Cu
OBTAINED	0,014	0,39	0,61	0,018	0,0005	0,24	24,93	3,72	6,91	0,59

ELEMENTS	W	CV_F8
OBTAINED	0,58	41

CV_F8 = CR+(3.3*MO)+(16*N2)

HARDNESS TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000915697 - 2.680 KG - 5.908 LB
SPECIFICATION ENISO6506 HARDNESS TEST HB TESTING METHOD: 10/3000
OBTAINED 241

IMPACT TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000915697 - 2.680 KG - 5.908 LB
SPECIFICATION EN ISO 148-1-KV2 DIRECTION OF THE TEST PIECE: L

TYPE OF TEST PIECE	KV		
TEST TEMPERATURE °C	20		
MEASUREMENT UNIT	J		
OBTAINED	438	431	433

DATE 30.06.2022 BARBARA VIETTI MV(QUALITY CERTIFICATOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne

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Company with Management Systems certified according to ISO 9001, ITAF 16949, EN 9100, ISO 14001 and ISO 45001.

TENSILE TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000915697 - 2.680 KG - 5.908 LB
SPECIFICATION ASTMA370-E8-0.5"SPEC DIRECTION OF THE TEST PIECE: L

MEASUREMENT UNIT	Rm MPA	Rp02% MPA	Z %	Al2 % 4,0 D
OBTAINED	819	554	82,5	42,8

CORROSION
Control lot No. - Weight :020000915697 - 2.680 KG - 5.908 LB
SPECIFICATION ASTM G48 A
OBTAINED 0,1015

FERRITE %
Control lot No. - Weight :020000915697 - 2.680 KG - 5.908 LB
SPECIFICATION ASTME562 --
OBTAINED 50,4

MICROSTRUCTURE
Control lot No. - Weight :020000915697 - 2.680 KG - 5.908 LB
SPECIFICATION -- --
SATISFACTORY
OBTAINED -

LATERAL EXPANSION
Control lot No. - Weight :020000915697 - 2.680 KG - 5.908 LB
SPECIFICATION ASTMA370 --
OBTAINED 2,5 2,5 2,5

SHEAR %
Control lot No. - Weight :020000915697 - 2.680 KG - 5.908 LB
SPECIFICATION ASTMA370 --
OBTAINED 100 100 100

REFERENCE NORMS:EN 10088-3, EN 10272, ASTM A276/ASME SA276, ASTM A479/ASME SA479, ISO 15156-3/NACE MR0175, ISO 17945/NACE MR0103, NORSOK M-650 REV.4/M-630, MDS D57 REV.5.
REFERENCE NORMS FOR CHEMICAL ANALYSIS, MECHANICAL PROPERTIES, HEAT TREATMENT: ASTM A182/ASME SA182, API 6A-PSL3
REFERENCE NORMS ONLY FOR CHEMICAL COMPOSITION: EN 10222-5, ASTM A484
HARDNESS TEST
Control lot No. - Weight :020000915697 - 2.680 KG - 5.908 LB
SPECIFICATION ASTMA370-E18 HARDNESS TEST HRC TESTING METHOD:
OBTAINED 20

DATE 30.06.2022 BARBARA VIETTI MV(QUALITY CERTIFICATOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne

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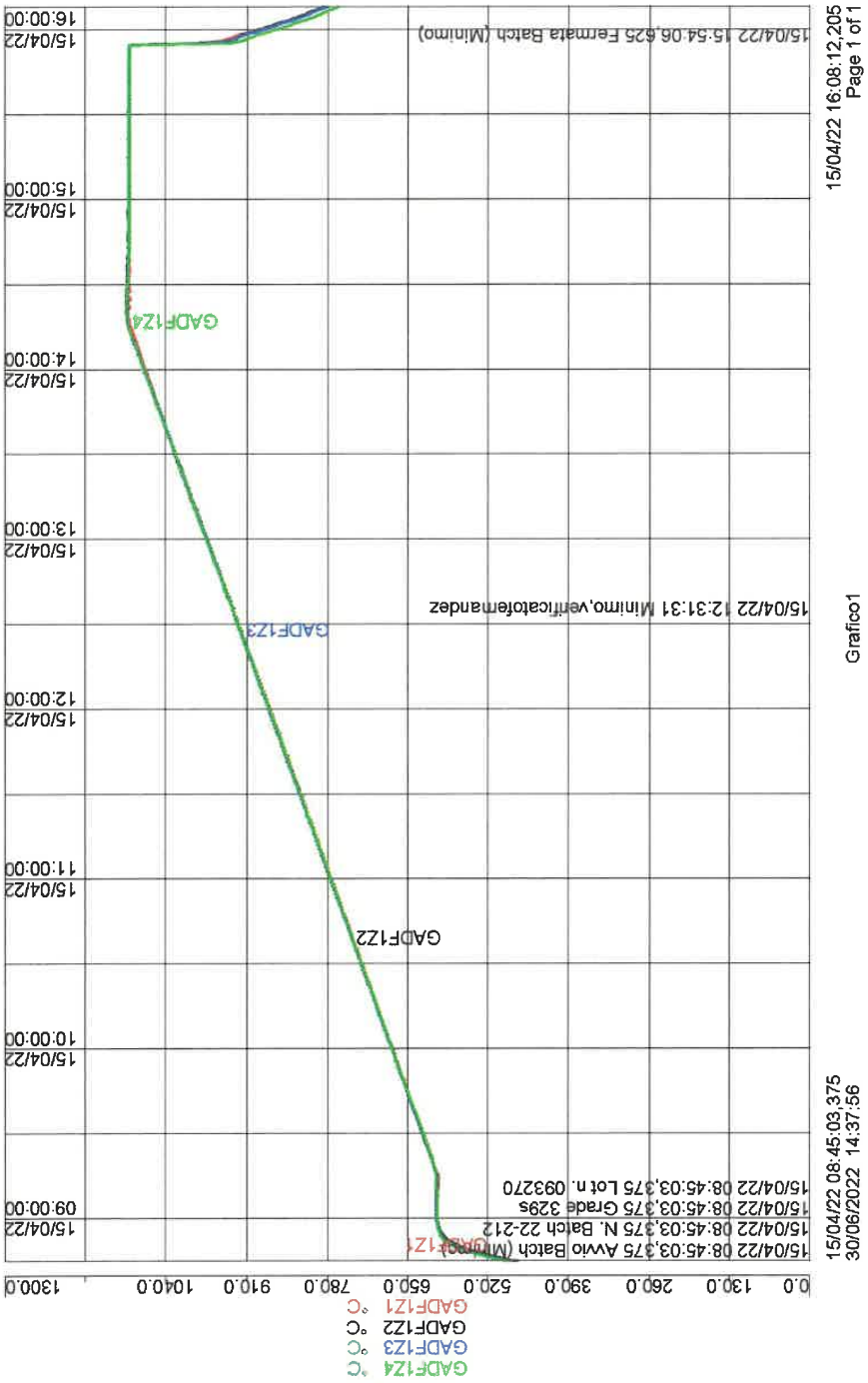
IMPACT TEST
Control lot No. - Weight :020000915697 - 2.680 KG - 5.908 LB
SPECIFICATION ASTM A370-E23 TYPE A DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 50-
MEASUREMENT UNIT J
OBTAINED 366 358 376

TENSILE TEST
Control lot No. - Weight :020000915697 - 2.680 KG - 5.908 LB
SPECIFICATION EN-ISO6892-1 DIRECTION OF THE TEST PIECE: L

	Rm_C	Rp02_C	A	Z_C
MEASUREMENT UNIT	MPA	MPA	% 5.0 D	%
OBTAINED	822	560	39,5	82,0

STEELMAKING EAF + AOD + CONTINUOUS CASTING
HOT ROLLED
METALLOGRAPHIC INSPECTION ACCORDING TO ASTM A923 METHOD A: SATISFACTORY.
IMPACT TEST VALUES AT -46°C ARE NOT LESS THAN THOSE AT -50°C HERE STATED.
QTC ON PROLONGATION OF BARS TESTS AT MID RADIUS (CENTER POS. FOR SIZES <2 INCHES).
ASTM A484 DOES NOT APPLY FOR SIZE AND LENGTH TOLERANCES.
MARKING: PRODUCER LOGO, MATERIAL NO, HEAT NO, LOT NR.
ALL THE NORMS MENTIONED ARE INTENDED IN THEIR LAST REVISION AT THE DATE OF ISSUE OF THIS DOCUMENT.
COUNTRY OF MELTING AND ORIGIN: ITALY, THE MATERIAL COMPLIES WITH FAR DFARS
252.225-7009 ALT 1.
THE PRODUCT SATISFIES THE DIRECTIVES: 2015/863/EU (ROHS3) - 2011/65/EU (ROHS2) - 2000/53/EU - 2002/95/EU(RoHS) - 2003/11/EU-2005/618/EU AND PED 2014/68/EU.
THE MATERIAL IS FREE OF ANY MERCURY, MERCURY COMPOUNDS AND OR RADIUM CONTAMINATION AT TIME OF SHIPMENT AND WAS PRODUCED WITHOUT USING OZONE DEPLETING SUBSTANCES OF CLASS I AND II.
VISUAL SURFACE INSPECTION AND EDDY CURRENT WITH ROTATING HEAD ACCORDING TO EN 10277 Class 4 : SATISFACTORY . DIMENSIONAL TEST ACCORDING TO EN 10278 : SATISFACTORY . ULTRASONIC TEST IN ACCORDING TO EN 10308 , Class 3 : SATISFACTORY . ANTIMIX SPECTROMETER CONTROL WITH PORTABLE PRODUCT : SATISFACTORY . NOT BEEN MADE BY ANY REPAIR MATERIAL WELDING
CORROSION TEST ACCORDING TO ASTM A262 Method E EN ISO 3651-2 A: SATISFACTORY. NO CRACKS AT 20X MAGNIFICATION

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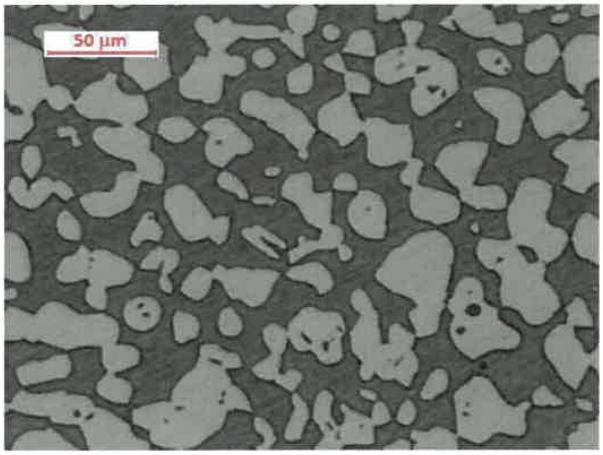
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МИКРОСЪЁМКА

MARCA *NUANCES* *WERKESTOFF* *GRADE* *МАРКА*	329S	*LOTTO DI CONTROLLO* *LOT DE CONTRÔLE* *LAUFKARTE* *CONTROL LOT* *ПАРТИЯ КОНТРОЛЯ*	020000915697
COLATA *COULEE* *SCHMELZE* *HEAT* *ПЛАВКА*	276345	*REAGENTE* *RÉACTIF* *REAGENS* *ETCHANT* *РЕАГЕНТ*	20 % NaOH electrolyte
TIPO DI APPARECCHIO *TIPE D'APPAREIL* *PRUEFGERAT TYP* *INSTRUMENT TYPE* *ТИП АППАРАТА*		**MICROSCOPE – LEICA** **MEF4M МИКРОСКОП**	
INGRANDIMENTO *AGRANDISSEMENT* *VERGRÖSSERUNG* *ENLARGEMENT* *УВЕЛИЧЕНИЕ*		**400 X**	

DIREZIONE D'ESAME
DIRECTION D'EXAMEN
PRUEFRICHTUNG
SCANNING DIRECTION
НАПРАВЛЕНИЕ
ПРИ ИССЛЕДОВАНИИ

☐ **LONGITUDINALE - LONGITUDINAL - ПРОДОЛЬНОЕ**
☒ **TRASVERSALE – TRANSVERSAL – KREUZEND-ПОПЕРЕЧНОЕ**

PHOTO (ELECTRONIC IMAGE) – ФОТОСНИМКИ (ЭЛЕКТРОННОЕ ИЗОБРАЖЕНИЕ)



NOTE:
ПРИМЕЧАНИЯ:
"Free from Intermetallic Phases"

FIRMA / SIGNATURE / ПОДПИСЬ	DATA / DATE / ДАТА
Sulis/Frison	22/04/22

Mod.Micro Rev.4

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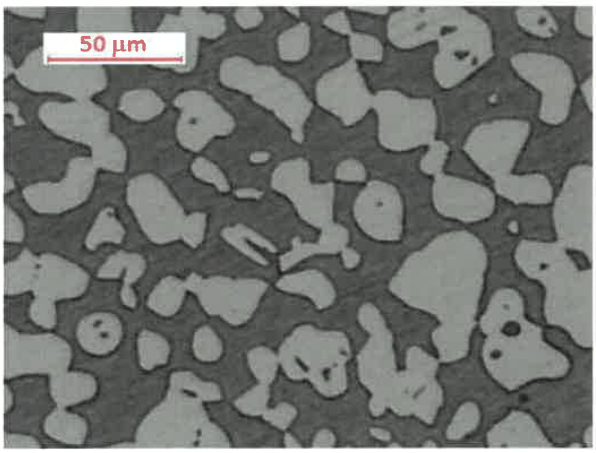
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МИКРОСЪЁМКА

All.N 2

MARCA *NUANCES* *WERKESTOFF* *GRADE* *МАРКА*	329S	*LOTTO DI CONTROLLO* *LOT DE CONTRÔLE* *LAUFKARTE* *CONTROL LOT* *ПАРТИЯ КОНТРОЛЯ*	020000915697
COLATA *COULEE* *SCHMELZE* *HEAT* *ПЛАВКА*	276345	*REAGENTE* *RÉACTIF* *REAGENS* *ETCHANT* *РЕАГЕНТ*	20 % NaOH electrolyte
TIPO DI APPARECCHIO *TIPE D'APPAREIL* *PRUEFGERAT TYP* *INSTRUMENT TYPE* *ТИП АППАРАТА*		**MICROSCOPE – LEICA** **MEF4M МИКРОСКОП**	
INGRANDIMENTO *AGRANDISSEMENT* *VERGRÖSSERUNG* *ENLARGEMENT* *УВЕЛИЧЕНИЕ*		**500 X**	
DIREZIONE D'ESAME *DIRECTION D'EXAMEN* *PRUEFRICHTUNG* SCANNING DIRECTION НАПРАВЛЕНИЕ ПРИ ИССЛЕДОВАНИИ	☐ **LONGITUDINALE - LONGITUDINAL - ПРОДОЛЬНОЕ** ☒ **TRASVERSALE – TRANSVERSAL – KREUZEND-ПОПЕРЕЧНОЕ**		

PHOTO (ELECTRONIC IMAGE) – ФОТОСНИМКИ (ЭЛЕКТРОННОЕ ИЗОБРАЖЕНИЕ)



NOTE:
ПРИМЕЧАНИЯ:
"Free from Intermetallic Phases"

FIRMA UNTERSCHRIFT SIGNATURE ПОДПИСЬ	DATA DATUM DATE ДАТА
Sulis/Frison	22/04/22

Mod.Micro Rev.4

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CERTIFICATO DI COLLAUDO ULTRASUONI
CERTIFICAT DE CONTROLE PAR ULTRASONS
ULTRASCHALL PRUEFZEUGNIS
REPORT OF ULTRASONIC INSPECTION
ОТЧЕТ ОБ УЛЬТРАЗВУКОВОМ КОНТРОЛЕ

N. US.
1034/22

CLIENTE *CLIENTSGG* *BESTELLER* *CUSTOMER* ЗАКАЗЧИК			*CONFERMA* *CONFIRMATION* *AUFTRAGSBESTRAKTIGUNG* *CONFIRMATION* ПОДТВЕРЖД. ЗАКАЗА		
MARCA *NUANCES* *WERKESTOFF* *GRADE*	329S W.No 1.4501		*ORDINE* *COMMANDE* *AUFTRAG* *ORDER*		
SPECIFICA *SPECIFICATION* *PRUKEVORSCHRIFT* *SPECIFICATION* ТЕХ. ТРЕБОВАНИЯ	EN10308 prospetto3 cl3		*COLATA* *COULEE* *SCHMELZE* *HEAT* ПЛАВКА	276345	*SCHEDA* *LOT* *LAUFKARTE* *LOT* ПАРТИЯ 093270
PRODOTTO *PRODUIT* *ERZEUGNISFORM* *PRODUCT* ИЗДЕЛИЕ	ROUND BARS 50 mm		*STATO DI LAVORAZIONE* *STADE DU PRODUIT* *LIEFERZUSTAND* *WORKING STEP* ОБРАБОТКА	PEELED	
TIPO DI APPARECCHIO *TIPE D'APPAREILPARUS* *PRUEFGERAT TYP* *INSTRUMENT TYPE* ТИП АППАРАТА	USM36	18107589	*COSTRUTTORE* *CONSTRUCTEUR* *BAUART* *MAKE*	KRAUTKRAMER	
TIPO DI SONDA *TIPE DE PALPEUR* *PRUFKOPT* *PROBETYPE*	SEB4-S		*FREQUENZA* *FREQUENCE* *FREQUENZ* *FREQUENCY*	4 MHz	S/N 67257 50316

DIREZIONE D'ESAME
DIRECTION D'EXAMEN
PRUEFRICHTUNG
SCANNING DIRECTION
НАПРАВЛЕНИЕ ПРИ

- [X] *RADIALE - RADIAL*
- [ ] *ASSIALE - AXIAL*
- [ ] *SONDE ANGOLATE - ANGLE BEAMS*

- [ ] *MATRICOLA BLOCCO CAMPIONE*
  DENTIFICATION BLOC DE REFERENCE MUSTER BLOCK
  MUSTER BLOCK
  TEST BLOCK NR

AVG SCALE
ECRANS ABAQUES AVG
AVG SKALEN
AVG SCALE
ШКАЛА *AVG*

- [ ]

AVG DIAGRAMMI
DIAGRAMMES AVG
AVG DIAGRAMM
AVG DIAGRAM
ДИАГРАММЫ *AVG*

- [X]

- [ ] V1
- [ ] V2

RISULTATODELL'ESAME
RESULTAT DE L' ESSAI
PRUEFERGERBNISSE
RESULT OF THE TEST
РЕЗУЛЬТАТ

EXAM DATA : 15/06/2022
INSPECTED N. BARS 22

THE MATERIAL IS IN ACCORDANCE TO THE FOLLOWING SPECIFICATIONS:
EN10308 prospetto3 cl3

L'ISPETTORE CND ZUSTANDER CND L'INSPECTEUR CND CND INSPECTOR ИНСПЕКТОР НРК NADALIN SIMONE Liv.II - ISO 9712 N° Cert.32040/PND/C	**III LIV.CND** III УРОВЕНЬ НРК BAISOTTI MARCO Liv III - ISO 9712 N° Cert 34194/PND/C		**DATA** DATUM DATE DATE ДАТА 30/06/2022

(Mod. Certus Rev. 6)

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ROSETTI MARINO ITEM 70

COD. VBC0NN24440100

TAG: BLPH-MV-048, BLPH-MV-051

INDRA ITEM 70

COD. 00.VSF.2688(T)

indra VALVES - ITALY	***Certificazione dei materiali*** ***EN 10204 3.1 come da allegati*** ***Material certification*** ***EN 10204 3.1 as per attachments***	**MD-02-04-IT-UK / VSF** **Rev. 16** **Data: 08-Nov-2018** **CM/IT/UK**

Nr. *No.* **24-1999** — **Data /** *Date :* **16-Oct-2024**

Cliente / *Customer* **ROSETTI MARINO SPA**

Vs. ordine Nr. / *Your order Nr.* **1724000798 REV.2** — **Data /** *Date :* **26-Jun-2024**

Ns. commessa Nr. / *Our job Nr.* **24 01216** — **Data /** *Date :* **3-Jul-2024**

Ns. D.D.T. Nr. / *Our advise note Nr.* — **Data /** *Date :*

Ordine di produzione / Production order number : 24 01216/70 - 301850

Lotto / Material batch number : 301850

Pos. Cliente *Customer Item*	*Pos. Indra* *Indra Item*	*Codice / Code* *Ns./ Our*	 *Vs. / Your*	*Q.tà / Q.ty*	*Nr. di serie* *Serial Number*	*Descrizione /Description*
70	70	00.VSF.2688(T)	VBC0NN24440100	2	105970,105971	INDRA BALL VALVE SB-598-25-F150RF3-F-F55F-F55-N-K-PG-ESX100-L1-TG-TGW-IT2-PMI2-PD2-BI-CR-TA-FS-SPC1-SPC2

Elenco / List

Componente / *Component*	Colata / Heat	Materiale *Material*	Numero del certificato Certificate number
Corpo Valvola / Valve Body	301850	F55 NACE	2024012940 - N.US.592/24
Closure F150RF3	301290	F55 NACE	2024011723 - N.US.338/24
Tirante / Stud bolt	BE1859	ASTM A193 B7M + HDG	5117
Dado / Nut	BD4437	ASTM A194 Gr.2HM + HDG	5166
Stelo antiespulsione sfera / Ball stem	408456	F55 NACE	534228 Rev.1 - FA0300149014 00 / V0
Sfera / Ball	070136	F55 NACE	2021003757 - N.US.122/2021

NOTE / **REMARKS :** TAG: BLPH-MV-048, BLPH-MV-051

PREPARATO DA: **ELEONORA RANZANI** — PREPARED BY: **DOCUMENTION MANAGER**

APPROVATO DA: **LUCIA NOSOTTI** — APPROVED BY: **QUALITY ASSURANCE MANAGER**

20013 Magenta (MI) Italy - Via Novara, 10/B-C
Tel. +39 02 97298663 r.a. - Fax +39 02 97291855
E-mail: indra@indra.it - http://www.indra.it

CROSSWIND
30/1/24

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CAP. SOC. 405.563.167,00 EUR INT. VERS.
C.F. 02187360967
VAT: IT00571320078 - R.E.A. n. AO-50474

Company with Management Systems certified according to ISO 9001, ITAF 16949, EN 9100, ISO 14001 and ISO 45001.

INSPECTION CERTIFICATE 3.1 (EN 10204:2004)
DOCUMENT NUMBER 2024012940

CUSTOMER:	C.S.C. SPA		
CUSTOMER'S ORDER:	A2024295SSS		
MANUFACTURER'S WORKS:	AOSTA, VIA PARAVERA 16 - ITALY		
PRODUCER OF THE DOC:	QUALITY DEPARTMENT		
MANUFACTURER'S WORKS ORDER NO:	0025316710 / 000030		
MARK OF THE MANUFACTURER:	COGNE		
DISPATCH NOTE:	0081600654 / 000010 WEIGHT: 2398 KG / 5287 LB		
INTERNAL SPEC:	NORSOKREV5		
PRODUCT:	SPE ROUGHPEELED ROUND BARS TOLERANCE: + 1,500 - 0,0000 (+ 0,0591 - 0 in)		
SURFACE FINISH:	1X Hot Finished		
PRODUCT DELIVERY CONDITION:	RS SOLUTION ANNEALED		
PRODUCT DIMENSIONS (mm):	115,000 (4,528 in)	LENGTH (mm)	04000 06000 (00157 00236 in)
GRADE:	F55 UNSS32760 1.4501	INTERNAL GRADE:	329S
IDENTIFICATION HEAT NO:	301850	IDENTIFICATION LOT NO:	993480
MARKING OF THE PRODUCT:	1.4501	TEST PIECE N:	348

STEELMAKING EAF + AOD
HEAT TREATMENT: SOLUTION ANNEALING AT 1120°C + WATER QUENCHING DOWN TO 260°C.MIN.SOAKING TIME 1,5 Min./mm THICKNESS.
ASTM G48 A/ASTM A923 C TESTING CONDITIONS: Sample surface 120 GRIT, Solution 100g FeCl3.6H2O+900ml H20, T 50°C, 24h, no pitting at 20X. UNIT OF MEASURE: G/M2
MELTING PROCESS UHP + AOD + INGOT CASTING
HEAT TREATMENT PERFORMED IN CALIBRATED FURNACES ACCORDING TO INTERNAL PROCEDURE PR-GDQ.ITT COMPLYING WITH API6A Annex M Ed. 21st, API 6D annex H Ed. 25th & API 6DSS annex J Ed.3rd.
HOT FORGED
REDUCTION RATIO 29,8

CHEMICAL LADLE ANALYSIS ACCORDING TO ASTM A751 - EN ISO 14284
Control lot No. - Weight :020000985645 - 91.260 KG - 201.190 LB

ELEMENTS	C	Si	Mn	P	S	N	Cr	Mo	Ni	Cu
MEASUREMENT UNIT	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w
OBTAINED	0,013	0,39	0,65	0,020	0,0008	0,26	24,99	3,69	6,89	0,59

ELEMENTS	W	CV_F8
MEASUREMENT UNIT	% w/w	% w/w
OBTAINED	0,53	41

CV_F8 = CR+(3.3*MO)+(16*N2)

HARDNESS TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000986845 - 8.006 KG - 17.650 LB
SPECIFICATION ENISO6506 HARDNESS TEST HB TESTING METHOD: 10/3000
OBTAINED 254

IMPACT TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000986845 - 8.006 KG - 17.650 LB
SPECIFICATION EN ISO 148-1-KV2 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 20
MEASUREMENT UNIT J
OBTAINED 436 431 430

DATE 18.03.2024 MORABITO ROSA CF(QUALITY CERTIFICATOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne

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TENSILE TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000986845 - 8.006 KG - 17.650 LB
SPECIFICATION ASTMA370/E8-0.5"SPEC DIRECTION OF THE TEST PIECE: L

MEASUREMENT UNIT	Rm MPA	Rp02% MPA	Z %	Al2 % 4,0 D
OBTAINED	782	555	74,6	43,3

CORROSION
Control lot No. - Weight :020000986845 - 8.006 KG - 17.650 LB
SPECIFICATION ASTM G48 A
OBTAINED 0,02769

FERRITE %
Control lot No. - Weight :020000986845 - 8.006 KG - 17.650 LB
SPECIFICATION ASTME562 --
OBTAINED 51,24

MICROSTRUCTURE
Control lot No. - Weight :020000986845 - 8.006 KG - 17.650 LB
SPECIFICATION -- --
OBTAINED SATISFACTORY -

LATERAL EXPANSION
Control lot No. - Weight :020000986845 - 8.006 KG - 17.650 LB
SPECIFICATION ASTMA370 --
OBTAINED 0,5 0,4 0,6

SHEAR %
Control lot No. - Weight :020000986845 - 8.006 KG - 17.650 LB
SPECIFICATION ASTMA370 --
OBTAINED 50 50 60

FURNACE CALIBRATION ACCORDING TO API 6A ANNEX M Ed. 21th and API 6D ANNEX H Ed. 25th.
FERRITE CONTENT DETERMINED ACCORDING TO ASTM E 562 WITH 16 POINTS PER FIELD AND MINIMUM 30 FIELDS
HARDNESS TEST
Control lot No. - Weight :020000986845 - 8.006 KG - 17.650 LB
SPECIFICATION ASTMA370-E18 HARDNESS TEST HRC TESTING METHOD:
OBTAINED 21

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INSPECTION CERTIFICATE 3.1 (EN 10204:2004)
DOCUMENT NUMBER 2024012940

IMPACT TEST
Control lot No. - Weight :020000986845 - 8.006 KG - 17.650 LB
SPECIFICATION ASTM A370-E23 TYPE A DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 50-
MEASUREMENT UNIT J
OBTAINED 203 214 243

IMPACT TEST
Control lot No. - Weight :020000986845 - 8.006 KG - 17.650 LB
SPECIFICATION ASTM A370-E23 TYPE A DIRECTION OF THE TEST PIECE: T
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 50-
MEASUREMENT UNIT J
OBTAINED 88 81 85

TENSILE TEST
Control lot No. - Weight :020000986845 - 8.006 KG - 17.650 LB
SPECIFICATION ASTMA370-E8-0.5"SPEC DIRECTION OF THE TEST PIECE: T

	TS	YS02	EL	RA	Al2 B
MEASUREMENT UNIT	KSI	KSI	%	%	%
			5.0 D		4,0 D
OBTAINED	115	82	35,5	73,6	41,6

TENSILE TEST
Control lot No. - Weight :020000986845 - 8.006 KG - 17.650 LB
SPECIFICATION EN-ISO6892-1 DIRECTION OF THE TEST PIECE: L

	Rm_C	Rp02_C	A	Z_C
MEASUREMENT UNIT	MPA	MPA	%	%
			5.0 D	
OBTAINED	790	555	39,4	71,5

REFERENCE NORMS:EN 10088-3(14), EN 10272(16),ASTM A276(23) ASME SA276(21),ASTM A479(23) ASME SA479(21),ISO 15156-3(20)/NACE MR0175(21), ISO 17945(15)/NACE MR0103(15),NORSOK M-650 REV.4/M-630, MDS D57 REV.5. REFERENCE NORMS FOR CHEMICAL ANALYSIS, MECHANICAL PROPERTIES, HEAT TREATMENT: ASTM A182(23)/ASME SA182(21), API 6A-PSL3
REFERENCE NORMS ONLY FOR CHEMICAL COMPOSITION: EN 10222-5(17), ASTM A484(23).
VISUAL INSPECTION OF SURFACE AND DIMENSIONAL CONTROL ACCORDING TO EN 10221 CLASS C AND EN 10060: SATISFACTORY.
METALLOGRAPHIC INSPECTION ACCORDING TO ASTM A923 METHOD A: SATISFACTORY.
IMPACT TEST VALUES AT -46°C ARE NOT LESS THAN THOSE AT -50°C HERE STATED.
QTC ON PROLONGATION OF BARS TESTS AT MID RADIUS (CENTER POS. FOR SIZES <2 INCHES).
ASTM A484 DOES NOT APPLY FOR SIZE AND LENGTH TOLERANCES.
MARKING: PRODUCER LOGO, MATERIAL NO, HEAT NO, LOT NR.
WHERE NOT SPECIFIED ALL THE NORMS MENTIONED ARE INTENDED IN THEIR LAST REVISION AT THE DATE OF ISSUE OF THIS DOCUMENT.
COUNTRY OF MELTING AND ORIGIN: ITALY, THE MATERIAL COMPLIES WITH FAR DFARS 252.225-7009 ALT 1.
THE PRODUCT SATISFIES THE DIRECTIVES: 2015/863/EU (ROHS3) - 2011/65/EU (ROHS2) - 2000/53/EU - 2002/95/EU(RoHS) - 2003/11/EU-

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2005/618/EU AND PED 2014/68/EU.
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ULTRASONIC TEST ACCORDING TO EN 10308 CLASS 3, EQUIVALENT TO ASTM A388 FBH 5 : SATISFACTORY
CORROSION TEST ACCORDING TO ASTM A262 Method E EN ISO 3651-2 A: SATISFACTORY. NO CRACKS AT 20X MAGNIFICATION

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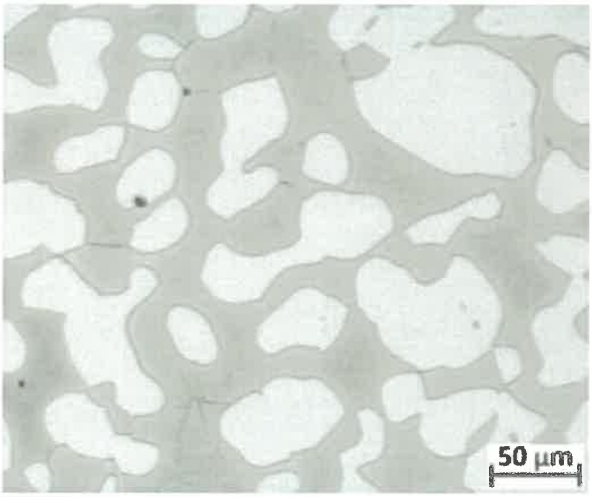
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All.N 1

MARCA *NUANCES* *WERKESTOFF* *GRADE* *МАРКА*	329S	*LOTTO DI CONTROLLO* *LOT DE CONTRÔLE* *LAUFKARTE* *CONTROL LOT* *ПАРТИЯ КОНТРОЛЯ*	020000986845
COLATA *COULEE* *SCHMELZE* *HEAT* *ПЛАВКА*	301850	*REAGENTE* *RÉACTIF* *REAGENS* *ETCHANT* *РЕАГЕНТ*	20 % NaOH electrolyte
TIPO DI APPARECCHIO *TIPE D'APPAREIL* *PRUEFGERAT TYP* *INSTRUMENT TYPE* *ТИП АППАРАТА*	Microscopio:	Leica DM2700M s/n 430371	
INGRANDIMENTO *AGRANDISSEMENT* *VERGRÖSSERUNG* *ENLARGEMENT* *УВЕЛИЧЕНИЕ*	400 X		
DIREZIONE D'ESAME *DIRECTION D'EXAMEN* *PRUEFRICHTUNG* *SCANNING DIRECTION* *НАПРАВЛЕНИЕ ПРИ ИССЛЕДОВАНИИ*	☐ LONGITUDINALE - LONGITUDINAL - ПРОДОЛЬНОЕ ☒ TRASVERSALE – TRANSVERSAL – KREUZEND-ПОПЕРЕЧНОЕ		

PHOTO (ELECTRONIC IMAGE) – ФОТОСНИМКИ (ЭЛЕКТРОННОЕ ИЗОБРАЖЕНИЕ)



NOTE:
ПРИМЕЧАНИЯ:
"Free from Intermetallic Phases"

FIRMA / SIGNATURE / ПОДПИСЬ	UNTERSCHRIFT / SIGNATURE	DATA / DATE / ДАТА	DATUM / DATE
C. Del Guerra		05/03/24	

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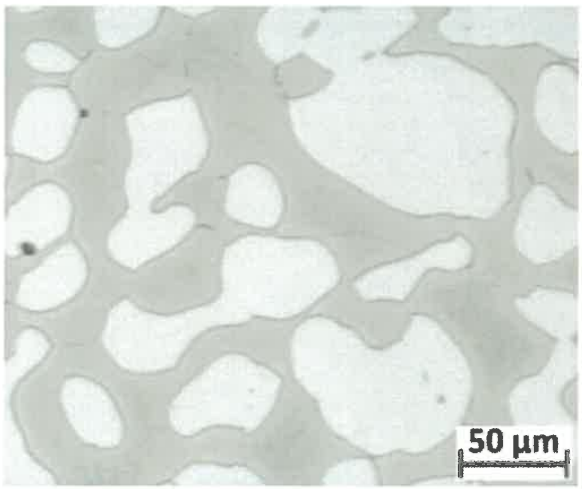
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Via Paravera, 16
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MICROPHOTO
МИКРОСЪЁМКА

All.N 2

MARCA *NUANCES* *WERKESTOFF* *GRADE* *МАРКА*	329S	*LOTTO DI CONTROLLO* *LOT DE CONTRÔLE* *LAUFKARTE* *CONTROL LOT* *ПАРТИЯ КОНТРОЛЯ*	020000986845
COLATA *COULEE* *SCHMELZE* *HEAT* *ПЛАВКА*	301850	*REAGENTE* *RÉACTIF* *REAGENS* *ETCHANT* *РЕАГЕНТ*	20 % NaOH electrolyte
TIPO DI APPARECCHIO *TIPE D'APPAREIL* *PRUEFGERAT TYP* *INSTRUMENT TYPE* *ТИП АППАРАТА*	Microscopio:	**Leica DM2700M s/n 430371**	
INGRANDIMENTO *AGRANDISSEMENT* *VERGRÖSSERUNG* *ENLARGEMENT* *УВЕЛИЧЕНИЕ*	**500 X**		
DIREZIONE D'ESAME *DIRECTION D'EXAMEN* *PRUEFRICHTUNG* *SCANNING DIRECTION* *НАПРАВЛЕНИЕ ПРИ ИССЛЕДОВАНИИ*	☐ **LONGITUDINALE - LONGITUDINAL - ПРОДОЛЬНОЕ** ☒ **TRASVERSALE – TRANSVERSAL – KREUZEND-ПОПЕРЕЧНОЕ**		

PHOTO (ELECTRONIC IMAGE) – ФОТОСНИМКИ (ЭЛЕКТРОННОЕ ИЗОБРАЖЕНИЕ)



NOTE:
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C. Del Guerra		05/03/24	

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CERTIFICATO DI COLLAUDO ULTRASUONI
CERTIFICAT DE CONTROLE PAR ULTRASONS
ULTRASCHALL PRUEFZEUGNIS
REPORT OF ULTRASONIC INSPECTION
ОТЧЕТ ОБ УЛЬТРАЗВУКОВОМ КОНТРОЛЕ

N. US. 592/24

CLIENTE *CLIENTSGG* *BESTELLER* *CUSTOMER* ЗАКАЗЧИК			*CONFERMA* *CONFIRMATION* *AUFTRAGSBESTRAKTIGUNG* *CONFIRMATION* ПОДТВЕРЖД. ЗАКАЗА		
MARCA *NUANCES* *WERKESTOFF* *GRADE* МАРКА	329S W.No 1.4501		*ORDINE* *COMMANDE* *AUFTRAG* *ORDER* ЗАКАЗ		
SPECIFICA *SPECIFICATION* *PRUKEVORSCHRIFT* *SPECIFICATION* ТЕХ. ТРЕБОВАНИЯ	EN10228-4 cl3		*COLATA* *COULEE* *SCHMELZE* *HEAT* ПЛАВКА	301850	*SCHEDA* *LOT* *LAUFKARTE* *LOT* ПАРТИЯ 993480
PRODOTTO *PRODUIT* *ERZEUGNISFORM* *PRODUCT* ИЗДЕЛИЕ	ROUND BARS 115 mm		*STATO DI LAVORAZIONE* *STADE DU PRODUIT* *LIEFERZUSIAND* *WORKING STEP* ОБРАБОТКА	PEELED	
TIPO DI APPARECCHIO *TIPE D'APPAREILPARUS* *PRUEFGERAT TYP* *INSTRUMENT TYPE* ТИП АППАРАТА	USN60 L SW	16L021RC	*COSTRUTTORE* *CONSTRUCTEUR* *BAUART* *MAKE* ИЗГОТОВИТЕЛЬ	KRAUTKRAMER	
TIPO DI SONDA *TIPE DE PALPEUR* *PRUFKOPT* *PROBETYPE* ТИП ЗОНДА	B2S-E		*FREQUENZA* *FREQUENCE* *FREQUENZ* *FREQUENCY* ЧАСТОТА	2 MHz S/N	57745-76867

DIREZIONE D'ESAME
DIRECTION D'EXAMEN
PRUEFRICHTUNG
SCANNING DIRECTION
НАПРАВЛЕНИЕ ПРИ

- [X] *RADIALE - RADIAL*
- [ ] *ASSIALE - AXIAL*
- [ ] *SONDE ANGOLATE - ANGLE BEAMS*

- [ ] *MATRICOLA BLOCCO CAMPIONE*
  DENTIFICATION BLOC DE REFERENCE MUSTER BLOCK
  MUSTER BLOCK
  TEST BLOCK NR
  № ОБРАЗЦА ДЛЯ ИСПЫТАНИЯ

- [ ] *AVG SCALE* *ECRANS ABAQUES AVG* *AVG SKALEN* *AVG SCALE* ШКАЛА *AVG*
- [X] *AVG DIAGRAMMI* *DIAGRAMMES AVG* *AVG DIAGRAMM* *AVG DIAGRAM* ДИАГРАММЫ *AVG*
- [ ] V1
- [ ] V2

RISULTATODELL'ESAME
RESULTAT DE L' ESSAI
PRUEFERGERBNISSE
RESULT OF THE TEST
РЕЗУЛЬТАТ ИСПЫТАНИЯ

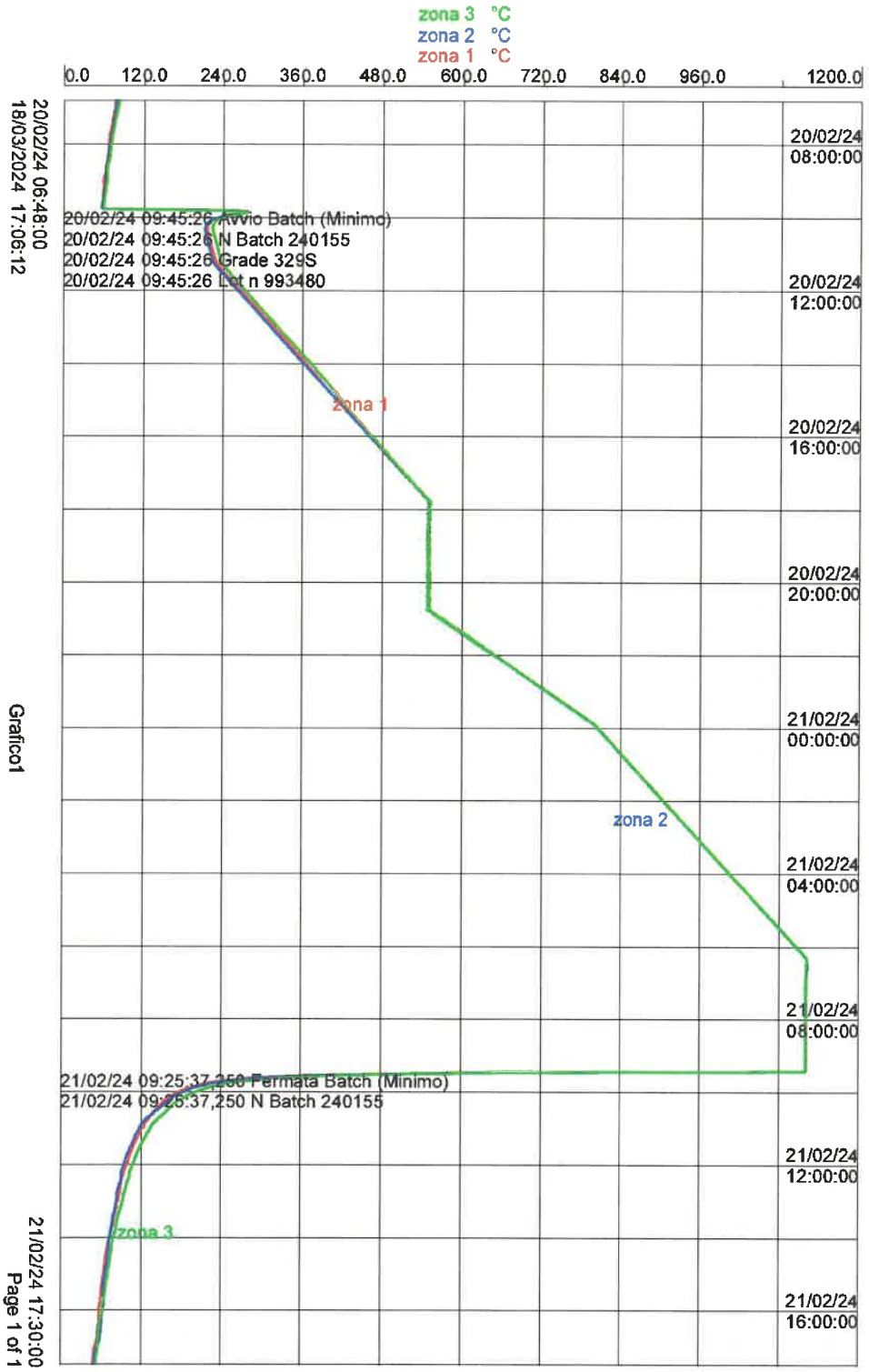
EXAM DATA : 15/03/2024
INSPECTED N. BARS 16

THE MATERIAL IS IN ACCORDANCE TO THE FOLLOWING SPECIFICATIONS:
EN10228-4 cl3

L'ISPETTORE CND ZUSTANDER CND L'INSPECTEUR CND CND INSPECTOR ИНСПЕКТОР НРК NADALIN SIMONE Liv.II - ISO 9712 N° Cert.32040/PND/C	**III LIV.CND** **III УРОВЕНЬ НРК** BAISOTTI MARCO Liv.III - ISO 9712 N° Cert.34194/PND/C		DATA DATUM DATE DATE ДАТА 18/03/2024

(Mod. Certus Rev. 6)

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C.F. 02187360967
VAT: IT00571320076 - R.E.A. n. AO-50474

Company with Management Systems certified according to ISO 9001, ITAF 16949, EN 9100, ISO 14001 and ISO 45001.

INSPECTION CERTIFICATE 3.1 (EN 10204:2004)
DOCUMENT NUMBER 2024011723

CUSTOMER:	C.S.C. SPA		
CUSTOMER'S ORDER:	A2024282SSS		
MANUFACTURER'S WORKS:	AOSTA, VIA PARAVERA 16 - ITALY		
PRODUCER OF THE DOC:	QUALITY DEPARTMENT		
MANUFACTURER'S WORKS ORDER NO:	0025313236 / 000010		
MARK OF THE MANUFACTURER:	**COGNE**		
DISPATCH NOTE:	0081597602 / 000010 WEIGHT: 1660 KG / 3660 LB		
INTERNAL SPEC:	NORSOKREV5		
PRODUCT:	SPE ROUGHPEELED ROUND BARS TOLERANCE: + 1,500 - 0,0000 (+ 0,0591 - 0 in)		
SURFACE FINISH:	1X Hot Finished		
PRODUCT DELIVERY CONDITION:	RS SOLUTION ANNEALED		
PRODUCT DIMENSIONS (mm):	133,360 (5,250 in)	LENGTH (mm)	04000 06000 (00157 00236 in)
GRADE:	F55 UNSS32760 1.4501	INTERNAL GRADE:	329S
IDENTIFICATION HEAT NO:	301290	IDENTIFICATION LOT NO:	441600
MARKING OF THE PRODUCT:	1.4501	TEST PIECE N:	160

STEELMAKING EAF + AOD
HEAT TREATMENT: SOLUTION ANNEALING AT 1120°C + WATER QUENCHING DOWN TO 260°C.MIN.SOAKING TIME 1,5 Min./mm THICKNESS.
ASTM G48 A/ASTM A923 C TESTING CONDITIONS: Sample surface 120 GRIT, Solution 100g FeCl3.6H2O+900ml H20, T 50°C, 24h, no pitting at 20X. UNIT OF MEASURE: G/M2
MELTING PROCESS UHP + AOD + INGOT CASTING
HEAT TREATMENT PERFORMED IN CALIBRATED FURNACES ACCORDING TO INTERNAL PROCEDURE PR-GDQ.ITT COMPLYING WITH API6A Annex M Ed. 21st, API 6D annex H Ed. 25th & API 6DSS annex J Ed.3rd.
HOT FORGED
REDUCTION RATIO 22,7

CHEMICAL LADLE ANALYSIS ACCORDING TO ASTM A751 - EN ISO 14284
Control lot No. - Weight :020000976090 - 83.040 KG - 183.069 LB

ELEMENTS	C	Si	Mn	P	S	N	Cr	Mo	Ni	Cu
MEASUREMENT UNIT	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w
OBTAINED	0,028	0,41	0,60	0,021	0,0008	0,26	24,92	3,69	6,94	0,57

ELEMENTS	W	CV_F8
MEASUREMENT UNIT	% w/w	% w/w
OBTAINED	0,57	41

CV_F8 = CR+(3.3*MO)+(16*N2)

HARDNESS TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000987830 - 3.986 KG - 8.787 LB
SPECIFICATION ENISO6506 HARDNESS TEST HB TESTING METHOD: 10/3000
OBTAINED 257

IMPACT TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000987830 - 3.986 KG - 8.787 LB
SPECIFICATION EN ISO 148-1-KV2 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 20
MEASUREMENT UNIT J
OBTAINED 426 438 431

DATE 20.02.2024 MORABITO ROSA CF(QUALITY CERTIFICATOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne

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DOCUMENT NUMBER 2024011723

TENSILE TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000987830 - 3.986 KG - 8.787 LB
SPECIFICATION ASTMA370/E8-0.5"SPEC DIRECTION OF THE TEST PIECE: L

MEASUREMENT UNIT	Rm MPA	Rp02% MPA	Z %	Al2 %
				4,0 D
OBTAINED	788	553	76,0	44,1

CORROSION
Control lot No. - Weight :020000987830 - 3.986 KG - 8.787 LB
SPECIFICATION ASTM G48 A
OBTAINED 0,07692

FERRITE %
Control lot No. - Weight :020000987830 - 3.986 KG - 8.787 LB
SPECIFICATION ASTME562 --
OBTAINED 46,56

MICROSTRUCTURE
Control lot No. - Weight :020000987830 - 3.986 KG - 8.787 LB
SPECIFICATION -- --
SATISFACTORY
OBTAINED -

LATERAL EXPANSION
Control lot No. - Weight :020000987830 - 3.986 KG - 8.787 LB
SPECIFICATION ASTMA370 --
OBTAINED 1 1 1

SHEAR %
Control lot No. - Weight :020000987830 - 3.986 KG - 8.787 LB
SPECIFICATION ASTMA370 --
OBTAINED 20 20 20

FURNACE CALIBRATION ACCORDING TO API 6A ANNEX M Ed. 21th and API 6D ANNEX H Ed. 25th.
FERRITE CONTENT DETERMINED ACCORDING TO ASTM E 562 WITH 16 POINTS PER FIELD AND MINIMUM 30 FIELDS
HARDNESS TEST
Control lot No. - Weight :020000987830 - 3.986 KG - 8.787 LB
SPECIFICATION ASTMA370-E18 HARDNESS TEST HRC TESTING METHOD:
OBTAINED 22

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INSPECTION CERTIFICATE 3.1 (EN 10204:2004)
DOCUMENT NUMBER 2024011723

IMPACT TEST
Control lot No. - Weight :020000987830 - 3.986 KG - 8.787 LB
SPECIFICATION ASTM A370-E23 TYPE A DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 50-
MEASUREMENT UNIT J
OBTAINED 238 190 209

IMPACT TEST
Control lot No. - Weight :020000987830 - 3.986 KG - 8.787 LB
SPECIFICATION ASTM A370-E23 TYPE A DIRECTION OF THE TEST PIECE: T
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 50-
MEASUREMENT UNIT J
OBTAINED 77 86 66

TENSILE TEST
Control lot No. - Weight :020000987830 - 3.986 KG - 8.787 LB
SPECIFICATION ASTMA370-E8-0.5"SPEC DIRECTION OF THE TEST PIECE: T

	TS	YS02	EL	RA	Al2 B
MEASUREMENT UNIT	KSI	KSI	% 5.0 D	%	% 4,0 D
OBTAINED	116	81	37,7	71,3	39,5

TENSILE TEST
Control lot No. - Weight :020000987830 - 3.986 KG - 8.787 LB
SPECIFICATION EN-ISO6892-1 DIRECTION OF THE TEST PIECE: L

	Rm_C	Rp02_C	A	Z_C
MEASUREMENT UNIT	MPA	MPA	% 5.0 D	%
OBTAINED	803	557	36,1	73,0

REFERENCE NORMS:EN 10088-3(14), EN 10272(16),ASTM A276(23) ASME SA276(21),ASTM A479(23) ASME SA479(21),ISO 15156-3(20)/NACE MR0175(21), ISO 17945(15)/NACE MR0103(15),NORSOK M-650 REV.4/M-630, MDS D57 REV.5. REFERENCE NORMS FOR CHEMICAL ANALYSIS, MECHANICAL PROPERTIES, HEAT TREATMENT: ASTM A182(23)/ASME SA182(21), API 6A-PSL3
REFERENCE NORMS ONLY FOR CHEMICAL COMPOSITION: EN 10222-5(17), ASTM A484(23).
VISUAL INSPECTION OF SURFACE AND DIMENSIONAL CONTROL ACCORDING TO EN 10221 CLASS C AND EN 10060: SATISFACTORY.
METALLOGRAPHIC INSPECTION ACCORDING TO ASTM A923 METHOD A: SATISFACTORY.
IMPACT TEST VALUES AT -46°C ARE NOT LESS THAN THOSE AT -50°C HERE STATED.
QTC ON PROLONGATION OF BARS TESTS AT MID RADIUS (CENTER POS. FOR SIZES <2 INCHES).
ASTM A484 DOES NOT APPLY FOR SIZE AND LENGTH TOLERANCES.
MARKING: PRODUCER LOGO, MATERIAL NO, HEAT NO, LOT NR.
WHERE NOT SPECIFIED ALL THE NORMS MENTIONED ARE INTENDED IN THEIR LAST REVISION AT THE DATE OF ISSUE OF THIS DOCUMENT.
COUNTRY OF MELTING AND ORIGIN: ITALY, THE MATERIAL COMPLIES WITH FAR DFARS 252.225-7009 ALT 1.
THE PRODUCT SATISFIES THE DIRECTIVES: 2015/863/EU (ROHS3) - 2011/65/EU (ROHS2) - 2000/53/EU - 2002/95/EU(RoHS) - 2003/11/EU-

DATE 20.02.2024 MORABITO ROSA CF(QUALITY CERTIFICATOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne

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CLOSURE F150RF3

2005/618/EU AND PED 2014/68/EU.
THE MATERIAL IS FREE OF ANY MERCURY, MERCURY COMPOUNDS AND OR RADIUM CONTAMINATION AT TIME OF SHIPMENT AND WAS PRODUCED WITHOUT USING OZONE DEPLETING SUBSTANCES OF CLASS I AND II.
ULTRASONIC TEST ACCORDING TO EN 10308 CLASS 3, EQUIVALENT TO ASTM A388 FBH 5 : SATISFACTORY
CORROSION TEST ACCORDING TO ASTM A262 Method E EN ISO 3651-2 A: SATISFACTORY. NO CRACKS AT 20X MAGNIFICATION

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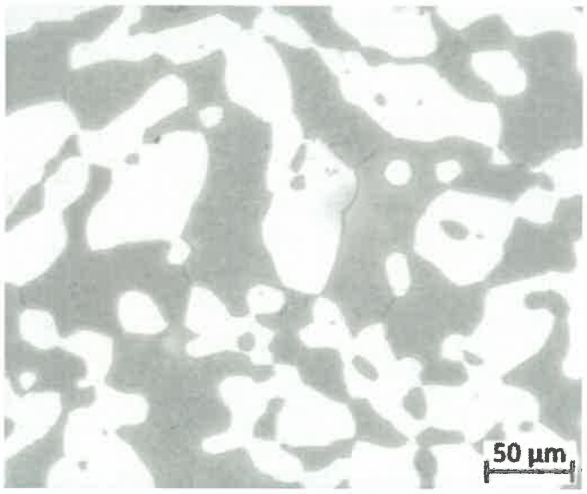
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All.N 1

MARCA *NUANCES* *WERKSTOFF* *GRADE* *МАРКА*	329S	*LOTTO DI CONTROLLO* *LOT DE CONTRÔLE* *LAUFKARTE* *CONTROL LOT* *ПАРТИЯ КОНТРОЛЯ*	020000987830
COLATA *COULEE* *SCHMELZE* *HEAT* *ПЛАВКА*	301290	*REAGENTE* *RÉACTIF* *REAGENS* *ETCHANT* *РЕАГЕНТ*	20 % NaOH electrolyte
TIPO DI APPARECCHIO *TYPE D'APPAREIL* *PRUEFGERAT TYP* *INSTRUMENT TYPE* *ТИП АППАРАТА*	Microscopio:	**Leica DM2700M s/n 430371**	
INGRANDIMENTO *AGRANDISSEMENT* *VERGRÖSSERUNG* *ENLARGEMENT* *УВЕЛИЧЕНИЕ*		**400 X**	
DIREZIONE D'ESAME *DIRECTION D'EXAMEN* *PRUEFRICHTUNG* *SCANNING DIRECTION* *НАПРАВЛЕНИЕ ПРИ ИССЛЕДОВАНИИ*	☐ **LONGITUDINALE - LONGITUDINAL - ПРОДОЛЬНОЕ** ☒ **TRASVERSALE – TRANSVERSAL – KREUZEND-ПОПЕРЕЧНОЕ**		

PHOTO (ELECTRONIC IMAGE) – ФОТОСНИМКИ (ЭЛЕКТРОННОЕ ИЗОБРАЖЕНИЕ)



	FIRMA / UNTERSCHRIFT / SIGNATURE / ПОДПИСЬ	DATA / DATUM / DATE / ДАТА
NOTE: ПРИМЕЧАНИЯ: "Free from Intermetallic Phases"	C. Del Guerra	16/12/23

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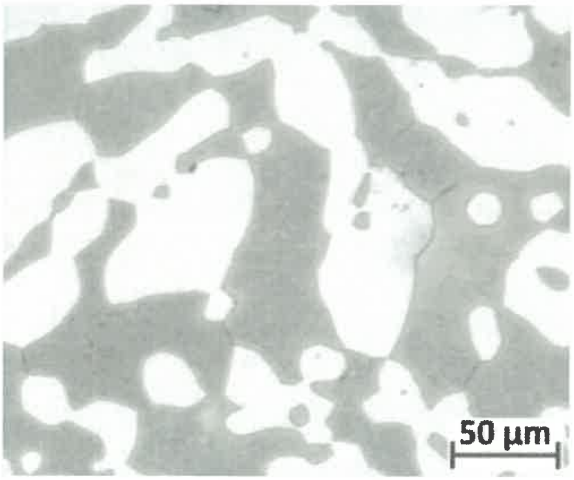
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MICROPHOTO **All.N 2**
МИКРОСЪЁМКА

MARCA *NUANCES* *WERKSTOFF* *GRADE* *МАРКА*	329S	*LOTTO DI CONTROLLO* *LOT DE CONTRÔLE* *LAUFKARTE* *CONTROL LOT* *ПАРТИЯ КОНТРОЛЯ*	020000987830
COLATA *COULEE* *SCHMELZE* *HEAT* *ПЛАВКА*	301290	*REAGENTE* *RÉACTIF* *REAGENS* *ETCHANT* *РЕАГЕНТ*	20 % NaOH electrolyte
TIPO DI APPARECCHIO *TIPE D'APPAREIL* *PRUEFGERAT TYP* *INSTRUMENT TYPE* *ТИП АППАРАТА*	Microscopio:	**Leica DM2700M s/n 430371**	
INGRANDIMENTO *AGRANDISSEMENT* *VERGRÖSSERUNG* *ENLARGEMENT* *УВЕЛИЧЕНИЕ*		**500 X**	
DIREZIONE D'ESAME *DIRECTION D'EXAMEN* *PRUEFRICHTUNG* *SCANNING DIRECTION* *НАПРАВЛЕНИЕ ПРИ ИССЛЕДОВАНИИ*	☐ **LONGITUDINALE - LONGITUDINAL - ПРОДОЛЬНОЕ** ☒ **TRASVERSALE – TRANSVERSAL – KREUZEND-ПОПЕРЕЧНОЕ**		

PHOTO (ELECTRONIC IMAGE) – ФОТОСНИМКИ (ЭЛЕКТРОННОЕ ИЗОБРАЖЕНИЕ)



NOTE: ПРИМЕЧАНИЯ:	FIRMA UNTERSCHRIFT SIGNATURE SIGNATURE ПОДПИСЬ	DATA DATUM DATE DATE ДАТА
"Free from Intermetallic Phases"	C. Del Guerra	16/12/23

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CERTIFICATO DI COLLAUDO ULTRASUONI
CERTIFICAT DE CONTROLE PAR ULTRASONS
ULTRASCHALL PRUEFZEUGNIS
REPORT OF ULTRASONIC INSPECTION
ОТЧЕТ ОБ УЛЬТРАЗВУКОВОМ КОНТРОЛЕ

N. US.
338/24

CLIENTE *CLIENTSGG* *BESTELLER* *CUSTOMER* ЗАКАЗЧИК			*CONFERMA* *CONFIRMATION* *AUFTRAGSBESTRAKTIGUNG* *CONFIRMATION* ПОДТВЕРЖД. ЗАКАЗА		
MARCA *NUANCES* *WERKESTOFF* *GRADE* МАРКА	329S W.No 1.4501		*ORDINE* *COMMANDE* *AUFTRAG* *ORDER* ЗАКАЗ		
SPECIFICA *SPECIFICATION* *PRUKEVORSCHRIFT* *SPECIFICATION* ТЕХ. ТРЕБОВАНИЯ	EN10228-4 cl3		*COLATA* *COULEE* *SCHMELZE* *HEAT* ПЛАВКА	301290	*SCHEDA* *LOT* *LAUFKARTE* *LOT* ПАРТИЯ 441600
PRODOTTO *PRODUIT* *ERZEUGNISFORM* *PRODUCT* ИЗДЕЛИЕ	ROUND BARS 133,36 mm		*STATO DI LAVORAZIONE* *STADE DU PRODUIT* *LIEFERZUSTAND* *WORKING STEP* ОБРАБОТКА	PEELED	
TIPO DI APPARECCHIO *TIPE D'APPAREILPARUS* *PRUEFGERAT TYP* *INSTRUMENT TYPE* ТИП АППАРАТА	USN60 L SW	16L021RC	*COSTRUTTORE* *CONSTRUCTEUR* *BAUART* *MAKE* ИЗГОТОВИТЕЛЬ	KRAUTKRAMER	
TIPO DI SONDA *TIPE DE PALPEUR* *PRUFKOPT* *PROBETYPE* ТИП ЗОНДА	B2S-E		*FREQUENZA* *FREQUENCE* *FREQUENZ* *FREQUENCY* ЧАСТОТА	2 MHz S/N	57745-78097

DIREZIONE D'ESAME
DIRECTION D'EXAMEN
PRUEFRICHTUNG
SCANNING DIRECTION
НАПРАВЛЕНИЕ ПРИ

- [X] *RADIALE - RADIAL*
- [ ] *ASSIALE - AXIAL*
- [ ] *SONDE ANGOLATE - ANGLE BEAMS*

- [ ] *MATRICOLA BLOCCO CAMPIONE*
  DENTIFICATION BLOC DE REFERENCE MUSTER BLOCK
  MUSTER BLOCK
  TEST BLOCK NR
  № ОБРАЗЦА ДЛЯ ИСПЫТАНИЯ

- [ ] *AVG SCALE*
  ECRANS ABAQUES AVG
  AVG SKALEN
  AVG SCALE
  ШКАЛА *AVG*
- [X] *AVG DIAGRAMMI*
  DIAGRAMMES AVG
  AVG DIAGRAMM
  AVG DIAGRAM
  ДИАГРАММЫ *AVG*
- [ ] V1
- [ ] V2

RISULTATODELL'ESAME
RESULTAT DE L' ESSAI
PRUEFERGERBNISSE
RESULT OF THE TEST
РЕЗУЛЬТАТ
ИСПЫТАНИЯ

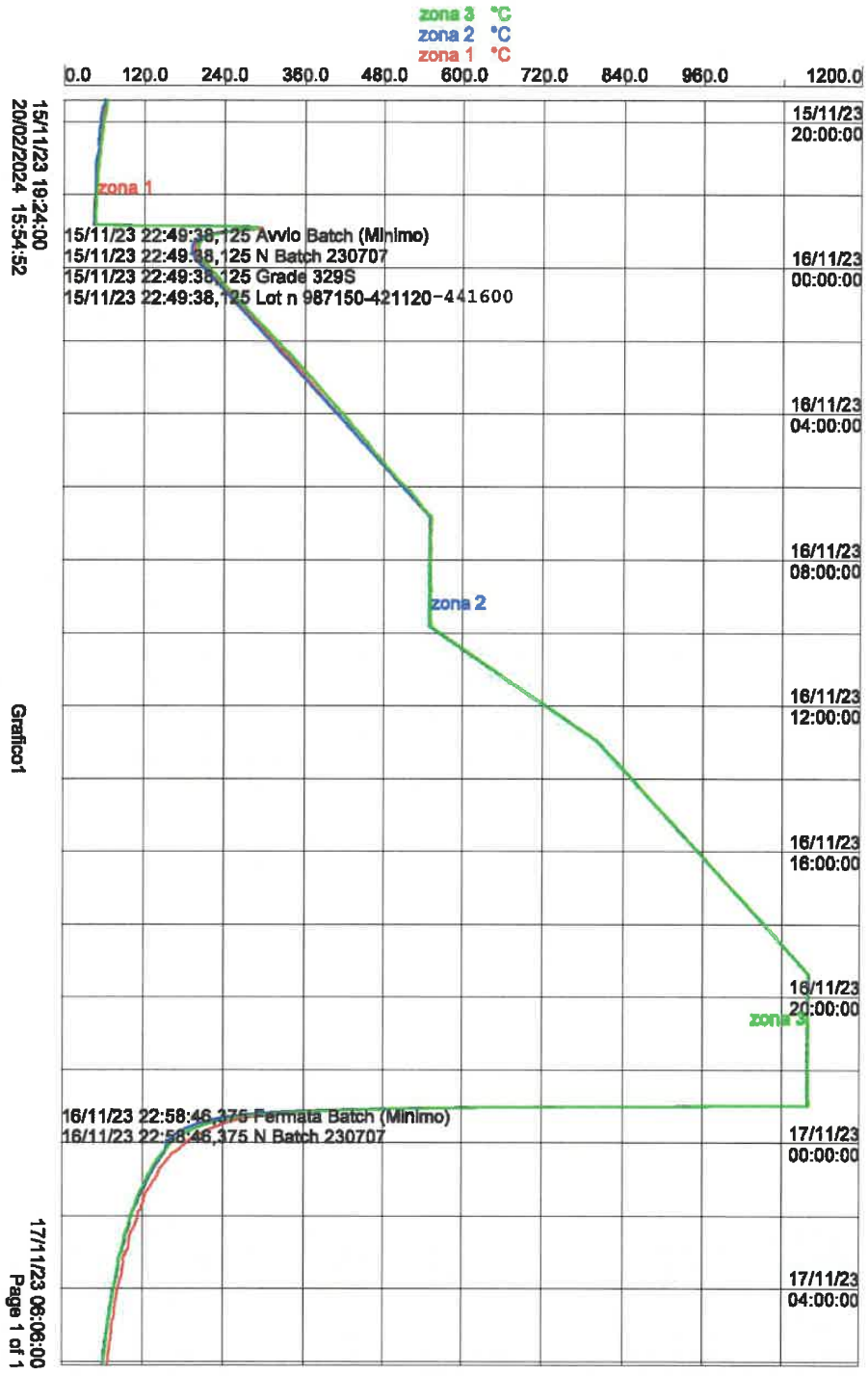
EXAM DATA : 16/02/2024
INSPECTED N. BARS 5

THE MATERIAL IS IN ACCORDANCE TO THE FOLLOWING SPECIFICATIONS:
EN10228-4 cl3

L'ISPETTORE CND ZUSTANDER CND L'INSPECTEUR CND CND INSPECTOR ИНСПЕКТОР НРК NADALIN SIMONE Liv.II - ISO 9712 N° Cert.32040/PND/C	**III LIV.CND** III УРОВЕНЬ НРК BAISOTTI MARCO Liv.III - ISO 9712 N° Cert.34194/PND/C		DATA DATUM DATE DATE ДАТА 19/02/2024

(Mod. Certus Rev. 6)

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TIRANTE / STUD BOLT t.e.c.n.o BOLT

CERTIFICATE

Nr. 5117 | **03-09-24**

Page 1/1

INDRA SRL
VIA NOVARA 10/B-C
20013 MAGENTA MI
ITALIA

EN ISO 10204 3.1
CERTIFIED MATERIAL TEST REPORT

Your order: AF24 02329 REV.02 16-07-24 Delivery note: 2175 03-09-24

Item	Materials	Description	Sizes	Batch	Heat	Quantity
1	ASTM A 193 B7M 980.99.0260CS	Tirante DIN 976/UNI 6610 ASTM A 193 B7M M HDG	10X30	8582	BE1859 N.	30

Pos.220, 230, 240, 340 CKD/SM/18/03/2022

CHEMICAL ANALYSIS

1		%C %	%Mn %	%P %	%S %	%Si %	%Cr %	%Mo %	%H.T. Q+T
	REQ. MIN.	0,37	0,65			0,15	0,75	0,15	T=1100 F
	REQ. MAX.	0,49	1,10	0,035	0,040	0,35	1,20	0,25	
	ACT.VAL.	0,420	0,830	0,010	0,026	0,230	1,040	0,180	Q+T

MECHANICAL PROPERTIES

1		UTS MPa	YS0,2 MPa	E %	R.A. %	H HB	I.T. °C Kv J-22 C
	REQ. MIN.	860	720	16	50		
	REQ. MAX.					321	
	ACT. VAL.	1000	804	22,6	61	298	N.A.

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We state that the material or fasteners, or both, were manufactered, sampled, tested and inspected in accordance with the specification and any supplementary requirements designated in the purchase/sales order and it was found to meet those requirements

tecnoBOLT s.r.l. - 20822 Seveso (MB) ITALY - way vignone n.7 - info@tecnobolt.com - www.tecnobolt.com

DADO / NUT

t·e·c·n·o BOLT

CERTIFICATE

Nr. 5166	18-09-24

Page 1/1

INDRA SRL
VIA NOVARA 10/B-C
20013 MAGENTA MI
ITALIA

EN ISO 10204 3.1
CERTIFIED MATERIAL TEST REPORT

Your order: AF24 02329 REV.02 16-07-24 Delivery note: 2307 18-09-24

Item	Materials	Description	Sizes	Batch	Heat		Quantity
3	ASTM A 194 Gr.2HM 980.99.0188 Pos.170, 180, 190, 330 CKD/DR/30/05/16	Dado UNI 5588/DIN 934 ASTM A 194 Gr.2HM M Esagonale HDG	10	8581	BD4437	N.	70

VOCE DOGANALE 73181900

MERCE DI ORIGINE ITALIANA

CHEMICAL ANALYSIS

3		%C %	%Mn %	%P %	%S %	%Si %	%H.T. Q+T	%Ni %	%Cr %	%Mo %
	REQ. MIN.	0,40					T=850 F			
	REQ. MAX.		1	0,040	0,050	0,40				
	ACT.VAL.	0,435	0,790	0,007	0,029	0,230	Q+T	0,070	0,190	0,020

MECHANICAL PROPERTIES

3		H HRC	P.L. N/mm
	REQ. MIN.		1205
	REQ. MAX.		
	ACT. VAL.	32-34	1205

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BGH Edelstahl Freital GmbH

BGH Edelstahl Freital GmbH Am Stahlwerk 1 01705 Freital

BGH Edelstahl Freital GmbH
Handelslager

Hüttenstraße

01705 Freital
Deutschland

Zeugnis-Nr. Certificate no. No. de certificat **534228** **Rev.1** **24.10.2023**

Bescheinigung über Werkstoffprüfung nach DIN EN 10204
Certificate of material tests according to DIN EN 10204 **3.1**
Certificat des essais des matériaux selon DIN EN 10204

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Delivery in accordance with the agreed terms of delivery.
La livraison correspond aux conditions de livraison convenues.

Zeichen des Lieferwerkes / Trade mark / Signe du fournisseur — Stempel des Werkssachverständigen / Inspector's stamp / Poinçon de l'inspecteur

Kunden-Bestell-Nr. Customer order no. Cde. no. du client **274466001**

BGH-Auftrags-Nr. BGH works no. BGH référence **39346002/274466**

BGH Q441

Erzeugnisform / Product	Stab, rund, geschält / round bars,peeled
Werkstoff / Quality	UNS S32760
Anforderungen / Requirements	UNS S32760 NORSOK M 630 :2020 UNS S32760 NORSOK MDS - D 57 Rev.6 :2020 UNS S32760 ASTM A 479 /A479M -21 UNS S32760 ASME BPVC II. A SA- 479 /SA-479M -2021 UNS S32760 ASTM A 276 - 17 UNS S32760 ASME BPVC II. A SA- 276 -2021 1.4501 X2CrNiMoCuWN25-7-4 DIN EN 10088 -3 12/14 1.4501 X 2 CrNiMoCuWN 25-7-4 DIN EN 10272 10/16 UNS S32760 ANSI/NACE MR 0175 /ISO15156-3 2015 UNS S32760 ANSI/NACE MR 0103 /ISO17945: 2015 1) F55 (UNS S32760) ASTM A182/A182M - aktuelle Ausgabe (nur Chemische Zusammensetzung und mechanische Eigenschaften) Gefertigt nach QTR BGH_F_E_32760 Rev. 3 nach Norsok M-650 Edition 4 F55 (UNS S32760) ASTM A182/A182M - Lat. Rev. (Chemical Composition and mechanical properties only) Manufactured acc. to QTR BGH_F_E_32760 rev. 3 acc. to Norsok M-650 Edition 4

Besichtigung und Maßnachprüfung Inspection and dimensional control Inspection et contrôle de dimension	Erschmelzung/Nachbehandlung Meltingprocess/secondary refining Mode d'élaboration/traitement ultérieur	Verwechslungsprüfung (spectroanalytisch) Identification test (spectral-analysis) eXamination d' identification(analyse spectrale)
ohne Beanstandung without objection	E- VOD	ohne Beanstandung without objection

Pos. Item Poste	Anzahl Quantity Quantité	Abmessung Dimension Dimensions	Gewicht Weight Poids	Schmelz-Nr. Heat-No. No. de coulée
1	3 Bd	22,22 RD	2068 kg	408456

Schmelze Heat %	C	Si	Mn	P	S	Cr	Mo	Ni	Cu	N	W	PRE
408456	0,016	0,27	0,54	0,021	0,0010	25,80	3,55	7,62	0,580	0,2350	0,530	41,275
	PREN 42,15											

Wärmebehandlungszustand Condition of heat treat	lösungsgeglüht solution annealed

Probe-Nr. Test-No.	Lage loc.	Temp. °C	Rp0,2 N/mm²		Rm N/mm²	A5/A4 %	Z %	Kerbschlagarbeit Impact value J		Probenform Shape of test piece Charpy-V °C		Härte Hardness HRC /HBW
Soll/Req.+	L	RT	>=530		>=730 <=930	>=25		>=100			RT -50	<=32 /<=290
*	L	RT	>=550		>=750 <=895	>=25	>=45	>=65			-46	
023IV1 +	L	RT	619		850	35/-	79	318	326	305	RT	27
023IV1 +	L							267	290	275	-50	

Anlagen / End. / Annexe	Freital,den Place and date Lieu et date	Abnahmebeauftragter Inspector representative Inspecteur de réception
US-Protokoll/UT report Glühbesch./Heat treatment cer. Gefügeaufnahme/micrograph	09.10.2023	Schwaar

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BGH Edelstahl Freital GmbH
Handelslager

Hüttenstraße

01705 Freital
Deutschland

Zeugnis-Nr. 534228 Rev.1 24.10.2023
Certificate no.
No. de certificat

Bescheinigung über Werkstoffprüfung nach DIN EN 10204
Certificate of material tests according to DIN EN 10204 3.1
Certificat des essais des matériaux selon DIN EN 10204

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Zeichen des Lieferwerkes / Trade mark / Signe du fournisseur
Stempel des Werkssachverständigen / Inspector's stamp / Poinçon de l'inspecteur

BGH Q441

Kunden-Bestell-Nr. 274466001
Customer order no.
Cde. no. du client

BGH-Auftrags-Nr. 39346002/274466
BGH works no.
BGH référence

023IV1	*	L	RT	611		850	--/39	78	290	308	297	-46	274
023IV2	+	L	RT	624		857	35/-	78	315	321	309	RT	
023IV2	+	L							271	288	280	-50	

+) Erprobung nach/Examination acc. to DIN EN ISO 6892-1 / DIN EN ISO 148-1
*) Erprobung nach/Examination acc. to ASTM/ASME A 370

Prüfort/test location: D/2 - mid thickness

Ferritgehaltmessung nach/Ferrite content measurement acc. to ISO 17781:
Zählverfahren: systematisches manuelles Punktzählverfahren nach ASTM E562
Method of counting: systematic manual point count acc. to ASTM E562
Probenlage Rand bis Kern, quer (Schliffgröße je 25x15mm)
Sample locaction surface to center, transverse (microsections 25x15 mm each)
Ätzmittel/Etchant: V2A + 30 % NaOH
Vergrößerung/Magnification: 200:1
Quadratgitter 5 x 5 Punkte, 30 Felder/Square grid 5 x 5 points, 30 fields

	Rand-near surf.	D/4-mid rad.	D/2-mid thickness
Deltaferrit/ferrite delta ASTM E 562:	55%	52%	53%
relat.Genauigkeit/relative accuracy:	7%	8%	8%

Gefügeuntersuchung nach/Microstructure examination acc. to ISO 17781:
Probenlage Rand bis Kern, quer (Schliffgröße je 25x15mm)/
Sample locaction surface to center, transverse (microsections 25x15 mm each)
Ätzmittel/Etchant: V2A + 30 % NaOH
Vergrößerung/Magnification: 500:1
Befund: keine intermetallischen Phasen oder Ausscheidungen
Findings: no intermetallic phases or precipitates

Korrosionsprüfung nach ISO 17781 / ASTM G48 Verfahren A:/
Corrosion test acc. to ISO 17781 / ASTM G48 method A:
Probenlage und -größe: ganzer Durchmesser x 6 mm x 50 mm/
Specimen location and size: full diameter x 6 mm x 50 mm
Oberfläche geschliffen P220 und gebeizt/Surface ground P220 and pickled
Temperatur/Temperature: 50 °C, Dauer/duration: 24 h/hrs
kein Lochfraß bei 20facher Vergrößerung/No pitting at 20x magnification.
Masseverlust/weight loss: 0,026 g/m²
Masse vor/Weight before - nach Test/after test: 74,1872 - 74,1871 g

Anlagen / End. / Annexe	Freital,den / Place and date / Lieu et date	Abnahmebeauftragter / Inspector representative / Inspecteur de réception
US-Protokoll/UT report Glühbesch./Heat treatment cer. Gefügeaufnahme/micrograph	09.10.2023	Schwaar

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BGH Edelstahl Freital GmbH
Handelslager

Hüttenstraße

01705 Freital
Deutschland

Zeugnis-Nr. Certificate no. No. de certificat **534228** **Rev.1** **24.10.2023**

Bescheinigung über Werkstoffprüfung nach DIN EN 10204
Certificate of material tests according to DIN EN 10204 **3.1**
Certificat des essais des matériaux selon DIN EN 10204

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BGH Q441

Kunden-Bestell-Nr. Customer order no. Cde. no. du client **274466001**

BGH-Auftrags-Nr. BGH works no. BGH référence **39346002/274466**

IK-Beständigkeit/intercrystalline corrosion DIN EN ISO 3651-2, Verfahren C:
ohne Befund/without objection
Probenvorbereitung/preparation of test specimen: 700°C 30' Wasser/water
Prüfdauer/time of testing: 20h

Material wurde nicht reparaturgeschweißt./Material no weld repaired.

Das Material ist frei von Quecksilber./Material is free from mercury.

Umformgrad/reduction ratio: 40:1

Stahlhersteller des Ausgangsmaterials: BGH Edelstahl Freital GmbH (Deutschland)
Steel manufacturer of starting material: BGH Edelstahl Freital GmbH (Germany)

Fertigung nach QM-System ISO 9001: 2015/ QM system in effect is ISO 9001: 2015
Zertifiziert nach / certificated AD2000 W0.

Kontrolle auf Radioaktivität ohne Befund, der Messwert liegt unter der Nachweisgrenze von 0,1 Bq/g.
Radioactivity inspection without objection, the measured value is below the detection limit of 0.1 Bq/g.

Anlagen / Encl. / Annexe	Freital,den / Place and date / Lieu et date	Abnahmebeauftragter / Inspector representative / Inspecteur de réception
US-Protokoll/UT report Glühbesch./Heat treatment cer. Gefügeaufnahme/micrograph	09.10.2023	Schwaar

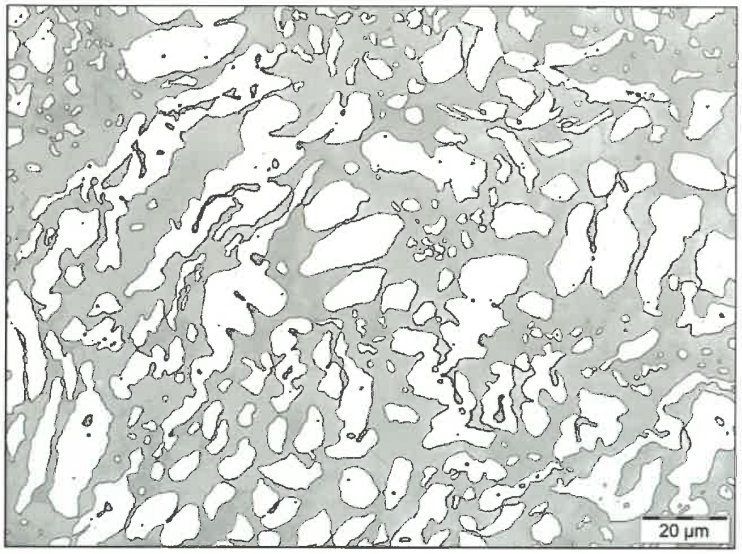
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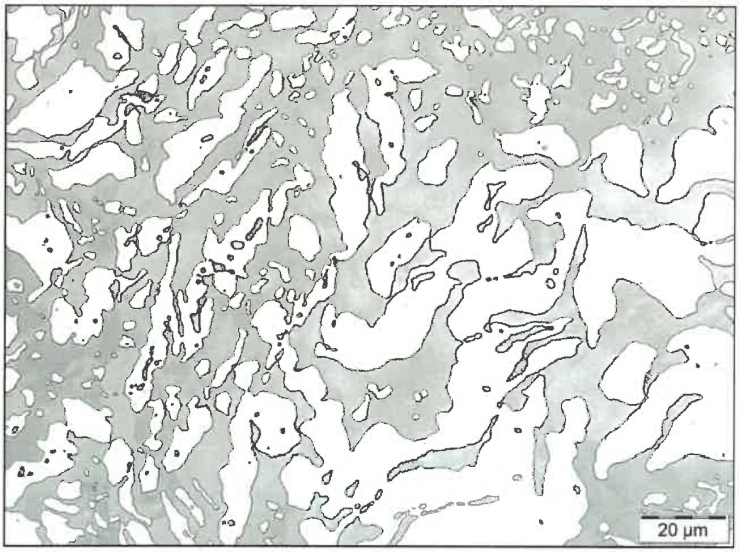
Gefügeaufnahmen zum Zertificat Nr. / Microstructure to certificate No.: **534228**

Besteller/Purchaser:	**BGH Edelstahl Freital GmbH**
Bestell-nr./Order-No.:	**274466001**
Werkstoff/Quality:	**UNS S32760**
Chargen-nr./Cast-No.:	**409456**
Erzeugnisform/Product:	**Stab, rund, geschält / round bars,peeled**
Abmessung/Dimension:	**22,22 RD**
Komm.-nr./Work-No.:	**39346002**

Proben-nr./Test-No.: **023IV1**



500:1 near surface



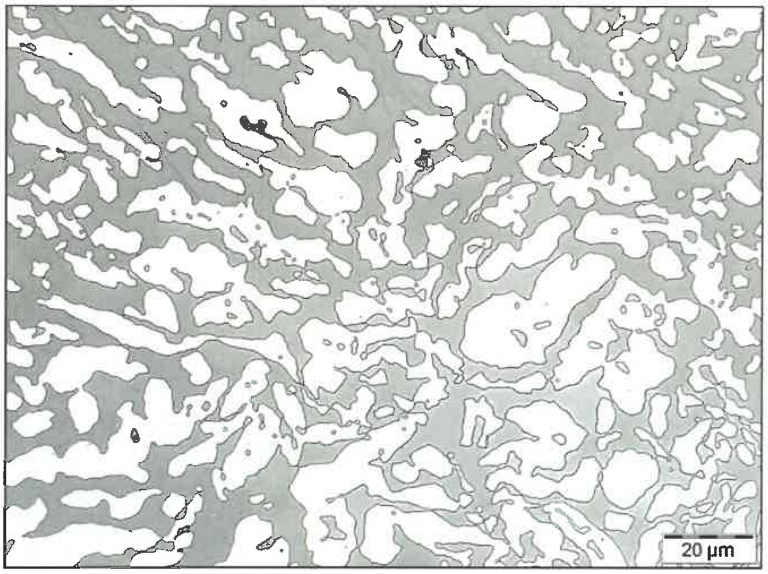
500:1 mid radius

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Gefügeaufnahmen zum Zertificat Nr. / Microstructure to certificate No.: **534228**

Besteller/Purchaser:	**BGH Edelstahl Freital GmbH**
Bestell-nr./Order-No.:	**274466001**
Werkstoff/Quality:	**UNS S32760**
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Erzeugnisform/Product:	**Stab, rund, geschält / round bars,peeled**
Abmessung/Dimension:	**22,22 RD**
Komm.-nr./Work-No.:	**39346002**

Proben-nr./Test-No.: **023IV1**



500:1 mid thickness

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Wärmebehandlungsbescheinigung
Heat treatment certificate
Attestation de traitement thermique

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BGH Edelstahl Freital GmbH

Kunden-Bestell-Nr. Customer order no. Cde. no. du client	BGH-Auftrags-Nr. BGH works no. BGH référence	Zeugnis-Nr. Certificate no. No. de certificat
274466001	**39346002**	**534228**

Wärmebehandlungszustand: Condition of heat treatment: État de traitement thermique:	**lösungsgeglüht solution annealed recuit de mise en solution**

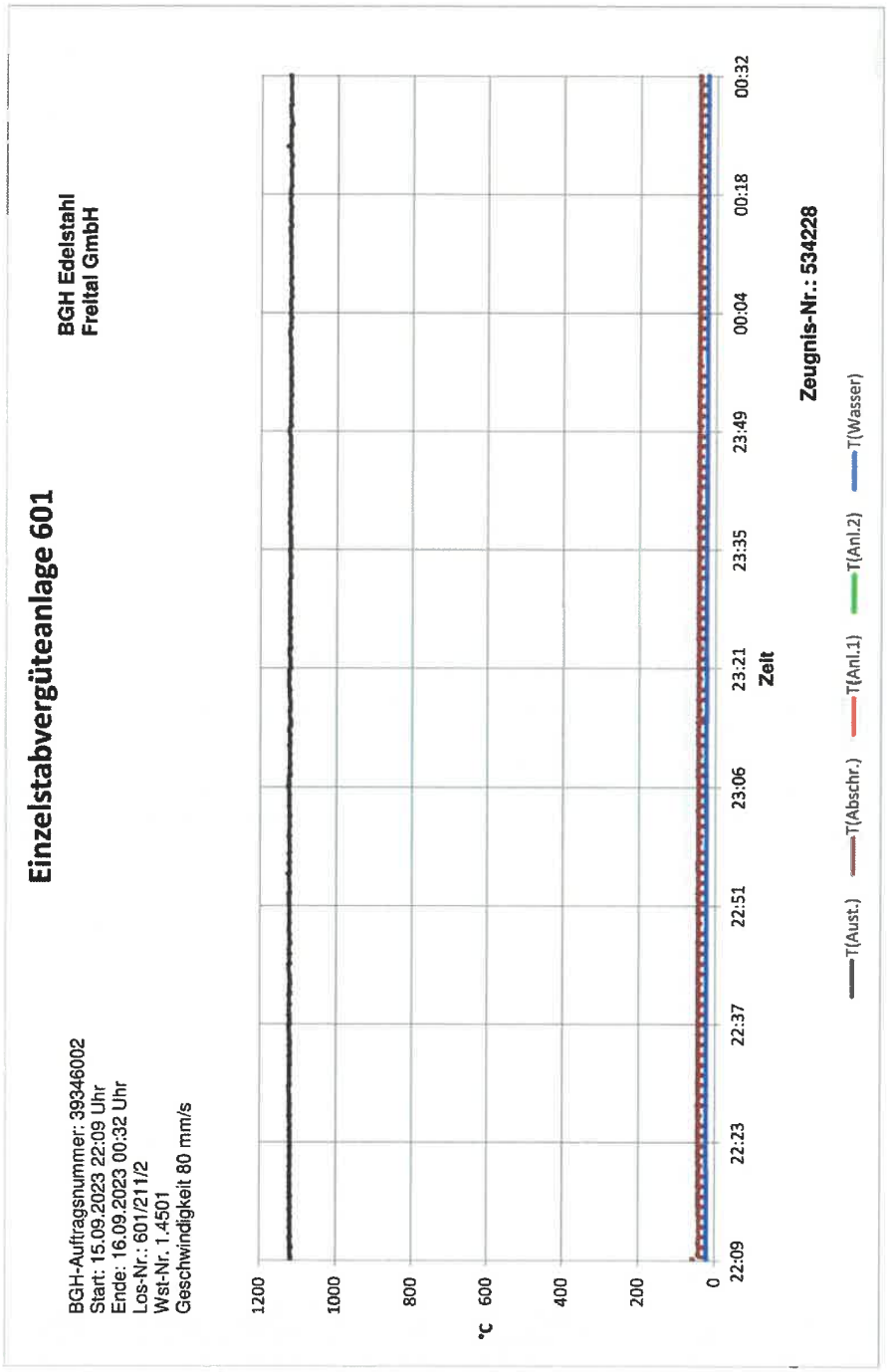
Heat treated at Induction line

Datum: Date: Date:	**16.09.2023**
Ofen-Nr.: Furnace no.: No. du four:	**601**
Aufheizzeit: Heating up time: Temps de montée en température:	
Haltetemperatur: Holding temperature: Température de maintien:	**1120 °C**
Haltezeit: Holding time: Temps de maintien	**108 s**
Abkühlmedium: Quenching medium: Moyen de refroidissement:	**Wasser / water / eau**
Datum: Date: Date:	
Ofen-Nr.: Furnace no.: No. du four:	
Haltezeit: Holding time: Temps de maintien:	
Abkühlmedium: Quenching medium: Moyen de refroidissement:	
Wärmebehandlungs-Nr.: Heat treatment lot no.: No. du lot de traitement thermique:	**023IV**

Diagramm: Diagram: Diagramme: X	Datum: Date: 09.10.2023 Date:	Abnahmebeauftragter Inspector representative Inspecteur de réception **HIEMANN, E.** BGH Q413

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Page

Ultraschallprüfung DIN EN 10204-01/05 3.1
Ultrasonic testing

BGH

BGH Edelstahl Freital GmbH

Kunden-Bestell-Nr. **274466001**
Customer order no.
Cde. no. du client

BGH-Auftrags-Nr **393460-02**
BGH works no.
BGH référence

Zeugnis-Nr. **534228**
Certificate no.
No. de certificat

Erzeugnisform : Stab, rund, geschält
Product : round bars,peeled

Werkstoff/Quality : UNS S32760 Schmelze: 408456

Abmessung/Dimension: 22,22 RD

Anzahl/Quantity : 3 Bd Gewicht /Weight : 2068 kg

Wärmebehandlungszustand : lösungsgeglüht
Condition of heat treat : solution annealed

Prüfrichtlinie
Specification

A388/A 388 M (latest Revision)
(KSR/FBH max. 1,5 mm)
DIN EN 10308 03/02
Tab.1-Typla(vollst.)Tab.3-Qual.-kl.3

Bearbeitungszustand Machining condition	: geschält peeled
Prüfgerät Test equipment	: GE ROWA B4
Prüfkopf Probe	: 4 Arrays á 90° - Radius: 35 mm 20 Elemente - 10 MHz
Kopplungsmittel Coupling medium	: Wasser water
Prüfumfang Extent of examination	: vollständig completely
Einschallrichtung Direction of incidence	: senkrecht und in Winkeleinschallung 40° perpendicular and angle beam 40°
Registriergrenze Registration level	: Prüfung und Justierung erfolgten gemäß obiger Spezifikation. Test and adjustment according to above mentioned specification.
Befund Result	: keine registrierpflichtigen Anzeigen no reportable indications
Prüfdatum Examination date	: 02.10.2023

Freital,den Place and date Lieu et date 09.10.23	Prüfer Testing operator Opérateur Philipp, F. Stufe 2 ISO 9712	Abnahmebeauftragter Inspector representative Inspecteur de réception Müller, G. BGH Q432	Überwacher Supervisor Surveilleur

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BGH Edelstahl Freital GmbH - Am Stahlwerk 1 - 01705 Freital

C.S.C. SpA
Zeugnisadresse
Via Lago Maggiore 7
36015 Schio (VI)
Italy

Ansprechpartner	Contact	
Telefon	Phone	
E-Mail	E-Mail	
Datum	Date	24.10.2023

Bescheinigung zur Materialidentität
Certificate Of Material Identity

Bescheinigungs-Nr.
certificate number

FA0300149014 00 / V0

Bestell-Nr. / order no.	Auftragsnummer / purchase order no.	Prüfbescheinigung (Anlage) / test certificate no. (attachment)
A20231087SSS R. 1	AB03545391 / 4	534228

Werkstoff / material	Die Lieferung entspricht den vereinbarten Lieferbedingungen. / The delivery corresponds to the agreed terms of delivery.
X2CrNiMoCuWN25-7-4, UNS S32760, X 2 CrNiMoCuWN 25-7-4, UNS S32760	

Erzeugnis	product
Stab rund, gewalzt, geschält	Round bars, rolled, peeled

Anforderungen / requirements
DIN EN 10088 -3 12/14, ANSI/NACE MR 0175/ISO15156-3 2015, DIN EN 10272 10/16, NACE MR 0103 2015, ASTM A 276 /A276M -17, NORSOK M 630 :2020, NORSOK MDS - D 57 Rev.6 :2020, ASTM A 479 /A479M -21, ASME BPVC II. A SA- 276 -2021, ASME BPVC II. A SA- 479 /SA-479M -2021

Schmelze / heat	Anzahl / quantity	Gewicht (kg) / weight (kg)	Abmessung / dimension
408456	0	148	22,22 RD (3160 - 4350mm)

Wir bestätigen, dass die gelieferten Teile aus der oben genannten Nummer der Prüfbescheinigung entnommen wurden.	We herewith confirm that the delivered parts were part of the certification stated above.

Ausgewiesen durch	DIN EN 10204-01/05 3.1	Certified by	DIN EN 10204-01/05 3.1

Stempelung / stamping	Wert / value

Betriebsbeauftragter / authorized representative

Schwaar

BGH Q32

Die Bescheinigung wurde maschinell erstellt und ist auch ohne Unterschrift gültig. / The certificate was created by a data system and is valid without signature.

Seite / Page 1/1

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COGNE ACCIAI SPECIALI S.p.a.
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TEL. +39.0165.3021 - FAX +39.0165.302296
CAP. SOC. 140.000.000 EUR INT. VERS.
C.F. 02187360967
VAT: IT00571320076 - R.E.A. n. AO-50474

Company with Management Systems certified according to ISO 9001, IATF 16949, EN 9100 and ISO 14001.

INSPECTION CERTIFICATE 3.1 (EN 10204:2004)
DOCUMENT NUMBER 2021003757
PAGE 1/3

CUSTOMER:	C.S.C. SPA		
CUSTOMER'S ORDER:	A2020525SSS		
MANUFACTURER'S WORKS:	AOSTA, VIA PARAVERA 16 - ITALY		
PRODUCER OF THE DOC:	QUALITY DEPARTMENT		
MANUFACTURER'S WORKS ORDER NO: 25268649 /10	MARK OF THE MANUFACTURER: **COGNE**		
DISPATCH NOTE:	81385676 /10 WEIGHT: 1896 KG		
THE CERTIFIED PRODUCTS ARE COMPLYING TO THE PURCHASE ORDER, EXCEPT FOR EXEMPTIONS AGREED WITH THE CUSTOMER, IF ANY.			
INTERNAL SPEC:	NORSOKREV5		
PRODUCT:	61404 PEL PEELED ROUND BARS TOLERANCE: ISOK11		
SURFACE FINISH:	2B Cold Finished		
PRODUCT DELIVERY CONDITION:	RS SOLUTION ANNEALED		
PRODUCT DIMENSIONS (mm):	45,000	LENGTH (mm)	06000 /06200
GRADE:	F55 UNSS32760 1.4501	INTERNAL GRADE:	329S
IDENTIFICATION HEAT NO:	070136	IDENTIFICATION LOT NO:	365710
MARKING OF THE PRODUCT:	1.4501	TEST PIECE N:	571

REFERENCE NORMS:EN 10088-3, EN 10272, ASTM A276/ASME SA276, ASTM A479/ASME SA479, ISO15156-3/NACE MR0175, NACE MR0103, API 6A-PSL3, NORSOK M-650 REV.4/M-630, MDS D57 REV.5.
REFERENCE NORMS ONLY FOR CHEMICAL COMPOSITION:
EN 10222-5, ASTM A182/ASME SA182, ASTM A484.
HEAT TREATMENT: SOLUBILIZATION 1100 ° C 1.5 min / mm COOLING WATER TEMPERATURE BELOW 260 °C (FURNACE THERMOCOUPLES)
ASTM G48 A/ASTM A923 C TESTING CONDITIONS: Sample surface 120 GRIT, Solution 100g FeCl3.6H2O+900ml H20, T 50°C, 24h, no pitting at 20X.
STEELMAKING EAF + AOD + CONTINUOUS CASTING
HOT ROLLED
REDUCTION RATIO 30,3

CHEMICAL LADLE ANALYSIS ACCORDING TO ASTM A751 - EN ISO 14284
Control lot No. - Weight :020000851112 - 86.811 KG

ELEMENTS	C	Si	Mn	P	S	N	Cr	Mo	Ni	Cu
OBTAINED	0,020	0,38	0,62	0,020	0,0005	0,24	25,02	3,69	6,91	0,57

ELEMENTS	W	CV_F8
OBTAINED	0,56	41

CV_F8 = CR+(3.3*MO)+(16*N2)

HARDNESS TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000859523 - 2.704 KG
SPECIFICATION ENISO6506 HARDNESS TEST HB TESTING METHOD: 10/3000
OBTAINED 240

IMPACT TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000859523 - 2.704 KG
SPECIFICATION EN ISO 148-1-KV2 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 20
MEASUREMENT UNIT J

OBTAINED	433	435	427

DATE 29.01.2021

MORABITO ROSA CF(QUALITY CERTIFICATOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne

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C.F. 02187360967
VAT: IT00571320076 - R.E.A. n. AO-50474

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TENSILE TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000859523 - 2.704 KG
SPECIFICATION ASTMA370-E8-0.5"SPEC DIRECTION OF THE TEST PIECE: L

MEASUREMENT UNIT	Rm MPA	Rp02% MPA	Z %	Al2 %
OBTAINED	804	554	83,0	4,0 D 42,6

CORROSION
Control lot No. - Weight :020000859523 - 2.704 KG
SPECIFICATION ASTM G48 A
OBTAINED 0,1262

FERRITE %
Control lot No. - Weight :020000859523 - 2.704 KG
SPECIFICATION ASTME562 --
OBTAINED 47

MICROSTRUCTURE
Control lot No. - Weight :020000859523 - 2.704 KG
SPECIFICATION -- --
OBTAINED SATISFACTORY -

LATERAL EXPANSION
Control lot No. - Weight :020000859523 - 2.704 KG
SPECIFICATION ASTMA370 --
OBTAINED 2,6 2,6 2,6

SHEAR %
Control lot No. - Weight :020000859523 - 2.704 KG
SPECIFICATION ASTMA370 --
OBTAINED 100 100 100

HARDNESS TEST
Control lot No. - Weight :020000859523 - 2.704 KG
SPECIFICATION ASTMA370-E18 HARDNESS TEST HRC TESTING METHOD:
OBTAINED 23,1

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INSPECTION CERTIFICATE 3.1 (EN 10204:2004)
DOCUMENT NUMBER 2021003757

IMPACT TEST
Control lot No. - Weight :020000859523 - 2.704 KG
SPECIFICATION ASTM A370-E23 TYPE A DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 50-
MEASUREMENT UNIT J
OBTAINED 345 359 318

TENSILE TEST
Control lot No. - Weight :020000859523 - 2.704 KG
SPECIFICATION EN-ISO6892-1 DIRECTION OF THE TEST PIECE: L

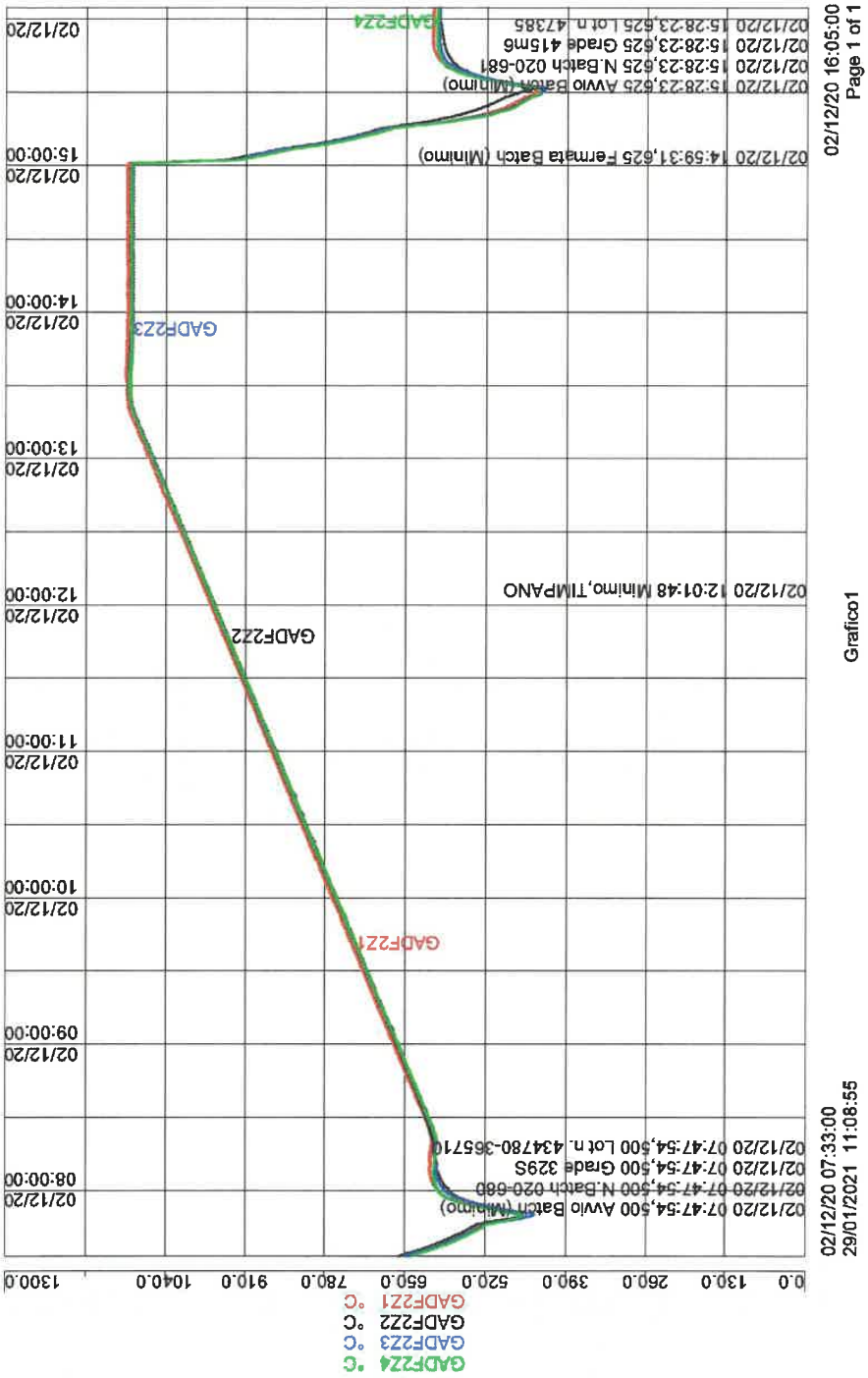
	Rm_C	Rp02_C	A	Z_C
MEASUREMENT UNIT	MPA	MPA	%	%
OBTAINED	801	553	5.0 D 40,1	81,0

STEELMAKING EAF + AOD + CONTINUOUS CASTING
HOT ROLLED
METALLOGRAPHIC INSPECTION ACCORDING TO ASTM A923 METHOD A: SATISFACTORY.
IMPACT TEST VALUES AT -46°C ARE NOT LESS THAN THOSE AT -50°C HERE STATED.
QTC ON PROLONGATION OF BARS TESTS AT MID RADIUS (CENTER POS. FOR SIZES <2 INCHES).
ASTM A484 DOES NOT APPLY FOR SIZE AND LENGTH TOLERANCES.
MARKING: PRODUCER LOGO, MATERIAL NO, HEAT NO, LOT NR.
ALL THE NORMS MENTIONED ARE INTENDED IN THEIR LAST REVISION AT THE DATE OF ISSUE OF THIS DOCUMENT.
COUNTRY OF ORIGIN: ITALY, THE MATERIAL COMPLIES WITH FAR DFARS
252.225-7009 ALT 1.
THE PRODUCT SATISFIES CE DIRECTIVES EU: 2015/863 (ROHS3) - 2011/65 (ROHS2) - 2000/53 - 2002/95(RoHS) - 2003/11 - 2005/618 AND PED 2014/68.
THE MATERIAL IS FREE OF ANY MERCURY, MERCURY COMPOUNDS AND OR RADIUM CONTAMINATION AT TIME OF SHIPMENT AND WAS PRODUCED WITHOUT USING OZONE DEPLETING SUBSTANCES OF CLASS I AND II.
VISUAL SURFACE INSPECTION AND EDDY CURRENT WITH ROTATING HEAD ACCORDING TO EN 10277-1 Class 4 : SATISFACTORY . DIMENSIONAL TEST ACCORDING TO EN 10278 : SATISFACTORY . ULTRASONIC TEST IN ACCORDING TO EN 10308 , Class 3 : SATISFACTORY . ANTIMIX SPECTROMETER CONTROL WITH PORTABLE PRODUCT : SATISFACTORY . NOT BEEN MADE BY ANY REPAIR MATERIAL WELDING
CORROSION TEST ACCORDING TO ASTM A262 Method E EN ISO 3651-2: SATISFACTORY. NO CRACKS AT 20X MAGNIFICATION

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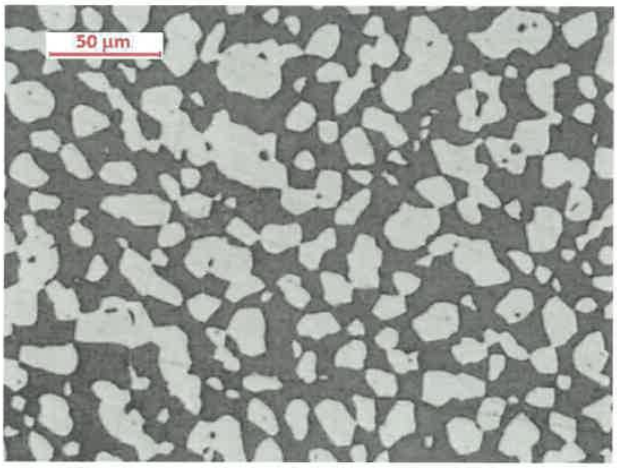
COGNE ACCIAI SPECIALI S.p.a.
Via Paravera, 16
I-11100 AOSTA

MICROPHOTO
МИКРОСЪЁМКА

All.N 1

MARCA *NUANCES* *WERKESTOFF* *GRADE* *МАРКА*	329S	*LOTTO DI CONTROLLO* *LOT DE CONTRÔLE* *LAUFKARTE* *CONTROL LOT* *ПАРТИЯ КОНТРОЛЯ*	020000854164
COLATA *COULEE* *SCHMELZE* *HEAT* *ПЛАВКА*	070136	*REAGENTE* *RÉACTIF* *REAGENS* *ETCHANT* *РЕАГЕНТ*	20 % NaOH electrolyte
TIPO DI APPARECCHIO *TIPE D'APPAREIL* *PRUEFGERAT TYP* *INSTRUMENT TYPE* *ТИП АППАРАТА*		**MICROSCOPE – LEICA** **MEF4M МИКРОСКОП**	
INGRANDIMENTO *AGRANDISSEMENT* *VERGRÖSSERUNG* *ENLARGEMENT* *УВЕЛИЧЕНИЕ*		**400 X**	
DIREZIONE D'ESAME *DIRECTION D'EXAMEN* *PRUEFRICHTUNG* SCANNING DIRECTION НАПРАВЛЕНИЕ ПРИ ИССЛЕДОВАНИИ	☐ **LONGITUDINALE - LONGITUDINAL - ПРОДОЛЬНОЕ** ☒ **TRASVERSALE – TRANSVERSAL – KREUZEND-ПОПЕРЕЧНОЕ**		

PHOTO (ELECTRONIC IMAGE) – ФОТОСНИМКИ (ЭЛЕКТРОННОЕ ИЗОБРАЖЕНИЕ)



NOTE:
ПРИМЕЧАНИЯ:
"Free from Intermetallic Phases"

FIRMA / SIGNATURE / ПОДПИСЬ	UNTERSCHRIFT / SIGNATURE	DATA / DATE / ДАТА	DATUM / DATE
Badiluzzo / Frison		14/12/20	

Mod.Micro Rev.4

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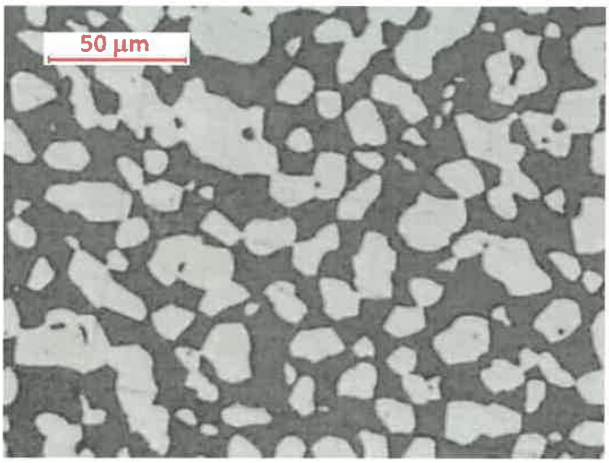
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Via Paravera, 16
I-11100 AOSTA

MICROPHOTO
МИКРОСЪЁМКА

All.N 2

MARCA *NUANCES* *WERKESTOFF* *GRADE* *МАРКА*	329S	*LOTTO DI CONTROLLO* *LOT DE CONTRÔLE* *LAUFKARTE* *CONTROL LOT* *ПАРТИЯ КОНТРОЛЯ*	020000854164
COLATA *COULEE* *SCHMELZE* *HEAT* *ПЛАВКА*	070136	*REAGENTE* *RÉACTIF* *REAGENS* *ETCHANT* *РЕАГЕНТ*	20 % NaOH electrolyte
TIPO DI APPARECCHIO *TIPE D'APPAREIL* *PRUEFGERAT TYP* *INSTRUMENT TYPE* *ТИП АППАРАТА*		**MICROSCOPE – LEICA** **MEF4M МИКРОСКОП**	
INGRANDIMENTO *AGRANDISSEMENT* *VERGRÖSSERUNG* *ENLARGEMENT* *УВЕЛИЧЕНИЕ*		**500 X**	
DIREZIONE D'ESAME *DIRECTION D'EXAMEN* *PRUEFRICHTUNG* SCANNING DIRECTION НАПРАВЛЕНИЕ ПРИ ИССЛЕДОВАНИИ	☐ **LONGITUDINALE - LONGITUDINAL - ПРОДОЛЬНОЕ** ☒ **TRASVERSALE – TRANSVERSAL – KREUZEND-ПОПЕРЕЧНОЕ**		

PHOTO (ELECTRONIC IMAGE) – ФОТОСНИМКИ (ЭЛЕКТРОННОЕ ИЗОБРАЖЕНИЕ)



NOTE:
ПРИМЕЧАНИЯ:
"Free from Intermetallic Phases"

FIRMA / UNTERSCHRIFT / SIGNATURE / ПОДПИСЬ	DATA / DATUM / DATE / ДАТА
Badiluzzo / Frison	14/12/20

Mod.Micro Rev.4

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COGNE ACCIAI SPECIALI S.P.A.

CERTIFICATO DI COLLAUDO ULTRASUONI
CERTIFICAT DE CONTROLE PAR ULTRASONS
ULTRASCHALL PRUEFZEUGNIS
REPORT OF ULTRASONIC INSPECTION
ОТЧЕТ ОБ УЛЬТРАЗВУКОВОМ КОНТРОЛЕ

N. US.
122/2021

CLIENTE *CLIENTSGG* *BESTELLER* *CUSTOMER* ЗАКАЗЧИК		*CONFERMA* *CONFIRMATION* *AUFTRAGSBESTRAKTIGUNG* *CONFIRMATION* ПОДТВЕРЖД. ЗАКАЗА	
MARCA *NUANCES* *WERKESTOFF* *GRADE* МАРКА	329S W.No 1.4501	*ORDINE* *COMMANDE* *AUFTRAG* *ORDER* ЗАКАЗ	
SPECIFICA *SPECIFICATION* *PRUKEVORSCHRIFT* *SPECIFICATION* ТЕХ. ТРЕБОВАНИЯ	EN10308 prospetto3 cl3	*COLATA* *COULEE* *SCHMELZE* *HEAT* ПЛАВКА	70136
		SCHEDA *LOT* *LAUFKARTE* *LOT* ПАРТИЯ	365710
PRODOTTO *PRODUIT* *ERZEUGNISFORM* *PRODUCT* ИЗДЕЛИЕ	ROUND BARS 45 mm	*STATO DI LAVORAZIONE* *STADE DU PRODUIT* *LIEFERZUSTAND* *WORKING STEP* ОБРАБОТКА	PEELED
TIPO DI APPARECCHIO *TIPE D'APPAREILPARUS* *PRUEFGERAT TYP* *INSTRUMENT TYPE* ТИП АППАРАТА	USM36 18107589	*COSTRUTTORE* *CONSTRUCTEUR* *BAUART* *MAKE* ИЗГОТОВИТЕЛЬ	KRAUTKRAMER
TIPO DI SONDA *TIPE DE PALPEUR* *PRUFKOPT* *PROBETYPE* ТИП ЗОНДА	MSEB4S-E	*FREQUENZA* *FREQUENCE* *FREQUENZ* *FREQUENCY* ЧАСТОТА	4 MHz S/N 67259-50223

DIREZIONE D'ESAME *DIRECTION D'EXAMEN* *PRUEFRICHTUNG* *SCANNING DIRECTION* НАПРАВЛЕНИЕ ПРИ

- [X] *RADIALE - RADIAL*
- [ ] *ASSIALE - AXIAL*
- [ ] *SONDE ANGOLATE - ANGLE BEAMS*

- [ ] *MATRICOLA BLOCCO CAMPIONE* *DENTIFICATION BLOC DE REFERENCE MUSTER BLOCK* *MUSTER BLOCK* *TEST BLOCK NR* № ОБРАЗЦА ДЛЯ ИСПЫТАНИЯ

- [ ] *AVG SCALE* *ECRANS ABAQUES AVG* *AVG SKALEN* *AVG SCALE* ШКАЛА *AVG*
- [X] *AVG DIAGRAMMI* *DIAGRAMMES AVG* *AVG DIAGRAMM* *AVG DIAGRAM* ДИАГРАММЫ *AVG*
- [ ] V1
- [ ] V2

RISULTATODELL'ESAME RESULTAT DE L' ESSAI PRUEFERGERBNISSE RESULT OF THE TEST РЕЗУЛЬТАТ

EXAM DATA : 27/01/2021
INSPECTED N. BARS 25

THE MATERIAL IS IN ACCORDANCE TO THE FOLLOWING SPECIFICATIONS:

EN10308 prospetto3 cl3

L'ISPETTORE CND ZUSTANDER CND L'INSPECTEUR CND CND INSPECTOR ИНСПЕКТОР НРК	**III LIV.CND** III УРОВЕНЬ НРК		**DATA** DATUM DATE DATE ДАТА
NADALIN SIMONE Liv.II - ISO 9712 N° Cert.32040/PND/C	BAISOTTI MARCO Liv.III - ISO 9712 N° Cert.34194/PND/C		29/01/2021

(Mod. Certus Rev. 6)

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ROSETTI MARINO ITEM 80

COD. VBC0NN24460200

TAG: BLPH-MV-464, BLPH-MV-465

INDRA ITEM 80

COD. 00.VSF.2692(T)

indra VALVES - ITALY	***Certificazione dei materiali*** ***EN 10204 3.1 come da allegati*** ***Material certification*** ***EN 10204 3.1 as per attachments***	**MD-02-04-IT-UK / VSF** **Rev. 16** **Data: 08-Nov-2018** **CM/IT/UK**

Nr. *No.* **24-2000** **Data / *Date :*** **16-Oct-2024**

Cliente / *Customer* **ROSETTI MARINO SPA**

Vs. ordine Nr. / *Your order Nr.* **1724000798 REV.2** **Data / *Date :*** **26-Jun-2024**

Ns. commessa Nr. / *Our job Nr.* **24 01216** **Data / *Date :*** **3-Jul-2024**

Ns. D.D.T. Nr. / *Our advise note Nr.* **Data / *Date :***

Ordine di produzione / Production order number : 24 01216/80 - 59770

Lotto / Material batch number : 59770

Pos. Cliente *Customer Item*	*Pos. Indra* *Indra Item*	*Codice / Code* *Ns./ Our*	 *Vs. / Your*	*Q.tà / Q.ty*	*Nr. di serie* *Serial Number*	*Descrizione /Description*
80	80	00.VSF.2692(T)	VBC0NN24460200	2	105972,105973	INDRA BALL VALVE SB-598-50-J150RF3-J-F55F-F55-N-PG-ESX100-L1-TG-TGW-IT2-PMI2-PD2-BI-CR-TA-FS-SPC1-SPC2

Elenco / List

Componente / *Component*	Colata / Heat	Materiale *Material*	Numero del certificato Certificate number
Corpo Valvola / Valve Body	59770	F55 NACE	742630
Closure J150RF3	59770	F55 NACE	742630
Tirante / Stud bolt	283509	ASTM A193 B7M + HDG	2402706
Dado / Nut	79325	ASTM A194 Gr.2HM + HDG	2402732
Stelo antiespulsione sfera / Ball stem	278285	F55 NACE	2023013924 - N.US.523/23
Sfera / Ball	370169	F55 NACE	2014054694 - N.US.1306/14

NOTE / **REMARKS :** TAG: BLPH-MV-464, BLPH-MV-465

PREPARATO DA: **ELEONORA RANZANI** PREPARED BY: **DOCUMENTION MANAGER**

APPROVATO DA: **LUCIA NOSOTTI** APPROVED BY: **QUALITY ASSURANCE MANAGER**

20013 Magenta (MI) Italy - Via Novara, 10/B-C
Tel. +39 02 97298663 r.a. - Fax +39 02 97291855
E-mail: indra@indra.it - http://www.indra.it

ACERALAVA
TUBACEX GROUP

INSPECTION CERTIFICATE
EN 10204:2004 / 3.1

Number: 742630 Page: 1 / 4	Rev: 00
Created on: Date: 23.03.2023	Modified on:

ACERÍA DE ALAVA S.A.U.

Registro Mercantil de Álava Tomo 414,Folio 131, Hoja VI-325. NIF A-01.010.958
Poligono Industrial Saracho
01470 Amurrio(Álava)
Spain
TL: +34 946719300
FAX: +34 946725062
E-MAIL: qualityaceralava@tubacex.es

CUSTOMER DESCRIPTION

CLIENT SOLD TO	CLIENT SHIP TO
SPECIAL STEEL STOCK-C.S.C. S.p.A. VIA LAGO MAGGIORE 7 36015 SCHIO VI ITALY	SPECIAL STEEL STOCK-C.S.C. S.p.A. VIA LAGO MAGGIORE 7 36015 SCHIO VI ITALY

CLIENT ORDER: A20221079SSS
SALES ORDER: 382522

STAINLESS STEEL ROUND BAR
RANDOM LENGTHS: 4.000/7.000 MM ,
GRADE: F55,S32760,1.4501
STANDARD: ASTM A479/A479M-21
ASTM A182/A182M-22
ASTM A276/A276M-17
ASME SECT.II PART.A SA182/SA182M-2021 ED.
ASME SECT.II PART.A SA479/SA479M-2021 ED.
EN 10088-3:2014
EN 10272:2016-10
ANSI/NACE MR0103/ISO 17945:2015
AD 2000 W0/05.2016
HEAT TREAT EQUIPMENT QUALIFICATION PER API 6D (24TH EDITION) ANNEX F
ASTM A923-14
MANUFACTURER APPROVED TO NORSOK M-650 EDITION 4
NORSOK M630:2020 MDS D57 REV.6
QTR NO.2
Impact test in conformance with ASTM A370
US acc. to EN 10228-4 (Up to diameter 400 mm.)
ANSI/NACE MR0175/ISO15156-3:2015
TOLERANCES: ASTM A182/A182M-21
DIMENSIONS: 165 MM RD
PRODUCTION TYPE: ROLLING

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Sales Item	Client Item	Delivery No	Lot No.	Heat No	Pieces	Weight	Un Lgth
60		8120065139	200284035	59770	2	2.316 KG	4000-7000 MM

LOT No	BAR No
200284035	271, 272

AENOR ER Empresa Registrada ER-0158/1996 · IQNet · AENOR Gestión Ambiental CGM-0033

We hereby certify that the material herein described has been manufactured, sampled, tested, and inspected in accordance with above standards and specifications and satisfies orderis requirements. This certificate is issued by a computerized system and it is valid without original signature. In case the owner of the certificate would release as a copy of it, he must attest its conformity to the issued, assuming the responsibility for any unlawful or TUBACEX, not allowed use. Any forgery or falsification of this certificate shall legally prosecuted.

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ACERALAVA
Quality & Environmental Director
Aitor González Arco

ACERALAVA
TUBACEX GROUP

INSPECTION CERTIFICATE
EN 10204:2004 / 3.1

Number: 742630 Page: 2 / 4	Rev: 00
Created on: Date: 23.03.2023	Modified on:

RAW MATERIAL

Heat Nr:	Supplier	Method
59770	ACERALAVA (SPAIN)	Electric furnace+AOD

CHEMICAL COMPOSITION (%) *L: Ladle C:Products

*	Heat	Seq	C	Mn	Si	P	S	Ni	Cr	Mo	Cu	W
L	59770	1	0,011	0,70	0,430	0,024	0,0004	6,89	25,65	3,63	0,66	0,580

*	Heat	Seq	N	Pren
L	59770	1	0,2615	41,8130

SURFACE FINISH
ROUND MACHINED BARS

INGOT REDUCTION

Item	Reduction
60	9,77

HEAT TREATMENT
SOLUTION ANNEALED AT 1060 °C , 8 h , WATER

TENSILE TEST

Lot No.	Sample	T	Rp0.2	Rm	A2"	A4	A5	Z	Type	Sam Cond
		℃	*MPa*	*MPa*	*%*	*%*	*%*	*%*		
200284035	1	20	597	852	39	39	38	57	T	S

HARDNESS TEST

Lot No.	Sample	HBW1	HBW2	HRC1	HRC2	Sam Cond
200284035	1	247	237			S
	1			23,9	21,5	S

IMPACT TEST

Lot No.	Sample	T	Wspec	Ecv 1	Ecv 2	Ecv 3	Ecv AVG	Type	Le1	Le2	Le3	Shear 1	Shear 2	Shear 3
		℃	*mm*	*J*	*J*	*J*	*J*		*mm*	*mm*	*mm*	*%*	*%*	*%*
200284035	1	-50	10,0	114	88	87	96	L	0,80	0,60	0,70	40	30	40

Lot No.	Sample	Sam Cond
200284035	1	S

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AENOR ER Empresa Registrada ER-0158/1994 · IQNet · AENOR GA Gestión Ambiental GCM-0033

We hereby certify that the material herein described has been manufactured, sampled, tested, and inspected in accordance with above standards and specifications and satisfies orderis requirements. This certificate is issued by a computerized system and it is valid without original signature. In case the owner of the certificate would release as a copy of it, he must attest its conformity to the issued, assuming the responsibility for any unlawful or TUBACEX, not allowed use. Any forgery or falsification of this certificate shall legally prosecuted.

ACERIA DE ALAVA, S.A.U.
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Corrosion test ASTM G48"A" at T/2 location.

Lot No.	Sample	T	Pits-20x	W.loss	time
		℃		*g/m2*	*Horas*
200284035	1	50	N	0,3820	24,0

Corrosion test ASTM G48 practice A

Lot No.	Sample	T	Pits-20x	W.loss	time
		℃		*g/m2*	*Horas*
200284035	1	50	N	0,3475	24,0

Corrosion test ASTM G48 A near to the surface in transversal.

Lot No.	Sample	T	Pits-20x	W.loss	time
		℃		*g/m2*	*Horas*
200284035	1	50	N	0,4220	24,0

FERRITE ACCORDING TO ASTM E 562

Lot No.	Sample	%Fer	Dev.Ferr	MAGN
		%	%	
200284035	1	51,60	2,84	200

Ferrite content ASTM E562 near to the surface

Lot No.	Sample	%Fer	Dev.Ferr	MAGN
		%	%	
200284035	1	53,70	1,89	200

FERRITE ACCORDING TO ASTM E562 AT T/2 LOCATION

Lot No.	Sample	%Fer	Dev.Ferr	MAGN
		%	%	
200284035	1	51,50	7,26	200

NON METALIC INCLUSIONS STANDARD DIN 50602

Lot No.	Sample	K4
200284035	1	7

METALURGICAL TESTS

ETCH STRUCTURE ACC. ASTM A923 MET.A: UNAFFECTED STRUCTURE. MATERIAL FREE FROM INTERMETALLIC PHASES AND PRECIPITATES. UNIFORM STRUCTURE ACROSS FULL WALL THICKNESS

INTERGRANULAR CORROSION TEST ACC.TO DIN EN ISO 3651-2 MET.A: SATISFACTORY

NON-DESTRUCTIVE TESTS

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ULTRASONIC TEST ACCORDING TO EN 10308/EN 10228-4 QL3: SATISFACTORY
STEEL GRADE ASSESMENT BY LASER ANALIZER: WITHOUT OBJECTIONS

Micrographic exam. near to the surface.

REMARKS
100% DIMENSIONAL CHECKING: SATISFACTORY
100% VISUAL INSPECTION: SATISFACTORY

THIS MATERIAL AND THE ELEMENTS USED ALONG MANUFACTURING ARE MERCURY FREE
NO WELDING WAS PERFORMED ON THE MATERIAL
RADIATION CONTAMINATION TEST: OK
MATERIAL MANUFACTURER APPROVED BY TÜV SÜD Industrie Service GmbH (NOTIFIED BODY 036)TO ISSUE CERTIFICATES OF SPECIFIC PRODUCT CONTROL IN ACCORDING TO PRESSURE EQUIPMENT DIRECTIVE 2014/68/EU ANNEX 1 POINT 4.3.
STAMP OF THE INSPECTION REPRESENTATIVE: AC1

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ACERALAVA
Quality & Environmental Director
Aitor Gonzalez Arco

ACERALAVA
TUBACEX GROUP

STRUCTURE EXAMINATION

MTC / Certificate: 742630

MATERIAL IDENTIFICATION / IDENTIFICACIÓN DEL MATERIAL

Lot No. / Num Lote	200284035	**Dimension** / Dimensión	RD 165 MM
Heat / Colada	59770	**Steel grade** / Grado de acero	S32760

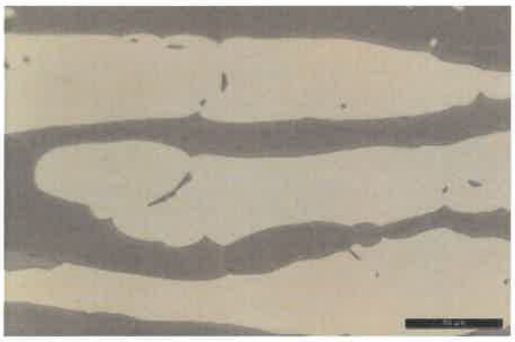
Type Of test / Tipo de Ensayo:	**MICROSTRUCTURE EVALUATION**

RESULTS / RESULTADO

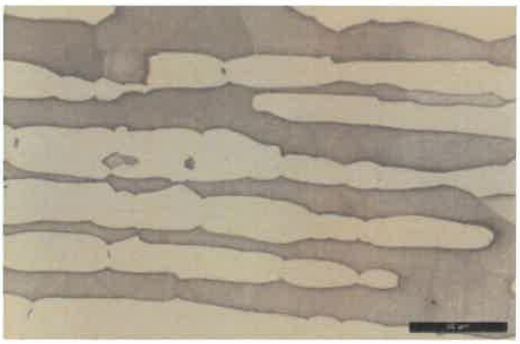
ETCH STRUCTURE ACC. ASTM A923 MET.A: UNAFFECTED STRUCTURE. MATERIAL FREE FROM INTERMETALLIC PHASES AND PRECIPITATES. UNIFORM STRUCTURE ACROSS FULL WALL THICKNESS

EXAMEN DE MICROESTRUCUTRA DE ACUERDO A ASTM A923 MET.A: ESTRUCTURA NO AFECTADA. MATERIAL LIBRE DE FASES INTERMETALICAS Y PRECIPITADOS.ESTRUCTURA UNIFORME A TRAVES DEL ESPESOR.

GRAPHICS RECORDS / REGISTROS FOTOGRÁFICOS:

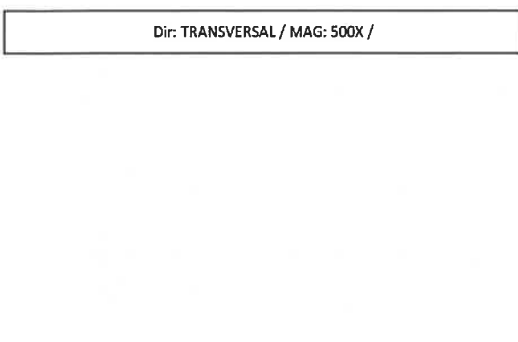


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María Cano
Responsable del Laboratorio
Laboratory Manager

ACERALAVA
TUBACEX GROUP

HEAT TREATMENT

MTC :	742630
Date :	23/03/2023

Page 1 of 1

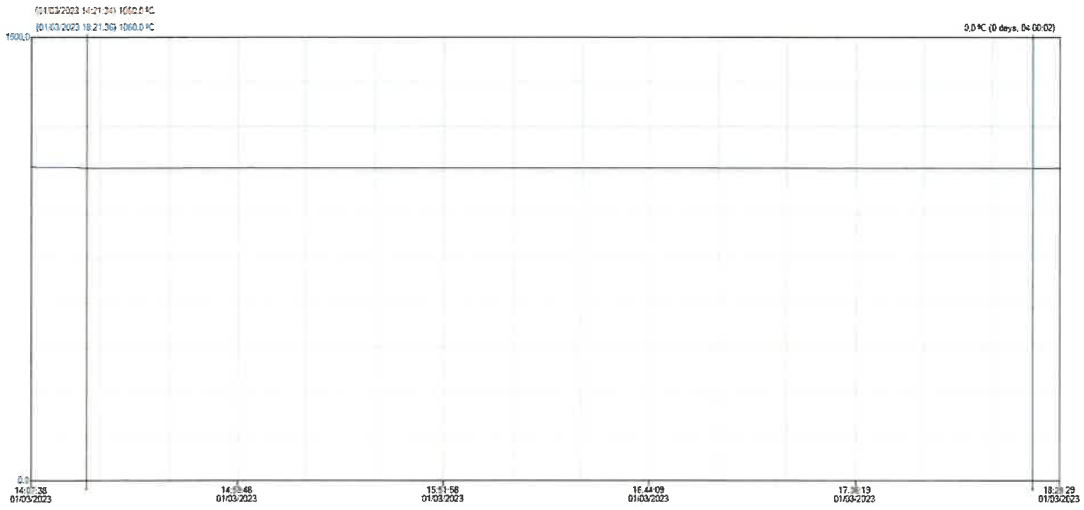
ACERIA DE ALAVA S.A.U.

Registro Mercantil de Alava, Tomo 414, Folio 131, Hoja VI-325 .N.I.F. A-01010958
Poligono Industrial Saracho
01470 Amurrio (Álava)
SPAIN

Customer: SPECIAL STEEL STOCK-C.S.C. S.p.A.
Client Order : A20221079SSS
Client Item
Sales Order : 382522
Sales Item: 60
Heat: 59770
Bar No.: 271-272
Standard : ASTM A479
Grade : S32760
Dimensions : RD 165 MM
Lot No.: 200284035

Instrument Type/ID: SOLUTION ANNEALING FURNACE (HCR-G-E type)
Last calibration date: June 2022
Expiration date: June 2023

Treatment Type: SOLUTION ANNEALED AT 1060 °C , 8 h , WATER COOLING



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TIRANTE / STUD BOLT

IPL S.r.l.
BULLONERIA - TIRANTERIA
SPECIALE E STANDARD

Via Papa Giovanni Paolo I, 306
21040 UBOLDO (VA)

Customer: INDRA SRL
C.SO XXII MARZO, 8
20135 MILANO (MI)

Date, 30-09-24 **Our Ref.** DDT 3480 / OC 1557 **of** 30-09-24 **Your Ref.** AF24 02342 10-07-24

CERTIFICATE UNI EN 10204 - 3.1 N.2402706

ITEM		QUANTITY	HEAT TREATMENT	PROTECTION	LOT nr.	HEAT nr.
TIR.7M010040NF	STUDBOLT UNI6610/DIN976B - A/SA193 B7M M 10 x 40 HDG 101.99.0187CS-PED46	10,00	quenched tempered	HOT DIP GALVANIZED ASTM A153 Cl. "C" / F2329	834265	283509*
TIR.7M012040NF	STUDBOLT UNI6610/DIN976B - A193 B7M M 12 x 40 H.D.G. → 101.99.0664CS-PED46	10,00	quenched tempered	HOT DIP GALVANIZED ASTM A153 Cl. "C" / F2329	834266	283509*
TIR.7M010035NF	STUDBOLT UNI6610/DIN976B - A/SA193 B7M M 10 x 35 HDG 101.99.0984CS-PED46	10,00	quenched tempered	HOT DIP GALVANIZED ASTM A153 Cl. "C" / F2329	834264	283509*

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If not mentioned the above test are performed at room temperature.
We certify that the fasteners were manufactured, sampled, tested and inspected in accordance with the specification and are consistent with order prescriptions.
Quality assurance system in accordance to European Directive 2014/68/EU annex I par. 4.3 (PED) and AD 2000 Merkblatt W0.
Certificates 0045/202/WZ1921/23 and TN/AD2000-W0/1921/23 TÜV NORD Systems GmbH & Co. KG.

IPL S.R.L.
RSQ A. Grisetti

TIRANTE / STUD BOLT

IPL S.r.l.
BULLONERIA - TIRANTERIA
SPECIALE E STANDARD

Via Papa Giovanni Paolo I, 306
21040 UBOLDO (VA)

Customer: INDRA SRL
C.SO XXII MARZO, 8
20135 MILANO (MI)

Date, 30-09-24 **Our Ref.** DDT 3480 / OC 1557 **of** 30-09-24 **Your Ref.** AF24 02342 10-07-24

CERTIFICATE UNI EN 10204 - 3.1 N.2402706

ITEM	QUANTITY	HEAT TREATMENT	PROTECTION	LOT nr.	HEAT nr.

MECHANICAL PROPERTIES

values	R (MPa)	Rs 0,2 (MPa)	A4 (%)	Z (%)	HB	I.T. KV - 73°C (J)
required	690 min.	550 min.	18 min.	50 min.	235 max	20 min. 27 av.
actual	700	570	28,0	66,0	220-215-220	143 - 147 - 117

CHEMICAL COMPOSITION

values	C (%)	Mn (%)	Si (%)	P (%)	S (%)	Cr (%)	Mo (%)	Al (%)
required	0,38 - 0,48	0,75 - 1,00	0,15 - 0,35	0,035 max	0,040 max	0,80 - 1,10	0,15 - 0,25	
actual	0,415	0,771	0,219	0,009	0,0300	1,035	0,159	0,022

remarks: Chemical values, at delivery condition, are quoted by the relevant steel work certificate. Mechanical values see IRCM cert. 1438/24.
According to: ASME II part. A ed. 2021. Macroetch test according to ASTM E381 result: S1 R1 C1. VISUAL AND DIMENSIONAL TEST SATISFACTORY

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If not mentioned the above test are performed at room temperature.
We certify that the fasteners were manufactured, sampled, tested and inspected in accordance with the specification and are consistent with order prescriptions.
Quality assurance system in accordance to European Directive 2014/68/EU annex I par. 4.3 (PED) and AD 2000 Merkblatt W0.
Certificates 0045/202/WZ1921/23 and TN/AD2000-W0/1921/23 TÜV NORD Systems GmbH & Co. KG.

IPL S.R.L.
RSQ A. Grisetti

DADO / NUT

IPL S.r.l.
BULLONERIA - TIRANTERIA
SPECIALE E STANDARD

Via Papa Giovanni Paolo I, 306
21040 UBOLDO (VA)

Customer: INDRA SRL
C.SO XXII MARZO, 8
20135 MILANO (MI)

Date, 04-10-24 **Our Ref.** DDT 3554 / OC 1557 **of** 04-10-24 **Your Ref.** AF24 02342 10-07-24

CERTIFICATE UNI EN 10204 - 3.1 N.2402732

ITEM		QUANTITY	HEAT TREATMENT	PROTECTION	LOT nr.	HEAT nr.
55882M012H10-8F	HEX NUT UNI 5588/DIN934 MODIFIED H=10,8 - A/SA194 2HM M 12 HDG 101.99.1067CS-PED46	10,00	quenched tempered @ 560°c	HOT DIP GALVANIZED ASTM A153 Cl. "C" / F2329	834263	79325 *

MECHANICAL PROPERTIES

values	HB (min-max)	HB after 24 hrs (min)	PROOF LOAD	I.T. ISO-V -46°C (J)
required	159 - 235	159		
actual	211 - 215	188	POSITIVE	28 - 30 - 28

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CHEMICAL COMPOSITION

values	C (%)	Mn (%)	Si (%)	P (%)	S (%)
required	0,400 min	1,000 max	0,400 max	0,040 max	0,050 max
actual	0,450	0,770	0,280	0,015	0,020

remarks: chemical values, at delivery condition, are quoted by the relevant steel work certificate. VISUAL AND DIMENSIONAL TEST SATISFACTORY
Nuts hardness test after 24 HRS tempering at 540°C.

If not mentioned the above test are performed at room temperature.
We certify that the fasteners were manufactured, sampled, tested and inspected in accordance with the specification and are consistent with order prescriptions.
Quality assurance system in accordance to European Directive 2014/68/EU annex I par. 4.3 (PED) and AD 2000 Merkblatt W0.
Certificates 0045/202/WZ1921/23 and TN/AD2000-W0/1921/23 TÜV NORD Systems GmbH & Co. KG.

IPL S.R.L.
RSQ A. Grisetti

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Company with Management Systems certified according to ISO 9001, ITAF 16949, EN 9100, ISO 14001 and ISO 45001.

INSPECTION CERTIFICATE 3.1 (EN 10204:2004)
DOCUMENT NUMBER 2023013924

CUSTOMER:	C.S.C. SPA		
CUSTOMER'S ORDER:	A202273SSS		
MANUFACTURER'S WORKS:	AOSTA, VIA PARAVERA 16 - ITALY		
PRODUCER OF THE DOC:	QUALITY DEPARTMENT		
MANUFACTURER'S WORKS ORDER NO:	0025289160 / 000020		
MARK OF THE MANUFACTURER:	COGNE		
DISPATCH NOTE:	0081539758 / 000010 WEIGHT: 1092 KG / 2408 LB		
INTERNAL SPEC:	NORSOKREV5		
PRODUCT:	PEL PEELED ROUND BARS TOLERANCE: ISOK11		
SURFACE FINISH:	2B Cold Finished		
PRODUCT DELIVERY CONDITION:	RS SOLUTION ANNEALED		
PRODUCT DIMENSIONS (mm):	25,000 (0,984 in)	LENGTH (mm)	04000 06200 (00157 00244 in)
GRADE:	F55 UNSS32760 1.4501	INTERNAL GRADE:	329S
IDENTIFICATION HEAT NO:	278285	IDENTIFICATION LOT NO:	864020
MARKING OF THE PRODUCT:	1.4501	TEST PIECE N:	402

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REFERENCE NORMS:EN 10088-3:2014, EN 10272:2016, ASTM A276/ASME SA276-R17, ASTM A479/ASME SA479-R21, ISO15156-3/NACE MR0175, NACE MR0103, API 6A-PSL3, NORSOK M-650 REV.4/M-630, MDS D57 REV.5.
REFERENCE NORMS ONLY FOR CHEMICAL COMPOSITION:
EN 10222-5:2017, ASTM A182/ASME SA182, ASTM A484-21.
HEAT TREATMENT: SOLUBILIZATION 1100 ° C 1.5 min / mm COOLING WATER TEMPERATURE BELOW 260 °C (FURNACE THERMOCOUPLES)
ASTM G48 A/ASTM A923 C TESTING CONDITIONS: Sample surface 120 GRIT, Solution 100g FeCl3.6H2O+900ml H20, T 50°C, 24h, no pitting at 20X.
STEELMAKING EAF + AOD + CONTINUOUS CASTING
HOT ROLLED
REDUCTION RATIO 100,1

CHEMICAL LADLE ANALYSIS ACCORDING TO ASTM A751 - EN ISO 14284
Control lot No. - Weight :020000944128 - 80.713 KG - 177.939 LB

ELEMENTS	C	Si	Mn	P	S	N	Cr	Mo	Ni	Cu
MEASUREMENT UNIT	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w
OBTAINED	0,017	0,38	0,58	0,019	0,0006	0,25	25,00	3,66	6,93	0,55

ELEMENTS	W	CV_F8
MEASUREMENT UNIT	% w/w	% w/w
OBTAINED	0,53	41

CV_F8 = CR+(3.3*MO)+(16*N2)

HARDNESS TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000946846 - 1.736 KG - 3.827 LB
SPECIFICATION ENISO6506 HARDNESS TEST HB TESTING METHOD: 10/3000
OBTAINED 240

IMPACT TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000946846 - 1.736 KG - 3.827 LB
SPECIFICATION EN ISO 148-1-KV2 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 20
MEASUREMENT UNIT J
OBTAINED 425 418 437

DATE 20.03.2023 BARBARA VIETTI MV(QUALITY CERTIFICATOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne

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Company with Management Systems certified according to ISO 9001, ITAF 16949, EN 9100, ISO 14001 and ISO 45001.

TENSILE TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000946846 - 1.736 KG - 3.827 LB
SPECIFICATION ASTMA370-E8-0.5"SPEC DIRECTION OF THE TEST PIECE: L

MEASUREMENT UNIT	Rm MPA	Rp02% MPA	Z %	Al2 %
				4,0 D
OBTAINED	807	550	80,8	42,6

CORROSION
Control lot No. - Weight :020000946846 - 1.736 KG - 3.827 LB
SPECIFICATION ASTM G48 A
OBTAINED 0,2

FERRITE %
Control lot No. - Weight :020000946846 - 1.736 KG - 3.827 LB
SPECIFICATION ASTME562 --
OBTAINED 48,6

MICROSTRUCTURE
Control lot No. - Weight :020000946846 - 1.736 KG - 3.827 LB
SPECIFICATION -- --
OBTAINED SATISFACTORY -

LATERAL EXPANSION
Control lot No. - Weight :020000946846 - 1.736 KG - 3.827 LB
SPECIFICATION ASTMA370 --
OBTAINED 2,6 2,5 2,6

SHEAR %
Control lot No. - Weight :020000946846 - 1.736 KG - 3.827 LB
SPECIFICATION ASTMA370 --
OBTAINED 100 100 100

REFERENCE NORMS:EN 10088-3, EN 10272, ASTM A276/ASME SA276, ASTM A479/ASME SA479, ISO 15156-3/NACE MR0175, ISO 17945/NACE MR0103, NORSOK M-650 REV.4/M-630, MDS D57 REV.5.
REFERENCE NORMS FOR CHEMICAL ANALYSIS, MECHANICAL PROPERTIES, HEAT TREATMENT: ASTM A182/ASME SA182, API 6A-PSL3
REFERENCE NORMS ONLY FOR CHEMICAL COMPOSITION: EN 10222-5, ASTM A484
HARDNESS TEST
Control lot No. - Weight :020000946846 - 1.736 KG - 3.827 LB
SPECIFICATION ASTMA370-E18 HARDNESS TEST HRC TESTING METHOD:
OBTAINED 20

DATE 20.03.2023 BARBARA VIETTI MV(QUALITY CERTIFICATOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne

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INSPECTION CERTIFICATE 3.1 (EN 10204:2004)
DOCUMENT NUMBER 2023013924

IMPACT TEST
Control lot No. - Weight :020000946846 - 1.736 KG - 3.827 LB
SPECIFICATION ASTM A370-E23 TYPE A DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 50-
MEASUREMENT UNIT J
OBTAINED 318 330 316

TENSILE TEST
Control lot No. - Weight :020000946846 - 1.736 KG - 3.827 LB
SPECIFICATION EN-ISO6892-1 DIRECTION OF THE TEST PIECE: L

	Rm_C	Rp02_C	A	Z_C
MEASUREMENT UNIT	MPA	MPA	% 5.0 D	%
OBTAINED	807	564	39,8	85,1

STEELMAKING EAF + AOD + CONTINUOUS CASTING
HOT ROLLED
METALLOGRAPHIC INSPECTION ACCORDING TO ASTM A923 METHOD A: SATISFACTORY.
IMPACT TEST VALUES AT -46°C ARE NOT LESS THAN THOSE AT -50°C HERE STATED.
QTC ON PROLONGATION OF BARS TESTS AT MID RADIUS (CENTER POS. FOR SIZES <2 INCHES).
ASTM A484 DOES NOT APPLY FOR SIZE AND LENGTH TOLERANCES.
MARKING: PRODUCER LOGO, MATERIAL NO, HEAT NO, LOT NR.
ALL THE NORMS MENTIONED ARE INTENDED IN THEIR LAST REVISION AT THE DATE OF ISSUE OF THIS DOCUMENT.
COUNTRY OF MELTING AND ORIGIN: ITALY, THE MATERIAL COMPLIES WITH FAR DFARS
252.225-7009 ALT 1.
THE PRODUCT SATISFIES THE DIRECTIVES: 2015/863/EU (ROHS3) - 2011/65/EU (ROHS2) - 2000/53/EU - 2002/95/EU(RoHS) - 2003/11/EU-2005/618/EU AND PED 2014/68/EU.
THE MATERIAL IS FREE OF ANY MERCURY, MERCURY COMPOUNDS AND OR RADIUM CONTAMINATION AT TIME OF SHIPMENT AND WAS PRODUCED WITHOUT USING OZONE DEPLETING SUBSTANCES OF CLASS I AND II.
VISUAL SURFACE INSPECTION AND EDDY CURRENT WITH ROTATING HEAD ACCORDING TO EN 10277 Class 4 : SATISFACTORY . DIMENSIONAL TEST ACCORDING TO EN 10278 : SATISFACTORY . ULTRASONIC TEST IN ACCORDING TO EN 10308 , Class 3 : SATISFACTORY . ANTIMIX SPECTROMETER CONTROL WITH PORTABLE PRODUCT : SATISFACTORY . NOT BEEN MADE BY ANY REPAIR MATERIAL WELDING
CORROSION TEST ACCORDING TO ASTM A262 Method E EN ISO 3651-2 A: SATISFACTORY. NO CRACKS AT 20X MAGNIFICATION

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DATE 20.03.2023

BARBARA VIETTI MV(QUALITY CERTIFICATOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne

COGNE ACCIAI SPECIALI S.P.A.

CERTIFICATO DI COLLAUDO ULTRASUONI
CERTIFICAT DE CONTROLE PAR ULTRASONS
ULTRASCHALL PRUEFZEUGNIS
REPORT OF ULTRASONIC INSPECTION
ОТЧЕТ ОБ УЛЬТРАЗВУКОВОМ КОНТРОЛЕ

N. US.
523/23

CLIENTE *CLIENTSGG* *BESTELLER* *CUSTOMER* ЗАКАЗЧИК			*CONFERMA* *CONFIRMATION* *AUFTRAGSBESTRAKTIGUNG* *CONFIRMATION* ПОДТВЕРЖД. ЗАКАЗА		
MARCA *NUANCES* *WERKESTOFF* *GRADE* МАРКА	329S W.No 1.4501		*ORDINE* *COMMANDE* *AUFTRAG* *ORDER* ЗАКАЗ		
SPECIFICA *SPECIFICATION* *PRUKEVORSCHRIFT* *SPECIFICATION* ТЕХ. ТРЕБОВАНИЯ	EN10308 prospetto3 cl3		*COLATA* *COULEE* *SCHMELZE* *HEAT* ПЛАВКА	278285	*SCHEDA* *LOT* *LAUFKARTE* *LOT* ПАРТИЯ 864020
PRODOTTO *PRODUIT* *ERZEUGNISFORM* *PRODUCT* ИЗДЕЛИЕ	ROUND BARS 25 mm		*STATO DI LAVORAZIONE* *STADE DU PRODUIT* *LIEFERZUSTAND* *WORKING STEP* ОБРАБОТКА	PEELED	
TIPO DI APPARECCHIO *TIPE D'APPAREILPARUS* *PRUEFGERAT TYP* *INSTRUMENT TYPE* ТИП АППАРАТА	MAC2	UT-100mm	*COSTRUTTORE* *CONSTRUCTEUR* *BAUART* *MAKE* ИЗГОТОВИТЕЛЬ	MAC	
TIPO DI SONDA *TIPE DE PALPEUR* *PRUFKOPT* *PROBETYPE* ТИП ЗОНДА	U113T9 16C02JCM U11391		*FREQUENZA* *FREQUENCE* *FREQUENZ* *FREQUENCY* ЧАСТОТА	5 MHz S/N 5 MHz S/N 5 MHz S/N	XDCR225N 389-087-130 XDCR210N

DIREZIONE D'ESAME
DIRECTION D'EXAMEN
PRUEFRICHTUNG
SCANNING DIRECTION
НАПРАВЛЕНИЕ ПРИ

- [X] *RADIALE - RADIAL*
- [ ] *ASSIALE - AXIAL*
- [ ] *SONDE ANGOLATE - ANGLE BEAMS*

- [X] *MATRICOLA BLOCCO CAMPIONE* 29
  DENTIFICATION BLOC DE REFERENCE MUSTER BLOCK
  MUSTER BLOCK
  TEST BLOCK NR
  № ОБРАЗЦА ДЛЯ ИСПЫТАНИЯ

- [ ] *AVG SCALE*
  ECRANS ABAQUES AVG
  AVG SKALEN
  AVG SCALE
  ШКАЛА *AVG*
- [ ] *AVG DIAGRAMMI*
  DIAGRAMMES AVG
  AVG DIAGRAMM
  AVG DIAGRAM
  ДИАГРАММЫ *AVG*
- [ ] V1
- [ ] V2

RISULTATODELL'ESAME
RESULTAT DE L' ESSAI
PRUEFERGERBNISSE
RESULT OF THE TEST
РЕЗУЛЬТАТ
ИСПЫТАНИЯ

EXAM DATA : 16/03/2023
INSPECTED N. BARS 46

THE MATERIAL IS IN ACCORDANCE TO THE FOLLOWING SPECIFICATIONS:
EN10308 prospetto3 cl3

L'ISPETTORE CND ZUSTANDER CND L'INSPECTEUR CND CND INSPECTOR ИНСПЕКТОР НРК NADALIN SIMONE Liv.II - ISO 9712 N° Cert.32040/PND/C	**III LIV.CND** III УРОВЕНЬ НРК BAISOTTI MARCO Liv.III - ISO 9712 N° Cert.34194/PND/C		**DATA** DATUM DATE DATE ДАТА 20/03/2023

(Mod. Certus Rev. 6)

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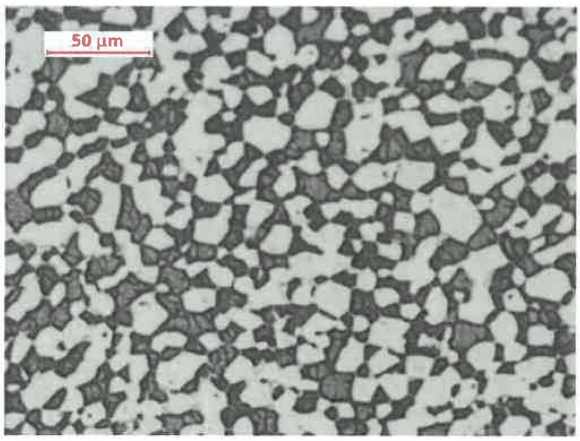
COGNE ACCIAI SPECIALI S.p.a.
Via Paravera, 16
I-11100 AOSTA

MICROPHOTO
МИКРОСЪЁМКА

All.N 1

MARCA *NUANCES* *WERKESTOFF* *GRADE* *МАРКА*	329S	**LOTTO DI CONTROLLO** *LOT DE CONTRÔLE* *LAUFKARTE* *CONTROL LOT* *ПАРТИЯ КОНТРОЛЯ*	020000946846
COLATA *COULEE* *SCHMELZE* *HEAT* *ПЛАВКА*	278285	**REAGENTE** *RÉACTIF* *REAGENS* *ETCHANT* *РЕАГЕНТ*	20 % NaOH electrolyte
TIPO DI APPARECCHIO *TIPE D'APPAREIL* *PRUEFGERAT TYP* *INSTRUMENT TYPE* *ТИП АППАРАТА*		**MICROSCOPE – LEICA** **MEF4M МИКРОСКОП**	
INGRANDIMENTO *AGRANDISSEMENT* *VERGRÖSSERUNG* *ENLARGEMENT* *УВЕЛИЧЕНИЕ*		**400 X**	
DIREZIONE D'ESAME *DIRECTION D'EXAMEN* *PRUEFRICHTUNG* SCANNING DIRECTION НАПРАВЛЕНИЕ ПРИ ИССЛЕДОВАНИИ	☐ **LONGITUDINALE - LONGITUDINAL - ПРОДОЛЬНОЕ** ☒ **TRASVERSALE – TRANSVERSAL – KREUZEND-ПОПЕРЕЧНОЕ**		

PHOTO (ELECTRONIC IMAGE) – ФОТОСНИМКИ (ЭЛЕКТРОННОЕ ИЗОБРАЖЕНИЕ)



NOTE:
ПРИМЕЧАНИЯ:
"Free from Intermetallic Phases"

FIRMA / UNTERSCHRIFT SIGNATURE / SIGNATURE ПОДПИСЬ	DATA / DATUM DATE / DATE ДАТА
C. Del Guerra	26/01/23

Mod.Micro Rev.4

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I-11100 AOSTA

MICROPHOTO
МИКРОСЪЁМКА

All.N 2

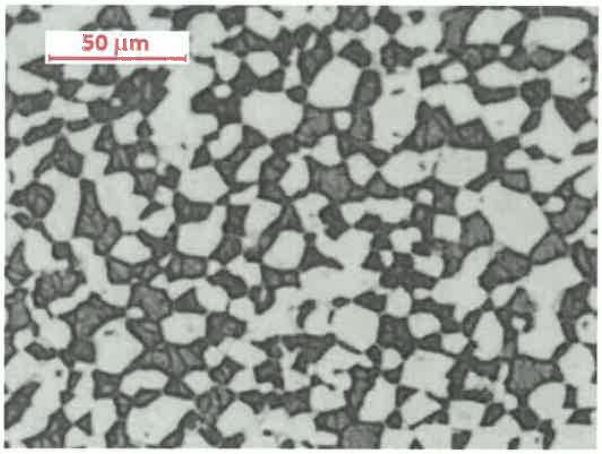
MARCA *NUANCES* *WERKESTOFF* *GRADE* *МАРКА*	329S	***LOTTO DI CONTROLLO*** *LOT DE CONTRÔLE* *LAUFKARTE* *CONTROL LOT* *ПАРТИЯ КОНТРОЛЯ*	020000946846
COLATA *COULEE* *SCHMELZE* *HEAT* *ПЛАВКА*	278285	***REAGENTE*** *RÉACTIF* *REAGENS* *ETCHANT* *РЕАГЕНТ*	20 % NaOH electrolyte
TIPO DI APPARECCHIO *TIPE D'APPAREIL* *PRUEFGERAT TYP* *INSTRUMENT TYPE* *ТИП АППАРАТА*		**MICROSCOPE – LEICA** **MEF4M МИКРОСКОП**	
INGRANDIMENTO *AGRANDISSEMENT* *VERGRÖSSERUNG* *ENLARGEMENT* *УВЕЛИЧЕНИЕ*		**500 X**	

DIREZIONE D'ESAME
DIRECTION D'EXAMEN
PRUEFRICHTUNG
SCANNING DIRECTION
НАПРАВЛЕНИЕ
ПРИ ИССЛЕДОВАНИИ

☐ **LONGITUDINALE - LONGITUDINAL - ПРОДОЛЬНОЕ**

☒ **TRASVERSALE – TRANSVERSAL – KREUZEND-ПОПЕРЕЧНОЕ**

PHOTO (ELECTRONIC IMAGE) – ФОТОСНИМКИ (ЭЛЕКТРОННОЕ ИЗОБРАЖЕНИЕ)

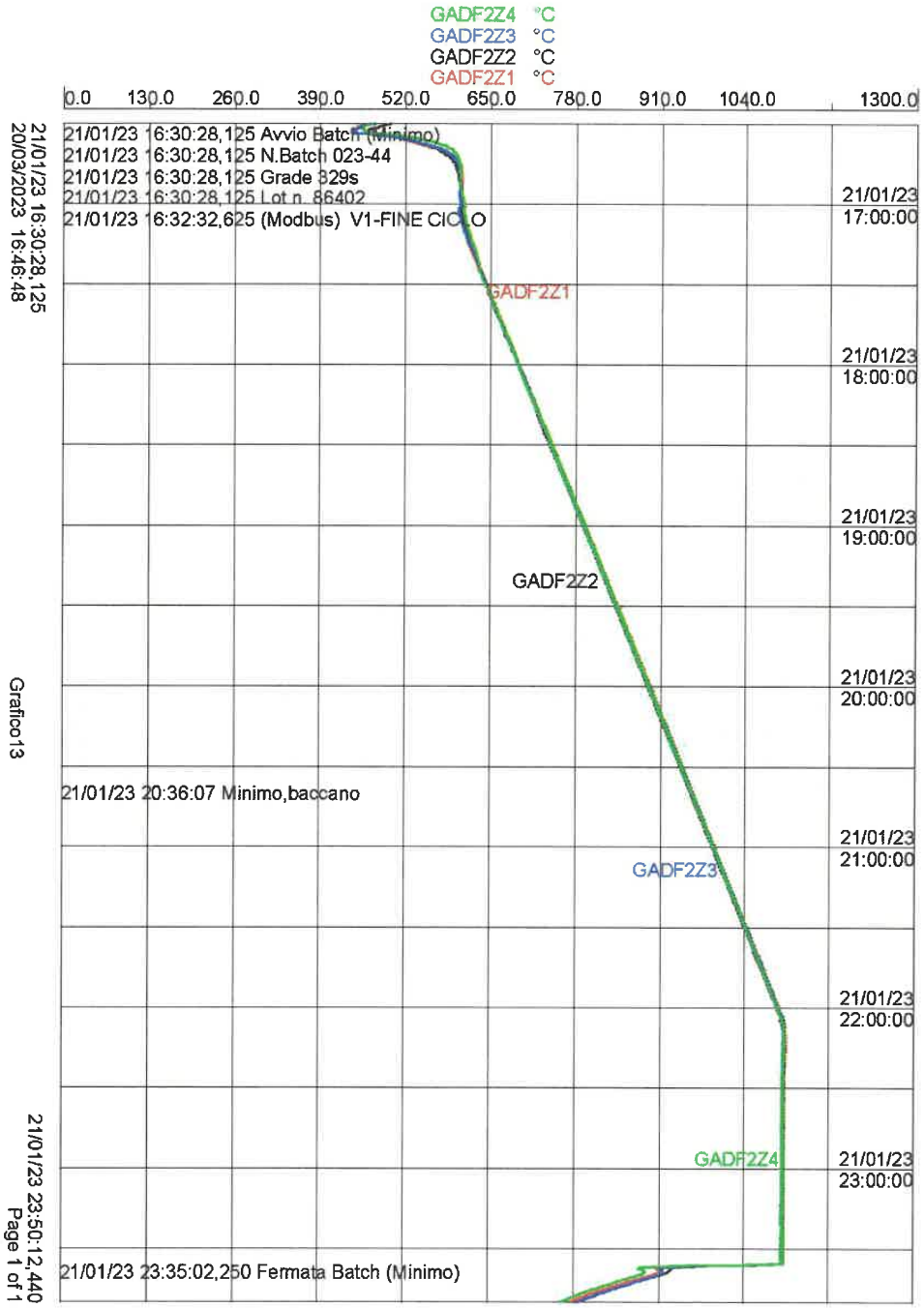


NOTE:
ПРИМЕЧАНИЯ:
"Free from Intermetallic Phases"

FIRMA / UNTERSCHRIFT / SIGNATURE / ПОДПИСЬ	DATA / DATUM / DATE / ДАТА
C. Del Guerra	26/01/23

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TEL +39.0165.3021 - FAX +39.0165.302296
CAP. SOC. 100.000.000 EUR INT. VERS.
C.F. 02187360967
VAT: IT00571320078 - R.E.A. n. AO-50474

Company with management systems IQG approved and certified according to ISO 9001, ISO/TS 16949 e ISO 14001.

INSPECTION CERTIFICATE 3.1 (EN 10204:2004)
DOCUMENT NUMBER 2014054694

CUSTOMER:	INDRA SRL		
CUSTOMER'S ORDER:	F17-01895		
MANUFACTURER'S WORKS:	AOSTA, VIA PARAVERA 16 - ITALY		
PRODUCER OF THE DOC:	QUALITY DEPARTMENT		
MANUFACTURER'S WORKS ORDER NO: 1096962 /10	MARK OF THE MANUFACTURER:	**COGNE**	
DISPATCH NOTE:	81124846 /10	WEIGHT:	140,00
THE CERTIFIED PRODUCTS ARE COMPLYING TO THE PURCHASE ORDER			
INTERNAL SPEC:	NORSOK	TECHNICAL RULE:	
PRODUCT:	25950 PEL PEELED ROUND BARS	TOLERANCE:	ISOK11
SURFACE FINISH:	2B Cold Finished		
PRODUCT DELIVERY CONDITION:	RS SOLUTION ANNEALED		
PRODUCT DIMENSIONS (mm):	88,900	LENGTH (mm)	04000 /06200
GRADE:	AISTMF55 UNSS32760 EN1.4501	INTERNAL GRADE:	329S
IDENTIFICATION HEAT NO:	370169	IDENTIFICATION LOT NO:	383400
MARKING OF THE PRODUCT:	1.4501	TEST PIECE N:	340

REFERENCE NORMS: EN 10088-3, ASTM A276, ASTM A479/ ASME SA479, ISO15156-3/NACE MR0175, NACE MR0103, API 6A-PSL1-3 75K L, NORSOK M-650/M-630 MDS D57 Rev.3, STATOIL D35.
REFERENCE NORMS FOR CHEMICAL COMPOSITION ONLY: EN 10222-5. REFERENCE NORMS FOR CHEMICAL COMPOSITION AND MECHANICAL PROPERTIES: ASTM A182/ASME SA182.
ASTM A484 DOES NOT APPLY FOR SIZE AND LENGTH TOLERANCES.
IMPACT TEST VALUES AT -46°C ARE NOT LESS THAN THOSE AT -50°C HERE STATED.
HEAT TREATMENT: SOLUTION ANNEALING AT 1100-1140°C + WATER QUENCHING DOWN TO 260°C.MIN.SOAKING TIME 1 Min./mm THICKNESS.
STEELMAKING EAF + AOD + CONTINUOUS CASTING
HOT ROLLED
REDUCTION RATIO 8,6

CHEM. COMP. (%W/W) - LADLE ANALYSIS ACCORDING TO ASTME1019-A751-E1086-E415-A580
Control lot No. - Weight :020000516772 - 83.000 KG

ELEMENTS	C	Si	Mn	P	S	N	Cr	Mo	Ni	Cu
OBTAINED	0,011	0,43	0,62	0,023	0,0005	0,25	25,01	3,69	6,76	0,53

ELEMENTS	W	CV_F8
OBTAINED	0,54	41

CV_F8 = CR+(3.3*MO)+(16*N2)

HARDNESS TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000542616 - 3.336 KG
SPECIFICATION ENISO6506 HARDNESS TEST HB TESTING METHOD: 10/3000
OBTAINED 228

IMPACT TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000542616 - 3.336 KG
SPECIFICATION EN ISO 148-1-KV2 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 20
MEASUREMENT UNIT J
OBTAINED 299 299 299

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C.F. 02187360967
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Company with management systems IGQ approved and certified according to ISO 9001, ISO/TS 16949 e ISO 14001.

SFERA / BALL

CORROSION
Control lot No. - Weight :020000542616 - 3.336 KG
SPECIFICATION ASTM G48 A
OBTAINED 0,027

FERRITE %
Control lot No. - Weight :020000542616 - 3.336 KG
SPECIFICATION ASTME562 --
OBTAINED 46,04

IMPACT TEST
Control lot No. - Weight :020000542616 - 3.336 KG
SPECIFICATION EN ISO 148-1-KV2 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 50-
MEASUREMENT UNIT J
OBTAINED 296 296 297

TENSILE TEST
Control lot No. - Weight :020000542616 - 3.336 KG
SPECIFICATION EN-ISO6892-1 DIRECTION OF THE TEST PIECE: L

	Rm	Rp02%	A	Z
MEASUREMENT UNIT	MPA	MPA	% 5.0 D	%
OBTAINED	809	568	37,2	78,3

TENSILE TEST
Control lot No. - Weight :020000542616 - 3.336 KG
SPECIFICATION ASTMA370-E8-0.5"SPEC DIRECTION OF THE TEST PIECE: L

	Rm B	Rp02 B	Z B	A12 B
MEASUREMENT UNIT	KSI	KSI	%	% 4,0 D
OBTAINED	116	82	78,5	40,2

CORROSION TEST ACCORDING TO ASTM A262 Practice E EN ISO 3651-2: SATISFACTORY.
ROTARY HEAD EDDY CURRENT AND VISUAL INSPECTION OF SURFACE ACCORDING TO EN 10277-1 Class4: SATISFACTORY.
DIMENSIONAL CONTROL ACCORDING TO EN 10278 :SATISFACTORY.
ULTRASONIC TEST ACCORDING TO EN 10308 CLASS 4, EQUIVALENT TO SEP 1920 GROUP 3 CLASS C (CLASS B FOR SIZES > 75 MM) AND ASTM A388 FBH 5(ONLY FOR SIZES > 100 MM): SATISFACTORY.
ANTIMIX TEST WITH PORTABLE SPECTROMETER: SATISFACTORY.
NO WELDING REPAIR ON THE MATERIAL.
THE PRODUCT SATISFIES CE DIRECTIVES: 2011/65 (ROHS2) - 2000/53 - 2002/95(RoHS) - 2003/11 - 2005/618 AND PED 2014/68/EU.
MARKING: PRODUCER LOGO, MATERIAL NO, HEAT NO, LOT NR.
QUALITY SYSTEM CERTIFIED BY I.G.Q ACCORDING TO UNI EN ISO 9001:2008 - ISO/TS 16949:2009 (THE LAST ONE ONLY FOR HOT ROLLED-PEELED-GROUND, STAINLESS STEEL BARS AND ATOMIZED METALLIC POWDERS).

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C.F. 02187360967
VAT: IT00571320076 - R.E.A. n. AO-50474

Company with management systems IGQ approved and certified according to ISO 9001, ISO/TS 16949 e ISO 14001.

ALL THE NORMS MENTIONED ARE INTENDED IN THEIR LATEST REVISION AT THE DATE OF ISSUE OF THIS DOCUMENT.
ASTM G48 Met.A TESTING CONDITIONS: Sample surface 120 GRIT, Solution 100g FeCl3.6H2O+900ml H20, T 50°C, 24h, no pitting at 20X

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DATE 07.10.2014

VANESSA MICONI MV

Cogne Acciai Speciali S.p.a.

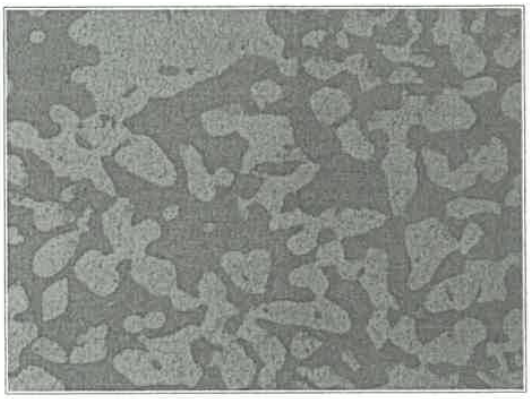
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I-11100 AOSTA

MICRO PHOTO All.N°1

MARCA *NUANCES* *WERKESTOFF* *GRADE*	329S	*LOTTO DI CONTROLLO* *LOT DE CONTRÔLE* *LAUFKARTE* *CONTROL LOT*	020000542616
COLATA *COULEE* *SCHMELZE* *HEAT*	370169	*REAGENTE* *RÉACTIF* *REAGENS* *ETCHANT*	Etchant #212 ASTM E407
TIPO DI APPARECCHIO *TIPE D'APPAREIL* *PRUEFGERAT TYP* *INSTRUMENT TYPE*	**MICROSCOPE – LEICA MEF4M**		
INGRANDIMENTO *AGRANDISSEMENT* *VERGRÖSSERUNG* *ENLARGEMENT*	**X 500**		
DIREZIONE D'ESAME *DIRECTION D'EXAMEN* *PRUEFRICHTUNG* *SCANNING DIRECTION*	☐ **LONGITUDINALE - LONGITUDINAL** ☒ **TRASVERSALE – TRANSVERSAL - KREUZEND**		

PHOTO (ELECTRONIC IMAGE)

RISULTATO DELL'ESAME RESULTAT DE L' ESSAI PRUXFERGERBNISSE RESULT OF THE TEST

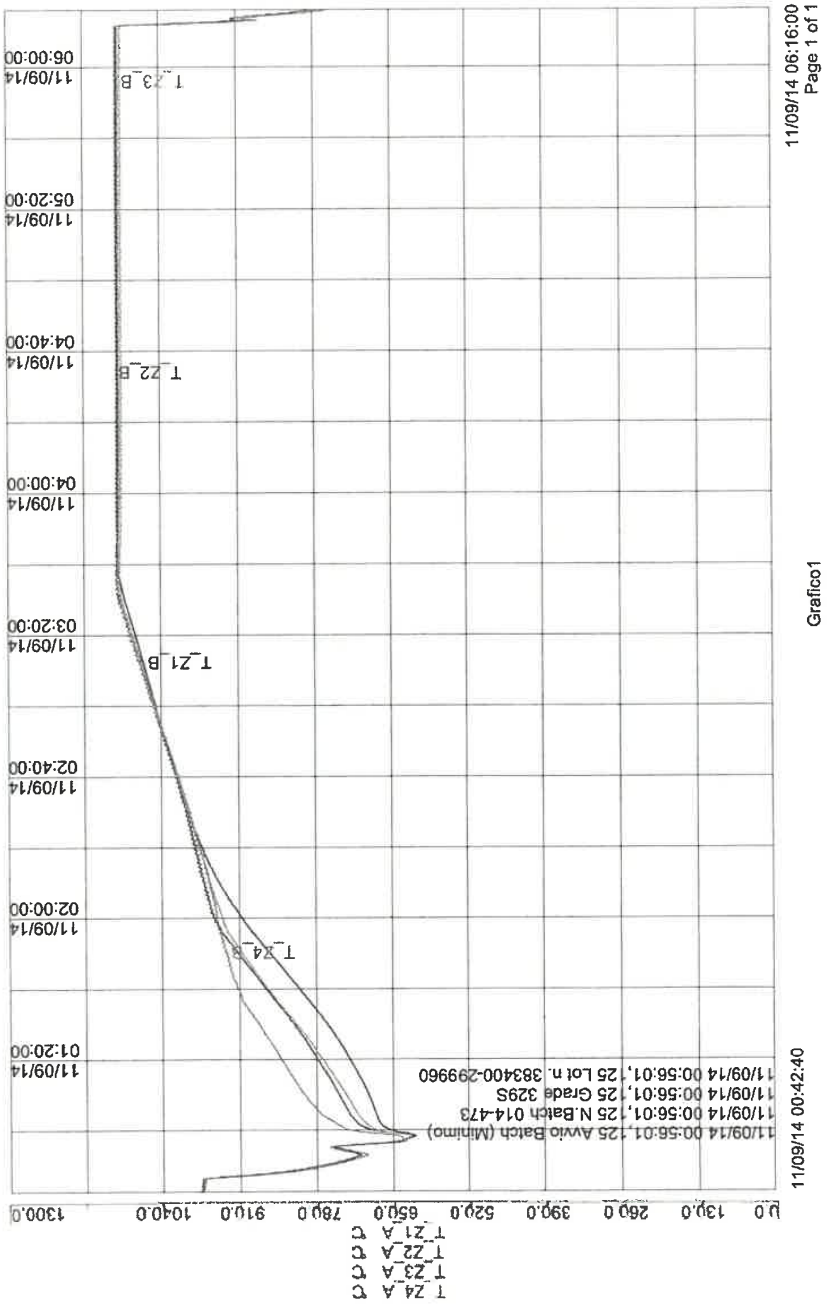


NOTE:
" Free from Intermetallic Phases and Precipitates"

FIRMA SIGNATURE UNTERSCHRIFT SIGNATURE	DATA DATE DATUM DATE
Fabio Frison	**17/9/14**

Mod.Micro Rev.2

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N.US.1306/14

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CERTIFICATO DI COLLAUDO ULTRASUONI
CERTIFICAT DE CONTROLE PAR ULTRASONS
ULTRASCHALL PRUEFZEUGNIS
REPORT OF ULTRASONIC INSPECTION

CLIENTE / CLIENTSGG / BESTELLER / CUSTOMER			*CONFERMA / CONFIRMATION / AUFTRAGSBESTRAKTIGUNG / CONFIRMATION*		
MARCA / NUANCES / WERKESTOFF / GRADE	329S W.No 1.4501		*ORDINE / COMMANDE / AUFTRAG / ORDER*		
SPECIFICA / SPECIFICATION / PRUKEVORSCHRIFT / SPECIFICATION	EN 10308 Cl 3		*COLATA / COULEE / SCHMELZE / HEAT*	370169	*SCHEDA / LOT / LAUFKARTE / LOT* 383400
PRODOTTO / PRODUIT / ERZEUGNISFORM / PRODUCT	Bars Ø 88,9 mm		*STATO DI LAVORAZIONE / STADE DU PRODUIT / LIEFERZUSTAND / WORKING STEP*	PEELED SOLUTION TREATED	
TIPO DI APPARECCHIO / TIPE / D'APPAREILPARUS / PRUEFGERAT TYP / INSTRUMENT TYPE	USN 58		*COSTRUTTORE / CONSTRUCTEUR / BAUART / MAKE*	Krautkramer	
TIPO DI SONDA / TIPE DE PALPEUR / PRUFKOPT / PROBETYPE	DL4R		*FREQUENZA / FREQUENCE / FREQUENZ / FREQUENCY*	4 MHz	

DIREZIONE D'ESAME / DIRECTION D'EXAMEN / PRUEFRICHTUNG / SCANNING DIRECTION

☒ *RADIALE - RADIAL*

☐ *ASSIALE – AXIAL – ACHSIAL – AXIAL-(ANGLE)*

☐ *CIRCONFERENZIALE –CIRCOFERENTIAL – CREISLINIE – CIRCUMFERENTIAL*

☐ *MATRICOLA BLOCCO CAMPIONE / DENTIFICATION BLOC DE REFERENCE MUSTER BLOCK / MUSTER BLOCK / TEST BLOCK NR*

☐ *AVG SCALE / ECRANS ABAQUES AVG / AVG SKALEN / AVG SCALE*

☒ *AVG DIAGRAMMI / DIAGRAMMES AVG / AVG DIAGRAMM / AVG DIAGRAM*

☒ *V1* ☐ *V2*

RISULTATO DELL'ESAME / RESULTAT DE L' ESSAI / PRUXFERGERBNISSE / RESULT OF THE TEST

EXAM DATA: 03/10/2014

INSPECTED NO 12 BARS

NO DEFECTS HAVE BEEN DETECTED

THE MATERIAL IS IN ACCORDANCE TO THE FOLLOWING SPECIFICATIONS:

EN 10308 Cl 3

L'ISPETTORE CND / L'INSPECTEUR CND / ZUSTANDIGER CND / CND INSPECTOR	III LIV.CND		DATA / DATE / DATUM / DATE
BAISOTTI MARCO Liv.II - EN473 N° Cert.20741/PND/C	OLIVERO DIMITRI Liv.III - EN473 N° Cert.23340/PND/C		06/10/2014

(Mod. Certus Rev. 3)

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ROSETTI MARINO ITEM 90

COD. VBC0NN24703Q00

TAG: BLPH-MV-275

INDRA ITEM 90

COD. 00.VSF.2686/V

indra VALVES - ITALY

Certificazione dei materiali
EN 10204 3.1 come da allegati

Material certification
EN 10204 3.1 as per attachments

MD-02-04-IT-UK / VSF
Rev. 16
Data: 08-Nov-2018
CM/IT/UK

Nr. *No.* **24-2001** — **Data /** *Date :* **16-Oct-2024**

Cliente / *Customer* **ROSETTI MARINO SPA**

Vs. ordine Nr. / *Your order Nr.* **1724000798 REV.2** — **Data /** *Date :* **26-Jun-2024**

Ns. commessa Nr. / *Our job Nr.* **24 01216** — **Data /** *Date :* **3-Jul-2024**

Ns. D.D.T. Nr. / *Our advise note Nr.* — **Data /** *Date :*

Ordine di produzione / Production order number : 24 01216/90 - P0JS1900A17575

Lotto / Material batch number : P0JS1900A17575

Pos. Cliente Customer Item	*Pos. Indra Indra Item*	*Codice / Code*		*Q.tà / Q.ty*	*Nr. di serie Serial Number*	*Descrizione /Description*
		Ns./ Our	*Vs. / Your*			
90	90	00.VSF.2686/V	VBC0NN24703Q00	1	105974	INDRA BALL VALVE SB-598-20-E150RF3-E-LF2-DL-CA3-N-RG-L1-TG-TGW-TV-PMI2-PD2-BI-CR-TA-FS-SPC1

Elenco / List

Componente / *Component*	Colata / Heat	Materiale *Material*	Numero del certificato Certificate number
Corpo Valvola / Valve Body	P0JS1900A17575	ASTM A350 LF2 NACE	109 - 2258 - UT 1
Closure E150RF3	P0JS1900A17575	ASTM A350 LF2 NACE	109 - 2258 - UT 1
Tirante / Stud bolt	BE1859	ASTM A193 B7M + HDG	5218
Dado / Nut	BD4437	ASTM A194 Gr.2HM + HDG	5166
Stelo antiespulsione sfera / Ball stem	E30822	AISI 316/316L NACE	173501
Sfera / Ball	372009	AISI 316/316L NACE	2023008125

NOTE / **REMARKS :** TAG: BLPH-MV-275

PREPARATO DA: **ELEONORA RANZANI**
PREPARED BY: **DOCUMENTION MANAGER**

APPROVATO DA: **LUCIA NOSOTTI**
APPROVED BY: **QUALITY ASSURANCE MANAGER**

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Robin x CROSSWIND
30/10/24

STEEL S.P.A.
AZIENDA CERTIFICATA UNI EN ISO 9001:2015

VIA C. COLOMBO 21
729010 SARMATO (PIACENZA)
TEL. 0523/886111 - FAX 0523/886298
E-MAIL: info@steelacciai.it

ATTESTATO DI CONTROLLO

TEST REPORT – RELEVE' DE CONTROLE – WERKSZEUGNIS N° 109 DATA 12.01.2024

CLIENTE Customer / Client / Besteller: INDRA SRL

ORDINE Order / Commande / Bestelung: 3454 DATA 18.12.2023 CONFERMA Confirmation / Confirmation de commande / Auftragsheslaligung
DDT 46 DATA 12.01.2024

ACCIAIO Steel / Acier / Stahl: A350 LF2/ A105 ASTM

PROFILO Shape / Section / Profil: T.110 KG=454

COLATA Reel / Coulée / Sclinetze: P0JS1900A17575

STATO DI FORNITURA Delivery state / Elait de livraison / Lieferzusla: HOT ROLLED NORMALIZED

	COMPOSIZIONE CHIMICA % - CHEMICAL ANALYSIS % - COMPOSITION CHIMIQUE % - CHEMISCHE ZUSAMMENSETZUNG %															
	C	SI	MN	P	S	CR	NI	MO	AL	CU	NB	V	TI	CEQ		
DI COLATA / On heat Sur coulée / Vonder Schmelze	.18	.1970	.9830	.011	.002	.0910	.038	.005	.02	.008	.0014	.003	.004	.3727		
SUL PRODOTTO / On product Sur prod. / Am Erzeugnis																

	CARATTERISTICHE MECCANICHE – MECHANICAL PROPERTIES – CARACTERISTIQUES MECANIQUES – MECHANISCHE EIGENSCHAFTEN													
	TRATTAMENTO TERMICO Heat treatment / Traitement thermique Warmebehandlung	Diameter Nominal mm	Weight Tollerance /m	Diameter Actual mm	Re Y. Strenght N/mm²	Rm T. Strenght N/mm²	A Elongation %	Z Reduction %	Rm/Re	KV-46°CJ			HB Brinell h. on product		
DI COLATA / On heat Sur coulée / Vonder Schmelze	NORMALIZED				350	500	34	66		77	79	78	150		
SUL PRODOTTO / On product Sur prod. / Am Erzeugnis															

ALTRE PROVE
Other test / Autres essais / Sonstige Prufungen
CERTIFICATO TTP N° 2258 DATA 07.12.2023
CONTROL UT 100% IN ACC. TO ASTM A388

COMMENTI
Remarks / Remarques / Andere Bemerkungen
Si attesta che i prodotti sopra descritti sono conformi ai requisiti contrattuali. NORME UNI EN 10204 3.1 – NACE MR 01-75/ ISO 15156 -NACE MR0103
We certify hereby that the above mentioned product are in accordance with the order prescriptions

Controllo Qualità
Quality control
Controle de qualit
Quelstralsablellung

STEEL s.p.a.

mod. 214 – REV. 01

INDRA S.r.l.
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Trattamenti Termici Piacentini TTP

T.T.P. s.r.l.
AZIENDA CERTIFICATA UNI EN ISO 9001:2015
Via C. Colombo snc 29010 Sarmato (PC)
Tel 0523.888115 (r.a.) Fax 0523-848002
P.Iva e C.F. 01456790334

ATTESTATO DI CONTROLLO

TEST REPORT – RELEVE' DE CONTROLE – WERKSZEUGNIS N° 2258 DATA 07.12.2023

INDRA S.r.l.
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CLIENTE Customer Client Besteller	STEEL ACCIAI S.P.A.		ORDINE Order Commande Bestelung		CONFERMA Confirmation Confirmation de commande Auftragsheslaligung	
ACCIAIO Steel Acier Stahl	A350 LF2 / A105 ASTM	PROFILO Shape Section Profil	T. 110	COLATA Reel Coulée Sclinetze	P0JS1900A17575	STATO DI FORNITURA Delivery state Elait de livraison Lieferzusland	HOT ROLLED NORMALIZED

	CARATTERISTICHE MECCANICHE – MECHANICAL PROPERTIES – CARACTERISTIQUES MECANIQUES – MECHANISCHE EIGENSCHAFTEN													
	TRATTAMENTO TERMICO Heat treatment / Traitement thermique Warmebehandlung	Diameter Nominal mm	Weight Tollerance /m	Diameter Actual mm	Re Y. Strenght N/mm²	Rm T. Strenght N/mm²	A Elongation %	Z Reduction %	Rm/Re	KV-46°CJ			HB Brinell h. on product		
DI COLATA / On heat Sur coulée / Vonder Schmelze	NORMALIZED				350	500	34	66		77	79	78	150		
SUL PRODOTTO / On product Sur prod. / Am Erzeugnis															

ALTRE PROVE Other test Autres essais Sonstige Prufungen	POSIZIONE PRELIEVO / TEST POSITION ¼ L ASTM A370 API 6D ANNEX H

COMMENTI Remarks Remarques Andere Bemerkungen	Si attesta che i prodotti sopra descritti sono conformi ai requisiti contrattuali. NORME UNI EN 10204 3.1 We certify hereby that the above mentioned product are in accordance with the order prescriptions

Controllo Qualità
Quality control
Controle de qualitè
Quelstralsabellung

TTP srl

mod. 214 – REV. 01

Trattamenti Termici Piacentini	UT QUALIFICATION RECORD	N° 1 DATE: 12.01.2024
CUSTOMER: INDRA SRL		**ODP N° 3454/AF23 del 18/12/2023**
ACTIVITY\PHASE: QUALIFICATION RECORD		
UT.Q.R. SPECIFICATION\ACCEPTANCE CRITERIA: IN ACC. TO ASTM A388 UT 100%		
MATERIAL GRADE: A350 LF2 / A105 Ø 110 mm		
EQUIPMENT: INSTRUMENT MANUFACTURER: **KRAUTKRAMER** TYPE: **USM 36** MAT. N°: **37462** SERIAL-No: **18107591** PROBE MANUFACTURER: **KRAUTKRAMER** TYPE: **B2S** MAT.N°: **17816** PROBE MHz: **2 0°** SIZE mm: **24.0** CABLE: **LEMO 1 L=2m** BLOCK TYPE: **V1** COUPLANT: **GEL**		
SCANNING DGS SENSIVITY: **sui blocchi campione ECOGLOBAL DGS1 42 Db**		
SCANNING SENSIVITY ON MATERIAL: **48 Db**		
SET RANGE: (AVG) **3 mm**		
SURFACE CONDITIONS : **HOT ROLLED +N**		
TEMPERATURE: **°C 8**		
REMARKS:		
LEVEL II EN ISO 9712:2012 OPERATOR: Marco Braghieri TTP srl		

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Trattamenti Termici Piacentini	UT INSPECTION REPORT	N°: 1 DATE: 12.01.2024
CUSTOMER: INDRA SRL	ODP N° 3454/AF23 del 18/12/2023	HEAT: P0JS1900A17575
ACTIVITY: CONTROLLO UT IN ACC. TO ASTM A388 UT 100%		
UT.QR N° 1		
MATERIAL: A350 LF2 / A105	Ø 110 mm	

MATERIAL IDENTIFICATION	LOCATION OF INDICATIONS TO THE END POS.	W.T.POS. mm	DIM mm	RESULTS
HEAT: P0JS1900A17575 L=6000				Conforme
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				

NOTE:

LEVEL II EN ISO 9712:2012
OPERATOR: Marco Braghieri
TTP srl

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TIRANTE / STUD BOLT t.e.c.n.o BOLT

CERTIFICATE	
Nr. 5218	02-10-24

Page 1/1

INDRA SRL
VIA NOVARA 10/B-C
20013 MAGENTA MI
ITALIA

EN ISO 10204 3.1
CERTIFIED MATERIAL TEST REPORT

Your order: AF24 02329 REV.02 16-07-24 Delivery note: 2454 02-10-24

Item	Materials	Description	Sizes	Batch	Heat	Quantity
6	ASTM A 193 B7M 980.99.0260CS Pos.285 CKD/SM/18/03/2022	Tirante DIN 976/UNI 6610 ASTM A 193 B7M M HDG	10X30	8582	BE1859 N.	40

CHEMICAL ANALYSIS

6		%C %	%Mn %	%P %	%S %	%Si %	%Cr %	%Mo %	%H.T. Q+T
	REQ. MIN.	0,37	0,65			0,15	0,75	0,15	T=1100 F
	REQ. MAX.	0,49	1,10	0,035	0,040	0,35	1,20	0,25	
	ACT.VAL.	0,420	0,830	0,010	0,026	0,230	1,040	0,180	Q+T

MECHANICAL PROPERTIES

6		UTS MPa	YS0,2 MPa	E %	R.A. %	H HB	I.T. °C Kv J-22 C
	REQ. MIN.	860	720	16	50		
	REQ. MAX.					321	
	ACT. VAL.	1000	804	22,6	61	298	N.A.

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We state that the material or fasteners, or both, were manufactered, sampled, tested and inspected in accordance with the specification and any supplementary requirements designated in the purchase/sales order and it was found to meet those requirements

DADO / NUT

t·e·c·n·o BOLT

CERTIFICATE	
Nr. 5166	18-09-24
Page 1/1	

INDRA SRL
VIA NOVARA 10/B-C
20013 MAGENTA MI
ITALIA

EN ISO 10204 3.1
CERTIFIED MATERIAL TEST REPORT

Your order: AF24 02329 REV.02 16-07-24 Delivery note: 2307 18-09-24

Item	Materials	Description	Sizes	Batch	Heat	Quantity
3	ASTM A 194 Gr.2HM 980.99.0188 Pos.170, 180, 190, 330 CKD/DR/30/05/16	Dado UNI 5588/DIN 934 ASTM A 194 Gr.2HM M Esagonale HDG	10	8581	BD4437 N.	70

VOCE DOGANALE 73181900

MERCE DI ORIGINE ITALIANA

CHEMICAL ANALYSIS

3	%C %	%Mn %	%P %	%S %	%Si %	%H.T. Q+T	%Ni %	%Cr %	%Mo %
REQ. MIN.	0,40					T=850 F			
REQ. MAX.		1	0,040	0,050	0,40				
ACT.VAL.	0,435	0,790	0,007	0,029	0,230	Q+T	0,070	0,190	0,020

MECHANICAL PROPERTIES

3	H HRC	P.L. N/mm
REQ. MIN.		1205
REQ. MAX.		
ACT. VAL.	32-34	1205

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We state that the material or fasteners, or both, were manufactered, sampled, tested and inspected in accordance with the specification and any supplementary requirements designated in the purchase/sales order and it was found to meet those requirements

STELO SFERA / BALL STEM

Rodacciai

23842 Bosisio Parini (LC) – Via Giuseppe Roda 1 – Italia
Tel. +39 031878111 – Fax +39 031878312
www.rodacciai.com – info@rodacciai.com

Azienda con sistema di gestione certificato da IGQ secondo UNI EN ISO 9001:2015

The Company's Quality Management System is certified by IGQ according to UNI EN ISO 9001:2015

CERTIFICATO DI CONTROLLO Inspection Certif N. 173501 Date 13/11/2023

Secondo According to . . . . . EN 10204:2004 3.1

ORDINE - Order N. 23/3822 Date 10/11/2023

D.d.T. - Delivery note N. 11634/04 Date 13/11/2023

Weight KG 128,00 **Odp. Nr.** 2022/A/13380
Tolerance ISO286-2 h9 + 0,000 - 0,043 mm **Bars Length** 3.000 - 3.050 mm

QUALITA' - Grade

STANDARD	EN 10088-3:2014	X2CrNiMo17-12-2	1.4404 / 316L
STANDARD	EN 10088-3:2023	X5CrNiMo17-12-2	1.4401 / 316

Mark RODACCIAI . . . . . 316 PLUS
PROFILO - Shape . . . . . ROUND
DIMENSIONE - Size . . . . . mm 18,00
ESECUZIONE - Form of delivery . . . . . ROUGH GROU.

COLATA - Heat E30822

ANALISI CHIMICA DI COLATA - Cast analysis % by mass

C	Mn	Si	S	P	Cr	Ni	Mo	Cu	Co	N
0,020	1,540	0,554	0,0290	0,031	16,620	10,020	2,030	0,441	0,280	0,0520

CARATTERISTICHE MECCANICHE ALLO STATO DI FORNITURA
Mechanical properties of the delivered material

		Tested
Tensile Strength	Rm (MPa)	695,3
Proof Stress	Rp (1) (MPa)	648,0
Proof Stress	Rp (0,2) (MPa)	580,7
Elongation	A 4 (%)	44,3
Elongation	A 5 (%)	41,1
Hardness	HBW	211,0
Reduction of area	Z (%)	68,0

NOTE - Notes

Processo di Fusione: E + A. O. D.
Prova di Corrosione Intergranularena: ASTM A262-15 "E"
Trattamento termico: Temperatura di Solubilizzazione 1060°C
Tempo Mantenimento: 4 Ore, Raffreddamento in Acqua
Materiale conforme a: ASTM A276-16a / A479-16a / A182-24
ASME: SA479; SA276; SA182 - UNS 31600 - 31630 AISI 316-316L

Pag. 1 / Segue

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Azienda con sistema di gestione certificato da IGQ secondo UNI EN ISO 9001:2015

The Company's Quality Management System is certified by IGQ according to UNI EN ISO 9001:2015

Segue certificato di controllo N. 173501 Date 13/11/2023
Inspection Certificate's continuance

NOTE - Notes

Materiale Conforme a NACE MR-0175/ISO 15156-3:2015
NACE MR-103/ISO 17495-1:2016
Corrosione Intercristallina EN ISO 3651-2:98 Met.A

Melting Process: E + A. O. D
Intergranular corrosion tested to ASTM A262-15 "E"
Heat treatment: annealed temperature 1060°C
Soaking time: 4 Hours, Cooling in water
Material Compliant to: ASTM A276-16a / A479-16a / A182-24
ASME: SA479; SA276; SA182 - UNS 31600 - 31630 AISI 316-316L
According to: NACE MR-0175 / ISO 15156-3:2015
NACE MR-103/ISO 17495-1:2016
Intergranular Corrosion according to EN ISO 3651-2:98 Met.A

Surface quality condition 2H conforming also to EN 10277 class 3

We certify hereby, that the above mentioned products are consistent with the order prescriptions.
This certificate was generated by data system acc. to EN 10204, it is not necessary to be signed for validity.

Materiale conforme alle seguenti direttive/regolamenti europee:
- Regolamento REACH 2006/1907/CE e tutti successivi aggiornamenti, compresa la modifica M80 Direttiva Delegata 2022/1632, e SVHC Candidate List aggiornata al 17/01/2023.
- Direttiva ROHS 2011/657UE e tutti i successivi aggiornamenti, compresa la modifica M80 attraverso la Direttiva Delegata 2022/1632, e Decreto Legislativo 27 del 04/03/2014.
- Direttiva RAEE 2012/19/UE e tutti successivi aggiornamenti, compresa la modifica M1 attraverso la Direttiva 2018/849.
- Direttiva ELV (End-of-Life Vehicles) 2000/53/CE e tutti i successivi aggiornamenti, compresa la modifica M15 attraverso la Direttiva 2020/363
- Contaminazione Radioattiva, Direttiva 2013/59/EURATOM e Decreto Legislativo N.101 del 31 Luglio 2020.
- Canadian List 168 aggiornata al 16/03/2022.
- Minerali di Conflitto, Regolamento (UE) 2017/821 e tutti i successivi aggiornamenti, compresa la modifica M1 attraverso il Regolamento Delegato 2020/1588, e Dodd-Frank Wall Street Reform and Consumer Protection Act Section 1502.

Material conforming to the following European directives/regulation:
- REACH regulation 2006/1907/EC and all subsequent updates, including modification M80 Delegate Directive, and SVHC Candidate List updated to 01/17/2023.
- ROHS Directive 2011/65/EU and all subsequent updates, including the M80 amendment through the Delegated Directive 2022/1632, and Italian Legislative Decree 27 of 03/04/2014.
- WEEE Directive 2012/19/EU and all subsequent updates, including the M1 amendment through Directive 2018/849.
- ELV (End-of-Life Vehicles) Directive 2000/53/EC and all subsequent updates, including the modification M15 through Directive 2020/363
- Radioactive Contamination, Directive 2013/59/EURATOM and Italian Legislative Decree No. 101 of 31 July 2020.
- Canadian List 168 updated 03/16/2022.
- Conflict Minerals, Regulation (EU) 2017/821 and all subsequent updates, including amendment M1 through Delegated Regulation 2020/1588, and Dodd-Frank Wall Street Reform and Consumer Protection Act Section 1502.

Pag. 2 / 2 RODACCIAI: The Work Inspector
Alessia Porta

INDRA s.r.l.
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COGNE ACCIAI SPECIALI S.p.a.

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CAP. SOC. 250.000.000 EUR INT. VERS.
C.F. 02187360967
VAT: IT00571320078 - R.E.A. n. AO-50474

Company with Management Systems certified according to ISO 9001, ITAF 16949, EN 9100, ISO 14001 and ISO 45001.

INSPECTION CERTIFICATE 3.1 (EN 10204:2004)
DOCUMENT NUMBER 2023008125

SFERA / BALL

CUSTOMER'S ORDER:	mail		
MANUFACTURER'S WORKS:	AOSTA, VIA PARAVERA 16 - ITALY		
PRODUCER OF THE DOC:	QUALITY DEPARTMENT		
MANUFACTURER'S WORKS ORDER NO:	0001137664 / 000020		
MARK OF THE MANUFACTURER:	COGNE		
DISPATCH NOTE:	81578978 / 000020 WEIGHT: 476 KG / 1049 LB		
INTERNAL SPEC:	AD2000MERKBLATTW10	TECHNICAL RULE:	AD2000
PRODUCT:	PEL PEELED ROUND BARS TOLERANCE: ISOK11		
SURFACE FINISH:	2B Cold Finished		
PRODUCT DELIVERY CONDITION:	RS SOLUTION ANNEALED		
PRODUCT DIMENSIONS (mm):	42,000 (1,654 in)	LENGTH (mm)	06000 06200 (00236 00244 in)
GRADE:	316L-S31600/31603-1.4404/1.4401	INTERNAL GRADE:	F316L IMCO
IDENTIFICATION HEAT NO:	372009	IDENTIFICATION LOT NO:	963880
MARKING OF THE PRODUCT:	1.4404	TEST PIECE N:	388

AISI 316/316L - UNS S31600/S31603 - 1.4404/1.4401
STEELMAKING EAF + AOD + CONTINUOUS CASTING
REFERENCE FOR APPLICABLE ASME STANDARD: SECTION II PART A ED. 2015-2017-2019-2021
THE MATERIAL IS PRODUCED ACCORDING TO SPECIFICATION AD2000-MERKBLATT W2/W10
DOCUMENT ISSUED IN AGREEMENT WITH TUEV BAYERN(11.1972) WAVING OF COUNTERSIGNING (SEE TUEV BAYERN LETTER DATED 17.01.80).
REFERENCE NORMS: EN 10088-3 2014, EN 10272 2016, ASTM A276/A276M, ASTM A479/A479M, ASTM A193 B8MCLASSE 1D, ASME SA276/SA276M, ASME SA479/SA479M, AMS 5653J, AMS 5648M, ISO15156-3/NACE MR0175 2015, NACE MR0103/ISO 17945, NORSOK M630 MDSS01 REV5.
REFERENCE NORMS FOR CHEMICAL COMPOSITION AND MECHANICAL PROPERTIES: ASTM A182, ASME SA182.
REFERENCE NORMS ONLY FOR CHEMICAL COMPOSITION: EN 10222-5 2017,ASTM A403-07a, ASTM A484-18a,ASTM A314-08, AMS-QQ-S-763D.
ASME SECT.II PART A EDITION 2015-2017-2019-2021
MATERIAL ACCORDING TO NACE MR0103/ISO 17945
HOT ROLLED
REDUCTION RATIO 16,8

CHEMICAL LADLE ANALYSIS ACCORDING TO ASTM A751 - EN ISO 14284
Control lot No. - Weight :020000951998 - 86.971 KG - 191.735 LB

ELEMENTS	C	Si	Mn	P	S	N	Cr	Mo	Ni	Cu
MEASUREMENT UNIT	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w
OBTAINED	0,016	0,41	1,81	0,024	0,025	0,071	16,89	2,10	10,25	0,39

ELEMENTS	Co
MEASUREMENT UNIT	% w/w
OBTAINED	0,12

HARDNESS TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000952723 - 2.519 KG - 5.553 LB
SPECIFICATION ENISO6506 HARDNESS TEST HB TESTING METHOD: 10/3000
OBTAINED 157

DATE 14.02.2023 BARBARA VIETTI MV(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne

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INDRA S.r.l.

COGNE ACCIAI SPECIALI S.p.a.

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Company with Management Systems certified according to ISO 9001, ITAF 16949, EN 9100, ISO 14001 and ISO 45001.

SFERA / BALL

IMPACT TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000952723 - 2.519 KG - 5.553 LB
SPECIFICATION EN ISO 148-1-KV2 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 20
MEASUREMENT UNIT J

OBTAINED	441	429	433	438	430	440	428	442	442

TENSILE TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000952723 - 2.519 KG - 5.553 LB
SPECIFICATION EN-ISO6892-1 DIRECTION OF THE TEST PIECE: L

	RM	RP02	A5	Z	RP1
MEASUREMENT UNIT	MPA	MPA	% 5.0 D	%	NMM
OBTAINED	567	273	58,1	77,4	313
	577	281	52,0	72,5	317
	568	266	58,9	80,2	312

GRAIN SIZE
Control lot No. - Weight :020000952723 - 2.519 KG - 5.553 LB
SPECIFICATION ASTME112 --
OBTAINED 6

CORROSION TEST ACCORDING TO ASTM A262 PRACTICE E EN ISO 3651-2 PRACTICE A: SATISFACTORY.
MATERIAL ACCORDING TO ASME SEC. II Ed. 2015
IMPACT TEST
Control lot No. - Weight :020000952723 - 2.519 KG - 5.553 LB
SPECIFICATION EN ISO 148-1 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 196-
MEASUREMENT UNIT J

OBTAINED	185	200	188	196	192	176	198	188	173

TENSILE TEST
Control lot No. - Weight :020000952723 - 2.519 KG - 5.553 LB
SPECIFICATION ASTMA370-E8-0.5"SPEC DIRECTION OF THE TEST PIECE: L

	RMB	RP02B	ZB	AL2B
MEASUREMENT UNIT	KSI	KSI	%	% 4,0 D
OBTAINED	84	38	79,4	58,9
	83	38	72,4	63,9
	83	39	79,8	64,1

The products delivered are conforming to EN10088-5 and bear the CE marking on the basis of the test results here reported and the continuous surveillance, assessment and approval by MPA NRW

DATE 14.02.2023 BARBARA VIETTI MV(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne

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VAT: IT00571320076 - R.E.A. n. AO-50474

Company with Management Systems certified according to ISO 9001, ITAF 16949, EN 9100, ISO 14001 and ISO 45001.

SFERA / BALL

(certificate no. 0432-CPR-00166-01)
Material produced according to the system #Regulation 305/2011/EU of the European Parliament and of the Council of 9 March 2011#
ULTRASONIC TEST ACCORDING TO EN 10308 Class.3: SATISFACTORY
EDDY CURRENT INSPECTION OF SURFACE ACCORDING TO EN 10277 CLASS 4.
DIMENSIONAL CONTROL ACCORDING TO EN 10278: SATISFACTORY.
NO WELDING REPAIR ON THE MATERIAL.
ANTIMIXING TEST BY PORTABLE SPECTROMETRE: CONFORMING
MARKING: SYMBOL OF THE MANUF. WORK, MATERIAL N. , CAST N., LOT N., RECEIVING AGENT STAMP
COUNTRY OF MELTING AND ORIGIN: ITALY, THE MATERIAL COMPLIES WITH FAR DFARS
252.225-7009 ALT 1.
THE PRODUCT SATISFIES THE DIRECTIVES: 2015/863/EU (ROHS3) - 2011/65/EU (ROHS2) - 2000/53/EU - 2002/95/EU(RoHS) - 2003/11/EU-
2005/618/EU AND PED 2014/68/EU.
ALL THE NORMS MENTIONED ARE INTENDED IN THEIR LAST REVISION AT THE DATE OF ISSUE OF THIS DOCUMENT.
MATERIAL ACCORDING TO NACE MR0103/ISO 17945
INSPECTOR'S STAMP LF
QUALITY SYSTEM CERTIFIED BY KIWA CERMET ACCORDING TO UNI EN ISO 9001:2015 -IATF 16949:2016 (THE LAST ONE ONLY FOR WIRE ROD AND HOT ROLLED-PEELED-GROUND STAINLESS STEEL BARS).
THE MATERIAL IS FREE OF ANY MERCURY, MERCURY COMPOUNDS AND OR RADIUM CONTAMINATION AT TIME OF SHIPMENT AND WAS PRODUCED WITHOUT USING OZONE DEPLETING SUBSTANCES OF CLASS I AND II.
RADIOACTIVITY CONTROL PERFORMED WITH A GAMMA SPECTROMETER: ASTM E181.
GAMMA ACTIVITY ON THE PRODUCTS BELOW 0.1 BQ/G ACCORDING TO EU RESOLUTION 2013/59/EURATOM , IAEA RS-G-1.7 AND IAEA SSG-17.

CE 0432

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DATE 14.02.2023

BARBARA VIETTI MV(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE

-Cogne

ROSETTI MARINO ITEM 100

COD. BC0NN24710100

TAG: BLPH-MV-263, BLPH-MV-419

INDRA ITEM 100

COD. 00.VSF.2770/V

indra VALVES - ITALY

Certificazione dei materiali
EN 10204 3.1 come da allegati

Material certification
EN 10204 3.1 as per attachments

MD-02-04-IT-UK / VSF
Rev. 16
Data: 08-Nov-2018
CM/IT/UK

Nr. *No.* **24-2002** **Data / *Date :*** **16-Oct-2024**

Cliente / *Customer* **ROSETTI MARINO SPA**

Vs. ordine Nr. / *Your order Nr.* **1724000798 REV.2** **Data / *Date :*** **26-Jun-2024**

Ns. commessa Nr. / *Our job Nr.* **24 01216** **Data / *Date :*** **3-Jul-2024**

Ns. D.D.T. Nr. / *Our advise note Nr.* **Data / *Date :***

Ordine di produzione / Production order number : 24 01216/100 - 36804

Lotto / Material batch number : 36804

Pos. Cliente Customer Item	*Pos. Indra Indra Item*	*Codice / Code*		*Q.tà / Q.ty*	*Nr. di serie Serial Number*	*Descrizione /Description*
		Ns./ Our	*Vs. / Your*			
100	100	00.VSF.2770/V	VBC0NN24710100	2	105975,105976	INDRA BALL VALVE SB-598-25-F150RF3-F-LF2-DL-CA3-N-RG-L1-TG-TGW-TV-PMI2-PD2-BI-CR-TA-FS-SPC1

Elenco / List

Componente / *Component*	Colata / Heat	Materiale *Material*	Numero del certificato Certificate number
Corpo Valvola / Valve Body	36804	ASTM A350 LF2 NACE	111 - 2150 - UT 3
Closure F150RF3	36804	ASTM A350 LF2 NACE	111 - 2150 - UT 3
Tirante / Stud bolt	BE1859	ASTM A193 B7M + HDG	5218
Dado / Nut	BD4437	ASTM A194 Gr.2HM + HDG	5166
Stelo antiespulsione sfera / Ball stem	E30822	AISI 316/316L NACE	173501
Sfera / Ball	072244	AISI 316/316L NACE	2020018438

NOTE / **REMARKS :** TAG: BLPH-MV-263, BLPH-MV-419

PREPARATO DA: **ELEONORA RANZANI**
PREPARED BY: **DOCUMENTION MANAGER**

APPROVATO DA: **LUCIA NOSOTTI**
APPROVED BY: **QUALITY ASSURANCE MANAGER**

20013 Magenta (MI) Italy - Via Novara, 10/B-C
Tel. +39 02 97298663 r.a. - Fax +39 02 97291855
E-mail: indra@indra.it - http://www.indra.it

CROSSWIND
30/10/24

STEEL S.P.A.
AZIENDA CERTIFICATA UNI EN ISO 9001:2015

VIA C. COLOMBO 21
29010 SARMATO (PIACENZA)
TEL. 0523/886111 - FAX 0523/886298
E-MAIL: info@steelacciai.it

steel Acciai speciali

ATTESTATO DI CONTROLLO

TEST REPORT – RELEVE' DE CONTROLE – WERKSZEUGNIS N° 111 DATA 12.01.2024

CLIENTE Customer / Client / Besteller: INDRA SRL

ORDINE Order / Commande / Bestelung: 3454 DATA 18.12.2023 CONFERMA Confirmation / Confirmation de commande / Auftragsheslaligung
DDT 46 DATA 12.01.2024

ACCIAIO Steel / Acier / Stahl: A105/ A350 LF2 ASTM

PROFILO Shape / Section / Profil: T. 125 KG=590

COLATA Reel / Coulée / Sclinetze: 36804

STATO DI FORNITURA Delivery state / Elait de livraison / Lieferzusland: HOT ROLLED NORMALIZED

	COMPOSIZIONE CHIMICA % - CHEMICAL ANALYSIS % - COMPOSITION CHIMIQUE % - CHEMISCHE ZUSAMMENSETZUNG %															
	C	SI	MN	P	S	CR	NI	MO	AL	CU	V	NB	SN	TI	H/ppm	CEQ
DI COLATA / On heat Sur coulée / Vonder Schmelze	.165	.190	.950	.011	.004	.160	.060	.010	.030	.180	.003	.001	.017	.006	2.3	.37
SUL PRODOTTO / On product Sur prod. / Am Erzeugnis																

	CARATTERISTICHE MECCANICHE – MECHANICAL PROPERTIES – CARACTERISTIQUES MECANIQUES – MECHANISCHE EIGENSCHAFTEN												
	TRATTAMENTO TERMICO Heat treatment / Traitement thermique Warmebehandlung	Diameter Nominal mm	Weight Tollerance /m	Diameter Actual mm	Re Y. Strenght N/mm²	Rm T. Strenght N/mm²	A Elongation %	Z Reduction %	Rm/Re	KV -46°CJ	HB Brinell h. on product		
DI COLATA / On heat Sur coulée / Vonder Schmelze	NORMALIZED				373	533	41	72		54 57 55	160		
SUL PRODOTTO / On product Sur prod. / Am Erzeugnis													

ALTRE PROVE
Other test / Autres essais / Sonstige Prufungen
CERTIFICATO TTP N° 2150 DATA 17.11.2023
CONTROL UT 100% IN ACC. TO ASTM A388

COMMENTI
Remarks / Remarques / Andere Bemerkungen
Si attesta che i prodotti sopra descritti sono conformi ai requisiti contrattuali. NORME UNI EN 10204 3.1 - NACE MR 01-75 -NACE MR0103
We certify hereby that the above mentioned product are in accordance with the order prescriptions

Controllo Qualità
Quality control4
Controle de qualitè
Quelstralsablellung

STEEL s.p.a.

mod. 214 – REV. 01

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Trattamenti Termici Placentini

T.T.P. s.r.l.
AZIENDA CERTIFICATA UNI EN ISO 9001:2015
Via C. Colombo snc 29010 Sarmato (PC)
Tel 0523.888115 (r.a.) Fax 0523-848002
P.Iva e C.F. 01456790334

ATTESTATO DI CONTROLLO

TEST REPORT – RELEVE' DE CONTROLE – WERKSZEUGNIS N° 2150 DATA 17.11.2023

INDURA S.r.l.
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CLIENTE Customer Client Besteller	STEEL S.P.A.			ORDINE Order Commande Bestelung		CONFERMA Confirmation Confirmation de commande Auftragsheslaligung	
ACCIAIO Steel Acier Stahl	A105 /A350 LF2 ASTM	PROFILO Shape Section Profil	D. 125 mm	COLATA Reel Coulée Sclinetze	36804	STATO DI FORNITURA Delivery state Elait de livraison Lieferzusland	LAMINATO NORMALIZZATO

	CARATTERISTICHE MECCANICHE – MECHANICAL PROPERTIES – CARACTERISTIQUES MECANIQUES – MECHANISCHE EIGENSCHAFTEN										
	TRATTAMENTO TERMICO Heat treatment / Traitement thermique Warmebehandlung	Diameter Nominal mm	Weight Tollerance /m	Diameter Actual mm	Re Y. Strenght N/mm²	Rm T. Strenght N/mm²	A Elongation %	Z Reduction %	Rm/Re	KV -46°CJ	HB Brinell h. on product
DI COLATA / On heat Sur coulée / Vonder Schmelze	NORMALIZZAZIONE				373	533	41	72		54 57 55	160
SUL PRODOTTO / On product Sur prod. / Am Erzeugnis											

ALTRE PROVE Other test Autres essais Sonstige Prufungen	POSIZIONE PRELIEVO / TEST POSITION ¼ L ASTM A370 API 6D ANNEX H
COMMENTI Remarks Remarques Andere Bemerkungen	Si attesta che i prodotti sopra descritti sono conformi ai requisiti contrattuali. Come da NORME UNI EN 10204 3.1

Controllo Qualità
Quality control
Controle de qualité
Quelstralsablellung

TTP srl

mod. 214 – REV. 01

Trattamenti Termici Piacentini	UT QUALIFICATION RECORD	N° 3 DATE: 12.01.2024
CUSTOMER: INDRA SRL		**ODP N° 3454/AF23 del 18/12/2023**
ACTIVITY\PHASE: QUALIFICATION RECORD		
UT.Q.R. SPECIFICATION\ACCEPTANCE CRITERIA: **IN ACC. TO ASTM A388 UT 100%**		
MATERIAL GRADE: A350 LF2 / A105 Ø 125 mm		
EQUIPMENT: INSTRUMENT MANUFACTURER: **KRAUTKRAMER** TYPE: **USM 36** MAT. N°: **37462** SERIAL-No: **18107591** PROBE MANUFACTURER: **KRAUTKRAMER** TYPE: **B2S** MAT.N°: **17816** PROBE MHz: **2 0°** SIZE mm: **24.0** CABLE: **LEMO 1 L=2m** BLOCK TYPE: **V1** COUPLANT: **GEL**		
SCANNING DGS SENSIVITY: **sui blocchi campione ECOGLOBAL DGS1 42 Db**		
SCANNING SENSIVITY ON MATERIAL: **51 Db**		
SET RANGE: (AVG) **3 mm**		
SURFACE CONDITIONS : **HOT ROLLED +N**		
TEMPERATURE: **°C 8**		
REMARKS:		
LEVEL II EN ISO 9712:2012 **OPERATOR: Marco Braghieri** **TTP srl**		

INDRA s.r.l.
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Trattamenti Termici Piacentini	UT INSPECTION REPORT	N°: 3 DATE: 12.01.2024
CUSTOMER: INDRA SRL	ODP N° 3454/AF23 del 18/12/2023	HEAT: 36804
ACTIVITY: CONTROLLO UT IN ACC. TO ASTM A388 UT 100%		
UT.QR N° 3		
MATERIAL: A350 LF2 / A105	Ø 125 mm	

MATERIAL IDENTIFICATION	LOCATION OF INDICATIONS TO THE END POS.	W.T.POS. mm	DIM mm	RESULTS
HEAT: 36804 L=6100				Conforme
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				

NOTE:

LEVEL II EN ISO 9712:2012
OPERATOR: Marco Braghieri
TTP srl

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TIRANTE / STUD BOLT t.e.c.n.o BOLT

CERTIFICATE

Nr. 5218 | **02-10-24**

Page 1/1

INDRA SRL
VIA NOVARA 10/B-C
20013 MAGENTA MI
ITALIA

EN ISO 10204 3.1
CERTIFIED MATERIAL TEST REPORT

Your order: AF24 02329 REV.02 16-07-24 Delivery note: 2454 02-10-24

Item	Materials	Description	Sizes	Batch	Heat		Quantity
6	ASTM A 193 B7M 980.99.0260CS Pos.285 CKD/SM/18/03/2022	Tirante DIN 976/UNI 6610 ASTM A 193 B7M M HDG	10X30	8582	BE1859	N.	40

CHEMICAL ANALYSIS

6		%C %	%Mn %	%P %	%S %	%Si %	%Cr %	%Mo %	%H.T. Q+T
	REQ. MIN.	0,37	0,65			0,15	0,75	0,15	T=1100 F
	REQ. MAX.	0,49	1,10	0,035	0,040	0,35	1,20	0,25	
	ACT.VAL.	0,420	0,830	0,010	0,026	0,230	1,040	0,180	Q+T

MECHANICAL PROPERTIES

6		UTS MPa	YS0,2 MPa	E %	R.A. %	H HB	I.T. °C Kv J-22 C
	REQ. MIN.	860	720	16	50		
	REQ. MAX.					321	
	ACT. VAL.	1000	804	22,6	61	298	N.A.

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We state that the material or fasteners, or both, were manufactered, sampled, tested and inspected in accordance with the specification and any supplementary requirements designated in the purchase/sales order and it was found to meet those requirements

DADO / NUT

t·e·c·n·o BOLT

CERTIFICATE

Nr. 5166	18-09-24

Page 1/1

INDRA SRL
VIA NOVARA 10/B-C
20013 MAGENTA MI
ITALIA

EN ISO 10204 3.1
CERTIFIED MATERIAL TEST REPORT

Your order: AF24 02329 REV.02 16-07-24 Delivery note: 2307 18-09-24

Item	Materials	Description	Sizes	Batch	Heat	Quantity
3	ASTM A 194 Gr.2HM 980.99.0188 Pos.170, 180, 190, 330 CKD/DR/30/05/16	Dado UNI 5588/DIN 934 ASTM A 194 Gr.2HM M Esagonale HDG	10	8581	BD4437 N.	70

VOCE DOGANALE 73181900

MERCE DI ORIGINE ITALIANA

CHEMICAL ANALYSIS

3		%C %	%Mn %	%P %	%S %	%Si %	%H.T. Q+T	%Ni %	%Cr %	%Mo %
	REQ. MIN.	0,40					T=850 F			
	REQ. MAX.		1	0,040	0,050	0,40				
	ACT.VAL.	0,435	0,790	0,007	0,029	0,230	Q+T	0,070	0,190	0,020

MECHANICAL PROPERTIES

3		H HRC	P.L. N/mm
	REQ. MIN.		1205
	REQ. MAX.		
	ACT. VAL.	32-34	1205

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We state that the material or fasteners, or both, were manufactered, sampled, tested and inspected in accordance with the specification and any supplementary requirements designated in the purchase/sales order and it was found to meet those requirements

STELO SFERA / BALL STEM

Rodacciai

23842 Bosisio Parini (LC) – Via Giuseppe Roda 1 – Italia
Tel. +39 031878111 – Fax +39 031878312
www.rodacciai.com – info@rodacciai.com

Azienda con sistema di gestione certificato da IGQ
secondo UNI EN ISO 9001:2015

The Company's Quality Management System
is certified by IGQ according to UNI EN ISO 9001:2015

CERTIFICATO DI CONTROLLO Inspection Certif N. 173501 Date 13/11/2023

Secondo According to . . . . . EN 10204:2004 3.1

ORDINE - Order N. 23/3822 Date 10/11/2023

D.d.T. - Delivery note N. 11634/04 Date 13/11/2023

Weight KG 128,00 **Odp. Nr.** 2022/A/13380
Tolerance ISO286-2 h9 + 0,000 - 0,043 mm **Bars Length** 3.000 - 3.050 mm

QUALITA' - Grade

STANDARD	EN 10088-3:2014	X2CrNiMo17-12-2	1.4404 / 316L
STANDARD	EN 10088-3:2023	X5CrNiMo17-12-2	1.4401 / 316

Mark RODACCIAI . . . . . 316 PLUS
PROFILO - Shape . . . . . ROUND
DIMENSIONE - Size . . . . . mm 18,00
ESECUZIONE - Form of delivery . . . . . ROUGH GROU.

COLATA - Heat E30822

ANALISI CHIMICA DI COLATA - Cast analysis % by mass

C	Mn	Si	S	P	Cr	Ni	Mo	Cu	Co	N
0,020	1,540	0,554	0,0290	0,031	16,620	10,020	2,030	0,441	0,280	0,0520

CARATTERISTICHE MECCANICHE ALLO STATO DI FORNITURA
Mechanical properties of the delivered material

		Tested
Tensile Strength	Rm (MPa)	695,3
Proof Stress	Rp (1) (MPa)	648,0
Proof Stress	Rp (0,2) (MPa)	580,7
Elongation	A 4 (%)	44,3
Elongation	A 5 (%)	41,1
Hardness	HBW	211,0
Reduction of area	Z (%)	68,0

NOTE - Notes

Processo di Fusione: E + A. O. D.
Prova di Corrosione Intergranularena: ASTM A262-15 "E"
Trattamento termico: Temperatura di Solubilizzazione 1060°C
Tempo Mantenimento: 4 Ore, Raffreddamento in Acqua
Materiale conforme a: ASTM A276-16a / A479-16a / A182-24
ASME: SA479; SA276; SA182 - UNS 31600 - 31630 AISI 316-316L

Pag. 1 / Segue

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STELO SFERA / BALL STEM

Rodacciai

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www.rodacciai.com – info@rodacciai.com

Azienda con sistema di gestione certificato da IGQ
secondo UNI EN ISO 9001:2015

The Company's Quality Management System
is certified by IGQ according to UNI EN ISO 9001:2015

Segue certificato di controllo N. 173501 Date 13/11/2023
Inspection Certificate's continuance

NOTE - Notes

Materiale Conforme a NACE MR-0175/ISO 15156-3:2015
NACE MR-103/ISO 17495-1:2016
Corrosione Intercristallina EN ISO 3651-2:98 Met.A

Melting Process: E + A. O. D
Intergranular corrosion tested to ASTM A262-15 "E"
Heat treatment: annealed temperature 1060°C
Soaking time: 4 Hours, Cooling in water
Material Compliant to: ASTM A276-16a / A479-16a / A182-24
ASME: SA479; SA276; SA182 - UNS 31600 - 31630 AISI 316-316L
According to: NACE MR-0175 / ISO 15156-3:2015
NACE MR-103/ISO 17495-1:2016
Intergranular Corrosion according to EN ISO 3651-2:98 Met.A

Surface quality condition 2H conforming also to EN 10277 class 3

We certify hereby, that the above mentioned products are consistent with the order prescriptions.
This certificate was generated by data system acc. to EN 10204, it is not necessary to be signed for validity.

Materiale conforme alle seguenti direttive/regolamenti europee:
. Regolamento REACH 2006/1907/CE e tutti successivi aggiornamenti, compresa la modifica M80 Direttiva Delegata 2022/1632, e SVHC Candidate List aggiornata al 17/01/2023.
. Direttiva ROHS 2011/657UE e tutti i successivi aggiornamenti, compresa la modifica M80 attraverso la Direttiva Delegata 2022/1632, e Decreto Legislativo 27 del 04/03/2014.
. Direttiva RAEE 2012/19/UE e tutti successivi aggiornamenti, compresa la modifica M1 attraverso la Direttiva 2018/849.
. Direttiva ELV (End-of-Life Vehicles) 2000/53/CE e tutti i successivi aggiornamenti, compresa la modifica M15 attraverso la Direttiva 2020/363
. Contaminazione Radioattiva, Direttiva 2013/59/EURATOM e Decreto Legislativo N.101 del 31 Luglio 2020.
. Canadian List 168 aggiornata al 16/03/2022.
. Minerali di Conflitto, Regolamento (UE) 2017/821 e tutti i successivi aggiornamenti, compresa la modifica M1 attraverso il Regolamento Delegato 2020/1588, e Dodd-Frank Wall Street Reform and Consumer Protection Act Section 1502.

Material conforming to the following European directives/regulation:
. REACH regulation 2006/1907/EC and all subsequent updates, including modification M80 Delegate Directive, and SVHC Candidate List updated to 01/17/2023.
. ROHS Directive 2011/65/EU and all subsequent updates, including the M80 amendment through the Delegated Directive 2022/1632, and Italian Legislative Decree 27 of 03/04/2014.
. WEEE Directive 2012/19/EU and all subsequent updates, including the M1 amendment through Directive 2018/849.
. ELV (End-of-Life Vehicles) Directive 2000/53/EC and all subsequent updates, including the modification M15 through Directive 2020/363
. Radioactive Contamination, Directive 2013/59/EURATOM and Italian Legislative Decree No. 101 of 31 July 2020.
. Canadian List 168 updated 03/16/2022.
. Conflict Minerals, Regulation (EU) 2017/821 and all subsequent updates, including amendment M1 through Delegated Regulation 2020/1588, and Dodd-Frank Wall Street Reform and Consumer Protection Act Section 1502.

 RODACCIAI: The Work Inspector
Alessia Porta

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COGNE ACCIAI SPECIALI S.p.a.

ITALY - 11100 AOSTA - VIA PARAVERA, 16
TEL. +39.0165.3021 - FAX +39.0165.302296
CAP. SOC. 200.000.000 EUR INT. VERS.
C.F. 02187360967
VAT: IT00571320076 - R.E.A. n. AO-50474

Company with Management Systems
certified according to ISO 9001, IATF 16949,
EN 9100 and ISO 14001.

INSPECTION CERTIFICATE 3.1 (EN 10204:2004)

CUSTOMER'S ORDER:	254		
MANUFACTURER'S WORKS:	AOSTA, VIA PARAVERA 16 - ITALY		
PRODUCER OF THE DOC:	QUALITY DEPARTMENT		
MANUFACTURER'S WORKS ORDER NO:	0001118068 / 000010		
MARK OF THE MANUFACTURER:	COGNE		
DISPATCH NOTE:	81346050 / 000010 WEIGHT: 232 KG / 512 LB		
THE CERTIFIED PRODUCTS ARE COMPLYING TO THE PURCHASE ORDER, EXCEPT FOR EXEMPTIONS AGREED WITH THE CUSTOMER, IF ANY.			
INTERNAL SPEC:	STOCKBARREW2	TECHNICAL RULE:	AD2000
PRODUCT:	PEL PEELED ROUND BARS TOLERANCE: ISOK11		
SURFACE FINISH:	2B Cold Finished		
PRODUCT DELIVERY CONDITION:	RS SOLUTION ANNEALED		
PRODUCT DIMENSIONS (mm):	45,000 (1,772 in)	LENGTH (mm)	06000 06200 (00236 00244 in)
GRADE:	AISI 316/316L EN1.4401/4404	INTERNAL GRADE:	F316L IMCO
IDENTIFICATION HEAT NO:	072244	IDENTIFICATION LOT NO:	201970
MARKING OF THE PRODUCT:	1.4404	TEST PIECE N:	197

REFERENCE NORMS: EN 10088-3 2014, EN 10272 2016, ASTM A276/A276M, ASTM A479/A479M, ASTM A193 B8MCLASSE 1D, ASME SA276/SA276M, ASME SA479/SA479M, AMS 5653J, AMS 5648M, ISO15156-3/NACE MR0175 2015, NACE MR0103/ISO 17945, NORSOK M630 MDSS01 REV5.
REFERENCE NORMS FOR CHEMICAL COMPOSITION AND MECHANICAL PROPERTIES: ASTM A182, ASME SA182.
REFERENCE NORMS ONLY FOR CHEMICAL COMPOSITION: EN 10222-5 2017,ASTM A403-07a, ASTM A484-18a,ASTM A314-08, AMS-QQ-S-763D.
ASME SECT.II PART A EDITION 2015-2017-2019
THE PRODUCT IS CONFORMING TO THE CONTRACT AGREEMENT AND TO THE RULE AD2000-MERKBLATT W0/W2.
ASTM A484 DOES NOT APPLY FOR SIZE AND LENGTH TOLERANCES.
STEELMAKING EAF + AOD + CONTINUOUS CASTING
REFERENCE NORM ASME BPVC.II.A-2015.
HOT ROLLED
REDUCTION RATIO 14,8

CHEMICAL LADLE ANALYSIS ACCORDING TO ASTM A751 - EN ISO 14284
Control lot No. - Weight :020000828767 - 83.288 KG - 183.616 LB

ELEMENTS	C	Si	Mn	P	S	N	Cr	Mo	Ni	Cu
OBTAINED	0,015	0,34	1,74	0,027	0,024	0,080	16,78	2,05	10,21	0,41

ELEMENTS	Co
OBTAINED	0,16

HARDNESS TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000828961 - 2.300 KG - 5.071 LB
SPECIFICATION ENISO6506 HARDNESS TEST HB TESTING METHOD: 10/3000
OBTAINED 171

IMPACT TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000828961 - 2.300 KG - 5.071 LB
SPECIFICATION EN ISO 148-1-KV2 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 20
MEASUREMENT UNIT J

OBTAINED	430	432	440	430	439	434	434	440	438	433
	431	439								

DATE 18.05.2020 BARBARA VIETTI MV(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne
REVIEW DATE 01.12.2021 N. REVIEW 1

INDRA s.r.l.
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C.F. 02187360967
VAT: IT00571320076 - R.E.A. n. AO-50474

Company with Management Systems certified according to ISO 9001, IATF 16949, EN 9100 and ISO 14001.

SFERA / BALL

TENSILE TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000828961 - 2.300 KG - 5.071 LB
SPECIFICATION EN-ISO6892-1 DIRECTION OF THE TEST PIECE: L

	RM	RP02	A5	Z	RP1
MEASUREMENT UNIT	MPA	MPA	% 5.0 D	%	NMM
OBTAINED	578	286	56,1	80,5	321
	592	287	55,6	80,1	321
	582	274	54,2	79,4	306
	585	274	55,6	81,2	312

GRAIN SIZE
Control lot No. - Weight :020000828961 - 2.300 KG - 5.071 LB
SPECIFICATION ASTME112 --
OBTAINED 5 7

MATERIAL IN COMPLIANCE WITH THE NORSOK M-630 MDS S01
IMPACT TEST
Control lot No. - Weight :020000828961 - 2.300 KG - 5.071 LB
SPECIFICATION EN ISO 148-1 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 196-
MEASUREMENT UNIT J

OBTAINED	181	183	188	177	175	200	188	174	194	183
	197	173								

TENSILE TEST
Control lot No. - Weight :020000828961 - 2.300 KG - 5.071 LB
SPECIFICATION ASTMA370-E8-0.5"SPEC DIRECTION OF THE TEST PIECE: L

	RMB	RP02B	ZB	AL2B
MEASUREMENT UNIT	KSI	KSI	%	% 4,0 D
OBTAINED	85	40	80,7	59,7
	85	42	81,2	60,3
	86	42	81,3	60,1
	85	41	81,0	58,6

COUNTRY OF MELTING AND ORIGIN: ITALY, THE MATERIAL COMPLIES WITH FAR DFARS
252.225-7009 ALT 1.
The products delivered are conforming to EN10088-5 and bear the CE marking on the basis of the test results here reported and the continuous surveillance, assessment and approval by MPA NRW
(certificate no. 0432-CPR-00166-01)
Material produced according to the system #Regulation 305/2011/EU of the European Parliament and of the Council of 9 March 2011#
DOCUMENT ISSUED IN AGREEMENT WITH TUEV BAYERN(11.1972) WAVING OF COUNTERSIGNING (SEE TUEV BAYERN LETTER DATED 17.01.80).
MARKING: SYMBOL OF THE MANUF. WORK, MATERIAL N. , CAST N., LOT N., RECEIVING AGENT STAMP
CORROSION TEST ACCORDING TO ASTM A262 PRACTICE E EN ISO 3651-2 PRACTICE A: SATISFACTORY.

DATE 18.05.2020 BARBARA VIETTI MV(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne
REVIEW DATE 01.12.2021 N. REVIEW 1

INDRA S.r.l.
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COGNE ACCIAI SPECIALI S.p.a.

ITALY - 11100 AOSTA - VIA PARAVERA, 16
TEL +39.0165.3021 - FAX +39.0165.302296
CAP. SOC. 200.000.000 EUR INT. VERS.
C.F. 02187360967
VAT: IT00571320076 - R.E.A. n. AO-50474

Company with Management Systems certified according to ISO 9001, IATF 16949, EN 9100 and ISO 14001.

SFERA / BALL

ANTIMIXING TEST BY PORTABLE SPECTROMETRE: CONFORMING
EDDY CURRENT INSPECTION OF SURFACE ACCORDING TO EN 10277 CLASS 4.
DIMENSIONAL CONTROL ACCORDING TO EN 10278: SATISFACTORY.
NO WELDING REPAIR ON THE MATERIAL.
ULTRASONIC TEST ACCORDING TO EN 10308 Class.3: SATISFACTORY
QUALITY SYSTEM CERTIFIED TO UNI EN ISO 9001:2015 -IATF 16949:2016 (THE LAST ONE ONLY FOR WIRE ROD AND HOT ROLLED-PEELED-GROUND STAINLESS STEEL BARS).
MATERIAL ACCORDING TO NORSOK M630 EDITION 6.
INSPECTOR'S STAMP LF
THE PRODUCT SATISFIES THE DIRECTIVES: 2015/863/EU (ROHS3) - 2011/65/EU (ROHS2) - 2000/53/EU - 2002/95/EU(RoHS) - 2003/11/EU-2005/618/EU AND PED 2014/68/EU.
THE MATERIAL IS FREE OF ANY MERCURY, MERCURY COMPOUNDS AND OR RADIUM CONTAMINATION AT TIME OF SHIPMENT AND WAS PRODUCED WITHOUT USING OZONE DEPLETING SUBSTANCES OF CLASS I AND II.
RADIOACTIVITY CONTROL PERFORMED WITH A GAMMA SPECTROMETER: ASTM E181.
GAMMA ACTIVITY ON THE PRODUCTS BELOW 0.1 BQ/G ACCORDING TO EU RESOLUTION 2013/59/EURATOM , IAEA RS-G-1.7 AND IAEA SSG-17.

CE 0432

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DATE 18.05.2020 BARBARA VIETTI MV(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne
REVIEW DATE 01.12.2021 N. REVIEW 1

ROSETTI MARINO ITEM 110

COD. VBC0NN24710100

TAG: BLPH-MV-417

INDRA ITEM 110

COD. 00.VSF.2689/V

indra VALVES - ITALY	***Certificazione dei materiali*** ***EN 10204 3.1 come da allegati*** ***Material certification*** ***EN 10204 3.1 as per attachments***	**MD-02-04-IT-UK / VSF** **Rev. 16** **Data: 08-Nov-2018** **CM/IT/UK**

Nr. *No.* **24-2003** **Data / *Date :*** **16-Oct-2024**

Cliente / *Customer* **ROSETTI MARINO SPA**

Vs. ordine Nr. / *Your order Nr.* **1724000798 REV.2** **Data / *Date :*** **26-Jun-2024**

Ns. commessa Nr. / *Our job Nr.* **24 01216** **Data / *Date :*** **3-Jul-2024**

Ns. D.D.T. Nr. / *Our advise note Nr.* **Data / *Date :***

Ordine di produzione / Production order number : 24 01216/110 - 438158

Lotto / Material batch number : 438158

Pos. Cliente Customer Item	*Pos. Indra Indra Item*	*Codice / Code*		*Q.tà / Q.ty*	*Nr. di serie Serial Number*	*Descrizione /Description*
		Ns./ Our	*Vs. / Your*			
110	110	00.VSF.2689/V	VBC0NN24710100	1	105977	INDRA BALL VALVE SB-598-25-F150RF3-F-LF2-DL-CA3-N-RG-EXS100-L1-TG-TGW-TV-PMI2-PD2-BI-CR-TA-FS-SPC1

Elenco / List

Componente / *Component*	Colata / Heat	Materiale *Material*	Numero del certificato Certificate number
Corpo Valvola / Valve Body	438158	ASTM A350 LF2 NACE	640 - 145 - UT 12
Closure F150RF3	P0JS1900A13025	ASTM A350 LF2 NACE	1364 - 198 - UT 10
Tirante / Stud bolt	BE1859	ASTM A193 B7M + HDG	5218
Dado / Nut	BD4437	ASTM A194 Gr.2HM + HDG	5166
Stelo antiespulsione sfera / Ball stem	E30822	AISI 316/316L NACE	173501
Sfera / Ball	072244	AISI 316/316L NACE	2020018438

NOTE / **REMARKS :** TAG: BLPH-MV-417

PREPARATO DA: **ELEONORA RANZANI** PREPARED BY: **DOCUMENTION MANAGER**

APPROVATO DA: **LUCIA NOSOTTI** APPROVED BY: **QUALITY ASSURANCE MANAGER**

20013 Magenta (MI) Italy - Via Novara, 10/B-C
Tel. +39 02 97298663 r.a. - Fax +39 02 97291855
E-mail: indra@indra.it - http://www.indra.it

Pratica CROSS WIND
30/10/24 R

STEEL S.P.A.
AZIENDA CERTIFICATA UNI EN ISO 9001:2015
VIA C. COLOMBO 21
29010 SARMATO (PIACENZA)
TEL. 0523/886111 - FAX 0523/886298
E-MAIL: info@steelacciai.it

ATTESTATO DI CONTROLLO

TEST REPORT – RELEVE' DE CONTROLE – WERKSZEUGNIS N° 640 DATA 30.01.2024

CLIENTE Customer / Client / Besteller: INDRA SRL
ORDINE Order / Commande / Bestelung: 249 DATA 23.01.2024 DDT 232 DATA 30.01.2024
CONFERMA Confirmation / Confirmation de commande / Auftragsbestaligung
ACCIAI Steel / Acier / Stahl: A105/A350 LF2 ASTM
PROFILO Shape / Section / Profil: T.130 KG=1916
COLATA Reel / Coulée / Sclinetze: 438158
STATO DI FORNITURA Delivery state / Elait de livraison / Lieferzusland: HOT ROLLED NORMALIZED

	COMPOSIZIONE CHIMICA % - CHEMICAL ANALYSIS % - COMPOSITION CHIMIQUE % - CHEMISCHE ZUSAMMENSETZUNG %															
	C	SI	MN	P	S	CR	NI	MO	AL	CU	V	NB	SN	TI	H/ppm	CEQ
DI COLATA / On heat Sur coulée / Vonder Schmelze	.178	.21	1.11	.007	.002	.12	.07	.03	.028	.11	.005	.002	.007	.0026	1.20	.406
SUL PRODOTTO / On product Sur prod. / Am Erzeugnis																

	CARATTERISTICHE MECCANICHE – MECHANICAL PROPERTIES – CARACTERISTIQUES MECANIQUES – MECHANISCHE EIGENSCHAFTEN													
	TRATTAMENTO TERMICO Heat treatment / Traitement thermique Warmebehandlung	Diameter Nominal mm	Weight Tolerance /m	Diameter Actual mm	Re Y. Strenght N/mm²	Rm T. Strenght N/mm²	A Elongation %	Z Reduction %	Rm/Re	KV-46°CJ	HB Brinell h. on product		
DI COLATA / On heat Sur coulée / Vonder Schmelze	NORMALIZED				359	513	35	69		85 89 82	154		
SUL PRODOTTO / On product Sur prod. / Am Erzeugnis													

ALTRE PROVE Other test / Autres essais / Sonstige Prufungen: CERTIFICATO TTP N° 145 DATA 30.01.2024

COMMENTI Remarks / Remarques / Andere Bemerkungen: Si attesta che i prodotti sopra descritti sono conformi ai requisiti contrattuali. NORME UNI EN 10204 3.1 – NACE MR 01-75
We certify hereby that the above mentioned product are in accordance with the order prescriptions

Controllo Qualità Quality control / Controle de qualité / Quelstralsablellung: STEEL s.p.a.

mod. 214 – REV. 01

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Trattamenti Termici Piacentini

T.T.P. s.r.l.
AZIENDA CERTIFICATA UNI EN ISO 9001:2015
Via C. Colombo snc 29010 Sarmato (PC)
Tel 0523.888115 (r.a.) Fax 0523-848002
P.Iva e C.F. 01456790334

ATTESTATO DI CONTROLLO

TEST REPORT – RELEVE' DE CONTROLE – WERKSZEUGNIS N° 145 DATA 30.01.2024

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CLIENTE Customer Client Besteller	STEEL S.P.A.			ORDINE Order Commande Bestelung		CONFERMA Confirmation Confirmation de commande Auftragsheslaligung
ACCIAIO Steel Acier Stahl	A350 LF2/A105 ASTM	PROFILO Shape Section Profil	D. 130 mm	COLATA Reel Coulée Sclinetze	438158	STATO DI FORNITURA Delivery state Elait de livraison Lieferzusland	LAMINATO NORMALIZZATO

	CARATTERISTICHE MECCANICHE – MECHANICAL PROPERTIES – CARACTERISTIQUES MECANIQUES – MECHANISCHE EIGENSCHAFTEN										
	TRATTAMENTO TERMICO Heat treatment / Traitement thermique Warmebehandlung	Diameter Nominal mm	Weight Tollerance /m	Diameter Actual mm	Re Y. Strenght N/mm²	Rm T. Strenght N/mm²	A Elongation %	Z Reduction %	Rm/Re	KV-46°CJ	HB Brinell h. on product
DI COLATA / On heat Sur coulée / Vonder Schmelze	NORMALIZZAZIONE				359	513	35	69		85 89 82	154
SUL PRODOTTO / On product Sur prod. / Am Erzeugnis											

ALTRE PROVE Other test Autres essais Sonstige Prufungen	POSIZIONE PRELIEVO / TEST POSITION ¼ L ASTM A370 API 6D
COMMENTI Remarks Remarques Andere Bemerkungen	Si attesta che i prodotti sopra descritti sono conformi ai requisiti contrattuali. Come da NORME UNI EN 10204 3.1

Controllo Qualità TTP srl
Quality control
Controle de qualité
Quelstralsablellung

mod. 214 – REV. 01

Trattamenti Termici Piacentini	UT QUALIFICATION RECORD	N° 12 DATE: 30.01.2024
CUSTOMER: INDRA SRL		ODP N° 249/AF24 del 23/01/2024
ACTIVITY\PHASE: QUALIFICATION RECORD		
UT.Q.R. SPECIFICATION\ACCEPTANCE CRITERIA: IN ACC. TO ASTM A388 UT 100%		
MATERIAL GRADE: A350 LF2 / A105 Ø 130 mm		
EQUIPMENT: INSTRUMENT MANUFACTURER: KRAUTKRAMER TYPE: USM 36 MAT. N°: 37462 SERIAL-No: 18107591 PROBE MANUFACTURER: KRAUTKRAMER TYPE: B2S MAT.N°: 17816 PROBE MHz: 2 0° SIZE mm: 24.0 CABLE: LEMO 1 L=2m BLOCK TYPE: V1 COUPLANT: GEL		
SCANNING DGS SENSIVITY: sui blocchi campione ECOGLOBAL DGS1 42 Db		
SCANNING SENSIVITY ON MATERIAL: 45 Db		
SET RANGE: (AVG) 3 mm		
SURFACE CONDITIONS : HOT ROLLED +N		
TEMPERATURE: °C 6		
REMARKS:		
LEVEL II EN ISO 9712:2012 OPERATOR: Marco Braghieri TTP srl		

INDRA s.r.l.
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Trattamenti Termici Piacentini	UT INSPECTION REPORT	N°: 12 DATE: 30.01.2024
CUSTOMER: INDRA SRL	ODP N° 249/AF24 del 23/01/2024	HEAT: 438158
ACTIVITY: CONTROLLO UT IN ACC. TO ASTM A388 UT 100%		
UT.QR N° 12		
MATERIAL: A350 LF2 / A105	Ø 130 mm	

MATERIAL IDENTIFICATION	LOCATION OF INDICATIONS TO THE END POS.	W.T.POS. mm	DIM mm	RESULTS
HEAT: 438158 L=6000				Conforme
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				

NOTE:

LEVEL II EN ISO 9712:2012
OPERATOR: Marco Braghieri
TTP srl

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STEEL S.P.A.
AZIENDA CERTIFICATA UNI EN ISO 9001:2015

VIA C. COLOMBO 21
29010 SARMATO (PIACENZA)
TEL. 0523/886111 - FAX 0523/886298
E-MAIL: info@steelacciai.it

ATTESTATO DI CONTROLLO

TEST REPORT – RELEVE' DE CONTROLE – WERKSZEUGNIS N° 1364 DATA 22.02.2023

CLIENTE (Customer / Client / Besteller): INDRA SRL

ORDINE (Order / Commande / Bestelung): 394 del 15.02.2023 — DDT 497 del 22.02.2023

CONFERMA (Confirmation / Confirmation de commande / Auftragsbestaligung)

ACCIAIO (Steel / Acier / Stahl): A350 LF2 / A105 ASTM

PROFILO (Shape / Section / Profil): T.120 POS.60 KG=568

COLATA (Reel / Coulée / Schmelze): P0JS1900A13025

STATO DI FORNITURA (Delivery state / Etat de livraison / Lieferzustand): HOT ROLLED NORMALIZED

	COMPOSIZIONE CHIMICA % - CHEMICAL ANALYSIS % - COMPOSITION CHIMIQUE % - CHEMISCHE ZUSAMMENSETZUNG %															
	C	SI	MN	P	S	CR	NI	MO	AL	CU	NB	V	TI	CEQ		
DI COLATA / On heat Sur coulée / Vonder Schmelze	.1890	.2050	.9540	.0130	.0010	.1000	.0200	.0050	.0290	.0080	.0011	.0030	.0027	.3715		
SUL PRODOTTO / On product Sur prod. / Am Erzeugnis																

	CARATTERISTICHE MECCANICHE – MECHANICAL PROPERTIES – CARACTERISTIQUES MECANIQUES – MECHANISCHE EIGENSCHAFTEN													
	TRATTAMENTO TERMICO Heat treatment / Traitement thermique Warmebehandlung	Diameter Nominal mm	Weight Tollerance /m	Diameter Actual mm	Re Y. Strenght N/mm²	Rm T. Strenght N/mm²	A Elongation %	Z Reduction %	Rm/Re	KV-46°CJ			HB Brinell h. on product		
DI COLATA / On heat Sur coulée / Vonder Schmelze	NORMALIZED				354	505	29	62		95	94	99	152		
SUL PRODOTTO / On product Sur prod. / Am Erzeugnis															

ALTRE PROVE (Other test / Autres essais / Sonstige Prufungen): CERTIFICATO TTP N° 198 del 29.01.2022

COMMENTI (Remarks / Remarques / Andere Bemerkungen):
Si attesta che i prodotti sopra descritti sono conformi ai requisiti contrattuali. NORME UNI EN 10204 3.1– NACE MR 01-75 / ISO 15156 / MR 01-03
We certify hereby that the above mentioned product are in accordance with the order prescriptions

Controllo Qualità (Quality control / Controle de qualitè / Qualitatsabteilung): STEEL s.p.a.

mod. 214 – REV. 01

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Trattamenti Termici Piacentini TTP

T.T.P. s.r.l.
AZIENDA CERTIFICATA UNI EN ISO 9001:2015
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Tel 0523.888115 (r.a.) Fax 0523-848002
P.Iva e C.F. 01456790334

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ATTESTATO DI CONTROLLO

TEST REPORT – RELEVE' DE CONTROLE – WERKSZEUGNIS N° 198 DATA 29.01.2022

CLIENTE Customer Client Besteller	STEEL SPA			ORDINE Order Commande Bestelung		CONFERMA Confirmation Confirmation de commande Auftragsheslaligung	
ACCIAIO Steel Acier Stahl	A350 LF2 / A105 ASTM	PROFILO Shape Section Profil	T. 120	COLATA Reel Coulée Sclinetze	P0JS1900A13025	STATO DI FORNITURA Delivery state Elait de livraison Lieferzusland	HOT ROLLED NORMALIZED

	CARATTERISTICHE MECCANICHE – MECHANICAL PROPERTIES – CARACTERISTIQUES MECANIQUES – MECHANISCHE EIGENSCHAFTEN												
	TRATTAMENTO TERMICO Heat treatment / Traitement thermique Warmebehandlung	Diameter Nominal mm	Weight Tollerance /m	Diameter Actual mm	Re Y. Strenght N/mm²	Rm T. Strenght N/mm²	A Elongation %	Z Reduction %	Rm/Re	KV-46°CJ	HB Brinell h. on product		
DI COLATA / On heat Sur coulée / Vonder Schmelze	NORMALIZED				354	505	29	62		95 94 99	152		
SUL PRODOTTO / On product Sur prod. / Am Erzeugnis													

ALTRE PROVE Other test Autres essais Sonstige Prufungen	POSIZIONE PRELIEVO / TEST POSITION ¼ L ASTM A370 API 6D

COMMENTI Remarks Remarques Andere Bemerkungen	Si attesta che i prodotti sopra descritti sono conformi ai requisiti contrattuali. NORME UNI EN 10204.3.1 We certify hereby that the above mentioned product are in accordance with the order prescriptions

Controllo Qualità
Quality control
Controle de qualitè
Quelstralsablellung

TTP srl

mod. 214 – REV. 01

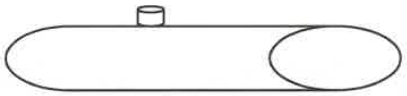
Trattamenti Termici Piacentini	UT QUALIFICATION RECORD	N° 10 DATE: 23.02.2023
CUSTOMER: INDRA S.R.L.	ORDER N° 394 del 15.02.2023	
ACTIVITY\PHASE: QUALIFICATION RECORD		
UT.Q.R. IN ACCORDANCE TO PROCEDURE: IL03 SPECIFICATION\ACCEPTANCE CRITERIA: IN ACC. TO ASTM A388 UT 100%		
MATERIAL GRADE: CS A350 LF2 / A105		
EQUIPMENT: INSTRUMENT MANUFACTURER: KRAUTKRAMER TYPE: USM 36 MAT. N°: 37462 PROBE MANIFACTURER: KRAUTKRAMER TYPE: B2S MAT.N°: 17816 PROBE MHz: 2 0° SIZE mm: 24.0 BLOCK TYPE: V1 COUPLANT: GEL		
SCANNING DGS SENSIVITY: sui blocchi campione ECOGLOBAL DGS1 42DB		
SCANNING SENSIVITY ON MATERIAL: 48DB		
SET RANGE: (DGS) depending on hole diameter		
SURFACE CONDITIONS : AS CAST		
TEMPERATURE:°C 17		
REMARKS:\		
LEVEL II ISO 9712 OPERATOR Marco Braghieri TTP srl		

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Trattamenti Termici Piacentini	UT INSPECTION REPORT	N°: 10 DATE: 23.02.2023
CUSTOMER: INDRA S.R.L.	ORDER N° 394 del 15.02.2023	HEAT P0JS1900A13025
ACTIVITY: CONTROLLO UT IN ACCORDANCE TO ASTM A388 UT 100%		
PROCEDURE: IL03	UT.QR N° 10	
MATERIAL: CS A350 LF2 / A105	O.D.mm 120	

MATERIAL IDENTIFICATION	LOCATION OF INDICATIONS CIRCUMF POS.	W.T.POS.	DIM	RESULTS
HEAT P0JS1900A13025				OK conforme
HEAT KG				
HEAT KG				

NOTE:



LEVEL II ISO 9712 OPERATOR
Marco Brandieri
TTP srl

INDRA s.r.l.
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TIRANTE / STUD BOLT t·e·c·n·o BOLT

CERTIFICATE

Nr. 5218	02-10-24

Page 1/1

INDRA SRL
VIA NOVARA 10/B-C
20013 MAGENTA MI
ITALIA

EN ISO 10204 3.1
CERTIFIED MATERIAL TEST REPORT

Your order: AF24 02329 REV.02 16-07-24 Delivery note: 2454 02-10-24

Item	Materials	Description	Sizes	Batch	Heat		Quantity
6	ASTM A 193 B7M 980.99.0260CS Pos.285 CKD/SM/18/03/2022	Tirante DIN 976/UNI 6610 ASTM A 193 B7M M HDG	10X30	8582	BE1859	N.	40

CHEMICAL ANALYSIS

6		%C %	%Mn %	%P %	%S %	%Si %	%Cr %	%Mo %	%H.T. Q+T
	REQ. MIN.	0,37	0,65			0,15	0,75	0,15	T=1100 F
	REQ. MAX.	0,49	1,10	0,035	0,040	0,35	1,20	0,25	
	ACT.VAL.	0,420	0,830	0,010	0,026	0,230	1,040	0,180	Q+T

MECHANICAL PROPERTIES

6		UTS MPa	YS0,2 MPa	E %	R.A. %	H HB	I.T. °C Kv J-22 C
	REQ. MIN.	860	720	16	50		
	REQ. MAX.					321	
	ACT. VAL.	1000	804	22,6	61	298	N.A.

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We state that the material or fasteners, or both, were manufactered, sampled, tested and inspected in accordance with the specification and any supplementary requirements designated in the purchase/sales order and it was found to meet those requirements

tecnoBOLT s.r.l. - 20822 Seveso (MB) ITALY - way vignone n.7 - info@tecnobolt.com - www.tecnobolt.com

DADO / NUT

t·e·c·n·o BOLT

CERTIFICATE

Nr. 5166	18-09-24

Page 1/1

INDRA SRL
VIA NOVARA 10/B-C
20013 MAGENTA MI
ITALIA

EN ISO 10204 3.1
CERTIFIED MATERIAL TEST REPORT

Your order: AF24 02329 REV.02 16-07-24 Delivery note: 2307 18-09-24

Item	Materials	Description	Sizes	Batch	Heat		Quantity
3	ASTM A 194 Gr.2HM 980.99.0188 Pos.170, 180, 190, 330 CKD/DR/30/05/16	Dado UNI 5588/DIN 934 ASTM A 194 Gr.2HM M Esagonale HDG	10	8581	BD4437	N.	70

VOCE DOGANALE 73181900

MERCE DI ORIGINE ITALIANA

CHEMICAL ANALYSIS

3	%C %	%Mn %	%P %	%S %	%Si %	%H.T. Q+T	%Ni %	%Cr %	%Mo %
REQ. MIN.	0,40					T=850 F			
REQ. MAX.		1	0,040	0,050	0,40				
ACT.VAL.	0,435	0,790	0,007	0,029	0,230	Q+T	0,070	0,190	0,020

MECHANICAL PROPERTIES

3	H HRC	P.L. N/mm
REQ. MIN.		1205
REQ. MAX.		
ACT. VAL.	32-34	1205

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We state that the material or fasteners, or both, were manufactered, sampled, tested and inspected in accordance with the specification and any supplementary requirements designated in the purchase/sales order and it was found to meet those requirements

tecnoBOLT s.r.l. - 20822 Seveso (MB) ITALY - way vignone n.7 - info@tecnobolt.com - www.tecnobolt.com

STELO SFERA / BALL STEM

Rodacciai

23842 Bosisio Parini (LC) – Via Giuseppe Roda 1 – Italia
Tel. +39 031878111 – Fax +39 031878312
www.rodacciai.com – info@rodacciai.com

Azienda con sistema di gestione certificato da IGQ secondo UNI EN ISO 9001:2015

The Company's Quality Management System is certified by IGQ according to UNI EN ISO 9001:2015

CERTIFICATO DI CONTROLLO Inspection Certif N. 173501 Date 13/11/2023

Secondo According to . . . . . EN 10204:2004 3.1

ORDINE - Order N. 23/3822 Date 10/11/2023

D.d.T. - Delivery note N. 11634/04 Date 13/11/2023

Weight KG 128,00 **Odp. Nr.** 2022/A/13380
Tolerance ISO286-2 h9 + 0,000 - 0,043 mm **Bars Length** 3.000 - 3.050 mm

QUALITA' - Grade

STANDARD	EN 10088-3:2014	X2CrNiMo17-12-2	1.4404 / 316L
STANDARD	EN 10088-3:2023	X5CrNiMo17-12-2	1.4401 / 316

Mark RODACCIAI . . . . . 316 PLUS
PROFILO - Shape . . . . . ROUND
DIMENSIONE - Size . . . . . mm 18,00
ESECUZIONE - Form of delivery . . . . . ROUGH GROU.

COLATA - Heat E30822

ANALISI CHIMICA DI COLATA - Cast analysis % by mass

C	Mn	Si	S	P	Cr	Ni	Mo	Cu	Co	N
0,020	1,540	0,554	0,0290	0,031	16,620	10,020	2,030	0,441	0,280	0,0520

CARATTERISTICHE MECCANICHE ALLO STATO DI FORNITURA
Mechanical properties of the delivered material

		Tested
Tensile Strength	Rm (MPa)	695,3
Proof Stress	Rp (1) (MPa)	648,0
Proof Stress	Rp (0,2) (MPa)	580,7
Elongation	A 4 (%)	44,3
Elongation	A 5 (%)	41,1
Hardness	HBW	211,0
Reduction of area	Z (%)	68,0

NOTE - Notes

Processo di Fusione: E + A. O. D.
Prova di Corrosione Intergranularena: ASTM A262-15 "E"
Trattamento termico: Temperatura di Solubilizzazione 1060°C
Tempo Mantenimento: 4 Ore, Raffreddamento in Acqua
Materiale conforme a: ASTM A276-16a / A479-16a / A182-24
ASME: SA479; SA276; SA182 - UNS 31600 - 31630 AISI 316-316L

Pag. 1 / Segue

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Segue certificato di controllo N. 173501 Date 13/11/2023
Inspection Certificate's continuance

NOTE - Notes

Materiale Conforme a NACE MR-0175/ISO 15156-3:2015
NACE MR-103/ISO 17495-1:2016
Corrosione Intercristallina EN ISO 3651-2:98 Met.A

Melting Process: E + A. O. D
Intergranular corrosion tested to ASTM A262-15 "E"
Heat treatment: annealed temperature 1060°C
Soaking time: 4 Hours, Cooling in water
Material Compliant to: ASTM A276-16a / A479-16a / A182-24
ASME: SA479; SA276; SA182 - UNS 31600 - 31630 AISI 316-316L
According to: NACE MR-0175 / ISO 15156-3:2015
NACE MR-103/ISO 17495-1:2016
Intergranular Corrosion according to EN ISO 3651-2:98 Met.A

Surface quality condition 2H conforming also to EN 10277 class 3

We certify hereby, that the above mentioned products are consistent with the order prescriptions.
This certificate was generated by data system acc. to EN 10204, it is not necessary to be signed for validity.

Materiale conforme alle seguenti direttive/regolamenti europee:
. Regolamento REACH 2006/1907/CE e tutti successivi aggiornamenti, compresa la modifica M80 Direttiva Delegata 2022/1632, e SVHC Candidate List aggiornata al 17/01/2023.
. Direttiva ROHS 2011/65/UE e tutti i successivi aggiornamenti, compresa la modifica M80 attraverso la Direttiva Delegata 2022/1632, e Decreto Legislativo 27 del 04/03/2014.
. Direttiva RAEE 2012/19/UE e tutti successivi aggiornamenti, compresa la modifica M1 attraverso la Direttiva 2018/849.
. Direttiva ELV (End-of-Life Vehicles) 2000/53/CE e tutti i successivi aggiornamenti, compresa la modifica M15 attraverso la Direttiva 2020/363
. Contaminazione Radioattiva, Direttiva 2013/59/EURATOM e Decreto Legislativo N.101 del 31 Luglio 2020.
. Canadian List 168 aggiornata al 16/03/2022.
. Minerali di Conflitto, Regolamento (UE) 2017/821 e tutti i successivi aggiornamenti, compresa la modifica M1 attraverso il Regolamento Delegato 2020/1588, e Dodd-Frank Wall Street Reform and Consumer Protection Act Section 1502.

Material conforming to the following European directives/regulation:
. REACH regulation 2006/1907/EC and all subsequent updates, including modification M80 Delegate Directive, and SVHC Candidate List updated to 01/17/2023.
. ROHS Directive 2011/65/EU and all subsequent updates, including the M80 amendment through the Delegated Directive 2022/1632, and Italian Legislative Decree 27 of 03/04/2014.
. WEEE Directive 2012/19/EU and all subsequent updates, including the M1 amendment through Directive 2018/849.
. ELV (End-of-Life Vehicles) Directive 2000/53/EC and all subsequent updates, including the modification M15 through Directive 2020/363
. Radioactive Contamination, Directive 2013/59/EURATOM and Italian Legislative Decree No. 101 of 31 July 2020.
. Canadian List 168 updated 03/16/2022.
. Conflict Minerals, Regulation (EU) 2017/821 and all subsequent updates, including amendment M1 through Delegated Regulation 2020/1588, and Dodd-Frank Wall Street Reform and Consumer Protection Act Section 1502.

 RODACCIAI: The Work Inspector
Alessia Porta

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COGNE ACCIAI SPECIALI S.p.a.
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CAP. SOC. 200.000.000 EUR INT. VERS.
C.F. 02167360067
VAT: IT00571320078 - R.E.A. n. AO-50474

Company with Management Systems certified according to ISO 9001, IATF 16949, EN 9100 and ISO 14001.

INSPECTION CERTIFICATE 3.1 (EN 10204:2004)
DOCUMENT NUMBER 2020018438

SFERA / BALL

CUSTOMER'S ORDER:	254		
MANUFACTURER'S WORKS:	AOSTA, VIA PARAVERA 16 - ITALY		
PRODUCER OF THE DOC:	QUALITY DEPARTMENT		
MANUFACTURER'S WORKS ORDER NO:	0001118068 / 000010		
MARK OF THE MANUFACTURER:	**COGNE**		
DISPATCH NOTE:	81346050 / 000010 WEIGHT: 232 KG / 512 LB		
THE CERTIFIED PRODUCTS ARE COMPLYING TO THE PURCHASE ORDER, EXCEPT FOR EXEMPTIONS AGREED WITH THE CUSTOMER, IF ANY.			
INTERNAL SPEC:	STOCKBARREW2	TECHNICAL RULE:	AD2000
PRODUCT:	PEL PEELED ROUND BARS TOLERANCE: ISOK11		
SURFACE FINISH:	2B Cold Finished		
PRODUCT DELIVERY CONDITION:	RS SOLUTION ANNEALED		
PRODUCT DIMENSIONS (mm):	45,000 (1,772 in)	LENGTH (mm)	06000 06200 (00236 00244 in)
GRADE:	AISI 316/316L EN1.4401/4404	INTERNAL GRADE:	F316L IMCO
IDENTIFICATION HEAT NO:	072244	IDENTIFICATION LOT NO:	201970
MARKING OF THE PRODUCT:	1.4404	TEST PIECE N:	197

REFERENCE NORMS: EN 10088-3 2014, EN 10272 2016, ASTM A276/A276M, ASTM A479/A479M, ASTM A193 B8MCLASSE 1D, ASME SA276/SA276M, ASME SA479/SA479M, AMS 5653J, AMS 5648M, ISO15156-3/NACE MR0175 2015, NACE MR0103/ISO 17945, NORSOK M630 MDSS01 REV5.
REFERENCE NORMS FOR CHEMICAL COMPOSITION AND MECHANICAL PROPERTIES: ASTM A182, ASME SA182.
REFERENCE NORMS ONLY FOR CHEMICAL COMPOSITION: EN 10222-5 2017,ASTM A403-07a, ASTM A484-18a,ASTM A314-08, AMS-QQ-S-763D.
ASME SECT.II PART A EDITION 2015-2017-2019
THE PRODUCT IS CONFORMING TO THE CONTRACT AGREEMENT AND TO THE RULE AD2000-MERKBLATT W0/W2.
ASTM A484 DOES NOT APPLY FOR SIZE AND LENGTH TOLERANCES.
STEELMAKING EAF + AOD + CONTINUOUS CASTING
REFERENCE NORM ASME BPVC.II.A-2015.
HOT ROLLED
REDUCTION RATIO 14,8

CHEMICAL LADLE ANALYSIS ACCORDING TO ASTM A751 - EN ISO 14284
Control lot No. - Weight :020000828767 - 83.288 KG - 183.616 LB

ELEMENTS	C	Si	Mn	P	S	N	Cr	Mo	Ni	Cu
OBTAINED	0,015	0,34	1,74	0,027	0,024	0,080	16,78	2,05	10,21	0,41

ELEMENTS	Co
OBTAINED	0,16

HARDNESS TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000828961 - 2.300 KG - 5.071 LB
SPECIFICATION ENISO6506 HARDNESS TEST HB TESTING METHOD: 10/3000
OBTAINED 171

IMPACT TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000828961 - 2.300 KG - 5.071 LB
SPECIFICATION EN ISO 148-1-KV2 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 20
MEASUREMENT UNIT J

OBTAINED	430	432	440	430	439	434	434	440	438	433
	431	439								

DATE 18.05.2020 BARBARA VIETTI MV(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne
REVIEW DATE 01.12.2021 N. REVIEW 1

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TENSILE TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000828961 - 2.300 KG - 5.071 LB
SPECIFICATION EN-ISO6892-1 DIRECTION OF THE TEST PIECE: L

	RM	RP02	A5	Z	RP1
MEASUREMENT UNIT	MPA	MPA	% 5.0 D	%	NMM
OBTAINED	578	286	56,1	80,5	321
	592	287	55,6	80,1	321
	582	274	54,2	79,4	306
	585	274	55,6	81,2	312

GRAIN SIZE
Control lot No. - Weight :020000828961 - 2.300 KG - 5.071 LB
SPECIFICATION ASTME112 --
OBTAINED 5 7

MATERIAL IN COMPLIANCE WITH THE NORSOK M-630 MDS S01
IMPACT TEST
Control lot No. - Weight :020000828961 - 2.300 KG - 5.071 LB
SPECIFICATION EN ISO 148-1 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 196-
MEASUREMENT UNIT J
OBTAINED 181 183 188 177 175 200 188 174 194 183
197 173

TENSILE TEST
Control lot No. - Weight :020000828961 - 2.300 KG - 5.071 LB
SPECIFICATION ASTMA370-E8-0.5"SPEC DIRECTION OF THE TEST PIECE: L

	RMB	RP02B	ZB	AL2B
MEASUREMENT UNIT	KSI	KSI	%	% 4,0 D
OBTAINED	85	40	80,7	59,7
	85	42	81,2	60,3
	86	42	81,3	60,1
	85	41	81,0	58,6

COUNTRY OF MELTING AND ORIGIN: ITALY, THE MATERIAL COMPLIES WITH FAR DFARS 252.225-7009 ALT 1.
The products delivered are conforming to EN10088-5 and bear the CE marking on the basis of the test results here reported and the continuous surveillance, assessment and approval by MPA NRW (certificate no. 0432-CPR-00166-01)
Material produced according to the system #Regulation 305/2011/EU of the European Parliament and of the Council of 9 March 2011#
DOCUMENT ISSUED IN AGREEMENT WITH TUEV BAYERN(11.1972) WAVING OF COUNTERSIGNING (SEE TUEV BAYERN LETTER DATED 17.01.80).
MARKING: SYMBOL OF THE MANUF. WORK, MATERIAL N. , CAST N., LOT N., RECEIVING AGENT STAMP
CORROSION TEST ACCORDING TO ASTM A262 PRACTICE E EN ISO 3651-2 PRACTICE A: SATISFACTORY.

DATE 18.05.2020 BARBARA VIETTI MV(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne
REVIEW DATE 01.12.2021 N. REVIEW 1

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ANTIMIXING TEST BY PORTABLE SPECTROMETRE: CONFORMING
EDDY CURRENT INSPECTION OF SURFACE ACCORDING TO EN 10277 CLASS 4.
DIMENSIONAL CONTROL ACCORDING TO EN 10278: SATISFACTORY.
NO WELDING REPAIR ON THE MATERIAL.
ULTRASONIC TEST ACCORDING TO EN 10308 Class.3: SATISFACTORY
QUALITY SYSTEM CERTIFIED TO UNI EN ISO 9001:2015 -IATF 16949:2016 (THE LAST ONE ONLY FOR WIRE ROD AND HOT ROLLED-PEELED-GROUND STAINLESS STEEL BARS).
MATERIAL ACCORDING TO NORSOK M630 EDITION 6.
INSPECTOR'S STAMP LF
THE PRODUCT SATISFIES THE DIRECTIVES: 2015/863/EU (ROHS3) - 2011/65/EU (ROHS2) - 2000/53/EU - 2002/95/EU(RoHS) - 2003/11/EU-2005/618/EU AND PED 2014/68/EU.
THE MATERIAL IS FREE OF ANY MERCURY, MERCURY COMPOUNDS AND OR RADIUM CONTAMINATION AT TIME OF SHIPMENT AND WAS PRODUCED WITHOUT USING OZONE DEPLETING SUBSTANCES OF CLASS I AND II.
RADIOACTIVITY CONTROL PERFORMED WITH A GAMMA SPECTROMETER: ASTM E181.
GAMMA ACTIVITY ON THE PRODUCTS BELOW 0.1 BQ/G ACCORDING TO EU RESOLUTION 2013/59/EURATOM , IAEA RS-G-1.7 AND IAEA SSG-17.

CE 0432

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DATE 18.05.2020 BARBARA VIETTI MV(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne
REVIEW DATE 01.12.2021 N. REVIEW 1

ROSETTI MARINO ITEM 120

COD. VBC0NN24721H00

TAG: BLPH-MV-412

INDRA ITEM 120

COD. 00.VSF.2691/V

indra VALVES - ITALY

Certificazione dei materiali
EN 10204 3.1 come da allegati

Material certification
EN 10204 3.1 as per attachments

MD-02-04-IT-UK / VSF
Rev. 16
Data: 08-Nov-2018
CM/IT/UK

Nr. *No.* **24-2004** — **Data /** *Date :* **16-Oct-2024**

Cliente / *Customer* **ROSETTI MARINO SPA**

Vs. ordine Nr. / *Your order Nr.* **1724000798 REV.2** — **Data /** *Date :* **26-Jun-2024**

Ns. commessa Nr. / *Our job Nr.* **24 01216** — **Data /** *Date :* **3-Jul-2024**

Ns. D.D.T. Nr. / *Our advise note Nr.* — **Data /** *Date :*

Ordine di produzione / Production order number : 24 01216/120 - 447639

Lotto / Material batch number : 447639

Pos. Cliente Customer Item	*Pos. Indra Indra Item*	*Codice / Code*		*Q.tà / Q.ty*	*Nr. di serie Serial Number*	*Descrizione /Description*
		Ns./ Our	*Vs. / Your*			
120	120	00.VSF.2691/V	VBC0NN24721H00	1	105978	INDRA BALL VALVE SB-598-40-H150RF3-H-LF2-DL-CA3-N-RG-ESX100-L1-TG-TGW-TV-PMI2-PD2-BI-CR-TA-FS-SPC1

Elenco / List

Componente / *Component*	Colata / Heat	Materiale *Material*	Numero del certificato Certificate number
Corpo Valvola / Valve Body	447639	ASTM A350 LF2 NACE	641 - 2155 - UT 13
Closure H150RF3	447639	ASTM A350 LF2 NACE	641 - 2155 - UT 13
Tirante / Stud bolt	283509	ASTM A193 B7M + HDG	2402706
Dado / Nut	79325	ASTM A194 Gr.2HM + HDG	2402707
Stelo antiespulsione sfera / Ball stem	E30822	AISI 316/316L NACE	173501
Sfera / Ball	870156	AISI 316/316L NACE	2019003303 - N.US.155/19

NOTE / **REMARKS :** TAG: BLPH-MV-412

PREPARATO DA: **ELEONORA RANZANI**
PREPARED BY: **DOCUMENTION MANAGER**

APPROVATO DA: **LUCIA NOSOTTI**
APPROVED BY: **QUALITY ASSURANCE MANAGER**

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E-mail: indra@indra.it - http://www.indra.it

Pothx crossw.ind
30/10/24 R

STEEL S.P.A.
AZIENDA CERTIFICATA UNI EN ISO 9001:2015

VIA C. COLOMBO 21
29010 SARMATO (PIACENZA)
TEL. 0523/886111 - FAX 0523/886298
E-MAIL: info@steelacciai.it

ATTESTATO DI CONTROLLO

TEST REPORT – RELEVE' DE CONTROLE – WERKSZEUGNIS N° 641 DATA 30.01.2024

CLIENTE Customer Client Besteller	INDRA SRL			ORDINE Order Commande Bestelung	249 DATA 23.01.2024 DDT 232 DATA 30.01.2024	CONFERMA Confirmation Confirmation de commande Auftragsheslaligung	
ACCIAIO Steel Acier Stahl	A350 LF2/A105 ASTM	PROFILO Shape Section Profil	T.160 KG=1926	COLATA Reel Coulée Sclinetze	447639	STATO DI FORNITURA Delivery state Elait de livraison Lieferzusland	HOT ROLLED NORMALIZED

	COMPOSIZIONE CHIMICA % - CHEMICAL ANALYSIS % - COMPOSITION CHIMIQUE % - CHEMISCHE ZUSAMMENSETZUNG %															
	C	SI	MN	P	S	CR	NI	MO	AL	CU	V	NB	SN	TI	H/ppm	CEQ
DI COLATA / On heat Sur coulée / Vonder Schmelze	.174	.24	.96	.015	.004	.11	.10	.03	.021	.16	.002	.001	.008	.0017	1.30	.38
SUL PRODOTTO / On product Sur prod. / Am Erzeugnis																

	CARATTERISTICHE MECCANICHE – MECHANICAL PROPERTIES – CARACTERISTIQUES MECANIQUES – MECHANISCHE EIGENSCHAFTEN													
	TRATTAMENTO TERMICO Heat treatment / Traitement thermique Warmebehandlung	Diameter Nominal mm	Weight Tollerance /m	Diameter Actual mm	Re Y. Strenght N/mm²	Rm T. Strenght N/mm²	A Elongation %	Z Reduction %	Rm/Re	KV-46°CJ	HB Brinell h. on product		
DI COLATA / On heat Sur coulée / Vonder Schmelze	NORMALIZED				465	618	32	57		84 92 77	186		
SUL PRODOTTO / On product Sur prod. / Am Erzeugnis													

ALTRE PROVE
Other test
Autres essais
Sonstige Prufungen
RIF CERT TTP N° 2155 DATA 17.11.2023

COMMENTI
Remarks
Remarques
Andere Bemerkungen
Si attesta che i prodotti sopra descritti sono conformi ai requisiti contrattuali. NORME UNI EN 10204 3.1 – NACE MR 01-75
We certify hereby that the above mentioned product are in accordance with the order prescriptions

Controllo Qualità
Quality control
Controle de qualité
Quelstralsablellung
STEEL s.p.a.

mod. 214 – REV. 01

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Trattamenti Termici Piacentini

T.T.P. s.r.l.
AZIENDA CERTIFICATA UNI EN ISO 9001:2015
Via C. Colombo snc 29010 Sarmato (PC)
Tel 0523.888115 (r.a.) Fax 0523-848002
P.Iva e C.F. 01456790334

ATTESTATO DI CONTROLLO

TEST REPORT – RELEVE' DE CONTROLE – WERKSZEUGNIS N° 2155 DATA 17.11.2023

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CLIENTE / Customer / Client / Besteller: STEEL S.P.A.

ORDINE / Order / Commande / Bestelung:

CONFERMA / Confirmation / Confirmation de commande / Auftragsheslaligung:

ACCIAIO / Steel / Acier / Stahl: A350 LF2/A105 ASTM

PROFILO / Shape / Section / Profil: D. 160 mm

COLATA / Reel / Coulée / Sclinetze: 447639

STATO DI FORNITURA / Delivery state / Elait de livraison / Lieferzusland: LAMINATO NORMALIZZATO

	CARATTERISTICHE MECCANICHE – MECHANICAL PROPERTIES – CARACTERISTIQUES MECANIQUES – MECHANISCHE EIGENSCHAFTEN											
	TRATTAMENTO TERMICO Heat treatment / Traitement thermique Warmebehandlung	Diameter Nominal mm	Weight Tollerance /m	Diameter Actual mm	Re Y. Strenght N/mm²	Rm T. Strenght N/mm²	A Elongation %	Z Reduction %	Rm/Re	KV-46°CJ	HB Brinell h. on product	
DI COLATA / On heat Sur coulée / Vonder Schmelze	NORMALIZZAZIONE				465	618	32	57		84 92 77	186	
SUL PRODOTTO / On product Sur prod. / Am Erzeugnis												

ALTRE PROVE / Other test / Autres essais / Sonstige Prufungen: POSIZIONE PRELIEVO / TEST POSITION ¼ L
ASTM A370
API 6D

COMMENTI / Remarks / Remarques / Andere Bemerkungen: Si attesta che i prodotti sopra descritti sono conformi ai requisiti contrattuali.
Come da NORME UNI EN 10204 3.1

Controllo Qualità / Quality control / Controle de qualitè / Quelstralsablellung: TTP Srl

mod. 214 – REV. 01

Trattamenti Termici Piacentini	UT QUALIFICATION RECORD	N° 13 DATE: 30.01.2024
CUSTOMER: INDRA SRL		ODP N° 249/AF24 del 23/01/2024
ACTIVITY\PHASE: QUALIFICATION RECORD		
UT.Q.R. SPECIFICATION\ACCEPTANCE CRITERIA: IN ACC. TO ASTM A388 UT 100%		
MATERIAL GRADE: A350 LF2 / A105 Ø 160 mm		
EQUIPMENT: INSTRUMENT MANUFACTURER: KRAUTKRAMER TYPE: USM 36 MAT. N°: 37462 SERIAL-No: 18107591 PROBE MANUFACTURER: KRAUTKRAMER TYPE: B2S MAT.N°: 17816 PROBE MHz: 2 0° SIZE mm: 24.0 CABLE: LEMO 1 L=2m BLOCK TYPE: V1 COUPLANT: GEL		
SCANNING DGS SENSIVITY: sui blocchi campione ECOGLOBAL DGS1 42 Db		
SCANNING SENSIVITY ON MATERIAL: 48 Db		
SET RANGE: (AVG) 3 mm		
SURFACE CONDITIONS : HOT ROLLED +N		
TEMPERATURE: °C 6		
REMARKS:		
LEVEL II EN ISO 9712:2012 OPERATOR: Marco Braghieri TTP srl		

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Trattamenti Termici Piacentini	UT INSPECTION REPORT	N°: 13 DATE: 30.01.2024
CUSTOMER: INDRA SRL	ODP N° 249/AF24 del 23/01/2024	HEAT: 447639
ACTIVITY: CONTROLLO UT IN ACC. TO ASTM A388 UT 100%		
UT.QR N° 13		
MATERIAL: A350 LF2 / A105	Ø 160 mm	

MATERIAL IDENTIFICATION	LOCATION OF INDICATIONS TO THE END POS.	W.T.POS. mm	DIM mm	RESULTS
HEAT: 447639 L=6000				Conforme
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				

NOTE:

LEVEL II EN ISO 9712:2012
OPERATOR: Marco Braghieri
TTP srl

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TIRANTE / STUD BOLT

IPL S.r.l.
BULLONERIA - TIRANTERIA
SPECIALE E STANDARD

Via Papa Giovanni Paolo I, 306
21040 UBOLDO (VA)

Customer: INDRA SRL
C.SO XXII MARZO, 8
20135 MILANO (MI)

Date, 30-09-24 **Our Ref.** DDT 3480 / OC 1557 **of** 30-09-24 **Your Ref.** AF24 02342 10-07-24

CERTIFICATE UNI EN 10204 - 3.1 N.2402706

ITEM		QUANTITY	HEAT TREATMENT	PROTECTION	LOT nr.	HEAT nr.
TIR.7M010040NF	STUDBOLT UNI6610/DIN976B - A/SA193 B7M M 10 x 40 HDG *101.99.0187CS-PED46*	10,00	quenched tempered	HOT DIP GALVANIZED ASTM A153 Cl. "C" / F2329	834265	283509*
TIR.7M012040NF	STUDBOLT UNI6610/DIN976B - A193 B7M M 12 x 40 H.D.G. *101.99.0664CS-PED46*	10,00	quenched tempered	HOT DIP GALVANIZED ASTM A153 Cl. "C" / F2329	834266	283509*
TIR.7M010035NF	STUDBOLT UNI6610/DIN976B - A/SA193 B7M M 10 x 35 HDG → *101.99.0984CS-PED46*	10,00	quenched tempered	HOT DIP GALVANIZED ASTM A153 Cl. "C" / F2329	834264	283509*

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If not mentioned the above test are performed at room temperature.
We certify that the fasteners were manufactured, sampled, tested and inspected in accordance with the specification and are consistent with order prescriptions.
Quality assurance system in accordance to European Directive 2014/68/EU annex I par. 4.3 (PED) and AD 2000 Merkblatt W0.
Certificates 0045/202/WZ1921/23 and TN/AD2000-W0/1921/23 TÜV NORD Systems GmbH & Co. KG.

IPL S.R.L.
RSQ A. Grisetti

TIRANTE / STUD BOLT

IPL S.r.l.
BULLONERIA - TIRANTERIA
SPECIALE E STANDARD

Via Papa Giovanni Paolo I, 306
21040 UBOLDO (VA)

Customer: **INDRA SRL**
C.SO XXII MARZO, 8
20135 MILANO (MI)

Date, 30-09-24 **Our Ref.** DDT 3480 / OC 1557 **of** 30-09-24 **Your Ref.** AF24 02342 10-07-24

CERTIFICATE UNI EN 10204 - 3.1 N.2402706

ITEM	QUANTITY	HEAT TREATMENT	PROTECTION	LOT nr.	HEAT nr.

MECHANICAL PROPERTIES

values	R (MPa)	Rs 0,2 (MPa)	A4 (%)	Z (%)	HB	I.T. KV - 73°C (J)
required	690 min.	550 min.	18 min.	50 min.	235 max	20 min. 27 av.
actual	700	570	28,0	66,0	220-215-220	143 - 147 - 117

CHEMICAL COMPOSITION

values	C (%)	Mn (%)	Si (%)	P (%)	S (%)	Cr (%)	Mo (%)	Al (%)
required	0,38 - 0,48	0,75 - 1,00	0,15 - 0,35	0,035 max	0,040 max	0,80 - 1,10	0,15 - 0,25	
actual	0,415	0,771	0,219	0,009	0,0300	1,035	0,159	0,022

remarks: Chemical values, at delivery condition, are quoted by the relevant steel work certificate. Mechanical values see IRCM cert. 1438/24.
According to: ASME II part. A ed. 2021. Macroetch test according to ASTM E381 result: S1 R1 C1. VISUAL AND DIMENSIONAL TEST SATISFACTORY

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We certify that the fasteners were manufactured, sampled, tested and inspected in accordance with the specification and are consistent with order prescriptions.
Quality assurance system in accordance to European Directive 2014/68/EU annex I par. 4.3 (PED) and AD 2000 Merkblatt W0.
Certificates 0045/202/WZ1921/23 and TN/AD2000-W0/1921/23 TÜV NORD Systems GmbH & Co. KG.

IPL S.R.L.
RSQ A. Grisetti

DADO / NUT

IPL S.r.l.
BULLONERIA - TIRANTERIA
SPECIALE E STANDARD

Via Papa Giovanni Paolo I, 306
21040 UBOLDO (VA)

Customer: INDRA SRL
C.SO XXII MARZO, 8
20135 MILANO (MI)

Date, 30-09-24 **Our Ref.** DDT 3479 / OC 1700 **of** 30-09-24 **Your Ref.** AF24 02342 AGG. 1 31-07-24

CERTIFICATE UNI EN 10204 - 3.1 N.2402707

ITEM		QUANTITY	HEAT TREATMENT	PROTECTION	LOT nr.	HEAT nr.
55882M010000F	HEX NUT UNI 5588/ISO4032/DIN934 H=0,8 d - A/SA194 2HM M 10 HDG 980.99.0188CS-PED46	5,00	quenched tempered @ 560°c	HOT DIP GALVANIZED ASTM A153 Cl. "C" / F2329	835024	79325 *

MECHANICAL PROPERTIES

values	HB (min-max)	HB after 24 hrs (min)	PROOF LOAD	I.T. ISO-V -46°C (J)
required	159 - 235	159		
actual	211 - 215	188	POSITIVE	28 - 30 - 28

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CHEMICAL COMPOSITION

values	C (%)	Mn (%)	Si (%)	P (%)	S (%)
required	0,400 min	1,000 max	0,400 max	0,040 max	0,050 max
actual	0,450	0,770	0,280	0,015	0,020

remarks: chemical values, at delivery condition, are quoted by the relevant steel work certificate. VISUAL AND DIMENSIONAL TEST SATISFACTORY
Nuts hardness test after 24 HRS tempering at 540°C.

If not mentioned the above test are performed at room temperature.
We certify that the fasteners were manufactured, sampled, tested and inspected in accordance with the specification and are consistent with order prescriptions.
Quality assurance system in accordance to European Directive 2014/68/EU annex I par. 4.3 (PED) and AD 2000 Merkblatt W0.
Certificates 0045/202/WZ1921/23 and TN/AD2000-W0/1921/23 TÜV NORD Systems GmbH & Co. KG.

IPL S.R.L.
RSQ A. Grisetti

Rodacciai

23842 Bosisio Parini (LC) – Via Giuseppe Roda 1 – Italia
Tel. +39 031878111 – Fax +39 031878312
www.rodacciai.com – info@rodacciai.com

Azienda con sistema di gestione certificato da IGQ secondo UNI EN ISO 9001:2015

The Company's Quality Management System is certified by IGQ according to UNI EN ISO 9001:2015

CERTIFICATO DI CONTROLLO Inspection Certif N. 173501 Date 13/11/2023

Secondo According to . . . . . EN 10204:2004 3.1

ORDINE - Order N. 23/3822 Date 10/11/2023

D.d.T. - Delivery note N. 11634/04 Date 13/11/2023

Weight KG 128,00 **Odp. Nr.** 2022/A/13380
Tolerance ISO286-2 h9 + 0,000 - 0,043 mm **Bars Length** 3.000 - 3.050 mm

QUALITA' - Grade

STANDARD	EN 10088-3:2014	X2CrNiMo17-12-2	1.4404 / 316L
STANDARD	EN 10088-3:2023	X5CrNiMo17-12-2	1.4401 / 316

Mark RODACCIAI . . . . . 316 PLUS
PROFILO - Shape . . . . . ROUND
DIMENSIONE - Size . . . . . mm 18,00
ESECUZIONE - Form of delivery . . . . . ROUGH GROU.

COLATA - Heat E30822

ANALISI CHIMICA DI COLATA - Cast analysis % by mass

C	Mn	Si	S	P	Cr	Ni	Mo	Cu	Co	N
0,020	1,540	0,554	0,0290	0,031	16,620	10,020	2,030	0,441	0,280	0,0520

CARATTERISTICHE MECCANICHE ALLO STATO DI FORNITURA
Mechanical properties of the delivered material

		Tested
Tensile Strength	Rm (MPa)	695,3
Proof Stress	Rp (1) (MPa)	648,0
Proof Stress	Rp (0,2) (MPa)	580,7
Elongation	A 4 (%)	44,3
Elongation	A 5 (%)	41,1
Hardness	HBW	211,0
Reduction of area	Z (%)	68,0

NOTE - Notes

Processo di Fusione: E + A. O. D.
Prova di Corrosione Intergranularena: ASTM A262-15 "E"
Trattamento termico: Temperatura di Solubilizzazione 1060°C
Tempo Mantenimento: 4 Ore, Raffreddamento in Acqua
Materiale conforme a: ASTM A276-16a / A479-16a / A182-24
ASME: SA479; SA276; SA182 - UNS 31600 - 31630 AISI 316-316L

Pag. 1 / Segue

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Segue certificato di controllo N. 173501 Date 13/11/2023
Inspection Certificate's continuance

NOTE - Notes

Materiale Conforme a NACE MR-0175/ISO 15156-3:2015
NACE MR-103/ISO 17495-1:2016
Corrosione Intercristallina EN ISO 3651-2:98 Met.A

Melting Process: E + A. O. D
Intergranular corrosion tested to ASTM A262-15 "E"
Heat treatment: annealed temperature 1060°C
Soaking time: 4 Hours, Cooling in water
Material Compliant to: ASTM A276-16a / A479-16a / A182-24
ASME: SA479; SA276; SA182 - UNS 31600 - 31630 AISI 316-316L
According to: NACE MR-0175 / ISO 15156-3:2015
NACE MR-103/ISO 17495-1:2016
Intergranular Corrosion according to EN ISO 3651-2:98 Met.A

Surface quality condition 2H conforming also to EN 10277 class 3

We certify hereby, that the above mentioned products are consistent with the order prescriptions.
This certificate was generated by data system acc. to EN 10204, it is not necessary to be signed for validity.

Materiale conforme alle seguenti direttive/regolamenti europee:
. Regolamento REACH 2006/1907/CE e tutti successivi aggiornamenti, compresa la modifica M80 Direttiva Delegata 2022/1632, e SVHC Candidate List aggiornata al 17/01/2023.
. Direttiva ROHS 2011/657UE e tutti i successivi aggiornamenti, compresa la modifica M80 attraverso la Direttiva Delegata 2022/1632, e Decreto Legislativo 27 del 04/03/2014.
. Direttiva RAEE 2012/19/UE e tutti successivi aggiornamenti, compresa la modifica M1 attraverso la Direttiva 2018/849.
. Direttiva ELV (End-of-Life Vehicles) 2000/53/CE e tutti i successivi aggiornamenti, compresa la modifica M15 attraverso la Direttiva 2020/363
. Contaminazione Radioattiva, Direttiva 2013/59/EURATOM e Decreto Legislativo N.101 del 31 Luglio 2020.
. Canadian List 168 aggiornata al 16/03/2022.
. Minerali di Conflitto, Regolamento (UE) 2017/821 e tutti i successivi aggiornamenti, compresa la modifica M1 attraverso il Regolamento Delegato 2020/1588, e Dodd-Frank Wall Street Reform and Consumer Protection Act Section 1502.

Material conforming to the following European directives/regulation:
. REACH regulation 2006/1907/EC and all subsequent updates, including modification M80 Delegate Directive, and SVHC Candidate List updated to 01/17/2023.
. ROHS Directive 2011/65/EU and all subsequent updates, including the M80 amendment through the Delegated Directive 2022/1632, and Italian Legislative Decree 27 of 03/04/2014.
. WEEE Directive 2012/19/EU and all subsequent updates, including the M1 amendment through Directive 2018/849.
. ELV (End-of-Life Vehicles) Directive 2000/53/EC and all subsequent updates, including the modification M15 through Directive 2020/363
. Radioactive Contamination, Directive 2013/59/EURATOM and Italian Legislative Decree No. 101 of 31 July 2020.
. Canadian List 168 updated 03/16/2022.
. Conflict Minerals, Regulation (EU) 2017/821 and all subsequent updates, including amendment M1 through Delegated Regulation 2020/1588, and Dodd-Frank Wall Street Reform and Consumer Protection Act Section 1502.

 RODACCIAI: The Work Inspector
Alessia Porta

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C.F. 02187360967
VAT: IT00571320076 - R.E.A. n. AO-50474

Company with Management Systems certified according to ISO 9001, IATF 16949, EN 9100 and ISO 14001.

INSPECTION CERTIFICATE 3.1 (EN 10204:2004)
DOCUMENT NUMBER 2019003303

SFERA / BALL

CUSTOMER'S ORDER:	139		
MANUFACTURER'S WORKS:	AOSTA, VIA PARAVERA 16 - ITALY		
PRODUCER OF THE DOC:	QUALITY DEPARTMENT		
MANUFACTURER'S WORKS ORDER NO: 1116858 /10	MARK OF THE MANUFACTURER:	**COGNE**	
DISPATCH NOTE:	81333422 /10	WEIGHT: 346 KG	
THE CERTIFIED PRODUCTS ARE COMPLYING TO THE PURCHASE ORDER			
INTERNAL SPEC:	A182FORGEDW2	TECHNICAL RULE:	AD2000
PRODUCT:	52616 PEL PEELED ROUND BARS	TOLERANCE: ISOK11	
SURFACE FINISH:	2B Cold Finished		
PRODUCT DELIVERY CONDITION:	RS SOLUTION ANNEALED		
PRODUCT DIMENSIONS (mm):	100,000	LENGTH (mm)	04000 /06200
GRADE:	AISI 316/316L EN1.4401/4404	INTERNAL GRADE:	F316L IMCO
IDENTIFICATION HEAT NO:	870156	IDENTIFICATION LOT NO:	821200
MARKING OF THE PRODUCT:	1.4404	TEST PIECE N:	120

THE PRODUCT IS CONFORMING TO THE CONTRACT AGREEMENT AND TO THE RULE AD2000-MERKBLATT W0/W2.
REFERENCE NORMS: EN 10088-3 2014, EN 10272 2016, ASTM A276/A276M-17, ASTM A479/A479M-18, ASTM A193 B8MCLASSE 1D-17, ASME SA276/SA276M-17, ASME SA479/SA479M-17, AMS 5653J, AMS 5648M, ISO15156-3/NACE MR0175 2015, NACE MR0103/ISO 17945, NORSOK M630 MDSS01 REV5.
REFERENCE NORMS FOR CHEMICAL COMPOSITION AND MECHANICAL PROPERTIES: ASTM A182, ASME SA182.
REFERENCE NORMS ONLY FOR CHEMICAL COMPOSITION: EN 10222-5 2017,ASTM A403-07a, ASTM A484-18a,ASTM A314-08, AMS-QQ-S-763D.
ASTM A484 DOES NOT APPLY FOR SIZE AND LENGTH TOLERANCES.
MATERIAL IN COMPLIANCE WITH THE NORSOK M-630 MDS S01
STEELMAKING EAF + AOD + CONTINUOUS CASTING
HOT FORGED
REDUCTION RATIO 5,9

CHEM. COMP. (%W/W) - LADLE ANALYSIS ACCORDING TO ASTME1019-A751-E1086-E415-A580
Control lot No. - Weight :020000758871 - 82.994 KG

ELEMENTS	C	Si	Mn	P	S	N	Cr	Mo	Ni	Cu
OBTAINED	0,018	0,35	1,81	0,023	0,026	0,084	16,72	2,03	10,02	0,28

ELEMENTS	Co
OBTAINED	0,18

HARDNESS TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000759112 - 7.483 KG
SPECIFICATION ENISO6506 HARDNESS TEST HB TESTING METHOD: 10/3000
OBTAINED 178

IMPACT TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000759112 - 7.483 KG
SPECIFICATION EN ISO 148-1-KV2 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 20
MEASUREMENT UNIT J

OBTAINED									
434	432	430	436	430	430	438	440	438	434
437	434								

DATE 23.01.2019 BARBARA VIETTI MV(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne

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INSPECTION CERTIFICATE 3.1 (EN 10204:2004)
DOCUMENT NUMBER 2019003303

TENSILE TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000759112 - 7.483 KG
SPECIFICATION EN-ISO6892-1 DIRECTION OF THE TEST PIECE: L

	RM	RP02	A5	Z	RP1
MEASUREMENT UNIT	MPA	MPA	% 5.0 D	%	MPA
OBTAINED	600	250	59,7	77,9	310
	606	255	58,3	75,7	299
	604	263	57,2	77,9	310
	596	258	57,4	76,7	299

GRAIN SIZE
Control lot No. - Weight :020000759112 - 7.483 KG
SPECIFICATION ASTME112 --
OBTAINED 4 6

IMPACT TEST
Control lot No. - Weight :020000759112 - 7.483 KG
SPECIFICATION EN ISO 148-1 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 196-
MEASUREMENT UNIT J
OBTAINED 187 199 200 194 180 194 175 189 179 187
187 179

TENSILE TEST
Control lot No. - Weight :020000759112 - 7.483 KG
SPECIFICATION ASTMA370-E8-0.5"SPEC DIRECTION OF THE TEST PIECE: L

	RMB	RP02B	ZB	AL2B
MEASUREMENT UNIT	KSI	KSI	%	% 4,0 D
OBTAINED	88	37	75,4	61,5
	87	36	77,6	60,1
	86	36	76,3	62,5
	87	36	77,2	62,1

CORROSION TEST ACCORDING TO ASTM A262 PRACTICE E EN ISO 3651-2 PRACTICE A: SATISFACTORY.
ROTARY HEAD EDDY CURRENT AND VISUAL INSPECTION OF SURFACE ACCORDING TO EN 10277-1 Class4: SATISFACTORY.
DIMENSIONAL CONTROL ACCORDING TO EN 10278 :SATISFACTORY.
UT ACCODING TO EN 10308 Cl 4,
EQUIVALENT TO SEP 1920 GROUP 3 CLASS C (CLASS B FOR Ø > 75 MM) AND ASTM A388 FBH 5 (ONLY FOR Ø> 100 MM): CONFORM.
ANTIMIX TEST WITH PORTABLE SPECTROMETER: SATISFACTORY.
NO WELDING REPAIR ON THE MATERIAL
THE PRODUCT SATISFIES CE DIRECTIVES: 2011/65 (ROHS2) - 2000/53 - 2002/95(RoHS) - 2003/11 - 2005/618 AND PED 2014/68/EU.
THE MATERIAL IS FREE OF ANY MERCURY, MERCURY COMPOUNDS AND OR RADIUM CONTAMINATION AT TIME OF SHIPMENT AND WAS PRODUCED WITHOUT USING OZONE DEPLETING SUBSTANCES OF CLASS I AND II.

DATE 23.01.2019 BARBARA VIETTI MV(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne

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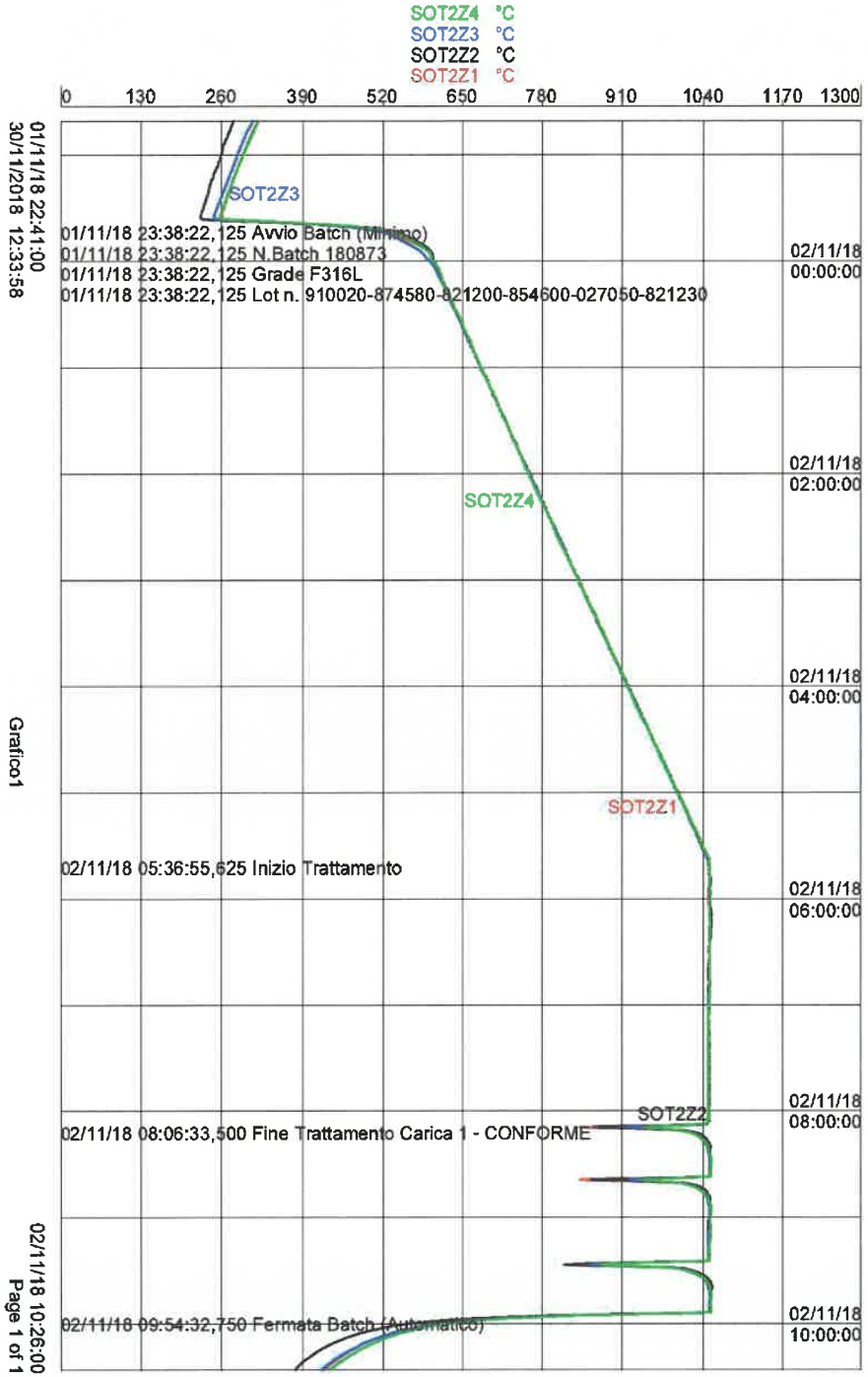
Company with Management Systems certified according to ISO 9001, IATF 16949, EN 9100 and ISO 14001.

MARKING: SYMBOL OF THE MANUF. WORK, MATERIAL N. , CAST N., LOT N., RECEIVING AGENT STAMP
DOCUMENT ISSUED IN AGREEMENT WITH TUEV BAYERN(11.1972) WAVING OF COUNTERSIGNING (SEE TUEV BAYERN LETTER DATED 17.01.80).
ALL THE NORMS MENTIONED ARE INTENDED IN THEIR LAST REVISION AT THE DATE OF ISSUE OF THIS DOCUMENT.
THE PRODUCT IS CONFORMING TO THE REQUIREMENTS AND COMPLIES WITH GRADE F316L ACCORDING TO ASTM A182 REGARDING CHEMICAL COMPOSITION AND MECHANICAL PROPERTIES.
COUNTRY OF ORIGIN: ITALY, THE MATERIAL COMPLIES WITH FAR DFARS
252.225-7009 ALT 1.
HARDNESS: 174-174-187HB
INSPECTOR'S STAMP LF
HAMMER FORGED BARS

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DATE 23.01.2019

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CERTIFICATO DI COLLAUDO ULTRASUONI
CERTIFICAT DE CONTROLE PAR ULTRASONS
ULTRASCHALL PRUEFZEUGNIS
REPORT OF ULTRASONIC INSPECTION
ОТЧЕТ ОБ УЛЬТРАЗВУКОВОМ КОНТРОЛЕ

N. US.
155/19

CLIENTE / CLIENTSGG / BESTELLER / CUSTOMER ЗАКАЗЧИК			*CONFERMA / CONFIRMATION / AUFTRAGSBESTRAKTIGUNG / CONFIRMATION* ПОДТВЕРЖД. ЗАКАЗА		
MARCA / NUANCES / WERKESTOFF / GRADE МАРКА	F316L W.No 1.4404		*ORDINE / COMMANDE / AUFTRAG / ORDER* ЗАКАЗ		
SPECIFICA / SPECIFICATION / PRUKEVORSCHRIFT / SPECIFICATION ТЕХ. ТРЕБОВАНИЯ	API 6A PSL3		*COLATA / COULEE / SCHMELZE / HEAT* ПЛАВКА	870156	*SCHEDA / LOT / LAUFKARTE / LOT* ПАРТИЯ 821200
PRODOTTO / PRODUIT / ERZEUGNISFORM / PRODUCT ИЗДЕЛИЕ	ROUND BARS 100 mm		*STATO DI LAVORAZIONE / STADE DU PRODUIT / LIEFERZUSTAND / WORKING STEP* ОБРАБОТКА	PEELED	
TIPO DI APPARECCHIO / TIPE D'APPAREILPARUS / PRUEFGERAT TYP / INSTRUMENT TYPE ТИП АППАРАТА	USM36	18107589	*COSTRUTTORE / CONSTRUCTEUR / BAUART / MAKE* ИЗГОТОВИТЕЛЬ	KRAUTKRAMER	
TIPO DI SONDA / TIPE DE PALPEUR / PRUFKOPT / PROBETYPE ТИП ЗОНДА	B2SE MSEB4S-E		*FREQUENZA / FREQUENCE / FREQUENZ / FREQUENCY* ЧАСТОТА	2 MHz 4 MHz	

DIREZIONE D'ESAME / DIRECTION D'EXAMEN / PRUEFRICHTUNG / SCANNING DIRECTION НАПРАВЛЕНИЕ ПРИ

- [X] *RADIALE - RADIAL*
- [X] *ASSIALE - AXIAL*
- [ ] *SONDE ANGOLATE - ANGLE BEAMS*

- [ ] *MATRICOLA BLOCCO CAMPIONE / DENTIFICATION BLOC DE REFERENCE MUSTER BLOCK / MUSTER BLOCK / TEST BLOCK NR* № ОБРАЗЦА ДЛЯ ИСПЫТАНИЯ

AVG SCALE / ECRANS ABAQUES AVG / AVG SKALEN / AVG SCALE ШКАЛА *AVG*

- [ ] *AVG DIAGRAMMI / DIAGRAMMES AVG / AVG DIAGRAMM / AVG DIAGRAM* ДИАГРАММЫ *AVG*
- [ ] V1
- [ ] V2

RISULTATODELL'ESAME
RESULTAT DE L' ESSAI
PRUEFERGERBNISSE
RESULT OF THE TEST
РЕЗУЛЬТАТ

EXAM DATA : 21/01/2019
INSPECTED N. BARS 17

THE MATERIAL IS IN ACCORDANCE TO THE FOLLOWING SPECIFICATIONS:

API 6A PSL3

L'ISPETTORE CND ZUSTANDER CND L'INSPECTEUR CND CND INSPECTOR ИНСПЕКТОР НРК BAISOTTI MARCO Liv.II - ISO9712 N° Cert.20741/PND/C	**III LIV.CND** III УРОВЕНЬ НРК OLIVERO DIMITRI Liv.III - ISO9712 N° Cert.24100/PND/C		**DATA** DATUM DATE DATE ДАТА 23/01/2019

(Mod. Certus Rev. 6)

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ROSETTI MARINO ITEM 130

COD. VBC0NN24893Q00

TAG: BLPH-MV-214,

BLPH-MV-400

INDRA ITEM 130

COD. 00.VSF.2683(T)

indra VALVES - ITALY	***Certificazione dei materiali*** ***EN 10204 3.1 come da allegati*** ***Material certification*** ***EN 10204 3.1 as per attachments***	**MD-02-04-IT-UK / VSF** **Rev. 16** **Data: 08-Nov-2018** **CM/IT/UK**

Nr. *No.* **24-1943** — **Data /** *Date :* **8-Oct-2024**

Cliente / *Customer* **ROSETTI MARINO SPA**

Vs. ordine Nr. / *Your order Nr.* **1724000798 REV.2** — **Data /** *Date :* **26-Jun-2024**

Ns. commessa Nr. / *Our job Nr.* **24 01216** — **Data /** *Date :* **3-Jul-2024**

Ns. D.D.T. Nr. / *Our advise note Nr.* — **Data /** *Date :*

Ordine di produzione / Production order number : 24 01216/130 - 307035

Lotto / Material batch number : 307035

Pos. Cliente Customer Item	*Pos. Indra Indra Item*	*Codice / Code*		*Q.tà / Q.ty*	*Nr. di serie Serial Number*	*Descrizione /Description*
		Ns./ Our	*Vs. / Your*			
130	130	00.VSF.2683(T)	VBC0NN24893Q00	2	105979,105980	INDRA BALL VALVE SB-598-20-E150FF-E-C276F-C276-N-PG-EXS100-L1-TG-TGW-PMI2 PD2-BI-CR-TA-FS-SPC1-SPC2

Elenco / List

Componente / *Component*	Colata / Heat	Materiale *Material*	Numero del certificato Certificate number
Corpo Valvola / Valve Body	307035	HASTELLOY C276 NACE	MEST075939/2024/1 - UT24003423
Closure E150FF	307035	HASTELLOY C276 NACE	MEST075939/2024/1 - UT24003423
Tirante / Stud bolt	572929	ASTM A193 B8M Cl.2	2402480
Dado / Nut	160903S05	ASTM A194 Gr.8M	5117
Stelo antiespulsione sfera / Ball stem	903981	HASTELLOY C276 NACE	FA1600157470 00 / V0 - 494070
Sfera / Ball	901228	HASTELLOY C276 NACE	MEST025211/2023/1 - UT23001136

NOTE / **REMARKS :** TAG: BLPH-MV-214, BLPH-MV-400

PREPARATO DA: **ELEONORA RANZANI** — PREPARED BY: **DOCUMENTION MANAGER**

APPROVATO DA: **LUCIA NOSOTTI** — APPROVED BY: **QUALITY ASSURANCE MANAGER**

20013 Magenta (MI) Italy - Via Novara, 10/B-C
Tel. +39 02 97298663 r.a. - Fax +39 02 97291855
E-mail: indra@indra.it - http://www.indra.it

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16/10/24

CORPO VALVOLA / VALVE BODY - CLOSURE E150FF

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497
https://www.valbruna-stainless-steel.com/

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION - CERTIFICADO DE INSPECCIÓN

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon/De conformidad con

Certificato nr. MEST075939 / 2024 / 1
Prufung/Test/Essai/Num. de certificado

Cliente / Besteller/Purchaser/Client/Cliente
C.V.A. NICRORAM S.R.L.
VIA GRAMSCI, 29
20016 - PERO - MI

Ordine nr: 240058
Bestell
Your order
Commande
Num. de pedido

Conferma ordine nr: IT24000959
Werks/Our Order/Ref nr.
Num. de confirmación de pedido

Avviso di Spedizione: A-VI24013045
Lieferanzeige/Packing list/B.L.
Aviso de embarque

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand
Delivery state
Etat de livraison
Estado de la entrega

Tipo di Elaborazione: E+AOD+ESR
Erschmelzungsart
Melting process
Mode d'elaboration
Método de fusión

Qualità: N10276/2.4819
Werkstoff/Grade/Nuance
Calidad

Marca: AVC276
Markenbezeichnung
Brand / Nuance / Marca

Produttore :
Hersteller/Item/Usine productrice/Producior

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice
Marcas de fábrica

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur
Sello del Comprobador

Punzonatura: N10276
Kennzeichnung
Marking
Marquage / Sello

SPECIFICHE :
Anforderungen / Requirements / Exigences / Especificaciones

ASME SB564 2023 N10276 A (0)
ASTM A370 2022 .
ASTM B462 2018 N10276 A (1)
ASTM B564 2019 N10276 A (2)
ASTM E112 2013 . (3)
NACE MR0103 2015 N10276 A (4)
NACE MR0175 2015 N10276 SA (5)
DIN 17744 2002 2.4819
ASTM G28 MET. A 2002 N10276

Note:
Aufzeichnungen / Notes / Notes / Notas

(0)Section II PT.B 2023 EDITION Chemical analysis only and mechanical properties.
(1)E1 Chemical analysis and mechanical properties only.
(2)Chemical analysis only and mechanical properties.
(3)Reapproved 2021
(4)ANSI/NACE MR0103/ISO 17945 November 23, 2015
(5)ANSI/NACE MR0175/ISO 15156-3, third edition November 23,2015

COPIA CONFORME ALL'ORIGINALE
C.V.A. NICRORAM SRL
DDT NR. 1655 DEL 02-09-2024
VS ORDINE AP2402709
PESO 84,4 KG

Tolleranza: k12
Toleranz/Allowance/Tolerance/Tolerancia

Pos. nr. / Item nr / Nr. de poste / Número de artículo	Oggetto / Gegenstand / Product description / Descrip. du produit / Descripción del producto	Dimensioni - mm / Abmessungen / Dimension / Dimensión / Dimensiones	Lunghezza - mm / Lange / Length / Longueur / Longitud	Colata / Schmelze / Heat / Coulée / Colada	Pezzi / Stückzahl / Pieces / Piezas	Peso - KG / Gewicht / Weight / Poids / Peso	Lotto nr. / Losnr / Lot nr. / Lote nro.
0010	Tondo	110,000	4311/ 4311	307035	1	363,0	316407961

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TEST ALLO STATO DI FORNITURA

TEST		min	max	
A	Dimensioni grano x ASTM E112			3

Test allo stato di fornitura per ASTM A370

1) L=Longitudinale/Längs, T=trasversale/quer, O=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg./diam. Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm / Probeta	°C	Posiz. Seggio Probenlage Location Emplacement Ubicacion 1)	Snervamento Streckgrenze/Yield Strength Limite elastique Limite elástico Rp 0,2% N/mm2	Snervamento Streckgrenze/Yield Strength Limite elastique Limite elástico	Resistenza Zugfestigkeit/Tensile strength Resistance à traction Resistencia a la tracción Rm N/mm2	Allungamento Bruchdehnung Elongation Alargamiento / Elongación E 4d %		Strizione Einschnürung Reduction of area Striction / Reducción de área RA %		Resilienza Kerbschlagarbeit Impact Value/ Resilience Prueba de impacto			Durezza Haerte Hardness Dureza / Dureza HRc		
Valori richiesti	Anforderungen/Required values Valeurs demandées / Valores requeridos	min max		283	-	690	-	40	-	-	-			-	35,0	
B	12,5	20	L	346		720		72		80				4,3		

Test allo stato di fornitura per ASTM A370

TEST		min	max	
B	HB		325	167

Mechanical properties according to ASTM A370.

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 10/06/2024
VCQ008 - MEST078960

Direzione Qualità
Qualitätsmanagement/Quality Management/Gestion Qualité/Gerente de calidad
R.BERTELLI

Direzione Prodotto
Produktmanagement/Product Management/Direction Produit/Gerente de producto
P.MESSORI

Pagina 1 di 3

CORPO VALVOLA / VALVE BODY - CLOSURE E150FF

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497
https://www.valbruna-stainless-steel.com/

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION - CERTIFICADO DE INSPECCIÓN

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1 — Certificato nr. MEST075939 / 2024 / 1
Nach/According to/Selon/De conformidad con — Prüfung/Test/Essai/Num. de certificado

Cliente / Besteller/Purchaser/Client/Cliente
C.V.A. NICRORAM S.R.L.
VIA GRAMSCI, 29
20016 - PERO - MI

Ordine nr: 240058
Bestell / Your order / Commande / Num. de pedido

Conferma ordine nr: IT24000959
Werks/Our Order/Ref nr. / Num. de confirmación de pedido

Avviso di Spedizione: A-VI24013045
Lieferanzeige/Packing list/B.L. / Aviso de embarque

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand / Delivery state / Etat de livraison / Estado de la entrega

Tipo di Elaborazione: E+AOD+ESR
Erschmelzungsart / Melting process / Mode d'elaboration / Método de fusión

Qualità: N10276/2.4819
Werkstoff/Grade/Nuance / Calidad

Marca: AVC276
Markenbezeichnung / Brand / Nuance / Marca

Produttore :
Hersteller/Item/Usine productrice/Productor

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice / Marcas de fábrica

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur / Sello del Comprobador

Punzonatura: N10276
Kennzeichnung / Marking / Marquage / Sello

Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique/Análisis químico

Colata/Heat/Coulée / Schmelze/Colada		Ni %	C %	Si %	Mn %	Cr %	Mo %	Cu %	Co %	W %	P %	S %	V %	Fe %		
	min	REST	-	-	-	14,50	15,00	-	-	3,00	-	-	-	4,00	-	-
	max	-	0,010	0,080	1,00	16,50	17,00	0,50	2,50	4,50	0,020	0,015	0,35	7,00	-	-
307035		REST	0,004	0,052	0,29	16,15	15,59	0,12	0,02	3,15	0,011	0,001	0,01	5,68		

Reduction ratio = 19,2 : 1
Material annealed 1150°C for 2,5 h /water cooled.
SURFACE QUALITY GUARANTEE BY ET INSPECTION (max defect depth 1% DIAMETER)
UT ACC. TO ASTM A388

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DDT NR. 1655 DEL 02-09-2024
VS ORDINE AF2402709
PESO 84,4 KG

Corrosion test in sulfuric acid and Iron sulfate solutions

Test standard: ASTM G28 method A (24h)

Test	Length of Period [h]	Test temp [°C]	Corrosion rate mm/year					
			min	max		min	max	
Intergranular corrosion	24	boil						3,2400

Allegati / Anlagen / Enclosure / Attachments :
UT24003423

Sono state soddisfatte tutte le condizioni richieste
Die gestellten Anforderungen sind lt. Anlage erfüllt
The material has been furnished in accordance with the requirements
Le materiel à été trouvé conforme aux exigences
El material cumple de acuerdo a los requisitos

Controllo antimiscelanza con tecnica XRF/OES portatile : OK
Verwechslungprüfung: durch XRF/OES Gerät geführt : OK
Antimixing testing performed with XRF/OES portable : OK
Contrôle antimélange svt technique XRF/OES portable : OK
Prueba de anti mezcla con técnica XRF/OES portátil: OK

Controllo visivo e dimensionale: soddisfa le esigenze
Sichtbigung und Ausmessung: ohne Beanstandung
Visual inspection and dimensional checks:satisfactory
Contrôle visuel et dimensions: satisfaisant
Inspección visual y dimensional: cumple los requisitos

Melted, poured and manufactured in Italy — No welding or weld repair — Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD`S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 10/06/2024	Direzione Qualità	Direzione Prodotto	Pagina
VCQ008 - MEST078960	Qualitätsmanagement/Quality Management/Gestion Qualité/Gerente de calidad: R.BERTELLI	Produktmanagement/Product Management/Direction Produit/Gerente de producto: P.MESSORI	2 di 3

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CORPO VALVOLA / VALVE BODY - CLOSURE E150FF

	Acciaierie Valbruna S.p.A. 36100 VICENZA (Italia) - Viale della scienza, 25 z.i. Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4	CERTIFICATO Certificate - Zeugnis - Certificat N° UT24003423	Pag 3 di 3
		CONTROLLO CON ULTRASUONI *Ultrasonic testing - Ultraschallprüfung - Controle par ultrasons*	

mod. UT02 MEST075939 / 2024 / 1

Cliente : C.V.A. NICRORAM S.R.L. *Customer*				**Lotto nr : 316407961** *Mill order*		
MARCA *Grade*	**DIMENSIONI - mm** *Size*	**COLATA** *Heat*	**BARRE** *Bars*	**PESO** *Weight*	**LUNGHEZZA - mm** *Length*	
AVC276	Tondo 110,000	307035	N. 1	KG : 363,0	4311	4311

T. TERMICO *Heat Treatement*	**ESECUZIONE** *Condition*	**RUGOSITA'** *Roughness*	**TOLLERANZA** *Tolerance*
Solubilizzato	Pelato	µm	k12

Istruzione : PROC CND 040 *Work Instruction*	**Criteri Accettabilità : ASTM A388/API 6A PSL3** Acceptance Criteria

ELETTRONICA : Olympus Quickscan LT
Equipment

ACCOPPIANTE : ACQUA + 0253 SA
Couplant

VEL.CONTROLLO : 138 mm/sec
Testing Speed

TRASDUTTORI *Probes*	**TIPO ONDA** *Type of wave*	**FREQUENZA (MHZ)** *Frequency*	**DIMENSIONI (MM)** *Dimension*	**ANGOLO** *Angle*	**TARATURA** *Calibration*
64EL. 2.25MHZ	LONG.	2,25	128X25	0°	DAC

CONTROLLO AUTOMATICO [X] *Automatic inspection*	**CONTROLLO MANUALE** *Manual inspection*

NOTE :
Notes

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16/10/24

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C.V.A. NICRORAM SRL

DDT NR. 1655 DEL 02-09-2024
VS ORDINE AF2402709
PESO 84,4 KG

CONFORME [X] *Compliant*	**CONFORME IN DEROGA** [ ] *See Deviation*	**NON CONFORME** [ ] *Not Compliant*

ISPEZIONATO DA Inspected by	**VERIFICATO DA** Verified by	**APPROVATO DA** Approved by	**COLLAUDATORE** Inspector - Abnahmesachsverst - Inspecteur
FIRMA	FIRMA	G.Parlato ISO 9712 LEV. 2 IND2401253 FIRMA	

Date - Date 04/06/2024

Operatori, strumenti e documenti di riferimento, utilizzati per il collaudo del materiale, sono identificati, controllati e/o calibrati in accordo alle norme EN, ISO e ASTM, richiamate nelle pratiche operative e istruzioni di pertinenza / *Operators, Equipment and reference documents, used for material inspection, are identified, checked and/or calibrated in accordance with EN/ISO or ASTM standards, reported in relevant documents*

TIRANTE / STUD BOLT

IPL S.r.l.
BULLONERIA - TIRANTERIA
SPECIALE E STANDARD

Via Papa Giovanni Paolo I, 306
21040 UBOLDO (VA)

Customer: **INDRA SRL**
C.SO XXII MARZO, 8
20135 MILANO (MI)

Date, 11-09-24 **Our Ref.** DDT 3209 / OC 1696 **of** 11-09-24 **Your Ref.** AF24 02662 01-08-24

CERTIFICATE UNI EN 10204 - 3.1 N.2402480

ITEM		QUANTITY	HEAT TREATMENT	PROTECTION	LOT nr.	HEAT nr.
TIR.82010030	STUDBOLT UNI6610/DIN976B - A/SA193-320 B8M CL.2 M 10 x 30	85,00	carb. sol. tr. + strain hard.		834976	572929

101.99.0962SS

MECHANICAL PROPERTIES

values	R (MPa)	Rs 0,2 (MPa)	A4 (%)	Z (%)	HB (min-max)
required	760 min	655 min	15 min.	45 min.	321 max
actual	785	684	28,0	69,0	240

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CHEMICAL COMPOSITION

values	C (%)	Mn (%)	Si (%)	P (%)	S (%)	Ni (%)	Cr (%)	Mo (%)	N (%)
required	0,08 max	2,00 max	1,00 max	0,045 max	0,030 max	10,00 - 14,00	16,00 - 18,00	2,00 - 3,00	
actual	0,014	1,830	0,370	0,027	0,027	10,13	17,03	2,080	

remarks: chemical and mechanical values, at delivery condition, are quoted by the relevant steel work certificate. VISUAL AND DIMENSIONAL TEST SATISFACTORY
According to: ASME II part. A ed. 2021

x CROSSWIND 16/10/24 R

If not mentioned the above test are performed at room temperature.
We certify that the fasteners were manufactured, sampled, tested and inspected in accordance with the specification and are consistent with order prescriptions.
Quality assurance system in accordance to European Directive 2014/68/EU annex I par. 4.3 (PED) and AD 2000 Merkblatt W0.
Certificates 0045/202/WZ1921/23 and TN/AD2000-W0/1921/23 TÜV NORD Systems GmbH & Co. KG.

IPL S.R.L.
RSQ A. Grisetti

DADO / NUT

t·e·c·n·o BOLT

CERTIFICATE

Nr. 5117 | **03-09-24**

Page 1/1

INDRA SRL
VIA NOVARA 10/B-C
20013 MAGENTA MI
ITALIA

EN ISO 10204 3.1
CERTIFIED MATERIAL TEST REPORT

Your order: AF24 02652 02-08-24 Delivery note: 2175 03-09-24

Item	Materials	Description	Sizes	Batch	Heat		Quantity
6	ASTM A 194 Gr.8M 980.99.0002 Pos.30-40-480 CKD/CTRL/REV.1/08/06/2016/PV	Dado UNI 5588/DIN 934 ASTM A 194 Gr.8M M Esagonale	10	67029	160903S05	N.	830



CHEMICAL ANALYSIS

6		%C %	%Mn %	%P %	%S %	%Si %	%Cr %	%Ni %	%Mo %
	REQ. MIN.						16	10	2
	REQ. MAX.	0,08	2	0,045	0,030	1	18	14	3
	ACT.VAL.	0.033	0.950	0.033	0.002	0.340	16.400	10.050	2.020

MECHANICAL PROPERTIES

6		H HB	P.L. KN
	REQ. MIN.	126	
	REQ. MAX.	300	
	ACT. VAL.	147-156	29.9

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16/10/24

We state that the material or fasteners, or both, were manufactered, sampled, tested and inspected in accordance with the specification and any supplementary requirements designated in the purchase/sales order and it was found to meet those requirements

tecnoBOLT s.r.l. - 20822 Seveso (MB) ITALY - way vignone n.7 - info@tecnobolt.com - www.tecnobolt.com

BGH SL-Stahl GmbH

BGH SL-Stahl GmbH - Chromstraße 3 - 30916 Isernhagen HB

I.W.S. International Welding Supplier SAS
Via Kennedy 42
20078 San Colombano al Lambro (MI)
Italien

Ansprechpartner	Contact	Herr D. Pelliccia
Telefon	Phone	+49 511 763 338 12
E-Mail	E-Mail	david.pelliccia@bgh.de
Datum	Date	09.12.2020

Bescheinigung zur Materialidentität
Certificate Of Material Identity

Bescheinigungs-Nr.
certificate number

FA1600157470 00 / V0

Bestell-Nr. / order no.	Auftragsnummer / purchase order no.	Prüfbescheinigung (Anlage) / test certificate no. (attachment)
ordine 26/20	AB16068004 / 5	494070

Werkstoff / material	Die Lieferung entspricht den vereinbarten Lieferbedingungen. / The delivery corresponds to the agreed terms of delivery.
NiMo16Cr15W, UNS N10276	

Erzeugnis	product
Stab rund, gewalzt, geschält	Round bars, rolled, peeled

Anforderungen	requirements
DIN 17744 09/02, ANSI/NACE MR 0175/ISO15156-3 2015	

Schmelze / heat	Anzahl / quantity	Gewicht (kg) / weight (kg)	Abmessung / dimension
903981	8	205	25,40 RD (4900 - 5940mm)

Wir bestätigen, dass die gelieferten Teile aus der oben genannten Nummer der Prüfbescheinigung entnommen wurden.	We herewith confirm that the delivered parts were part of the certification stated above.
Ausgewiesen durch: DIN EN 10204-01/05 3.1	Certified by: DIN EN 10204-01/05 3.1

Stempelung / stamping	Wert / value
INDRA s.r.l. COPIA CONFORME ALL'ORIGINALE VERIFIED TRUE COPY OF ORIGINAL	

Betriebsbeauftragter / authorized representative	
Sense	BGH Q35

Die Bescheinigung wurde maschinell erstellt und ist auch ohne Unterschrift gültig. The certificate was created by a data system and is valid without signature.

Seite / Page 1/1

Seite 1 /2
Page

BGH

BGH Edelstahl Freital GmbH

BGH Edelstahl Freital GmbH Am Stahlwerk 1 01705 Freital

BGH SL-Stahl GmbH

Chromstraße 3

30916 Isernhagen
Deutschland

Zeugnis-Nr. 494070
Certificate no.
No. de certificat

Bescheinigung über Werkstoffprüfung nach DIN EN 10204
Certificate of material tests according to DIN EN 10204 3.1
Certificat des essais des matériaux selon DIN EN 10204

Die Lieferung entspricht den vereinbarten Lieferbedingungen.
Delivery in accordance with the agreed terms of delivery.
La livraison correspond aux conditions de livraison convenues.

Zeichen des Lieferwerkes / Trade mark / Signe du fournisseur

Stempel des Werkssachverständigen / Inspector's stamp / Poinçon de l'inspecteur

BGH Q406

Kunden-Bestell-Nr. BSVF16002065DPE
Customer order no.
Cde. no. du client

BGH-Auftrags-Nr. 35932801/250857
BGH works no.
BGH référence

Erzeugnisform Product	Stab, rund, gewalzt, geschält round bars, rolled, peeled
Werkstoff / Quality	UNS N10276 (Chem.+Mech.only)
Anforderungen Requirements	UNS N10276 (Chem.+Mech.only) ASTM B 564 -19 UNS N10276 (Chem.+Mech.only) ASTM B 574 -18 UNS N10276 (Chem.+Mech.only) ASME BPVC II. B SB- 564 2017 UNS N10276 (Chem.+Mech.only) ASME BPVC II. B SB- 574 2017 UNS N10276 ANSI/NACE MR 0175 /ISO15156-3 2015 UNS N10276 ANSI/NACE MR 0103 /ISO17945: 2015 2.4819 NiMo16Cr15W DIN 17744 09/02 2.4819 NiMo16Cr15W DIN 17752 August 2019 NiMo16Cr15W Ofenkurve+Gefüge+US+Umformgrad Alloy C-276 Kundenbestellung (chemische Analyse und mech. Kennwerte bei Raumtemperatur in Anlehnung an VdTÜV-Blatt 400) Abnahmeprüfzeugnis ausgestellt im Einvernehmen mit der TÜV SÜD Industrie Service GmbH (30.11.2009), QS entsprechend DGRL, Anhang I, Absatz 4.3 von Notified Body 0036 überprüft. Zertifikat Nr. DGR-0036-QS-W 010/2018/AN1-DRE. Inspection Certificate issued in accordance with TÜV SÜD Industrie Service GmbH (11/30/2009), QA according to PED, Annex I, Point 4.3 verified by Notified Body 0036. Certificate no. DGR-0036-QS-W 010/2018/AN1-DRE.

Besichtigung und Maßnachprüfung Inspection and dimensional control Inspection et contrôle de dimension	Erschmelzung/Nachbehandlung Melting process/secondary refining Mode d'élaboration/traitement ultérieur	Verwechslungsprüfung (spectroanalytisch) Identification test (spectral-analysis) examination d' identification(analyse spectrale)
ohne Beanstandung without objection	VIM	ohne Beanstandung without objection

Pos. Item Poste	Anzahl Quantity Quantité	Abmessung Dimension Dimensions	Gewicht Weight Poids	Schmelz-Nr. Heat-No. No. de coulée
1	1 Bd	25,40 RD	410 kg	903981

Schmelze Heat %	C	Si	Mn	P	S	Cr	Mo	Ni	Cu	V	W	Co
903981	0,008	0,01	0,35	0,005	0,0007	16,13	16,17	57,80	0,01	0,191	3,440	0,010
	Fe											
	5,62											

Wärmebehandlungszustand: Hot finished - solution annealed

Probe-Nr. Test-No.	Lage loc.	Temp. °C	Rp0,2 N/mm² ksi	Rp1,0 N/mm²	Rm N/mm² ksi	A5/A4 %	Z %	Kerbschlagarbeit Impact value J	Probenform Shape of test piece Charpy-V °C	Härte Hardness HBW /HRC HBW /HRC
Soll/Req.+	L	RT	>=280	>=300	>=700	>=35		>=96	RT	
+	L	RT			<=950					/<=35
*	L	RT	>=41		>=100	>=40				
025KE1 +	L	RT	348	384	766	63/-	68	376 424 385	RT	171 / <20

Anlagen End. Annexe	Freital,den Place and date Lieu et date	Abnahmebeauftragter Inspector representative Inspecteur de réception
US-Protokoll/UT report Glühbesch./Heat treatment cer. Gefügeaufnahme/micrograph	09.11.2020	Müller

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BGH

BGH Edelstahl Freital GmbH

BGH Edelstahl Freital GmbH Am Stahlwerk 1 01705 Freital

BGH SL-Stahl GmbH

Chromstraße 3

30916 Isernhagen
Deutschland

Zeugnis-Nr. 494070
Certificate no.
No. de certificat

Bescheinigung über Werkstoffprüfung nach DIN EN 10204
Certificate of material tests according to DIN EN 10204 3.1
Certificat des essais des matériaux selon DIN EN 10204

Die Lieferung entspricht den vereinbarten Lieferbedingungen.
Delivery in accordance with the agreed terms of delivery.
La livraison correspond aux conditions de livraison convenues.

Zeichen des Lieferwerkes
Trade mark
Signe du fournisseur

Stempel des Werkssachverständigen
Inspector's stamp
Poinçon de l'inspecteur

BGH Q406

Kunden-Bestell-Nr. BSVF16002065DPE
Customer order no.
Cde. no. du client

BGH-Auftrags-Nr. 35932801/250857
BGH works no.
BGH référence

025KE1	*	L	RT	50		110	--/63	74	

+ Erprobung nach/testing acc. to DIN EN ISO 6892-1 / DIN EN ISO 148-1
* Erprobung nach/testing acc. to ASTM/ASME A 370

Proben wurden von der Stabverlängerung entnommem./
Test pieces taken from actual bar prolongation.

IK-Beständigkeit/intercrystalline corrosion SEP 1877, Meth. II:
ohne Beanstandung/no objection

IK-Beständigkeit/intercrystalline corrosion ASTM G28, Meth. A: 5,09 mm/y

Umformgrad/reduction ratio: 481:1

Am Material wurden keine Schweißungen ausgeführt./
No welding was performed at the material.

Ursprungsland (Erschmelzung und Fertigung): Deutschland
Country of origin (Melting and manufacturing): GERMANY

Fertigung nach QM-System ISO 9001: 2015/ QM system in effect is ISO 9001: 2015
Zertifiziert nach / certificated AD2000 W0.

Kontrolle auf Radioaktivität ohne Befund, der Messwert liegt unter der Nachweisgrenze von 0,1 Bq/g.
Radioactivity inspection without objection, the measured value is below the detection limit of 0.1 Bq/g.

Das Material ist zum Zeitpunkt des Versands frei von Quecksilber- und / oder Radiumverunreinigungen und wurde ohne ozonschädigende Substanzen hergestellt.
ozonschädigende Substanzen hergestellt./
Material is free from any mercury and or radium contamination at time of shipment and it was produced without ozone depleting substances.

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Anlagen / End. / Annexe: US-Protokoll/UT report; Glühbesch./Heat treatment cer.; Gefügeaufnahme/micrograph	Freital,den Place and date Lieu et date 09.11.2020	Abnahmebeauftragter Inspector representative Inspecteur de réception Müller
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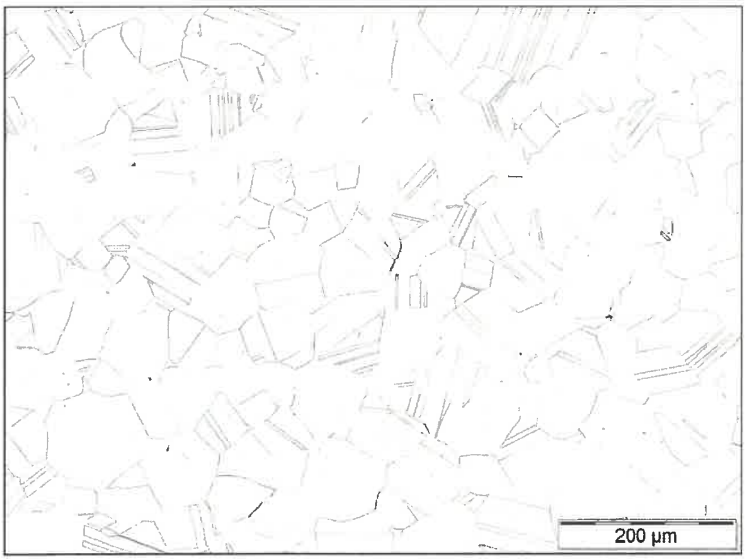
Gefügeaufnahmen zum Zertifikat Nr. / Microstructure to certificate No.: **494070**

Besteller/Purchaser:	**BGH SL-Stahl GmbH**
Bestell-nr./Order-No.:	**BSVF16002065DPE**
Werkstoff/Quality:	**UNS N10276 (Chem.+Mech.only)**
Chargen-nr./Cast-No.:	**903981**
Erzeugnisform/Product:	**Stab, rund, gewalzt, geschält / round bars, rolled, peeled**
Abmessung/Dimension:	**25,40 RD**
Komm.-nr./Work-No.:	**35932801**

Proben-nr./Test-No.: **025KE1**



100:1 transversal



100:1 longitutinal

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Wärmebehandlungsbescheinigung
Heat treatment certificate
Attestation de traitement thermique

BGH

BGH Edelstahl Freital GmbH

Kunden-Bestell-Nr. Customer order no. Cde. no. du client	BGH-Auftrags-Nr. BGH works no. BGH référence	Zeugnis-Nr. Certificate no. No. de certificat
BSVF16002065DPE	35932801	494070

Wärmebehandlungszustand: Condition of heat treatment: État de traitement thermique:	lösungsgeglüht solution annealed recuit de mise en solution
Datum: Date: Date:	16.10.2020
Ofen-Nr.: Furnace no.: No. du four:	475
Aufheizzeit: Heating up time: Temps de montée en température:	2 h
Haltetemperatur: Holding temperature: Température de maintien:	1015 °C
Haltezeit: Holding time: Temps de maintien	2,5 h
Abkühlmedium: Quenching medium: Moyen de refroidissement:	Wasser / water / eau
Datum: Date: Date:	
Ofen-Nr.: Furnace no.: No. du four:	
Haltezeit: Holding time: Temps de maintien:	
Abkühlmedium: Quenching medium: Moyen de refroidissement:	
Wärmebehandlungs-Nr.: Heat treatment lot no.: No. du lot de traitement thermique:	475/4481 (025KE)

Furnace calibration in accordance with API 6A 21. Ed. Annex M.

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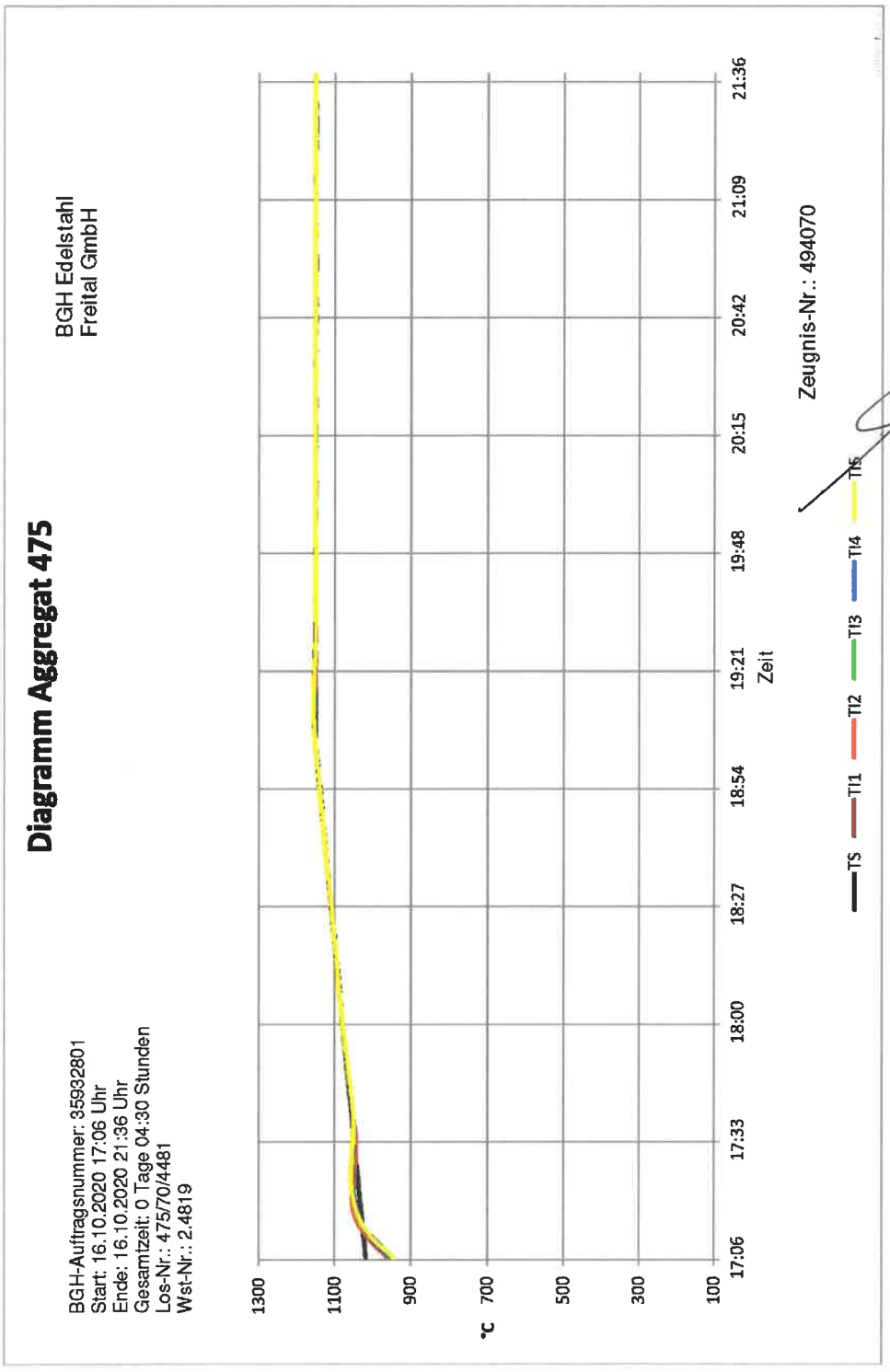
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Diagramm: Diagram: Diagramme:	Datum: Date: Date:	Abnahmebeauftragter Inspector representative Inspecteur de réception
X	09.11.2020	KUNZ

BGH Q413

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Seite / Page 1 /1

Ultraschallprüfung
Ultrasonic testing

DIN EN 10204-01/05 3.1

BGH Edelstahl Freital GmbH

Kunden-Bestell-Nr. / Customer order no. / Cde. no. du client: BSVF16002065DPE

BGH-Auftrags-Nr. / BGH works no. / BGH référence: 359328-01

Zeugnis-Nr. / Certificate no. / No. de certificat: 494070

Erzeugnisform : Stab, rund, gewalzt, geschält
Product : round bars, rolled, peeled

Werkstoff/Quality : UNS N10276 (Chem.+Mech.only) Schmelze: 903981

Abmessung/Dimension: 25,40 RD

Anzahl/Quantity : 1 Bd Gewicht /Weight : 410 kg

Wärmebehandlungszustand : Hot finished - solution annealed
Condition of heat treat : solution annealed

Prüfrichtlinie
Specification

A388/A 388 M (latest Revision)
(KSR/FBH max. 1,5 mm)
DIN EN 10308 03/02
Tab.1-Typ1a(vollst.)Tab.3-Qual.-kl.3

Bearbeitungszustand Machining condition	:	geschält peeled
Prüfgerät Test equipment	:	GE ROWA B4
Prüfkopf Probe	:	4 Arrays á 90° - Radius: 35 mm 20 Elemente - 10 MHz
Kopplungsmittel Coupling medium	:	Wasser water
Prüfumfang Extent of examination	:	vollständig completely
Einschallrichtung Direction of incidence	:	senkrecht und in Winkeleinschallung 40° perpendicular and angle beam 40°
Registriergrenze Registration level	:	Prüfung und Justierung erfolgten gemäß obiger Spezifikation. Test and adjustment according to above mentioned specification.
Befund Result	:	keine registrierpflichtigen Anzeigen no reportable indications
Prüfdatum Examination date	:	04.11.2020

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Freital,den Place and date Lieu et date 09.11.20	Prüfer Testing operator Opérateur Günther Stufe 2 ISO 9712	Abnahmebeauftragter Inspector representative Inspecteur de réception Kunz Stufe 2 ISO 9712	BGH Q413	Überwacher Supervisor Surveilleur

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Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1 — Certificato nr. MEST025211 / 2023 / 1

Cliente / Bestellet/Purchaser/Client
C.V.A. NICRORAM S.R.L.
VIA GRAMSCI, 29
20016 - PERO - MI

Ordine nr: 230022

Conferma ordine nr: IT23000473

Avviso di Spedizione: A-VI23004793

Stato di fornitura: Laminato - Solubilizzato Pelato

Tipo di Elaborazione: E+AOD+ESR

Qualità: N10276

Marca: AVC276

Produttore:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV

Punzone del Collaudatore: MR

Punzonatura: N10276

SPECIFICHE:

	Note:
ASME SB564 2021 N10276 A (0)	(0)SECTION II PT.B 2021 EDITION Chemical analysis only and mechanical properties.
ASME SB574 2021 N10276 A (1)	(1)SECTION II PT.B 2021 EDITION
ASTM A370 2022 .	
ASTM B462 2018 N10276 A (2)	(2)E1 Chemical analysis and mechanical properties only.
ASTM B564 2019 N10276 A (3)	(3)Chemical analysis only and mechanical properties.
ASTM B574 2018 N10276 A	
NACE MR0103 2015 N10276 A (4)	(4)ANSI/NACE MR0103/ISO 17945 November 23, 2015
NACE MR0175 2015 N10276 SA (5)	(5)ANSI/NACE MR0175/ISO 15156-3, third edition November 23,2015
ASTM G28 MET. A 2002 N10276	

Tolleranza: k12

Pos. nr.	Oggetto	Dimensioni - mm	Lunghezza - mm	Colata	Pezzi	Peso - KG	Lotto nr.
0060	Tondo	45,000	4350/ 4380	901228		183,0	133716760

Test allo stato di fornitura per ASTM A370

TEST	Provetta/	°C		Snervamento Rp 0,2% N/mm2	Snervamento	Resistenza Rm N/mm2	Allungamento E 4d %		Strizione RA %		Resilienza			Durezza HB		
Valori richiesti		min - max		283	-	690	-	40	-	-	-			- 325		
E	12.5	20	L	373		754		67		77				168		

Mechanical properties according to ASTM A370.

Analisi chimica

Colata		Ni %	C %	Si %	Mn %	Cr %	Mo %	Co %	W %	P %	S %	V %	Fe %
	min REM	-	-	-	-	14,50	15,00	-	3,00	-	-	-	4,00	-	-	-
	max -	0,010	0,080	1,00		16,50	17,00	2,50	4,50	0,040	0,030	0,35	7,00			
901228	REM	0,005	0,038	0,27		16,34	15,72	0,02	3,21	0,009	0,001	0,01	6,14			

Reduction ratio = 18,7 : 1
Material annealed 1150°C for 2 h /water cooled.
ET ACC. TO EN 10088-3 TAB.1
UT ACC. TO ASTM A388

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DDT NR. 2379 DEL 11-12-2023
AF23 03298
VS ORDINE
28 KG
PESO

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 28/11/2023
VC0012 - MEST145679

Direzione Qualità
Qualitätsmanagement/Quality Management/Gestion Qualité
R.BERTELLI

Direzione Prodotto
Produktmanagement/Product Management/Direct. Produit
P.MESSORI

Pagina 1 di 3

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In conformità a: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1 — Certificato nr. MEST025211 / 2023 / 1

Cliente / Besteller/Purchaser/Client:
C.V.A. NICRORAM S.R.L.
VIA GRAMSCI, 29
20016 - PERO - MI

Ordine nr: 230022

Conferma ordine nr: IT23000473

Avviso di Spedizione: A-VI23004793

Stato di fornitura: Laminato - Solubilizzato Pelato

Tipo di Elaborazione: E+AOD+ESR

Qualità: N10276

Marca: AVC276

Produttore:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV

Punzone del Collaudatore: MR

Punzonatura: N10276

Corrosion test in sulfuric acid and iron sulfate solutions

Test standard: ASTM G28 method A (24h)

Test	Length of Period [h]	Test temp [°C]	Corrosion rate mm/year					
			min	max		min	max	
Intergranular corrosion	24	boil						4,5600

Allegati / Anlagen / Enclosure / Attachments :
UT23001136

Sono state soddisfatte tutte le condizioni richieste
Die gestellten Anforderungen sind lt. Anlage erfüllt
The material has been furnished in accordance with the requirements
Le materiel a été fourni conforme aux exigences

Controllo antimescolanza con tecnica XRF/OES portatile : OK
Verwechslungsprüfung: durch XRF/OES Gerät geführt : OK
Anti-mixing testing performed with XRF/OES portable : OK
Contrôle anti-mélange avt technique XRF/OES portable : OK

Controllo visivo e dimensionale: soddisfa le esigenze
Besichtigung und Ausmessung: ohne Beanstandung
Visual inspection and dimensional check: satisfactory
Contrôle visuel et dimensions: satisfaisant

Melted, poured and manufactured in Italy — No welding or weld repair — Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD'S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SÜD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

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C.V.A. NICRORAM SRL
DDT NR. 2379 DEL 11-12-2023
VS ORDINE AF23 03298
PESO 28 KG

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 28/11/2023
VCQ012 - MEST145679

Direzione Qualità
R.BERTELLI

Direzione Prodotto
P.MESSORI

SFERA / BALL

Acciaierie Valbruna S.p.A. 36100 VICENZA (Italia) - Viale della scienza, 25 z.i. Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4	CERTIFICATO Certificate - Zeugnis - Certificat N° UT23001136	Pag 3 di 3
	CONTROLLO CON ULTRASUONI Ultrasonic testing - Ultraschallprüfung - Controle par ultrasons	

mod. UT02

MEST025211 / 2023 / 1

Cliente : C.V.A. NICRORAM S.R.L. Customer				Lotto nr : 133716760 Mill order		
MARCA Grade	DIMENSIONI - mm Size	COLATA Heat	BARRE Bars	PESO Weight	LUNGHEZZA - mm Length	
AVC276	Tonda 45,000	901228		KG : 183,0	4350	4380

T. TERMICO Heat Treatement	ESECUZIONE Condition	RUGOSITA' Roughness	TOLLERANZA Tolerance
Solubilizzato	Pelato	µm	k12

Istruzione : PROC CND 050 Work Instruction		Criteri Accettabilità : ASTM A388/API 6A PSL3 Acceptance Criteria
ELETTRONICA : GE ROWA Equipment		
ACCOPPIANTE : ACQUA Couplant		VEL.CONTROLLO : 30 m/min Testing Speed

TRASDUTTORI Probes	TIPO ONDA Type of wave	FREQUENZA (MHZ) Frequency	DIMENSIONI (MM) Dimension	ANGOLO Angle	TARATURA Calibration
PA128EL. 5MHZ	LONGITUDINALE	5	.	0°	DAC

CONTROLLO AUTOMATICO [X] Automatic inspection	CONTROLLO MANUALE Manual inspection

NOTE :
Notes

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VS ORDINE AP23 03298
PESO 28 KG

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16/10/24

CONFORME [X] Compliant	CONFORME IN DEROGA [ ] See Deviation	NON CONFORME [ ] Not Compliant

ISPEZIONATO DA Inspected by	VERIFICATO DA Verified by	APPROVATO DA Approved by	COLLAUDATORE Inspector - Abnahmesachsverst - Inspecteur
FIRMA 03/11/2022 Date - Date	FIRMA	G.Parlato ISO 9712 LEV. 2 IND1901054 FIRMA	

Operatori, strumenti e documenti di riferimento, utilizzati per il collaudo del materiale, sono identificati, controllati e/o calibrati in accordo alle norme EN, ISO e ASTM, richiamate nelle pratiche operative e istruzioni di pertinenza / *Operators, Equipment and reference documents, used for material inspection, are identified, checked and/or calibrated in accordance with EN/ISO or ASTM standards, reported in relevant documents*

ROSETTI MARINO ITEM 140

COD. VBD0NN16460300

TAG: BLPH-MV-402

INDRA ITEM 140

COD. 00.VSF.2695/V

indra VALVES - ITALY

Certificazione dei materiali
EN 10204 3.1 come da allegati

Material certification
EN 10204 3.1 as per attachments

MD-02-04-IT-UK / VSF
Rev. 16
Data: 08-Nov-2018
CM/IT/UK

Nr. *No.* **24-1878** — **Data / *Date :*** **30-Sep-2024**

Cliente / *Customer* **ROSETTI MARINO SPA**

Vs. ordine Nr. / *Your order Nr.* **1724000798 REV.2** — **Data / *Date :*** **26-Jun-2024**

Ns. commessa Nr. / *Our job Nr.* **24 01216** — **Data / *Date :*** **3-Jul-2024**

Ns. D.D.T. Nr. / *Our advise note Nr.* — **Data / *Date :***

Ordine di produzione / Production order number : 24 01216/140 - 293334

Lotto / Material batch number : 293334

Pos. Cliente Customer Item	*Pos. Indra Indra Item*	*Codice / Code*		*Q.tà / Q.ty*	*Nr. di serie Serial Number*	*Descrizione /Description*
		Ns./ Our	*Vs. / Your*			
140	140	00.VSF.2695/V	VBD0NN16460300	1	105981	INDRA BALL VALVE SB-598-HR-50-L150RF3-L-DLF-DL-CA3-N-RG-L1-TG-TGW-TV-DP-PMI2-PD2-BI-GT-CR-TA-FE2-FS-FE-SPC1

Elenco / List

Componente / *Component*	Colata / Heat	Materiale *Material*	Numero del certificato Certificate number
Corpo Valvola / Valve Body	293334	AISI 316/316L NACE	MEST007064/2024/ - UT24000304
Closure L150RF3	437746	AISI 316/316L NACE	MEST043035/2024/ - UT24002046
Tirante / Stud bolt	724094	ASTM A193 B8M Cl.2	10- 150757
Dado / Nut	T6CV	ASTM A194 Gr.8M	10- 150760
Stelo antiespulsione sfera / Ball stem	291905	AISI 316/316L NACE	MEST084078/2023/
Sfera / Ball	272823	AISI 316/316L NACE	2022021445

NOTE / **REMARKS :** TAG: BLPH-MV-402

PREPARATO DA: **ELEONORA RANZANI**
PREPARED BY: **DOCUMENTION MANAGER**

APPROVATO DA: **LUCIA NOSOTTI**
APPROVED BY: **QUALITY ASSURANCE MANAGER**

20013 Magenta (MI) Italy - Via Novara, 10/B-C
Tel. +39 02 97298863 r.a. - Fax +39 02 97291855
E-mail: indra@indra.it - http://www.indra.it

x CROSSWISE
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CORPO VALVOLA / VALVE BODY

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST007064 / 2024 /
Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 00016
Bestell
Your order
Commande

Conferma ordine nr: MI24000193
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24000311
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato - Solubilizzato Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung
Marking
Marquage

SPECIFICHE : Anforderungen / Requirements / Exigences	Note: Aufzeichnungen / Notes / Notes
VAL STOCK W2 A/1 1.4404/316L A	
MDS S01 5 316 A (0)	(0)Norsok-standard M-630 Edition 6, October 2013
MDS S17 1 316 A (1)	(1)Norsok-standard M-630: 2020 (2020-09-30)
AD 2000-M. W 2 2022 1.4401 A (2)	(2)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
AD 2000-M. W 2 2022 1.4404 A (3)	(3)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
AISI . 316/316L	
AMS-QQ-S-763 D 316/316L A	
ASME SA182 2023 S31600/03 A (4)	(4)Section II Part A 2023 EDITION For products machined directly from bar refer to ASME SA479.
ASME SA193 2023 B8M CLASS 1 (5)	(5)Section II Part A 2023 EDITION
ASME SA276 2023 S31600/03 A (6)	(6)Section II Part A 2023 EDITION
ASME SA320 2021 B8M CLASS 1 (7)	(7)Section II Part A 2021 EDITION
ASME SA479 2023 S31600/03 A (8)	(8)Section II Part A 2023 EDITION
ASTM A182 2023 S31600/03 A (9)	(9)For products machined directly from bar refer also to ASTM A479.
ASTM A193 2023 B8M CLASS 1	
ASTM A262 PR. E 2015 316/316L (A)	(A)Reapproved 2021
ASTM A276 2023 S31600/03 A	
ASTM A320 2022 B8M CLASS 1 CLASS1	
ASTM A370 2022 .	
ASTM A479 2023A S31600/03 A	
ASTM E10 2023 .	
ASTM E8 2022 .	
EN 10088 PART 3 2014 1.4401 A	
EN 10088 PART 3 2014 1.4404 A	
EN 10222 PART 5 2017 1.4401 A	
EN 10222 PART 5 2017 1.4404 A	
EN 10272 2016. 1.4401 A	
EN 10272 2016. 1.4404 A	
ISO 148-1 2016 .	
ISO 3651-2 98 METHOD A T1	
ISO 6506-1 2014 .	
ISO 6892-1 2019 .	
NACE MR0103 2015 S31600/03 A (B)	(B)ANSI/NACE MR0103/ISO 17945 November 23, 2015
NACE MR0175 4 S31600/03 A (C)	(C)ANSI/NACE MR0175/ISO 15156-3:2020 Fourth edition, approved 21 Sep 2022.
QQ-S-763 F 316/316L A	
ACH CO . .	
KV L -196C . ISO 148-1	
KV T -196C . ISO 148-1	

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 17/01/2024 VCQ012 - MEST007064	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 1 di 6

CORPO VALVOLA / VALVE BODY

Acciaierie Valbruna S.p.A.

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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST007064 / 2024 /
Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 00016
Bestell
Your order
Commande

Conferma ordine nr: MI24000193
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24000311
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato - Solubilizzato Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stampel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung
Marking
Marquage

		Tolleranza: k12 Toleranz/Allowance/Tolerance					
Pos. nr. Pos. nr Item nr. Nr. de poste	Oggetto Gegenstand Product description Descrip. du produit	Dimensioni - mm Abmessungen Dimension Dimension	Lunghezza - mm Lange Length Longueur	Colata Schmelze Heat Coulée	Pezzi Stückzahl Pieces Pieces	Peso - KG Gewicht Weight Poids	Lotto nr. Losnr. Lot nr. Lot nr.
0080	Tondo	200,000	6635/ 6635	293334		1661,0	310208790

TEST ALLO STATO DI FORNITURA

TEST		min	max	
A	Dimensioni grano x ASTM E112			3

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C		Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max			-	-	-	-	-	-	-	-	-
B	10X10	-196	L		197	201	198	1,146	1,449	1,474	65	60	65

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C		Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max			210	-	520 790	-	40	-	50	-			-		
C	12,5	20	L		266		558		57		67				166		

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Vicenza, 17/01/2024 VCQ012 - MEST007064	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 2 di 6

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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST007064 / 2024 /

Cliente / Besteller/Purchaser/Client:
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr. / Bestell/Your order/Commande: AF24 00016

Conferma ordine nr. / Werks/Our Order/Ref nr.: MI24000193

Avviso di Spedizione / Lieferanzeige/Packing list/B.L.: A-MI24000311

Stato di fornitura / Lieferzustand/Delivery state/Etat de livraison: Fucinato - Solubilizzato Pelato

Tipo di Elaborazione / Erschmelzungsart/Melting process/Mode d'elaboration: E+AOD

Qualità / Werkstoff/Grade/Nuance: 1.4401/1.4404/316/316L

Marca / Markenbezeichnung/Brand / Nuance: MVAPML (MAXIVAL)

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Lieferwerkes/Trade marks/Sigles de l'usine productrice: AV

Punzone del Collaudatore / Stempel des Werksachverständigen/Inspector's stamp/Poinçon de l'assayeur: MR

Punzonatura / Kennzeichnung/Marking/Marquage: 1.4401/1.4404

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais. mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete		
Valori richiesti / Anforderungen/Required values / Valeurs demandées		min / max		205	-	515	-	40	-	50	-			-		
D	12,5	20	T	260		556		54		66						

Prova di trazione per ISO 6892-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais. mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement A5 %		Strizione Einschnürung Reduction of area Striction Z %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti / Anforderungen/Required values / Valeurs demandées		min / max		205	240	510 690	35	-	-	-	-			-	- 215	
E	10	20	T	267	306	557	51		65					165		
F	10	20	T	258	305	556	53		67					168		

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais. mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti / Anforderungen/Required values / Valeurs demandées		min / max		-	-	-	-	-	-	-	-	-
G	10X10	-196	T	90	76	79	0,855	1,042	0,596	35	35	31

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais. mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion -			Shear Shear -		
Valori richiesti / Anforderungen/Required values / Valeurs demandées		min / max		60	60	60	-	-	-	-	-	-
J	10X10	20	T	120	131	120						
K	10X10	20	T	123	122	124						

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 17/01/2024 VCQ012 - MEST007064	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 3 di 6

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Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST007064 / 2024 /
Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 00016
Bestell
Your order
Commande

Conferma ordine nr: MI24000193
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24000311
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato - Solubilizzato Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werksachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung
Marking
Marquage

Tensile testing according to ISO 6892-1
Impact testing according to ISO 148-1
Mechanical properties according to ASTM A370.
Brinnell hardness according to ASTM E10
Tensile testing according to ASTM E8
Brinnell hardness according to ISO 6506-1

Analisi chimica
Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat Schmelze/Coulée	C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	Co %	P %	S %	N %				
	min - max 0,030	- 1,00	- 2,00	16,50 18,00	2,00 2,50	- 1,00	10,00 13,00	-	- 0,045	- 0,030	- 0,100	-	-	-	-
293334	0,020	0,40	1,69	16,70	2,04	0,63	10,15	0,140	0,033	0,027	0,065				

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Reduction ratio = 8,0 : 1
Solution annealed 1080°C for 4,5 h /water cooled.
SURFACE QUALITY GUARANTEE BY ET INSPECTION (max defect depth 1% DIAMETER)
UT ACC. TO ASTM A388; EN 10308 Cl.1
"Issued in agreement with TÜV SÜD Industrie Service GMBH
(07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by
Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

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Vicenza, 17/01/2024 VCQ012 - MEST007064	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité **R.BERTELLI**	Direzione Prodotto Produktmanagement/Product Management/Direction Produit **P.MESSORI**	Pagina 4 di 6

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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST007064 / 2024 /
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INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 00016
Bestell
Your order
Commande

Conferma ordine nr: MI24000193
Works/Our Order/Ref nr.

Avviso di Spedizione: A-MI24000311
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato - Solubilizzato Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werksachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung
Marking
Marquage

Allegati / Anlagen / Enclosure / Attachments :
UT24000304

Sono state soddisfatte tutte le condizioni richieste	Controllo antimescolanza con tecnica XRF/OES portatile : OK	Controllo visivo e dimensionale: soddisfa le esigenze
Die gestellen Anforderungen sind it. Anlage erfüllt	Verwechslungprüfung: durch XRF/OES Gerät geführt : OK	Besichtigufg und Ausmessung: ohne Beanstandung
The material has been furnished in accordance with the requirements	Antimixing testing performed with XRF/OES portable : OK	Visual inspection and dimensional checks:satisfactory
Le materiel à été trouvé conforme aux exigences	Contrôle antimélange evt technique XRF/OES portable : OK	Contrôle visuel et dimensions: satisfaisant

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD`S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 17/01/2024 VCQ012 - MEST007064	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 5 di 6

CORPO VALVOLA / VALVE BODY

	Acciaierie Valbruna S.p.A. 36100 VICENZA (Italia) - Viale della scienza, 25 z.i. Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4	**CERTIFICATO** Certificate - Zeugnis - Certificat **N° UT24000304**	Pag 6 di 6
		CONTROLLO CON ULTRASUONI *Ultrasonic testing - Ultraschallprüfung - Controle par ultrasons*	

mod. UT02

MEST007064 / 2024 /

Cliente : INDRA S.R.L. *Customer*				**Lotto nr : 310208790** *Mill order*		
MARCA *Grade*	**DIMENSIONI - mm** *Size*	**COLATA** *Heat*	**BARRE** *Bars*	**PESO** *Weight*	**LUNGHEZZA - mm** *Length*	
MVAPML	Tondo 200,000	293334		KG : 1661,0	6635	6635

T. TERMICO *Heat Treatement*	**ESECUZIONE** *Condition*	**RUGOSITA'** *Roughness*	**TOLLERANZA** *Tolerance*
Solubilizzato	Pelato	µm	k12

Istruzione : PROC CND 040 *Work Instruction*		**Criteri Accettabilità :** **ASTM A388; EN 10308 Cl.1** Acceptance Criteria

ELETTRONICA : Olympus Quickscan LT
Equipment

ACCOPPIANTE : ACQUA + 0253 SA
Couplant

VEL.CONTROLLO : **231 mm/sec**
Testing Speed

TRASDUTTORI *Probes*	**TIPO ONDA** *Type of wave*	**FREQUENZA (MHZ)** *Frequency*	**DIMENSIONI (MM)** *Dimension*	**ANGOLO** *Angle*	**TARATURA** *Calibration*
64EL. 2.25MHZ	LONG.	2,25	128X25	0°	DAC

CONTROLLO AUTOMATICO [X] *Automatic inspection*	**CONTROLLO MANUALE** *Manual inspection*

NOTE :
Notes

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16/10/24

CONFORME [X] *Compliant*	**CONFORME IN DEROGA [ ]** *See Deviation*	**NON CONFORME [ ]** *Not Compliant*

ISPEZIONATO DA Inspected by	**VERIFICATO DA** Verified by	**APPROVATO DA** Approved by	**COLLAUDATORE** Inspector - Abnahmesachsverst - Inspecteur
FIRMA 04/12/2023 Date - Date	**FIRMA**	**G.Parlato** ISO 9712 LEV. 2 IND1901054 **FIRMA**	

Operatori, strumenti e documenti di riferimento, utilizzati per il collaudo del materiale, sono identificati, controllati e/o calibrati in accordo alle norme EN, ISO e ASTM, richiamate nelle pratiche operative e istruzioni di pertinenza / *Operators, Equipment and reference documents, used for material inspection, are identified, checked and/or calibrated in accordance with EN/ISO or ASTM standards, reported in relevant documents.*

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CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST043035 / 2024 /
Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 01115
Bestell
Your order
Commande

Conferma ordine nr: MI24002784
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24001984
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato - Solubilizzato Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore:
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung
Marking
Marquage

SPECIFICHE : Anforderungen / Requirements / Exigences	Note: Aufzeichnungen / Notes / Notes
VAL STOCK W2 A/1 1.4404/316L A	
MDS S01 5 316 A (0)	(0)Norsok-standard M-630 Edition 6, October 2013
MDS S17 1 316 A (1)	(1)Norsok-standard M-630: 2020 (2020-09-30)
AD 2000-M. W 2 2022 1.4401 A (2)	(2)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
AD 2000-M. W 2 2022 1.4404 A (3)	(3)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
AISI . 316/316L	
AMS-QQ-S-763 D 316/316L A	
ASME SA182 2023 S31600/03 A (4)	(4)Section II Part A 2023 EDITION For products machined directly from bar refer to ASME SA479.
ASME SA193 2023 B8M CLASS 1 (5)	(5)Section II Part A 2023 EDITION
ASME SA276 2023 S31600/03 A (6)	(6)Section II Part A 2023 EDITION
ASME SA320 2021 B8M CLASS 1 (7)	(7)Section II Part A 2021 EDITION
ASME SA479 2023 S31600/03 A (8)	(8)Section II Part A 2023 EDITION
ASTM A182 2023 S31600/03 A (9)	(9)For products machined directly from bar refer also to ASTM A479.
ASTM A193 2023 B8M CLASS 1	
ASTM A262 PR. E 2015 316/316L (A)	(A)Reapproved 2021
ASTM A276 2024A S31600/03 A	
ASTM A320 2022 B8M CLASS 1 CLASS1	
ASTM A370 2022 .	
ASTM A479 2023A S31600/03 A	
ASTM E10 2023 .	
ASTM E8 2022 .	
EN 10088 PART 3 2014 1.4401 A	
EN 10088 PART 3 2014 1.4404 A	
EN 10222 PART 5 2017 1.4401 A	
EN 10222 PART 5 2017 1.4404 A	
EN 10272 2016. 1.4401 A	
EN 10272 2016. 1.4404 A	
ISO 148-1 2016 .	
ISO 3651-2 98 METHOD A T1	
ISO 6506-1 2014 .	
ISO 6892-1 2019 .	
NACE MR0103 2015 S31600/03 A (B)	(B)ANSI/NACE MR0103/ISO 17945 November 23, 2015
NACE MR0175 4 S31600/03 A (C)	(C)ANSI/NACE MR0175/ISO 15156-3:2020 Fourth edition, approved 21 Sep 2022.
QQ-S-763 F 316/316L A	
ACH CO . .	
KV L -196C . ISO 148-1	
KV T -196C . ISO 148-1	

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 26/03/2024 VCQ012 - MEST043035	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 1 di 6

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Nach/According to/Selon

Certificato nr. MEST043035 / 2024 /
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Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 01115
Bestell
Your order
Commande

Conferma ordine nr: MI24002784
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24001984
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato - Solubilizzato Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore:
Stempel des Werksachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung
Marking
Marquage

		Tolleranza: k12 Toleranz/Allowance/Tolerance					
Pos. nr. Pos. nr. Item nr Nr. de poste	Oggetto Gegenstand Product description Descrip. du produit	Dimensioni - mm Abmessungen Dimension Dimension	Lunghezza - mm Länge Length Longueur	Colata Schmelze Heat Coulée	Pezzi Stückzahl Pieces Pieces	Peso - KG Gewicht Weight Poids	Lotto nr. Losnr. Lot nr Lot nr
0010	Tondo	200,000	6390/ 6390	437746		1600,0	330005800

TEST ALLO STATO DI FORNITURA

TEST		min	max	
A	Dimensioni grano x ASTM E112			3

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg. diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C		Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs démandées		min max			-	-	-	-	-	-	-	-	-
B	10X10	-196	L		195	199	196	0,982	1,341	1,356	65	59	64

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg. diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C		Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Heerte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs démandées		min max			210	-	520 790	-	40	-	50	-			-		
C	12,5	20	L		274		554		64		73				173		

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Vicenza, 26/03/2024 VCQ012 - MEST043035	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 2 di 6

Acciaierie Valbruna S.p.A.

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In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1 — Certificato nr. MEST043035 / 2024 /

Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 01115
Conferma ordine nr: MI24002784
Avviso di Spedizione: A-MI24001984

Stato di fornitura : Fucinato - Solubilizzato Pelato
Tipo di Elaborazione: E+AOD
Qualità: 1.4401/1.4404/316/316L
Marca: MVAPML (MAXIVAL)

Produttore :
ACCIAIERIE VALBRUNA S.P.A.
Marchi di Fabbrica: AV
Punzone del Collaudatore: MR
Punzonatura: 1.4401/1.4404

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab	°C	Posiz. Saggio	Snervamento Rp 0,2% N/mm2	Snervamento	Resistenza Rm N/mm2	Allungamento E 4d %		Strizione RA %		Resilienza			Durezza		
Valori richiesti		min		205	-	515	-	40	-	50	-			-		
		max														
D	12,5	20	T	265		561		49		60						

Prova di trazione per ISO 6892-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab	°C	Posiz. Saggio	Snervamento Rp 0,2% N/mm2	Snervamento Rp 1% N/mm2	Resistenza Rm N/mm2	Allungamento A5 %		Strizione Z %		Resilienza			Durezza HB		
Valori richiesti		min		205	240	510	35	-	-	-	-			-		
		max				690								215		
E	10	20	T	261	300	551	55		68					168		
F	10	20	T	259	297	558	53		67					170		

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab	°C	Posiz. Saggio	Resilienza KV2 J			Espansione laterale Lateral ex mm			Shear % Shear %		
Valori richiesti		min		-	-	-	-	-	-	-	-	-
		max										
G	10X10	-196	T	80	78	81	0,939	0,526	0,681	35	36	29

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab	°C	Posiz. Saggio	Resilienza KV2 J			Espansione laterale			Shear		
Valori richiesti		min		60	60	60	-	-	-	-	-	-
		max										
J	10X10	20	T	122	133	123						
K	10X10	20	T	126	126	129						

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 26/03/2024
VCQ012 - MEST043035

Direzione Qualità
Qualitätsmanagement/Quality Management/Gestion Qualité
R.BERTELLI

Direzione Prodotto
Produktmanagement/Product Management/Direction Produit
P.MESSORI

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INDRA S.R.L.
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20013 - MAGENTA - MI

Ordine nr: AF24 01115
Bestell
Your order
Commande

Conferma ordine nr: MI24002784
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24001984
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato - Solubilizzato Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore:
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung
Marking
Marquage

Tensile testing according to ISO 6892-1
Impact testing according to ISO 148-1
Mechanical properties according to ASTM A370.
Brinnell hardness according to ASTM E10
Tensile testing according to ASTM E8
Brinnell hardness according to ISO 6506-1

Analisi chimica
Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat / Schmelze/Coulée	C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	Co %	P %	S %	N %
	min - max 0,030	- 1,00	- 2,00	16,50 18,00	2,00 2,50	- 1,00	10,00 13,00	-	- 0,045	- 0,030	- 0,100
437746	0,018	0,38	1,86	16,98	2,08	0,52	10,20	0,079	0,027	0,026	0,072

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Furnace calibrated according to API 6A REV 21th ED ANNEX M.
Furnace calibrated according to API 6D REV 25th ED ANNEX H.
Reduction ratio = 8,0 : 1
Solution annealed 1080°C for 4,5 h / water cooled.
SURFACE QUALITY GUARANTEE BY ET INSPECTION (max defect depth 1% DIAMETER)
UT ACC. TO:ASTM A388; EN 10308 Cl.1
"Issued in agreement with TÜV SÜD Industrie Service GMBH
(07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by
Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

x CROSSMIND
16/10/24

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Vicenza, 26/03/2024	Direzione Qualità	Direzione Prodotto	Pagina
VCQ012 - MEST043035	Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Produktmanagement/Product Management/Direction Produit P.MESSORI	4 di 6

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Acciaierie Valbruna S.p.A.

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Stato di fornitura : Fucinato - Solubilizzato Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung
Marking
Marquage

Allegati / Anlagen / Enclosure / Attachments :
UT24002046

Sono state soddisfatte tutte le condizioni richieste	Controllo antimescolanza con tecnica XRF/OES portatile : OK	Controllo visivo e dimensionale: soddisfa le esigenze
Die gestellen Anforderungen sind it. Anlage erfüllt	Verwechslungprüfung: durch XRF/OES Gerät geführt : OK	Besichtigung und Ausmessung: ohne Beanstandung
The material has been furnished in accordance with the requirements	Antimixing testing performed with XRF/OES portable : OK	Visual inspection and dimensional checks:satisfactory
Le materiel à été trouvé conforme aux exigences	Contrôle antimélange evt technique XRF/QES portable : OK	Contrôle visuel et dimensions: satisfaisant

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD'S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

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Vicenza, 26/03/2024	Direzione Qualità	Direzione Prodotto	Pagina
VCQ012 - MEST043035	Qualitätsmanagement/Quality Management/Gestion Qualité	Produktmanagement/Product Management/Direction Produit	5 di 6
	R.BERTELLI	P.MESSORI	

CLOSURE L150RF3

	Acciaierie Valbruna S.p.A. 36100 VICENZA (Italia) - Viale della scienza, 25 z.i. Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4	**CERTIFICATO** Certificate - Zeugnis - Certificat **N° UT24002046**	Pag 6 di 6
		CONTROLLO CON ULTRASUONI *Ultrasonic testing - Ultraschallprüfung - Controle par ultrasons*	

mod. UT02 MEST043035 / 2024 /

Cliente : INDRA S.R.L. *Customer*				**Lotto nr : 330005800** *Mill order*		
MARCA *Grade*	**DIMENSIONI - mm** *Size*	**COLATA** *Heat*	**BARRE** *Bars*	**PESO** *Weight*	**LUNGHEZZA - mm** *Length*	
MVAPML	Tondo 200,000	437746		KG : 1600,0	6390	6390

T. TERMICO *Heat Treatement*	**ESECUZIONE** *Condition*	**RUGOSITA'** *Roughness*	**TOLLERANZA** *Tolerance*
Solubilizzato	Pelato	µm	k12

Istruzione : PROC CND 040 *Work Instruction*		**Criteri Accettabilità : ASTM A388** Acceptance Criteria

ELETTRONICA : Olympus Quickscan LT *Equipment*	
ACCOPPIANTE : ACQUA + 0253 SA *Couplant*	**VEL.CONTROLLO : 273 mm/sec** *Testing Speed*

TRASDUTTORI *Probes*	**TIPO ONDA** *Type of wave*	**FREQUENZA (MHZ)** *Frequency*	**DIMENSIONI (MM)** *Dimension*	**ANGOLO** *Angle*	**TARATURA** *Calibration*
64EL. 2.25MHZ	LONG.	2,25	128X25	0°	DAC

CONTROLLO AUTOMATICO [X] *Automatic inspection*	**CONTROLLO MANUALE** *Manual inspection*

NOTE :
Notes

INDRA S.r.l.
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VERIFIED TRUE COPY OF ORIGINAL

16/6/24

CONFORME [X] *Compliant*	**CONFORME IN DEROGA [ ]** *See Deviation*	**NON CONFORME [ ]** *Not Compliant*

ISPEZIONATO DA Inspected by **FIRMA**	**VERIFICATO DA** Verified by **FIRMA**	**APPROVATO DA** Approved by **G.Parlato** ISO 9712 LEV. 2 IND1901054 **FIRMA**	**COLLAUDATORE** Inspector - Abnahmesachsverst - Inspecteur

Date - Date **26/03/2024**

Operatori, strumenti e documenti di riferimento, utilizzati per il collaudo del materiale, sono identificati, controllati e/o calibrati in accordo alle norme EN, ISO e ASTM, richiamate nelle pratiche operative e istruzioni di pertinenza / *Operators, Equipment and reference documents, used for material inspection, are identified, checked and/or calibrated in accordance with EN/ISO or ASTM standards, reported in relevant documents.*

TIRANTE / STUD BOLT

MEM s.r.l. Viale Toscana, 106
21052 - Busto Arsizio (VA) Italia
Tel. +39 0331 342181 - Fax. +39 0331 342272
e-mail: certificati@membulloneria.it

CERTIFICATO DI COLLAUDO
INSPECTION CERTIFICATE
EN 10204 – 3.1

Cliente *Customer*	INDRA S.R.L.	**Descrizione** / *Description*	**Certificato N°** *Certificate N°* 10- 150757
CORSO XXII MARZO 8		TIRANTI T.F. UNI 6610 B8M Cl.2 - M12X040 - POS. 10	*Int. reference* 1000240047
MILANO MI		**N°pezzi** *Quantity* 6	**Classe materiale** *Material Class* B8M cl.2 (<=M20) S31600 ASTM A193/A193M-19; ASTM A320/A320M-18
N°DDT 240224 **del** 22/01/2024		**N°Ordine Cliente** *Order N°* AF23 03287	**Colata** *Heat N°* 724094

Analisi chimica
Chemical Analysis

Valori richiesti %		C	Mn	Si	Cr	Ni	Mo	S	P
Required values	min.				16,000	10,000	2,000		
	max	0,080	2,000	1,000	18,000	14,000	3,000	0,030	0,045
Analisi colata **Heat analysis*		0,018	0,752	0,503	16,813	11,180	2,111	0,002	0,027

* As reported on steel work or supplier certificate

Balance Fe

Caratteristiche meccaniche
Mechanical requirements

	Rottura *Tensile strenght* **Rm [N/mm2]** min	max	Snervamento *Yield strenght* **Rs [N/mm2]** min	Allungamento *Elongation* **A%** 4D min	5D min	Strizione *Reduction of area* **Z%** min	Durezza *Hardness HB* min	max	Resilienza *Impact test* **[J]** media	min	Temperat. resilienza [°C]
Valori richiesti *Required values*	760		655	15,00%		45,00%		321			
Valori ottenuti *Actual values*	831		730	22,50%		60,20%		276			
Note	QC							*Macroetch examin. result*	Non applicabile - Not applicable		

Trattamento termico *Heat treatment*: Carbide solution treated and strain hardened

CROSSMIND 16/10/24

Controllo dimensionale e visivo *Visual and dimensional test*: Positive

P.M.I.: Positive

Marcature *Marking*:

Rivestimento *Coating*:

Informazioni aggiuntive *Further information*:

Si certifica che il materiale citato in questo documento è conforme alle norme indicate in ordine.
The materials indicated on this document are in accordance with the specification included in your order.

CONTROLLO QUALITA'
Quality Control Dept.

TÜVRheinland CERTIFIED — Management System ISO 9001:2015 — www.tuv.com ID 9108640859

INDRA s.r.l.
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Cod. Fisc. e Part. IVA: 01117640121
E-mail: certificati@membulloneria.it

Company with quality system certified by TUV - UNI EN ISO 9001:2015

DADO / NUT

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e-mail: certificati@membulloneria.it

CERTIFICATO DI COLLAUDO
INSPECTION CERTIFICATE
EN 10204 – 3.1

Cliente *Customer* INDRA S.R.L.	**Descrizione** / *Description* DADI ESAG. UNI 5588 Gr.8M M12 - POS. 40	**Certificato N°** *Certificate N°* 10- 150760
CORSO XXII MARZO 8		*Int. reference* 4000240047
MILANO MI	**N° pezzi** *Quantity* 10	**Classe materiale** *Material Class* gr. 8M S31600 ASTM A194/A194M-18
N° DDT 240224 **del** 22/01/2024	**N° Ordine Cliente** *Order N°* AF23 03287	**Colata** *Heat N°* T6CV

Analisi chimica
Chemical Analysis

Analisi colata %	C	Mn	Si	Cr	Ni	Mo	S	P					N							
*Heat analysis	0,020	1,688	0,336	16,730	10,045	2,047	0,002	0,034					0,044							

* As reported on steel work or supplier certificate

Balance Fe

Caratteristiche meccaniche
Mechanical requirements

	Durezza HB *Hardness HB* min	max	Prova di carico *Proof load test*
Valori richiesti *Required values*	126	300	Positive
Valori ottenuti *Actual values*	278	298	Positive
Note	QC		

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Trattamento termico
Heat treatment: Carbide solution treated

+ CROSSWIND 16/10/24

Controllo dimensionale e visivo *Visual and dimensional test*	Positive	**P.M.I.**	Positive	**Marcature** *Marking*	8M
				Rivestimento *Coating*	
Informazioni aggiuntive *Further information*					

Si certifica che il materiale citato in questo documento è conforme alle norme indicate in ordine.

The materials indicated on this document are in accordance with the specification included in your order.

CONTROLLO QUALITA'
Quality Control Dept.

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Tel. 0331.342181 - Fax 0331.342272
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TÜVRheinland CERTIFIED
Management System ISO 9001:2015
www.tuv.com ID 9108640859

Company with quality system certified by TUV - UNI EN ISO 9001:2015

STELO SFERA / BALL STEM

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST084078 / 2023 /
Prüfung/Test/Essai

Ordine nr: ORD.N.2300396
Bestell
Your order
Commande

Conferma ordine nr: MI23004818
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23003903
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Hot rolled - Annealed COLD PROCESSED
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung
Marking
Marquage

SPECIFICHE :
Anforderungen / Requirements / Exigences

Note:
Aufzeichnungen / Notes / Notes

VAL STOCK W2 A/1 1.4404/316L A,CF
AD 2000-M. W 2 01/20 1.4401 A,CF (0)
AD 2000-M. W 2 01/20 1.4404 A,CF (1)
AISI . 316/316L
AMS-QQ-S-763 D 316/316L A,CF
ASME SA182 2021 S31600/03 A (2)
ASME SA276 2021 S31600/03 A,CF (3)
ASME SA479 2021 S31600/03 A (4)
ASTM A182 2022A S31600/03 A (5)
ASTM A262 PR. E 2015 316/316L (6)
ASTM A276 2017 S31600/03 A,CF
ASTM A370 2022 .
ASTM A479 2021 S31600/03 A
ASTM E10 2018 .
ASTM E8 2022 .
EN 10088 PART 3 2014 1.4401 A,CF
EN 10088 PART 3 2014 1.4404 A,CF
EN 10272 2016. 1.4401 A,CF
EN 10272 2016. 1.4404 A,CF
ISO 148-1 2016 .
ISO 3651-2 98 METHOD A T1
ISO 6506-1 2014 .
ISO 6892-1 2019 .
NACE MR0103 2015 S31600/03 A (7)
NACE MR0175 2015 S31600/03 A (8)
QQ-S-763 F 316/316L A,CF
ACH CO . .
KV L -196C . ISO 148-1

(0)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
(1)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
(2)Section II Part A 2021 EDITION For products machined directly from bar refer to ASME SA479.
(3)Section II Part A 2021 EDITION
(4)Section II Part A 2021 EDITION
(5)For products machined directly from bar refer also to ASTM A479.
(6)Reapproved 2021
(7)ANSI/NACE MR0103/ISO 17945 November 23, 2015
(8)ANSI/NACE MR0175/ISO 15156-3, third edition November 23,2015

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Tolleranza: h9 - DIN671/EN10278
Toleranz/Allowance/Tolerance

Pos. nr.	Oggetto	Dimensioni - mm	Lunghezza - mm	Colata	Pezzi	Peso - KG	Lotto nr.
Pos. nr. Item nr. Nr. de poste	Gegenstand Product description Descrip. du produit	Abmessungen Dimension Dimension	Länge Length Longueur	Schmelze Heat Coulée	Stückzahl Pieces Pièces	Gewicht Weight Poids	Losnr Lot nr. Lot nr.
0010	Round	25,000	3000/ 3040	291905		58,0	304610390

x CROSSWIND 16/10/24 R

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 26/06/2023 VCQ052 - MEST084078	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 1 di 4

STELO SFERA / BALL STEM

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST084078 / 2023 /

Ordine nr: ORD.N.2300396
Bestell / Your order / Commande

Conferma ordine nr: MI23004818
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23003903
Lieferanzeige/Packing list/B.L.

Stato di fornitura: Hot rolled - Annealed COLD PROCESSED
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice: AV

Punzone del Collaudatore / Stempel des Werksachverständigen / Inspector's stamp/Poinçon de l'assayeur: MR

Punzonatura / Kennzeichnung / Marking / Marquage: 1.4401/1.4404

TEST ALLO STATO DI FORNITURA
Test on delivery condition — Prüfung auf lieferbereitem produkt — test a l'etat de fourniture — Prueba sobre el material así come entregado

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C		Posiz. Saggio Prooflage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement A5 %		Strizione Einschnürung Reduction of area Striction Z %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti / Anforderungen/Required values / Valeurs demandées		min			200	235	500	20	-	-	-	-			-		
		max					900								315		
A	10	20	L		480	568	694	43		65					231		
G	10	20	L		485	571	699	42		64					234		

TEST ALLO STATO DI FORNITURA
Test on delivery condition / Prüfung auf lieferbereitem produkt / Test a l'etat de fourniture / Prueba sobre el material así come entregado

TEST		min	max	
A	Grain size for ASTM E112			5

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C		Posiz. Saggio Prooflage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti / Anforderungen/Required values / Valeurs demandées		min			-	-	-	-	-	-	-	-	-
		max											
B	10X10	-196	L		168	170	162	1,758	1,485	1,328	65	60	59

Test on delivery condition per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C		Posiz. Saggio Prooflage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti / Anforderungen/Required values / Valeurs demandées		min			210	-	517	-	30	-	50	-			-		
		max													235		
C	12,5	20	L		502		697		43		69				233		

CROSSWIND
16/10/24

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 26/06/2023	Direzione Qualità / Qualitätsmanagement/Quality Management/Gestion Qualité	Direzione Prodotto / Produktmanagement/Product Management/Direction Produit	Pagina
VCQ052 - MEST084078	R.BERTELLI	P.MESSORI	2 di 4

STELO SFERA / BALL STEM

Acciaierie Valbruna S.p.A.

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Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST084078 / 2023 /
Prüfung/Test/Essai

Ordine nr: ORD.N.2300396
Bestell / Your order / Commande

Conferma ordine nr: MI23004818
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23003903
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Hot rolled - Annealed COLD PROCESSED
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung / Marking / Marquage

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg diam epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale - Lateral Expansion -			Shear - Shear -		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		100	100	100	-	-	-	-	-	-
F	10X10	20	L	201	198	200						
H	10X10	20	L	209	191	194						

Tensile testing according to ISO 6892-1
Impact testing according to ISO 148-1
Mechanical properties according to ASTM A370.
Brinnell hardness according to ASTM E10
Tensile testing according to ASTM E8
Brinnell hardness according to ISO 6506-1

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Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat Schmelze/Coulée	C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	Co %	P %	S %	N %				
min - max	0,030	1,00	2,00	16,50 18,00	2,00 2,50	1,00	10,00 13,00	- -	- 0,045	0,030	0,100	- -	- -	- -	- -
291905	0,015	0,54	1,50	16,86	2,01	0,42	10,13	0,168	0,031	0,029	0,058				

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 26/06/2023	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité	Direzione Prodotto Produktmanagement/Product Management/Direction Produit	Pagina 3 di 4
VCQ052 - MEST084078	R.BERTELLI	P.MESSORI	

STELO SFERA / BALL STEM

Acciaierie Valbruna S.p.A.

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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST084078 / 2023 /

Ordine nr: ORD.N.2300396
Bestell / Your order / Commande

Conferma ordine nr: MI23004818
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23003903
Lieferanzeige/Packing list/B.L.

Stato di fornitura / Lieferzustand / Delivery state / Etat de livraison: Hot rolled - Annealed COLD PROCESSED

Tipo di Elaborazione / Enschmelzungsart / Melting process / Mode d'elaboration: E+AOD

Qualità / Werkstoff/Grade/Nuance: 1.4401/1.4404/316/316L

Marca / Markenbezeichnung / Brand / Nuance: MVAPML (MAXIVAL)

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice: AV

Punzone del Collaudatore / Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur: MR

Punzonatura / Kennzeichnung / Marking / Marquage: 1.4401/1.4404

Reduction ratio = 61,1 : 1
Solution annealed 1040°C for 135'(total time)/water cooled.
SURFACE QUALITY COMPLIANT TO EN 10088-3 TAB.1 COND. 2H
"Issued in agreement with TÜV SÜD Industrie Service GMBH
(07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by
Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

Sono state soddisfatte tutte le condizioni richieste	Controllo antimescolanza con tecnica XRF/OES portatile : OK	Controllo visivo e dimensionale: soddisfa le esigenze
Die gestellen Anforderungen sind lt. Anlage erfüllt	Verwechslungprüfung: durch XRF/QES Gerät geführt : OK	Besichtigung und Ausmessung: ohne Beanstandung
The material has been furnished in accordance with the requirements	Antimixing testing performed with XRF/OES portable : OK	Visual inspection and dimensional checks:satisfactory
Le materiel à été trouvé conforme aux exigences	Contrôle antimélange svt technique XRF/QES portable : OK	Contrôle visuel et dimensions: satisfaisant

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD'S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 26/06/2023	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité	Direzione Prodotto Produktmanagement/Product Management/Direction Produit	Pagina 4 di 4
VCQ052 - MEST084078	R.BERTELLI	P.MESSORI	

COGNE ACCIAI SPECIALI S.p.a.

ITALY - 11100 AOSTA - VIA PARAVERA, 16
TEL.+39.0165.3021 - FAX +39.0165.302296
CAP. SOC. 250.000.000 EUR INT. VERS.
C.F. 02187380967
VAT: IT00571320078 - R.E.A. n. AO-50474

Company with Management Systems certified according to ISO 9001, IATF 16949, EN 9100 and ISO 14001.

INSPECTION CERTIFICATE 3.1 (EN 10204:2004)
DOCUMENT NUMBER 2022021445

SFERA / BALL

CUSTOMER:	SWISS STEEL ITALIA S.R.L.		
CUSTOMER'S ORDER:	2058038281		
MANUFACTURER'S WORKS:	AOSTA, VIA PARAVERA 16 - ITALY		
PRODUCER OF THE DOC:	QUALITY DEPARTMENT		
MANUFACTURER'S WORKS ORDER NO:	0025290568 / 000120		
MARK OF THE MANUFACTURER:	**COGNE**		
DISPATCH NOTE:	81480988 / 000010 WEIGHT: 1840 KG / 4057 LB		
THE CERTIFIED PRODUCTS ARE COMPLYING TO THE PURCHASE ORDER, EXCEPT FOR EXEMPTIONS AGREED WITH THE CUSTOMER, IF ANY.			
INTERNAL SPEC:	AD2000MERKBLATTW10	TECHNICAL RULE:	AD2000
PRODUCT:	PEL PEELED ROUND BARS TOLERANCE: ISOK11		
SURFACE FINISH:	2B Cold Finished		
PRODUCT DELIVERY CONDITION:	RS SOLUTION ANNEALED		
PRODUCT DIMENSIONS (mm):	95,000 (3,740 in)	LENGTH (mm)	04000 06200 (00157 00244 in)
GRADE:	316L-S31600/31603-1.4404/1.4401	INTERNAL GRADE:	F316L IMCO
IDENTIFICATION HEAT NO:	272823	IDENTIFICATION LOT NO:	135920
MARKING OF THE PRODUCT:	1.4404	TEST PIECE N:	592

AISI 316/316L - UNS S31600/S31603 - 1.4404/1.4401
THE MATERIAL IS PRODUCED ACCORDING TO SPECIFICATION AD2000-MERKBLATT W2/W10
DOCUMENT ISSUED IN AGREEMENT WITH TUEV BAYERN(11.1972) WAVING OF COUNTERSIGNING (SEE TUEV BAYERN LETTER DATED 17.01.80).
REFERENCE NORMS: EN 10088-3 2014, EN 10272 2016, ASTM A276/A276M, ASTM A479/A479M, ASTM A193 B8MCLASSE 1D, ASME SA276/SA276M, ASME SA479/SA479M, AMS 5653J, AMS 5648M, ISO15156-3/NACE MR0175 2015, NACE MR0103/ISO 17945, NORSOK M630 MDSS01 REV5.
REFERENCE NORMS FOR CHEMICAL COMPOSITION AND MECHANICAL PROPERTIES: ASTM A182, ASME SA182.
REFERENCE NORMS ONLY FOR CHEMICAL COMPOSITION: EN 10222-5 2017,ASTM A403-07a, ASTM A484-18a,ASTM A314-08, AMS-QQ-S-763D.
ASME SECT.II PART A EDITION 2015-2017-2019-2021
MATERIAL ACCORDING TO NACE MR0103/ISO 17945
HOT ROLLED
REDUCTION RATIO 3,3

CHEMICAL LADLE ANALYSIS ACCORDING TO ASTM A751 - EN ISO 14284
Control lot No. - Weight :020000918793 - 85.286 KG - 188.020 LB

ELEMENTS	C	Si	Mn	P	S	N	Cr	Mo	Ni	Cu
OBTAINED	0,017	0,34	1,81	0,028	0,026	0,076	16,89	2,09	10,16	0,47

ELEMENTS	Co
OBTAINED	0,21

HARDNESS TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000919124 - 15.314 KG - 33.761 LB
SPECIFICATION ENISO6506 HARDNESS TEST HB TESTING METHOD: 10/3000
OBTAINED 172

IMPACT TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000919124 - 15.314 KG - 33.761 LB
SPECIFICATION EN ISO 148-1-KV2 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 20
MEASUREMENT UNIT J

OBTAINED										
	427	433	427	443	433	428	427	438	430	428
	432	431								

DATE 28.04.2022 MORABITO ROSA CF(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne

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Company with Management Systems certified according to ISO 9001, IATF 16949, EN 9100 and ISO 14001.

SFERA / BALL

TENSILE TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000919124 - 15.314 KG - 33.761 LB
SPECIFICATION EN-ISO6892-1 DIRECTION OF THE TEST PIECE: L

	RM	RP02	A5	Z	RP1
MEASUREMENT UNIT	MPA	MPA	% 5.0 D	%	NMM
OBTAINED	580	241	57,8	77,4	286
	582	241	55,0	77,3	285
	590	256	53,8	72,3	290
	578	244	55,0	78,2	286

GRAIN SIZE
Control lot No. - Weight :020000919124 - 15.314 KG - 33.761 LB
SPECIFICATION ASTME112 --
OBTAINED 5

CORROSION TEST ACCORDING TO ASTM A262 PRACTICE E EN ISO 3651-2 PRACTICE A: SATISFACTORY.
MATERIAL ACCORDING TO ASME SEC. II Ed. 2015
IMPACT TEST
Control lot No. - Weight :020000919124 - 15.314 KG - 33.761 LB
SPECIFICATION EN ISO 148-1 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 196-
MEASUREMENT UNIT J

OBTAINED	190	182	176	196	174	171	186	170	197	200
	175	188								

TENSILE TEST
Control lot No. - Weight :020000919124 - 15.314 KG - 33.761 LB
SPECIFICATION ASTMA370-E8-0.5"SPEC DIRECTION OF THE TEST PIECE: L

	RMB	RP02B	ZB	AL2B
MEASUREMENT UNIT	KSI	KSI	%	% 4,0 D
OBTAINED	85	35	78,7	54,2
	84	34	79,5	59,4
	84	35	74,8	62,9
	84	34	78,6	60,4

x CROSSWIND 16/10/22 R

The products delivered are conforming to EN10088-5 and bear the CE marking on the basis of the test results here reported and the continuous surveillance, assessment and approval by MPA NRW
(certificate no. 0432-CPR-00166-01)
Material produced according to the system #Regulation 305/2011/EU of the European Parliament and of the Council of 9 March 2011#
ULTRASONIC TEST ACCORDING TO EN 10308 Class.3: SATISFACTORY
EDDY CURRENT INSPECTION OF SURFACE ACCORDING TO EN 10277 CLASS 4.
DIMENSIONAL CONTROL ACCORDING TO EN 10278: SATISFACTORY.
NO WELDING REPAIR ON THE MATERIAL.

DATE 28.04.2022 MORABITO ROSA CF(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne

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Company with Management Systems certified according to ISO 9001, IATF 16949, EN 9100 and ISO 14001.

SFERA / BALL

ANTIMIXING TEST BY PORTABLE SPECTROMETRE: CONFORMING
MARKING: SYMBOL OF THE MANUF. WORK, MATERIAL N. , CAST N., LOT N., RECEIVING AGENT STAMP
COUNTRY OF MELTING AND ORIGIN: ITALY, THE MATERIAL COMPLIES WITH FAR DFARS
252.225-7009 ALT 1.
THE PRODUCT SATISFIES THE DIRECTIVES: 2015/863/EU (ROHS3) - 2011/65/EU (ROHS2) - 2000/53/EU - 2002/95/EU(RoHS) - 2003/11/EU-2005/618/EU AND PED 2014/68/EU.
ALL THE NORMS MENTIONED ARE INTENDED IN THEIR LAST REVISION AT THE DATE OF ISSUE OF THIS DOCUMENT.
MATERIAL ACCORDING TO NACE MR0103/ISO 17945
INSPECTOR'S STAMP LF
QUALITY SYSTEM CERTIFIED BY KIWA CERMET ACCORDING TO UNI EN ISO 9001:2015 -IATF 16949:2016 (THE LAST ONE ONLY FOR WIRE ROD AND HOT ROLLED-PEELED-GROUND STAINLESS STEEL BARS).
THE MATERIAL IS FREE OF ANY MERCURY, MERCURY COMPOUNDS AND OR RADIUM CONTAMINATION AT TIME OF SHIPMENT AND WAS PRODUCED WITHOUT USING OZONE DEPLETING SUBSTANCES OF CLASS I AND II.
RADIOACTIVITY CONTROL PERFORMED WITH A GAMMA SPECTROMETER: ASTM E181.
GAMMA ACTIVITY ON THE PRODUCTS BELOW 0.1 BQ/G ACCORDING TO EU RESOLUTION 2013/59/EURATOM , IAEA RS-G-1.7 AND IAEA SSG-17.

CE 0432

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DATE 28.04.2022 MORABITO ROSA CF(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne

ROSETTI MARINO ITEM 150

COD. VLBBNN07190100

TAG:

BLPH-MV-003, BLPH-MV-010, BLPH-MV-018, BLPH-MV-029, BLPH-MV-086, BLPH-MV-087, BLPH-MV-088, BLPH-MV-093, BLPH-MV-094, BLPH-MV-098, BLPH-MV-192, BLPH-MV-193, BLPH-MV-195, BLPH-MV-197, BLPH-MV-198, BLPH-MV-200, BLPH-MV-206, BLPH-MV-207, BLPH-MV-211,BLPH-MV-212 BLPH-MV-384, BLPH-MV-385, BLPH-MV-390,BLPH-MV-391, BLPH-MV-426, BLPH-MV-428, BLPH-MV-434, BLPH-MV-435

INDRA ITEM 150

COD. 00.VSF.2680/V

indra VALVES - ITALY

Certificazione dei materiali
EN 10204 3.1 come da allegati

Material certification
EN 10204 3.1 as per attachments

MD-02-04-IT-UK / VSF
Rev. 16
Data: 08-Nov-2018
CM/IT/UK

Nr. / *No.* 24-1879 — **Data** / *Date :* 30-Sep-2024

Cliente / *Customer* ROSETTI MARINO SPA

Vs. ordine Nr. / *Your order Nr.* 1724000798 REV.2 — **Data** / *Date :* 26-Jun-2024

Ns. commessa Nr. / *Our job Nr.* 24 01216 — **Data** / *Date :* 3-Jul-2024

Ns. D.D.T. Nr. / *Our advise note Nr.* — **Data** / *Date :*

Ordine di produzione / Production order number : 24 01216/150 - 435799 (SN FROM 105982 TO 106008)

Lotto / Material batch number : 435799 (SN FROM 105982 TO 106008)

Ordine di produzione / Production order number : 24 01216/150 - 437075 (SN 106009)

Lotto / Material batch number : 437075 (SN 106009)

Pos. Cliente Customer Item	Pos. Indra Indra Item	Codice / Code		Q.tà / Q.ty	Nr. di serie Serial Number	Descrizione /Description
		Ns./ Our	Vs. / Your			
150	150	00.VSF.2680/V	VLBBNN07190100	28	From 105982 to 106009	INDRA BALL VALVE DBB-898-HR-25-F300RF3-F-D-DLF-DL-N-PG-L123-TG-TGW-TV-DP-PMI2-PD2-BI-GT-CR-TA-FE2-FS-FE-SPC1

Elenco / List

Componente / *Component*	Colata / Heat	Materiale *Material*	Numero del certificato Certificate number
Corpo Valvola / Valve Body (SN FROM 105982 TO 106008)	435799	AISI 316/316L NACE	MEST080040/2024/ - UT24003628
Corpo Valvola / Valve Body (SN 106009)	437075	AISI 316/316L NACE	MEST007058/2024/ - UT24000302
Closure F300RF3	294158	AISI 316/316L NACE	MEST098212/2024/ - UT24004631
Tirante / Stud bolt	281154	ASTM A193 B8M Cl.2	5086
Dado / Nut	160903S05	ASTM A194 Gr.8M	5066
Stelo antiespulsione sfera / Ball stem	E30822	AISI 316/316L NACE	173501
Sfera / Ball	072244	AISI 316/316L NACE	2020018438
Corpo bonnet/ Bonnet body	291893	AISI 316/316L NACE	MEST040838/2024/
Stelo spillo / Stem needle	172303	AISI 316/316L NACE	174495
Otturatore / Tip	290962	AISI 316/316L NACE	MEST140440/2023/

NOTE / **REMARKS :** TAG: BLPH-MV-003, BLPH-MV-010, BLPH-MV-018, BLPH-MV-029,BLPH-MV-086,BLPH-MV-087, BLPH-MV-088, BLPH-MV-093, BLPH-MV-094, BLPH-MV-098, BLPH-MV-192, BLPH-MV-193, BLPH-MV-195, BLPH-MV-197, BLPH-MV-198, BLPH-MV-200, BLPH-MV-206, BLPH-MV-207, BLPH-MV-211, BLPH-MV-212, BLPH-MV-384, BLPH-MV-385, BLPH-MV-390, BLPH-MV-391, BLPH-MV-426, BLPH-MV-428, BLPH-MV-434, BLPH-MV-435

PREPARATO DA: **ELEONORA RANZANI**
PREPARED BY: **DOCUMENTION MANAGER**

APPROVATO DA: **LUCIA NOSOTTI**
APPROVED BY: **QUALITY ASSURANCE MANAGER**

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E-mail: indra@indra.it - http://www.indra.it

MX CROSSWIND
16/10/24

CORPO VALVOLA / VALVE BODY (SN FROM 105982 TO 106008)

Acciaierie Valbruna S.p.A.

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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST080040 / 2024 /

Cliente / Besteller/Purchaser/Client:
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr / Bestell / Your order / Commande: AF24 01954

Conferma ordine nr / Werks/Our Order/Ref nr.: MI24004883

Avviso di Spedizione / Lieferanzeige/Packing list/B.L.: A-MI24003675

Stato di fornitura / Lieferzustand / Delivery state / Etat de livraison: Fucinato Solubilizzato - Pelato

Tipo di Elaborazione / Erschmelzungsart / Melting process / Mode d'elaboration: E+AOD

Qualità / Werkstoff/Grade/Nuance: 1.4401/1.4404/316/316L

Marca / Markenbezeichnung / Brand / Nuance: MVAPML (MAXIVAL)

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice: AV

Punzone del Collaudatore / Stempel des Werksachverständigen / Inspector's stamp/Poinçon de l'assayeur: MR

Punzonatura / Kennzeichnung / Marking / Marquage: 1.4401/1.4404/316/316L

SPECIFICHE : / Anforderungen / Requirements / Exigences	Note: / Aufzeichnungen / Notes / Notes
AV 316L VALVES A/1 1.4401/1.4404 A	
IS107 01 316 A	
MDS S01 5 316 A (0)	(0)Norsok-standard M-630 Edition 6, October 2013
MDS S17 1 316 A (1)	(1)Norsok-standard M-630: 2020 (2020-09-30)
AD 2000-M. W 2 2022 1.4401 A (2)	(2)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 08.2022
AD 2000-M. W 2 2022 1.4404 A (3)	(3)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 08.2022
API 6A 21 ANNEX M (4)	(4)Errata 1 (04/2019), Errata 2 (06/2020), Errata 3 (09/2020). Addendum 1 (July 2020) and Addendum 2 (June 2021).
API 6D 25 ANNEX H (5)	(5)Revision November 2021
ASME SA182 2023 S31600/03 A (6)	(6)Section II Part A 2023 EDITION For products machined directly from bar refer to ASME SA479.
ASME SA276 2023 S31600/03 A (7)	(7)Section II Part A 2023 EDITION
ASME SA479 2023 S31600/03 A (8)	(8)Section II Part A 2023 EDITION
ASTM A182 2024 S31600/03 A (9)	(9)For products machined directly from bar refer also to ASTM A479.
ASTM A262 PR. E 2015 316/316L (A)	(A)Reapproved 2021
ASTM A276 2024A S31600/03 A	
ASTM A370 2024 .	
ASTM A479 2023A S31600/03 A	
ASTM E381 2022 .	
ASTM E562 2019 . (B)	(B)19E01
EN 10088 PART 3 2014 1.4401 A	
EN 10088 PART 3 2014 1.4404 A	
EN 10222 PART 5 2017 1.4401 A	
EN 10222 PART 5 2017 1.4404 A	
EN 10272 2016. 1.4401 A	
EN 10272 2016. 1.4404 A	
ISO 148-1 2016 .	
ISO 6892-1 2019 .	
NACE MR0103 2015 S31600/03 A (C)	(C)ANSI/NACE MR0103/ISO 17945 November 23, 2015
NACE MR0175 4 S31600/03 A (D)	(D)ANSI/NACE MR0175/ISO 15156-3:2020 Fourth edition, approved 21 Sep 2022.

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		Tolleranza: k12 Toleranz/Allowance/Tolerance					
Pos. nr. Pos. nr. Item nr. N° de posta	Oggetto Gegenstand Product description Descrip. du produit	Dimensioni - mm Abmessungen Dimension Dimension	Lunghezza - mm Länge Length Longueur	Colata Schmelze Heat Coulée	Pezzi Stückzahl Pieces Pièces	Peso - KG Gewicht Weight Poids	Lotto nr. Losnr. Lot nr. Lot nr.
0010	Tondo	110,000	5320/ 5563	435799	2	824,0	207704610

CROSSWIND 16/10/24

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 13/06/2024 VCQ012 - MEST080040	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité **R.BERTELLI**	Direzione Prodotto Produktmanagement/Product Management/Direction Produit **P.MESSORI**	Pagina 1 di 7

CORPO VALVOLA / VALVE BODY (SN FROM 105982 TO 106008)

Acciaierie Valbruna S.p.A.

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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST080040 / 2024 /

Cliente / Besteller/Purchaser/Client:
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr / Bestell / Your order / Commande: AF24 01954

Conferma ordine nr / Werks/Our Order/Ref nr.: MI24004883

Avviso di Spedizione / Lieferanzeige/Packing list/B.L.: A-MI24003675

Stato di fornitura / Lieferzustand / Delivery state / Etat de livraison: Fucinato Solubilizzato - Pelato

Tipo di Elaborazione / Erschmelzungsart / Melting process / Mode d'elaboration: E+AOD

Qualità / Werkstoff/Grade/Nuance: 1.4401/1.4404/316/316L

Marca / Markenbezeichnung / Brand / Nuance: MVAPML (MAXIVAL)

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice: AV

Punzone del Collaudatore / Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur: MR

Punzonatura / Kennzeichnung / Marking / Marquage: 1.4401/1.4404/316/316L

TEST ALLO STATO DI FORNITURA
Test on delivery condition — Prüefung auf lieferbereitem produkt — test a l'etat de fourniture — Prueba sobre el material así come entregado

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta / Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement °	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement A5 %		Strizione Einschnürung Reduction of area Striction Z %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti / Anforderungen/Required values / Valeurs démandées		min		205	240	510	45	-	-	-	-			-		
		max				690								215		
A	10	20	L	276	308	568	54		73					149		
I	10	20	L	279	313	573	54		73					153		

TEST ALLO STATO DI FORNITURA
Test on delivery condition / Prüefung auf lieferbereitem produkt / Test a l'etat de fourniture / Prueba sobre el material así come entregado

TEST		min	max	
A	Dimensioni grano x ASTM E112			4
A	Ferrite delta %			1,4 %

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta / Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement °	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti / Anforderungen/Required values / Valeurs démandées		min		60	60	60	-	-	-	-	-	-
		max										
E	10X10	-196	L	236	233	230	1,990	2,015	2,023	70	70	70

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta / Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement °	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete		
Valori richiesti / Anforderungen/Required values / Valeurs démandées		min		205	-	515	-	40	-	50	-			-		
		max														
C	12,5	20	L	272		566		57		75						

10/06/24

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 13/06/2024	Direzione Qualità / Qualitätsmanagement/Quality Management/Gestion Qualité	Direzione Prodotto / Produktmanagement/Product Management/Direction Produit	Pagina
VCQ012 - MEST080040	R.BERTELLI	P.MESSORI	2 di 7

CORPO VALVOLA / VALVE BODY (SN FROM 105982 TO 106008)

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST080040 / 2024 /
Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 01954
Bestell
Your order
Commande

Conferma ordine nr: MI24004883
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24003675
Lieferanzeige/Packing list/B.L.

Stato di fornitura: Fucinato Solubilizzato - Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore:
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werksachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais. mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		60	60	60	-	-	-	-	-	-
F	10X10	-196	T	97	84	92	0,946	0,931	1,010	40	40	40

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais. mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion mm			Shear Shear %		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		100	100	100	-	-	-	-	-	-
D	10X10	20	L	265	260	261						
L	10X10	20	L	269	264	253						

Tensile testing according to ISO 6892-1
Impact testing according to ISO 148-1
Mechanical properties according to ASTM A370.
Ferrite content tested according to ASTM E562.

Analisi chimica
Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat Schmelze/Coulée																
	min	23,0	-	-	-	16,50	2,00	10,00	-	-	-	-	-	-	-	-
	max	28,0	0,030	1,00	2,00	18,00	2,50	13,00	-	0,045	0,030	0,100	-	-	-	-
	PRE		C %	Si %	Mn %	Cr %	Mo %	Ni %	Co %	P %	S %	N %				
435799	24,8		0,018	0,65	1,76	16,81	2,07	10,34	0,117	0,029	0,028	0,073				

Colata /Heat Schmelze/Coulée									
	min	14,0	-	-	-	-	-	-	-
	max	20,0	-	-	-	-	-	-	-
	Ni+(2*Mo)								
435799	14,5								

16/06/24

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CORPO VALVOLA / VALVE BODY (SN FROM 105982 TO 106008)

Acciaierie Valbruna S.p.A.

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Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST080040 / 2024 /
Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 01954
Bestell
Your order
Commande

Conferma ordine nr: MI24004883
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24003675
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

Furnace calibrated according to API 6A REV 21th ED ANNEX M.
Furnace calibrated according to API 6D REV 24th ED ANNEX F.
Macroetch test per ASTM E381: acceptable.
Reduction ratio = 28,8 : 1
ET ACC. TO EN 10088-3 TAB.1
UT ACC. TO A388/API 6A PSL3-EN 10308cl.3-ASME B16.34/IV
Treatment made on date 02/09/2022 in continuous furnace
FCB calibration expiry date 29/09/2022.
Solution annealed 1080°C for 160'(total time)/water cooled.
"Issued in agreement with TÜV SÜD Industrie Service GMBH (07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

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16/10/24

Allegati / Anlagen / Enclosure / Attachments :
UT24003628 GT24001195

Sono state soddisfatte tutte le condizioni richieste
Die gestellen Anforderungen sind it. Anlage erfüllt
The material has been furnished in accordance with the requirements
Le materiel à été trouvé conforme aux exigences

Controllo antimescolanza con tecnica XRF/OES portatile : OK
Verwechslungprüfung: durch XRF/QES Gerät geführt : OK
Antimixing testing performed with XRF/OES portable : OK
Contrôle antimélange svt technique XRF/QES portable : OK

Controllo visivo e dimensionale: soddisfa le esigenze
Beschtigufg und Ausmessung: ohne Beanstandung
Visual inspection and dimensional checks:satisfactory
Contrôle visuel et dimensions: satisfaisant

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 13/06/2024 VCQ012 - MEST080040	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité **R.BERTELLI**	Direzione Prodotto Produktmanagement/Product Management/Direction Produit **P.MESSORI**	Pagina 4 di 7

CORPO VALVOLA / VALVE BODY (SN FROM 105982 TO 106008)

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST080040 / 2024 /

Cliente / Besteller/Purchaser/Client:
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 01954
Bestell / Your order / Commande

Conferma ordine nr: MI24004883
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24003675
Lieferanzeige/Packing list/B.L.

Stato di fornitura: Fucinato Solubilizzato - Pelato
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore:
Hersteller/Item/Usine productrice
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung / Marking / Marquage

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD'S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

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CORPO VALVOLA / VALVE BODY (SN FROM 105982 TO 106008)

	Acciaierie Valbruna S.p.A. 36100 VICENZA (Italia) - Viale della scienza, 25 z.i. Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4	**CERTIFICATO** Certificate - Zeugnis - Certificat **N° UT24003628**	**Pag 6 di 7**
		CONTROLLO CON ULTRASUONI *Ultrasonic testing - Ultraschallprüfung - Controle par ultrasons*	

mod. UT02 MEST080040 / 2024 /

Cliente : INDRA S.R.L. *Customer*				**Lotto nr : 207704610** *Mill order*	
MARCA *Grade*	**DIMENSIONI - mm** *Size*	**COLATA** *Heat*	**BARRE** *Bars*	**PESO** *Weight*	**LUNGHEZZA - mm** *Length*
MVAPML	Tondo 110,000	435799	N. 2	KG : 824,0	5320 / 5563

T. TERMICO *Heat Treatement*	**ESECUZIONE** *Condition*	**RUGOSITA'** *Roughness*	**TOLLERANZA** *Tolerance*
Solubilizzato	Pelato	µm	k12

Istruzione : PROC CND 040 *Work Instruction*		**Criteri Accettabilità : ASTM A388** Acceptance Criteria

ELETTRONICA : Olympus Quickscan LT *Equipment*	
ACCOPPIANTE : ACQUA + 0253 SA *Couplant*	**VEL.CONTROLLO : 303 mm/sec** *Testing Speed*

TRASDUTTORI *Probes*	**TIPO ONDA** *Type of wave*	**FREQUENZA (MHZ)** *Frequency*	**DIMENSIONI (MM)** *Dimension*	**ANGOLO** *Angle*	**TARATURA** *Calibration*
64EL. 2.25MHZ	LONG.	2,25	128X25	0°	DAC

CONTROLLO AUTOMATICO [X] *Automatic inspection*	**CONTROLLO MANUALE** *Manual inspection*

NOTE :
Notes

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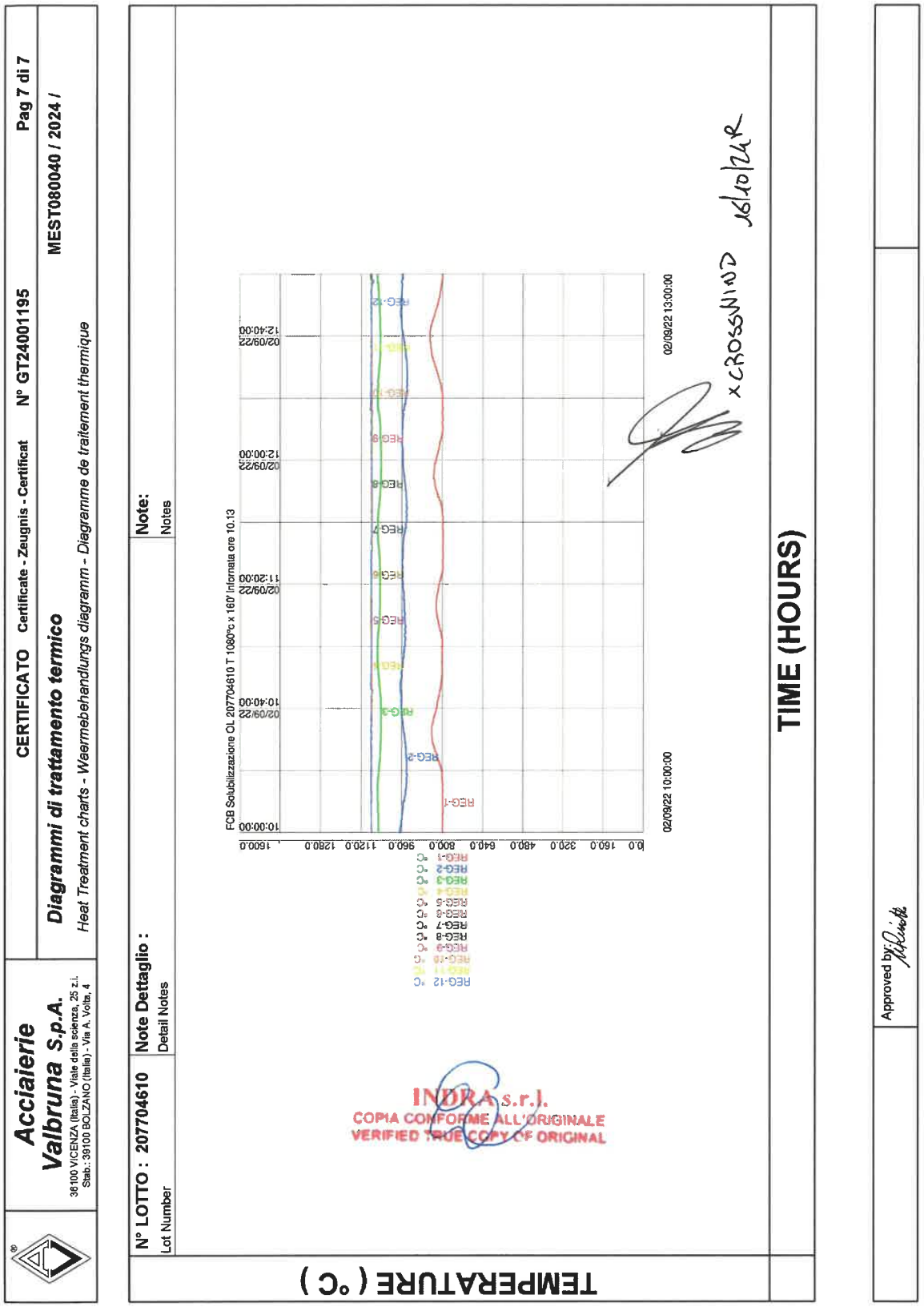
CONFORME [X] *Compliant*	**CONFORME IN DEROGA [ ]** *See Deviation*	**NON CONFORME [ ]** *Not Compliant*

ISPEZIONATO DA Inspected by **FIRMA**	**VERIFICATO DA** Verified by **FIRMA**	**APPROVATO DA** Approved by **G.Parlato** ISO 9712 LEV. 2 IND2401253 **FIRMA**	**COLLAUDATORE** Inspector - Abnahmesachsverst - Inspecteur

Date - Date **22/03/2023**

Operatori, strumenti e documenti di riferimento, utilizzati per il collaudo del materiale, sono identificati, controllati e/o calibrati in accordo alle norme EN, ISO e ASTM, richiamate nelle pratiche operative e istruzioni di pertinenza / *Operators, Equipment and reference documents, used for material inspection, are identified, checked and/or calibrated in accordance with EN/ISO or ASTM standards, reported in relevant documents.*

CORPO VALVOLA / VALVE BODY (SN FROM 105982 TO 106008)



CORPO VALVOLA / VALVE BODY (SN 106009)

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST007058 / 2024 /
Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 00016
Bestell
Your order
Commande

Conferma ordine nr: MI24000193
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24000311
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato - Solubilizzato Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage

SPECIFICHE : Anforderungen / Requirements / Exigences	Note: Aufzeichnungen / Notes / Notes
AV 316L VALVES A 1.4401/1.4404 A	
MDS S01 5 316 A (0)	(0)Norsok-standard M-630 Edition 6, October 2013
AD 2000-M. W 2 2022 1.4401 A (1)	(1)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
AD 2000-M. W 2 2022 1.4404 A (2)	(2)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
API 6A 21 ANNEX M (3)	(3)Errata 1, April 2019-Errata 2, June 2020-Add. 1, July 2020
API 6D 25 ANNEX H (4)	(4)Revision November 2021
ASME SA182 2023 S31600/03 A (5)	(5)Section II Part A 2023 EDITION For products machined directly from bar refer to ASME SA479.
ASME SA276 2023 S31600/03 A (6)	(6)Section II Part A 2023 EDITION
ASME SA479 2023 S31600/03 A (7)	(7)Section II Part A 2023 EDITION
ASTM A182 2023 S31600/03 A (8)	(8)For products machined directly from bar refer also to ASTM A479.
ASTM A262 PR. E 2015 316/316L (9)	(9)Reapproved 2021
ASTM A276 2023 S31600/03 A	
ASTM A370 2022 .	
ASTM A479 2023A S31600/03 A	
ASTM E381 2022 .	
ASTM E562 2019 . (A)	(A)19E01
EN 10088 PART 3 2014 1.4401 A	
EN 10088 PART 3 2014 1.4404 A	
EN 10222 PART 5 2017 1.4401 A	
EN 10222 PART 5 2017 1.4404 A	
EN 10272 2016. 1.4401 A	
EN 10272 2016. 1.4404 A	
ISO 148-1 2016 .	
ISO 6892-1 2019 .	
NACE MR0103 2015 S31600/03 A (B)	(B)ANSI/NACE MR0103/ISO 17945 November 23, 2015
NACE MR0175 4 S31600/03 A (C)	(C)ANSI/NACE MR0175/ISO 15156-3:2020 Fourth edition, approved 21 Sep 2022.

		Tolleranza: k12 Toleranz/Allowance/Tolerance					
Pos. nr. Pos. nr. Item nr. Nr. de poste	Oggetto Gegenstand Product description Descrip. du produit	Dimensioni - mm Abmessungen Dimension Dimension	Lunghezza - mm Länge Length Longueur	Colata Schmelze Heat Coulée	Pezzi Stückzahl Pieces Pieces	Peso - KG Gewicht Weight Poids	Lotto nr. Losnr. Lot nr. Lot nr.
0020	Tondo	110,000	6511/6731	437075	4	2017,0	311803030

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 17/01/2024 VCQ012 - MEST007058	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 1 di 7

CORPO VALVOLA / VALVE BODY (SN 106009)

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST007058 / 2024 /

Cliente / Besteller/Purchaser/Client:
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 00016
Bestell / Your order / Commande

Conferma ordine nr: MI24000193
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24000311
Lieferanzeige/Packing list/B.L.

Stato di fornitura: Fucinato - Solubilizzato Pelato
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung / Marking / Marquage

TEST ALLO STATO DI FORNITURA
Test on delivery condition / Prüefung auf lieferbereitem produkt / test a l'etat de fourniture / Prueba sobre el material asi come entregado

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C		Posiz. Saggio Probestage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement A5 %		Strizione Einschnürung Reduction of area Striction Z %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Heerte Hardness Durete HB		
Valori richiesti / Anforderungen/Required values / Valeurs démandées		min			205	240	510	45	-	-	-	-			-		
		max					690								215		
A	10	20	L		265	295	555	57		74					156		
I	10	20	L		268	296	559	55		73					159		

TEST ALLO STATO DI FORNITURA
Test on delivery condition / Prüefung auf lieferbereitem produkt / Test a l'etat de fourniture / Prueba sobre el material asi come entregado

TEST		min	max	
I	Dimensioni grano x ASTM E112			4
I	Ferrite delta %			1,1 %

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C		Posiz. Saggio Probestage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti / Anforderungen/Required values / Valeurs démandées		min			60	60	60	-	-	-	-	-	-
		max											
B	10X10	-196	L		240	236	231	2,314	2,289	2,278	65	65	65

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C		Posiz. Saggio Probestage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Heerte Hardness Durete		
Valori richiesti / Anforderungen/Required values / Valeurs démandées		min			205	-	515	-	40	-	50	-			-		
		max															
C	12,5	20	L		263		559		58		77						

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CORPO VALVOLA / VALVE BODY (SN 106009)

Acciaierie Valbruna S.p.A.

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Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST007058 / 2024 /

Cliente / Besteller/Purchaser/Client:
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 00016
Bestell / Your order / Commande

Conferma ordine nr: MI24000193
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24000311
Lieferanzeige/Packing list/B.L.

Stato di fornitura: Fucinato - Solubilizzato Pelato
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice: AV

Punzone del Collaudatore / Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur: MR

Punzonatura / Kennzeichnung / Marking / Marquage: 1.4401/1.4404/316/316L

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probentage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs demandées		min		60	60	60	-	-	-	-	-	-
		max										
D	10X10	-196	T	74	75	79	0,712	0,752	0,736	35	35	35

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probentage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion			Shear Shear		
Valori richiesti Anforderungen/Required values Valeurs demandées		min		100	100	100	-	-	-	-	-	-
		max										
H	10X10	20	L	278	280	291						
J	10X10	20	L	270	264	284						

Tensile testing according to ISO 6892-1
Impact testing according to ISO 148-1
Mechanical properties according to ASTM A370.
Ferrite content tested according to ASTM E562.

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Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat Schmelze/Coulée																
	min	23,0	-	-	-	-	16,50	2,00	10,00	-	-	-	-	-	-	-
	max	28,0	0,030	1,00	2,00	18,00	2,50	13,00	-	0,045	0,030	0,100	-	-	-	-
	PRE		C %	Si %	Mn %	Cr %	Mo %	Ni %	Co %	P %	S %	N %				
437075	24,7		0,015	0,59	1,78	16,66	2,08	10,10	0,096	0,031	0,024	0,072				

Colata /Heat Schmelze/Coulée									
	min	14,0	-	-	-	-	-	-	-
	max	20,0	-	-	-	-	-	-	-
	Ni+(2*Mo)								
437075	14,3								

MX CROSSWIND 16/10/24 R

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 17/01/2024	Direzione Qualità / Qualitätsmanagement/Quality Management/Gestion Qualité	Direzione Prodotto / Produktmanagement/Product Management/Direction Produit	Pagina
VCQ012 - MEST007058	R.BERTELLI	P.MESSORI	3 di 7

CORPO VALVOLA / VALVE BODY (SN 106009)

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST007058 / 2024 /
Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 00016
Bestell
Your order
Commande

Conferma ordine nr: MI24000193
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24000311
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato - Solubilizzato Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

Furnace calibrated according to API 6A REV 21th ED ANNEX M.
Furnace calibrated according to API 6D REV 25th ED ANNEX H.
Macroetch test per ASTM E381: acceptable.
Reduction ratio = 25,5 : 1
ET ACC. TO EN 10088-3 TAB.1
UT ACC. TO A388/API 6A PSL3-EN 10308cl.3-ASME B16.34/IV
Treatment made on date 21/07/2023 in continuous furnace
FCB calibration expiry date 14/08/2023.
Solution annealed 1080°C for 160'(total time)/water cooled.
"Issued in agreement with TÜV SÜD Industrie Service GMBH (07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

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Allegati / Anlagen / Enclosure / Attachments :
UT24000302 GT24000098

Sono state soddisfatte tutte le condizioni richieste
Die gestellen Anforderungen sind it. Anlage erfüllt
The material has been furnished in accordance with the requirements
Le materiel á été trouvé conforme aux exigences

Controllo antimescolanza con tecnica XRF/OES portatile : OK
Verwechslungprüfung: durch XRF/OES Gerät geführt : OK
Antimixing testing performed with XRF/OES portable : OK
Contrôle antimélange svt technique XRF/QES portable : OK

Controllo visivo e dimensionale: soddisfa le esigenze
Besichtigufg und Ausmessung: ohne Beanstandung
Visual inspection and dimensional checks:satisfactory
Contrôle visuel et dimensions: satisfaisant

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 17/01/2024 VCQ012 - MEST007058	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité **R.BERTELLI**	Direzione Prodotto Produktmanagement/Product Management/Direction Produit **P.MESSORI**	Pagina 4 di 7

CORPO VALVOLA / VALVE BODY (SN 106009)

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST007058 / 2024 /
Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 00016
Bestell
Your order
Commande

Conferma ordine nr: MI24000193
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24000311
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato - Solubilizzato Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD`S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

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CORPO VALVOLA / VALVE BODY (SN 106009)

Acciaierie Valbruna S.p.A. 36100 VICENZA (Italia) - Viale della scienza, 25 z.i. Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4	**CERTIFICATO** Certificate - Zeugnis - Certificat **N° UT24000302**	**Pag 6 di 7**
	CONTROLLO CON ULTRASUONI *Ultrasonic testing - Ultraschallprüfung - Controle par ultrasons*	

mod. UT02

MEST007058 / 2024 /

Cliente : INDRA S.R.L. *Customer*				**Lotto nr : 311803030** *Mill order*	
MARCA *Grade*	**DIMENSIONI - mm** *Size*	**COLATA** *Heat*	**BARRE** *Bars*	**PESO** *Weight*	**LUNGHEZZA - mm** *Length*
MVAPML	Tondo 110,000	437075	N. 4	KG : 2017,0	6511 / 6731

T. TERMICO *Heat Treatement*	**ESECUZIONE** *Condition*	**RUGOSITA'** *Roughness*	**TOLLERANZA** *Tolerance*
Solubilizzato	Pelato		k12

Istruzione : PROC CND 040 *Work Instruction*		**Criteri Accettabilità : ASTM A388** Acceptance Criteria

ELETTRONICA : Olympus Quickscan LT
Equipment

ACCOPPIANTE : ACQUA + 0253 SA
Couplant

VEL.CONTROLLO : 177 mm/sec
Testing Speed

TRASDUTTORI *Probes*	**TIPO ONDA** *Type of wave*	**FREQUENZA (MHZ)** *Frequency*	**DIMENSIONI (MM)** *Dimension*	**ANGOLO** *Angle*	**TARATURA** *Calibration*
64EL. 2.25MHZ	LONG.	2,25	128X25	0°	DAC

CONTROLLO AUTOMATICO [X] *Automatic inspection*	**CONTROLLO MANUALE** *Manual inspection*

NOTE :
Notes

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16/10/24 R

CONFORME [X] *Compliant*	**CONFORME IN DEROGA [ ]** *See Deviation*	**NON CONFORME [ ]** *Not Compliant*

ISPEZIONATO DA Inspected by	**VERIFICATO DA** Verified by	**APPROVATO DA** Approved by	**COLLAUDATORE** Inspector - Abnahmesachsverst - Inspecteur
FIRMA 14/09/2023 Date - Date	**FIRMA**	**S.Stefani** ISO 9712 LEV. 2 IND1901845 **FIRMA**	

Operatori, strumenti e documenti di riferimento, utilizzati per il collaudo del materiale, sono identificati, controllati e/o calibrati in accordo alle norme EN, ISO e ASTM, richiamate nelle pratiche operative e istruzioni di pertinenza / *Operators, Equipment and reference documents, used for materiel inspection, are identified, checked and/or calibrated in accordance with EN/ISO or ASTM standards, reported in relevant documents.*

CORPO VALVOLA / VALVE BODY (SN 106009)

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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37 Telefono 0471.924111 - Fax 0471.924497
https://www.valbruna-stainless-steel.com/

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION - CERTIFICADO DE INSPECCIÓN

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon/De conformidad con

Certificato nr. MEST098212 / 2024 /
Prüfung/Test/Essai/Num. de certificado

Cliente / Besteller/Purchaser/Client/Cliente
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: N. AF24 02498
Bestell
Your order
Commande
Num. de pedido

Conferma ordine nr: MI24006121
Werks/Our Order/Ref nr.
Num. de confirmación de pedido

Avviso di Spedizione: A-MI24004527
Lieferanzeige/Packing list/B.L.
Aviso de embarque

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand
Delivery state
Etat de livraison
Estado de la entrega

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration
Método de fusión

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance
Calidad

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance / Marca

Produttore :
Hersteller/Item/Usine productrice/Productor

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice
Marcas de fábrica

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur
Sello del Comprobador

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage / Sello

SPECIFICHE :
Anforderungen / Requirements / Exigences / Especificaciones

Note:
Aufzeichnungen / Notes / Notes / Notas

AV 316L VALVES A/1 1.4401/1.4404 A
IS107 01 316 A
MDS S01 5 316 A (0) — (0)Norsok-standard M-630 Edition 6, October 2013
MDS S17 1 316 A (1) — (1)Norsok-standard M-630: 2020 (2020-09-30)
AD 2000-M. W 2 2022 1.4401 A (2) — (2)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
AD 2000-M. W 2 2022 1.4404 A (3) — (3)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
API 6A 21 ANNEX M (4) — (4)Errata 1 (04/2019), Errata 2 (06/2020), Errata 3 (09/2020). Addendum 1 (July 2020) and Addendum 2 (June 2021).
API 6D 25 ANNEX H (5) — (5)Revision November 2021
ASME SA182 2023 S31600/03 A (6) — (6)Section II Part A 2023 EDITION For products machined directly from bar refer to ASME SA479.
ASME SA276 2023 S31600/03 A (7) — (7)Section II Part A 2023 EDITION
ASME SA479 2023 S31600/03 A (8) — (8)Section II Part A 2023 EDITION
ASTM A182 2024 S31600/03 A (9) — (9)For products machined directly from bar refer also to ASTM A479.
ASTM A262 PR. E 2015 316/316L (A) — (A)Reapproved 2021
ASTM A276 2024A S31600/03 A
ASTM A370 2024 .
ASTM A479 2024 S31600/03 A
ASTM E381 2022 .
ASTM E562 2019 . (B) — (B)19E01
EN 10088 PART 3 2014 1.4401 A
EN 10088 PART 3 2014 1.4404 A
EN 10222 PART 5 2017 1.4401 A
EN 10222 PART 5 2017 1.4404 A
EN 10272 2016. 1.4401 A
EN 10272 2016. 1.4404 A
ISO 148-1 2016 .
ISO 6892-1 2019 .
NACE MR0103 2015 S31600/03 A (C) — (C)ANSI/NACE MR0103/ISO 17945 November 23, 2015
NACE MR0175 4 S31600/03 A (D) — (D)ANSI/NACE MR0175/ISO 15156-3:2020 Fourth edition, approved 21 Sep 2022.

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		Tolleranza: k12 Toleranz/Allowance/Tolerance/Tolerancia					
Pos. nr. Pos. nr. / Item nr. Nr. de poste Número de artículo	Oggetto Gegenstand / Product description Descrip. du produit Descripción del producto	Dimensioni - mm Abmessungen Dimension Dimension / Dimensiones	Lunghezza - mm Lenge Length Longueur / Longitud	Colata Schmelze Heat Coulée / Colada	Pezzi Stückzahl Pieces Pieces / Piezas	Peso - KG Gewicht Weight Poids / Peso	Lotto nr. Losnr. Lot nr. Lot nr. / Lote nro.
0010	Tondo	130,000	3960/ 4000	294158	1	422,0	316310390

x CROSSWIND 16/10/24 R

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 23/07/2024 VCQ012 - MEST098212	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité/Gerente de calidad **R.BERTELLI**	Direzione Prodotto Produktmanagement/Product Management/Direction Produit/Gerente de producto **P.MESSORI**	Pagina 1 di 7

CLOSURE F300RF3

Acciaierie Valbruna S.p.A.

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https://www.valbruna-stainless-steel.com/

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION - CERTIFICADO DE INSPECCIÓN

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1 — Certificato nr. MEST098212 / 2024 /

Nach/According to/Selon/De conformidad con — Prüfung/Test/Essai/Num. de certificado

Cliente / Besteller/Purchaser/Client/Cliente
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: N. AF24 02498
Bestell / Your order / Commande / Num. de pedido

Conferma ordine nr: MI24006121
Werks/Our Order/Ref nr. / Num. de confirmación de pedido

Avviso di Spedizione: A-MI24004527
Lieferanzeige/Packing list/B.L. / Aviso de embarque

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand / Delivery state / Etat de livraison / Estado de la entrega

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration / Método de fusión

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance / Calidad

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance / Marca

Produttore :
Hersteller/Item/Usine productrice/Productor
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice / Marcas de fábrica

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur / Sello del Comprobador

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung / Marking / Marquage / Sello

TEST ALLO STATO DI FORNITURA
Test on delivery condition — Prüfung auf lieferbereitem produkt — test a l'etat de fourniture — Prueba sobre el material así come entregado

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais. mm / Probeta	°C	Posiz. Saggio Probenlage Location Emplacement Ubicación 1)	Snervamento Streckgrenze/Yield Stress Limite elastique Limite elástico Rp 0,2% N/mm2	Snervamento Streckgrenze/Yield Stress Limite elastique Limite elástico Rp 1% N/mm2	Resistenza Zugfestigkeit/Tensile strengt Resistance à la traction Resistencia a la tracción Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement / Elongación A5 %		Strizione Einschnürung Reduction of area Striction / Reducción de área Z %		Resilienza Kerbschlagarbeit Impact Value/ Resilience Prueba de impacto			Durezza Hearte Hardness Durete / Dureza HB		
Valori richiesti Anforderungen/Required values Valeurs démandées / Valores requeridos		min max		205	240	510 690	45	-	-	-	-			-	215	
A	10	20	L	303	336	582	47		73					167		
I	10	20	L	297	331	585	48		71					168		

TEST ALLO STATO DI FORNITURA
Test on delivery condition / Prüfung auf lieferbereitem produkt / Test a l'etat de fourniture / Prueba sobre el material así come entregado

TEST		min	max	
I	Dimensioni grano x ASTM E112			2
I	Ferrite delta %			0,9 %

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Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais. mm / Probeta	°C	Posiz. Saggio Probenlage Location Emplacement Ubicación 1)	Resilienza Kerbschlagarbeit Impact Value Resilience / Prueba de impacto KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs démandées / Valores requeridos		min max		60	60	60	-	-	-	-	-	-
B	10X10	-196	L	269	246	256	2,322	2,334	2,278	70	70	70

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais. mm / Probeta	°C	Posiz. Saggio Probenlage Location Emplacement Ubicación 1)	Snervamento Streckgrenze/Yield Stress Limite elastique Limite elástico Rp 0,2% N/mm2	Snervamento Streckgrenze/Yield Stress Limite elastique Limite elástico	Resistenza Zugfestigkeit/Tensile strengt Resistance à la traction Resistencia a la tracción Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement / Elongación E 4d %		Strizione Einschnürung Reduction of area Striction / Reducción de área RA %		Resilienza Kerbschlagarbeit Impact Value/ Resilience Prueba de impacto			Durezza Hearte Hardness Durete / Dureza HB		
Valori richiesti Anforderungen/Required values Valeurs démandées / Valores requeridos		min max		205	-	515	-	40	-	50	-			-	215	
C	12,5	20	L	296		581		50		71				167		
N	12,5	20	L	296		581		50		71				163		

x CROSSWIND 16/10/24

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 23/07/2024 VCQ012 - MEST098212	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité/Gerente de calidad R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit/Gerente de producto P.MESSORI	Pagina 2 di 7

CLOSURE F300RF3

Acciaierie Valbruna S.p.A.

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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37 Telefono 0471.924111 - Fax 0471.924497
https://www.valbruna-stainless-steel.com/

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION - CERTIFICADO DE INSPECCIÓN

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon/De conformidad con

Certificato nr. MEST098212 / 2024 /
Prüfung/Test/Essai/Num. de certificado

Cliente / Besteller/Purchaser/Client/Cliente
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: N. AF24 02498
Bestell
Your order
Commande
Num. de pedido

Conferma ordine nr: MI24006121
Werks/Our Order/Ref nr.
Num. de confirmación de pedido

Avviso di Spedizione: A-MI24004527
Lieferanzeige/Packing list/B.L.
Aviso de embarque

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand
Delivery state
Etat de livraison
Estado de la entrega

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration
Método de fusión

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance
Calidad

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance / Marca

Produttore :
Hersteller/Item/Usine productrice/Productor

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice
Marcas de fábrica

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur
Sello del Comprobador

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage / Sello

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais. mm / Probeta	°C	Posiz. Saggio Probenlage Location Emplacement Ubicación 1)	Snervamento Streckgrenze/Yield Stress Limite elastique Limite elástico Rp 0,2% N/mm2	Snervamento Streckgrenze/Yield Stress Limite elastique Limite elástico	Resistenza Zugfestigkeit/Tensile strength Resistance à traction Resistencia a tracción Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement / Elongación E 4d %		Strizione Einschnürung Reduction of area Striction / Reducción de área RA %		Resilienza Kerbschlagarbeit Impact Value/ Resilience Prueba de impacto			Durezza Hearte Hardness Dureté / Dureza HB		
Valori richiesti Anforderungen/Required values Valeurs démandées / Valores requeridos		min max		205	-	515	-	40	-	50	-			- 215		
J	6.25	20	T	277		592		45		51				166		

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais. mm / Probeta	°C	Posiz. Saggio Probenlage Location Emplacement Ubicación 1)	Resilienza Kerbschlagarbeit Impact Value Resilience / Prueba de impacto KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs démandées / Valores requeridos		min max		60	60	60	-	-	-	-	-	-
D	10X10	-196	T	72	72	62	0,536	0,554	0,566	30	30	30

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais. mm / Probeta	°C	Posiz. Saggio Probenlage Location Emplacement Ubicación 1)	Resilienza Kerbschlagarbeit Impact Value Resilience / Prueba de impacto KV2 J			Espansione laterale Lateral Expansion			Shear Shear		
Valori richiesti Anforderungen/Required values Valeurs démandées / Valores requeridos		min max		100	100	100	-	-	-	-	-	-
H	10X10	20	L	357	340	349						
K	10X10	20	L	352	348	345						

Tensile testing according to ISO 6892-1
Impact testing according to ISO 148-1
Mechanical properties according to ASTM A370.
Ferrite content tested according to ASTM E562.

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https://www.valbruna-stainless-steel.com/

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION - CERTIFICADO DE INSPECCIÓN

In conformità a / Nach/According to/Selon/De conformidad con: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai/Num. de certificado: MEST098212 / 2024 /

Cliente / Besteller/Purchaser/Client/Cliente:
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr. / Bestell/Your order/Commande/Num. de pedido: N. AF24 02498

Conferma ordine nr. / Werks/Our Order/Ref nr./Num. de confirmación de pedido: MI24006121

Avviso di Spedizione / Lieferanzeige/Packing list/B.L./Aviso de embarque: A-MI24004527

Stato di fornitura / Lieferzustand/Delivery state/Etat de livraison/Estado de la entrega: Fucinato Solubilizzato - Pelato

Tipo di Elaborazione / Erschmelzungsart/Melting process/Mode d'elaboration/Método de fusión: E+AOD

Qualità / Werkstoff/Grade/Nuance/Calidad: 1.4401/1.4404/316/316L

Marca / Markenbezeichnung/Brand / Nuance / Marca: MVAPML (MAXIVAL)

Produttore / Hersteller/Item/Usine productrice/Productor:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Lieferwerkes/Trade marks/Sigles de l'usine productrice/Marcas de fábrica: AV

Punzone del Collaudatore / Stempel des Werkssachverständigen/Inspector's stamp/Poinçon de l'assayeur/Sello del Comprobador: MR

Punzonatura / Kennzeichnung/Marking/Marquage / Sello: 1.4401/1.4404/316/316L

Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique/Análisis químico

Colata/Heat/Coulée / Schmelze/Colada		C %	Si %	Mn %	Cr %	Mo %	Ni %	Co %	P %	S %	N %				
	min	-	-	-	16,50	2,00	10,00	-	-	-	-	-	-	-	-
	max	0,030	1,00	2,00	18,00	2,50	13,00	-	0,045	0,030	0,100	-	-	-	-
	PRE														
294158	25,0	0,018	0,45	1,78	16,76	2,09	10,11	0,212	0,033	0,020	0,084				

Colata/Heat/Coulée / Schmelze/Colada								
	min	14,0	-	-	-	-	-	-
	max	20,0	-	-	-	-	-	-
	Ni+(2*Mo)							
294158	14,3							

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

Furnace calibrated according to API 6A REV 21th ED ANNEX M.
Furnace calibrated according to API 6D REV 25th ED ANNEX H.
Macroetch test per ASTM E381: acceptable.
Reduction ratio = 20,2 : 1
Solution annealed 1080°C for 180'(total time)/water cooled.
Treatment made on date 10/05/24 in continuous furnace
FCB calibration expiry date 08/06/24.
SURFACE QUALITY GUARANTEE BY ET INSPECTION (max defect depth 1% DIAMETER)
UT ACC. TO A388/API 6A PSL3-EN 10308cl.3-ASME B16.34/IV :
PASS
"Issued in agreement with TÜV SÜD Industrie Service GMBH (07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by Notified Body 0036"

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x CROSSLINE 16/10/24 R

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 23/07/2024	Direzione Qualità	Direzione Prodotto	Pagina
VCQ012 - MEST098212	Qualitätsmanagement/Quality Management/Gestion Qualité/Gerente de calidad R.BERTELLI	Produktmanagement/Product Management/Direction Produit/Gerente de producto P.MESSORI	4 di 7

CLOSURE F300RF3

Acciaierie Valbruna S.p.A.

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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37 Telefono 0471.924111 - Fax 0471.924497
https://www.valbruna-stainless-steel.com/

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION - CERTIFICADO DE INSPECCIÓN

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon/De conformidad con

Certificato nr. MEST098212 / 2024 /
Prüfung/Test/Essai/Num. de certificado

Cliente / Besteller/Purchaser/Client/Cliente
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: N. AF24 02498
Bestell
Your order
Commande
Num. de pedido

Conferma ordine nr: MI24006121
Werks/Our Order/Ref nr.
Num. de confirmación de pedido

Avviso di Spedizione: A-MI24004527
Lieferanzeige/Packing list/B.L.
Aviso de embarque

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand
Delivery state
Etat de livraison
Estado de la entrega

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration
Método de fusión

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance
Calidad

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance / Marca

Produttore :
Hersteller/Item/Usine productrice/Productor

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice
Marcas de fábrica

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur
Sello del Comprobador

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage / Sello

"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

Allegati / Anlagen / Enclosure / Attachments :
UT24004631 GT24001450

Sono state soddisfatte tutte le condizioni richieste	Controllo antimescolanza con tecnica XRF/OES portatile : OK	Controllo visivo e dimensionale: soddisfa le esigenze
Die gestellen Anforderungen sind lt. Anlage erfüllt The material has been furnished in accordance with the requirements Le materiel á été trouvé conforme aux exigences El material cumple de acuerdo a los requisitos	Verwechslungprüfung: durch XRF/OES Gerät geführt : OK Antimixing testing performed with XRF/OES portable : OK Contrôle antimélange evt technique XRF/OES portable : OK Prueba de anti mezcla con técnica XRF/OES portátil: OK	Besichtigurig und Ausmessung: ohne Beanstandung Visual inspection and dimensional checks:satisfactory Contrôle visuel et dimensions: satisfaisant Inspección visual y dimensional: cumple los requisitos

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD'S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

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16/10/24

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 23/07/2024 VCQ012 - MEST098212	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité/Gerente de calidad **R.BERTELLI**	Direzione Prodotto Produktmanagement/Product Management/Direction Produit/Gerente de producto **P.MESSORI**	Pagina 5 di 7

CLOSURE F300RF3

Acciaierie Valbruna S.p.A. 36100 VICENZA (Italia) - Viale della scienza, 25 z.i. Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4	**CERTIFICATO** Certificate - Zeugnis - Certificat **N° UT24004631**	**Pag 6 di 7**
	CONTROLLO CON ULTRASUONI *Ultrasonic testing - Ultraschallprüfung - Controle par ultrasons*	

mod. UT02 MEST098212 / 2024 /

Cliente : INDRA S.R.L. *Customer*				**Lotto nr : 316310390** *Mill order*		
MARCA *Grade*	**DIMENSIONI - mm** *Size*	**COLATA** *Heat*	**BARRE** *Bars*	**PESO** *Weight*	**LUNGHEZZA - mm** *Length*	
MVAPML	Tondo 130,000	294158	N. 1	KG : 422,0	3960	4000

T. TERMICO *Heat Treatement*	**ESECUZIONE** *Condition*	**RUGOSITA'** *Roughness*	**TOLLERANZA** *Tolerance*
Solubilizzato	Pelato	µm	k12

Istruzione : PROC CND 040 *Work Instruction*		**Criteri Accettabilità : A388/API 6A PSL3-EN 10308 cl.3-ASME B16.34/IV** Acceptance Criteria

ELETTRONICA : Olympus Quickscan LT
Equipment

ACCOPPIANTE : ACQUA + 0253 SA
Couplant

VEL.CONTROLLO : 231 mm/sec
Testing Speed

TRASDUTTORI *Probes*	**TIPO ONDA** *Type of wave*	**FREQUENZA (MHZ)** *Frequency*	**DIMENSIONI (MM)** *Dimension*	**ANGOLO** *Angle*	**TARATURA** *Calibration*
64EL. 2.25MHZ	LONG.	2,25	128X25	0°	DAC

CONTROLLO AUTOMATICO [X] *Automatic inspection*	**CONTROLLO MANUALE** *Manual inspection*

NOTE :
Notes

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CONFORME [X] *Compliant*	**CONFORME IN DEROGA [ ]** *See Deviation*	**NON CONFORME [ ]** *Not Compliant*

ISPEZIONATO DA Inspected by	**VERIFICATO DA** Verified by	**APPROVATO DA** Approved by	**COLLAUDATORE** Inspector - Abnahmesachsverst - Inspecteur
FIRMA	**FIRMA**	**G.Parlato** ISO 9712 LEV. 2 IND2401253 **FIRMA**	16/10/24

Date - Date **22/07/2024**

Operatori, strumenti e documenti di riferimento, utilizzati per il collaudo del materiale, sono identificati, controllati e/o calibrati in accordo alle norme EN, ISO e ASTM, richiamate nelle pratiche operative e istruzioni di pertinenza / *Operators, Equipment and reference documents, used for material inspection, are identified, checked and/or calibrated in accordance with EN/ISO or ASTM standards, reported in relevant documents.*

Acciaierie Valbruna S.p.A.
36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4

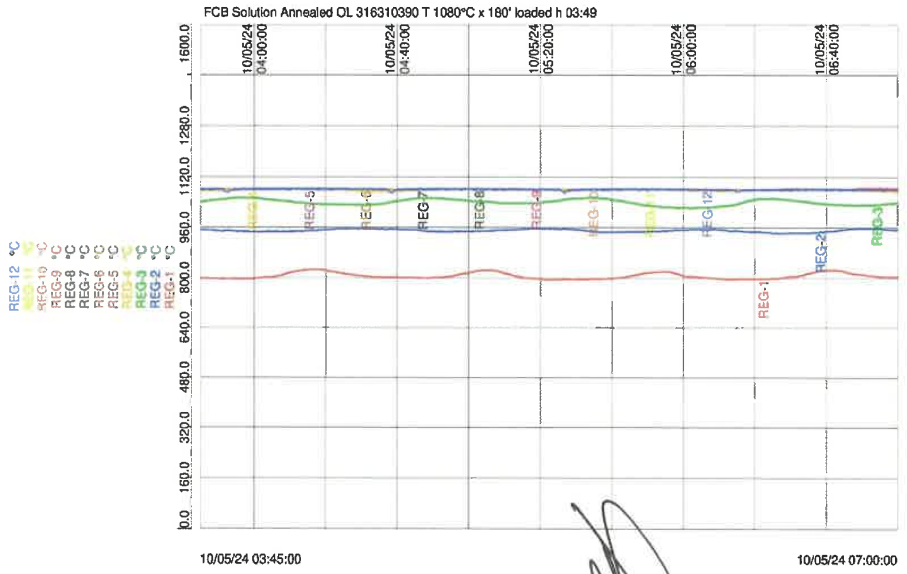
CERTIFICATO Certificate - Zeugnis - Certificat **N° GT24001450** **Pag 7 di 7**

Diagrammi di trattamento termico

MEST098212 / 2024 /

Heat Treatment charts - Waermebehandlungs diagramm - Diagramme de traitement thermique

N° LOTTO : 316310390 Lot Number	Note Dettaglio : Detail Notes	Note: Notes



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Approved by:

INDRA S.r.l.
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TIRANTE / STUD BOLT

t·e·c·n·o BOLT

CERTIFICATE

Nr. 5086	05-08-24

Page 1/1

INDRA SRL
VIA NOVARA 10/B-C
20013 MAGENTA MI
ITALIA

EN ISO 10204 3.1
CERTIFIED MATERIAL TEST REPORT

Your order: AF24 01970 24-06-24 Delivery note: 2072 05-08-24

Item	Materials	Description	Sizes	Batch	Heat		Quantity
1	ASTM A 193 B8M cl.2 101.99.0962SS	Tirante DIN 976/UNI 6610 ASTM A 193 B8M cl.2 M	10X30	66451	281154	N.	330

Pos. 110 - 120 - 130 - 140 - 150 - 160 - 165 VOCE DOGANALE 73181900 MERCE DI ORIGINE:ITALIA

CHEMICAL ANALYSIS

1		%C %	%Mn %	%P %	%S %	%Si %	%Cr %	%Ni %	%Mo %	%H.T. CST+SH
	REQ. MIN.						16	10	2	
	REQ. MAX.	0,080	2	0,045	0,030	1	18	14	3	
	ACT.VAL.	0,015	1,520	0,032	0,022	0,540	16,530	10,130	2,060	CST+SH

MECHANICAL PROPERTIES

1		UTS MPa	YS0,2 MPa	E %	R.A. %	H HB
	REQ. MIN.	760	655	15	45	
	REQ. MAX.					321
	ACT. VAL.	851	738	20,1	52	258

We state that the material or fasteners, or both, were manufactered, sampled, tested and inspected in accordance with the specification and any supplementary requirements designated in the purchase/sales order and it was found to meet those requirements

tecnoBOLT s.r.l. - 20822 Seveso (MB) ITALY - way vignone n.7 - info@tecnobolt.com - www.tecnobolt.com

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16/10/24

DADO / NUT

t·e·c·n·o BOLT

CERTIFICATE

Nr. 5066	26-07-24

Page 1/1

INDRA SRL
VIA NOVARA 10/B-C
20013 MAGENTA MI
ITALIA

EN ISO 10204 3.1
CERTIFIED MATERIAL TEST REPORT

Your order: AF24 01970 24-06-24 Delivery note: 2000 26-07-24

Item	Materials	Description	Sizes	Batch	Heat		Quantity
9	ASTM A 194 Gr.8M 980.99.0002 Pos. 170 - 180 - 190 - 200 - 210 - 220 - 230 - 240 - 300	Dado UNI 5588/DIN 934 ASTM A 194 Gr.8M M Esagonale	10	64533	160903S05	N.	380



VOCE DOGANALE 73181900

MERCE DI ORIGINE ITALIA

CHEMICAL ANALYSIS

9		%C %	%Mn %	%P %	%S %	%Si %	%Cr %	%Ni %	%Mo %
	REQ. MIN.						16	10	2
	REQ. MAX.	0,08	2	0,045	0,030	1	18	14	3
	ACT.VAL.	0.033	0.950	0.033	0.002	0.340	16.400	10.050	2.020

MECHANICAL PROPERTIES

9		H HB	P.L. KN
	REQ. MIN.	126	
	REQ. MAX.	300	
	ACT. VAL.	147-156	29.9

We state that the material or fasteners, or both, were manufactered, sampled, tested and inspected in accordance with the specification and any supplementary requirements designated in the purchase/sales order and it was found to meet those requirements

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STELO SFERA / BALL STEM

Rodacciai

23842 Bosisio Parini (LC) – Via Giuseppe Roda 1 – Italia
Tel. +39 031878111 – Fax +39 031878312
www.rodacciai.com – info@rodacciai.com

Azienda con sistema di gestione certificato da IGQ
secondo UNI EN ISO 9001:2015

The Company's Quality Management System
is certified by IGQ according to UNI EN ISO 9001:2015

CERTIFICATO DI CONTROLLO Inspection Certif N. 173501 Date 13/11/2023

Secondo According to . . . . . EN 10204:2004 3.1

ORDINE - Order N. 23/3822 Date 10/11/2023

D.d.T. - Delivery note N. 11634/04 Date 13/11/2023

Weight KG 128,00 **Odp. Nr.** 2022/A/13380

Tolerance ISO286-2 h9 + 0,000 - 0,043 mm **Bars Length** 3.000 - 3.050 mm

QUALITA' - Grade

STANDARD	EN 10088-3:2014	X2CrNiMo17-12-2	1.4404 / 316L
STANDARD	EN 10088-3:2023	X5CrNiMo17-12-2	1.4401 / 316

Mark RODACCIAI . . . . . 316 PLUS
PROFILO - Shape . . . . . ROUND
DIMENSIONE - Size . . . . . mm 18,00
ESECUZIONE - Form of delivery . . . . . ROUGH GROU.

COLATA - Heat E30822

ANALISI CHIMICA DI COLATA - Cast analysis % by mass

C	Mn	Si	S	P	Cr	Ni	Mo	Cu	Co	N
0,020	1,540	0,554	0,0290	0,031	16,620	10,020	2,030	0,441	0,280	0,0520

CARATTERISTICHE MECCANICHE ALLO STATO DI FORNITURA
Mechanical properties of the delivered material

		Tested
Tensile Strength	Rm (MPa)	695,3
Proof Stress	Rp (1) (MPa)	648,0
Proof Stress	Rp (0,2) (MPa)	580,7
Elongation	A 4 (%)	44,3
Elongation	A 5 (%)	41,1
Hardness	HBW	211,0
Reduction of area	Z (%)	68,0

NOTE - Notes

Processo di Fusione: E + A. O. D.
Prova di Corrosione Intergranularena: ASTM A262-15 "E"
Trattamento termico: Temperatura di Solubilizzazione 1060°C
Tempo Mantenimento: 4 Ore, Raffreddamento in Acqua
Materiale conforme a: ASTM A276-16a / A479-16a / A182-24
ASME: SA479; SA276; SA182 - UNS 31600 - 31630 AISI 316-316L

Pag. 1 / Segue

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The Company's Quality Management System is certified by IGQ according to UNI EN ISO 9001:2015

Segue certificato di controllo N. 173501 Date 13/11/2023
Inspection Certificate's continuance

NOTE - Notes

Materiale Conforme a NACE MR-0175/ISO 15156-3:2015
NACE MR-103/ISO 17495-1:2016
Corrosione Intercristallina EN ISO 3651-2:98 Met.A

Melting Process: E + A. O. D
Intergranular corrosion tested to ASTM A262-15 "E"
Heat treatment: annealed temperature 1060°C
Soaking time: 4 Hours, Cooling in water
Material Compliant to: ASTM A276-16a / A479-16a / A182-24
ASME: SA479; SA276; SA182 - UNS 31600 - 31630 AISI 316-316L
According to: NACE MR-0175 / ISO 15156-3:2015
NACE MR-103/ISO 17495-1:2016
Intergranular Corrosion according to EN ISO 3651-2:98 Met.A

Surface quality condition 2H conforming also to EN 10277 class 3

We certify hereby, that the above mentioned products are consistent with the order prescriptions.
This certificate was generated by data system acc. to EN 10204, it is not necessary to be signed for validity.

Materiale conforme alle seguenti direttive/regolamenti europee:
. Regolamento REACH 2006/1907/CE e tutti successivi aggiornamenti, compresa la modifica M80 Direttiva Delegata 2022/1632, e SVHC Candidate List aggiornata al 17/01/2023.
. Direttiva ROHS 2011/6570E e tutti i successivi aggiornamenti, compresa la modifica M80 attraverso la Direttiva Delegata 2022/1632, e Decreto Legislativo 27 del 04/03/2014.
. Direttiva RAEE 2012/19/UE e tutti successivi aggiornamenti, compresa la modifica M1 attraverso la Direttiva 2018/849.
. Direttiva ELV (End-of-Life Vehicles) 2000/53/CE e tutti i successivi aggiornamenti, compresa la modifica M15 attraverso la Direttiva 2020/363
. Contaminazione Radioattiva, Direttiva 2013/59/EURATOM e Decreto Legislativo N.101 del 31 Luglio 2020.
. Canadian List 168 aggiornata al 16/03/2022.
. Minerali di Conflitto, Regolamento (UE) 2017/821 e tutti i successivi aggiornamenti, compresa la modifica M1 attraverso il Regolamento Delegato 2020/1588, e Dodd-Frank Wall Street Reform and Consumer Protection Act Section 1502.

Material conforming to the following European directives/regulation:
. REACH regulation 2006/1907/EC and all subsequent updates, including modification M80 Delegate Directive, and SVHC Candidate List updated to 01/17/2023.
. ROHS Directive 2011/65/EU and all subsequent updates, including the M80 amendment through the Delegated Directive 2022/1632, and Italian Legislative Decree 27 of 03/04/2014.
. WEEE Directive 2012/19/EU and all subsequent updates, including the M1 amendment through Directive 2018/849.
. ELV (End-of-Life Vehicles) Directive 2000/53/EC and all subsequent updates, including the modification M15 through Directive 2020/363
. Radioactive Contamination, Directive 2013/59/EURATOM and Italian Legislative Decree No. 101 of 31 July 2020.
. Canadian List 168 updated 03/16/2022.
. Conflict Minerals, Regulation (EU) 2017/821 and all subsequent updates, including amendment M1 through Delegated Regulation 2020/1588, and Dodd-Frank Wall Street Reform and Consumer Protection Act Section 1502.

a CROSSWIND
16/10/24

Pag. 2 / 2 RODACCIAI: The Work Inspector
Alessia Porta

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C.F. 02187360067
VAT: IT00571320076 - R.E.A. n. AO-50474

Company with Management Systems certified according to ISO 9001, IATF 16949, EN 9100 and ISO 14001.

INSPECTION CERTIFICATE 3.1 (EN 10204:2004)
DOCUMENT NUMBER 2020018438

SFERA / BALL

CUSTOMER'S ORDER:	254		
MANUFACTURER'S WORKS:	AOSTA, VIA PARAVERA 16 - ITALY		
PRODUCER OF THE DOC:	QUALITY DEPARTMENT		
MANUFACTURER'S WORKS ORDER NO:	0001118068 / 000010		
MARK OF THE MANUFACTURER:	**COGNE**		
DISPATCH NOTE:	81346050 / 000010 WEIGHT: 232 KG / 512 LB		
THE CERTIFIED PRODUCTS ARE COMPLYING TO THE PURCHASE ORDER, EXCEPT FOR EXEMPTIONS AGREED WITH THE CUSTOMER, IF ANY.			
INTERNAL SPEC:	STOCKBARREW2	TECHNICAL RULE:	AD2000
PRODUCT:	PEL PEELED ROUND BARS TOLERANCE: ISOK11		
SURFACE FINISH:	2B Cold Finished		
PRODUCT DELIVERY CONDITION:	RS SOLUTION ANNEALED		
PRODUCT DIMENSIONS (mm):	45,000 (1,772 in)	LENGTH (mm)	06000 06200 (00236 00244 in)
GRADE:	AISI 316/316L EN1.4401/4404	INTERNAL GRADE:	F316L IMCO
IDENTIFICATION HEAT NO:	072244	IDENTIFICATION LOT NO:	201970
MARKING OF THE PRODUCT:	1.4404	TEST PIECE N:	197

REFERENCE NORMS: EN 10088-3 2014, EN 10272 2016, ASTM A276/A276M, ASTM A479/A479M, ASTM A193 B8MCLASSE 1D, ASME SA276/SA276M, ASME SA479/SA479M, AMS 5653J, AMS 5648M, ISO15156-3/NACE MR0175 2015, NACE MR0103/ISO 17945, NORSOK M630 MDSS01 REV5.
REFERENCE NORMS FOR CHEMICAL COMPOSITION AND MECHANICAL PROPERTIES: ASTM A182, ASME SA182.
REFERENCE NORMS ONLY FOR CHEMICAL COMPOSITION: EN 10222-5 2017,ASTM A403-07a, ASTM A484-18a,ASTM A314-08, AMS-QQ-S-763D.
ASME SECT.II PART A EDITION 2015-2017-2019
THE PRODUCT IS CONFORMING TO THE CONTRACT AGREEMENT AND TO THE RULE AD2000-MERKBLATT W0/W2.
ASTM A484 DOES NOT APPLY FOR SIZE AND LENGTH TOLERANCES.
STEELMAKING EAF + AOD + CONTINUOUS CASTING
REFERENCE NORM ASME BPVC.II.A-2015.
HOT ROLLED
REDUCTION RATIO 14,8

CHEMICAL LADLE ANALYSIS ACCORDING TO ASTM A751 - EN ISO 14284
Control lot No. - Weight :020000828767 - 83.288 KG - 183.616 LB

ELEMENTS	C	Si	Mn	P	S	N	Cr	Mo	Ni	Cu
OBTAINED	0,015	0,34	1,74	0,027	0,024	0,080	16,78	2,05	10,21	0,41

ELEMENTS	Co
OBTAINED	0,16

HARDNESS TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000828961 - 2.300 KG - 5.071 LB
SPECIFICATION ENISO6506 HARDNESS TEST HB TESTING METHOD: 10/3000
OBTAINED 171

IMPACT TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000828961 - 2.300 KG - 5.071 LB
SPECIFICATION EN ISO 148-1-KV2 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 20
MEASUREMENT UNIT J

OBTAINED	430	432	440	430	439	434	434	440	438	433
	431	439								

DATE 18.05.2020 BARBARA VIETTI MV(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne
REVIEW DATE 01.12.2021 N. REVIEW 1

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SFERA / BALL

TENSILE TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000828961 - 2.300 KG - 5.071 LB
SPECIFICATION EN-ISO6892-1 DIRECTION OF THE TEST PIECE: L

	RM	RP02	A5	Z	RP1
MEASUREMENT UNIT	MPA	MPA	% 5.0 D	%	NMM
OBTAINED	578	286	56,1	80,5	321
	592	287	55,6	80,1	321
	582	274	54,2	79,4	306
	585	274	55,6	81,2	312

GRAIN SIZE
Control lot No. - Weight :020000828961 - 2.300 KG - 5.071 LB
SPECIFICATION ASTME112 --
OBTAINED 5 7

MATERIAL IN COMPLIANCE WITH THE NORSOK M-630 MDS S01
IMPACT TEST
Control lot No. - Weight :020000828961 - 2.300 KG - 5.071 LB
SPECIFICATION EN ISO 148-1 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 196-
MEASUREMENT UNIT J

OBTAINED	181	183	188	177	175	200	188	174	194	183
	197	173								

TENSILE TEST
Control lot No. - Weight :020000828961 - 2.300 KG - 5.071 LB
SPECIFICATION ASTMA370-E8-0.5"SPEC DIRECTION OF THE TEST PIECE: L

	RMB	RP02B	ZB	AL2B
MEASUREMENT UNIT	KSI	KSI	%	% 4,0 D
OBTAINED	85	40	80,7	59,7
	85	42	81,2	60,3
	86	42	81,3	60,1
	85	41	81,0	58,6

COUNTRY OF MELTING AND ORIGIN: ITALY, THE MATERIAL COMPLIES WITH FAR DFARS 252.225-7009 ALT 1.
The products delivered are conforming to EN10088-5 and bear the CE marking on the basis of the test results here reported and the continuous surveillance, assessment and approval by MPA NRW (certificate no. 0432-CPR-00166-01)
Material produced according to the system #Regulation 305/2011/EU of the European Parliament and of the Council of 9 March 2011#
DOCUMENT ISSUED IN AGREEMENT WITH TUEV BAYERN(11.1972) WAVING OF COUNTERSIGNING (SEE TUEV BAYERN LETTER DATED 17.01.80).
MARKING: SYMBOL OF THE MANUF. WORK, MATERIAL N. , CAST N., LOT N., RECEIVING AGENT STAMP
CORROSION TEST ACCORDING TO ASTM A262 PRACTICE E EN ISO 3651-2 PRACTICE A: SATISFACTORY.

DATE 18.05.2020 BARBARA VIETTI MV(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne
REVIEW DATE 01.12.2021 N. REVIEW 1

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CROSSWIND 16/10/24

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SFERA / BALL

ANTIMIXING TEST BY PORTABLE SPECTROMETRE: CONFORMING
EDDY CURRENT INSPECTION OF SURFACE ACCORDING TO EN 10277 CLASS 4.
DIMENSIONAL CONTROL ACCORDING TO EN 10278: SATISFACTORY.
NO WELDING REPAIR ON THE MATERIAL.
ULTRASONIC TEST ACCORDING TO EN 10308 Class.3: SATISFACTORY
QUALITY SYSTEM CERTIFIED TO UNI EN ISO 9001:2015 -IATF 16949:2016 (THE LAST ONE ONLY FOR WIRE ROD AND HOT ROLLED-PEELED-GROUND STAINLESS STEEL BARS).
MATERIAL ACCORDING TO NORSOK M630 EDITION 6.
INSPECTOR'S STAMP LF
THE PRODUCT SATISFIES THE DIRECTIVES: 2015/863/EU (ROHS3) - 2011/65/EU (ROHS2) - 2000/53/EU - 2002/95/EU(RoHS) - 2003/11/EU-2005/618/EU AND PED 2014/68/EU.
THE MATERIAL IS FREE OF ANY MERCURY, MERCURY COMPOUNDS AND OR RADIUM CONTAMINATION AT TIME OF SHIPMENT AND WAS PRODUCED WITHOUT USING OZONE DEPLETING SUBSTANCES OF CLASS I AND II.
RADIOACTIVITY CONTROL PERFORMED WITH A GAMMA SPECTROMETER: ASTM E181.
GAMMA ACTIVITY ON THE PRODUCTS BELOW 0.1 BQ/G ACCORDING TO EU RESOLUTION 2013/59/EURATOM , IAEA RS-G-1.7 AND IAEA SSG-17.

CE 0432

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16/10/24

DATE 18.05.2020 BARBARA VIETTI MV(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne
REVIEW DATE 01.12.2021 N. REVIEW 1

CORPO BONNET / BONNET BODY

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST040838 / 2024 /
Prüfung/Test/Essai

Ordine nr: ORD.24000161
Bestell / Your order / Commande

Conferma ordine nr: **AN24000318**
Werks/Our Order/Ref nr.

Avviso di Spedizione: **A-AN24000296**
Lieferanzeige/Packing list/B.L.

Stato di fornitura: Laminato - Solubilizzato FINITO A FREDDO
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore:
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung / Marking / Marquage

SPECIFICHE : Anforderungen / Requirements / Exigences	Note: Aufzeichnungen / Notes / Notes
VAL STOCK W2 A/1 1.4404/316L A,CF	
AD 2000-M. W 2 2022 1.4401 A,CF (0)	(0)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
AD 2000-M. W 2 2022 1.4404 A,CF (1)	(1)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
AISI . 316/316L	
AMS-QQ-S-763 D 316/316L A,CF	
ASME SA182 2023 S31600/03 A (2)	(2)Section II Part A 2023 EDITION For products machined directly from bar refer to ASME SA479.
ASME SA276 2023 S31600/03 A,CF (3)	(3)Section II Part A 2023 EDITION
ASME SA479 2023 S31600/03 A (4)	(4)Section II Part A 2023 EDITION
ASTM A182 2023 S31600/03 A (5)	(5)For products machined directly from bar refer also to ASTM A479.
ASTM A262 PR. E 2015 316/316L (6)	(6)Reapproved 2021
ASTM A276 2024A S31600/03 A,CF	
ASTM A370 2022 .	
ASTM A479 2023A S31600/03 A	
ASTM E10 2023 .	
ASTM E8 2022 .	
EN 10088 PART 3 2014 1.4401 A,CF	
EN 10088 PART 3 2014 1.4404 A,CF	
EN 10272 2016. 1.4401 A,CF	
EN 10272 2016. 1.4404 A,CF	
ISO 148-1 2016 .	
ISO 3651-2 98 METHOD A T1	
ISO 6506-1 2014 .	
ISO 6892-1 2019 .	
NACE MR0103 2015 S31600/03 A (7)	(7)ANSI/NACE MR0103/ISO 17945 November 23, 2015
NACE MR0175 4 S31600/03 A (8)	(8)ANSI/NACE MR0175/ISO 15156-3:2020 Fourth edition, approved 21 Sep 2022.
QQ-S-763 F 316/316L A,CF	
ACH CO . .	
KV L -196C . ISO 148-1	
MDS S01 5 316 A,CF (9)	(9)Norsok-standard M-630 Edition 6, October 2013
ASTM A479 2023A S31600 A	

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Tolleranza: h11 - DIN668/EN10278
Toleranz/Allowance/Tolerance

Pos. nr.	Oggetto	Dimensioni - mm	Lunghezza - mm	Colata	Pezzi	Peso - KG	Lotto nr.
0010	Esagono	22,000	3030/ 3030	291893		901,0	217704270

x CROSSWIND 16/10/24

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 21/03/2024
VCQ012 - MEST040838

Direzione Qualità
Qualitätsmanagement/Quality Management/Gestion Qualité
R.BERTELLI

Direzione Prodotto
Produktmanagement/Product Management/Direction Produit
P.MESSORI

CORPO BONNET / BONNET BODY

Acciaierie Valbruna S.p.A.

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CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST040838 / 2024 /

Ordine nr: ORD.24000161 (Bestell / Your order / Commande)

Conferma ordine nr: AN24000318 (Werks/Our Order/Ref nr.)

Avviso di Spedizione: A-AN24000296 (Lieferanzeige/Packing list/B.L.)

Stato di fornitura: Laminato - Solubilizzato FINITO A FREDDO (Lieferzustand / Delivery state / Etat de livraison)

Tipo di Elaborazione: E+AOD (Erschmelzungsart / Melting process / Mode d'elaboration)

Qualità: 1.4401/1.4404/316/316L (Werkstoff/Grade/Nuance)

Marca: MVAPML (MAXIVAL) (Markenbezeichnung / Brand / Nuance)

Produttore: (Hersteller/Item/Usine productrice)
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: (Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice) AV

Punzone del Collaudatore: (Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur) MR

Punzonatura: 1.4401/1.4404 (Kennzeichnung / Marking / Marquage)

TEST ALLO STATO DI FORNITURA
Test on delivery condition Prüefung auf lieferbereitem produkt test a l'etat de fourniture Prueba sobre el material así come entregado

1) L=longitudinale/Längs, T=trasversale/quer, O=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Lag. diam. epais mm	°C	Posiz. Saggio Prelevamento Location Emplacement	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement A5 %		Strizione Einschnürung Reduction of area Striction Z %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Härte Hardness Dureté HB		
Valori richiesti / Anforderungen/Required values/Valeurs demandées		min		200	235	500	20	-	-	-	-			-		
		max				900								315		
A	10	20	L	480	548	678	44		67					224		
G	10	20	L	484	550	683	43		65					227		

TEST ALLO STATO DI FORNITURA
Test on delivery condition / Prüefung auf lieferbereitem produkt / Test a l'etat de fourniture / Prueba sobre el material así come entregado

TEST		min	max	
G	Dimensioni grano x ASTM E112			5

Charpy per ISO 148-1

1) L=longitudinale/Längs, T=trasversale/quer, O=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Lag. diam. epais mm	°C	Posiz. Saggio Prelevamento Location Emplacement	Resilienza Kerbschlagarbeit Impact Value Resilience KV_2 J			Espansione laterale - Lateral Expansion - Lateral ex mm			Shear - Shear - % Shear %		
Valori richiesti / Anforderungen/Required values/Valeurs demandées		min		-	-	-	-	-	-	-	-	-
		max										
B	10X10	-196	L	129	134	139	1,487	1,328	1,210	60	58	60

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/Längs, T=trasversale/quer, O=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Lag. diam. epais mm	°C	Posiz. Saggio Prelevamento Location Emplacement	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Härte Hardness Dureté HB		
Valori richiesti / Anforderungen/Required values/Valeurs demandées		min		210	-	517	-	35	-	50	-			-		
		max												235		
C	12,5	20	L	483		681		46		69				222		

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 21/03/2024	Direzione Qualità / Qualitätsmanagement/Quality Management/Gestion Qualité	Direzione Prodotto / Produktmanagement/Product Management/Direction Produit	Pagina
VCQ012 - MEST040838	R.BERTELLI	P.MESSORI	2 di 4

CORPO BONNET / BONNET BODY

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST040838 / 2024 /

Ordine nr. / Bestell / Your order / Commande: ORD.24000161

Conferma ordine nr. / Weiss/Our Order/Ref nr.: AN24000318

Avviso di Spedizione / Lieferanzeige/Packing list/B.L.: A-AN24000296

Stato di fornitura / Lieferzustand / Delivery state / Etat de livraison: Laminato - Solubilizzato FINITO A FREDDO

Tipo di Elaborazione / Erschmelzungsart / Melting process / Mode d'elaboration: E+AOD

Qualità / Werkstoff/Grade/Nuance: 1.4401/1.4404/316/316L

Marca / Markenbezeichnung / Brand / Nuance: MVAPML (MAXIVAL)

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Herstellwerkes / Trade marks / Sigles de l'usine productrice: AV

Punzone del Collaudatore / Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur: MR

Punzonatura / Kennzeichnung / Marking / Marquage: 1.4401/1.4404

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta / Probestab / Specimen/Eprouvette Lung.Dim. Spec. Nella Dim. / Dicke Width Dim. / Epaisseur Lung. dim. / epais mm	°C		Posiz. Saggio / Probenlage / Location / Emplacement	Resilienza / Kerbschlagarbeit / Impact Value / Resilience KV2 J			Espansione laterale / Lateral Expansion			Shear / Shear %		
Valori richiesti / Anforderungen/Required values/Valeurs demandées		min / max			100	100	100	-	-	-	-	-	-
F	10X10	20	L		189	194	199						
H	10X10	20	L		180	190	186						

Tensile testing according to ISO 6892-1
Impact testing according to ISO 148-1
Mechanical properties according to ASTM A370.
Brinnell hardness according to ASTM E10
Tensile testing according to ASTM E8
Brinnell hardness according to ISO 6506-1

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Analisi chimica
Chemische Zusammensetzung / Chemical Analysis / Analyse chimique

Colata / Heat / Schmelze / Coulée	C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	Co %	P %	S %	N %				
min - max	0,030	1,00	2,00	16,50 - 18,00	2,00 - 2,50	1,00	10,00 - 13,00		0,045	0,030	0,100				
291893	0,019	0,52	1,55	16,65	2,01	0,48	10,17	0,140	0,030	0,030	0,066				

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 21/03/2024
VCQ012 - MEST040838

Direzione Qualità / Qualitätsmanagement/Quality Management/Gestion Qualité
R.BERTELLI

Direzione Prodotto / Produktmanagement/Product Management/Direction Produit
P.MESSORI

CROSSWIND 16/10/24 R

CORPO BONNET / BONNET BODY

Acciaierie Valbruna S.p.A.

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Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST040838 / 2024 /
Prüfung/Test/Essai

Ordine nr: ORD.24000161
Bestell
Your order
Commande

Conferma ordine nr: AN24000318
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-AN24000296
Lieferanzeige/Packing list/B.L

Stato di fornitura: Laminato - Solubilizzato FINITO A FREDDO
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung
Marking
Marquage

Reduction ratio = 78,0 : 1
Solution annealed 1060°C for 180'(total time)/water cooled.
SURFACE QUALITY COMPLIANT TO EN 10088-3 TAB.1 COND. 2H
"Issued in agreement with TÜV SÜD Industrie Service GMBH (07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

Sono state soddisfatte tutte le condizioni richieste Die gestellen Anforderungen sind lt. Anlage erfüllt The material has been furnished in accordance with the requirements Le materiel à été trouvé conforme aux exigences	Controllo antimescolanza con tecnica XRF/OES portatile : OK Verwechslungprüfung: durch XRF/OES Gerät geführt : OK Antimixing testing performed with XRF/OES portable : OK Contrôle antimélange svt technique XRF/OES portable : OK	Controllo visivo e dimensionale: soddisfa le esigenze Besichtigufig und Ausmessung: ohne Beanstandung Visual inspection and dimensional checks:satisfactory Contrôle visuel et dimensions: satisfaisant

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD`S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 21/03/2024 VCQ012 - MEST040838	**Direzione Qualità** Qualitätsmanagement/Quality Management/Gestion Qualité **R.BERTELLI**	**Direzione Prodotto** Produktmanagement/Product Management/Direction Produit **P.MESSORI**	Pagina 4 di 4

STELO / STEM

Rodacciai

23842 Bosisio Parini (LC) – Via Giuseppe Roda 1 – Italia
Tel. +39 031878111 – Fax +39 031878312
www.rodacciai.com – info@rodacciai.com

Azienda con sistema di gestione certificato da IGQ secondo UNI EN ISO 9001:2015

The Company's Quality Management System is certified by IGQ according to UNI EN ISO 9001:2015

CERTIFICATO DI CONTROLLO Inspection Certif N. 174495 Date 14/11/2023

Secondo According to . . . . . EN 10204:2004 3.1

ORDINE - Order N. 372 Date 10/11/2023

D.d.T. - Delivery note N. 11714/04 Date 14/11/2023

Weight KG 411,00 **Odp. Nr.** 2022/A/58282
Tolerance ISO286-2 h9 + 0,000 - 0,036 mm **Bars Length** 3.000 - 3.050 mm

QUALITA' - Grade

STANDARD	EN 10088-3:2014	X2CrNiMo17-12-2	1.4404 / 316L
STANDARD	EN 10088-3:2023	X5CrNiMo17-12-2	1.4401 / 316

Mark RODACCIAI . . . . . 316 PLUS
PROFILO - Shape . . . . . ROUND
DIMENSIONE - Size . . . . . mm 10,00
ESECUZIONE - Form of delivery . . . . . ROUGH GROU.

COLATA - Heat 172303

ANALISI CHIMICA DI COLATA - Cast analysis % by mass

C	Mn	Si	S	P	Cr	Ni	Mo	Cu	Co	N
0,021	1,820	0,360	0,0220	0,025	16,640	10,100	2,100	0,360	0,150	0,0760

CARATTERISTICHE MECCANICHE ALLO STATO DI FORNITURA
Mechanical properties of the delivered material

		Tested
Tensile Strength	Rm (MPa)	746,0
Proof Stress	Rp (1) (MPa)	692,0
Proof Stress	Rp (0,2) (MPa)	612,0
Elongation	A 5 (%)	32,0
Hardness	HBW	226,0
Reduction of area	Z (%)	51,0

NOTE - Notes

Processo di Fusione: E + A. O. D.
Trattamento termico: Temperatura di Solubilizzazione 1060°C
Tempo Mantenimento: 4 Ore, Raffreddamento in Acqua
Prova di Corrosione Intergranularena: ASTM A262-15 "E"
Materiale Conforme a NACE MR-0175/ISO 15156-3:2015
NACE MR-103/ISO 17495-1:2016

Pag. 1 / Segue

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Azienda con sistema di gestione certificato da IGQ secondo UNI EN ISO 9001:2015

The Company's Quality Management System is certified by IGQ according to UNI EN ISO 9001:2015

Segue certificato di controllo N. 174495 Date 14/11/2023
Inspection Certificate's continuance

NOTE - Notes

Materiale conforme a: ASTM A276-24a / A479-23a/ A182-24
ASME SA: 479-21 276-21 182; UNS 31600 - 31630 AISI 316-316L
Corrosione Intercristallina EN ISO 3651-2:98 Met.A

Melting Process: E + A. O. D
Heat treatment: annealed temperature 1060°C
Soaking time: 4 Hours, Cooling in water
Intergranular corrosion tested to ASTM A262-15 "E"
According to: NACE MR-0175 / ISO 15156-3:2015
NACE MR-103/ISO 17495-1:2016
Material Compliant to: ASTM A276-24a / A479-23a/ A182-24
ASME SA: 479-21 276-21 182; UNS 31600 - 31630 AISI 316-316L
Intergranular Corrosion according to EN ISO 3651-2:98 Met.A

Surface quality condition 2H conforming also to EN 10277 class 3

We certify hereby, that the above mentioned products are consistent with the order prescriptions.
This certificate was generated by data system acc. to EN 10204, it is not necessary to be signed for validity.

Materiale conforme alle seguenti direttive/regolamenti europee:
. Regolamento REACH 2006/1907/CE e tutti successivi aggiornamenti, compresa la modifica M80 Direttiva Delegata 2022/1632, e SVHC Candidate List aggiornata al 17/01/2023.
. Direttiva ROHS 2011/65/UE e tutti i successivi aggiornamenti, compresa la modifica M80 attraverso la Direttiva Delegata 2022/1632, e Decreto Legislativo 27 del 04/03/2014.
. Direttiva RAEE 2012/19/UE e tutti successivi aggiornamenti, compresa la modifica M1 attraverso la Direttiva 2018/849.
. Direttiva ELV (End-of-Life Vehicles) 2000/53/CE e tutti i successivi aggiornamenti, compresa la modifica M15 attraverso la Direttiva 2020/363
. Contaminazione Radioattiva, Direttiva 2013/59/EURATOM e Decreto Legislativo N.101 del 31 Luglio 2020.
. Canadian List 168 aggiornata al 16/03/2022.
. Minerali di Conflitto, Regolamento (UE) 2017/821 e tutti i successivi aggiornamenti, compresa la modifica M1 attraverso il Regolamento Delegato 2020/1588, e Dodd-Frank Wall Street Reform and Consumer Protection Act Section 1502.

Material conforming to the following European directives/regulation:
. REACH regulation 2006/1907/EC and all subsequent updates, including modification M80 Delegate Directive, and SVHC Candidate List updated to 01/17/2023.
. ROHS Directive 2011/65/EU and all subsequent updates, including the M80 amendment through the Delegated Directive 2022/1632, and Italian Legislative Decree 27 of 03/04/2014.
. WEEE Directive 2012/19/EU and all subsequent updates, including the M1 amendment through Directive 2018/849.
. ELV (End-of-Life Vehicles) Directive 2000/53/EC and all subsequent updates, including the modification M15 through Directive 2020/363
. Radioactive Contamination, Directive 2013/59/EURATOM and Italian Legislative Decree No. 101 of 31 July 2020.
. Canadian List 168 updated 03/16/2022.
. Conflict Minerals, Regulation (EU) 2017/821 and all subsequent updates, including amendment M1 through Delegated Regulation 2020/1588, and Dodd-Frank Wall Street Reform and Consumer Protection Act Section 1502.

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Pag. 2 / 2 RODACCIAI: The Work Inspector
Alessia Porta

OTTURATORE / TIP

Acciaierie Valbruna S.p.A.

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Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST140440 / 2023 /
Prüfung/Test/Essai

Ordine nr: VS ORD MAIL
Bestell / Your order / Commande

Conferma ordine nr: AN23001468
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-AN23000875
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Laminato - Solubilizzato FINITO A FREDDO
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Liefernwerkes / Trade marks / Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung / Marking / Marquage

SPECIFICHE : Anforderungen / Requirements / Exigences	Note: Aufzeichnungen / Notes / Notes
VAL STOCK W2 A/1 1.4404/316L A,CF	
AD 2000-M. W 2 2022 1.4401 A,CF (0)	(0)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
AD 2000-M. W 2 2022 1.4404 A,CF (1)	(1)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
AISI . 316/316L	
ASME SA182 2021 S31600/03 A (2)	(2)Section II Part A 2021 EDITION For products machined directly from bar refer to ASME SA479.
ASME SA276 2021 S31600/03 A,CF (3)	(3)Section II Part A 2021 EDITION
ASME SA479 2021 S31600/03 A (4)	(4)Section II Part A 2021 EDITION
ASTM A182 2023 S31600/03 A (5)	(5)For products machined directly from bar refer also to ASTM A479.
ASTM A262 PR. E 2015 316/316L (6)	(6)Reapproved 2021
ASTM A276 2023 S31600/03 A,CF	
ASTM A370 2022 .	
ASTM A479 2023A S31600/03 A	
ASTM E10 2023 .	
ASTM E8 2022 .	
EN 10088 PART 3 2014 1.4401 A,CF	
EN 10088 PART 3 2014 1.4404 A,CF	
EN 10272 2016. 1.4401 A,CF	
EN 10272 2016. 1.4404 A,CF	
ISO 3651-2 98 METHOD A T1	
ISO 6506-1 2014 .	
ISO 6892-1 2019 .	
ACH CO . .	
PME HB L . .	
NACE MR0175 4 S31600/03 A (7)	(7)ANSI/NACE MR0175/ISO 15156-3:2020 Fourth edition, approved 21 Sep 2022.
NACE MR0103 2015 S31600/03 A (8)	(8)ANSI/NACE MR0103/ISO 17945 November 23, 2015

		Tolleranza: h9 - DIN671/EN10278 Toleranz/Allowance/Tolerance					
Pos. nr. Pos. nr Item nr Nr. de poste	Oggetto Gegenstand Product description Descrip. du produit	Dimensioni - mm Abmessungen Dimension Dimension	Lunghezza - mm Länge Length Longueur	Colata Schmelze Heat Coulée	Pezzi Stückzahl Pieces Pieces	Peso - KG Gewicht Weight Poids	Lotto nr. Losnr Lot nr Lot nr
0010	Tondo	9,000	3000/ 3050	290962		162,0	210502620

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16/10/24

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 15/11/2023 VCQ012 - MEST140440	**Direzione Qualità** Qualitätsmanagement/Quality Management/Gestion Qualité **R.BERTELLI**	**Direzione Prodotto** Produktmanagement/Product Management/Direction Produit **P.MESSORI**	Pagina 1 di 3

OTTURATORE / TIP

Acciaierie Valbruna S.p.A.

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Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST140440 / 2023 /
Prüfung/Test/Essai

Ordine nr: VS ORD MAIL
Bestell / Your order / Commande

Conferma ordine nr: AN23001468
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-AN23000875
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Laminato - Solubilizzato FINITO A FREDDO
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung / Marking / Marquage

TEST ALLO STATO DI FORNITURA

Test on delivery condition Prüefung auf lieferbereitem produkt test a l'etat de fourniture Prueba sobre el material así come entregado

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Durm. Dicke Width Diam. Thickness Larg. diam. epais. mm	°C	Posiz. Saggio Prelevatogo Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement A5 %		Strizione Einschnürung Reduction of area Striction Z %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs demandées		min		200	235	500	20	-	-	-	-			-		
		max				900								315		
A	9	20	L	637	686	720	31		73					234		
E	9	20	L	639	690	726	30		71					235		

TEST ALLO STATO DI FORNITURA

Test on delivery condition / Prüefung auf lieferbereitem produkt / Test a l'etat de fourniture / Prueba sobre el material así come entregado

TEST		min	max	
A	Dimensioni grano x ASTM E112			5

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Durm. Dicke Width Diam Thickness Larg. diam epais. mm	°C	Posiz. Saggio Prelevatogo Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs demandées		min		310	-	620	-	30	-	50	-			235		
		max														
D	6	20	L	640		723		33		74				230		

Tensile testing according to ISO 6892-1
Mechanical properties according to ASTM A370.
Brinnell hardness according to ASTM E10
Tensile testing according to ASTM E8
Brinnell hardness according to ISO 6506-1

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Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat Schmelze/Coulée		C %	Si %	Mn %	Cr %	Mo %	Ni %	Co %	P %	S %	N %
	min -	-	-	-	16,50	2,00	10,00	-	-	-	-
	max	0,030	1,00	2,00	18,00	2,50	13,00	-	0,045	0,030	0,100
290962		0,015	0,46	1,48	16,68	2,03	10,23	0,127	0,030	0,023	0,048

CROSSWIND 16/10/24

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 15/11/2023 VCQ012 - MEST140440	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 2 di 3

OTTURATORE / TIP

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST140440 / 2023 /
Prüfung/Test/Essai

Ordine nr: VS ORD MAIL
Bestell Your order Commande

Conferma ordine nr: AN23001468
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-AN23000875
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Laminato - Solubilizzato FINITO A FREDDO
Lieferzustand Delivery state Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart Melting process Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes Trade marks Sigles de l'usine productrice

Punzone del Collaudatore:
Stempel des Werkssachverständigen Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung Marking Marquage

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

Reduction ratio = 457,3 : 1
Material annealed 1040°C for 135'(total time)/water cooled.
SURFACE QUALITY COMPLIANT TO EN 10088-3 TAB.1 COND. 2H
"Issued in agreement with TÜV SÜD Industrie Service GMBH
(07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by
Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

Sono state soddisfatte tutte le condizioni richieste
Die gestellen Anforderungen sind e. Anlage erfüllt
The material has been furnished in accordance with the requirements
Le materiel à été trouvé conforme aux exigences

Controllo antimescolanza con tecnica XRF/OES portatile : OK
Verwechslungprüfung: durch XRF/OES Gerät geführt : OK
Antimixing testing performed with XRF/OES portable : OK
Contrôle antimélange svt technique XRF/OES portable : OK

Controllo visivo e dimensionale: soddisfa le esigenze
Besichtigung und Ausmessung: ohne Beanstandung
Visual inspection and dimensional checks:satisfactory
Contrôle visuel et dimensions: satisfaisant

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD'S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 15/11/2023 VCQ012 - MEST140440	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité **R.BERTELLI**	Direzione Prodotto Produktmanagement/Product Management/Direction Produit **P.MESSORI**	Pagina 3 di 3

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x CROSS WIND 16/10/24 R

ROSETTI MARINO ITEM 160

COD. VLBBNN07201H00

TAG:

BLPH-MV-032, BLPH-MV-266, BLPH-MV-389, BLPH-MV-416, BLPH-MV-433, BLPH-MV-442

INDRA ITEM 160

COD. 00.VSF.2681/V

indra VALVES - ITALY	***Certificazione dei materiali*** ***EN 10204 3.1 come da allegati*** ***Material certification*** ***EN 10204 3.1 as per attachments***	**MD-02-04-IT-UK / VSF** **Rev. 16** **Data: 08-Nov-2018** **CM/IT/UK**

Nr. *No.* **24-1966** — **Data /** *Date :* **8-Oct-2024**

Cliente / *Customer* **ROSETTI MARINO SPA**

Vs. ordine Nr. / *Your order Nr.* **1724000798 REV.2** — **Data /** *Date :* **26-Jun-2024**

Ns. commessa Nr. / *Our job Nr.* **24 01216** — **Data /** *Date :* **3-Jul-2024**

Ns. D.D.T. Nr. / *Our advise note Nr.* — **Data /** *Date :*

Ordine di produzione / Production order number : 24 01216/160 - 294062

Lotto / Material batch number : 294062

Pos. Cliente *Customer Item*	*Pos. Indra* *Indra Item*	*Codice / Code* *Ns./ Our*	 *Vs. / Your*	*Q.tà / Q.ty*	*Nr. di serie* *Serial Number*	*Descrizione /Description*
160	160	00.VSF.2681/V	VLBBNN07201H00	6	From 106010 to 106015	INDRA BALL VALVE DBB-898-HR-40-H300RF3-H-D-DLF-DL-N-PG-L123-TG-TGW-TV-DP-PMI2-PD2-BI-GT-CR-TA-FE2-FS-FE-SPC1

Elenco / List

Componente / *Component*	Colata / Heat	Materiale *Material*	Numero del certificato Certificate number
Corpo Valvola / Valve Body	294062	AISI 316/316L NACE	MEST080042/2024/ - UT24003648
Closure H300RF3	292410	AISI 316/316L NACE	MEST053963/2024/ - UT24002496
Tirante / Stud bolt	172522	ASTM A193 B8M Cl.2	1368345 - 1369552
Dado / Nut	160903S05	ASTM A194 Gr.8M	5066
Stelo antiespulsione sfera / Ball stem	291905	AISI 316/316L NACE	MEST084078/2023/
Sfera / Ball	372447	AISI 316/316L NACE	2023013898
Corpo bonnet/ Bonnet body	291893	AISI 316/316L NACE	MEST040838/2024/
Stelo spillo / Stem needle	172303	AISI 316/316L NACE	174495
Otturatore / Tip	290962	AISI 316/316L NACE	MEST140440/2023/

NOTE / **REMARKS :** TAG: BLPH-MV-032, BLPH-MV-266, BLPH-MV-389, BLPH-MV-416, BLPH-MV-433, BLPH-MV-442

PREPARATO DA: **ELEONORA RANZANI**
PREPARED BY: **DOCUMENTION MANAGER**

APPROVATO DA: **LUCIA NOSOTTI**
APPROVED BY: **QUALITY ASSURANCE MANAGER**

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E-mail: indra@indra.it - http://www.indra.it

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23/10/24

CORPO VALVOLA / VALVE BODY

Acciaierie Valbruna S.p.A.

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Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST080042 / 2024 /

Cliente / Besteller/Purchaser/Client:
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 01999
Bestell / Your order / Commande

Conferma ordine nr: MI24005018
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24003675
Lieferanzeige/Packing list/B.L.

Stato di fornitura / Lieferzustand / Delivery state / Etat de livraison: Fucinato Solubilizzato - Pelato

Tipo di Elaborazione / Erschmelzungsart / Melting process / Mode d'elaboration: E+AOD

Qualità / Werkstoff/Grade/Nuance: 1.4401/1.4404/316/316L

Marca / Markenbezeichnung / Brand / Nuance: MVAPML (MAXIVAL)

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice: AV

Punzone del Collaudatore / Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur: MR

Punzonatura / Kennzeichnung / Marking / Marquage: 1.4401/1.4404/316/316L

SPECIFICHE : / Anforderungen / Requirements / Exigences	Note: / Aufzeichnungen / Notes / Notes
AV 316L VALVES A/1 1.4401/1.4404 A	
IS107 01 316 A	
MDS S01 5 316 A (0)	(0)Norsok-standard M-630 Edition 6, October 2013
MDS S17 1 316 A (1)	(1)Norsok-standard M-630: 2020 (2020-09-30)
AD 2000-M. W 2 2022 1.4401 A (2)	(2)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
AD 2000-M. W 2 2022 1.4404 A (3)	(3)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
API 6A 21 ANNEX M (4)	(4)Errata 1 (04/2019), Errata 2 (08/2020), Errata 3 (09/2020). Addendum 1 (July 2020) and Addendum 2 (June 2021).
API 6D 25 ANNEX H (5)	(5)Revision November 2021
ASME SA182 2023 S31600/03 A (6)	(6)Section II Part A 2023 EDITION For products machined directly from bar refer to ASME SA479.
ASME SA276 2023 S31600/03 A (7)	(7)Section II Part A 2023 EDITION
ASME SA479 2023 S31600/03 A (8)	(8)Section II Part A 2023 EDITION
ASTM A182 2024 S31600/03 A (9)	(9)For products machined directly from bar refer also to ASTM A479.
ASTM A262 PR. E 2015 316/316L (A)	(A)Reapproved 2021
ASTM A276 2024A S31600/03 A	
ASTM A370 2024 .	
ASTM A479 2023A S31600/03 A	
ASTM E381 2022 .	
ASTM E562 2019 . (B)	(B)19E01
EN 10088 PART 3 2014 1.4401 A (C)	(C)Chemical and mechanical properties only.
EN 10088 PART 3 2014 1.4404 A (D)	(D)Chemical and mechanical properties only.
EN 10222 PART 5 2017 1.4401 A	
EN 10222 PART 5 2017 1.4404 A	
EN 10272 2016. 1.4401 A	
EN 10272 2016. 1.4404 A	
ISO 148-1 2016 .	
ISO 6892-1 2019 .	
NACE MR0103 2015 S31600/03 A (E)	(E)ANSI/NACE MR0103/ISO 17945 November 23, 2015
NACE MR0175 4 S31600/03 A (F)	(F)ANSI/NACE MR0175/ISO 15156-3:2020 Fourth edition, approved 21 Sep 2022.

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		Tolleranza: k12 / Toleranz/Allowance/Tolerance					
Pos. nr. / Pos. nr. / Item nr. / Nr. de poste	Oggetto / Gegenstand / Product description / Descrip. du produit	Dimensioni - mm / Abmessungen / Dimension / Dimension	Lunghezza - mm / Länge / Length / Longueur	Colata / Schmelze / Heat / Coulée	Pezzi / Stückzahl / Pieces / Pièces	Peso - KG / Gewicht / Weight / Poids	Lotto nr. / Losnr / Lot nr / Lot nr
0010	Tondo	170,000	5145/5145	294062		932,0	313307330

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 13/06/2024 VCQ012 - MEST080042	Direzione Qualità / Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto / Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 1 di 7

CORPO VALVOLA / VALVE BODY

Acciaierie Valbruna S.p.A.

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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST080042 / 2024 /
Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 01999
Bestell
Your order
Commande

Conferma ordine nr: MI24005018
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24003675
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Liefernwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore:
Stempel des Werksachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage

TEST ALLO STATO DI FORNITURA

TEST		min	max	
A	Dimensioni grano x ASTM E112			1
A	Ferrite delta %			1,2 %

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probentage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs démandées		min max		60	60	60	-	-	-	-	-	-
B	10X10	-196	L	253	231	242	2,086	2,112	1,095	70	70	70

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probentage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Heerte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs démandées		min max		205	-	515	-	40	-	50	-			- 235		
C	12,5	20	L	271		555		58		69				159		

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probentage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Heerte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs démandées		min max		205	-	515	-	40	-	50	-			- 235		
J	12,5	20	T	273		559		57		67				162		

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23/10/24

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 13/06/2024	Direzione Qualità	Direzione Prodotto	Pagina
VCQ012 - MEST080042	Qualitätsmanagement/Quality Management/Gestion Qualité	Produktmanagement/Product Management/Direction Produit	2 di 7
	R.BERTELLI	P.MESSORI	

CORPO VALVOLA / VALVE BODY

Acciaierie Valbruna S.p.A.

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Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST080042 / 2024 /

Cliente / Besteller/Purchaser/Client:
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr / Bestell / Your order / Commande: AF24 01999

Conferma ordine nr / Werks/Our Order/Ref nr.: MI24005018

Avviso di Spedizione / Lieferanzeige/Packing list/B.L.: A-MI24003675

Stato di fornitura / Lieferzustand / Delivery state / Etat de livraison: Fucinato Solubilizzato - Pelato

Tipo di Elaborazione / Erschmelzungsart / Melting process / Mode d'elaboration: E+AOD

Qualità / Werkstoff/Grade/Nuance: 1.4401/1.4404/316/316L

Marca / Markenbezeichnung / Brand / Nuance: MVAPML (MAXIVAL)

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice: AV

Punzone del Collaudatore / Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur: MR

Punzonatura / Kennzeichnung / Marking / Marquage: 1.4401/1.4404/316/316L

Prova di trazione per ISO 6892-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probentage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement A5 %		Strizione Einschnürung Reduction of area Striction Z %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti / Anforderungen/Required values / Valeurs demandées		min / max		205	240	510 / 690	35	-	-	-	-			- / 215		
D	10	20	T	264	296	547	52		59					156		
K	10	20	T	268	299	549	50		58					159		

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probentage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti / Anforderungen/Required values / Valeurs demandées		min / max		-	-	-	-	-	-	-	-	-
E	10X10	-196	T	78	70	71	0,586	0,591	0,574	30	30	30

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probentage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion			Shear Shear		
Valori richiesti / Anforderungen/Required values / Valeurs demandées		min / max		60	60	60	-	-	-	-	-	-
I	10X10	20	T	115	110	108						
L	10X10	20	T	119	111	100						

Tensile testing according to ISO 6892-1
Impact testing according to ISO 148-1
Mechanical properties according to ASTM A370.
Ferrite content tested according to ASTM E562.

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23/10/24

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 13/06/2024 VCQ012 - MEST080042	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 3 di 7

CORPO VALVOLA / VALVE BODY

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST080042 / 2024 /

Cliente / Besteller/Purchaser/Client:
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 01999
Bestell / Your order / Commande

Conferma ordine nr: MI24005018
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24003675
Lieferanzeige/Packing list/B.L.

Stato di fornitura: Fucinato Solubilizzato - Pelato
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung / Marking / Marquage

Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata / Heat / Schmelze/Coulée		PRE	C %	Si %	Mn %	Cr %	Mo %	Ni %	Co %	P %	S %	N %				
	min		-	-	-	16,50	2,00	10,00	-	-	-	-	-	-	-	-
	max		0,030	1,00	2,00	18,00	2,50	13,00	-	0,045	0,030	0,100	-	-	-	-
294062		24,8	0,024	0,39	1,62	16,87	2,02	10,11	0,155	0,033	0,020	0,082				

Colata / Heat / Schmelze/Coulée		Ni+(2*Mo)							
	min	14,0	-	-	-	-	-	-	-
	max	20,0	-	-	-	-	-	-	-
294062		14,2							

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Furnace calibrated according to API 6A REV 21th ED ANNEX M.
Furnace calibrated according to API 6D REV 25th ED ANNEX H.
Macroetch test per ASTM E381: acceptable.
Reduction ratio = 12,6 : 1
Solution annealed 1080°C for 3h/water cooled.
Treatment made on date 14/04/2024 in batch
furnace M9A calibration expiry date 11/05/2024.
SURFACE QUALITY GUARANTEE BY ET INSPECTION (max defect depth 1% DIAMETER)
UT ACC. TO A388/API 6A PSL3-EN 10308cl.3-ASME B16.34/IV
"Issued in agreement with TÜV SÜD Industrie Service GMBH (07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 13/06/2024	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité	Direzione Prodotto Produktmanagement/Product Management/Direction Produit	Pagina
VCQ012 - MEST080042	R.BERTELLI	P.MESSORI	4 di 7

CORPO VALVOLA / VALVE BODY

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST080042 / 2024 /
Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 01999
Bestell
Your order
Commande

Conferma ordine nr: MI24005018
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24003675
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werksachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage

Allegati / Anlagen / Enclosure / Attachments :
UT24003648 GT24001199

Sono state soddisfatte tutte le condizioni richieste	Controllo antimescolanza con tecnica XRF/OES portatile : OK	Controllo visivo e dimensionale: soddisfa le esigenze
Die gestellen Anforderungen sind it. Anlage erfüllt	Verwechslungprüfung: durch XRF/QES Gerät geführt : OK	Besichtigung und Ausmessung: ohne Beanstandung
The material has been furnished in accordance with the requirements	Antimbding testing performed with XRF/OES portable : OK	Visual Inspection and dimensional checks:satisfactory
Le material á été trouvé conforme aux exigences	Contrôle antimélange svt technique XRF/QES portable : OK	Contrôle visuel et dimensions: satisfaisant

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD`S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

WSPCC861EA820C851EA13FA81EA74BD85

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 13/06/2024 VCQ012 - MEST080042	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 5 di 7

CORPO VALVOLA / VALVE BODY

	Acciaierie Valbruna S.p.A. 36100 VICENZA (Italia) - Viale della scienza, 25 z.i. Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4	**CERTIFICATO** Certificate - Zeugnis - Certificat **N° UT24003648**	Pag 6 di 7
		CONTROLLO CON ULTRASUONI *Ultrasonic testing - Ultraschallprüfung - Controle par ultrasons*	

mod. UT02

MEST080042 / 2024 /

Cliente : INDRA S.R.L. *Customer*				**Lotto nr : 313307330** *Mill order*		
MARCA *Grade*	**DIMENSIONI - mm** *Size*	**COLATA** *Heat*	**BARRE** *Bars*	**PESO** *Weight*	**LUNGHEZZA - mm** *Length*	
MVAPML	Tondo 170,000	294062		KG : 932,0	5145	5145

T. TERMICO *Heat Treatement*	**ESECUZIONE** *Condition*	**RUGOSITA'** *Roughness*	**TOLLERANZA** *Tolerance*
Solubilizzato	Pelato	µm	k12

Istruzione : PROC CND 040 *Work Instruction*		**Criteri Accettabilità : ASTM A388** Acceptance Criteria

ELETTRONICA : Olympus Quickscan LT
Equipment

ACCOPPIANTE : ACQUA + 0253 SA
Couplant

VEL.CONTROLLO : 294 mm/sec
Testing Speed

TRASDUTTORI *Probes*	**TIPO ONDA** *Type of wave*	**FREQUENZA (MHZ)** *Frequency*	**DIMENSIONI (MM)** *Dimension*	**ANGOLO** *Angle*	**TARATURA** *Calibration*
64EL. 2.25MHZ	LONG.	2,25	128X25	0°	DAC

CONTROLLO AUTOMATICO [X] *Automatic inspection*	**CONTROLLO MANUALE** *Manual inspection*

NOTE :
Notes

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CONFORME [X] *Compliant*	**CONFORME IN DEROGA [ ]** *See Deviation*	**NON CONFORME [ ]** *Not Compliant*

ISPEZIONATO DA Inspected by	**VERIFICATO DA** Verified by	**APPROVATO DA** Approved by	**COLLAUDATORE** Inspector - Abnahmesachsverst - Inspecteur
FIRMA	**FIRMA**	**G.Parlato** ISO 9712 LEV. 2 IND2401253 **FIRMA**	

Date - Date **12/06/2024**

Operatori, strumenti e documenti di riferimento, utilizzati per il collaudo del materiale, sono identificati, controllati e/o calibrati in accordo alle norme EN, ISO e ASTM, richiamate nelle pratiche operative e istruzioni di pertinenza / *Operators, Equipment and reference documents, used for material inspection, are identified, checked and/or calibrated in accordance with EN/ISO or ASTM standards, reported in relevant documents.*

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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4

CERTIFICATO Certificate - Zeugnis - Certificat N° GT24001199 Pag 7 di 7

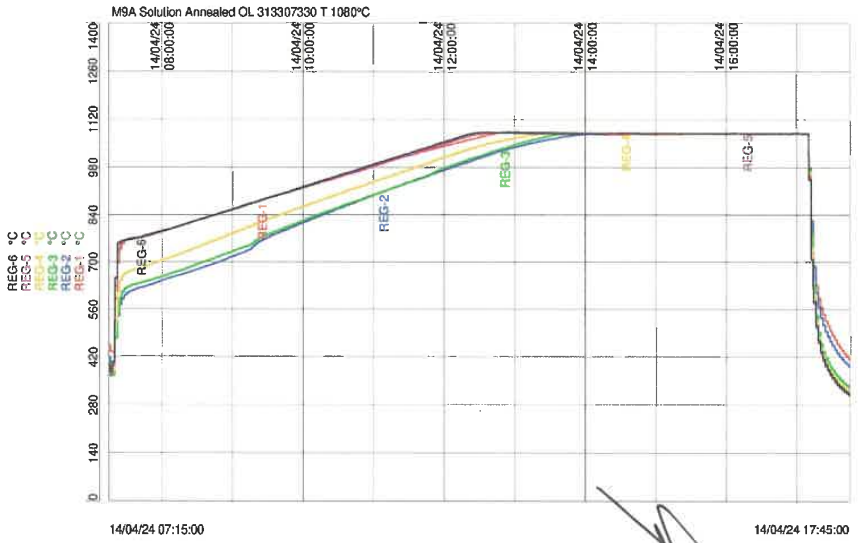
Diagrammi di trattamento termico

MEST080042 / 2024 /

Heat Treatment charts - Waermebehandlungs diagramm - Diagramme de traitement thermique

N° LOTTO : 313307330 Lot Number	Note Dettaglio : Detail Notes	Note: Notes

TEMPERATURE (°C)



TIME (HOURS)

	Approved by:	

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CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : Nach/According to/Selon — EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. Prüfung/Test/Essai — MEST053963 / 2024 /

Cliente / Besteller/Purchaser/Client INDRA S.R.L. VIA NOVARA, 10/B-C 20013 - MAGENTA - MI	**Stato di fornitura** : Lieferzustand / Delivery state / Etat de livraison	Fucinato Solubilizzato - Pelato
	Tipo di Elaborazione: Erschmelzungsart / Melting process / Mode d'elaboration	E+AOD
Ordine nr: N. AF2401382 Bestell / Your order / Commande	**Qualità**: Werkstoff/Grade/Nuance	1.4401/1.4404/316/316L
Conferma ordine nr: MI24003281 Werks/Our Order/Ref nr.	**Marca**: Markenbezeichnung / Brand / Nuance	MVAPML (MAXIVAL)
Avviso di Spedizione: A-MI24002843 Lieferanzeige/Packing list/B.L.		
Produttore : Hersteller/Item/Usine productrice	**ACCIAIERIE VALBRUNA S.P.A.**	
Marchi di Fabbrica: Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice	AV	
Punzone del Collaudatore: Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur	MR	
Punzonatura: Kennzeichnung / Marking / Marquage	1.4401/1.4404/316/316L	

SPECIFICHE : Anforderungen / Requirements / Exigences	Note: Aufzeichnungen / Notes / Notes
AV 316L VALVES A/1 1.4401/1.4404 A	
IS107 01 316 A	
MDS S01 5 316 A (0)	(0)Norsok-standard M-630 Edition 6, October 2013
MDS S17 1 316 A (1)	(1)Norsok-standard M-630: 2020 (2020-09-30)
AD 2000-M. W 2 2022 1.4401 A (2)	(2)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
AD 2000-M. W 2 2022 1.4404 A (3)	(3)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
API 6A 21 ANNEX M (4)	(4)Errata 1 (04/2019), Errata 2 (06/2020), Errata 3 (09/2020). Addendum 1 (July 2020) and Addendum 2 (June 2021).
API 6D 25 ANNEX H (5)	(5)Revision November 2021
ASME SA182 2023 S31600/03 A (6)	(6)Section II Part A 2023 EDITION For products machined directly from bar refer to ASME SA479.
ASME SA276 2023 S31600/03 A (7)	(7)Section II Part A 2023 EDITION
ASME SA479 2023 S31600/03 A (8)	(8)Section II Part A 2023 EDITION
ASTM A182 2024 S31600/03 A (9)	(9)For products machined directly from bar refer also to ASTM A479.
ASTM A262 PR. E 2015 316/316L (A)	(A)Reapproved 2021
ASTM A276 2024A S31600/03 A	
ASTM A370 2022 .	
ASTM A479 2023A S31600/03 A	
ASTM E381 2022 .	
ASTM E562 2019 . (B)	(B)19E01
EN 10088 PART 3 2014 1.4401 A	
EN 10088 PART 3 2014 1.4404 A	
EN 10222 PART 5 2017 1.4401 A	
EN 10222 PART 5 2017 1.4404 A	
EN 10272 2016. 1.4401 A	
EN 10272 2016. 1.4404 A	
ISO 148-1 2016 .	
ISO 6892-1 2019 .	
NACE MR0103 2015 S31600/03 A (C)	(C)ANSI/NACE MR0103/ISO 17945 November 23, 2015
NACE MR0175 4 S31600/03 A (D)	(D)ANSI/NACE MR0175/ISO 15156-3:2020 Fourth edition, approved 21 Sep 2022.

		Tolleranza: k12 Toleranz/Allowance/Tolerance					
Pos. nr. Pos. nr Item nr Nr. de poste	Oggetto Gegenstand Product description Descrip. du produit	Dimensioni - mm Abmessungen Dimension Dimension	Lunghezza - mm Länge Length Longueur	Colata Schmelze Heat Coulée	Pezzi Stückzahl Pieces Pieces	Peso - KG Gewicht Weight Poids	Lotto nr. Losnr. Lot nr. Lot nr.
0010	Tondo	160,000	5916/ 5916	292410	1	945,0	319310830

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 07/05/2024 VCQ012 - MEST053963	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité **R.BERTELLI**	Direzione Prodotto Produktmanagement/Product Management/Direction Produit **P.MESSORI**	Pagina 1 di 7

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Acciaierie Valbruna S.p.A.

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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST053963 / 2024 /
Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: N. AF2401382
Bestell
Your order
Commande

Conferma ordine nr: MI24003281
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24002843
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore:
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage

TEST ALLO STATO DI FORNITURA
Test on delivery condition Prüefung auf lieferbereitem produkt test a l'etat de fourniture Prueba sobre el material así come entregado

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement A5 %		Strizione Einschnürung Reduction of area Striction Z %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		205	240	510 690	45	-	-	-	-			- 215		
A	10	20	L	278	307	558	56		70					159		
I	10	20	L	281	309	563	55		68					163		

TEST ALLO STATO DI FORNITURA
Test on delivery condition / Prüefung auf lieferbereitem produkt / Test a l'etat de fourniture / Prueba sobre el material así come entregado

TEST		min	max	
I	Dimensioni grano x ASTM E112			2
I	Ferrite delta %			0,9 %

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		60	60	60	-	-	-	-	-	-
B	10X10	-196	L	225	222	221	1,856	1,822	1,834	70	70	70

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		205	-	515	-	40	-	50	-			- 215		
C	12,5	20	L	263		557		64		70				160		

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 07/05/2024
VCQ012 - MEST053963

Direzione Qualità
Qualitätsmanagement/Quality Management/Gestion Qualité
R.BERTELLI

Direzione Prodotto
Produktmanagement/Product Management/Direction Produit
P.MESSORI

CLOSURE H300RF3

Acciaierie Valbruna S.p.A.

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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST053963 / 2024 /
Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: N. AF2401382
Bestell
Your order
Commande

Conferma ordine nr: MI24003281
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24002843
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C		Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max			205	-	515	-	40	-	50	-			- 215		
L	12,5	20	T		256		554		53		62				162		

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C		Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max			60	60	60	-	-	-	-	-	-
D	10X10	-196	T		84	77	79	0,722	0,734	0,755	30	30	30

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C		Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion			Shear Shear		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max			100	100	100	-	-	-	-	-	-
H	10X10	20	L		289	290	284						
J	10X10	20	L		281	293	280						

Tensile testing according to ISO 6892-1
Impact testing according to ISO 148-1
Mechanical properties according to ASTM A370.
Ferrite content tested according to ASTM E562.

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Analisi chimica
Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat Schmelze/Coulée																	
	min	23,0	-	-	-	16,50	2,00	10,00	-	-	-	-	-	-	-	-	-
	max	28,0	0,030	1,00	2,00	18,00	2,50	13,00	-	0,045	0,030	0,100	-	-	-	-	-
	PRE		C %	Si %	Mn %	Cr %	Mo %	Ni %	Co %	P %	S %	N %					
292410	24,8		0,015	0,49	1,73	16,77	2,04	10,19	0,178	0,032	0,027	0,078					

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 07/05/2024	Direzione Qualità	Direzione Prodotto	Pagina
VCQ012 - MEST053963	Qualitätsmanagement/Quality Management/Gestion Qualité	Produktmanagement/Product Management/Direction Produit	3 di 7
	R.BERTELLI	P.MESSORI	

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST053963 / 2024 /
Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: N. AF2401382
Bestell
Your order
Commande

Conferma ordine nr: MI24003281
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24002843
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Liefernwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage

Colata /Heat Schmelze/Coulée	min 14,0 max 20,0	-	-	-	-	-	-	-
292410	Ni+(2*Mo) 14,3							

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

Furnace calibrated according to API 6A REV 21th ED ANNEX M.
Furnace calibrated according to API 6D REV 25th ED ANNEX H.
Macroetch test per ASTM E381: acceptable.
Reduction ratio = 11,5 : 1
Treatment made on date 27/01/2024 in batch furnace
M4B calibration expiry date 01/04/2024.
Solution annealed 1080°C for 4 h / water cooled.
SURFACE QUALITY GUARANTEE BY ET INSPECTION (max defect depth 1% DIAMETER)
UT ACC. TO:A388/API 6A PSL3-EN 10308cl.3-ASME B16.34/IV
"Issued in agreement with TÜV SÜD Industrie Service GMBH (07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

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xCROSSWIND 23/10/24

Allegati / Anlagen / Enclosure / Attachments :
UT24002496 GT24000805

Sono state soddisfatte tutte le condizioni richieste Die gestellen Anforderungen sind lt. Anlage erfüllt The material has been furnished in accordance with the requirements Le materiel à été trouvé conforme aux exigences	Controllo antimescolanza con tecnica XRF/OES portatile : OK Verwechslungprüfung: durch XRF/QES Gerät geführt : OK Antimixing testing performed with XRF/OES portable : OK Contrôle antimélange evt technique XRF/QES portable : OK	Controllo visivo e dimensionale: soddisfa le esigenze Besichtigung und Ausmessung: ohne Beanstandung Visual inspection and dimensional checks:satisfactory Contrôle visuel et dimensions: satisfaisant

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 07/05/2024 VCQ012 - MEST053963	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité **R.BERTELLI**	Direzione Prodotto Produktmanagement/Product Management/Direction Produit **P.MESSORI**	Pagina 4 di 7

Acciaierie Valbruna S.p.A.

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In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST053963 / 2024 /
Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: N. AF2401382
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Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD'S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 07/05/2024 VCQ012 - MEST053963	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 5 di 7

CLOSURE H300RF3

	Acciaierie Valbruna S.p.A. 36100 VICENZA (Italia) - Viale della scienza, 25 z.i. Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4	**CERTIFICATO** Certificate - Zeugnis - Certificat **N° UT24002496**	Pag 6 di 7
		CONTROLLO CON ULTRASUONI *Ultrasonic testing - Ultraschallprüfung - Controle par ultrasons*	

mod. UT02

MEST053963 / 2024 /

Cliente : INDRA S.R.L. *Customer*				**Lotto nr : 319310830** *Mill order*		
MARCA *Grade*	**DIMENSIONI - mm** *Size*	**COLATA** *Heat*	**BARRE** *Bars*	**PESO** *Weight*	**LUNGHEZZA - mm** *Length*	
MVAPML	Tondo 160,000	292410	N. 1	KG : 945,0	5916	5916

T. TERMICO *Heat Treatement*	**ESECUZIONE** *Condition*	**RUGOSITA'** *Roughness*	**TOLLERANZA** *Tolerance*
Solubilizzato	Pelato	µm	k12

Istruzione : PROC CND 040 *Work Instruction*		**Criteri Accettabilità : ASTM A388** Acceptance Criteria

ELETTRONICA : Olympus Quickscan LT
Equipment

ACCOPPIANTE : ACQUA + 0253 SA
Couplant

VEL.CONTROLLO : 339 mm/sec
Testing Speed

TRASDUTTORI *Probes*	**TIPO ONDA** *Type of wave*	**FREQUENZA (MHZ)** *Frequency*	**DIMENSIONI (MM)** *Dimension*	**ANGOLO** *Angle*	**TARATURA** *Calibration*
64EL. 2.25MHZ	LONG.	2,25	128X25	0°	DAC

CONTROLLO AUTOMATICO [X] *Automatic inspection*	**CONTROLLO MANUALE** *Manual inspection*

NOTE :
Notes

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23/10/24

CONFORME [X] *Compliant*	**CONFORME IN DEROGA [ ]** *See Deviation*	**NON CONFORME[ ]** *Not Compliant*

ISPEZIONATO DA Inspected by	**VERIFICATO DA** Verified by	**APPROVATO DA** Approved by **G.Parlato** ISO 9712 LEV. 2 IND2401253	**COLLAUDATORE** Inspector - Abnahmesachsverst - Inspecteur
FIRMA	**FIRMA**	**FIRMA**	

Date - Date **14/03/2024**

Operatori, strumenti e documenti di riferimento, utilizzati per il collaudo del materiale, sono identificati, controllati e/o calibrati in accordo alle norme EN, ISO e ASTM, richiamate nelle pratiche operative e istruzioni di pertinenza / *Operators, Equipment and reference documents, used for material inspection, are identified, checked and/or calibrated in accordance with EN/ISO or ASTM standards, reported in relevant documents.*

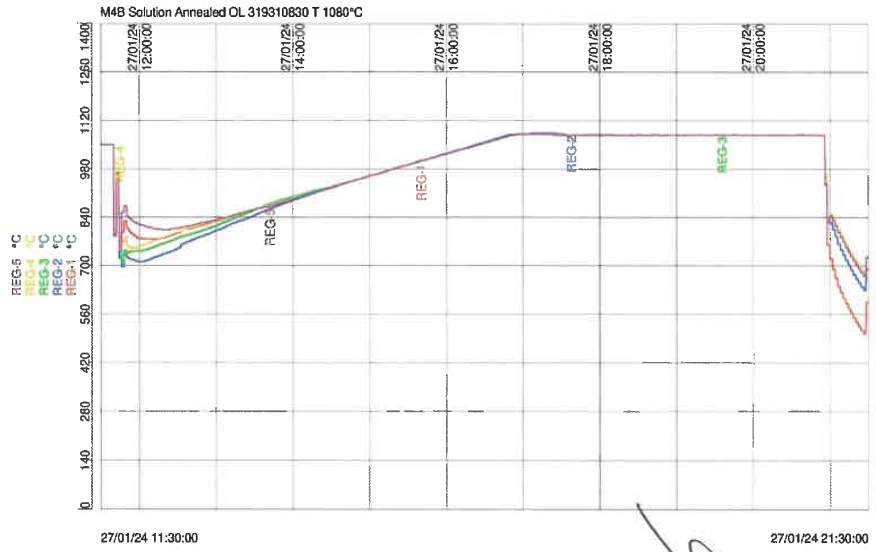
Acciaierie Valbruna S.p.A.
36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4

CERTIFICATO Certificate - Zeugnis - Certificat **N° GT24000805**

Diagrammi di trattamento termico **MEST053963 / 2024 /**

Heat Treatment charts - Waermebehandlungs diagramm - Diagramme de traitement thermique

N° LOTTO : 319310830 Lot Number	Note Dettaglio : Detail Notes	Note: Notes



x CROSSWIND 23/10/24

Approved by:

INDRA S.r.l.
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TIRANTE / STUD BOLT

COMVITEA s.r.l.
Via Isonzo 32/C - 20078 Turate (CO) Tel 02 9697121 - Fax 02 96754113

CERTIFICATO DI COLLAUDO EN 10204
INSPECTION CERTIFICATE EN 10204

3.1

Azienda CERTIFICATA - UNI EN ISO 9001:2015
AD 2000 MERKBLATT W0 - PED Directive 2014/68/EU

Certificato/Certificate N°	1368345	Pag. 1 / 1	Cliente/Customer	INDRA SRL	
Data cert /Date cert.	03/05/2024		Vs. ordine/Order.	AF24 01242	
d.d.t./Delivery note n.	2775	03/05/2024	Ns.rif./Int. ref.	2124	11/04/2024

Descrizione Materiale / Material Description

Item	Qty	Articolo / Article	Materiale / Material	Pos-Rifer / Your pos-ref.
1	40	Dado ASTM/ASME A/SA 194 gr.8M UNI 5588 / DIN 934 PG M10	ASTM/ASME A/SA 194 gr.8M	980.99.0189SS
2	20	Dado ASTM/ASME A/SA 194 gr.8M UNI 5588 / DIN 934 PG M16	ASTM/ASME A/SA 194 gr.8M	101.99.0673SS
→ 3	40	Tirante tutto filetto ASTM/ASME A/SA 193 B8M cl.2 M10x40	ASTM/ASME A/SA 193 B8M cl.2	101.99.0375SS
4	20	Tirante tutto filetto ASTM/ASME A/SA 193 B8M cl.2 M16x65	ASTM/ASME A/SA 193 B8M cl.2	101.99.1122SS
5	20	Vite A4-70 UNI 5739 / DIN 933 M10x25	A4-70	99.01.0226
6	10	Vite A4-70 UNI 5933 / DIN 7991 M4x8	A4-70	101.99.1267

COLATA-ANALISI CHIMICA come da certificato di acciaieria / HEAT-CHEMICAL ANALYSIS according to mill certificate

Item	Colata/Heat	C	Cr	Mn	Mo	Ni	P	S	Si
1	S088	0,0190	17,1000	1,4430	2,0390	10,5050	0,0340	0,0210	0,2750
2	072330	0,0120	16,9200	1,6200	2,0900	11,2600	0,0270	0,0010	0,3900
→ 3	172522	0,0240	16,6200	1,8100	2,0100	10,1700	0,0310	0,0280	0,3800
4	386276	0,0280	16,6500	1,5000	2,0000	10,0000	0,0340	0,0280	0,4300
5	211124BE08	0,0460	16,5500	0,9500	2,0500	10,1000	0,0434	0,0020	0,2700
6	526333	0,0300	16,4000	1,2800	2,2000	10,2900	0,0200	0,0110	0,4600

NORME/STANDARDS

ASME II Part A ed. 2021
ASME II Part A ed. 2021
ASME II Part A ed. 2021
ASME II Part A ed. 2021

PROPRIETA' MECCANICHE / MECHANICAL PROPERTIES

	OTTENUTE / OBTAINED							RICHIESTE / REQUIRED								
	Rm	Re	A	Z	Dur/hard.		Resilienza/Impact test	Rm (N/mm²)		Re (N/mm²)		A %	Z %	Dur/hard. HB		Resilienza/Impact test
Item	N/mm²	N/mm²	%	%	HB		KV - Joule °C	min	max	min	max	min	min	min	max	KV - Joule °C
1					260	266	20							126	300	20
2					286	296	20							126	300	20
→ 3	960	900	22,60	67,40	281	288	20								321	20
4	894	722	20,00	64,00	280	285	20								321	20
5	720	470					20									20
6	760	485					20									20

	Trattamento Termico	Dur./Hard. HB dadi/nuts				Prova allarg. per dadi		ESAME VISIVO-VIS.EXAM
Item	Tempering - °C	h	°C	>=	HB	Cone stripping on nuts		
1	Carbide solution treated					Positive	Proof load positive	Positivo / Positive
2	Carbide solution treated					Positive	Proof load positive	Positivo / Positive
→ 3	Carbide solution treated and strain hardened 1060°							Positivo / Positive
4	Carbide solution treated and strain hardened 1060°							Positivo / Positive
5								Positivo / Positive
6								Positivo / Positive

Note:

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x CROSSWIND
23/10/24

Certifichiamo che i materiali sono stati fabbricati, campionati, testati e ispezionati in conformità alle specifiche e conformi alle prescrizioni degli ordini.
We certify that the fasteners were manufactured, sampled, tested and inspected in accordance with the specification and are consistent with order prescriptions.

Oscar Uboldi - Quality Assurance

TIRANTE / STUD BOLT

COMVITEA s.r.l.
Via Isonzo 32/C - 20078 Turate (CO) Tel 02.9697121 - Fax 02 96754113

CERTIFICATO DI COLLAUDO EN 10204
INSPECTION CERTIFICATE EN 10204

Azienda CERTIFICATA - UNI EN ISO 9001:2015
3.1 AD 2000 MERKBLATT W0 - PED Directive 2014/68/EU

Certificato/Certificate N°	1369552	Pag. 1 / 1	Cliente/Customer	INDRA SRL	
Data cert /Date cert.	18/07/2024		Vs. ordine/Order.	AF24 01968	
d.d.t./Delivery note n.	4664	18/07/2024	Ns.rif./Int. ref.	3902	27/06/2024

Descrizione Materiale / Material Description

Item	Qty	Articolo / Article	Materiale / Material	Pos-Rifer / Your pos-ref.
1	40	Tirante tutto filetto ASTM/ASME A/SA 193 B8M cl.2 M10x40	ASTM/ASME A/SA 193 B8M cl.2	101.99.0375SS
2	60	Tirante tutto filetto ASTM/ASME A/SA 193 B8M cl.2 M20x70	ASTM/ASME A/SA 193 B8M cl.2	101.99.1098SS
3	215	Tirante tutto filetto ASTM/ASME A/SA 193 B8M cl.2 5/8"-11UNCx75	ASTM/ASME A/SA 193 B8M cl.2	101.99.1160SS
4	260	Vite ASTM/ASME A/SA 193 B8M cl.2 UNI 5931 / DIN 912 M8x20	ASTM/ASME A/SA 193 B8M cl.2	96.50.0014SS
5	45	Vite ASTM/ASME A/SA 193 B8M cl.2 UNI 5931 / DIN 912 M10x80	ASTM/ASME A/SA 193 B8M cl.2	101.99.1161SS
6	45	Vite ASTM/ASME A/SA 193 B8M cl.2 UNI 5931 / DIN 912 TF M10x60	ASTM/ASME A/SA 193 B8M cl.2	

COLATA-ANALISI CHIMICA come da certificato di acciaieria / HEAT-CHEMICAL ANALYSIS according to mill certificate

Item	Colata/Heat	C	Cr	Mn	Mo	Ni	P	S	Si	NORME/STANDARDS
1	172522	0,0240	16,6200	1,8100	2,0100	10,1700	0,0310	0,0280	0,3800	ASME II Part A ed. 2021
2	291913	0,0160	16,6400	1,4200	2,0300	10,0500	0,0320	0,0010	0,3800	ASME II Part A ed. 2021
3	Z5XR	0,0160	16,6850	1,3520	2,0270	10,2850	0,0300	0,0260	0,3750	ASME II Part A ed. 2021
4	304113	0,0210	16,6500	1,5800	2,0200	10,1500	0,0320	0,0280	0,3900	ASME II Part A ed. 2021
5	847049	0,0630	16,5820	1,3120	2,0320	10,0850	0,0297	0,0227	0,4130	ASME II Part A ed. 2021
6	847049	0,0630	16,5820	1,3120	2,0320	10,0850	0,0297	0,0227	0,4130	ASME II Part A ed. 2021

PROPRIETA' MECCANICHE / MECHANICAL PROPERTIES

	OTTENUTE / OBTAINED							RICHIESTE / REQUIRED							
	Rm	Re	A	Z	Dur/hard.	Resilienza/Impact test		Rm (N/mm²)		Re (N/mm²)		A %	Z %	Dur/hard.	Resilienza/Impact test	
Item	N/mm²	N/mm²	%	%	HB	KV - Joule	°C	min	max	min	max	min	min	min HB max	KV - Joule	°C
1	960	900	22,60	67,40	281 288		20							321		20
2	854	748	24,00	61,00	273 277		20							321		20
3	898	724	26,00	71,00	255 260		20							321		20
4	868	730	24,00	62,00	280 285		20							321		20
5	851	699	27,00	64,00	240 243		20							321		20
6	851	699	27,00	64,00	240 243		20							321		20

Item	Trattamento Termico Tempering - °C	Dur./Hard. HB dadi/nuts h	°C	>=	HB	Prova allarg. per dadi Cone stripping on nuts	ESAME VISIVO-VIS.EXAM
1	Carbide solution treated and strain hardened 1060°						Positivo / Positive
2	Carbide solution treated and strain hardened 1060°						Positivo / Positive
3	Carbide solution treated and strain hardened 1060°						Positivo / Positive
4	Carbide solution treated and strain hardened 1060°						Positivo / Positive
5	Carbide solution treated and strain hardened 1060°						Positivo / Positive
6	Carbide solution treated and strain hardened 1060°						Positivo / Positive

Note:

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23/10/24

Certifichiamo che i materiali sono stati fabbricati, campionati, testati e ispezionati in conformità alle specifiche e conformi alle prescrizioni degli ordini.
We certify that the fasteners were manufactured, sampled, tested and inspected in accordance with the specification and are consistent with order prescriptions.

Oscar Uboldi - Quality Assurance

DADO / NUT

t·e·c·n·o BOLT

CERTIFICATE	
Nr. 5066	26-07-24

Page 1/1

INDRA SRL
VIA NOVARA 10/B-C
20013 MAGENTA MI
ITALIA

EN ISO 10204 3.1
CERTIFIED MATERIAL TEST REPORT

Your order: AF24 01970 24-06-24 Delivery note: 2000 26-07-24

Item	Materials	Description	Sizes	Batch	Heat		Quantity
9	ASTM A 194 Gr.8M 980.99.0002 Pos. 170 - 180 - 190 - 200 - 210 - 220 - 230 - 240 - 300	Dado UNI 5588/DIN 934 ASTM A 194 Gr.8M M Esagonale	10	64533	160903S05	N.	380



VOCE DOGANALE 73181900

MERCE DI ORIGINE ITALIA

CHEMICAL ANALYSIS

9	%C %	%Mn %	%P %	%S %	%Si %	%Cr %	%Ni %	%Mo %
REQ. MIN.						16	10	2
REQ. MAX.	0,08	2	0,045	0,030	1	18	14	3
ACT.VAL.	0.033	0.950	0.033	0.002	0.340	16.400	10.050	2.020

MECHANICAL PROPERTIES

9	H HB	P.L. KN
REQ. MIN.	126	
REQ. MAX.	300	
ACT. VAL.	147-156	29.9

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23/10/24 R

We state that the material or fasteners, or both, were manufactered, sampled, tested and inspected in accordance with the specification and any supplementary requirements designated in the purchase/sales order and it was found to meet those requirements

tecnoBOLT s.r.l. - 20822 Seveso (MB) ITALY - way vignone n.7 - info@tecnobolt.com - www.tecnobolt.com

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STELO SFERA / BALL STEM

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST084078 / 2023 /
Prüfung/Test/Essai

Ordine nr: ORD.N.2300396
Bestell/Your order/Commande

Conferma ordine nr: MI23004818
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23003903
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Hot rolled - Annealed COLD PROCESSED
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung / Marking / Marquage

SPECIFICHE :
Anforderungen / Requirements / Exigences

Note:
Aufzeichnungen / Notes / Notes

VAL STOCK W2 A/1 1.4404/316L A,CF
AD 2000-M. W 2 01/20 1.4401 A,CF (0)
AD 2000-M. W 2 01/20 1.4404 A,CF (1)
AISI . 316/316L
AMS-QQ-S-763 D 316/316L A,CF
ASME SA182 2021 S31600/03 A (2)
ASME SA276 2021 S31600/03 A,CF (3)
ASME SA479 2021 S31600/03 A (4)
ASTM A182 2022A S31600/03 A (5)
ASTM A262 PR. E 2015 316/316L (6)
ASTM A276 2017 S31600/03 A,CF
ASTM A370 2022 .
ASTM A479 2021 S31600/03 A
ASTM E10 2018 .
ASTM E8 2022 .
EN 10088 PART 3 2014 1.4401 A,CF
EN 10088 PART 3 2014 1.4404 A,CF
EN 10272 2016. 1.4401 A,CF
EN 10272 2016. 1.4404 A,CF
ISO 148-1 2016 .
ISO 3651-2 98 METHOD A T1
ISO 6506-1 2014 .
ISO 6892-1 2019 .
NACE MR0103 2015 S31600/03 A (7)
NACE MR0175 2015 S31600/03 A (8)
QQ-S-763 F 316/316L A,CF
ACH CO . .
KV L -196C . ISO 148-1

(0)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
(1)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
(2)Section II Part A 2021 EDITION For products machined directly from bar refer to ASME SA479.
(3)Section II Part A 2021 EDITION
(4)Section II Part A 2021 EDITION
(5)For products machined directly from bar refer also to ASTM A479.
(6)Reapproved 2021
(7)ANSI/NACE MR0103/ISO 17945 November 23, 2015
(8)ANSI/NACE MR0175/ISO 15156-3, third edition November 23,2015

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		Tolleranza: h9 - DIN671/EN10278 Toleranz/Allowance/Tolerance					
Pos. nr. Pos. nr. Item nr. Nr. de poste	Oggetto Gegenstand Product description Descrip. du produit	Dimensioni - mm Abmessungen Dimension Dimension	Lunghezza - mm Länge Length Longueur	Colata Schmelze Heat Coulée	Pezzi Stückzahl Pieces Pièces	Peso - KG Gewicht Weight Poids	Lotto nr. Losnr Lot nr. Lot nr.
0010	Round	25,000	3000/ 3040	291905		58,0	304610390

x CROSSWIND 23/10/24

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 26/06/2023 VCQ052 - MEST084078	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 1 di 4

STELO SFERA / BALL STEM

Acciaierie Valbruna S.p.A.

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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST084078 / 2023 /
Prüfung/Test/Essai

Ordine nr: ORD.N.2300396
Bestell
Your order
Commande

Conferma ordine nr: MI23004818
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23003903
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Hot rolled - Annealed COLD PROCESSED
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werksachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung
Marking
Marquage

TEST ALLO STATO DI FORNITURA
Test on delivery condition Prüefung auf lieferbereitem produkt test a l'etat de fourniture Prueba sobre el material así come entregado

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement A5 %		Strizione Einschnürung Reduction of area Striction Z %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		200	235	500 900	20	-	-	-	-			- 315		
A	10	20	L	480	568	694	43		65					231		
G	10	20	L	485	571	699	42		64					234		

TEST ALLO STATO DI FORNITURA
Test on delivery condition / Prüefung auf lieferbereitem produkt / Test a l'etat de fourniture / Prueba sobre el material así come entregado

TEST		min	max	
A	Grain size for ASTM E112			5

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale - Lateral Expansion - Lateral ex mm			Shear - Shear - % Shear %		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		-	-	-	-	-	-	-	-	-
B	10X10	-196	L	168	170	162	1,758	1,485	1,328	65	60	59

Test on delivery condition per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		210	-	517	-	30	-	50	-			- 235		
C	12,5	20	L	502		697		43		69				233		

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 26/06/2023 VCQ052 - MEST084078	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 2 di 4

STELO SFERA / BALL STEM

Acciaierie Valbruna S.p.A.

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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST084078 / 2023 /
Prüfung/Test/Essai

Stato di fornitura : Hot rolled - Annealed COLD PROCESSED
Lieferzustand / Delivery state / Etat de livraison

Produttore : ACCIAIERIE VALBRUNA S.P.A.
Hersteller/Item/Usine productrice

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice

Ordine nr: ORD.N.2300396
Bestell / Your order / Commande

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur

Conferma ordine nr: MI23004818
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23003903
Lieferanzeige/Packing list/B.L.

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Punzonatura: 1.4401/1.4404
Kennzeichnung / Marking / Marquage

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, O=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diem Spess / Breite Diam. Dicke / Width Diam. Thickness / Larg diem epais mm	°C		Posiz. Saggio Probenlage / Location / Emplacement 1)	Resilienza Kerbschlagarbeit / Impact Value / Resilience KV2 J			Espansione laterale - Lateral Expansion -			Shear - Shear -		
Valori richiesti / Anforderungen/Required values / Valeurs démandées		min / max			100	100	100	-	-	-	-	-	-
F	10X10	20	L		201	198	200						
H	10X10	20	L		209	191	194						

Tensile testing according to ISO 6892-1
Impact testing according to ISO 148-1
Mechanical properties according to ASTM A370.
Brinnell hardness according to ASTM E10
Tensile testing according to ASTM E8
Brinnell hardness according to ISO 6506-1

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Analisi chimica
Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata / Heat / Schmelze/Coulée		C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	Co %	P %	S %	N %				
	min -	-	-	-	16,50	2,00	-	10,00	-	-	-	-	-	-	-	-
	max 0,030	1,00	2,00	18,00	2,50	1,00	13,00	-	0,045	0,030	0,100	-	-	-	-
291905		0,015	0,54	1,50	16,86	2,01	0,42	10,13	0,168	0,031	0,029	0,058				

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 26/06/2023	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité	Direzione Prodotto Produktmanagement/Product Management/Direction Produit	Pagina 3 di 4
VCQ052 - MEST084078	R.BERTELLI	P.MESSORI	

STELO SFERA / BALL STEM

Acciaierie Valbruna S.p.A.

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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST084078 / 2023 /

Ordine nr / Bestell / Your order / Commande: ORD.N.2300396

Conferma ordine nr / Werks/Our Order/Ref nr.: MI23004818

Avviso di Spedizione / Lieferanzeige/Packing list/B.L: A-MI23003903

Stato di fornitura / Lieferzustand / Delivery state / Etat de livraison:	Hot rolled - Annealed COLD PROCESSED
Tipo di Elaborazione / Erschmelzungsart / Melting process / Mode d'elaboration:	E+AOD
Qualità / Werkstoff/Grade/Nuance:	1.4401/1.4404/316/316L
Marca / Markenbezeichnung / Brand / Nuance:	MVAPML (MAXIVAL)

Produttore / Hersteller/Item/Usine productrice:

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice: AV

Punzone del Collaudatore / Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur: MR

Punzonatura / Kennzeichnung / Marking / Marquage: 1.4401/1.4404

Reduction ratio = 61,1 : 1
Solution annealed 1040°C for 135'(total time)/water cooled.
SURFACE QUALITY COMPLIANT TO EN 10088-3 TAB.1 COND. 2H
"Issued in agreement with TÜV SÜD Industrie Service GMBH
(07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by
Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

Sono state soddisfatte tutte le condizioni richieste Die gestellen Anforderungen sind it. Anlage erfüllt The material has been furnished in accordance with the requirements Le materiel ñ été trouvé conforme aux exigences	Controllo antimescolanza con tecnica XRF/OES portatile : OK Verwechslungprüfung: durch XRF/QES Gerät geführt : OK Antimixing testing performed with XRF/OES portable : OK Contrôle antimélange svt technique XRF/QES portable : OK	Controllo visivo e dimensionale: soddisfa le esigenze Besichtigufg und Ausmessung: ohne Beanstandung Visual inspection and dimensional checks:satisfactory Contrôle visuel et dimensions: satisfaisant

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD`S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

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23/10/24

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 26/06/2023 VCQ052 - MEST084078	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 4 di 4

COGNE ACCIAI SPECIALI S.p.a.
ITALY - 11100 AOSTA - VIA PARAVERA, 16
TEL +39.0165.3021 - FAX +39.0165.302296
CAP. SOC. 250.000.000 EUR INT. VERS.
C.F. 02187380987
VAT: IT00571320076 - R.E.A. n. AO-50474

Company with Management Systems certified according to ISO 9001, ITAF 16949, EN 9100, ISO 14001 and ISO 45001.

SFERA / BALL

INSPECTION CERTIFICATE 3.1 (EN 10204:2004)

DOCUMENT NUMBER 2023013898

CUSTOMER'S ORDER:	mail		
MANUFACTURER'S WORKS:	AOSTA, VIA PARAVERA 16 - ITALY		
PRODUCER OF THE DOC:	QUALITY DEPARTMENT		
MANUFACTURER'S WORKS ORDER NO:	0001135656 / 000010		
MARK OF THE MANUFACTURER:	**COGNE**		
DISPATCH NOTE:	81560368 / 000010 WEIGHT: 424 KG / 935 LB		
INTERNAL SPEC:	STOCKBARREW2	TECHNICAL RULE:	AD2000
PRODUCT:	PEL PEELED ROUND BARS TOLERANCE: ISOK11		
SURFACE FINISH:	2B Cold Finished		
PRODUCT DELIVERY CONDITION:	RS SOLUTION ANNEALED		
PRODUCT DIMENSIONS (mm):	75,000 (2,953 in)	LENGTH (mm)	04000 06200 (00157 00244 in)
GRADE:	316L-S31600/31603-1.4404/1.4401	INTERNAL GRADE:	F316L IMCO
IDENTIFICATION HEAT NO:	372447	IDENTIFICATION LOT NO:	725530
MARKING OF THE PRODUCT:	1.4404	TEST PIECE N:	553

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REFERENCE NORMS: EN 10088-3 2014, EN 10272 2016, ASTM A276/A276M, ASTM A479/A479M, ASTM A193 B8MCLASSE 1D, ASME SA276/SA276M, ASME SA479/SA479M, AMS 5653J, AMS 5648N, ISO15156-3/NACE MR0175 2015, NACE MR0103/ISO 17945, NORSOK M630 MDSS01 REV5.
REFERENCE NORMS FOR CHEMICAL COMPOSITION AND MECHANICAL PROPERTIES: ASTM A182, ASME SA182.
REFERENCE NORMS ONLY FOR CHEMICAL COMPOSITION: EN 10222-5 2017,ASTM A403-07a, ASTM A484-18a,ASTM A314-08, AMS-QQ-S-763D.
ASME SECT.II PART A EDITION 2015-2017-2019-2021
AISI 316/316L - UNS S31600/S31603 - 1.4404/1.4401
THE PRODUCT IS CONFORMING TO THE CONTRACT AGREEMENT AND TO THE RULE AD2000-MERKBLATT W0/W2.
STEELMAKING EAF + AOD + CONTINUOUS CASTING
ASTM A484 DOES NOT APPLY FOR SIZE AND LENGTH TOLERANCES.
STEELMAKING EAF + AOD + CONTINUOUS CASTING
REFERENCE FOR APPLICABLE ASME STANDARD: SECTION II PART A ED. 2015-2017-2019-2021
HOT ROLLED
REDUCTION RATIO 5,2

CHEMICAL LADLE ANALYSIS ACCORDING TO ASTM A751 - EN ISO 14284
Control lot No. - Weight :020000959784 - 79.906 KG - 176.160 LB

ELEMENTS	C	Si	Mn	P	S	N	Cr	Mo	Ni	Cu
MEASUREMENT UNIT	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w
OBTAINED	0,015	0,35	1,80	0,030	0,029	0,076	16,88	2,11	10,33	0,39

ELEMENTS	Co
MEASUREMENT UNIT	% w/w
OBTAINED	0,17

HARDNESS TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000960596 - 7.776 KG - 17.143 LB
SPECIFICATION ENISO6506 HARDNESS TEST HB TESTING METHOD: 10/3000
OBTAINED 154

x CROSSWIND 23/10/2023

DATE 20.03.2023 BARBARA VIETTI MV(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne

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CAP. SOC. 250.000.000 EUR INT. VERS.
C.F. 02187380067
VAT: IT00571320078 - R.E.A. n. AO-50474

Company with Management Systems certified according to ISO 9001, ITAF 16949, EN 9100, ISO 14001 and ISO 45001.

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IMPACT TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000960596 - 7.776 KG - 17.143 LB
SPECIFICATION EN ISO 148-1-KV2 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 20
MEASUREMENT UNIT J

OBTAINED	431	434	425	427	430	434	428	425	431	441
	427	435								

TENSILE TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000960596 - 7.776 KG - 17.143 LB
SPECIFICATION EN-ISO6892-1 DIRECTION OF THE TEST PIECE: L

	RM	RP02	A5	Z	RP1
MEASUREMENT UNIT	MPA	MPA	% 5.0 D	%	NMM
OBTAINED	596	271	54,1	75,6	316
	594	267	54,7	78,2	315
	608	290	50,4	74,9	318
	604	268	53,3	79,3	315

GRAIN SIZE
Control lot No. - Weight :020000960596 - 7.776 KG - 17.143 LB
SPECIFICATION ASTME112 --
OBTAINED 6

MATERIAL IN COMPLIANCE WITH THE NORSOK M-630 MDS S01
IMPACT TEST
Control lot No. - Weight :020000960596 - 7.776 KG - 17.143 LB
SPECIFICATION EN ISO 148-1 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 196-
MEASUREMENT UNIT J

OBTAINED	196	190	187	185	187	171	171	198	199	171
	173	199								

TENSILE TEST
Control lot No. - Weight :020000960596 - 7.776 KG - 17.143 LB
SPECIFICATION ASTMA370-E8-0.5"SPEC DIRECTION OF THE TEST PIECE: L

	RMB	RP02B	ZB	AL2B
MEASUREMENT UNIT	KSI	KSI	%	% 4,0 D
OBTAINED	88	39	77,4	51,8
	88	39	79,0	59,1
	88	39	74,8	59,3
	89	39	75,2	52,9

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Company with Management Systems certified according to ISO 9001, ITAF 16949, EN 9100, ISO 14001 and ISO 45001.

SFERA / BALL

COUNTRY OF MELTING AND ORIGIN: ITALY, THE MATERIAL COMPLIES WITH FAR DFARS
252.225-7009 ALT 1.
The products delivered are conforming to EN10088-5 and bear the CE marking on the basis of the test results here reported and the continuous surveillance, assessment and approval by MPA NRW
(certificate no. 0432-CPR-00166-01)
Material produced according to the system #Regulation 305/2011/EU of the European Parliament and of the Council of 9 March 2011#
DOCUMENT ISSUED IN AGREEMENT WITH TUEV BAYERN(11.1972) WAVING OF COUNTERSIGNING (SEE TUEV BAYERN LETTER DATED 17.01.80).
MARKING: SYMBOL OF THE MANUF. WORK, MATERIAL N. , CAST N., LOT N., RECEIVING AGENT STAMP
CORROSION TEST ACCORDING TO ASTM A262 PRACTICE E EN ISO 3651-2 PRACTICE A: SATISFACTORY.
ANTIMIXING TEST BY PORTABLE SPECTROMETRE: CONFORMING
EDDY CURRENT INSPECTION OF SURFACE ACCORDING TO EN 10277 CLASS 4.
DIMENSIONAL CONTROL ACCORDING TO EN 10278: SATISFACTORY.
NO WELDING REPAIR ON THE MATERIAL.
ULTRASONIC TEST ACCORDING TO EN 10308 Class.3: SATISFACTORY
QUALITY SYSTEM CERTIFIED BY KIWA CERMET ACCORDING TO UNI EN ISO 9001:2015 -IATF 16949:2016 (THE LAST ONE ONLY FOR WIRE ROD AND HOT ROLLED-PEELED-GROUND STAINLESS STEEL BARS).
INSPECTOR'S STAMP LF
MATERIAL CONFORM TO: 2015/863/UE (RoHS3) - 2011/65/UE (RoHS2) - 2000/53/UE - 2002/95/UE (RoHS) - 2003/11/UE - 2005/618/UE - PED 2014/68/UE e PE(S)R 2016/1105
THE MATERIAL IS FREE OF ANY MERCURY, MERCURY COMPOUNDS AND OR RADIUM CONTAMINATION AT TIME OF SHIPMENT AND WAS PRODUCED WITHOUT USING OZONE DEPLETING SUBSTANCES OF CLASS I AND II.
RADIOACTIVITY CONTROL PERFORMED WITH A GAMMA SPECTROMETER: ASTM E181.
GAMMA ACTIVITY ON THE PRODUCTS BELOW 0.1 BQ/G ACCORDING TO EU RESOLUTION 2013/59/EURATOM , IAEA RS-G-1.7 AND IAEA SSG-17.

CE 0432

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23/10/24

DATE 20.03.2023

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CORPO BONNET / BONNET BODY

Acciaierie Valbruna S.p.A.

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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1 (Nach/According to/Selon)

Certificato nr. MEST040838 / 2024 / (Prüfung/Test/Essai)

Ordine nr: ORD.24000161 (Bestell / Your order / Commande)

Conferma ordine nr: AN24000318 (Werks/Our Order/Ref nr.)

Avviso di Spedizione: A-AN24000296 (Lieferanzeige/Packing list/B.L.)

Stato di fornitura: Laminato - Solubilizzato FINITO A FREDDO (Lieferzustand / Delivery state / Etat de livraison)

Tipo di Elaborazione: E+AOD (Erschmelzungsart / Melting process / Mode d'elaboration)

Qualità: 1.4401/1.4404/316/316L (Werkstoff/Grade/Nuance)

Marca: MVAPML (MAXIVAL) (Markenbezeichnung / Brand / Nuance)

Produttore: (Hersteller/Item/Usine productrice)

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: (Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice)

Punzone del Collaudatore: MR (Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur)

Punzonatura: 1.4401/1.4404 (Kennzeichnung / Marking / Marquage)

SPECIFICHE : (Anforderungen / Requirements / Exigences)

Note: (Aufzeichnungen / Notes / Notes)

VAL STOCK W2 A/1 1.4404/316L A,CF
AD 2000-M. W 2 2022 1.4401 A,CF (0)
AD 2000-M. W 2 2022 1.4404 A,CF (1)

(0)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
(1)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022

AISI . 316/316L
AMS-QQ-S-763 D 316/316L A,CF
ASME SA182 2023 S31600/03 A (2)

(2)Section II Part A 2023 EDITION For products machined directly from bar refer to ASME SA479.

ASME SA276 2023 S31600/03 A,CF (3)
ASME SA479 2023 S31600/03 A (4)
ASTM A182 2023 S31600/03 A (5)

(3)Section II Part A 2023 EDITION
(4)Section II Part A 2023 EDITION
(5)For products machined directly from bar refer also to ASTM A479.

ASTM A262 PR. E 2015 316/316L (6)
ASTM A276 2024A S31600/03 A,CF
ASTM A370 2022 .

(6)Reapproved 2021

ASTM A479 2023A S31600/03 A
ASTM E10 2023 .
ASTM E8 2022 .
EN 10088 PART 3 2014 1.4401 A,CF
EN 10088 PART 3 2014 1.4404 A,CF
EN 10272 2016. 1.4401 A,CF
EN 10272 2016. 1.4404 A,CF
ISO 148-1 2016 .
ISO 3651-2 98 METHOD A T1
ISO 6506-1 2014 .
ISO 6892-1 2019 .
NACE MR0103 2015 S31600/03 A (7)

(7)ANSI/NACE MR0103/ISO 17945 November 23, 2015

NACE MR0175 4 S31600/03 A (8)

(8)ANSI/NACE MR0175/ISO 15156-3:2020 Fourth edition, approved 21 Sep 2022.

QQ-S-763 F 316/316L A,CF
ACH CO . .
KV L -196C . ISO 148-1
MDS S01 5 316 A,CF (9)
ASTM A479 2023A S31600 A

(9)Norsok-standard M-630 Edition 6, October 2013

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Tolleranza: h11 - DIN668/EN10278 (Toleranz/Allowance/Tolerance)

Pos. nr. (Pos. nr. / Rep. nr. / Nr. de poste)	Oggetto (Gegenstand / Product description / Descrip. de produit)	Dimensioni - mm (Abmessungen / Dimension / Dimension)	Lunghezza - mm (Länge / Length / Longueur)	Colata (Schmelze / Heat / Coulée)	Pezzi (Stückzahl / Pieces / Pièces)	Peso - KG (Gewicht / Weight / Poids)	Lotto nr. (Losnr. / Lot n. / Lot n.)
0010	Esagono	22,000	3030/ 3030	291893		901,0	217704270

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 21/03/2024
VCQ012 - MEST040838

Direzione Qualità (Qualitätsmanagement/Quality Management/Gestion Qualité)
R.BERTELLI

Direzione Prodotto (Produktmanagement/Product Management/Direction Produit)
P.MESSORI

CORPO BONNET / BONNET BODY

Acciaierie Valbruna S.p.A.

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CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1 — Nach/According to/Selon

Certificato nr. MEST040838 / 2024 / — Prüfung/Test/Essai

Stato di fornitura: Laminato - Solubilizzato FINITO A FREDDO — Lieferzustand / Delivery state / Etat de livraison

Produttore: ACCIAIERIE VALBRUNA S.P.A. — Hersteller/Item/Usine productrice

Tipo di Elaborazione: E+AOD — Erschmelzungsart / Melting process / Mode d'elaboration

Marchi di Fabbrica: — Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice

Ordine nr: ORD.24000161 — Bestell / Your order / Commande

Qualità: 1.4401/1.4404/316/316L — Werkstoff/Grade/Nuance

Punzone del Collaudatore: MR — Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur

Conferma ordine nr: AN24000318 — Werks/Our Order/Ref nr.

Marca: MVAPML (MAXIVAL) — Markenbezeichnung / Brand / Nuance

Punzonatura: 1.4401/1.4404 — Kennzeichnung / Marking / Marquage

Avviso di Spedizione: A-AN24000296 — Lieferanzeige/Packing list/B.L

TEST ALLO STATO DI FORNITURA

Test on delivery condition Prüefung auf lieferbereitem produkt test a l'etat de fourniture Prueba sobre el material asi come entregado

1) L=longitudinale/längs, T=trasversale/quer, O=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C		Posiz. Saggio Probenlage Location Emplacement	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance a traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement A5 %		Strizione Einschnürung Reduction of area Striction Z %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Harte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs demandées		min			200	235	500	20	-	-	-	-			-		
		max					900								315		
A	10	20	L		480	548	678	44		67					224		
G	10	20	L		484	550	683	43		65					227		

TEST ALLO STATO DI FORNITURA

Test on delivery condition / Prüefung auf lieferbereitem produkt / Test a l'etat de fourniture / Prueba sobre el material asi come entregado

TEST		min	max	
G	Dimensioni grano x ASTM E112			5

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, O=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C		Posiz. Saggio Probenlage Location Emplacement	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs demandées		min			-	-	-	-	-	-	-	-	-
		max											
B	10X10	-196	L		129	134	139	1,487	1,328	1,210	60	58	60

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, O=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C		Posiz. Saggio Probenlage Location Emplacement	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance a traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Harte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs demandées		min			210	-	517	-	35	-	50	-			-		
		max													235		
C	12,5	20	L		483		681		46		69				222		

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 21/03/2024	Direzione Qualità	Direzione Prodotto	Pagina
VCQ012 - MEST040838	Qualitätsmanagement/Quality Management/Gestion Qualité	Produktmanagement/Product Management/Direction Produit	2 di 4
	R.BERTELLI	P.MESSORI	

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Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST040838 / 2024 /

Ordine nr: ORD.24000161 (Bestell / Your order / Commande)

Conferma ordine nr: AN24000318 (Werks/Our Order/Ref nr.)

Avviso di Spedizione: A-AN24000296 (Lieferanzeige/Packing list/B.L)

Stato di fornitura: Laminato - Solubilizzato FINITO A FREDDO (Lieferzustand / Delivery state / Etat de livraison)

Tipo di Elaborazione: E+AOD (Erschmelzungsart / Melting process / Mode d'elaboration)

Qualità: 1.4401/1.4404/316/316L (Werkstoff/Grade/Nuance)

Marca: MVAPML (MAXIVAL) (Markenbezeichnung / Brand / Nuance)

Produttore: (Hersteller/Item/Usine productrice)

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: (Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice) AV

Punzone del Collaudatore: (Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur) MR

Punzonatura: 1.4401/1.4404 (Kennzeichnung / Marking / Marquage)

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, O=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Side Diam. Diàm Width Diam. Thickness Larg. diam. epais mm	°C		Posiz. Saggio Probelage Location Emplacement	Resilienza Resilienza Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion			Shear Shear		
Valori richiesti Anforderungswerte/Required values Valeurs demandées		min max			100	100	100	-	-	-	-	-	-
F	10X10	20	L		189	194	199						
H	10X10	20	L		180	190	186						

Tensile testing according to ISO 6892-1
Impact testing according to ISO 148-1
Mechanical properties according to ASTM A370.
Brinnell hardness according to ASTM E10
Tensile testing according to ASTM E8
Brinnell hardness according to ISO 6506-1

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CROSSWIND
23/10/24

Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat Schmelze/Coulée	C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	Co %	P %	S %	N %				
min - max	- 0,030	- 1,00	- 2,00	16,50 18,00	2,00 2,50	- 1,00	10,00 13,00	- -	- 0,045	- 0,030	- 0,100	- -	- -	- -	- -
291893	0,019	0,52	1,55	16,65	2,01	0,48	10,17	0,140	0,030	0,030	0,066				

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 21/03/2024	Direzione Qualità / Qualitätsmanagement/Quality Management/Gestion Qualité	Direzione Prodotto / Produktmanagement/Product Management/Direction Produit	Pagina
VCQ012 - MEST040838	R.BERTELLI	P.MESSORI	3 di 4

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Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST040838 / 2024 /
Prüfung/Test/Essai

Ordine nr: ORD.24000161
Bestell Your order Commande

Conferma ordine nr: AN24000318
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-AN24000296
Lieferanzeige/Packing list/B.L

Stato di fornitura: Laminato - Solubilizzato FINITO A FREDDO
Lieferzustand Delivery state Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart Melting process Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes Trade marks Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung Marking Marquage

Reduction ratio = 78,0 : 1
Solution annealed 1060°C for 180'(total time)/water cooled.
SURFACE QUALITY COMPLIANT TO EN 10088-3 TAB.1 COND. 2H
"Issued in agreement with TÜV SÜD Industrie Service GMBH (07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

Sono state soddisfatte tutte le condizioni richieste Die gestellten Anforderungen sind lt. Anlage erfüllt The material has been furnished in accordance with the requirements Le materiel à été trouvé conforme aux exigences	Controllo antimescolanza con tecnica XRF/OES portatile : OK Verwechslungprüfung: durch XRF/OES Gerät geführt : OK Antimixing testing performed with XRF/OES portable : OK Contrôle antimélange svt technique XRF/OES portable : OK	Controllo visivo e dimensionale: soddisfa le esigenze Besichtigung und Ausmessung: ohne Beanstandung Visual inspection and dimensional checks: satisfactory Contrôle visuel et dimensions: satisfaisant

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD'S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

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x CROSSWIND
23/10/2024

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 21/03/2024 VCQD12 - MEST040838	**Direzione Qualità** Qualitätsmanagement/Quality Management/Gestion Qualité **R.BERTELLI**	**Direzione Prodotto** Produktmanagement/Product Management/Direction Produit **P.MESSORI**	**Pagina 4 di 4**

STELO / STEM

Rodacciai

23842 Bosisio Parini (LC) – Via Giuseppe Roda 1 – Italia
Tel. +39 031878111 – Fax +39 031878312
www.rodacciai.com – info@rodacciai.com

Azienda con sistema di gestione certificato da IGQ secondo UNI EN ISO 9001:2015

The Company's Quality Management System is certified by IGQ according to UNI EN ISO 9001:2015

CERTIFICATO DI CONTROLLO Inspection Certif N. 174495 Date 14/11/2023

Secondo According to . . . . . EN 10204:2004 3.1

ORDINE - Order N. 372 Date 10/11/2023

D.d.T. - Delivery note N. 11714/04 Date 14/11/2023

Weight KG 411,00 **Odp. Nr.** 2022/A/58282
Tolerance ISO286-2 h9 + 0,000 - 0,036 mm **Bars Length** 3.000 - 3.050 mm

QUALITA' - Grade

STANDARD	EN 10088-3:2014	X2CrNiMo17-12-2	1.4404 / 316L
STANDARD	EN 10088-3:2023	X5CrNiMo17-12-2	1.4401 / 316

Mark RODACCIAI . . . . . 316 PLUS
PROFILO - Shape . . . . . ROUND
DIMENSIONE - Size . . . . . mm 10,00
ESECUZIONE - Form of delivery . . . . . ROUGH GROU.

COLATA - Heat 172303

ANALISI CHIMICA DI COLATA - Cast analysis % by mass

C	Mn	Si	S	P	Cr	Ni	Mo	Cu	Co	N
0,021	1,820	0,360	0,0220	0,025	16,640	10,100	2,100	0,360	0,150	0,0760

CARATTERISTICHE MECCANICHE ALLO STATO DI FORNITURA
Mechanical properties of the delivered material

		Tested
Tensile Strength	Rm (MPa)	746,0
Proof Stress	Rp (1) (MPa)	692,0
Proof Stress	Rp (0,2) (MPa)	612,0
Elongation	A 5 (%)	32,0
Hardness	HBW	226,0
Reduction of area	Z (%)	51,0

NOTE - Notes

Processo di Fusione: E + A. O. D.
Trattamento termico: Temperatura di Solubilizzazione 1060°C
Tempo Mantenimento: 4 Ore, Raffreddamento in Acqua
Prova di Corrosione Intergranularena: ASTM A262-15 "E"
Materiale Conforme a NACE MR-0175/ISO 15156-3:2015
NACE MR-103/ISO 17495-1:2016

x CROSSWIND
23/10/24

Pag. 1 / Segue

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Azienda con sistema di gestione certificato da IGQ secondo UNI EN ISO 9001:2015

The Company's Quality Management System is certified by IGQ according to UNI EN ISO 9001:2015

Segue certificato di controllo N. 174495 Date 14/11/2023
Inspection Certificate's continuance

NOTE - Notes

Materiale conforme a: ASTM A276-24a / A479-23a/ A182-24
ASME SA: 479-21 276-21 182; UNS 31600 - 31630 AISI 316-316L
Corrosione Intercristallina EN ISO 3651-2:98 Met.A

Melting Process: E + A. O. D
Heat treatment: annealed temperature 1060°C
Soaking time: 4 Hours, Cooling in water
Intergranular corrosion tested to ASTM A262-15 "E"
According to: NACE MR-0175 / ISO 15156-3:2015
NACE MR-103/ISO 17495-1:2016
Material Compliant to: ASTM A276-24a / A479-23a/ A182-24
ASME SA: 479-21 276-21 182; UNS 31600 - 31630 AISI 316-316L
Intergranular Corrosion according to EN ISO 3651-2:98 Met.A

Surface quality condition 2H conforming also to EN 10277 class 3

We certify hereby, that the above mentioned products are consistent with the order prescriptions.
This certificate was generated by data system acc. to EN 10204, it is not necessary to be signed for validity.

Materiale conforme alle seguenti direttive/regolamenti europee:
. Regolamento REACH 2006/1907/CE e tutti successivi aggiornamenti, compresa la modifica M80 Direttiva Delegata 2022/1632, e SVHC Candidate List aggiornata al 17/01/2023.
. Direttiva ROHS 2011/65/UE e tutti i successivi aggiornamenti, compresa la modifica M80 attraverso la Direttiva Delegata 2022/1632, e Decreto Legislativo 27 del 04/03/2014.
. Direttiva RAEE 2012/19/UE e tutti successivi aggiornamenti, compresa la modifica M1 attraverso la Direttiva 2018/849.
. Direttiva ELV (End-of-Life Vehicles) 2000/53/CE e tutti i successivi aggiornamenti, compresa la modifica M15 attraverso la Direttiva 2020/363
. Contaminazione Radioattiva, Direttiva 2013/59/EURATOM e Decreto Legislativo N.101 del 31 Luglio 2020.
. Canadian List 168 aggiornata al 16/03/2022.
. Minerali di Conflitto, Regolamento (UE) 2017/821 e tutti i successivi aggiornamenti, compresa la modifica M1 attraverso il Regolamento Delegato 2020/1588, e Dodd-Frank Wall Street Reform and Consumer Protection Act Section 1502.

Material conforming to the following European directives/regulation:
. REACH regulation 2006/1907/EC and all subsequent updates, including modification M80 Delegate Directive, and SVHC Candidate List updated to 01/17/2023.
. ROHS Directive 2011/65/EU and all subsequent updates, including the M80 amendment through the Delegated Directive 2022/1632, and Italian Legislative Decree 27 of 03/04/2014.
. WEEE Directive 2012/19/EU and all subsequent updates, including the M1 amendment through Directive 2018/849.
. ELV (End-of-Life Vehicles) Directive 2000/53/EC and all subsequent updates, including the modification M15 through Directive 2020/363
. Radioactive Contamination, Directive 2013/59/EURATOM and Italian Legislative Decree No. 101 of 31 July 2020.
. Canadian List 168 updated 03/16/2022.
. Conflict Minerals, Regulation (EU) 2017/821 and all subsequent updates, including amendment M1 through Delegated Regulation 2020/1588, and Dodd-Frank Wall Street Reform and Consumer Protection Act Section 1502.

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CROSSWIND
23/10/24 R

Pag. 2 / 2 RODACCIAI: The Work Inspector
Alessia Porta

OTTURATORE / TIP

Acciaierie Valbruna S.p.A.

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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST140440 / 2023 /
Prüfung/Test/Essai

Ordine nr: VS ORD MAIL
Bestell / Your order / Commande

Conferma ordine nr: AN23001468
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-AN23000875
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Laminato - Solubilizzato FINITO A FREDDO
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice

Punzone del Collaudatore:
Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung / Marking / Marquage

SPECIFICHE :
Anforderungen / Requirements / Exigences

VAL STOCK W2 A/1 1.4404/316L A,CF
AD 2000-M. W 2 2022 1.4401 A,CF (0)
AD 2000-M. W 2 2022 1.4404 A,CF (1)
AISI . 316/316L
ASME SA182 2021 S31600/03 A (2)
ASME SA276 2021 S31600/03 A,CF (3)
ASME SA479 2021 S31600/03 A (4)
ASTM A182 2023 S31600/03 A (5)
ASTM A262 PR. E 2015 316/316L (6)
ASTM A276 2023 S31600/03 A,CF
ASTM A370 2022 .
ASTM A479 2023A S31600/03 A
ASTM E10 2023 .
ASTM E8 2022 .
EN 10088 PART 3 2014 1.4401 A,CF
EN 10088 PART 3 2014 1.4404 A,CF
EN 10272 2016. 1.4401 A,CF
EN 10272 2016. 1.4404 A,CF
ISO 3651-2 98 METHOD A T1
ISO 6506-1 2014 .
ISO 6892-1 2019 .
ACH CO . .
PME HB L . .
NACE MR0175 4 S31600/03 A (7)
NACE MR0103 2015 S31600/03 A (8)

Note:
Aufzeichnungen / Notes / Notes

(0)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
(1)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
(2)Section II Part A 2021 EDITION For products machined directly from bar refer to ASME SA479.
(3)Section II Part A 2021 EDITION
(4)Section II Part A 2021 EDITION
(5)For products machined directly from bar refer also to ASTM A479.
(6)Reapproved 2021
(7)ANSI/NACE MR0175/ISO 15156-3:2020 Fourth edition, approved 21 Sep 2022.
(8)ANSI/NACE MR0103/ISO 17945 November 23, 2015

Tolleranza: h9 - DIN671/EN10278
Toleranz/Allowance/Tolerance

Pos. nr.	Oggetto	Dimensioni - mm	Lunghezza - mm	Colata	Pezzi	Peso - KG	Lotto nr.
Pos. nr / Item nr / Nr. de poste	Gegenstand / Product description / Descrip. du produit	Abmessungen / Dimension / Dimension	Länge / Length / Longueur	Schmelze / Heat / Coulée	Stückzahl / Pieces / Pieces	Gewicht / Weight / Poids	Losnr. / Lot nr / Lot nr
0010	Tondo	9,000	3000/ 3050	290962		162,0	210502620

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CROSSWIND
23/10/24

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 15/11/2023	Direzione Qualità	Direzione Prodotto	Pagina
VCQ012 - MEST140440	Qualitätsmanagement/Quality Management/Gestion Qualité	Produktmanagement/Product Management/Direction Produit	1 di 3
	R.BERTELLI	P.MESSORI	

OTTURATORE / TIP

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Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1 — Certificato nr. MEST140440 / 2023 /

Ordine nr: VS ORD MAIL

Conferma ordine nr: AN23001468

Avviso di Spedizione: A-AN23000875

Stato di fornitura : Laminato - Solubilizzato FINITO A FREDDO

Tipo di Elaborazione: E+AOD

Qualità: 1.4401/1.4404/316/316L

Marca: MVAPML (MAXIVAL)

Produttore :

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV

Punzone del Collaudatore: MR

Punzonatura: 1.4401/1.4404

TEST ALLO STATO DI FORNITURA

Test on delivery condition Prüefung auf lieferbereitem produkt test a l'etat de fourniture Prueba sobre el material así come entregado

1) L=longitudinale/längs, T=trasversale/quer, O=Tangenziale/tangential

TEST	Provetta/ Probestab	°C	Posiz. Saggio	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement A5 %		Strizione Einschnürung Reduction of area Striction Z %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Härte Hardness Dureté HB		
Valori richiesti		min		200	235	500	20	-	-	-	-			-		
		max				900								315		
A	9	20	L	637	686	720	31		73					234		
E	9	20	L	639	690	726	30		71					235		

TEST ALLO STATO DI FORNITURA

Test on delivery condition / Prüefung auf lieferbereitem produkt / Test a l'etat de fourniture / Prueba sobre el material así come entregado

TEST		min	max	
A	Dimensioni grano x ASTM E112			5

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, O=Tangenziale/tangential

TEST	Provetta/ Probestab	°C	Posiz. Saggio	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Härte Hardness Dureté HB		
Valori richiesti		min		310	-	620	-	30	-	50	-			-		
		max												235		
D	6	20	L	640		723		33		74				230		

Tensile testing according to ISO 6892-1
Mechanical properties according to ASTM A370.
Brinnell hardness according to ASTM E10
Tensile testing according to ASTM E8
Brinnell hardness according to ISO 6506-1

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Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat Schmelze/Coulée	C %	Si %	Mn %	Cr %	Mo %	Ni %	Co %	P %	S %	N %
	min -	-	-	16,50	2,00	10,00	-	-	-	-
	max 0,030	1,00	2,00	18,00	2,50	13,00	-	0,045	0,030	0,100
290962	0,015	0,46	1,48	16,68	2,03	10,23	0,127	0,030	0,023	0,048

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 15/11/2023	Direzione Qualità	Direzione Prodotto	Pagina
VCQ012 - MEST140440	Qualitätsmanagement/Quality Management/Gestion Qualité	Produktmanagement/Product Management/Direction Produit	2 di 3
	R.BERTELLI	P.MESSORI	

Acciaierie Valbruna S.p.A.

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Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST140440 / 2023 /

Ordine nr: VS ORD MAIL
Bestell / Your order / Commande

Conferma ordine nr: AN23001468
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-AN23000875
Lieferanzeige/Packing list/B.L.

Stato di fornitura / Lieferzustand / Delivery state / Etat de livraison: Laminato - Solubilizzato FINITO A FREDDO

Tipo di Elaborazione / Erschmelzungsart / Melting process / Mode d'elaboration: E+AOD

Qualità / Werkstoff/Grade/Nuance: 1.4401/1.4404/316/316L

Marca / Markenbezeichnung / Brand / Nuance: MVAPML (MAXIVAL)

Produttore / Hersteller/Ilam/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice: AV

Punzone del Collaudatore / Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'asseyeur: MR

Punzonatura / Kennzeichnung / Marking / Marquage: 1.4401/1.4404

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

Reduction ratio = 457,3 : 1
Material annealed 1040°C for 135'(total time)/water cooled.
SURFACE QUALITY COMPLIANT TO EN 10088-3 TAB.1 COND. 2H
"Issued in agreement with TÜV SÜD Industrie Service GMBH
(07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by
Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

x CROSSWIND
23/04/24

Sono state soddisfatte tutte le condizioni richieste / Die gestellen Anforderungen sind lt. Anlage erfüllt / The material has been furnished in accordance with the requirements / Le materiel à été trouvé conforme aux exigences

Controllo antimescolanza con tecnica XRF/OES portatile : OK / Verwechslungprüfung: durch XRF/QES Gerät geführt : OK / Antimixing testing performed with XRF/OES portable : OK / Contrôle antimélange svt technique XRF/QES portable : OK

Controllo visivo e dimensionale: soddisfa le esigenze / Besichtigung und Ausmessung: ohne Beanstandung / Visual inspection and dimensional checks:satisfactory / Contrôle visuel et dimensions: satisfaisant

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD'S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 15/11/2023 VCQ012 - MEST140440	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 3 di 3

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ROSETTI MARINO ITEM 170

COD. VLBBNN07210200

TAG:

BLPH-MV-019

INDRA ITEM 170

COD. 00.VSF.2682/V

indra VALVES - ITALY

Certificazione dei materiali
EN 10204 3.1 come da allegati

Material certification
EN 10204 3.1 as per attachments

MD-02-04-IT-UK / VSF
Rev. 16
Data: 08-Nov-2018
CM/IT/UK

Nr. / *No.* 24-1834 — **Data** / *Date :* 23-Sep-2024

Cliente / *Customer* ROSETTI MARINO SPA

Vs. ordine Nr. / *Your order Nr.* 1724000798 REV.2 — **Data** / *Date :* 26-Jun-2024

Ns. commessa Nr. / *Our job Nr.* 24 01216 — **Data** / *Date :* 3-Jul-2024

Ns. D.D.T. Nr. / *Our advise note Nr.* — **Data** / *Date :*

Ordine di produzione / Production order number : 24 01216/170 - 293223

Lotto / Material batch number : 293223

Pos. Cliente / Customer Item	Pos. Indra / Indra Item	Codice / Code		Q.tà / Q.ty	Nr. di serie / Serial Number	Descrizione / Description
		Ns./ Our	Vs. / Your			
170	170	00.VSF.2682/V	VLBBNN07210200	1	106017	INDRA BALL VALVE DBB-898-HR-50-J300RF3-J-D-DLF-DL-N-PG-L123-TG-TGW-TV-DP-PMI2-PD2-BI-GT-CR-TA-FE2-FS-FE-SPC1

Elenco / List

Componente / *Component*	Colata / Heat	Materiale / *Material*	Numero del certificato / Certificate number
Corpo Valvola / Valve Body	293223	AISI 316/316L NACE	MEST042722/2024/ - UT24002025
Closure J300RF3	293307	AISI 316/316L NACE	MEST007063/2024/ - UT24000314
Tirante / Stud bolt	1KNK	ASTM A193 B8M Cl.2	2303177
Dado / Nut	253295	ASTM A194 Gr.8M	2303217
Stelo antiespulsione sfera / Ball stem	291905	AISI 316/316L NACE	MEST084078/2023/
Sfera / Ball	272823	AISI 316/316L NACE	2022021445
Corpo bonnet/ Bonnet body	291893	AISI 316/316L NACE	MEST040838/2024/
Stelo spillo / Stem needle	172303	AISI 316/316L NACE	174495
Otturatore / Tip	290962	AISI 316/316L NACE	MEST140440/2023/

NOTE / **REMARKS :** TAG: BLPH-MV-019

PREPARATO DA: **ELEONORA RANZANI** — PREPARED BY: **DOCUMENTION MANAGER**

APPROVATO DA: **LUCIA NOSOTTI** — APPROVED BY: **QUALITY ASSURANCE MANAGER**

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CORPO VALVOLA / VALVE BODY

Acciaierie Valbruna S.p.A.

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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST042722 / 2024 /

Cliente / Besteller/Purchaser/Client:
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: N. AF2401021
Bestell / Your order / Commande

Conferma ordine nr: MI24002182
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24002139
Lieferanzeige/Packing list/B.L.

Stato di fornitura / Lieferzustand / Delivery state / Etat de livraison: Fucinato - Solubilizzato Pelato

Tipo di Elaborazione / Erschmelzungsart / Melting process / Mode d'elaboration: E+AOD

Qualità / Werkstoff/Grade/Nuance: 1.4401/1.4404/316/316L

Marca / Markenbezeichnung / Brand / Nuance: MVAPML (MAXIVAL)

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice: AV

Punzone del Collaudatore / Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur: MR

Punzonatura / Kennzeichnung / Marking / Marquage: 1.4401/1.4404/316/316L

SPECIFICHE : / Anforderungen / Requirements / Exigences	Note: / Aufzeichnungen / Notes / Notes
AV 316L VALVES A 1.4401/1.4404 A	
MDS S01 5 316 A (0)	(0)Norsok-standard M-630 Edition 6, October 2013
AD 2000-M. W 2 2022 1.4401 A (1)	(1)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
AD 2000-M. W 2 2022 1.4404 A (2)	(2)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
API 6A 21 ANNEX M (3)	(3)Errata 1 (04/2019), Errata 2 (06/2020), Errata 3 (09/2020). Addendum 1 (July 2020) and Addendum 2 (June 2021).
API 6D 25 ANNEX H (4)	(4)Revision November 2021
ASME SA182 2023 S31600/03 A (5)	(5)Section II Part A 2023 EDITION For products machined directly from bar refer to ASME SA479.
ASME SA276 2023 S31600/03 A (6)	(6)Section II Part A 2023 EDITION
ASME SA479 2023 S31600/03 A (7)	(7)Section II Part A 2023 EDITION
ASTM A182 2023 S31600/03 A (8)	(8)For products machined directly from bar refer also to ASTM A479.
ASTM A262 PR. E 2015 316/316L (9)	(9)Reapproved 2021
ASTM A276 2024A S31600/03 A	
ASTM A370 2022 .	
ASTM A479 2023A S31600/03 A	
ASTM E381 2022 .	
ASTM E562 2019 . (A)	(A)19E01
EN 10088 PART 3 2014 1.4401 A (B)	(B)Chemical and mechanical properties only.
EN 10088 PART 3 2014 1.4404 A (C)	(C)Chemical and mechanical properties only.
EN 10222 PART 5 2017 1.4401 A	
EN 10222 PART 5 2017 1.4404 A	
EN 10272 2016. 1.4401 A	
EN 10272 2016. 1.4404 A	
ISO 148-1 2016 .	
ISO 6892-1 2019 .	
NACE MR0103 2015 S31600/03 A (D)	(D)ANSI/NACE MR0103/ISO 17945 November 23, 2015
NACE MR0175 4 S31600/03 A (E)	(E)ANSI/NACE MR0175/ISO 15156-3:2020 Fourth edition, approved 21 Sep 2022.

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Pos. nr. / Pos. nr. / Item nr. / Nr. de poste	Oggetto / Gegenstand / Product description / Descrip. du produit	Tolleranza: k12 / Toleranz/Allowance/Tolerance — Dimensioni - mm / Abmessungen / Dimension / Dimension	Lunghezza - mm / Länge / Length / Longueur	Colata / Schmelze / Heat / Coulée	Pezzi / Stückzahl / Pieces / Pieces	Peso - KG / Gewicht / Weight / Poids	Lotto nr. / Losnr. / Lot nr. / Lot nr.
0030	Tondo	170,000	3720/ 3720	293223	1	671,0	308714630

TEST ALLO STATO DI FORNITURA

TEST		min	max	
A	Dimensioni grano x ASTM E112			3
A	Ferrite delta %			1,1 %

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 04/04/2024 VCQ012 - MEST042722	Direzione Qualità / Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto / Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 1 di 6

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In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST042722 / 2024 /

Cliente / Besteller/Purchaser/Client:
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VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr. / Bestell / Your order / Commande: N. AF2401021

Conferma ordine nr. / Werks/Our Order/Ref nr.: MI24002182

Avviso di Spedizione / Lieferanzeige/Packing list/B.L.: A-MI24002139

Stato di fornitura / Lieferzustand / Delivery state / Etat de livraison: Fucinato - Solubilizzato Pelato

Tipo di Elaborazione / Erschmelzungsart / Melting process / Mode d'elaboration: E+AOD

Qualità / Werkstoff/Grade/Nuance: 1.4401/1.4404/316/316L

Marca / Markenbezeichnung / Brand / Nuance: MVAPML (MAXIVAL)

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice: AV

Punzone del Collaudatore / Stempel des Werksachverständigen / Inspector's stamp/Poinçon de l'assayeur: MR

Punzonatura / Kennzeichnung / Marking / Marquage: 1.4401/1.4404/316/316L

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, O=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		60	60	60	-	-	-	-	-	-
B	10X10	-196	L	224	202	215	1,860	1,855	1,834	70	70	70

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, O=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		205	-	515	-	40	-	50	-			- 235		
C	12,5	20	L	280		558		55		70				159		

Prova di trazione per ISO 6892-1

1) L=longitudinale/längs, T=trasversale/quer, O=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement A5 %		Strizione Einschnürung Reduction of area Striction Z %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		205	240	510 690	35	-	-	-	-			- 215		
D	10	20	T	280	307	556	57		75					152		
J	10	20	T	284	309	559	56		73					155		

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, O=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		-	-	-	-	-	-	-	-	-
E	10X10	-196	T	101	112	109	0,849	0,874	0,896	45	45	45

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 04/04/2024	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité	Direzione Prodotto Produktmanagement/Product Management/Direction Produit	Pagina
VCQ012 - MEST042722	R.BERTELLI	P.MESSORI	2 di 6

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CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1 (Nach/According to/Selon)

Certificato nr. MEST042722 / 2024 / (Prüfung/Test/Essai)

Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: N. AF2401021
Bestell / Your order / Commande

Conferma ordine nr: MI24002182
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24002139
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato - Solubilizzato Pelato
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung / Marking / Marquage

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, C=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2			Espansione laterale - Lateral Expension			Shear - Shear		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		60	60	60	-	-	-	-	-	-
I	10X10	20	T	129	130	122						
K	10X10	20	T	120	136	124						

Tensile testing according to ISO 6892-1
Impact testing according to ISO 148-1
Mechanical properties according to ASTM A370.
Ferrite content tested according to ASTM E562.

Analisi chimica
Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat Schmelze/Coulée															
	min 23,0	-	-	-	16,50	2,00	10,00	-	-	-	-	-	-	-	-
	max 28,0	0,030	1,00	2,00	18,00	2,50	13,00	-	0,045	0,030	0,100	-	-	-	-
	PRE	C %	Si %	Mn %	Cr %	Mo %	Ni %	Co %	P %	S %	N %				
293223	25,1	0,012	0,46	1,72	16,96	2,05	10,18	0,197	0,032	0,020	0,083				

Colata /Heat Schmelze/Coulée								
	min 14,0	-	-	-	-	-	-	-
	max 20,0	-	-	-	-	-	-	-
	Ni+(2*Mo)							
293223	14,3							

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 04/04/2024 VCQ012 - MEST042722	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité **R.BERTELLI**	Direzione Prodotto Produktmanagement/Product Management/Direction Produit **P.MESSORI**	Pagina 3 di 6

CORPO VALVOLA / VALVE BODY

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Certificato nr. / Prüfung/Test/Essai: MEST042722 / 2024 /

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VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr. / Bestell / Your order / Commande: N. AF2401021

Conferma ordine nr. / Werks/Our Order/Ref nr.: MI24002182

Avviso di Spedizione / Lieferanzeige/Packing list/B.L.: A-MI24002139

Stato di fornitura / Lieferzustand / Delivery state / Etat de livraison: Fucinato - Solubilizzato Pelato

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Marca / Markenbezeichnung / Brand / Nuance: MVAPML (MAXIVAL)

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Liefernwerkes / Trade marks / Sigles de l'usine productrice: AV

Punzone del Collaudatore / Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur: MR

Punzonatura / Kennzeichnung / Marking / Marquage: 1.4401/1.4404/316/316L

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Furnace calibrated according to API 6A REV 21th ED ANNEX M.
Furnace calibrated according to API 6D REV 25th ED ANNEX H.
Macroetch test per ASTM E381: acceptable.
Reduction ratio = 12,6 : 1
SURFACE QUALITY GUARANTEE BY ET INSPECTION (max defect depth 1% DIAMETER)
UT ACC. TO:A388/API 6A PSL3-EN 10308cl.3-ASME B16.34/IV
Solution annealed 1080°C for 3h/water cooled.
Treatment made on date 23/10/2023 in batch
furnace M1A calibration expiry date 29/11/2023.
"Issued in agreement with TÜV SÜD Industrie Service GMBH
(07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by
Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

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Allegati / Anlagen / Enclosure / Attachments :
UT24002025 GT24000634

Sono state soddisfatte tutte le condizioni richieste	Controllo antimescolanza con tecnica XRF/OES portatile : OK	Controllo visivo e dimensionale: soddisfa le esigenze
Die gestellen Anforderungen sind lt. Anlage erfüllt	Verwechslungprüfung: durch XRF/QES Gerät geführt : OK	Besichtigung und Ausmessung: ohne Beanstandung
The material has been furnished in accordance with the requirements	Antimbing testing performed with XRF/OES portable : OK	Visual inspection and dimensional checks:satisfactory
Le materiel à été trouvé conforme aux exigences	Contrôle antimélange svt technique XRF/QES portable : OK	Contrôle visuel et dimensions: satisfaisant

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

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31/10/24

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD'S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
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VCQ012 - MEST042722	R.BERTELLI	P.MESSORI	4 di 6

CORPO VALVOLA / VALVE BODY

	Acciaierie Valbruna S.p.A. 36100 VICENZA (Italia) - Viale della scienza, 25 z.i. Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4	**CERTIFICATO** Certificate - Zeugnis - Certificat **N° UT24002025**	Pag 5 di 6
		CONTROLLO CON ULTRASUONI *Ultrasonic testing - Ultraschallprüfung - Controle par ultrasons*	

mod. UT02 MEST042722 / 2024 /

Cliente : INDRA S.R.L. *Customer*				**Lotto nr : 308714630** *Mill order*		
MARCA *Grade*	**DIMENSIONI - mm** *Size*	**COLATA** *Heat*	**BARRE** *Bars*	**PESO** *Weight*	**LUNGHEZZA - mm** *Length*	
MVAPML	Tondo 170,000	293223	N. 1	KG : 671,0	3720	3720

T. TERMICO *Heat Treatement*	**ESECUZIONE** *Condition*	**RUGOSITA'** *Roughness*	**TOLLERANZA** *Tolerance*
Solubilizzato	Pelato	µm	k12

Istruzione : PROC CND 040 *Work Instruction*		**Criteri Accettabilità : ASTM A388** Acceptance Criteria

ELETTRONICA : Olympus Quickscan LT *Equipment*					
ACCOPPIANTE : ACQUA + 0253 SA *Couplant*				**VEL.CONTROLLO : 249 mm/sec** *Testing Speed*	
TRASDUTTORI *Probes*	**TIPO ONDA** *Type of wave*	**FREQUENZA (MHZ)** *Frequency*	**DIMENSIONI (MM)** *Dimension*	**ANGOLO** *Angle*	**TARATURA** *Calibration*
64EL. 2.25MHZ	LONG.	2,25	128X25	0°	DAC

CONTROLLO AUTOMATICO [X] *Automatic inspection*	**CONTROLLO MANUALE** *Manual inspection*

NOTE :
Notes

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31/10/24

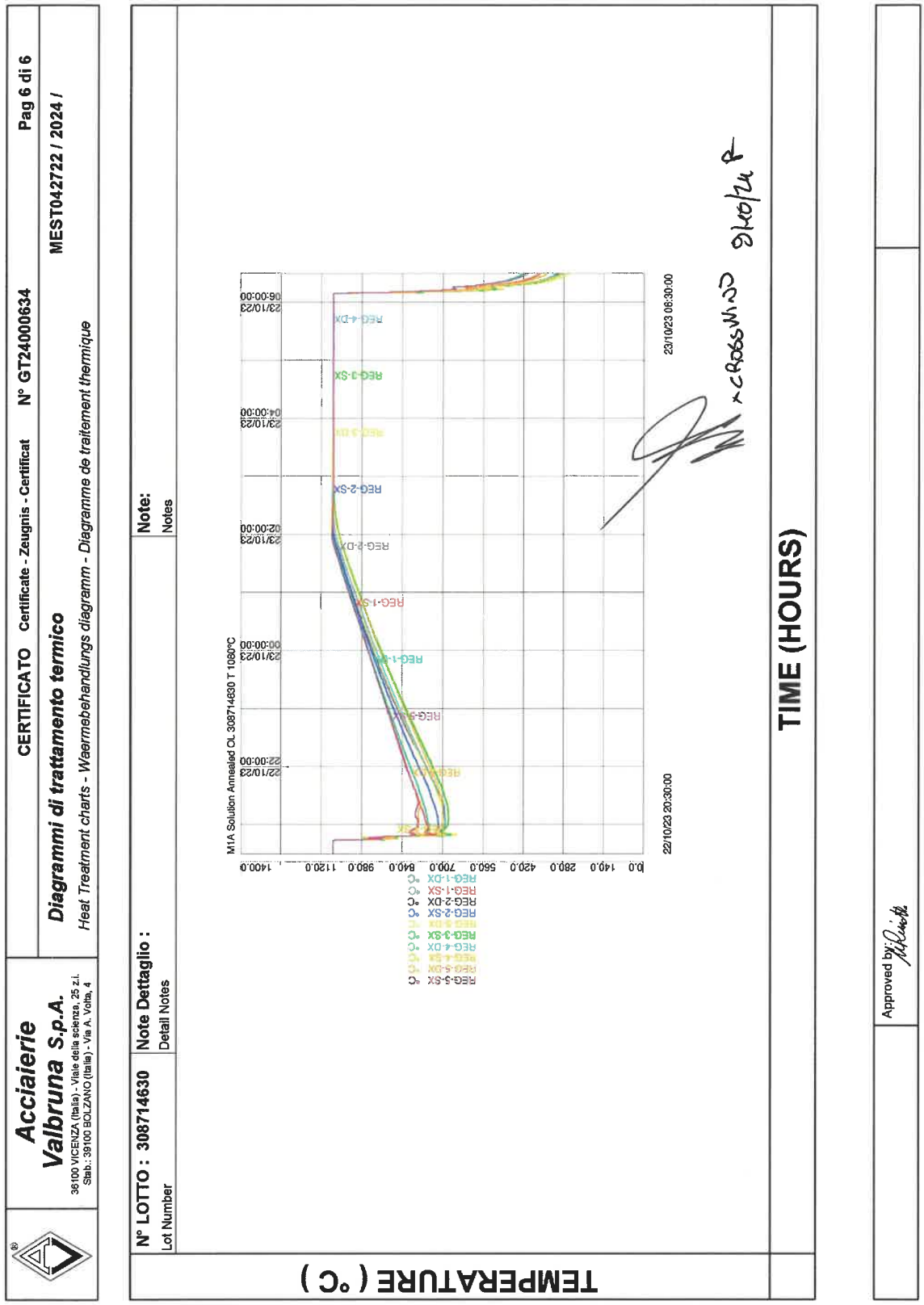
CONFORME [X] *Compliant*	**CONFORME IN DEROGA [ ]** *See Deviation*	**NON CONFORME [ ]** *Not Compliant*

ISPEZIONATO DA Inspected by	**VERIFICATO DA** Verified by	**APPROVATO DA** Approved by **G.Parlato** ISO 9712 LEV. 2 IND1901054	**COLLAUDATORE** Inspector - Abnahmesachsverst - Inspecteur
FIRMA	**FIRMA**	**FIRMA**	

Date - Date **26/02/2024**

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In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST007063 / 2024 /
Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 00016
Bestell
Your order
Commande

Conferma ordine nr: MI24000193
Works/Our Order/Ref nr.

Avviso di Spedizione: A-MI24000311
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato - Solubilizzato Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werksachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung
Marking
Marquage

SPECIFICHE :	Note:
Anforderungen / Requirements / Exigences	Aufzeichnungen / Notes / Notes
VAL STOCK W2 A/1 1.4404/316L A	
MDS S01 5 316 A (0)	(0)Norsok-standard M-630 Edition 6, October 2013
MDS S17 1 316 A (1)	(1)Norsok-standard M-630: 2020 (2020-09-30)
AD 2000-M. W 2 2022 1.4401 A (2)	(2)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
AD 2000-M. W 2 2022 1.4404 A (3)	(3)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
AISI . 316/316L	
AMS-QQ-S-763 D 316/316L A	
ASME SA182 2023 S31600/03 A (4)	(4)Section II Part A 2023 EDITION For products machined directly from bar refer to ASME SA479.
ASME SA193 2023 B8M CLASS 1 (5)	(5)Section II Part A 2023 EDITION
ASME SA276 2023 S31600/03 A (6)	(6)Section II Part A 2023 EDITION
ASME SA320 2021 B8M CLASS 1 (7)	(7)Section II Part A 2021 EDITION
ASME SA479 2023 S31600/03 A (8)	(8)Section II Part A 2023 EDITION
ASTM A182 2023 S31600/03 A (9)	(9)For products machined directly from bar refer also to ASTM A479.
ASTM A193 2023 B8M CLASS 1	
ASTM A262 PR. E 2015 316/316L (A)	(A)Reapproved 2021
ASTM A276 2023 S31600/03 A	
ASTM A320 2022 B8M CLASS 1 CLASS1	
ASTM A370 2022 .	
ASTM A479 2023A S31600/03 A	
ASTM E10 2023 .	
ASTM E8 2022 .	
EN 10088 PART 3 2014 1.4401 A	
EN 10088 PART 3 2014 1.4404 A	
EN 10222 PART 5 2017 1.4401 A	
EN 10222 PART 5 2017 1.4404 A	
EN 10272 2016. 1.4401 A	
EN 10272 2016. 1.4404 A	
ISO 148-1 2016 .	
ISO 3651-2 98 METHOD A T1	
ISO 6506-1 2014 .	
ISO 6892-1 2019 .	
NACE MR0103 2015 S31600/03 A (B)	(B)ANSI/NACE MR0103/ISO 17945 November 23, 2015
NACE MR0175 4 S31600/03 A (C)	(C)ANSI/NACE MR0175/ISO 15156-3:2020 Fourth edition, approved 21 Sep 2022.
QQ-S-763 F 316/316L A	
ACH CO . .	
KV L -196C . ISO 148-1	
KV T -196C . ISO 148-1	

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xCROSSWIND
9/10/24R

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 17/01/2024	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité	Direzione Prodotto Produktmanagement/Product Management/Direction Produit	Pagina
VCQ012 - MEST007063	R.BERTELLI	P.MESSORI	1 di 6

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST007063 / 2024 /
Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 00016
Bestell
Your order
Commande

Conferma ordine nr: MI24000193
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24000311
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato - Solubilizzato Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung
Marking
Marquage

		Tolleranza: k12					
Pos. nr.	Oggetto	Dimensioni - mm	Lunghezza - mm	Colata	Pezzi	Peso - KG	Lotto nr.
Pos. nr Item nr Nr. de poste	Gegenstand Product description Descrip. ou produit	Abmessungen Dimension Dimension	Länge Length Longueur	Schmelze Heat Coulée	Stückzahl Pieces Pieces	Gewicht Weight Poids	Losnr. Lot nr Lot nr.
0070	Tondo	180,000	6080/ 6080	293307		1232,0	320206260

TEST ALLO STATO DI FORNITURA

TEST		min	max	
A	Dimensioni grano x ASTM E112			3

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs démandées		min max		-	-	-	-	-	-	-	-	-
B	10X10	-196	L	212	220	224	1,920	1,595	2,210	75	71	70

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs démandées		min max		210	-	520 790	-	40	-	50	-			-	223
C	12,5	20	L	262		560		59		69				160	

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 17/01/2024 VCQ012 - MEST007063	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 2 di 6

Acciaierie Valbruna S.p.A.

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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST007063 / 2024 /
Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 00016
Bestell
Your order
Commande

Conferma ordine nr: MI24000193
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24000311
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato - Solubilizzato Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Liefernwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore:
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung
Marking
Marquage

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais. mm	°C	Posiz. Saggio Probenlage Location Emplacement °	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete		
Valori richiesti Anforderungen/Required values Valeurs démandées		min max		205	-	515	-	40	-	50	-			-		
D	12,5	20	T	256		554		54		67						

Prova di trazione per ISO 6892-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais. mm	°C	Posiz. Saggio Probenlage Location Emplacement °	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement A5 %		Strizione Einschnürung Reduction of area Striction Z %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs démandées		min max		205	240	510 690	35	-	-	-	-			- 215		
E	10	20	T	252	293	551	55		65					157		
L	10	20	T	248	295	559	53		66					158		

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais. mm	°C	Posiz. Saggio Probenlage Location Emplacement °	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale - Lateral Expansion - Lateral ex mm			Shear - Shear - % Shear %		
Valori richiesti Anforderungen/Required values Valeurs démandées		min max		-	-	-	-	-	-	-	-	-
F	10X10	-196	T	97	95	92	0,655	0,810	0,585	20	20	21

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais. mm	°C	Posiz. Saggio Probenlage Location Emplacement °	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale - Lateral Expansion -			Shear - Shear -		
Valori richiesti Anforderungen/Required values Valeurs démandées		min max		60	60	60	-	-	-	-	-	-
I	10X10	20	T	101	98	94						
J	10X10	20	T	95	92	96						

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 17/01/2024
VCQ012 - MEST007063

Direzione Qualità
Qualitätsmanagement/Quality Management/Gestion Qualité
R.BERTELLI

Direzione Prodotto
Produktmanagement/Product Management/Direction Produit
P.MESSORI

x CROSSWIND
9/10/24 R

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Acciaierie Valbruna S.p.A.

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Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST007063 / 2024 /
Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 00016
Bestell
Your order
Commande

Conferma ordine nr: MI24000193
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24000311
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato - Solubilizzato Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore:
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung
Marking
Marquage

Tensile testing according to ISO 6892-1
Impact testing according to ISO 148-1
Mechanical properties according to ASTM A370.
Brinnell hardness according to ASTM E10
Tensile testing according to ASTM E8
Brinnell hardness according to ISO 6506-1

Analisi chimica
Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat Schmelze/Coulée	C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	Co %	P %	S %	N %				
min - max	- 0,030	- 1,00	- 2,00	16,50 - 18,00	2,00 - 2,50	- 1,00	10,00 - 13,00	- -	- 0,045	- 0,030	- 0,100	- -	- -	- -	- -
293307	0,019	0,44	1,74	16,72	2,06	0,46	10,00	0,124	0,030	0,024	0,071				

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Indicare dati TT
TT solo in forno (no placca).
Reduction ratio = 8,0 : 1
Solution annealed 1080°C for 5 h /water cooled.
SURFACE QUALITY GUARANTEE BY ET INSPECTION (max defect depth 1% DIAMETER)
UT ACC. TO ASTM A388; EN 10308 Cl.1
"Issued in agreement with TÜV SÜD Industrie Service GMBH
(07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by
Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 17/01/2024 VCQ012 - MEST007063	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 4 di 6

CROSSWIND 8/10/24 R

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
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INDRA S.R.L.
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20013 - MAGENTA - MI

Ordine nr: AF24 00016
Bestell
Your order
Commande

Conferma ordine nr: MI24000193
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24000311
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato - Solubilizzato Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werksachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung
Marking
Marquage

Allegati / Anlagen / Enclosure / Attachments :
UT24000314

Sono state soddisfatte tutte le condizioni richieste Die gestellen Anforderungen sind lt. Anlage erfüllt The material has been furnished in accordance with the requirements Le materiel á été trouvé conforme aux exigences	Controllo antimescolanza con tecnica XRF/OES portatile : OK Verwechslungprüfung: durch XRF/OES Gerät geführt : OK Antimixing testing performed with XRF/OES portable : OK Contrôle antimélange svt technique XRF/QES portable : OK	Controllo visivo e dimensionale: soddisfa le esigenze Besichtigufg und Ausmessung: ohne Beanstandung Visual inspection and dimensional checks:satisfactory Contrôle visuel et dimensions: satisfaisant

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD`S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 17/01/2024 VCQ012 - MEST007063	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité **R.BERTELLI**	Direzione Prodotto Produktmanagement/Product Management/Direction Produit **P.MESSORI**	Pagina 5 di 6

CLOSURE J300RF3

	Acciaierie Valbruna S.p.A. 36100 VICENZA (Italia) - Viale della scienza, 25 z.i. Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4	**CERTIFICATO** Certificate - Zeugnis - Certificat **N° UT24000314**	**Pag 6 di 6**
		CONTROLLO CON ULTRASUONI *Ultrasonic testing - Ultraschallprüfung - Controle par ultrasons*	

mod. UT02 MEST007063 / 2024 /

Cliente : INDRA S.R.L. *Customer*				**Lotto nr : 320206260** *Mill order*		
MARCA *Grade*	**DIMENSIONI - mm** *Size*	**COLATA** *Heat*	**BARRE** *Bars*	**PESO** *Weight*	**LUNGHEZZA - mm** *Length*	
MVAPML	Tondo 180,000	293307		KG : 1232,0	6080	6080

T. TERMICO *Heat Treatement*	**ESECUZIONE** *Condition*	**RUGOSITA'** *Roughness*	**TOLLERANZA** *Tolerance*
Solubilizzato	Pelato	µm	k12

Istruzione : PROC CND 040 *Work Instruction*	**Criteri Accettabilità : ASTM A388** Acceptance Criteria

ELETTRONICA : Olympus Quickscan LT
Equipment

ACCOPPIANTE : ACQUA + 0253 SA
Couplant

VEL.CONTROLLO : 450 m/min
Testing Speed

TRASDUTTORI *Probes*	**TIPO ONDA** *Type of wave*	**FREQUENZA (MHZ)** *Frequency*	**DIMENSIONI (MM)** *Dimension*	**ANGOLO** *Angle*	**TARATURA** *Calibration*
64EL. 2.25MHZ	LONG.	2,25	128X25	0°	DAC

CONTROLLO AUTOMATICO [X] *Automatic inspection*	**CONTROLLO MANUALE** *Manual inspection*

NOTE :
Notes

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31/10/24 R

CONFORME [X] *Compliant*	**CONFORME IN DEROGA [ ]** *See Deviation*	**NON CONFORME [ ]** *Not Compliant*

ISPEZIONATO DA Inspected by	**VERIFICATO DA** Verified by	**APPROVATO DA** Approved by	**COLLAUDATORE** Inspector - Abnahmesachsverst - Inspecteur
FIRMA 17/01/2024 Date - Date	**FIRMA**	**G.Parlato** ISO 9712 LEV. 2 IND1901054 **FIRMA**	

Operatori, strumenti e documenti di riferimento, utilizzati per il collaudo del materiale, sono identificati, controllati e/o calibrati in accordo alle norme EN, ISO e ASTM, richiamate nelle pratiche operative e istruzioni di pertinenza / *Operators, Equipment and reference documents, used for material inspection, are identified, checked and/or calibrated in accordance with EN/ISO or ASTM standards, reported in relevent documents.*

TIRANTE / STUD BOLT

IPL S.r.l.
BULLONERIA - TIRANTERIA
SPECIALE E STANDARD

Via Papa Giovanni Paolo I, 306
21040 UBOLDO (VA)

Customer: **INDRA SRL**
C.SO XXII MARZO, 8
20135 MILANO (MI)

Date, 12-12-23 **Our Ref.** DDT 3982 / OC 2244 **of** 12-12-23 **Your Ref.** AF23 02961 03-11-23

CERTIFICATE UNI EN 10204 - 3.1 N.2303177

ITEM		QUANTITY	HEAT TREATMENT	PROTECTION	LOT nr.	HEAT nr.
TIR.820160681-5	STUDBOLT UNI6610/DIN976B - A/SA193/320 B8M CL.2 M 16 x 1,5 x 68 *60*	288,00	carb. sol. tr. + strain hard.		813586	1KNK
TIR.820160681-5	STUDBOLT UNI6610/DIN976B - A/SA193/320 B8M CL.2 M 16 x 1,5 x 68 *440*	12,00	carb. sol. tr. + strain hard.		813586	1KNK

MECHANICAL PROPERTIES

values	R (MPa)	Rs 0,2 (MPa)	A4 (%)	Z (%)	HB (min-max)
required	760 min	655 min	15 min.	45 min.	321 max
actual	920	657	28,0	63,0	265

CHEMICAL COMPOSITION

values	C (%)	Mn (%)	Si (%)	P (%)	S (%)	Ni (%)	Cr (%)	Mo (%)
required	0,08 max	2,00 max	1,00 max	0,045 max	0,030 max	10,00 - 14,00	16,00 - 18,00	2,00 - 3,00
actual	0,0280	1,4620	0,3970	0,0250	0,0270	10,3850	16,6750	2,0570

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remarks: chemical and mechanical values, at delivery condition, are quoted by the relevant steel work certificate. VISUAL AND DIMENSIONAL TEST SATISFACTORY
According to: ASME II part. A ed. 2023

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9/10/24

If not mentioned the above test are performed at room temperature.
We certify that the fasteners were manufactured, sampled, tested and inspected in accordance with the specification and are consistent with order prescriptions.
Quality assurance system in accordance to European Directive 2014/68/EU annex I par. 4.3 (PED) and AD 2000 Merkblatt W0.
Certificates 0045/202/WZ1921/23 and TN/AD2000-W0/1921/23 TÜV NORD Systems GmbH & Co. KG.

IPL S.R.L.
RSQ A. Grisetti

DADO / NUT

S.r.l.
BULLONERIA - TIRANTERIA
SPECIALE E STANDARD

Via Papa Giovanni Paolo I, 306
21040 UBOLDO (VA)

Customer: **INDRA SRL**
C.SO XXII MARZO, 8
20135 MILANO (MI)

Date, 13-12-23 **Our Ref.** DDT 4025 / OC 2244 **of** 13-12-23 **Your Ref.** AF23 02961 03-11-23

CERTIFICATE UNI EN 10204 - 3.1 N.2303217

ITEM		QUANTITY	HEAT TREATMENT	PROTECTION	LOT nr.	HEAT nr.
86738M0161-5	HEX NUT ISO 8673 - A/SA194 G8M M 16 x 1,5	283,00	carbide solution tr.		813592	253295*
	50					
86738M0161-5	HEX NUT ISO 8673 - A/SA194 G8M M 16 x 1,5	17,00	carbide solution tr.		813592	253295*
	390					

MECHANICAL PROPERTIES

values	HB (min-max)	PROOF LOAD
required	126 - 300	
actual	242 - 248	N.A.

CHEMICAL COMPOSITION

values	C (%)	Mn (%)	Si (%)	P (%)	S (%)	Ni (%)	Cr (%)	Mo (%)
required	0,08 max	2,00 max	1,00 max	0,045 max	0,030 max	10,0 - 14,0	16,0 - 18,0	2,00 - 3,00
actual	0,011	1,92	0,52	0,029	0,028	10,85	16,87	2,03

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remarks: chemical and mechanical values, at delivery condition, are quoted by the relevant steel work certificate. VISUAL AND DIMENSIONAL TEST SATISFACTORY
Corrosion test acc. to ASTM A262 pract. E: OK

x CROSSWOOD
31/10/24

If not mentioned the above test are performed at room temperature.
We certify that the fasteners were manufactured, sampled, tested and inspected in accordance with the specification and are consistent with order prescriptions.
Quality assurance system in accordance to European Directive 2014/68/EU annex I par. 4.3 (PED) and AD 2000 Merkblatt W0.
Certificates 0045/202/WZ1921/23 and TN/AD2000-W0/1921/23 TÜV NORD Systems GmbH & Co. KG.

IPL S.R.L.
RSQ A. Grisetti

STELO SFERA / BALL STEM

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST084078 / 2023 /
Prüfung/Test/Essai

Ordine nr: ORD.N.2300396
Bestell / Your order / Commande

Conferma ordine nr: MI23004818
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23003903
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Hot rolled - Annealed COLD PROCESSED
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung / Marking / Marquage

SPECIFICHE :	Note:
Anforderungen / Requirements / Exigences	Aufzeichnungen / Notes / Notes
VAL STOCK W2 A/1 1.4404/316L A,CF	
AD 2000-M. W 2 01/20 1.4401 A,CF (0)	(0)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
AD 2000-M. W 2 01/20 1.4404 A,CF (1)	(1)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
AISI . 316/316L	
AMS-QQ-S-763 D 316/316L A,CF	
ASME SA182 2021 S31600/03 A (2)	(2)Section II Part A 2021 EDITION For products machined directly from bar refer to ASME SA479.
ASME SA276 2021 S31600/03 A,CF (3)	(3)Section II Part A 2021 EDITION
ASME SA479 2021 S31600/03 A (4)	(4)Section II Part A 2021 EDITION
ASTM A182 2022A S31600/03 A (5)	(5)For products machined directly from bar refer also to ASTM A479.
ASTM A262 PR. E 2015 316/316L (6)	(6)Reapproved 2021
ASTM A276 2017 S31600/03 A,CF	
ASTM A370 2022 .	
ASTM A479 2021 S31600/03 A	
ASTM E10 2018 .	
ASTM E8 2022 .	
EN 10088 PART 3 2014 1.4401 A,CF	
EN 10088 PART 3 2014 1.4404 A,CF	
EN 10272 2016. 1.4401 A,CF	
EN 10272 2016. 1.4404 A,CF	
ISO 148-1 2016 .	
ISO 3651-2 98 METHOD A T1	
ISO 6506-1 2014 .	
ISO 6892-1 2019 .	
NACE MR0103 2015 S31600/03 A (7)	(7)ANSI/NACE MR0103/ISO 17945 November 23, 2015
NACE MR0175 2015 S31600/03 A (8)	(8)ANSI/NACE MR0175/ISO 15156-3, third edition November 23,2015
QQ-S-763 F 316/316L A,CF	
ACH CO . .	
KV L -196C . ISO 148-1	

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Tolleranza: h9 - DIN671/EN10278
Toleranz/Allowance/Tolerance

Pos. nr.	Oggetto	Dimensioni - mm	Lunghezza - mm	Colata	Pezzi	Peso - KG	Lotto nr.
Pos. nr. / Item nr. / Nr. de poste	Gegenstand / Product description / Descrip. du produit	Abmessungen / Dimension / Dimension	Länge / Length / Longueur	Schmelze / Heat / Coulée	Stückzahl / Pieces / Pieces	Gewicht / Weight / Poids	Losnr / Lot nr. / Lot nr.
0010	Round	25,000	3000/ 3040	291905		58,0	304610390

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 26/06/2023	Direzione Qualità	Direzione Prodotto	Pagina
VCQ052 - MEST084078	Qualitätsmanagement/Quality Management/Gestion Qualité	Produktmanagement/Product Management/Direction Produit	1 di 4
	R.BERTELLI	P.MESSORI	

STELO SFERA / BALL STEM

Acciaierie Valbruna S.p.A.

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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST084078 / 2023 /
Prüfung/Test/Essai

Stato di fornitura : Hot rolled - Annealed COLD PROCESSED
Lieferzustand / Delivery state / Etat de livraison

Produttore :
Hersteller/Item/Usine productrice
ACCIAIERIE VALBRUNA S.P.A.

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Marchi di Fabbrica:
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice

Ordine nr: ORD.N.2300396
Bestell / Your order / Commande

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Punzone del Collaudatore:
Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur

Conferma ordine nr: MI23004818
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23003903
Lieferanzeige/Packing list/B.L.

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Punzonatura: 1.4401/1.4404
Kennzeichnung / Marking / Marquage

TEST ALLO STATO DI FORNITURA
Test on delivery condition Prüefung auf lieferbereitem produkt test a l'etat de fourniture Prueba sobre el material así come entregado

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement A5 %		Strizione Einschnürung Reduction of area Striction Z %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs démandées		min		200	235	500	20	-	-	-	-			-		
		max				900									315	
A	10	20	L	480	568	694	43		65					231		
G	10	20	L	485	571	699	42		64					234		

TEST ALLO STATO DI FORNITURA
Test on delivery condition / Prüefung auf lieferbereitem produkt / Test a l'etat de fourniture / Prueba sobre el material así come entregado

TEST		min	max	
A	Grain size for ASTM E112			5

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs démandées		min		-	-	-	-	-	-	-	-	-
		max										
B	10X10	-196	L	168	170	162	1,758	1,485	1,328	65	60	59

Test on delivery condition per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs démandées		min		210	-	517	-	30	-	50	-			-		
		max													235	
C	12,5	20	L	502		697		43		69				233		

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 26/06/2023	Direzione Qualità	Direzione Prodotto	Pagina
VCQ052 - MEST084078	Qualitätsmanagement/Quality Management/Gestion Qualité	Produktmanagement/Product Management/Direction Produit	2 di 4
	R.BERTELLI	P.MESSORI	

STELO SFERA / BALL STEM

Acciaierie Valbruna S.p.A.

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Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST084078 / 2023 /
Prüfung/Test/Essai

Stato di fornitura : Hot rolled - Annealed COLD PROCESSED
Lieferzustand / Delivery state / Etat de livraison

Produttore :
Hersteller/Item/Usine productrice
ACCIAIERIE VALBRUNA S.P.A.

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Marchi di Fabbrica:
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice

Ordine nr: ORD.N.2300396
Bestell / Your order / Commande

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Punzone del Collaudatore:
Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur

Conferma ordine nr: MI23004818
Werks/Our Order/Ref nr.

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Punzonatura: 1.4401/1.4404
Kennzeichnung / Marking / Marquage

Avviso di Spedizione: A-MI23003903
Lieferanzeige/Packing list/B.L.

Charpy per ISO 148-1

1) L=longitudinale/lengs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg. dem Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais. mm	°C	Posiz. Saggio Probenlage Location Emplacement °	Resilienza Kerbschlagarbeit Impact Value Resilience KV_2 J			Espansione laterale Lateral Expension			Shear Shear		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		100	100	100	-	-	-	-	-	-
F	10X10	20	L	201	198	200						
H	10X10	20	L	209	191	194						

Tensile testing according to ISO 6892-1
Impact testing according to ISO 148-1
Mechanical properties according to ASTM A370.
Brinnell hardness according to ASTM E10
Tensile testing according to ASTM E8
Brinnell hardness according to ISO 6506-1

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31/10/24

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Analisi chimica
Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat Schmelze/Coulée		C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	Co %	P %	S %	N %				
	min -	-	-	-	16,50	2,00	-	10,00	-	-	-	-	-	-	-	-
	max 0,030	1,00	2,00	18,00	2,50	1,00	13,00	-	0,045	0,030	0,100	-	-	-	-	
291905		0,015	0,54	1,50	16,86	2,01	0,42	10,13	0,168	0,031	0,029	0,058				

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 26/06/2023	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité	Direzione Prodotto Produktmanagement/Product Management/Direction Produit	Pagina 3 di 4
VCQ052 - MEST084078	**R.BERTELLI**	**P.MESSORI**	

STELO SFERA / BALL STEM

Acciaierie Valbruna S.p.A.

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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST084078 / 2023 /
Prüfung/Test/Essai

Ordine nr: ORD.N.2300396
Bestell
Your order
Commande

Conferma ordine nr: MI23004818
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23003903
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Hot rolled - Annealed COLD PROCESSED
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung
Marking
Marquage

Reduction ratio = 61,1 : 1
Solution annealed 1040°C for 135'(total time)/water cooled.
SURFACE QUALITY COMPLIANT TO EN 10088-3 TAB.1 COND. 2H
"Issued in agreement with TÜV SÜD Industrie Service GMBH
(07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by
Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

Sono state soddisfatte tutte le condizioni richieste	Controllo antimescolanza con tecnica XRF/OES portatile : OK	Controllo visivo e dimensionale: soddisfa le esigenze
Die gestellen Anforderungen sind it. Anlage erfüllt	Verwechslungprüfung: durch XRF/QES Gerät geführt : OK	Besichtigung und Ausmessung: ohne Beanstandung
The material has been furnished in accordance with the requirements	Antimixing testing performed with XRF/OES portable : OK	Visual inspection and dimensional checks:satisfactory
Le materiel à été trouvé conforme aux exigences	Contrôle antimélange svt technique XRF/QES portable : OK	Contrôle visuel et dimensions: satisfaisant

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD`S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 26/06/2023 VCQ052 - MEST084078	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 4 di 4

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C.F. 02187360967
VAT: IT00571320076 - R.E.A. n. AO-50474

Company with Management Systems certified according to ISO 9001, IATF 16949, EN 9100 and ISO 14001.

INSPECTION CERTIFICATE 3.1 (EN 10204:2004)

DOCUMENT NUMBER 2022021445

SFERA / BALL

CUSTOMER:	SWISS STEEL ITALIA S.R.L.
CUSTOMER'S ORDER:	2058038281
MANUFACTURER'S WORKS:	AOSTA, VIA PARAVERA 16 - ITALY
PRODUCER OF THE DOC:	QUALITY DEPARTMENT
MANUFACTURER'S WORKS ORDER NO:	0025290568 / 000120
MARK OF THE MANUFACTURER:	COGNE
DISPATCH NOTE:	81480988 / 000010 WEIGHT: 1840 KG / 4057 LB

THE CERTIFIED PRODUCTS ARE COMPLYING TO THE PURCHASE ORDER, EXCEPT FOR EXEMPTIONS AGREED WITH THE CUSTOMER, IF ANY.

INTERNAL SPEC:	AD2000MERKBLATTW10	TECHNICAL RULE:	AD2000
PRODUCT:	PEL PEELED ROUND BARS TOLERANCE: ISOK11		
SURFACE FINISH:	2B Cold Finished		
PRODUCT DELIVERY CONDITION:	RS SOLUTION ANNEALED		
PRODUCT DIMENSIONS (mm):	95,000 (3,740 in)	LENGTH (mm)	04000 06200 (00157 00244 in)
GRADE:	316L-S31600/31603-1.4404/1.4401	INTERNAL GRADE:	F316L IMCO
IDENTIFICATION HEAT NO:	272823	IDENTIFICATION LOT NO:	135920
MARKING OF THE PRODUCT:	1.4404	TEST PIECE N:	592

AISI 316/316L - UNS S31600/S31603 - 1.4404/1.4401
THE MATERIAL IS PRODUCED ACCORDING TO SPECIFICATION AD2000-MERKBLATT W2/W10
DOCUMENT ISSUED IN AGREEMENT WITH TUEV BAYERN(11.1972) WAVING OF COUNTERSIGNING (SEE TUEV BAYERN LETTER DATED 17.01.80).
REFERENCE NORMS: EN 10088-3 2014, EN 10272 2016, ASTM A276/A276M, ASTM A479/A479M, ASTM A193 B8MCLASSE 1D, ASME SA276/SA276M, ASME SA479/SA479M, AMS 5653J, AMS 5648M, ISO15156-3/NACE MR0175 2015, NACE MR0103/ISO 17945, NORSOK M630 MDSS01 REV5.
REFERENCE NORMS FOR CHEMICAL COMPOSITION AND MECHANICAL PROPERTIES: ASTM A182, ASME SA182.
REFERENCE NORMS ONLY FOR CHEMICAL COMPOSITION: EN 10222-5 2017,ASTM A403-07a, ASTM A484-18a,ASTM A314-08, AMS-QQ-S-763D.
ASME SECT.II PART A EDITION 2015-2017-2019-2021
MATERIAL ACCORDING TO NACE MR0103/ISO 17945
HOT ROLLED
REDUCTION RATIO 3,3

CHEMICAL LADLE ANALYSIS ACCORDING TO ASTM A751 - EN ISO 14284
Control lot No. - Weight :020000918793 - 85.286 KG - 188.020 LB

ELEMENTS	C	Si	Mn	P	S	N	Cr	Mo	Ni	Cu
OBTAINED	0,017	0,34	1,81	0,028	0,026	0,076	16,89	2,09	10,16	0,47

ELEMENTS	Co
OBTAINED	0,21

HARDNESS TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000919124 - 15.314 KG - 33.761 LB
SPECIFICATION ENISO6506 HARDNESS TEST HB TESTING METHOD: 10/3000
OBTAINED 172

IMPACT TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000919124 - 15.314 KG - 33.761 LB
SPECIFICATION EN ISO 148-1-KV2 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 20
MEASUREMENT UNIT J

OBTAINED										
	427	433	427	443	433	428	427	438	430	428
	432	431								

DATE 28.04.2022 MORABITO ROSA CF(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne

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TENSILE TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000919124 - 15.314 KG - 33.761 LB
SPECIFICATION EN-ISO6892-1 DIRECTION OF THE TEST PIECE: L

	RM	RP02	A5	Z	RP1
MEASUREMENT UNIT	MPA	MPA	% 5.0 D	%	NMM
OBTAINED	580	241	57,8	77,4	286
	582	241	55,0	77,3	285
	590	256	53,8	72,3	290
	578	244	55,0	78,2	286

GRAIN SIZE
Control lot No. - Weight :020000919124 - 15.314 KG - 33.761 LB
SPECIFICATION ASTME112 --
OBTAINED 5

CORROSION TEST ACCORDING TO ASTM A262 PRACTICE E EN ISO 3651-2 PRACTICE A: SATISFACTORY.
MATERIAL ACCORDING TO ASME SEC. II Ed. 2015
IMPACT TEST
Control lot No. - Weight :020000919124 - 15.314 KG - 33.761 LB
SPECIFICATION EN ISO 148-1 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 196-
MEASUREMENT UNIT J

OBTAINED	190	182	176	196	174	171	186	170	197	200
	175	188								

TENSILE TEST
Control lot No. - Weight :020000919124 - 15.314 KG - 33.761 LB
SPECIFICATION ASTMA370-E8-0.5"SPEC DIRECTION OF THE TEST PIECE: L

	RMB	RP02B	ZB	AL2B
MEASUREMENT UNIT	KSI	KSI	%	% 4,0 D
OBTAINED	85	35	78,7	54,2
	84	34	79,5	59,4
	84	35	74,8	62,9
	84	34	78,6	60,4

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The products delivered are conforming to EN10088-5 and bear the CE marking on the basis of the test results here reported and the continuous surveillance, assessment and approval by MPA NRW
(certificate no. 0432-CPR-00166-01)
Material produced according to the system #Regulation 305/2011/EU of the European Parliament and of the Council of 9 March 2011#
ULTRASONIC TEST ACCORDING TO EN 10308 Class.3: SATISFACTORY
EDDY CURRENT INSPECTION OF SURFACE ACCORDING TO EN 10277 CLASS 4.
DIMENSIONAL CONTROL ACCORDING TO EN 10278: SATISFACTORY.
NO WELDING REPAIR ON THE MATERIAL.

DATE 28.04.2022 MORABITO ROSA CF(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne

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SFERA / BALL

ANTIMIXING TEST BY PORTABLE SPECTROMETRE: CONFORMING
MARKING: SYMBOL OF THE MANUF. WORK, MATERIAL N. , CAST N., LOT N., RECEIVING AGENT STAMP
COUNTRY OF MELTING AND ORIGIN: ITALY, THE MATERIAL COMPLIES WITH FAR DFARS
252.225-7009 ALT 1.
THE PRODUCT SATISFIES THE DIRECTIVES: 2015/863/EU (ROHS3) - 2011/65/EU (ROHS2) - 2000/53/EU - 2002/95/EU(RoHS) - 2003/11/EU-2005/618/EU AND PED 2014/68/EU.
ALL THE NORMS MENTIONED ARE INTENDED IN THEIR LAST REVISION AT THE DATE OF ISSUE OF THIS DOCUMENT.
MATERIAL ACCORDING TO NACE MR0103/ISO 17945
INSPECTOR'S STAMP LF
QUALITY SYSTEM CERTIFIED BY KIWA CERMET ACCORDING TO UNI EN ISO 9001:2015 -IATF 16949:2016 (THE LAST ONE ONLY FOR WIRE ROD AND HOT ROLLED-PEELED-GROUND STAINLESS STEEL BARS).
THE MATERIAL IS FREE OF ANY MERCURY, MERCURY COMPOUNDS AND OR RADIUM CONTAMINATION AT TIME OF SHIPMENT AND WAS PRODUCED WITHOUT USING OZONE DEPLETING SUBSTANCES OF CLASS I AND II.
RADIOACTIVITY CONTROL PERFORMED WITH A GAMMA SPECTROMETER: ASTM E181.
GAMMA ACTIVITY ON THE PRODUCTS BELOW 0.1 BQ/G ACCORDING TO EU RESOLUTION 2013/59/EURATOM , IAEA RS-G-1.7 AND IAEA SSG-17.

CE 0432

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DATE 28.04.2022

MORABITO ROSA CF(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE

-Cogne

CORPO BONNET / BONNET BODY

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Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST040838 / 2024 /
Prüfung/Test/Essai

Stato di fornitura: Laminato - Solubilizzato FINITO A FREDDO
Lieferzustand / Delivery state / Etat de livraison

Produttore:
Hersteller/Item/Usine productrice
ACCIAIERIE VALBRUNA S.P.A.

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Marchi di Fabbrica:
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice

Ordine nr: ORD.24000161
Bestell / Your order / Commande

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Punzone del Collaudatore:
Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur

Conferma ordine nr: **AN24000318**
Werks/Our Order/Ref nr.

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Punzonatura: 1.4401/1.4404
Kennzeichnung / Marking / Marquage

Avviso di Spedizione: **A-AN24000296**
Lieferanzeige/Packing list/B.L.

SPECIFICHE :
Anforderungen / Requirements / Exigences

Note:
Aufzeichnungen / Notes / Notes

VAL STOCK W2 A/1 1.4404/316L A,CF
AD 2000-M. W 2 2022 1.4401 A,CF (0)
AD 2000-M. W 2 2022 1.4404 A,CF (1)
AISI . 316/316L
AMS-QQ-S-763 D 316/316L A,CF
ASME SA182 2023 S31600/03 A (2)
ASME SA276 2023 S31600/03 A,CF (3)
ASME SA479 2023 S31600/03 A (4)
ASTM A182 2023 S31600/03 A (5)
ASTM A262 PR. E 2015 316/316L (6)
ASTM A276 2024A S31600/03 A,CF
ASTM A370 2022 .
ASTM A479 2023A S31600/03 A
ASTM E10 2023 .
ASTM E8 2022 .
EN 10088 PART 3 2014 1.4401 A,CF
EN 10088 PART 3 2014 1.4404 A,CF
EN 10272 2016. 1.4401 A,CF
EN 10272 2016. 1.4404 A,CF
ISO 148-1 2016 .
ISO 3651-2 98 METHOD A T1
ISO 6506-1 2014 .
ISO 6892-1 2019 .
NACE MR0103 2015 S31600/03 A (7)
NACE MR0175 4 S31600/03 A (8)
QQ-S-763 F 316/316L A,CF
ACH CO . .
KV L -196C . ISO 148-1
MDS S01 5 316 A,CF (9)
ASTM A479 2023A S31600 A

(0)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
(1)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
(2)Section II Part A 2023 EDITION For products machined directly from bar refer to ASME SA479.
(3)Section II Part A 2023 EDITION
(4)Section II Part A 2023 EDITION
(5)For products machined directly from bar refer also to ASTM A479.
(6)Reapproved 2021
(7)ANSI/NACE MR0103/ISO 17945 November 23, 2015
(8)ANSI/NACE MR0175/ISO 15156-3:2020 Fourth edition, approved 21 Sep 2022.
(9)Norsok-standard M-630 Edition 6, October 2013

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Tolleranza: h11 - DIN668/EN10278
Toleranz/Allowance/Tolerance

Pos. nr.	Oggetto	Dimensioni - mm	Lunghezza - mm	Colata	Pezzi	Peso - KG	Lotto nr.
Pos. nr. / Item nr. / Nr. de poste	Gegenstand / Product description / Descrip. de produit	Abmessungen / Dimension / Dimension	Länge / Length / Longueur	Schmelze / Heat / Coulée	Stückzahl / Pieces / Pièces	Gewicht / Weight / Poids	Losnr. / Lot no. / Lot n.
0010	Esagono	22,000	3030/ 3030	291893		901,0	217704270

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 21/03/2024 VCQ012 - MEST040838	**Direzione Qualità** Qualitätsmanagement/Quality Management/Gestion Qualité **R.BERTELLI**	**Direzione Prodotto** Produktmanagement/Product Management/Direction Produit **P.MESSORI**	Pagina 1 di 4

CORPO BONNET / BONNET BODY

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Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST040838 / 2024 /

Ordine nr. / Bestell / Your order / Commande: ORD.24000161

Conferma ordine nr. / Weks/Our Order/Ref nr.: AN24000318

Avviso di Spedizione / Lieferanzeige/Packing list/B.L.: A-AN24000296

Stato di fornitura / Lieferzustand / Delivery state / Etat de livraison: Laminato - Solubilizzato FINITO A FREDDO

Tipo di Elaborazione / Erschmelzungsart / Melting process / Mode d'elaboration: E+AOD

Qualità / Werkstoff/Grade/Nuance: 1.4401/1.4404/316/316L

Marca / Markenbezeichnung / Brand / Nuance: MVAPML (MAXIVAL)

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice: AV

Punzone del Collaudatore / Stempel des Werksabnahmeständigen / Inspector's stamp/Poinçon de l'assayeur: MR

Punzonatura / Kennzeichnung / Marking / Marquage: 1.4401/1.4404

TEST ALLO STATO DI FORNITURA

Test on delivery condition / Prüfung auf lieferbereitem produkt / test a l'etat de fourniture / Prueba sobre el material así come entregado

1) L=longitudinale/Längs, T=trasversale/quer, O=Tangenziale/tangential

TEST	Provetta / Probestab / Specimen/Eprouvette Lung.diam.Spess. / Barre Diam. / Dicke / Width Diam. / Thickness / Lang. diam. epais. mm	°C	Posiz. Saggio / Probenlage / Location / Emplacement	Snervamento / Streckgrenze / Yield Stress / Limite elastique Rp 0,2% N/mm2	Snervamento / Streckgrenze / Yield Stress / Limite elastique Rp 1% N/mm2	Resistenza / Zugfestigkeit / Tensile strength / Resistance à traction Rm N/mm2	Allungamento / Bruchdehnung / Elongation / Allongement A5 %		Strizione / Einschnürung / Reduction of area / Striction Z %		Resilienza / Kerbschlagarbeit / Impact Value / Resilience			Durezza / Härte / Hardness / Dureté HB		
Valori richiesti / Anforderungen/Required values / Valeurs demandées		min / max		200	235	500 / 900	20	-	-	-	-			- / 315		
A	10	20	L	480	548	678	44		67					224		
G	10	20	L	484	550	683	43		65					227		

TEST ALLO STATO DI FORNITURA

Test on delivery condition / Prüfung auf lieferbereitem produkt / Test a l'etat de fourniture / Prueba sobre el material así come entregado

TEST		min	max	
G	Dimensioni grano x ASTM E112			5

Charpy per ISO 148-1

1) L=longitudinale/Längs, T=trasversale/quer, O=Tangenziale/tangential

TEST	Provetta / Probestab / Specimen/Eprouvette Lung.diam.Spess. / Barre Diam. / Dicke / Width Diam. / Thickness / Lang. diam. epais. mm	°C	Posiz. Saggio / Probenlage / Location / Emplacement	Resilienza / Kerbschlagarbeit / Impact Value / Resilience KV2 J			Espansione laterale / Lateral Expansion / Lateral ex mm			Shear / % Shear %		
Valori richiesti / Anforderungen/Required values / Valeurs demandées		min / max		-	-	-	-	-	-	-	-	-
B	10X10	-196	L	129	134	139	1,487	1,328	1,210	60	58	60

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/Längs, T=trasversale/quer, O=Tangenziale/tangential

TEST	Provetta / Probestab / Specimen/Eprouvette Lung.diam.Spess. / Barre Diam. / Dicke / Width Diam. / Thickness / Lang. diam. epais. mm	°C	Posiz. Saggio / Probenlage / Location / Emplacement	Snervamento / Streckgrenze / Yield Stress / Limite elastique Rp 0,2% N/mm2	Snervamento / Streckgrenze / Yield Stress / Limite elastique	Resistenza / Zugfestigkeit / Tensile strength / Resistance à traction Rm N/mm2	Allungamento / Bruchdehnung / Elongation / Allongement E 4d %		Strizione / Einschnürung / Reduction of area / Striction RA %		Resilienza / Kerbschlagarbeit / Impact Value / Resilience			Durezza / Härte / Hardness / Dureté HB		
Valori richiesti / Anforderungen/Required values / Valeurs demandées		min / max		210	-	517	-	35	-	50	-			- / 235		
C	12,5	20	L	483		681		46		69				222		

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 21/03/2024	Direzione Qualità / Qualitätsmanagement/Quality Management/Gestion Qualité	Direzione Prodotto / Produktmanagement/Product Management/Direction Produit	Pagina
VCQ012 - MEST040838	R.BERTELLI	P.MESSORI	2 di 4

CORPO BONNET / BONNET BODY

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Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1 (Nach/According to/Selon)

Certificato nr. MEST040838 / 2024 / (Prüfung/Test/Essai)

Ordine nr: ORD.24000161 (Bestell / Your order / Commande)

Conferma ordine nr: AN24000318 (Werks/Our Order/Ref nr.)

Avviso di Spedizione: A-AN24000296 (Lieferanzeige/Packing list/B.L.)

Stato di fornitura: Laminato - Solubilizzato FINITO A FREDDO (Lieferzustand / Delivery state / Etat de livraison)

Tipo di Elaborazione: E+AOD (Erschmelzungsart / Melting process / Mode d'elaboration)

Qualità: 1.4401/1.4404/316/316L (Werkstoff/Grade/Nuance)

Marca: MVAPML (MAXIVAL) (Markenbezeichnung / Brand / Nuance)

Produttore: (Hersteller/Item/Usine productrice)

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: (Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice)

Punzone del Collaudatore: (Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur) MR

Punzonatura: 1.4401/1.4404 (Kennzeichnung / Marking / Marquage)

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, O=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C		Posiz. Saggio Prelievo Location Emplacement	Resilienza Kerbschlagarbeit Impact Value Resilience KV_2 J			Espansione laterale - Lateral Expansion -			Shear - Shear -		
Valori richiesti Anforderungswerte Valeurs demandées		min max			100	100	100	-	-	-	-	-	-
F	10X10	20	L		189	194	199						
H	10X10	20	L		180	190	186						

Tensile testing according to ISO 6892-1
Impact testing according to ISO 148-1
Mechanical properties according to ASTM A370.
Brinnell hardness according to ASTM E10
Tensile testing according to ASTM E8
Brinnell hardness according to ISO 6506-1

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Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata / Heat Schmelze/Coulée		C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	Co %	P %	S %	N %				
	min -	-	-	-	16,50	2,00	-	10,00	-	-	-	-	-	-	-	-
	max 0,030	1,00	2,00	18,00	2,50	1,00	13,00	-	0,045	0,030	0,100	-	-	-	-	
291893		0,019	0,52	1,55	16,65	2,01	0,48	10,17	0,140	0,030	0,030	0,066				

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 21/03/2024
VCQ012 - MEST040838

Direzione Qualità (Qualitätsmanagement/Quality Management/Gestion Qualité)
R.BERTELLI

Direzione Prodotto (Produktmanagement/Product Management/Direction Produit)
P.MESSORI

CORPO BONNET / BONNET BODY

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Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST040838 / 2024 /

Ordine nr: ORD.24000161
Bestell / Your order / Commande

Conferma ordine nr: AN24000318
Weeks/Our Order/Ref nr.

Avviso di Spedizione: A-AN24000296
Lieferanzeige/Packing list/B.L

Stato di fornitura: Laminato - Solubilizzato FINITO A FREDDO
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore / Herstellerfirm/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Liefernweekes / Trade marks / Sigles de l'usine productrice: AV

Punzone del Collaudatore / Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur: MR

Punzonatura / Kennzeichnung / Marking / Marquage: 1.4401/1.4404

Reduction ratio = 78,0 : 1
Solution annealed 1060°C for 180'(total time)/water cooled.
SURFACE QUALITY COMPLIANT TO EN 10088-3 TAB.1 COND. 2H
"Issued in agreement with TÜV SÜD Industrie Service GMBH
(07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by
Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

Sono state soddisfatte tutte le condizioni richieste Die gestellen Anforderungen sind IL Anlaga erfüllt The material has been furnished in accordance with the requirements Le materiel â été trouvé conforme aux exigences	Controllo antimescolanza con tecnica XRF/OES portatile : OK Verwechslungprüfung: durch XRF/OES Gerät geführt : OK Antimixing testing performed with XRF/OES portable : OK Contrôle antimélange svt technique XRF/OES portable : OK	Controllo visivo e dimensionale: soddisfa le esigenze Besichtigufig und Ausmessung: ohne Beanstandung Visual inspection and dimensional checks:satisfactory Contrôle visuel et dimensions: satisfaisant

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD'S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 21/03/2024 VCQ012 - MEST040838	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 4 di 4

STELO / STEM

Rodacciai

23842 Bosisio Parini (LC) – Via Giuseppe Roda 1 – Italia
Tel. +39 031878111 – Fax +39 031878312
www.rodacciai.com – info@rodacciai.com

Azienda con sistema di gestione certificato da IGQ secondo UNI EN ISO 9001:2015

The Company's Quality Management System is certified by IGQ according to UNI EN ISO 9001:2015

CERTIFICATO DI CONTROLLO Inspection Certif N. 174495 Date 14/11/2023

Secondo According to . . . . . EN 10204:2004 3.1

ORDINE - Order N. 372 Date 10/11/2023

D.d.T. - Delivery note N. 11714/04 Date 14/11/2023

Weight KG 411,00 **Odp. Nr.** 2022/A/58282
Tolerance ISO286-2 h9 + 0,000 - 0,036 mm **Bars Length** 3.000 - 3.050 mm

QUALITA' - Grade

STANDARD	EN 10088-3:2014	X2CrNiMo17-12-2	1.4404 / 316L
STANDARD	EN 10088-3:2023	X5CrNiMo17-12-2	1.4401 / 316

Mark RODACCIAI . . . . . 316 PLUS
PROFILO - Shape . . . . . ROUND
DIMENSIONE - Size . . . . . mm 10,00
ESECUZIONE - Form of delivery . . . . . ROUGH GROU.

COLATA - Heat 172303

ANALISI CHIMICA DI COLATA - Cast analysis % by mass

C	Mn	Si	S	P	Cr	Ni	Mo	Cu	Co	N
0,021	1,820	0,360	0,0220	0,025	16,640	10,100	2,100	0,360	0,150	0,0760

CARATTERISTICHE MECCANICHE ALLO STATO DI FORNITURA
Mechanical properties of the delivered material

		Tested
Tensile Strength	Rm (MPa)	746,0
Proof Stress	Rp (1) (MPa)	692,0
Proof Stress	Rp (0,2) (MPa)	612,0
Elongation	A 5 (%)	32,0
Hardness	HBW	226,0
Reduction of area	Z (%)	51,0

NOTE - Notes

Processo di Fusione: E + A. O. D.
Trattamento termico: Temperatura di Solubilizzazione 1060°C
Tempo Mantenimento: 4 Ore, Raffreddamento in Acqua
Prova di Corrosione Intergranularena: ASTM A262-15 "E"
Materiale Conforme a NACE MR-0175/ISO 15156-3:2015
NACE MR-103/ISO 17495-1:2016

Pag. 1 / Segue

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The Company's Quality Management System is certified by IGQ according to UNI EN ISO 9001:2015

Segue certificato di controllo N. 174495 Date 14/11/2023
Inspection Certificate's continuance

NOTE - Notes

Materiale conforme a: ASTM A276-24a / A479-23a/ A182-24
ASME SA: 479-21 276-21 182; UNS 31600 - 31630 AISI 316-316L
Corrosione Intercristallina EN ISO 3651-2:98 Met.A

Melting Process: E + A. O. D
Heat treatment: annealed temperature 1060°C
Soaking time: 4 Hours, Cooling in water
Intergranular corrosion tested to ASTM A262-15 "E"
According to: NACE MR-0175 / ISO 15156-3:2015
NACE MR-103/ISO 17495-1:2016
Material Compliant to: ASTM A276-24a / A479-23a/ A182-24
ASME SA: 479-21 276-21 182; UNS 31600 - 31630 AISI 316-316L
Intergranular Corrosion according to EN ISO 3651-2:98 Met.A

Surface quality condition 2H conforming also to EN 10277 class 3

We certify hereby, that the above mentioned products are consistent with the order prescriptions.
This certificate was generated by data system acc. to EN 10204, it is not necessary to be signed for validity.

Materiale conforme alle seguenti direttive/regolamenti europee:
- Regolamento REACH 2006/1907/CE e tutti successivi aggiornamenti, compresa la modifica M80 Direttiva Delegata 2022/1632, e SVHC Candidate List aggiornata al 17/01/2023.
- Direttiva ROHS 2011/65/UE e tutti i successivi aggiornamenti, compresa la modifica M80 attraverso la Direttiva Delegata 2022/1632, e Decreto Legislativo 27 del 04/03/2014.
- Direttiva RAEE 2012/19/Ue e tutti successivi aggiornamenti, compresa la modifica M1 attraverso la Direttiva 2018/849.
- Direttiva ELV (End-of-Life Vehicles) 2000/53/CE e tutti i successivi aggiornamenti, compresa la modifica M15 attraverso la Direttiva 2020/363
- Contaminazione Radioattiva, Direttiva 2013/59/EURATOM e Decreto Legislativo N.101 del 31 Luglio 2020.
- Canadian List 168 aggiornata al 16/03/2022.
- Minerali di Conflitto, Regolamento (UE) 2017/821 e tutti i successivi aggiornamenti, compresa la modifica M1 attraverso il Regolamento Delegato 2020/1588, e Dodd-Frank Wall Street Reform and Consumer Protection Act Section 1502.

Material conforming to the following European directives/regulation:
- REACH regulation 2006/1907/EC and all subsequent updates, including modification M80 Delegate Directive, and SVHC Candidate List updated to 01/17/2023.
- ROHS Directive 2011/65/EU and all subsequent updates, including the M80 amendment through the Delegated Directive 2022/1632, and Italian Legislative Decree 27 of 03/04/2014.
- WEEE Directive 2012/19/EU and all subsequent updates, including the M1 amendment through Directive 2018/849.
- ELV (End-of-Life Vehicles) Directive 2000/53/EC and all subsequent updates, including the modification M15 through Directive 2020/363
- Radioactive Contamination, Directive 2013/59/EURATOM and Italian Legislative Decree No. 101 of 31 July 2020.
- Canadian List 168 updated 03/16/2022.
- Conflict Minerals, Regulation (EU) 2017/821 and all subsequent updates, including amendment M1 through Delegated Regulation 2020/1588, and Dodd-Frank Wall Street Reform and Consumer Protection Act Section 1502.

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Pag. 2 / 2 RODACCIAI: The Work Inspector
Alessia Porta

OTTURATORE / TIP

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST140440 / 2023 /
Prüfung/Test/Essai

Ordine nr: VS ORD MAIL
Bestell / Your order / Commande

Conferma ordine nr: AN23001468
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-AN23000875
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Laminato - Solubilizzato FINITO A FREDDO
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung / Marking / Marquage

SPECIFICHE :
Anforderungen / Requirements / Exigences

VAL STOCK W2 A/1 1.4404/316L A,CF
AD 2000-M. W 2 2022 1.4401 A,CF (0)
AD 2000-M. W 2 2022 1.4404 A,CF (1)
AISI . 316/316L
ASME SA182 2021 S31600/03 A (2)
ASME SA276 2021 S31600/03 A,CF (3)
ASME SA479 2021 S31600/03 A (4)
ASTM A182 2023 S31600/03 A (5)
ASTM A262 PR. E 2015 316/316L (6)
ASTM A276 2023 S31600/03 A,CF
ASTM A370 2022 .
ASTM A479 2023A S31600/03 A
ASTM E10 2023 .
ASTM E8 2022 .
EN 10088 PART 3 2014 1.4401 A,CF
EN 10088 PART 3 2014 1.4404 A,CF
EN 10272 2016. 1.4401 A,CF
EN 10272 2016. 1.4404 A,CF
ISO 3651-2 98 METHOD A T1
ISO 6506-1 2014 .
ISO 6892-1 2019 .
ACH CO . .
PME HB L . .
NACE MR0175 4 S31600/03 A (7)
NACE MR0103 2015 S31600/03 A (8)

Note:
Aufzeichnungen / Notes / Notes

(0)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
(1)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
(2)Section II Part A 2021 EDITION For products machined directly from bar refer to ASME SA479.
(3)Section II Part A 2021 EDITION
(4)Section II Part A 2021 EDITION
(5)For products machined directly from bar refer also to ASTM A479.
(6)Reapproved 2021
(7)ANSI/NACE MR0175/ISO 15156-3:2020 Fourth edition, approved 21 Sep 2022.
(8)ANSI/NACE MR0103/ISO 17945 November 23, 2015

		Tolleranza: h9 - DIN671/EN10278 Toleranz/Allowance/Tolerance					
Pos. nr. Pos. nr. Item nr. Nr. de poste	Oggetto Gegenstand Product description Descrip. du produit	Dimensioni - mm Abmessungen Dimension Dimension	Lunghezza - mm Länge Length Longueur	Colata Schmelze Heat Coulée	Pezzi Stückzahl Pieces Pièces	Peso - KG Gewicht Weight Poids	Lotto nr. Los nr Lot nr
0010	Tondo	9,000	3000/ 3050	290962		162,0	210502620

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 15/11/2023 VCQ012 - MEST140440	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 1 di 3

OTTURATORE / TIP

Acciaierie Valbruna S.p.A.

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Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST140440 / 2023 /

Ordine nr: VS ORD MAIL
Bestell / Your order / Commande

Conferma ordine nr: AN23001468
Werks/Our Order/Ref nr

Avviso di Spedizione: A-AN23000875
Lieferanzeige/Packing list/B.L.

Stato di fornitura: Laminato - Solubilizzato FINITO A FREDDO
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore: ACCIAIERIE VALBRUNA S.P.A.
Hersteller/Item/Usine productrice

Marchi di Fabbrica: AV
Zeichen des Liefernwerkes / Trade marks / Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung / Marking / Marquage

TEST ALLO STATO DI FORNITURA
Test on delivery condition Prüefung auf lieferbereitem produkt test a l'etat de fourniture Prueba sobre el material así come entregado

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement A5 %		Strizione Einschnürung Reduction of area Striction Z %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Kaerte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		200	235	500 900	20	-	-	-	-			-		315
A	9	20	L	637	686	720	31		73					234		
E	9	20	L	639	690	726	30		71					235		

TEST ALLO STATO DI FORNITURA
Test on delivery condition / Prüefung auf lieferbereitem produkt / Test a l'etat de fourniture / Prueba sobre el material así come entregado

TEST		min	max	
A	Dimensioni grano x ASTM E112			5

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Kaerte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		310	-	620	-	30	-	50	-			-		235
D	6	20	L	640		723		33		74				230		

Tensile testing according to ISO 6892-1
Mechanical properties according to ASTM A370.
Brinnell hardness according to ASTM E10
Tensile testing according to ASTM E8
Brinnell hardness according to ISO 6506-1

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Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat Sohmelze/Coulée		C %	Si %	Mn %	Cr %	Mo %	Ni %	Co %	P %	S %	N %					
	min -	-	-	-	16,50	2,00	10,00	-	-	-	-	-	-	-	-	-
	max 0,030	1,00	2,00	18,00	2,50	13,00	-	0,045	0,030	0,100	-	-	-	-	-	-
290962		0,015	0,46	1,48	16,68	2,03	10,23	0,127	0,030	0,023	0,048					

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 15/11/2023 VCQ012 - MEST140440	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 2 di 3

Acciaierie Valbruna S.p.A.

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CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : Nach/According to/Selon — EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. Prüfung/Test/Essai — MEST140440 / 2023 /

Ordine nr: VS ORD MAIL
Bestell / Your order / Commande

Conferma ordine nr: AN23001468
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-AN23000875
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Lieferzustand / Delivery state / Etat de livraison — Laminato - Solubilizzato FINITO A FREDDO

Tipo di Elaborazione: Erschmelzungsart / Melting process / Mode d'elaboration — E+AOD

Qualità: Werkstoff/Grade/Nuance — 1.4401/1.4404/316/316L

Marca: Markenbezeichnung / Brand / Nuance — MVAPML (MAXIVAL)

Produttore : Hersteller/Item/Usine productrice
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice — AV

Punzone del Collaudatore: Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur — MR

Punzonatura: 1.4401/1.4404
Kennzeichnung / Marking / Marquage

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

Reduction ratio = 457,3 : 1
Material annealed 1040°C for 135'(total time)/water cooled.
SURFACE QUALITY COMPLIANT TO EN 10088-3 TAB.1 COND. 2H
"Issued in agreement with TÜV SÜD Industrie Service GMBH
(07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by
Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

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Sono state soddisfatte tutte le condizioni richieste
Die gestellen Anforderungen sind it. Anlage erfüllt
The material has been furnished in accordance with the requirements
Le materiel à été trouvé conforme aux exigences

Controllo antimescolanza con tecnica XRF/OES portatile : OK
Verwechslungprüfung: durch XRF/OES Gerät geführt : OK
Antimixing testing performed with XRF/OES portable : OK
Contrôle antimélange svt technique XRF/QES portable : OK

Controllo visivo e dimensionale: soddisfa le esigenze
Besichtigung und Ausmessung: ohne Beanstandung
Visual inspection and dimensional checks:satisfactory
Contrôle visuel et dimensions: satisfaisant

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD`S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 15/11/2023 VCQ012 - MEST140440	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 3 di 3

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ROSETTI MARINO ITEM 180

COD. VLBBNN07230400

TAG:

BLPH-MV-034, BLPH-MV-222, BLPH-MV-387, BLPH-MV-423, BLPH-MV-431, BLPH-MV-440

INDRA ITEM 180

COD. 00.VSF.2679/V

indra VALVES - ITALY	***Certificazione dei materiali*** ***EN 10204 3.1 come da allegati*** ***Material certification*** ***EN 10204 3.1 as per attachments***	**MD-02-04-IT-UK / VSF** **Rev. 16** **Data: 08-Nov-2018** **CM/IT/UK**

Nr. *No.* **24-2114** **Data / *Date :*** **23-Oct-2024**

Cliente / *Customer* **ROSETTI MARINO SPA**

Vs. ordine Nr. / *Your order Nr.* **1724000798 REV.2** **Data / *Date :*** **26-Jun-2024**

Ns. commessa Nr. / *Our job Nr.* **24 01216** **Data / *Date :*** **3-Jul-2024**

Ns. D.D.T. Nr. / *Our advise note Nr.* **Data / *Date :***

Ordine di produzione / Production order number : 24 01216/180 - 437836

Lotto / Material batch number : 437836

Pos. Cliente Customer Item	*Pos. Indra Indra Item*	*Codice / Code*		*Q.tà / Q.ty*	*Nr. di serie Serial Number*	*Descrizione /Description*
		Ns./ Our	*Vs. / Your*			
180	180	00.VSF.2679/V	VLBBNN07230400	6	From 106018 to 106023	INDRA BALL VALVE DBB-898-HR-100-N300RF3-N-D-DLF-DL-N-RG-GE12-L123-TG-TGW-TV-DP-PMI2-PD2-BI-GT-CR-TA-FE2-FS-FE-SPC1-SPC2

Elenco / List

Componente / *Component*	Colata / Heat	Materiale *Material*	Numero del certificato Certificate number
Corpo Valvola / Valve Body	437836	AISI 316/316L NACE	MEST096767/2024/ - UT24004516
Closure N300RF3	437836	AISI 316/316L NACE	MEST096767/2024/ - UT24004516
Tirante / Stud bolt	934087	ASTM A193 B8M Cl.2	5185
Dado / Nut	972059	ASTM A194 Gr.8M	5117
Stelo antiespulsione sfera / Ball stem	073183	AISI 316/316L NACE	2021002663
Sfera / Ball	288405	AISI 316/316L NACE	MEST091415/2023/ - UT23003880
Corpo bonnet/ Bonnet body	291366	AISI 316/316L NACE	MEST136234/2023/1
Stelo spillo / Stem needle	172303	AISI 316/316L NACE	174495
Otturatore / Tip	290962	AISI 316/316L NACE	MEST140440/2023/

NOTE / **REMARKS :** TAG: BLPH-MV-034, BLPH-MV-222, BLPH-MV-387, BLPH-MV-423, BLPH-MV-431, BLPH-MV-440

PREPARATO DA: **ELEONORA RANZANI** PREPARED BY: **DOCUMENTION MANAGER**

APPROVATO DA: **LUCIA NOSOTTI** APPROVED BY: **QUALITY ASSURANCE MANAGER**

20013 Magenta (MI) Italy - Via Novara, 10/B-C
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E-mail: indra@indra.it - http://www.indra.it

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CORPO VALVOLA / VALVE BODY - CLOSURE N300RF3

Acciaierie Valbruna S.p.A.
36100 VICENZA (Italia) - Viale della scienza, 25 z.i. Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37 Telefono 0471.924111 - Fax 0471.924497
https://www.valbruna-stainless-steel.com/

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION - CERTIFICADO DE INSPECCIÓN

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon/De conformidad con

Certificato nr. MEST096767 / 2024 /
Prüfung/Test/Essai/Num. de certificado

Cliente / Besteller/Purchaser/Client/Cliente
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF2402455
Bestell
Your order
Commande
Num. de pedido

Conferma ordine nr: MI24006040
Werks/Our Order/Ref nr.
Num. de confirmación de pedido

Avviso di Spedizione: A-MI24004445
Lieferanzeige/Packing list/B.L.
Aviso de embarque

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand
Delivery state
Etat de livraison
Estado de la entrega

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration
Método de fusión

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance
Calidad

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance / Marca

Produttore :
Hersteller/Item/Usine productrice/Productor

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice
Marcas de fábrica

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur
Sello del Comprobador

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage / Sello

SPECIFICHE :
Anforderungen / Requirements / Exigences / Especificaciones

Note:
Aufzeichnungen / Notes / Notes / Notas

VAL STOCK A/1 1.4404/316L A
IS107 01 316 A
MDS S01 5 316 A (0)
(0)Norsok-standard M-630 Edition 6, October 2013

MDS S17 1 316 A (1)
AISI . 316/316L
AMS-QQ-S-763 D 316/316L A
(1)Norsok-standard M-630: 2020 (2020-09-30)

ASME SA182 2023 S31600/03 A (2)
(2)Section II Part A 2023 EDITION For products machined directly from bar refer to ASME SA479.

ASME SA193 2023 B8M CLASS 1 (3)
(3)Section II Part A 2023 EDITION

ASME SA276 2023 S31600/03 A (4)
(4)Section II Part A 2023 EDITION

ASME SA320 2023 B8M CLASS 1 (5)
(5)Section II Part A 2021 EDITION

ASME SA479 2023 S31600/03 A (6)
(6)Section II Part A 2023 EDITION

ASTM A182 2024 S31600/03 A (7)
(7)For products machined directly from bar refer also to ASTM A479.

ASTM A193 2023 B8M CLASS 1
ASTM A262 PR. E 2015 316/316L (8)
ASTM A276 2024A S31600/03 A
(8)Reapproved 2021

ASTM A320 2022 B8M CLASS 1 CLASS1
ASTM A370 2024 .
ASTM A479 2024 S31600/03 A
ASTM E10 2023 .
ASTM E8 2024 .

EN 10088 PART 3 2014 1.4401 A (9)
(9)Chemical and mechanical properties only.

EN 10088 PART 3 2014 1.4404 A (A)
(A)Chemical and mechanical properties only.

EN 10272 2016. 1.4401 A
EN 10272 2016. 1.4404 A
ISO 148-1 2016 .
ISO 3651-2 98 METHOD A T1
ISO 6506-1 2014 .
ISO 6892-1 2019 .

NACE MR0103 2015 S31600/03 A (B)
(B)ANSI/NACE MR0103/ISO 17945 November 23, 2015

NACE MR0175 4 S31600/03 A (C)
(C)ANSI/NACE MR0175/ISO 15156-3:2020 Fourth edition, approved 21 Sep 2022

QQ-S-763 F 316/316L A
ACH CO . .
KV L -196C . ISO 148-1
KV T -196C . ISO 148-1
PREN . .

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		Tolleranza: k13 Toleranz/Allowance/Tolerance/Tolerancia					
Pos. nr. Pos. nr / Item nr Nr. de poste Número de artículo	Oggetto Gegenstand / Product description Designio du produit Descripción del producto	Dimensioni - mm Abmessungen Dimension Dimensiones	Lunghezza - mm Länge Length Longueur / Longitud	Colata Schmelze Heat Coulée / Colada	Pezzi Stückzahl Pieces Pieces / Piezas	Peso - KG Gewicht Weight Poids / Peso	Lotto nr. Losnr Lot nr. Lot nr. / Lote nro
0010	Tondo	260,000	4042/ 4042	437836	1	1713,0	329306270

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 19/07/2024
VCQ012 - MEST096767

Direzione Qualità
Qualitätsmanagement/Quality Management/Gestion Qualité/Gerente de calidad
R.BERTELLI

Direzione Prodotto
Produktmanagement/Product Management/Direction Produit/Gerente de producto
P.MESSORI

CORPO VALVOLA / VALVE BODY - CLOSURE N300RF3

Acciaierie Valbruna S.p.A.
36100 VICENZA (Italia) - Viale della scienza, 25 z.i. Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37 Telefono 0471.924111 - Fax 0471.924497
https://www.valbruna-stainless-steel.com/

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION - CERTIFICADO DE INSPECCIÓN

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1 (Nach/According to/Selon/De conformidad con)

Certificato nr. MEST096767 / 2024 / (Prüfung/Test/Essai/Num. de certificado)

Cliente / Besteller/Purchaser/Client/Cliente
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF2402455 (Bestell / Your order / Commande / Num. de pedido)

Conferma ordine nr: MI24006040 (Werks/Our Order/Ref nr. / Num. de confirmación de pedido)

Avviso di Spedizione: A-MI24004445 (Lieferanzeige/Packing list/B.L. / Aviso de embarque)

Stato di fornitura : Fucinato Solubilizzato - Pelato (Lieferzustand / Delivery state / Etat de livraison / Estado de la entrega)

Tipo di Elaborazione: E+AOD (Erschmelzungsart / Melting process / Mode d'elaboration / Método de fusión)

Qualità: 1.4401/1.4404/316/316L (Werkstoff/Grade/Nuance / Calidad)

Marca: MVAPML (MAXIVAL) (Markenbezeichnung / Brand / Nuance / Marca)

Produttore : (Hersteller/Item/Usine productrice/Productor)
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: (Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice / Marcas de fábrica) AV

Punzone del Collaudatore: (Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur / Sello del Comprobador) MR

Punzonatura: 1.4401/1.4404/316/316L (Kennzeichnung / Marking / Marquage / Sello)

TEST ALLO STATO DI FORNITURA

TEST		min	max	
A	Dimensioni grano x ASTM E112			2

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm / Probeta	°C	Posiz. Saggio Probenlage Location Emplacement Ubicación 1)	Resilienza Kerbschlagarbeit Impact Value Resilience / Prueba de impacto KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs demandées / Valores requeridos		min max		-	-	-	-	-	-	-	-	-
B	10X10	-196	L	218	200	197	1,750	1,850	1,800	65	70	70

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm / Probeta	°C	Posiz. Saggio Probenlage Location Emplacement Ubicación 1)	Snervamento Streckgrenze/Yield Stress Limite élastique Límite elástico Rp 0,2% N/mm2	Snervamento Streckgrenze/Yield Stress Limite élastique Límite elástico	Resistenza Zugfestigkeit/Tensile strength Résistance à traction Resistencia a la tracción Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement / Elongación E 4d %		Strizione Einschnürung Reduction of area Striction / Reducción de área RA %		Resilienza Kerbschlagarbeit Impact Value/ Resilience Prueba de impacto			Durezza Haerte Hardness Dureté / Dureza HB		
Valori richiesti Anforderungen/Required values Valeurs demandées / Valores requeridos		min max		210	-	520 790	-	40	-	50	-			- 223		
C	12,5	20	L	254		552		60		72				159		

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm / Probeta	°C	Posiz. Saggio Probenlage Location Emplacement Ubicación 1)	Snervamento Streckgrenze/Yield Stress Limite élastique Límite elástico Rp 0,2% N/mm2	Snervamento Streckgrenze/Yield Stress Limite élastique Límite elástico	Resistenza Zugfestigkeit/Tensile strength Résistance à traction Resistencia a la tracción Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement / Elongación E 4d %		Strizione Einschnürung Reduction of area Striction / Reducción de área RA %		Resilienza Kerbschlagarbeit Impact Value/ Resilience Prueba de impacto			Durezza Haerte Hardness Dureté / Dureza		
Valori richiesti Anforderungen/Required values Valeurs demandées / Valores requeridos		min max		205	-	515	-	40	-	50	-			-		
D	12,5	20	T	247		554		54		63						

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 19/07/2024	Direzione Qualità	Direzione Prodotto	Pagina
VCQ012 - MEST096767	Qualitätsmanagement/Quality Management/Gestion Qualité/Gerente de calidad	Produktmanagement/Product Management/Direction Produit/Gerente de producto	2 di 6
	R.BERTELLI	P.MESSORI	

CORPO VALVOLA / VALVE BODY - CLOSURE N300RF3

Acciaierie Valbruna S.p.A.

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https://www.valbruna-stainless-steel.com/

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION - CERTIFICADO DE INSPECCIÓN

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon/De conformidad con

Certificato nr. MEST096767 / 2024 /
Prüfung/Test/Essai/Num. de certificado

Cliente / Besteller/Purchaser/Client/Cliente
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF2402455
Bestell
Your order
Commande
Num. de pedido

Conferma ordine nr: MI24006040
Werks/Our Order/Ref nr.
Num. de confirmación de pedido

Avviso di Spedizione: A-MI24004445
Lieferanzeige/Packing list/B.L.
Aviso de embarque

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand
Delivery state
Etat de livraison
Estado de la entrega

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration
Método de fusión

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance
Calidad

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance / Marca

Produttore :
Hersteller/Item/Usine productrice/Productor

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice
Marcas de fábrica

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur
Sello del Comprobador

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage / Sello

Prova di trazione per ISO 6892-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm / Probeta	°C	Posiz. Saggio Probenlage Location Emplacement Ubicación 1)	Snervamento Streckgrenze/Yield Strength Limite elastique Limite elástico Rp 0,2% N/mm2	Snervamento Streckgrenze/Yield Strength Limite elastique Limite elástico Rp 1% N/mm2	Resistenza Zugfestigkeit/Tensile strength Resistance à traction Resistencia a la tracción Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement / Elongación A5 %		Strizione Einschnürung Reduction of area Striction / Reducción de área Z %		Resilienza Kerbschlagarbeit Impact Value/ Resilience Prueba de impacto			Durezza Haerte Hardness Dureza / Durezza HB		
Valori richiesti Anforderungen/Required values Valeurs démandées / Valores requeridos		min max		200	235	500 700	30	-	-	-	-			-		
E	10	20	T	252	291	550	55		65					153		
J	10	20	T	255	295	556	54		63					156		

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm / Probeta	°C	Posiz. Saggio Probenlage Location Emplacement Ubicación 1)	Resilienza Kerbschlagarbeit Impact Value Resilience / Prueba de impacto KV2 J			Espansione laterale - Lateral Expansion - Lateral ex mm			Shear - Shear - % Shear %		
Valori richiesti Anforderungen/Required values Valeurs démandées / Valores requeridos		min max		-	-	-	-	-	-	-	-	-
F	10X10	-196	T	89	94	92	0,700	0,748	0,622	20	27	22

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm / Probeta	°C	Posiz. Saggio Probenlage Location Emplacement Ubicación 1)	Resilienza Kerbschlagarbeit Impact Value Resilience / Prueba de impacto KV2 J			Espansione laterale - Lateral Expansion -			Shear - Shear -		
Valori richiesti Anforderungen/Required values Valeurs démandées / Valores requeridos		min max		60	60	60	-	-	-	-	-	-
I	10X10	20	T	88	88	92						
K	10X10	20	T	80	81	86						

Mechanical properties according to ASTM A370.
Brinnell hardness according to ASTM E10
Tensile testing according to ASTM E8
Impact testing according to ISO 148-1
Brinnell hardness according to ISO 6506-1
Tensile testing according to ISO 6892-1

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 19/07/2024 VCQ012 - MEST096767	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité/Gerente de calidad R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit/Gerente de producto P.MESSORI	Pagina 3 di 6

CORPO VALVOLA / VALVE BODY - CLOSURE N300RF3

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i. Telefono 0444.968211 - Fax 0444.963836
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CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION - CERTIFICADO DE INSPECCIÓN

In conformità a / Nach/According to/Selon/De conformidad con: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai/Num. de certificado: MEST096767 / 2024 /

Cliente / Besteller/Purchaser/Client/Cliente:
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF2402455
Bestell / Your order / Commande / Num. de pedido

Conferma ordine nr: MI24006040
Werks/Our Order/Ref nr. / Num. de confirmación de pedido

Avviso di Spedizione: A-MI24004445
Lieferanzeige/Packing list/B.L. / Aviso de embarque

Stato di fornitura: Fucinato Solubilizzato - Pelato
Lieferzustand / Delivery state / Etat de livraison / Estado de la entrega

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration / Método de fusión

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance / Calidad

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance / Marca

Produttore / Hersteller/Item/Usine productrice/Productor:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice / Marcas de fábrica

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur / Sello del Comprobador

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung / Marking / Marquage / Sello

Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique/Análisis químico

Colata/Heat/Coulée / Schmelze/Colada		C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	Co %	P %	S %	N %			
	min	-	-	-	16,50	2,00	-	10,00	-	-	-	-	-	-	-
	max	0,030	1,00	2,00	18,00	2,50	1,00	13,00	-	0,045	0,030	0,100	-	-	-
	PRE														
437836	25,3	0,014	0,32	1,72	16,94	2,17	0,68	10,25	0,101	0,030	0,023	0,075			

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Reduction ratio = 4,9 : 1
Solution annealed 1080°C for 6 h /water cooled.
UT ACC. TO ASTM A388
Furnace calibrated according to API 6A REV 21th ED ANNEX M.
Furnace calibrated according to API 6D REV 25th ED ANNEX H.
pth 1% DIAMETER)

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Allegati / Anlagen / Enclosure / Attachments :
UT24004516

Sono state soddisfatte tutte le condizioni richieste
Die gestellen Anforderungen sind it. Anlage erfüllt / The material has been furnished in accordance with the requirements / Le materiel à été trouvé conforme aux exigences / El material cumple de acuerdo a los requisitos

Controllo antimescolanza con tecnica XRF/OES portatile : OK
Verwechslungprüfung: durch XRF/OES Gerät geführt : OK / Antimixing testing performed with XRF/OES portable : OK / Contrôle antimélange avt technique XRF/OES portable : OK / Prueba de anti mezcla con técnica XRF/OES portátil: OK

Controllo visivo e dimensionale: soddisfa le esigenze
Besichtigung und Ausmessung ohne Beanstandung / Visual inspection and dimensional checks:satisfactory / Contrôle visuel et dimensionnel: satisfaisant / Inspección visual y dimensional: cumple los requisitos

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 19/07/2024 VCQ012 - MEST096767	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité/Gerente de calidad **R.BERTELLI**	Direzione Prodotto Produktmanagement/Product Management/Direction Produit/Gerente de producto **P.MESSORI**	Pagina 4 di 6

CORPO VALVOLA / VALVE BODY - CLOSURE N300RF3

Acciaierie Valbruna S.p.A.
36100 VICENZA (Italia) - Viale della scienza, 25 z.i. Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37 Telefono 0471.924111 - Fax 0471.924497
https://www.valbruna-stainless-steel.com/

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION - CERTIFICADO DE INSPECCIÓN

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon/De conformidad con

Certificato nr. MEST096767 / 2024 /
Prüfung/Test/Essai/Num. de certificado

Cliente / Besteller/Purchaser/Client/Cliente
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF2402455
Bestell
Your order
Commande
Num. de pedido

Conferma ordine nr: MI24006040
Werks/Our Order/Ref nr.
Num. de confirmación de pedido

Avviso di Spedizione: A-MI24004445
Lieferanzeige/Packing list/B.L.
Aviso de embarque

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand
Delivery state
Etat de livraison
Estado de la entrega

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration
Método de fusión

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance
Calidad

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance / Marca

Produttore :
Hersteller/Item/Usine productrice/Productor

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice
Marcas de fábrica

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur
Sello del Comprobador

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage / Sello

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD`S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

WSP6CCA874ZFDA741E9842EC45EB985FC0

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 19/07/2024 VCQ012 - MEST096767	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité/Gerente de calidad **R.BERTELLI**	Direzione Prodotto Produktmanagement/Product Management/Direction Produit/Gerente de producto **P.MESSORI**	Pagina 5 di 6

CORPO VALVOLA / VALVE BODY - CLOSURE N300RF3

Acciaierie Valbruna S.p.A. 36100 VICENZA (Italia) - Viale della scienza, 25 z.i. Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4	**CERTIFICATO** Certificate - Zeugnis - Certificat **N° UT24004516**	**Pag 6 di 6**
	CONTROLLO CON ULTRASUONI *Ultrasonic testing - Ultraschallprüfung - Controle par ultrasons*	

mod. UT02

MEST096767 / 2024 /

Cliente : INDRA S.R.L. *Customer*				**Lotto nr : 329306270** *Mill order*	
MARCA *Grade*	**DIMENSIONI - mm** *Size*	**COLATA** *Heat*	**BARRE** *Bars*	**PESO** *Weight*	**LUNGHEZZA - mm** *Length*
MVAPML	Tondo 260,000	437836	N. 1	KG : 1713,0	4042 / 4042

T. TERMICO *Heat Treatement*	**ESECUZIONE** *Condition*	**RUGOSITA'** *Roughness*	**TOLLERANZA** *Tolerance*
Solubilizzato	Pelato		k13

Istruzione : PROC CND 040 *Work Instruction*		**Criteri Accettabilità : ASTM A 388** Acceptance Criteria

ELETTRONICA : Olympus Quickscan LT *Equipment*					
ACCOPPIANTE : ACQUA + 0253 SA *Couplant*				**VEL.CONTROLLO :** *Testing Speed*	**228 mm/sec**
TRASDUTTORI *Probes*	**TIPO ONDA** *Type of wave*	**FREQUENZA (MHZ)** *Frequency*	**DIMENSIONI (MM)** *Dimension*	**ANGOLO** *Angle*	**TARATURA** *Calibration*
64EL. 2.25MHZ	LONG.	2,25	128X25	0°	DAC

CONTROLLO AUTOMATICO [X] *Automatic inspection*	**CONTROLLO MANUALE** *Manual inspection*

NOTE :
Notes

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CONFORME [X] *Compliant*	**CONFORME IN DEROGA [ ]** *See Deviation*	**NON CONFORME [ ]** *Not Compliant*

ISPEZIONATO DA Inspected by	**VERIFICATO DA** Verified by	**APPROVATO DA** Approved by	**COLLAUDATORE** Inspector - Abnahmesachsverst - Inspecteur
FIRMA	**FIRMA**	**S.Stefani** ISO 9712 LEV. 2 IND2401258 **FIRMA**	

Date - Date **18/07/2024**

Operatori, strumenti e documenti di riferimento, utilizzati per il collaudo del materiale, sono identificati, controllati e/o calibrati in accordo alle norme EN, ISO e ASTM, richiamate nelle pratiche operative e istruzioni di pertinenza / *Operators, Equipment and reference documents, used for material inspection, are identified, checked and/or calibrated in accordance with EN/ISO or ASTM standards, reported in relevant documents.*

TIRANTE / STUD BOLT t · e · c · n · o BOLT

CERTIFICATE	
Nr. 5185	24-09-24
Page 1/1	

INDRA SRL
VIA NOVARA 10/B-C
20013 MAGENTA MI
ITALIA

EN ISO 10204 3.1
CERTIFIED MATERIAL TEST REPORT

Your order: AF24 02329 REV.02 16-07-24 Delivery note: 2361 24-09-24

Item	Materials	Description	Sizes	Batch	Heat		Quantity
1	ASTM A 193 B8M cl.2 101.99.1039SS Pos.80, 290 CKD/CM/14/07/2022	Tirante DIN 976/UNI 6610 ASTM A 193 B8M cl.2 M	16X1,5X55	8857	934087	N.	100

CHEMICAL ANALYSIS

1		%C %	%Mn %	%P %	%S %	%Si %	%Cr %	%Ni %	%Mo %	%H.T. CST+SH
	REQ. MIN.						16	10	2	
	REQ. MAX.	0,080	2	0,045	0,030	1	18	14	3	
	ACT.VAL.	0,015	1,268	0,027	0,0252	0,405	16,643	10,115	2,061	CST+SH

MECHANICAL PROPERTIES

1		UTS MPa	YS0,2 MPa	E %	R.A. %	H HB
	REQ. MIN.	760	655	15	45	
	REQ. MAX.					321
	ACT. VAL.	874	782	16	64	257

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We state that the material or fasteners, or both, were manufactered, sampled, tested and inspected in accordance with the specification and any supplementary requirements designated in the purchase/sales order and it was found to meet those requirements

tecnoBOLT s.r.l. - 20822 Seveso (MB) ITALY - way vignone n.7 - info@tecnobolt.com - www.tecnobolt.com

x CROSSWIND
13/11/24

DADO / NUT

t·e·c·n·o BOLT

CERTIFICATE

Nr. 5117 | **03-09-24**

Page 1/1

INDRA SRL
VIA NOVARA 10/B-C
20013 MAGENTA MI
ITALIA

EN ISO 10204 3.1
CERTIFIED MATERIAL TEST REPORT

Your order: AF24 02329 REV.02 16-07-24 Delivery note: 2175 03-09-24

Item	Materials	Description	Sizes	Batch	Heat		Quantity
7	ASTM A 194 Gr.8M 101.99.0571SS Pos.40, 270 CKD/CTRL	Dado UNI 5588/DIN 934 ASTM A 194 Gr.8M M Esagonale passo fine	M16 X 1.5	8577	972059	N.	100

CHEMICAL ANALYSIS

7	%C %	%Mn %	%P %	%S %	%Si %	%Cr %	%Ni %	%Mo %	%N %
REQ. MIN.						16	10	2	
REQ. MAX.	0,08	2	0,045	0,030	1	18	14	3	
ACT.VAL.	0,014	1,860	0,027	0,001	0,470	16,810	10,250	2,030	0,074

MECHANICAL PROPERTIES

7	H HRC	P.L. KN
REQ. MIN.		POSIT
REQ. MAX.		
ACT. VAL.	20-31	POSIT

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We state that the material or fasteners, or both, were manufactered, sampled, tested and inspected in accordance with the specification and any supplementary requirements designated in the purchase/sales order and it was found to meet those requirements

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COGNE ACCIAI SPECIALI S.p.a.

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CAP. SOC. 140.000.000 EUR INT. VERS.
C.F. 02187380967
VAT: IT00571320076 - R.E.A. n. AO-50474

Company with Management Systems certified according to ISO 9001, IATF 16949, EN 9100 and ISO 14001.

INSPECTION CERTIFICATE 3.1 (EN 10204:2004)

DOCUMENT NUMBER 2021002663

CUSTOMER'S ORDER:	MAIL		
MANUFACTURER'S WORKS:	AOSTA, VIA PARAVERA 16 - ITALY		
PRODUCER OF THE DOC:	QUALITY DEPARTMENT		
MANUFACTURER'S WORKS ORDER NO:	0001122639 / 000080		
MARK OF THE MANUFACTURER:	COGNE		
DISPATCH NOTE:	81394303 / 20 WEIGHT: 98 KG		
INTERNAL SPEC:	STOCKBARREW2	TECHNICAL RULE:	AD2000
PRODUCT:	PEL PEELED ROUND BARS TOLERANCE: ISOK11		
SURFACE FINISH:	2B Cold Finished		
PRODUCT DELIVERY CONDITION:	RS SOLUTION ANNEALED		
PRODUCT DIMENSIONS (mm):	50,000	LENGTH (mm)	06000 /06200
GRADE:	AISI 316/316L EN1.4401	INTERNAL GRADE:	F316L IMCO
IDENTIFICATION HEAT NO:	073183	IDENTIFICATION LOT NO:	528350
MARKING OF THE PRODUCT:	1.4404	TEST PIECE N:	835

REFERENCE NORMS: EN 10088-3 2014, EN 10272 2016, ASTM A276/A276M-17, ASTM A479/A479M-18, ASTM A193 B8MCLASSE 1D-17, ASME SA276/SA276M-17, ASME SA479/SA479M-17, AMS 5653J, AMS 5648M, ISO15156-3/NACE MR0175 2015, NACE MR0103/ISO 17945, NORSOK M630 MDSS01 REV5.
REFERENCE NORMS FOR CHEMICAL COMPOSITION AND MECHANICAL PROPERTIES: ASTM A182, ASME SA182.
REFERENCE NORMS ONLY FOR CHEMICAL COMPOSITION: EN 10222-5 2017,ASTM A403-07a, ASTM A484-18a,ASTM A314-08, AMS-QQ-S-763D.
THE PRODUCT IS CONFORMING TO THE CONTRACT AGREEMENT AND TO THE RULE AD2000-MERKBLATT W0/W2.
ASTM A484 DOES NOT APPLY FOR SIZE AND LENGTH TOLERANCES.
STEELMAKING EAF + AOD + CONTINUOUS CASTING
REFERENCE NORM ASME BPVC.II.A-2015.
HOT ROLLED
REDUCTION RATIO 11,8

CHEMICAL LADLE ANALYSIS ACCORDING TO ASTM A751 - EN ISO 14284
Control lot No. - Weight :020000858551 - 81.600 KG

ELEMENTS	C	Si	Mn	P	S	N	Cr	Mo	Ni	Cu
OBTAINED	0,022	0,34	1,82	0,025	0,026	0,074	16,77	2,03	10,00	0,40

ELEMENTS	Co
OBTAINED	0,16

HARDNESS TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000858913 - 7.441 KG
SPECIFICATION ENISO6506 HARDNESS TEST HB TESTING METHOD: 10/3000
OBTAINED 184

IMPACT TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000858913 - 7.441 KG
SPECIFICATION EN ISO 148-1-KV2 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 20
MEASUREMENT UNIT J

OBTAINED	435	440	433	431	440	433	435	437	432	432
	433	430								

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13/11/21

DATE 25.01.2021 MORABITO ROSA CF(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne
REVIEW DATE 18.03.2021 N. REVIEW 1

INOX A S.r.l.
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STELO ANTIESPULSIONE SFERA / BALL STEM

COGNE ACCIAI SPECIALI S.p.a.
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TEL +39.0165.3021 - FAX +39.0165.302296
CAP. SOC. 140.000.000 EUR INT. VERS.
C.F. 02187360967
VAT: IT00571320078 - R.E.A. n. AO-50474

Company with Management Systems certified according to ISO 9001, IATF 16949, EN 9100 and ISO 14001.

TENSILE TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000858913 - 7.441 KG
SPECIFICATION EN-ISO6892-1 DIRECTION OF THE TEST PIECE: L

	RM	RP02	A5	Z	RP1
MEASUREMENT UNIT	MPA	MPA	% 5.0 D	%	NMM
OBTAINED	621	274	57,3	79,9	300
	619	281	56,9	80,6	304
	595	281	54,8	79,8	315
	607	277	56,8	80,1	307

GRAIN SIZE
Control lot No. - Weight :020000858913 - 7.441 KG
SPECIFICATION ASTME112 --
OBTAINED 5 7

MATERIAL IN COMPLIANCE WITH THE NORSOK M-630 MDS S01
IMPACT TEST
Control lot No. - Weight :020000858913 - 7.441 KG
SPECIFICATION EN ISO 148-1 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 196-
MEASUREMENT UNIT J

OBTAINED	178	188	172	171	196	192	174	183	176	183
	172	178								

TENSILE TEST
Control lot No. - Weight :020000858913 - 7.441 KG
SPECIFICATION ASTMA370-E8-0.5"SPEC DIRECTION OF THE TEST PIECE: L

	RMB	RP02B	ZB	AL2B
MEASUREMENT UNIT	KSI	KSI	%	% 4,0 D
OBTAINED	90	39	80,0	60,9
	90	39	79,9	60,7
	89	40	80,7	59,4
	88	40	79,5	61,1

COUNTRY OF MELTING AND ORIGIN: ITALY, THE MATERIAL COMPLIES WITH FAR DFARS
252.225-7009 ALT 1.
The products delivered are conforming to EN10088-5 and bear the CE marking on the basis of the test results here reported and the continuous surveillance, assessment and approval by MPA NRW
(certificate no. 0432-CPR-00166-01)
Material produced according to the system #Regulation 305/2011/EU of the European Parliament and of the Council of 9 March 2011#
DOCUMENT ISSUED IN AGREEMENT WITH TUEV BAYERN(11.1972) WAVING OF COUNTERSIGNING (SEE TUEV BAYERN LETTER DATED 17.01.80).
MARKING: SYMBOL OF THE MANUF. WORK, MATERIAL N. , CAST N., LOT N., RECEIVING AGENT STAMP
CORROSION TEST ACCORDING TO ASTM A262 PRACTICE E EN ISO 3651-2 PRACTICE A: SATISFACTORY.

DATE 25.01.2021 MORABITO ROSA CF(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne
REVIEW DATE 18.03.2021 N. REVIEW 1

INDRA s.r.l.
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STELO ANTIESPULSIONE SFERA / BALL STEM

COGNE ACCIAI SPECIALI S.p.a.

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C.F. 02167360967
VAT: IT00571320076 - R.E.A. n. AO-50474

Company with Management Systems certified according to ISO 9001, IATF 16949, EN 9100 and ISO 14001.

ANTIMIXING TEST BY PORTABLE SPECTROMETRE: CONFORMING
EDDY CURRENT INSPECTION OF SURFACE ACCORDING TO EN 10277-1 CLASS 4.
DIMENSIONAL CONTROL ACCORDING TO EN 10278: SATISFACTORY.
NO WELDING REPAIR ON THE MATERIAL.
ULTRASONIC TEST ACCORDING TO EN 10308 Class.3: SATISFACTORY
QUALITY SYSTEM CERTIFIED BY I.G.Q ACCORDING TO UNI EN ISO 9001:2015 -IATF 16949:2016 (THE LAST ONE ONLY FOR WIRE ROD AND HOT ROLLED-PEELED-GROUND STAINLESS STEEL BARS).
NORSOK M630 ED. 6 MDS SO01 REV 5
INSPECTOR'S STAMP LF
THE PRODUCT SATISFIES CE DIRECTIVES EU: 2015/863 (ROHS3) - 2011/65 (ROHS2) - 2000/53 - 2002/95(RoHS) - 2003/11 - 2005/618 AND PED 2014/68.
THE MATERIAL IS FREE OF ANY MERCURY, MERCURY COMPOUNDS AND OR RADIUM CONTAMINATION AT TIME OF SHIPMENT AND WAS PRODUCED WITHOUT USING OZONE DEPLETING SUBSTANCES OF CLASS I AND II.
RADIOACTIVITY CONTROL PERFORMED WITH A GAMMA SPECTROMETER: ASTM E181.
GAMMA ACTIVITY ON THE PRODUCTS BELOW 0.1 BQ/G ACCORDING TO EU RESOLUTION 2013/59/EURATOM , IAEA RS-G-1.7 AND IAEA SSG-17.

CE 0432

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13/11/21

DATE 25.01.2021 MORABITO ROSA CF(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne
REVIEW DATE 18.03.2021 N. REVIEW 1

STELO ANTIESPULSIONE SFERA / BALL STEM

SFERA / BALL

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST091415 / 2023 /
Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: N. AF23 01871
Bestell
Your order
Commande

Conferma ordine nr: MI23005210
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23004231
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato - Solubilizzato Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage

SPECIFICHE : Anforderungen / Requirements / Exigences	Note: Aufzeichnungen / Notes / Notes
AV 316L VALVES A 1.4401/1.4404 A	
MDS S01 5 316 A (0)	(0)Norsok-standard M-630 Edition 6, October 2013
AD 2000-M. W 2 01/20 1.4401 A (1)	(1)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
AD 2000-M. W 2 01/20 1.4404 A (2)	(2)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
API 6A 21 ANNEX M (3)	(3)Errata 1, April 2019-Errata 2, June 2020-Add. 1, July 2020
API 6D 25 ANNEX H (4)	(4)Revision November 2021
ASME SA182 2021 S31600/03 A (5)	(5)Section II Part A 2021 EDITION For products machined directly from bar refer to ASME SA479.
ASME SA276 2021 S31600/03 A (6)	(6)Section II Part A 2021 EDITION
ASME SA479 2021 S31600/03 A (7)	(7)Section II Part A 2021 EDITION
ASTM A182 2023 S31600/03 A (8)	(8)For products machined directly from bar refer also to ASTM A479.
ASTM A262 PR. E 2015 316/316L (9)	(9)Reapproved 2021
ASTM A276 2017 S31600/03 A	
ASTM A370 2022 .	
ASTM A479 2023A S31600/03 A	
ASTM E381 2022 .	
ASTM E562 2019 . (A)	(A)19E01
EN 10088 PART 3 2014 1.4401 A (B)	(B)Chemical and mechanical properties only.
EN 10088 PART 3 2014 1.4404 A (C)	(C)Chemical and mechanical properties only.
EN 10222 PART 5 2017 1.4401 A	
EN 10222 PART 5 2017 1.4404 A	
EN 10272 2016. 1.4401 A	
EN 10272 2016. 1.4404 A	
ISO 148-1 2016 .	
ISO 6892-1 2019 .	
NACE MR0103 2015 S31600/03 A (D)	(D)ANSI/NACE MR0103/ISO 17945 November 23, 2015
NACE MR0175 2015 S31600/03 A (E)	(E)ANSI/NACE MR0175/ISO 15156-3, third edition November 23,2015

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		Tolleranza: k12 Toleranz/Allowance/Tolerance					
Pos. nr. Pos. nr. Item nr. Nr. de poste	Oggetto Gegenstand Product description Descrip. du produit	Dimensioni - mm Abmessungen Dimension Dimension	Lunghezza - mm Länge Length Longueur	Colata Schmelze Heat Coulée	Pezzi Stückzahl Pieces Pieces	Peso - KG Gewicht Weight Poids	Lotto nr. Losnr. Lot nr. Lot nr.
0030	Tondo	170,000	5401/ 5401	288405	1	974,0	216805510

x CROSSWIND
13/11/2023

TEST ALLO STATO DI FORNITURA

TEST		min	max	
A	Dimensioni grano x ASTM E112			2
A	Ferrite delta %			1,7 %

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 11/07/2023	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité	Direzione Prodotto Produktmanagement/Product Management/Direction Produit	Pagina
VCQ012 - MEST091415	R.BERTELLI	P.MESSORI	1 di 6

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Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST091415 / 2023 /
Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: N. AF23 01871
Bestell
Your order
Commande

Conferma ordine nr: MI23005210
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23004231
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato - Solubilizzato Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore:
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais. mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		60	60	60	-	-	-	-	-	-
E	10X10	-196	L	229	216	215	2,055	2,012	1,974	65	65	65

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais. mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		205	-	515	-	40	-	50	-			- 235		
D	12,5	20	L	265		541		61		73				142		

Prova di trazione per ISO 6892-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais. mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement A5 %		Strizione Einschnürung Reduction of area Striction Z %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		205	240	510 - 690	35	-	-	-	-			- 215		
F	10	20	T	243	274	530	55		62					140		
J	10	20	T	246	279	536	54		61					144		

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais. mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		-	-	-	-	-	-	-	-	-
H	10X10	-196	T	114	109	105	0,809	0,795	0,755	45	45	45

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 11/07/2023	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité	Direzione Prodotto Produktmanagement/Product Management/Direction Produit	Pagina
VCQ012 - MEST091415	R.BERTELLI	P.MESSORI	2 di 6

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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. Prüfung/Test/Essai: MEST091415 / 2023 /

Cliente / Besteller/Purchaser/Client:
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: N. AF23 01871
Bestell / Your order / Commande

Conferma ordine nr: MI23005210
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23004231
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Lieferzustand / Delivery state / Etat de livraison: Fucinato - Solubilizzato Pelato

Tipo di Elaborazione: Erschmelzungsart / Melting process / Mode d'elaboration: E+AOD

Qualità: Werkstoff/Grade/Nuance: 1.4401/1.4404/316/316L

Marca: Markenbezeichnung / Brand / Nuance: MVAPML (MAXIVAL)

Produttore : Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice: AV

Punzone del Collaudatore: Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur: MR

Punzonatura: Kennzeichnung / Marking / Marquage: 1.4401/1.4404/316/316L

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab / Specimen/Eprouvette Larg.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais. mm	°C		Posiz. Saggio Probenlage Location Emplacement	Resilienza Kerbschlagenbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion			Shear Shear		
Valori richiesti / Anforderungen/Required values / Valeurs démandées		min / max			60	60	60	-	-	-	-	-	-
G	10X10	20	T		128	130	122						
K	10X10	20	T		121	128	120						

Tensile testing according to ISO 6892-1

Impact testing according to ISO 148-1

Mechanical properties according to ASTM A370.

Ferrite content tested according to ASTM E562.

Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat / Schmelze/Coulée															
	min	23,0	-	-	-	16,50	2,00	10,00	-	-	-	-	-	-	-
	max	28,0	0,030	1,00	2,00	18,00	2,50	13,00	-	0,045	0,030	0,100	-	-	-
	PRE		C %	Si %	Mn %	Cr %	Mo %	Ni %	Co %	P %	S %	N %			
288405	24,9		0,019	0,49	1,66	16,92	2,05	10,03	0,136	0,029	0,028	0,076			

Colata /Heat / Schmelze/Coulée								
	min	14,0	-	-	-	-	-	-
	max	20,0	-	-	-	-	-	-
	Ni+(2*Mo)							
288405	14,1							

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	SATISFACTORY

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Vicenza, 11/07/2023	Direzione Qualità / Qualitätsmanagement/Quality Management/Gestion Qualité	Direzione Prodotto / Produktmanagement/Product Management/Direction Produit	Pagina
VCQ012 - MEST091415	R.BERTELLI	P.MESSORI	3 di 6

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CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST091415 / 2023 /
Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: N. AF23 01871
Bestell
Your order
Commande

Conferma ordine nr: MI23005210
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23004231
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato - Solubilizzato Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werksachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Furnace calibrated according to API 6A REV 21th ED ANNEX M.
Furnace calibrated according to API 6D REV 25th ED ANNEX H.
Macroetch test per ASTM E381: acceptable.
Reduction ratio = 12,6 : 1
ET ACC. TO EN 10088-3 TAB.1
UT ACC. TO A388/API 6A PSL3-EN 10308cl.3-ASME B16.34/IV
Treatment made on date 07/11/2022 in batch
furnace M3B calibration expiry date 29/03/2023.
Solution annealed 1080°C for 4 h / water cooled.
"Issued in agreement with TÜV SÜD Industrie Service GMBH
(07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by
Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

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Allegati / Anlagen / Enclosure / Attachments :
UT23003880 GT23001052

Sono state soddisfatte tutte le condizioni richieste
Die gestellen Anforderungen sind it. Anlage erfüllt
The material has been furnished in accordance with the requirements
Le material à été trouvé conforme aux exigences

Controllo antimescolanza con tecnica XRF/OES portatile : OK
Verwechselungprüfung: durch XRF/OES Gerät geführt : OK
Antimixing testing performed with XRF/OES portable : OK
Contrôle antimélange svt technique XRF/QES portable : OK

Controllo visivo e dimensionale: soddisfa le esigenze
Besichtigufig und Abmessung: ohne Beanstandung
Visual inspection and dimensional checks: satisfactory
Contrôle visuel et dimensionel: satisfaisant

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD`S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

WSPEC1468BABCDEF123452NOZZABCDF124

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 11/07/2023 VCQ012 - MEST091415	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité **R.BERTELLI**	Direzione Prodotto Produktmanagement/Product Management/Direction Produit **P.MESSORI**	Pagina 4 di 6

SFERA / BALL

	Acciaierie Valbruna S.p.A. 36100 VICENZA (Italia) - Viale della scienza, 25 z.i. Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4	**CERTIFICATO** Certificate - Zeugnis - Certificat **N° UT23003880**	Pag 5 di 6
		CONTROLLO CON ULTRASUONI *Ultrasonic testing - Ultraschallprüfung - Controle par ultrasons*	

mod. UT02

MEST091415 / 2023 /

Cliente : INDRA S.R.L. *Customer*				**Lotto nr : 216805510** *Mill order*	
MARCA *Grade*	**DIMENSIONI - mm** *Size*	**COLATA** *Heat*	**BARRE** *Bars*	**PESO** *Weight*	**LUNGHEZZA - mm** *Length*
MVAPML	Tondo 170,000	288405	N. 1	KG : 974,0	5401 5401

T. TERMICO *Heat Treatement*	**ESECUZIONE** *Condition*	**RUGOSITA'** *Roughness*	**TOLLERANZA** *Tolerance*
Solubilizzato	Pelato	µm	k12

Istruzione : PROC CND 040 *Work Instruction*		**Criteri Accettabilità : ASTM A388** Acceptance Criteria

ELETTRONICA : Olympus Quickscan LT
Equipment

ACCOPPIANTE : ACQUA + 0253 SA
Couplant

VEL.CONTROLLO : 498 mm/sec
Testing Speed

TRASDUTTORI *Probes*	**TIPO ONDA** *Type of wave*	**FREQUENZA (MHZ)** *Frequency*	**DIMENSIONI (MM)** *Dimension*	**ANGOLO** *Angle*	**TARATURA** *Calibration*
64EL. 2.25MHZ	LONG.	2,25	128X25	0°	DAC

CONTROLLO AUTOMATICO [X] *Automatic inspection*	**CONTROLLO MANUALE** *Manual inspection*

NOTE :
Notes

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13/11/24

CONFORME [X] *Compliant*	**CONFORME IN DEROGA [ ]** *See Deviation*	**NON CONFORME [ ]** *Not Compliant*

ISPEZIONATO DA Inspected by	**VERIFICATO DA** Verified by	**APPROVATO DA** Approved by	**COLLAUDATORE** Inspector - Abnahmesachsverst - Inspecteur
FIRMA 11/07/2023 Date - Date	**FIRMA**	**G.Parlato** ISO 9712 LEV. 2 IND1901054 **FIRMA**	

Operatori, strumenti e documenti di riferimento, utilizzati per il collaudo del materiale, sono identificati, controllati e/o calibrati in accordo alle norme EN, ISO e ASTM, richiamate nelle pratiche operative e istruzioni di pertinenza / *Operators, Equipment and reference documents, used for material inspection, are identified, checked and/or calibrated in accordance with EN/ISO or ASTM standards, reported in relevant documents.*

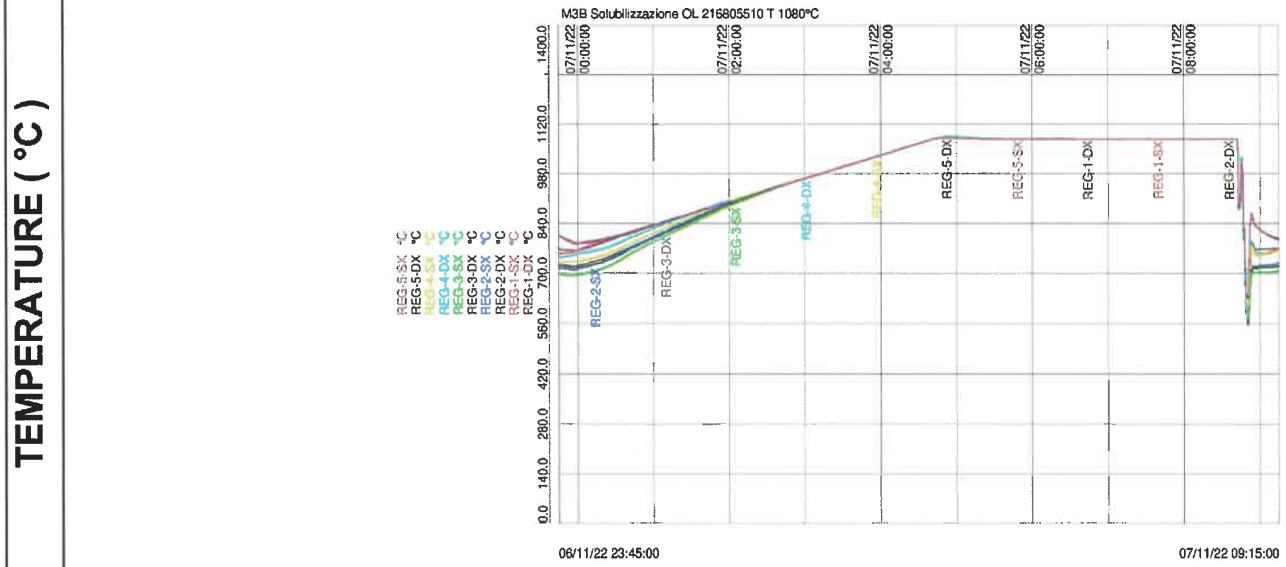
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CERTIFICATO Certificate - Zeugnis - Certificat **N° GT23001052** **Pag 6 di 6**

Diagrammi di trattamento termico **MEST091415 / 2023 /**

Heat Treatment charts - Waermebehandlungs diagramm - Diagramme de traitement thermique

N° LOTTO : 216805510 Lot Number	**Note Dettaglio :** Detail Notes	**Note:** Notes



x CROSSMIND 13/11/24

Approved by:

INDRA S.r.l.
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CORPO BONNET / BONNET BODY

Acciaierie Valbruna S.p.A.

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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST136234 / 2023 / 1

Ordine nr: VS ORDINE 25
Bestell / Your order / Commande

Conferma ordine nr: BS23002709
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-BS23001767
Lieferanzeige/Packing list/B.L.

Stato di fornitura: Laminato - Solubilizzato FINITO A FREDDO
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werksachverständigen / Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung / Marking / Marquage

SPECIFICHE :
Anforderungen / Requirements / Exigences

Note
Aufzeichnungen / Notes / Notes

VAL STOCK W2 A/1 1.4404/316L A,CF
AD 2000-M. W 2 01/20 1.4401 A.CF (0)
AD 2000-M. W 2 01/20 1.4404 A.CF (1)
AISI . 316/316L
AMS-QQ-S-763 D 316/316L A,CF
ASME SA182 2021 S31600/03 A (2)
ASME SA276 2021 S31600/03 A,CF (3)
ASME SA479 2021 S31600/03 A (4)
ASTM A182 2022A S31600/03 A (5)
ASTM A262 PR. E 2015 316/316L (6)
ASTM A276 2017 S31600/03 A,CF
ASTM A370 2022 .
ASTM A479 2021 S31600/03 A
ASTM E10 2018 .
ASTM E8 2022 .
EN 10088 PART 3 2014 1.4401 A,CF
EN 10088 PART 3 2014 1.4404 A,CF
EN 10272 2016. 1.4401 A,CF
EN 10272 2016. 1.4404 A,CF
ISO 148-1 2016 .
ISO 3651-2 98 METHOD A T1
ISO 6506-1 2014 .
ISO 6892-1 2019 .
NACE MR0103 2015 S31600/03 A (7)
NACE MR0175 2015 S31600/03 A (8)
QQ-S-763 F 316/316L A,CF
ACH CO . .
KV L -196C . ISO 148-1
MDS S01 5 316 A,CF (9)
ASTM A479 2023A S31600 A

(0)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
(1)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
(2)Section II Part A 2021 EDITION For products machined directly from bar refer to ASME SA479.
(3)Section II Part A 2021 EDITION
(4)Section II Part A 2021 EDITION
(5)For products machined directly from bar refer also to ASTM A479.
(6)Reapproved 2021
(7)ANSI/NACE MR0103/ISO 17945 November 23, 2015
(8)ANSI/NACE MR0175/ISO 15156-3. third edition November 23.2015
(9)Norsok-standard M-630 Edition 6. October 2013

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Tolleranz/Allowance/Tolerance: Tolleranza: h11 - DIN668/EN10278

Pos. nr. / Item nr. / Nr. de poste	Oggetto / Gegenstand / Product description / Descrip. du produit	Dimensioni - mm / Abmessungen / Dimension / Dimension	Lunghezza - mm / Länge / Length / Longueur	Colata / Schmelze / Heat / Coulée	Pezzi / Stucke / Pieces / Pieces	Peso - KG / Gewicht / Weight / Poids	Lotto nr. / Los nr. / Lot nr. / Lot nr.
0010	Esagono	22,000	3000/ 3030	291366		2191,0	221203290

2 CROSSWIND
13/11/24 R

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 07/11/2023
VCQ008 - MEST136589

Direzione Qualità / Qualitätsmanagement/Quality Management/Gestion Qualité
R.BERTELLI

Direzione Prodotto / Produktmanagement/Product Management/Direction Produit
P.MESSORI

CORPO BONNET / BONNET BODY

Acciaierie Valbruna S.p.A.

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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1 — Certificato nr. MEST136234 / 2023 / 1

Stato di fornitura : Laminato - Solubilizzato FINITO A FREDDO

Produttore : ACCIAIERIE VALBRUNA S.P.A.

Tipo di Elaborazione: E+AOD

Ordine nr: VS ORDINE 25

Conferma ordine nr: BS23002709

Avviso di Spedizione: A-BS23001767

Qualità: 1.4401/1.4404/316/316L

Marca: MVAPML (MAXIVAL)

Marchi di Fabbrica: AV

Punzone del Collaudatore: MR

Punzonatura: 1.4401/1.4404

TEST ALLO STATO DI FORNITURA

Test on delivery condition Prüefung auf lieferbereitem produkt test a l'etat de fourniture Prueba sobre el material asi come entregado

1) L=longitudinale/längs, T=trasversale/quer, O=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C		Posiz. Saggio Probenlage Location Emplacement	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement A5 %		Strizione Einschnürung Reduction of area Striction Z %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max			200	235	500 900	20	-	-	-	-			- 315		
A	10	20	L		458	548	658	43		67					225		
I	10	20	L		457	538	659	45		66					227		

TEST ALLO STATO DI FORNITURA

Test on delivery condition / Prüefung auf lieferbereitem produkt / Test a l'etat de fourniture / Prueba sobre el material asi come entregado

TEST		min	max	
I	Dimensioni grano x ASTM E112			5

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, O=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C		Posiz. Saggio Probenlage Location Emplacement	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max			-	-	-	-	-	-	-	-	-
D	10X10	-196	L		128	130	125	1,858	1,910	1,289	58	60	57

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, O=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C		Posiz. Saggio Probenlage Location Emplacement	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max			210	-	517	-	35	-	50	-			- 235		
E	12,5	20	L		595		725		35		69				233		

x CROSSWIND 13/11/2023

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 07/11/2023	Direzione Qualità	Direzione Prodotto	Pagina
VCQ008 - MEST136589	R.BERTELLI	P.MESSORI	2 di 4

CORPO BONNET / BONNET BODY

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST136234 / 2023 / 1

Ordine nr. / Bestell / Your order / Commande: VS ORDINE 25

Conferma ordine nr. / Werks/Our Order/Ref nr.: BS23002709

Avviso di Spedizione / Lieferanzeige/Packing list/B.L.: A-BS23001767

Stato di fornitura / Lieferzustand / Delivery state / Etat de livraison: Laminato - Solubilizzato FINITO A FREDDO

Tipo di Elaborazione / Erschmelzungsart / Melting process / Mode d'elaboration: E+AOD

Qualità / Werkstoff/Grade/Nuance: 1.4401/1.4404/316/316L

Marca / Markenbezeichnung / Brand / Nuance: MVAPML (MAXIVAL)

Produttore / Hersteller/Usine productrice: **ACCIAIERIE VALBRUNA S.P.A.**

Marchi di Fabbrica / Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice: AV

Punzone del Collaudatore / Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'essayeur: MR

Punzonatura / Kennzeichnung / Marking / Marquage: 1.4401/1.4404

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab / Specimen/Eprouvette Larg.diam Spess. / Breite Durch. Dicke / Width Diam. Thickness / Larg. diam. epais	°C	Posiz. Saggio / Position / Location / Emplacement	Resilienza / Kerbschlagarbeit / Impact Value / Resilience KV2			Espansione laterale / Lateral Expansion			Shear		
Valori richiesti / Anforderungen/Required values / Valeurs demandées		min / max		100	100	100	-	-	-	-	-	-
H	10X10	20	L	185	179	184						
J	10X10	20	L	197	193	191						

Tensile testing according to ISO 6892-1
Impact testing according to ISO 148-1
Mechanical properties according to ASTM A370.
Brinnell hardness according to ASTM E10
Tensile testing according to ASTM E8
Brinnell hardness according to ISO 6506-1

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Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata / Heat / Schmelze/Coulée	C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	Co %	P %	S %	N %				
min - max	- 0,030	- 1,00	- 2,00	16,50 - 18,00	2,00 - 2,50	- 1,00	10,00 - 13,00	-	- 0,045	- 0,030	- 0,100	-	-	-	-
291366	0,019	0,50	1,48	16,78	2,06	0,56	10,05	0,134	0,031	0,027	0,064				

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 07/11/2023
VCQ008 - MEST136589

Direzione Qualità / Qualitätsmanagement/Quality Management/Gestion Qualité: **R.BERTELLI**

Direzione Prodotto / Produktmanagement/Product Management/Direction Produit: **P.MESSORI**

CORPO BONNET / BONNET BODY

Acciaierie Valbruna S.p.A.

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Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST136234 / 2023 / 1

Ordine nr: VS ORDINE 25
Bestell / Your order / Commande

Conferma ordine nr: BS23002709
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-BS23001767
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Lieferzustand / Delivery state / Etat de livraison	Laminato - Solubilizzato FINITO A FREDDO
Tipo di Elaborazione: Erschmelzungsart / Melting process / Mode d'elaboration	E+AOD
Qualità: Werkstoff/Grade/Nuance	1.4401/1.4404/316/316L
Marca: Markenbezeichnung / Brand / Nuance	MVAPML (MAXIVAL)

Produttore : Hersteller/Item/Usine productrice
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice
AV

Punzone del Collaudatore: Stempel des Werksachverständigen / Inspector's stamp/Poinçon de l'assayeur
MR

Punzonatura: 1.4401/1.4404
Kennzeichnung / Marking / Marquage

Reduction ratio = 78,0 : 1
Solution annealed 1060°C for 180'(total time)/water cooled.
SURFACE QUALITY COMPLIANT TO EN 10088-3 TAB.1 COND. 2H
"Issued in agreement with TÜV SÜD Industrie Service GMBH
(07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by
Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

Sono state soddisfatte tutte le condizioni richieste Die gestellten Anforderungen sind it. Anlage erfüllt The material has been furnished in accordance with the requirements Le materiel à été trouvé conforme aux exigences	Controllo antimescolanza con tecnica XRF/OES portatile : OK Verwechslungprüfung durch XRF/OES Gerät geführt : OK Antimixing testing performed with XRF/OES portable : OK Contrôle antimélange avt technique XRF/OES portable : OK	Controllo visivo e dimensionale: soddisfa le esigenze Besichtigung und Ausmessung: ohne Beanstandung Visual inspection and dimensional checks:satisfactory Contrôle visuel et dimensions: satisfaisant

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD'S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

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13/11/24

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 07/11/2023 VCQ008 - MEST136589	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 4 di 4

Rodacciai

23842 Bosisio Parini (LC) – Via Giuseppe Roda 1 – Italia
Tel. +39 031878111 – Fax +39 031878312
www.rodacciai.com – info@rodacciai.com

Azienda con sistema di gestione certificato da IGQ
secondo UNI EN ISO 9001:2015

The Company's Quality Management System
is certified by IGQ according to UNI EN ISO 9001:2015

CERTIFICATO DI CONTROLLO Inspection Certif N. 174495 Date 14/11/2023

Secondo According to . . . . . EN 10204:2004 3.1

ORDINE - Order N. 372 Date 10/11/2023

D.d.T. - Delivery note N. 11714/04 Date 14/11/2023

Weight KG 411,00 **Odp. Nr.** 2022/A/58282
Tolerance ISO286-2 h9 + 0,000 - 0,036 mm **Bars Length** 3.000 - 3.050 mm

QUALITA' - Grade

STANDARD	EN 10088-3:2014	X2CrNiMo17-12-2	1.4404 / 316L
STANDARD	EN 10088-3:2023	X5CrNiMo17-12-2	1.4401 / 316

Mark RODACCIAI . . . . . 316 PLUS
PROFILO - Shape . . . . . ROUND
DIMENSIONE - Size . . . . . mm 10,00
ESECUZIONE - Form of delivery . . . . . ROUGH GROU.

COLATA - Heat 172303

ANALISI CHIMICA DI COLATA - Cast analysis % by mass

C	Mn	Si	S	P	Cr	Ni	Mo	Cu	Co	N
0,021	1,820	0,360	0,0220	0,025	16,640	10,100	2,100	0,360	0,150	0,0760

CARATTERISTICHE MECCANICHE ALLO STATO DI FORNITURA
Mechanical properties of the delivered material

		Tested
Tensile Strength	Rm (MPa)	746,0
Proof Stress	Rp (1) (MPa)	692,0
Proof Stress	Rp (0,2) (MPa)	612,0
Elongation	A 5 (%)	32,0
Hardness	HBW	226,0
Reduction of area	Z (%)	51,0

NOTE - Notes

Processo di Fusione: E + A. O. D.
Trattamento termico: Temperatura di Solubilizzazione 1060°C
Tempo Mantenimento: 4 Ore, Raffreddamento in Acqua
Prova di Corrosione Intergranularena: ASTM A262-15 "E"
Materiale Conforme a NACE MR-0175/ISO 15156-3:2015
NACE MR-103/ISO 17495-1:2016

Pag. 1 / Segue

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Rodacciai

23842 Bosisio Parini (LC) – Via Giuseppe Roda 1 – Italia
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www.rodacciai.com – info@rodacciai.com

Azienda con sistema di gestione certificato da IGQ secondo UNI EN ISO 9001:2015

The Company's Quality Management System is certified by IGQ according to UNI EN ISO 9001:2015

Segue certificato di controllo N. 174495 Date 14/11/2023
Inspection Certificate's continuance

NOTE - Notes

Materiale conforme a: ASTM A276-24a / A479-23a/ A182-24
ASME SA: 479-21 276-21 182; UNS 31600 - 31630 AISI 316-316L
Corrosione Intercristallina EN ISO 3651-2:98 Met.A

Melting Process: E + A. O. D
Heat treatment: annealed temperature 1060°C
Soaking time: 4 Hours, Cooling in water
Intergranular corrosion tested to ASTM A262-15 "E"
According to: NACE MR-0175 / ISO 15156-3:2015
NACE MR-103/ISO 17495-1:2016
Material Compliant to: ASTM A276-24a / A479-23a/ A182-24
ASME SA: 479-21 276-21 182; UNS 31600 - 31630 AISI 316-316L
Intergranular Corrosion according to EN ISO 3651-2:98 Met.A

Surface quality condition 2H conforming also to EN 10277 class 3

We certify hereby, that the above mentioned products are consistent with the order prescriptions.
This certificate was generated by data system acc. to EN 10204, it is not necessary to be signed for validity.

Materiale conforme alle seguenti direttive/regolamenti europee:
. Regolamento REACH 2006/1907/CE e tutti successivi aggiornamenti, compresa la modifica M80 Direttiva Delegata 2022/1632, e SVHC Candidate List aggiornata al 17/01/2023.
. Direttiva ROHS 2011/65/UE e tutti i successivi aggiornamenti, compresa la modifica M80 attraverso la Direttiva Delegata 2022/1632, e Decreto Legislativo 27 del 04/03/2014.
. Direttiva RAEE 2012/19/UE e tutti successivi aggiornamenti, compresa la modifica M1 attraverso la Direttiva 2018/849.
. Direttiva ELV (End-of-Life Vehicles) 2000/53/CE e tutti i successivi aggiornamenti, compresa la modifica M15 attraverso la Direttiva 2020/363
. Contaminazione Radioattiva, Direttiva 2013/59/EURATOM e Decreto Legislativo N.101 del 31 Luglio 2020.
. Canadian List 168 aggiornata al 16/03/2022
. Minerali di Conflitto, Regolamento (UE) 2017/821 e tutti i successivi aggiornamenti, compresa la modifica M1 attraverso il Regolamento Delegato 2020/1588, e Dodd-Frank Wall Street Reform and Consumer Protection Act Section 1502.

Material conforming to the following European directives/regulation:
. REACH regulation 2006/1907/EC and all subsequent updates, including modification M80 Delegate Directive, and SVHC Candidate List updated to 01/17/2023.
. ROHS Directive 2011/65/EU and all subsequent updates, including the M80 amendment through the Delegated Directive 2022/1632, and Italian Legislative Decree 27 of 03/04/2014.
. WEEE Directive 2012/19/EU and all subsequent updates, including the M1 amendment through Directive 2018/849.
. ELV (End-of-Life Vehicles) Directive 2000/53/EC and all subsequent updates, including the modification M15 through Directive 2020/363
. Radioactive Contamination, Directive 2013/59/EURATOM and Italian Legislative Decree No. 101 of 31 July 2020.
. Canadian List 168 updated 03/16/2022.
. Conflict Minerals, Regulation (EU) 2017/821 and all subsequent updates, including amendment M1 through Delegated Regulation 2020/1588, and Dodd-Frank Wall Street Reform and Consumer Protection Act Section 1502.

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13/11/24

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Pag. 2 / 2 RODACCIAI: The Work Inspector
Alessia Porta

OTTURATORE / TIP

Acciaierie Valbruna S.p.A.

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Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST140440 / 2023 /
Prüfung/Test/Essai

Ordine nr: VS ORD MAIL
Bestell / Your order / Commande

Conferma ordine nr: AN23001468
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-AN23000875
Lieferanzeige/Packing list/B.L.

Stato di fornitura: Laminato - Solubilizzato FINITO A FREDDO
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stampel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung / Marking / Marquage

SPECIFICHE : Anforderungen / Requirements / Exigences	Note: Aufzeichnungen / Notes / Notes
VAL STOCK W2 A/1 1.4404/316L A,CF	
AD 2000-M. W 2 2022 1.4401 A,CF (0)	(0)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
AD 2000-M. W 2 2022 1.4404 A,CF (1)	(1)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
AISI . 316/316L	
ASME SA182 2021 S31600/03 A (2)	(2)Section II Part A 2021 EDITION For products machined directly from bar refer to ASME SA479.
ASME SA276 2021 S31600/03 A,CF (3)	(3)Section II Part A 2021 EDITION
ASME SA479 2021 S31600/03 A (4)	(4)Section II Part A 2021 EDITION
ASTM A182 2023 S31600/03 A (5)	(5)For products machined directly from bar refer also to ASTM A479.
ASTM A262 PR. E 2015 316/316L (6)	(6)Reapproved 2021
ASTM A276 2023 S31600/03 A,CF	
ASTM A370 2022 .	
ASTM A479 2023A S31600/03 A	
ASTM E10 2023 .	
ASTM E8 2022 .	
EN 10088 PART 3 2014 1.4401 A,CF	
EN 10088 PART 3 2014 1.4404 A,CF	
EN 10272 2016. 1.4401 A,CF	
EN 10272 2016. 1.4404 A,CF	
ISO 3651-2 98 METHOD A T1	
ISO 6506-1 2014 .	
ISO 6892-1 2019 .	
ACH CO . .	
PME HB L . .	
NACE MR0175 4 S31600/03 A (7)	(7)ANSI/NACE MR0175/ISO 15156-3:2020 Fourth edition, approved 21 Sep 2022.
NACE MR0103 2015 S31600/03 A (8)	(8)ANSI/NACE MR0103/ISO 17945 November 23, 2015

		Tolleranza: h9 - DIN671/EN10278 (Toleranz/Allowance/Tolerance)					
Pos. nr. (Pos. nr / Item nr / Nr. de poste)	Oggetto (Gegenstand / Product description / Descrip. du produit)	Dimensioni - mm (Abmessungen / Dimension / Dimension)	Lunghezza - mm (Länge / Length / Longueur)	Colata (Schmelze / Heat / Coulée)	Pezzi (Stückzahl / Pieces / Pieces)	Peso - KG (Gewicht / Weight / Poids)	Lotto nr. (Los nr / Lot nr / Lot nr)
0010	Tondo	9,000	3000/ 3050	290962		162,0	210502620

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 15/11/2023	Direzione Qualità (Qualitätsmanagement/Quality Management/Gestion Qualité)	Direzione Prodotto (Produktmanagement/Product Management/Direction Produit)	Pagina
VCQ012 - MEST140440	R.BERTELLI	P.MESSORI	1 di 3

OTTURATORE / TIP

Acciaierie Valbruna S.p.A.

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Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST140440 / 2023 /
Prüfung/Test/Essai

Stato di fornitura : Laminato - Solubilizzato FINITO A FREDDO
Lieferzustand / Delivery state / Etat de livraison

Produttore :
Hersteller/Item/Usine productrice
ACCIAIERIE VALBRUNA S.P.A.

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Marchi di Fabbrica:
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice

Ordine nr: VS ORD MAIL
Bestell / Your order / Commande

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Punzone del Collaudatore:
Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur

Conferma ordine nr: AN23001468
Werks/Our Order/Ref nr

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand : Nuance

Punzonatura: 1.4401/1.4404
Kennzeichnung / Marking / Marquage

Avviso di Spedizione: A-AN23000875
Lieferanzeige/Packing list/B.L.

TEST ALLO STATO DI FORNITURA
Test on delivery condition Prüefung auf lieferbereitem produkt test a l'etat de fourniture Prueba sobre el material así come entregado

1) L=longitudinale/längs, T=trasversale/quer, O=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam epais mm	°C	Posiz. Saggio Prelievo Location Emplacement	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement A5 %		Strizione Einschnürung Reduction of area Striction Z %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs demandées		min		200	235	500	20	-	-	-	-			-		
		max				900								315		
A	9	20	L	637	686	720	31		73					234		
E	9	20	L	639	690	726	30		71					235		

TEST ALLO STATO DI FORNITURA
Test on delivery condition / Prüefung auf lieferbereitem produkt / Test a l'etat de fourniture / Prueba sobre el material asi come entregado

TEST		min	max	
A	Dimensioni grano x ASTM E112			5

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, O=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam epais mm	°C	Posiz. Saggio Prelievo Location Emplacement	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs demandées		min		310	-	620	-	30	-	50	-			-		
		max												235		
D	6	20	L	640		723		33		74				230		

Tensile testing according to ISO 6892-1
Mechanical properties according to ASTM A370.
Brinnell hardness according to ASTM E10
Tensile testing according to ASTM E8
Brinnell hardness according to ISO 6506-1

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Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat Schmelze/Coulée		C %	Si %	Mn %	Cr %	Mo %	Ni %	Co %	P %	S %	N %						
	min -	-	-	-	16,50	2,00	10,00	-	-	-	-	-	-	-	-	-	-
	max	0,030	1,00	2,00	18,00	2,50	13,00	-	0,045	0,030	0,100	-	-	-	-	-	-
290962		0,015	0,46	1,48	16,68	2,03	10,23	0,127	0,030	0,023	0,048						

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 15/11/2023 VCQ012 - MEST140440	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 2 di 3

OTTURATORE / TIP

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST140440 / 2023 /

Ordine nr. / Bestell / Your order / Commande: VS ORD MAIL

Conferma ordine nr. / Werks/Our Order/Ref nr.: AN23001468

Avviso di Spedizione / Lieferanzeige/Packing list/B.L.: A-AN23000875

Stato di fornitura / Lieferzustand / Delivery state / Etat de livraison: Laminato - Solubilizzato FINITO A FREDDO

Tipo di Elaborazione / Erschmelzungsart / Melting process / Mode d'elaboration: E+AOD

Qualità / Werkstoff/Grade/Nuance: 1.4401/1.4404/316/316L

Marca / Markenbezeichnung / Brand / Nuance: MVAPML (MAXIVAL)

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice: AV

Punzone del Collaudatore / Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur: MR

Punzonatura / Kennzeichnung / Marking / Marquage: 1.4401/1.4404

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

Reduction ratio = 457,3 : 1
Material annealed 1040°C for 135'(total time)/water cooled.
SURFACE QUALITY COMPLIANT TO EN 10088-3 TAB.1 COND. 2H
"Issued in agreement with TÜV SÜD Industrie Service GMBH
(07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by
Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

Sono state soddisfatte tutte le condizioni richieste / Die gestellen Anforderungen sind it. Anlage erfüllt / The material has been furnished in accordance with the requirements / Le materiel à été trouvé conforme aux exigences

Controllo antimescolanza con tecnica XRF/OES portatile : OK / Verwechslungprüfung: durch XRF/QES Gerät geführt : OK / Antimixing testing performed with XRF/OES portable : OK / Contrôle antimélange svt technique XRF/OES portable : OK

Controllo visivo e dimensionale: soddisfa le esigenze / Besichtigung und Ausmessung: ohne Beanstandung / Visual inspection and dimensional checks satisfactory / Contrôle visuel et dimensions: satisfaisant

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD'S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 15/11/2023 VCQ012 - MEST140440	Direzione Qualità / Qualitätsmanagement/Quality Management/Gestion Qualité **R.BERTELLI**	Direzione Prodotto / Produktmanagement/Product Management/Direction Produit **P.MESSORI**	Pagina 3 di 3

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ROSETTI MARINO ITEM 190

COD. VLBBNN07240600

TAG:

BLPH-MV-035, BLPH-MV-264, BLPH-MV-388, BLPH-MV-424, BLPH-MV-432, BLPH-MV-441

INDRA ITEM 190

COD. 00.VSFT.0223/V

indra VALVES - ITALY

Certificazione dei materiali
EN 10204 3.1 ed. 2004 come da allegati

Material certification
EN 10204 3.1 ed. 2004 as per attachments

MD-02-04-IT-UK / VSF / TRU
Rev. 16
Data: 08-Nov-2018
CM/IT/UK

Nr. / *No.* 24-2115 — **Data / Date :** 23-Oct-2024

Cliente / *Customer* ROSETTI MARINO SPA

Vs. ordine Nr. / *Your order Nr.* 1724000798 REV.2 — **Data / Date :** 26-Jun-2024

Ns. commessa Nr. / *Our job Nr.* 24 01216 — **Data / Date :** 3-Jul-2024

Ns. D.D.T. Nr. / *Our advise note Nr.* — **Data /** *Date* **:**

Ordine di produzione / Production order number : 24 01216/190 - 293299 (Serial Number from 106042 to 106045)
Lotto / Material batch number : 293299 (Serial Number from 106042 to 106045)

Ordine di produzione / Production order number : 24 01216/190 - 294238 (Serial Number 106046,106047)
Lotto / Material batch number : 294238 (Serial Number 106046,106047)

Pos. Cliente / Customer Item	Pos. Indra / Indra Item	Codice / Code		Q.tà / Q.ty	Nr. di serie Serial Number	Descrizione /Description
		Ns./ Our	Vs. / Your			
190	190	00.VSFT.0223/V	VLBBNN07240600	6	From 106042 to 106047	INDRA BALL VALVE DBB-898-TRU-HR-150-Q300RF3-Q-D-DLF-DL-N-RG-GE12-L123-TG-TGW-TV-DP-PMI2-PD2-BI-GT-CR-TA-FE2-FS-SPC1-SPC2

Elenco / List

Componente / Component	Colata / Heat	Materiale Material	Numero del certificato Certificate number
Corpo Valvola / Valve Body (SN from 106042 to 106045)	293299	AISI 316/316L NACE	MEST089170/2024/
Corpo Valvola / Valve Body (SN 106046,106047)	294238	AISI 316/316L NACE	MEST090433/2024/
Closure Q300RF3	295063	AISI 316/316L NACE	MEST089171/2024/
Tirante / Stud bolt	Z5XR	ASTM A193 B8M Cl.2	1369552
Dado / Nut	YA27099	ASTM A194 Gr.8M	5066
Flangia premitreccia / Gland plate	294158	AISI 316/316L NACE	MEST076309/2024/ - UT24003464
Vite flangia premitreccia / Gland plate bolt	847049	ASTM A193 B8M Cl.2	1369552
Piastra supporto sfera / Ball support flange	43421	AISI 316/316L NACE	2024-107037
Stelo antiespulsione sfera / Ball stem	2VCV	AISI 316/316L NACE	2023/014186
Seggio / Seat	301859	AISI 316/316L NACE	2024003430
Sfera / Ball	101823	AISI 316/316L NACE	2021055970
Corpo bonnet/ Bonnet body	291893	AISI 316/316L NACE	MEST040838/2024/
Stelo spillo / Stem needle	172303	AISI 316/316L NACE	174495
Otturatore / Tip	290962	AISI 316/316L NACE	MEST140440/2023/

*NOTE / **REMARKS** :* TAG : BLPH-MV-035, BLPH-MV-264, BLPH-MV-388, BLPH-MV-424, BLPH-MV-432, BLPH-MV-441

PREPARATO DA: **ELEONORA RANZANI**
PREPARED BY: **DOCUMENTATION MANAGER**

APPROVATO DA: **LUCIA NOSOTTI**
APPROVED BY: **QUALITY ASSURANCE MANAGER**

20013 Magenta (MI) Italy - Via Novara, 10/B-C
Tel. +39 02 97298663 r.a. - Fax +39 02 97291855
E-mail: indra@indra.it - http://www.indra.it

x CROSSWIND
13/11/24

CORPO VALVOLA / VALVE BODY (SN FROM 106042 TO 106045)

Acciaierie Valbruna S.p.A.

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Telefono 0471.924111 - Fax 0471.924497
https://www.valbruna-stainless-steel.com/

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION - CERTIFICADO DE INSPECCIÓN

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon/De conformidad con

Certificato nr. MEST089170 / 2024 /
Prüfung/Test/Essai/Num. de certificado

Cliente / Besteller/Purchaser/Client/Cliente
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 02072
Bestell
Your order
Commande
Num. de pedido

Conferma ordine nr: MI24005187
Werks/Our Order/Ref nr.
Num. de confirmación de pedido

Avviso di Spedizione: A-MI24004060
Lieferanzeige/Packing list/B.L.
Aviso de embarque

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand
Delivery state
Etat de livraison
Estado de la entrega

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration
Método de fusión

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance
Calidad

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance / Marca

Produttore :
Hersteller/Item/Usine productrice/Producto

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice
Marcas de fábrica

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur
Sello del Comprobador

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage / Sello

SPECIFICHE :
Anforderungen / Requirements / Exigences / Especificaciones

Note:
Aufzeichnungen / Notes / Notes / Notas

VAL STOCK A/1 1.4404/316L A
MDS S01 5 316 A (0)
AISI . 316/316L
AMS-QQ-S-763 D 316/316L A
ASME SA182 2021 S31600/03 A (1)
ASME SA193 2021 B8M CLASS 1 (2)
ASME SA276 2021 S31600/03 A (3)
ASME SA320 2021 B8M CLASS 1 (4)
ASME SA479 2021 S31600/03 A (5)
ASTM A182 2023 S31600/03 A (6)
ASTM A193 2023 B8M CLASS 1
ASTM A262 PR. E 2015 316/316L (7)
ASTM A276 2023 S31600/03 A
ASTM A320 2022 B8M CLASS 1 CLASS1
ASTM A370 2022 .
ASTM A479 2023A S31600/03 A
ASTM E10 2023 .
ASTM E8 2022 .
EN 10088 PART 3 2014 1.4401 A (8)
EN 10088 PART 3 2014 1.4404 A (9)
EN 10272 2016. 1.4401 A
EN 10272 2016. 1.4404 A
ISO 148-1 2016 .
ISO 3651-2 98 METHOD A T1
ISO 6506-1 2014 .
ISO 6892-1 2019 .
NACE MR0103 2015 S31600/03 A (A)
NACE MR0175 4 S31600/03 A (B)
QQ-S-763 F 316/316L A
ACH CO . .
KV L -196C . ISO 148-1
KV T -196C . ISO 148-1

(0)Norsok-standard M-630 Edition 6, October 2013
(1)Section II Part A 2021 EDITION For products machined directly from bar refer to ASME SA479.
(2)Section II Part A 2021 EDITION
(3)Section II Part A 2021 EDITION
(4)Section II Part A 2021 EDITION
(5)Section II Part A 2021 EDITION
(6)For products machined directly from bar refer also to ASTM A479.
(7)Reapproved 2021
(8)Chemical and mechanical properties only.
(9)Chemical and mechanical properties only.
(A)ANSI/NACE MR0103/ISO 17945 November 23, 2015
(B)ANSI/NACE MR0175/ISO 15156-3:2020 Fourth edition, approved 21 Sep 2022.

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		Tolleranza: -0/+1% Toleranz/Allowance/Tolerance/Tolerancia					
Pos. nr. Pos. nr. / Item nr. Nr. de poste Número de artículo	Oggetto Gegenstand / Product description Descrip. du produit Descripción del producto	Dimensioni - mm Abmessungen Dimension Dimensiones	Lunghezza - mm Länge Length Longueur / Longitud	Colata Schmelze Heat Coulée / Colada	Pezzi Stückzahl Pieces Pièces / Piezas	Peso - KG Gewicht Weight Poids / Peso	Lotto nr. Losnr. Lot nr. Lot nr. / Lote nro.
0060	Tondo	340,000	976/ 976	293299		1438,0	312310400

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 03/07/2024 VCQ008 - MEST089170	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité/Gerente de calidad **R.BERTELLI**	Direzione Prodotto Produktmanagement/Product Management/Direction Produit/Gerente de producto **P.MESSORI**	Pagina 1 di 4

CORPO VALVOLA / VALVE BODY (SN FROM 106042 TO 106045)

Acciaierie Valbruna S.p.A.

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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497
https://www.valbruna-stainless-steel.com/

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION - CERTIFICADO DE INSPECCIÓN

In conformità a / Nach/According to/Selon/De conformidad con: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai/Num. de certificado: MEST089170 / 2024 /

Cliente / Besteller/Purchaser/Client/Cliente:
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr. / Bestell / Your order / Commande / Num. de pedido: AF24 02072

Conferma ordine nr. / Werks/Our Order/Ref nr. / Num. de confirmación de pedido: MI24005187

Avviso di Spedizione / Lieferanzeige/Packing list/B.L. / Aviso de embarque: A-MI24004060

Stato di fornitura / Lieferzustand / Delivery state / Etat de livraison / Estado de la entrega: Fucinato Solubilizzato - Pelato

Tipo di Elaborazione / Erschmelzungsart / Melting process / Mode d'elaboration / Método de fusión: E+AOD

Qualità / Werkstoff/Grade/Nuance / Calidad: 1.4401/1.4404/316/316L

Marca / Markenbezeichnung / Brand / Nuance / Marca: MVAPML (MAXIVAL)

Produttore / Hersteller/Item/Usine productrice/Productor:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice / Marcas de fábrica: AV

Punzone del Collaudatore / Stempel des Werksachverständigen / Inspector's stamp/Poinçon de l'assayeur / Sello del Comprobador: MR

Punzonatura / Kennzeichnung / Marking / Marquage / Sello: 1.4401/1.4404/316/316L

TEST ALLO STATO DI FORNITURA

TEST		min	max	
A	Dimensioni grano x ASTM E112			1

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm / Probeta	°C	Posiz. Saggio Probenlage Location Emplacement Ubicación 1)	Resilienza Kerbschlagarbeit Impact Value Resilience / Prueba de impacto KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs démandées / Valores requeridos		min max		-	-	-	-	-	-	-	-	-
B	10X10	-196	L	210	205	201	1,485	2,328	2,195	74	70	70

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm / Probeta	°C	Posiz. Saggio Probenlage Location Emplacement Ubicación 1)	Snervamento Streckgrenze/Yield Stress Limite elastique Limite elástico Rp 0,2% N/mm2	Snervamento Streckgrenze/Yield Stress Limite elastique Limite elástico	Resistenza Zugfestigkeit/Tensile strength Resistance à la traction Resistencia a la tracción Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement / Elongación E 4d %		Strizione Einschnürung Reduction of area Striction / Reducción de área RA %		Resilienza Kerbschlagarbeit Impact Value/ Resilience Prueba de impacto			Durezza Haerte Hardness Dureté / Dureza HB		
Valori richiesti Anforderungen/Required values Valeurs démandées / Valores requeridos		min max		210	-	520 790	-	40	-	50	-			-		223
C	12,5	20	L	258		559		61		71				160		

Prova di trazione per ISO 6892-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm / Probeta	°C	Posiz. Saggio Probenlage Location Emplacement Ubicación 1)	Snervamento Streckgrenze/Yield Stress Limite elastique Limite elástico Rp 0,2% N/mm2	Snervamento Streckgrenze/Yield Stress Limite elastique Limite elástico Rp 1% N/mm2	Resistenza Zugfestigkeit/Tensile strength Resistance à la traction Resistencia a la tracción Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement / Elongación A5 %		Strizione Einschnürung Reduction of area Striction / Reducción de área Z %		Resilienza Kerbschlagarbeit Impact Value/ Resilience Prueba de impacto			Durezza Haerte Hardness Dureté / Dureza HB		
Valori richiesti Anforderungen/Required values Valeurs démandées / Valores requeridos		min max		200	235	500 700	30	-	-	-	-			-		215
D	10	20	T	247	289	554	55		65					158		
J	10	20	T	253	295	559	53		66					157		

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 03/07/2024 VCQ008 - MEST089170	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité/Gerente de calidad R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit/Gerente de producto P.MESSORI	Pagina 2 di 4

CORPO VALVOLA / VALVE BODY (SN FROM 106042 TO 106045)

Acciaierie Valbruna S.p.A.

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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497
https://www.valbruna-stainless-steel.com/

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION - CERTIFICADO DE INSPECCIÓN

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon/De conformidad con

Certificato nr. MEST089170 / 2024 /
Prüfung/Test/Essai/Num. de certificado

Cliente / Besteller/Purchaser/Client/Cliente
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 02072
Bestell
Your order
Commande
Num. de pedido

Conferma ordine nr: MI24005187
Werks/Our Order/Ref nr.
Num. de confirmación de pedido

Avviso di Spedizione: A-MI24004060
Lieferanzeige/Packing list/B.L.
Aviso de embarque

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand
Delivery state
Etat de livraison
Estado de la entrega

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration
Método de fusión

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance
Calidad

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance / Marca

Produttore :
Hersteller/Item/Usine productrice/Productor

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice
Marcas de fábrica

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur
Sello del Comprobador

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage / Sello

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, O=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg diam epais mm / Probeta	°C	Posiz. Saggio Probentage Location Emplacement Ubicación 1)	Resilienza Kerbschlagarbeit Impact Value Resilience / Prueba de impacto KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs démandées / Valores requeridos		min max		-	-	-	-	-	-	-	-	-
E	10X10	-196	T	91	87	85	0,700	0,485	0,328	28	27	20

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, O=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg diam epais mm / Probeta	°C	Posiz. Saggio Probentage Location Emplacement Ubicación 1)	Resilienza Kerbschlagarbeit Impact Value Resilience / Prueba de impacto KV2 J			Espansione laterale Lateral Expansion			Shear Shear		
Valori richiesti Anforderungen/Required values Valeurs démandées / Valores requeridos		min max		60	60	60	-	-	-	-	-	-
H	10X10	20	T	88	94	91						
K	10X10	20	T	87	81	85						

Mechanical properties according to ASTM A370.
Brinnell hardness according to ASTM E10
Tensile testing according to ASTM E8
Impact testing according to ISO 148-1
Brinnell hardness according to ISO 6506-1
Tensile testing according to ISO 6892-1

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Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique/Análisis químico

Colata/Heat/Coulée / Schmelze/Colada		C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	Co %	P %	S %	N %				
	min -	-	-	-	16,50	2,00	-	10,00	-	-	-	-	-	-	-	-
	max 0,030	1,00	2,00	18,00	2,50	1,00	13,00	-	0,045	0,030	0,100	-	-	-	-
293299		0,019	0,56	1,69	16,94	2,03	0,47	10,15	0,227	0,031	0,021	0,080				

CROSSWIND

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 03/07/2024 VCQ008 - MEST089170	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité/Gerente de calidad **R.BERTELLI**	Direzione Prodotto Produktmanagement/Product Management/Direction Produit/Gerente de producto **P.MESSORI**	Pagina 3 di 4

CORPO VALVOLA / VALVE BODY (SN FROM 106042 TO 106045)

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
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INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 02072
Bestell
Your order
Commande
Num. de pedido

Conferma ordine nr: MI24005187
Werks/Our Order/Ref nr.
Num. de confirmación de pedido

Avviso di Spedizione: A-MI24004060
Lieferanzeige/Packing list/B.L.
Aviso de embarque

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand
Delivery state
Etat de livraison
Estado de la entrega

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration
Método de fusión

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance
Calidad

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance / Marca

Produttore :
Hersteller/Item/Usine productrice/Productor

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice
Marcas de fábrica

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur
Sello del Comprobador

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage / Sello

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Reduction ratio = 4,4 : 1
Solution annealed 1080°C for 6 h /water cooled.
SURFACE QUALITY WITH MAX DEFECT DEPTH 1% DIAMETER
UT ACC. TO ASTM A388

Sono state soddisfatte tutte le condizioni richieste
Die gestellen Anforderungen sind it. Anlage erfüllt
The material has been furnished in accordance with the requirements
Le materiel à été trouvé conforme aux exigences
El material cumple de acuerdo a los requisitos

Controllo antimescolanza con tecnica XRF/OES portatile : OK
Verwechslungprüfung: durch XRF/OES Gerät geführt : OK
Antimixing testing performed with XRF/OES portable : OK
Contrôle antimélange avt technique XRF/OES portable : OK
Prueba de anti mezcla con técnica XRF/OES portátil: OK

Controllo visivo e dimensionale: soddisfa le esigenze
Besichtigung und Ausmessung: ohne Beanstandung
Visual inspection and dimensional checks:satisfactory
Contrôle visuel et dimensions: satisfaisant
Inspección visual y dimensional: cumple los requisitos

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD`S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 03/07/2024 VCQ008 - MEST089170	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité/Gerente de calidad **R.BERTELLI**	Direzione Prodotto Produktmanagement/Product Management/Direction Produit/Gerente de producto **P.MESSORI**	Pagina 4 di 4

CORPO VALVOLA / VALVE BODY (SN 106046,106047)

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497
https://www.valbruna-stainless-steel.com/

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION - CERTIFICADO DE INSPECCIÓN

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon/De conformidad con

Certificato nr. MEST090433 / 2024 /
Prüfung/Test/Essai/Num. de certificado

Cliente / Besteller/Purchaser/Client/Cliente
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 02072
Bestell / Your order / Commande / Num. de pedido

Conferma ordine nr: MI24005187
Werks/Our Order/Ref nr. / Num. de confirmación de pedido

Avviso di Spedizione: A-MI24004158
Lieferanzeige/Packing list/B.L. / Aviso de embarque

Stato di fornitura : Fucinato - Solubilizzato Pelato
Lieferzustand / Delivery state / Etat de livraison / Estado de la entrega

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration / Método de fusión

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance / Calidad

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance / Marca

Produttore :
Hersteller/Item/Usine productrice/Producto

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice / Marcas de fábrica

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur / Sello del Comprobador

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung / Marking / Marquage / Sello

SPECIFICHE :
Anforderungen / Requirements / Exigences / Especificaciones

Note:
Aufzeichnungen / Notes / Notes / Notas

VAL STOCK A/1 1.4404/316L A
MDS S01 5 316 A (0)
AISI . 316/316L
AMS-QQ-S-763 D 316/316L A
ASME SA182 2023 S31600/03 A (1)
ASME SA193 2023 B8M CLASS 1 (2)
ASME SA276 2023 S31600/03 A (3)
ASME SA320 2023 B8M CLASS 1 (4)
ASME SA479 2023 S31600/03 A (5)
ASTM A182 2024 S31600/03 A (6)
ASTM A193 2023 B8M CLASS 1
ASTM A262 PR. E 2015 316/316L (7)
ASTM A276 2024A S31600/03 A
ASTM A320 2022 B8M CLASS 1 CLASS1
ASTM A370 2024 .
ASTM A479 2023A S31600/03 A
ASTM E10 2023 .
ASTM E8 2024 .
EN 10088 PART 3 2014 1.4401 A (8)
EN 10088 PART 3 2014 1.4404 A (9)
EN 10272 2016. 1.4401 A
EN 10272 2016. 1.4404 A
ISO 148-1 2016 .
ISO 3651-2 98 METHOD A T1
ISO 6506-1 2014 .
ISO 6892-1 2019 .
NACE MR0103 2015 S31600/03 A (A)
NACE MR0175 4 S31600/03 A (B)
QQ-S-763 F 316/316L A
ACH CO . .
KV L -196C . ISO 148-1
KV T -196C . ISO 148-1
PREN . .

(0)Norsok-standard M-630 Edition 6, October 2013
(1)Section II Part A 2023 EDITION For products machined directly from bar refer to ASME SA479.
(2)Section II Part A 2023 EDITION
(3)Section II Part A 2023 EDITION
(4)Section II Part A 2021 EDITION
(5)Section II Part A 2023 EDITION
(6)For products machined directly from bar refer also to ASTM A479.
(7)Reapproved 2021
(8)Chemical and mechanical properties only.
(9)Chemical and mechanical properties only.
(A)ANSI/NACE MR0103/ISO 17945 November 23, 2015
(B)ANSI/NACE MR0175/ISO 15156-3:2020 Fourth edition, approved 21 Sep 2022.

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Tolleranza: -0/+1%
Toleranz/Allowance/Tolerance/Tolerancia

Pos. nr.	Oggetto	Dimensioni - mm	Lunghezza - mm	Colata	Pezzi	Peso - KG	Lotto nr.
Pos. nr. / Item nr. / Nr. de poste / Numero de articulo	Gegenstand / Product description / Descrip. du produit / Descripción del producto	Abmessungen / Dimension / Dimension / Dimensiones	Lange / Length / Longueur / Longitud	Schmelze / Heat / Coulée / Colada	Stückzahl / Pieces / Pieces / Piezas	Gewicht / Weight / Poids / Peso	Losnr. / Lot nr. / Lot nr. / Lote nro.
0060	Tondo	340,000	976/ 976	294238		719,0	325704410

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 05/07/2024
VCQ008 - MEST090433

Direzione Qualità
Qualitätsmanagement/Quality Management/Gestion Qualité/Gerente de calidad
R.BERTELLI

Direzione Prodotto
Produktmanagement/Product Management/Direction Produit/Gerente de producto
P.MESSORI

CORPO VALVOLA / VALVE BODY (SN 106046,106047)

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497
https://www.valbruna-stainless-steel.com/

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION - CERTIFICADO DE INSPECCIÓN

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon/De conformidad con

Certificato nr. MEST090433 / 2024 /
Prüfung/Test/Essai/Num. de certificado

Cliente / Besteller/Purchaser/Client/Cliente
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 02072
Bestell
Your order
Commande
Num. de pedido

Conferma ordine nr: MI24005187
Werks/Our Order/Ref nr.
Num. de confirmación de pedido

Avviso di Spedizione: A-MI24004158
Lieferanzeige/Packing list/B.L.
Aviso de embarque

Stato di fornitura : Fucinato - Solubilizzato Pelato
Lieferzustand
Delivery state
Etat de livraison
Estado de la entrega

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration
Método de fusión

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance
Calidad

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance / Marca

Produttore :
Hersteller/Item/Usine productrice/Productor

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice
Marcas de fábrica

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur
Sello del Comprobador

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage / Sello

TEST ALLO STATO DI FORNITURA

TEST		min	max	
A	Dimensioni grano x ASTM E112			1

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm / Probeta	°C	Posiz. Saggio Probenlage Location Emplacement Ubicación 1)	Resilienza Kerbschlagarbeit Impact Value Resilience / Prueba de impacto KV2 J			Espansione laterale Lateral Expansion mm			Shear % Shear		
Valori richiesti Anforderungen/Required values Valeurs démandées / Valores requeridos		min		-	-	-	-	-	-	-	-	-
		max										
B	10X10	-196	L	220	215	216	1,900	1,795	1,795	74	70	70

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm / Probeta	°C	Posiz. Saggio Probenlage Location Emplacement Ubicación 1)	Snervamento Streckgrenze/Yield Stress Limite elastique Limite elástico Rp 0,2% N/mm2	Snervamento Streckgrenze/Yield Stress Limite elastique Limite elástico	Resistenza Zugfestigkeit/Tensile strength Resistance à traction Resistencia a tracción Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement / Elongación E 4d %		Strizione Einschnürung Reduction of area Striction / Reducción de área RA %		Resilienza Kerbschlagarbeit Impact Value/ Resilience Prueba de impacto			Durezza Hearte Hardness Durete / Dureza HB		
Valori richiesti Anforderungen/Required values Valeurs démandées / Valores requeridos		min		210	-	520	-	40	-	50	-			-		
		max				790									223	
C	12,5	20	L	258		563		60		71				160		

Prova di trazione per ISO 6892-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm / Probeta	°C	Posiz. Saggio Probenlage Location Emplacement Ubicación 1)	Snervamento Streckgrenze/Yield Stress Limite elastique Limite elástico Rp 0,2% N/mm2	Snervamento Streckgrenze/Yield Stress Limite elastique Limite elástico Rp 1% N/mm2	Resistenza Zugfestigkeit/Tensile strength Resistance à traction Resistencia a tracción Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement / Elongación A5 %		Strizione Einschnürung Reduction of area Striction / Reducción de área Z %		Resilienza Kerbschlagarbeit Impact Value/ Resilience Prueba de impacto			Durezza Hearte Hardness Durete / Dureza HB		
Valori richiesti Anforderungen/Required values Valeurs démandées / Valores requeridos		min		200	235	500	30	-	-	-	-			-		
		max				700									215	
D	10	20	T	252	298	559	54		65					156		
L	10	20	T	259	305	565	52		67					158		

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xCROSSWIND 13/11/24 R

CORPO VALVOLA / VALVE BODY (SN 106046,106047)

Acciaierie Valbruna S.p.A.

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Telefono 0444.968211 - Fax 0444.963836
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Conferma ordine nr: MI24005187
Werks/Our Order/Ref nr.
Num. de confirmación de pedido

Avviso di Spedizione: A-MI24004158
Lieferanzeige/Packing list/B.L.
Aviso de embarque

Stato di fornitura : Fucinato - Solubilizzato Pelato
Lieferzustand
Delivery state
Etat de livraison
Estado de la entrega

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration
Método de fusión

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance
Calidad

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance / Marca

Produttore :
Hersteller/Item/Usine productrice/Productor

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice
Marcas de fábrica

Punzone del Collaudatore: MR
Stempel des Werksachverständigen
Inspector's stamp/Poinçon de l'assayeur
Sello del Comprobador

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage / Sello

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm / Probeta	°C	Posiz. Saggio Probenlage Location Emplacement Ubicación 1)	Resilienza Kerbschlagarbeit Impact Value Resilience / Prueba de impacto KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs démandées / Valores requeridos		min max		-	-	-	-	-	-	-	-	-
E	10X10	-196	T	90	88	93	0,700	0,793	0,805	24	20	21

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm / Probeta	°C	Posiz. Saggio Probenlage Location Emplacement Ubicación 1)	Resilienza Kerbschlagarbeit Impact Value Resilience / Prueba de impacto KV2 J			Espansione laterale Lateral Expansion			Shear Shear		
Valori richiesti Anforderungen/Required values Valeurs démandées / Valores requeridos		min max		60	60	60	-	-	-	-	-	-
H	10X10	20	T	88	97	95						

Mechanical properties according to ASTM A370.
Brinnell hardness according to ASTM E10
Tensile testing according to ASTM E8
Impact testing according to ISO 148-1
Brinnell hardness according to ISO 6506-1
Tensile testing according to ISO 6892-1

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Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique/Análisis químico

Colata/Heat/Coulée Schmelze/Colada		PRE	C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	Co %	P %	S %	N %			
	min		-	-	-	16,50	2,00	-	10,00	-	-	-	-	-	-	-
	max		0,030	1,00	2,00	18,00	2,50	1,00	13,00	-	0,045	0,030	0,100	-	-	-
294238		24,6	0,018	0,58	1,72	16,75	2,00	0,61	10,06	0,176	0,029	0,022	0,078			

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 05/07/2024
VCQ008 - MEST090433

Direzione Qualità
Qualitätsmanagement/Quality Management/Gestion Qualité/Gerente de calidad
R.BERTELLI

Direzione Prodotto
Produktmanagement/Product Management/Direction Produit/Gerente de producto
P.MESSORI

CORPO VALVOLA / VALVE BODY (SN 106046,106047)

Acciaierie Valbruna S.p.A.

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Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497
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CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION - CERTIFICADO DE INSPECCIÓN

In conformità a / Nach/According to/Selon/De conformidad con: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai/Num. de certificado: MEST090433 / 2024 /

Cliente / Besteller/Purchaser/Client/Cliente:
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VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 02072
Bestell / Your order / Commande / Num. de pedido

Conferma ordine nr: MI24005187
Werks/Our Order/Ref nr. / Num. de confirmación de pedido

Avviso di Spedizione: A-MI24004158
Lieferanzeige/Packing list/B.L. / Aviso de embarque

Stato di fornitura: Fucinato - Solubilizzato Pelato
Lieferzustand / Delivery state / Etat de livraison / Estado de la entrega

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration / Método de fusión

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance / Calidad

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance / Marca

Produttore:
Hersteller/Item/Usine productrice/Productor
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice / Marcas de fábrica

Punzone del Collaudatore: MR
Stempel des Werksachverständigen / Inspector's stamp/Poinçon de l'assayeur / Sello del Comprobador

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung / Marking / Marquage / Sello

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Furnace calibrated according to API 6A REV 21th ED ANNEX M.
Furnace calibrated according to API 6D REV 25th ED ANNEX H.
Reduction ratio = 4,4 : 1
SURFACE QUALITY WITH MAX DEFECT DEPTH 1% DIAMETER
UT ACC. TO ASTM A388
Solution annealed 1080°C for 7,5 h /water cooled.

Sono state soddisfatte tutte le condizioni richieste / Die gestellen Anforderungen sind it. Anlage erfüllt / The material has been furnished in accordance with the requirements / Le materiel à été trouvé conforme aux exigences / El material cumple de acuerdo a los requisitos

Controllo antimescolanza con tecnica XRF/OES portatile : OK / Verwechslungprüfung: durch XRF/OES Gerät geführt : OK / Antimixing testing performed with XRF/OES portable : OK / Contrôle antimélange svt technique XRF/OES portable : OK / Prueba de anti mezcla con técnica XRF/OES portátil: OK

Controllo visivo e dimensionale: soddisfa le esigenze / Besichtigung und Ausmessung: ohne Beanstandung / Visual inspection and dimensional checks:satisfactory / Contrôle visuel et dimensions: satisfaisant / Inspección visual y dimensional: cumple los requisitos

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD'S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

WBP5273IT 08878f1 1274CEAE8A4A05286C

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 05/07/2024 VCQ008 - MEST090433	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité/Gerente de calidad **R.BERTELLI**	Direzione Prodotto Produktmanagement/Product Management/Direction Produit/Gerente de producto **P.MESSORI**	Pagina 4 di 4

Acciaierie Valbruna S.p.A.

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CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION - CERTIFICADO DE INSPECCIÓN

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon/De conformidad con

Certificato nr. MEST089171 / 2024 /
Prüfung/Test/Essai/Num. de certificado

Cliente / Besteller/Purchaser/Client/Cliente
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 02072
Bestell
Your order
Commande
Num. de pedido

Conferma ordine nr: MI24005187
Werks/Our Order/Ref nr.
Num. de confirmación de pedido

Avviso di Spedizione: A-MI24004060
Lieferanzeige/Packing list/B.L.
Aviso de embarque

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand
Delivery state
Etat de livraison
Estado de la entrega

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration
Método de fusión

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance
Calidad

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance / Marca

Produttore :
Hersteller/Item/Usine productrice/Productor

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice
Marcas de fábrica

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur
Sello del Comprobador

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage / Sello

SPECIFICHE :
Anforderungen / Requirements / Exigences / Especificaciones

Note:
Aufzeichnungen / Notes / Notes / Notas

VAL STOCK A/1 1.4404/316L A
MDS S01 5 316 A (0)
AISI . 316/316L
AMS-QQ-S-763 D 316/316L A
ASME SA182 2023 S31600/03 A (1)
ASME SA193 2023 B8M CLASS 1 (2)
ASME SA276 2023 S31600/03 A (3)
ASME SA320 2023 B8M CLASS 1 (4)
ASME SA479 2023 S31600/03 A (5)
ASTM A182 2024 S31600/03 A (6)
ASTM A193 2023 B8M CLASS 1
ASTM A262 PR. E 2015 316/316L (7)
ASTM A276 2024A S31600/03 A
ASTM A320 2022 B8M CLASS 1 CLASS1
ASTM A370 2024 .
ASTM A479 2023A S31600/03 A
ASTM E10 2023 .
ASTM E8 2024 .
EN 10088 PART 3 2014 1.4401 A (8)
EN 10088 PART 3 2014 1.4404 A (9)
EN 10272 2016. 1.4401 A
EN 10272 2016. 1.4404 A
ISO 148-1 2016 .
ISO 3651-2 98 METHOD A T1
ISO 6506-1 2014 .
ISO 6892-1 2019 .
NACE MR0103 2015 S31600/03 A (A)
NACE MR0175 4 S31600/03 A (B)
QQ-S-763 F 316/316L A
ACH CO . .
KV L -196C . ISO 148-1
KV T -196C . ISO 148-1
PREN . .

(0)Norsok-standard M-630 Edition 6, October 2013
(1)Section II Part A 2023 EDITION For products machined directly from bar refer to ASME SA479.
(2)Section II Part A 2023 EDITION
(3)Section II Part A 2023 EDITION
(4)Section II Part A 2021 EDITION
(5)Section II Part A 2023 EDITION
(6)For products machined directly from bar refer also to ASTM A479.
(7)Reapproved 2021
(8)Chemical and mechanical properties only.
(9)Chemical and mechanical properties only.
(A)ANSI/NACE MR0103/ISO 17945 November 23, 2015
(B)ANSI/NACE MR0175/ISO 15156-3:2020 Fourth edition, approved 21 Sep 2022.

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		Tolleranza: k13 Toleranz/Allowance/Tolerance/Tolerancia					
Pos. nr. Pos. nr. / Item nr. Nr. de poste Número de artículo	Oggetto Gegenstand / Product description Descrip. du produit Descripción del producto	Dimensioni - mm Abmessungen Dimension Dimension / Dimensiones	Lunghezza - mm Länge Length Longueur / Longitud	Colata Schmelze Heat Coulée / Colada	Pezzi Stückzahl Pieces Pieces / Piezas	Peso - KG Gewicht Weight Poids / Peso	Lotto nr. Losnr Lot nr. Lot nr. / Lote nro.
0070	Tondo	320,000	1644/ 1644	295063		1079,0	402913090

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 03/07/2024 VCQ052 - MEST089171	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité/Gerente de calidad R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit/Gerente de producto P.MESSORI	Pagina 1 di 4

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Telefono 0471.924111 - Fax 0471.924497
https://www.valbruna-stainless-steel.com/

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In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon/De conformidad con

Certificato nr. MEST089171 / 2024 /
Prüfung/Test/Essai/Num. de certificado

Cliente / Besteller/Purchaser/Client/Cliente
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VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 02072
Bestell / Your order / Commande / Num. de pedido

Conferma ordine nr: MI24005187
Werks/Our Order/Ref nr. / Num. de confirmación de pedido

Avviso di Spedizione: A-MI24004060
Lieferanzeige/Packing list/B.L. / Aviso de embarque

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand / Delivery state / Etat de livraison / Estado de la entrega

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration / Método de fusión

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance / Calidad

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance / Marca

Produttore :
Hersteller/Item/Usine productrice/Productor

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice / Marcas de fábrica

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur / Sello del Comprobador

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung / Marking / Marquage / Sello

TEST ALLO STATO DI FORNITURA

TEST		min	max	
A	Dimensioni grano x ASTM E112			1

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg diam epais mm / Probeta	°C	Posiz. Saggio Probenlage Location Emplacement Ubicación 1)	Resilienza Kerbschlagarbeit Impact Value Resilience / Prueba de impacto KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs démandées / Valores requeridos		min		-	-	-	-	-	-	-	-	-
		max										
B	10X10	-196	L	200	208	201	1,850	1,750	1,743	70	73	70

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg diam epais mm / Probeta	°C	Posiz. Saggio Probenlage Location Emplacement Ubicación 1)	Snervamento Streckgrenze/Yield Stress Limite elastique Limite elástico Rp 0,2% N/mm2	Snervamento Streckgrenze/Yield Stress Limite elastique Limite elástico	Resistenza Zugfestigkeit/Tensile strength Resistance à traction Resistencia a tracción Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement / Elongación E 4d %		Strizione Einschnürung Reduction of area Striction / Reducción de área RA %		Resilienza Kerbschlagarbeit Impact Value/ Resilience Prueba de impacto			Durezza Hearte Hardness Dureté / Dureza HB		
Valori richiesti Anforderungen/Required values Valeurs démandées / Valores requeridos		min		210	-	520	-	40	-	50	-			-		
		max				790								223		
C	12,5	20	L	261		557		59		69				157		

Prova di trazione per ISO 6892-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg diam epais mm / Probeta	°C	Posiz. Saggio Probenlage Location Emplacement Ubicación 1)	Snervamento Streckgrenze/Yield Stress Limite elastique Limite elástico Rp 0,2% N/mm2	Snervamento Streckgrenze/Yield Stress Limite elastique Limite elástico Rp 1% N/mm2	Resistenza Zugfestigkeit/Tensile strength Resistance à traction Resistencia a tracción Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement / Elongación A5 %		Strizione Einschnürung Reduction of area Striction / Reducción de área Z %		Resilienza Kerbschlagarbeit Impact Value/ Resilience Prueba de impacto			Durezza Hearte Hardness Dureté / Dureza HB		
Valori richiesti Anforderungen/Required values Valeurs démandées / Valores requeridos		min		200	235	500	30	-	-	-	-			-		
		max				700								215		
D	10	20	T	249	293	554	55		67					155		
J	10	20	T	253	295	559	54		64					158		

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CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION - CERTIFICADO DE INSPECCIÓN

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
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VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 02072
Bestell
Your order
Commande
Num. de pedido

Conferma ordine nr: MI24005187
Werks/Our Order/Ref nr.
Num. de confirmación de pedido

Avviso di Spedizione: A-MI24004060
Lieferanzeige/Packing list/B.L.
Aviso de embarque

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand
Delivery state
Etat de livraison
Estado de la entrega

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration
Método de fusión

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance
Calidad

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance / Marca

Produttore :
Hersteller/Item/Usine productrice/Productor

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice
Marcas de fábrica

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur
Sello del Comprobador

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage / Sello

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, O=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess / Breite Diam Dicke / Width Diam Thickness / Larg. diam. epais mm / Probeta	°C	Posiz. Saggio Probenlage Location Emplacement Ubicación 1)	Resilienza Kerbschlagarbeit Impact Value Resilience / Prueba de impacto KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs demandées / Valores requeridos		min max		-	-	-	-	-	-	-	-	-
E	10X10	-196	T	94	93	92	0,700	0,600	0,550	24	20	24

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, O=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess / Breite Diam Dicke / Width Diam Thickness / Larg. diam. epais mm / Probeta	°C	Posiz. Saggio Probenlage Location Emplacement Ubicación 1)	Resilienza Kerbschlagarbeit Impact Value Resilience / Prueba de impacto KV2 J			Espansione laterale Lateral Expansion			Shear Shear		
Valori richiesti Anforderungen/Required values Valeurs demandées / Valores requeridos		min max		60	60	60	-	-	-	-	-	-
H	10X10	20	T	91	89	85						
K	10X10	20	T	98	81	88						

Mechanical properties according to ASTM A370.
Brinnell hardness according to ASTM E10
Tensile testing according to ASTM E8
Impact testing according to ISO 148-1
Brinnell hardness according to ISO 6506-1
Tensile testing according to ISO 6892-1

x CROSSWIND
13/11/24

Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique/Análisis químico

Colata/Heat/Coulée / Schmelze/Colada		PRE	C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	Co %	P %	S %	N %			
	min		-	-	-	16,50	2,00	-	10,00	-	-	-	-	-	-	-
	max		0,030	1,00	2,00	18,00	2,50	1,00	13,00	-	0,045	0,030	0,100	-	-	-
295063		24,4	0,018	0,38	1,65	16,55	2,00	0,71	10,17	0,099	0,029	0,022	0,076			

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 03/07/2024 VCQ052 - MEST089171	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité/Gerente de calidad **R.BERTELLI**	Direzione Prodotto Produktmanagement/Product Management/Direction Produit/Gerente de producto **P.MESSORI**	Pagina 3 di 4

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CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION - CERTIFICADO DE INSPECCIÓN

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Nach/According to/Selon/De conformidad con

Certificato nr. MEST089171 / 2024 /
Prüfung/Test/Essai/Num. de certificado

Cliente / Besteller/Purchaser/Client/Cliente
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 02072
Bestell
Your order
Commande
Num. de pedido

Conferma ordine nr: MI24005187
Werks/Our Order/Ref nr.
Num. de confirmación de pedido

Avviso di Spedizione: A-MI24004060
Lieferanzeige/Packing list/B.L.
Aviso de embarque

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand
Delivery state
Etat de livraison
Estado de la entrega

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration
Método de fusión

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance
Calidad

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance / Marca

Produttore :
Hersteller/Item/Usine productrice/Productor

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice
Marcas de fábrica

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur
Sello del Comprobador

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage / Sello

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Furnace calibrated according to API 6A REV 21th ED ANNEX M.
Furnace calibrated according to API 6D REV 25th ED ANNEX H.
Reduction ratio = 4,9 : 1
SURFACE QUALITY WITH MAX DEFECT DEPTH 1% DIAMETER
UT ACC. TO ASTM A388
Solution annealed 1080°C for 7 h /water cooled.

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Sono state soddisfatte tutte le condizioni richieste
Die gestellten Anforderungen sind il. Anlage erfüllt
The material has been furnished in accordance with the requirements
Le materiel à été trouvé conforme aux exigences
El material cumple de acuerdo a los requisitos

Controllo antimescolanza con tecnica XRF/OES portatile : OK
Verwechslungprüfung: durch XRF/QES Gerät geführt : OK
Antimixing testing performed with XRF/OES portable : OK
Contrôle antimélange svt technique XRF/QES portable : OK
Prueba de anti mezcla con técnica XRF/OES portátil: OK

Controllo visivo e dimensionale: soddisfa le esigenze
Besichtigung und Ausmessung: ohne Beanstandung
Visual inspection and dimensional checks:satisfactory
Contrôle visuel et dimensions: satisfaisant
Inspección visual y dimensional: cumple los requisitos

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD`S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

YI9F7A852FCB51EA731DA63F8554B3FA558E

13/11/24

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 03/07/2024 VCQ052 - MEST089171	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité/Gerente de calidad **R.BERTELLI**	Direzione Prodotto Produktmanagement/Product Management/Direction Produit/Gerente de producto **P.MESSORI**	Pagina 4 di 4

TIRANTE / STUD BOLT

COMVITEA
Via Isonzo 32/C - 20078 Turate (CO) Tel 02 9697121 - Fax 02 96754113

CERTIFICATO DI COLLAUDO EN 10204
INSPECTION CERTIFICATE EN 10204

Azienda CERTIFICATA - UNI EN ISO 9001:2015
3.1 AD 2000 MERKBLATT W0 - PED Directive 2014/68/EU

Certificato/Certificate N°	**1369552**	Pag. **1 / 1**	Cliente/Customer	**INDRA SRL**	
Data cert /Date cert.	**18/07/2024**		Vs. ordine/Order.	**AF24 01968**	
d.d.t./Delivery note n.	**4664**	**18/07/2024**	Ns.rif./Int. ref.	**3902**	**27/06/2024**

Descrizione Materiale / Material Description

Item	Qty	Articolo / Article	Materiale / Material	Pos-Rifer / Your pos-ref.
1	40	Tirante tutto filetto ASTM/ASME A/SA 193 B8M cl.2 M10x40	ASTM/ASME A/SA 193 B8M cl.2	101.99.0375SS
2	60	Tirante tutto filetto ASTM/ASME A/SA 193 B8M cl.2 M20x70	ASTM/ASME A/SA 193 B8M cl.2	101.99.1098SS
→ 3	215	Tirante tutto filetto ASTM/ASME A/SA 193 B8M cl.2 5/8"-11UNCx75	ASTM/ASME A/SA 193 B8M cl.2	101.99.1160SS
4	260	Vite ASTM/ASME A/SA 193 B8M cl.2 UNI 5931 / DIN 912 M8x20	ASTM/ASME A/SA 193 B8M cl.2	96.50.0014SS
5	45	Vite ASTM/ASME A/SA 193 B8M cl.2 UNI 5931 / DIN 912 M10x80	ASTM/ASME A/SA 193 B8M cl.2	101.99.1161SS
6	45	Vite ASTM/ASME A/SA 193 B8M cl.2 UNI 5931 / DIN 912 TF M10x60	ASTM/ASME A/SA 193 B8M cl.2	101.99.0911SS

COLATA-ANALISI CHIMICA come da certificato di acciaieria / HEAT-CHEMICAL ANALYSIS according to mill certificate

Item	Colata/Heat	C	Cr	Mn	Mo	Ni	P	S	Si
1	172522	0,0240	16,6200	1,8100	2,0100	10,1700	0,0310	0,0280	0,3800
2	291913	0,0160	16,6400	1,4200	2,0300	10,0500	0,0320	0,0010	0,3800
→ 3	Z5XR	0,0160	16,6850	1,3520	2,0270	10,2850	0,0300	0,0260	0,3750
4	304113	0,0210	16,6500	1,5800	2,0200	10,1500	0,0320	0,0290	0,3900
5	847049	0,0630	16,5820	1,3120	2,0320	10,0850	0,0297	0,0227	0,4130
6	847049	0,0630	16,5820	1,3120	2,0320	10,0850	0,0297	0,0227	0,4130

NORME/STANDARDS

ASME II Part A ed. 2021
ASME II Part A ed. 2021
ASME II Part A ed. 2021
ASME II Part A ed. 2021
ASME II Part A ed. 2021
ASME II Part A ed. 2021

PROPRIETA' MECCANICHE / MECHANICAL PROPERTIES

	OTTENUTE / OBTAINED							RICHIESTE / REQUIRED							
	Rm	Re	A	Z	Dur/hard.		Resilienza/Impact test	Rm (N/mm²)		Re (N/mm²)		A %	Z %	Dur/hard. HB	Resilienza/Impact test
Item	N/mm²	N/mm²	%	%	HB		KV - Joule °C	min	max	min	max	min	min	min max	KV - Joule °C
1	960	900	22,60	67,40	281	288	20							321	20
2	854	748	24,00	61,00	273	277	20							321	20
→ 3	898	724	26,00	71,00	255	260	20							321	20
4	868	730	24,00	62,00	280	285	20							321	20
5	851	699	27,00	64,00	240	243	20							321	20
6	851	699	27,00	64,00	240	243	20							321	20

Item	Trattamento Termico Tempering - °C	Dur./Hard. HB dadi/nuts h	°C	>=	HB	Prova allarg. per dadi Cone stripping on nuts	ESAME VISIVO-VIS.EXAM
1	Carbide solution treated and strain hardened 1060°						Positivo / Positive
2	Carbide solution treated and strain hardened 1060°						Positivo / Positive
→ 3	Carbide solution treated and strain hardened 1060°						Positivo / Positive
4	Carbide solution treated and strain hardened 1060°						Positivo / Positive
5	Carbide solution treated and strain hardened 1060°						Positivo / Positive
6	Carbide solution treated and strain hardened 1060°						Positivo / Positive

Note:

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Certifichiamo che i materiali sono stati fabbricati, campionati, testati e ispezionati in conformità alle specifiche e conformi alle prescrizioni degli ordini.
We certify that the fasteners were manufactured, sampled, tested and inspected in accordance with the specification and are consistent with order prescriptions.

Oscar Uboldi - Quality Assurance

DADO / NUT

t·e·c·n·o BOLT

CERTIFICATE

Nr. 5066 | **26-07-24**

Page 1/1

INDRA SRL
VIA NOVARA 10/B-C
20013 MAGENTA MI
ITALIA

EN ISO 10204 3.1
CERTIFIED MATERIAL TEST REPORT

Your order: AF24 01970 24-06-24 Delivery note: 2000 26-07-24

Item	Materials	Description	Sizes	Batch	Heat		Quantity
3	ASTM A 194 Gr.8M 101.99.0616SS	Dado Pesante H=d ANSI/ASME B18.2.2 ASTM A 194 Gr.8M ASME B.1.1 UNC Esagonale	5/8"	48340	YA27099	N.	215

Pos. 50 - 60 - 270



CHEMICAL ANALYSIS

3		%C %	%Mn %	%P %	%S %	%Si %	%Cr %	%Ni %	%Mo %
	REQ. MIN.						16	10	2
	REQ. MAX.	0,08	2	0,045	0,030	1	18	14	3
	ACT.VAL.	0,025	1,180	0,038	0,002	0,310	16,930	10,050	2,020

MECHANICAL PROPERTIES

3		H HB	P.L. lbf
	REQ. MIN.	126	18080
	REQ. MAX.	300	
	ACT. VAL.	173-179	18080

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We state that the material or fasteners, or both, were manufactered, sampled, tested and inspected in accordance with the specification and any supplementary requirements designated in the purchase/sales order and it was found to meet those requirements

tecnoBOLT s.r.l. - 20822 Seveso (MB) ITALY - way vignone n.7 - info@tecnobolt.com - www.tecnobolt.com

FLANGIA PREMITRECCIA / GLAND PLATE

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497
https://www.valbruna-stainless-steel.com/

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION - CERTIFICADO DE INSPECCIÓN

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon/De conformidad con

Certificato nr. MEST076309 / 2024 /
Prüfung/Test/Essai/Num. de certificado

Cliente / Besteller/Purchaser/Client/Cliente
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: N. AF2401382
Bestell / Your order / Commande / Num. de pedido

Conferma ordine nr: MI24003281
Werks/Our Order/Ref nr. / Num. de confirmación de pedido

Avviso di Spedizione: A-MI24003462
Lieferanzeige/Packing list/B.L. / Aviso de embarque

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand / Delivery state / Etat de livraison / Estado de la entrega

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration / Método de fusión

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance / Calidad

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance / Marca

Produttore :
Hersteller/Item/Usine productrice/Productor

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice / Marcas de fábrica

Punzone del Collaudatore:
Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur / Sello del Comprobador

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung / Marking / Marquage / Sello

SPECIFICHE : Anforderungen / Requirements / Exigences / Especificaciones	Note: Aufzeichnungen / Notes / Notes / Notas
AV 316L VALVES A/1 1.4401/1.4404 A	
IS107 01 316 A	
MDS S01 5 316 A (0)	(0)Norsok-standard M-630 Edition 6, October 2013
MDS S17 1 316 A (1)	(1)Norsok-standard M-630: 2020 (2020-09-30)
AD 2000-M. W 2 2022 1.4401 A (2)	(2)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
AD 2000-M. W 2 2022 1.4404 A (3)	(3)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
API 6A 21 ANNEX M (4)	(4)Errata 1 (04/2019), Errata 2 (06/2020), Errata 3 (09/2020). Addendum 1 (July 2020) and Addendum 2 (June 2021).
API 6D 25 ANNEX H (5)	(5)Revision November 2021
ASME SA182 2023 S31600/03 A (6)	(6)Section II Part A 2023 EDITION For products machined directly from bar refer to ASME SA479.
ASME SA276 2023 S31600/03 A (7)	(7)Section II Part A 2023 EDITION
ASME SA479 2023 S31600/03 A (8)	(8)Section II Part A 2023 EDITION
ASTM A182 2024 S31600/03 A (9)	(9)For products machined directly from bar refer also to ASTM A479.
ASTM A262 PR. E 2015 316/316L (A)	(A)Reapproved 2021
ASTM A276 2024A S31600/03 A	
ASTM A370 2024 .	
ASTM A479 2023A S31600/03 A	
ASTM E381 2022 .	
ASTM E562 2019 . (B)	(B)19E01
EN 10088 PART 3 2014 1.4401 A	
EN 10088 PART 3 2014 1.4404 A	
EN 10222 PART 5 2017 1.4401 A	
EN 10222 PART 5 2017 1.4404 A	
EN 10272 2016. 1.4401 A	
EN 10272 2016. 1.4404 A	
ISO 148-1 2016 .	
ISO 6892-1 2019 .	
NACE MR0103 2015 S31600/03 A (C)	(C)ANSI/NACE MR0103/ISO 17945 November 23, 2015
NACE MR0175 4 S31600/03 A (D)	(D)ANSI/NACE MR0175/ISO 15156-3:2020 Fourth edition, approved 21 Sep 2022.

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		Tolleranza: k12 (Toleranz/Allowance/Tolerance/Tolerancia)					
Pos. nr. (Pos. nr. / Item nr. / Nr. de poste / Número de artículo)	Oggetto (Gegenstand / Product description / Descrip. du produit / Descripción del producto)	Dimensioni - mm (Abmessungen / Dimension / Dimension / Dimensiones)	Lunghezza - mm (Länge / Length / Longueur / Longitud)	Colata (Schmelze / Heat / Coulée / Colada)	Pezzi (Stückzahl / Pieces / Piezas)	Peso - KG (Gewicht / Weight / Poids / Peso)	Lotto nr. (Losnr. / Lot nr / Lot nr. / Lote nro.)
0040	Tondo	130,000	5990/ 6132	294158	2	1280,0	314706260

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 05/06/2024 VCQ012 - MEST076309	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité/Gerente de calidad R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit/Gerante de producto P.MESSORI	Pagina 1 di 7

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Acciaierie Valbruna S.p.A.

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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497
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CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION - CERTIFICADO DE INSPECCIÓN

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon/De conformidad con

Certificato nr. MEST076309 / 2024 /
Prüfung/Test/Essai/Num. de certificado

Cliente / Besteller/Purchaser/Client/Cliente
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: N. AF2401382
Bestell
Your order
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Conferma ordine nr: MI24003281
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Avviso di Spedizione: A-MI24003462
Lieferanzeige/Packing list/B.L.
Aviso de embarque

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand
Delivery state
Etat de livraison
Estado de la entrega

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration
Método de fusión

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Werkstoff/Grade/Nuance
Calidad

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance / Marca

Produttore :
Hersteller/Item/Usine productrice/Productor

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes
Trade marks
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Punzone del Collaudatore: MR
Stempel des Werksachverständigen
Inspector's stamp/Poinçon de l'assayeur
Sello del Comprobador

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage / Sello

TEST ALLO STATO DI FORNITURA

Test on delivery condition Prüefung auf lieferbereitem produkt test a l'etat de fourniture Prueba sobre el material así come entregado

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais. mm / Probeta	°C	Posiz. Saggio Probenlage Location Emplacement Ubicación 1)	Snervamento Streckgrenze/Yield Stress Limite elastique Limite elástico Rp 0,2% N/mm2	Snervamento Streckgrenze/Yield Stress Limite elastique Limite elástico Rp 1% N/mm2	Resistenza Zugfestigkeit/Tensile strength Resistance à traction Resistencia a la tracción Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement / Elongación A5 %		Strizione Einschnürung Reduction of area Striction / Reducción de área Z %		Resilienza Kerbschlagarbeit Impact Value/ Resilience Prueba de impacto			Durezza Heerte Hardness Durete / Dureza HB		
Valori richiesti Anforderungen/Required values Valeurs démandées / Valores requeridos		min max		205	240	510 690	45	-	-	-	-			- 215		
A	10	20	L	298	331	582	47		69					159		
I	10	20	L	299	330	586	45		67					162		

TEST ALLO STATO DI FORNITURA

Test on delivery condition / Prüefung auf lieferbereitem produkt / Test a l'etat de fourniture / Prueba sobre el material así come entregado

TEST		min	max	
A	Dimensioni grano x ASTM E112			2
A	Ferrite delta %			1,4 %

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais. mm / Probeta	°C	Posiz. Saggio Probenlage Location Emplacement Ubicación 1)	Resilienza Kerbschlagarbeit Impact Value Resilience / Prueba de impacto KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs démandées / Valores requeridos		min max		60	60	60	-	-	-	-	-	-
B	10X10	-196	L	313	310	305	2,722	2,743	2,758	70	70	70

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais. mm / Probeta	°C	Posiz. Saggio Probenlage Location Emplacement Ubicación 1)	Snervamento Streckgrenze/Yield Stress Limite elastique Limite elástico Rp 0,2% N/mm2	Snervamento Streckgrenze/Yield Stress Limite elastique Limite elástico	Resistenza Zugfestigkeit/Tensile strength Resistance à traction Resistencia a la tracción Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement / Elongación E 4d %		Strizione Einschnürung Reduction of area Striction / Reducción de área RA %		Resilienza Kerbschlagarbeit Impact Value/ Resilience Prueba de impacto			Durezza Heerte Hardness Durete / Dureza		
Valori richiesti Anforderungen/Required values Valeurs démandées / Valores requeridos		min max		205	-	515	-	40	-	50	-			-		
C	12,5	20	L	293		577		49		78						

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 05/06/2024 VCQ012 - MEST076309	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité/Gerente de calidad R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit/Gerente de producto P.MESSORI	Pagina 2 di 7

FLANGIA PREMITRECCIA / GLAND PLATE

Acciaierie Valbruna S.p.A.

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In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon/De conformidad con

Certificato nr. MEST076309 / 2024 /
Prüfung/Test/Essai/Num. de certificado

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VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: N. AF2401382
Bestell / Your order / Commande / Num. de pedido

Conferma ordine nr: MI24003281
Werks/Our Order/Ref nr. / Num. de confirmación de pedido

Avviso di Spedizione: A-MI24003462
Lieferanzeige/Packing list/B.L. / Aviso de embarque

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand / Delivery state / Etat de livraison / Estado de la entrega

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration / Método de fusión

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance / Calidad

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance / Marca

Produttore :
Hersteller/Item/Usine productrice/Productor
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice / Marcas de fábrica

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur / Sello del Comprobador

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung / Marking / Marquage / Sello

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm / Probeta	°C	Posiz. Saggio Probentage Location Emplacement Ubicación 1)	Snervamento Streckgrenze/Yield Stress Limite elastique Limite elástico Rp 0,2% N/mm2	Snervamento Streckgrenze/Yield Stress Limite elastique Limite elástico	Resistenza Zugfestigkeit/Tensile strength Resistance à la traction Resistencia a la tracción Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement / Elongacion E 4d %		Strizione Einschnürung Reduction of area Stricion / Reducción de área RA %		Resilienza Kerbschlagarbeit Impact Value/ Resilience Prueba de impacto			Durezza Haerte Hardness Dureté / Dureza HB		
Valori richiesti Anforderungen/Required values Valeurs démendées / Valores requeridos		min max		205	-	515	-	40	-	50	-			- 215		
J	6.25	20	T	298		582		46		76				163		

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm / Probeta	°C	Posiz. Saggio Probentage Location Emplacement Ubicación 1)	Resilienza Kerbschlagarbeit Impact Value Resilience / Prueba de impacto KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs démendées / Valores requeridos		min max		60	60	60	-	-	-	-	-	-
D	10X10	-196	T	80	75	75	0,722	0,734	0,708	30	30	30

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm / Probeta	°C	Posiz. Saggio Probentage Location Emplacement Ubicación 1)	Resilienza Kerbschlagarbeit Impact Value Resilience / Prueba de impacto KV2 J			Espansione laterale Lateral Expansion			Shear Shear		
Valori richiesti Anforderungen/Required values Valeurs démendées / Valores requeridos		min max		100	100	100	-	-	-	-	-	-
H	10X10	20	L	325	322	319						
K	10X10	20	L	331	329	310						

Tensile testing according to ISO 6892-1
Impact testing according to ISO 148-1
Mechanical properties according to ASTM A370.
Ferrite content tested according to ASTM E562.

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Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique/Análisis químico

Colata/Heat/Coulée Schmelze/Colada																	
	min	23,0	-	-	-	16,50	2,00	10,00	-	-	-	-	-	-	-	-	-
	max	28,0	0,030	1,00	2,00	18,00	2,50	13,00	-	0,045	0,030	0,100	-	-	-	-	-
	PRE		C %	Si %	Mn %	Cr %	Mo %	Ni %	Co %	P %	S %	N %					
294158	25,0		0,018	0,45	1,78	16,76	2,09	10,11	0,212	0,033	0,020	0,084					

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 05/06/2024
VCQ012 - MEST076309

Direzione Qualità
Qualitätsmanagement/Quality Management/Gestion Qualité/Gerente de calidad
R.BERTELLI

Direzione Prodotto
Produktmanagement/Product Management/Direction Produit/Gerente de producto
P.MESSORI

FLANGIA PREMITRECCIA / GLAND PLATE

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497
https://www.valbruna-stainless-steel.com/

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION - CERTIFICADO DE INSPECCIÓN

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon/De conformidad con

Certificato nr. MEST076309 / 2024 /
Prüfung/Test/Essai/Num. de certificado

Cliente / Besteller/Purchaser/Client/Cliente
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: N. AF2401382
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Your order
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Conferma ordine nr: MI24003281
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Avviso di Spedizione: A-MI24003462
Lieferanzeige/Packing list/B.L.
Aviso de embarque

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand
Delivery state
Etat de livraison
Estado de la entrega

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration
Método de fusión

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance
Calidad

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance / Marca

Produttore :
Hersteller/Item/Usine productrice/Productor
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice
Marcas de fábrica

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur
Sello del Comprobador

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage / Sello

Colata/Heat/Coulée / Schmelze/Colada	min 14,0 max 20,0	-	-	-	-	-	-	-
294158	Ni+(2*Mo) 14,3							

Corrosion test in 16% sulfuric acid and copper sulfate solutions
Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions
Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

Furnace calibrated according to API 6A REV 21th ED ANNEX M.
Furnace calibrated according to API 6D REV 25th ED ANNEX H.
Macroetch test per ASTM E381: acceptable.
Reduction ratio = 20,2 : 1
Solution annealed 1080°C for 180'(total time)/water cooled.
Treatment made on date 10/05/24 in continuous furnace
FCB calibration expiry date 08/06/24.
SURFACE QUALITY GUARANTEE BY ET INSPECTION (max defect depth 1% DIAMETER)
UT ACC. TO A388/API 6A PSL3-EN 10308cl.3-ASME B16.34/IV :
PASS
"Issued in agreement with TÜV SÜD Industrie Service GMBH
(07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by
Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

13/11/24

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Allegati / Anlagen / Enclosure / Attachments :
UT24003464 GT24001144

Sono state soddisfatte tutte le condizioni richieste	Controllo antimiscelanza con tecnica XRF/OES portatile : OK	Controllo visivo e dimensionale: soddisfa le esigenze
Die gestellen Anforderungen sind lt. Anlage erfüllt The material has been furnished in accordance with the requirements Le materiel il été trouvé conforme aux exigences El material cumple de acuerdo a los requisitos	Verwechslungprüfung: durch XRF/OES Gerät geführt : OK Antimixing testing performed with XRF/OES portable : OK Contrôle antimélange svt technique XRF/OES portable : OK Prueba de anti mezcla con técnica XRF/OES portátil: OK	Besichtigung und Ausmessung: ohne Beanstandung Visual inspection and dimensional checks:satisfactory Contrôle visuel et dimensions: satisfaisant Inspección visual y dimensional: cumple los requisitos

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 05/06/2024 VCQ012 - MEST076309	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité/Gerente de calidad **R.BERTELLI**	Direzione Prodotto Produktmanagement/Product Management/Direction Produit/Gerente de producto **P.MESSORI**	Pagina 4 di 7

FLANGIA PREMITRECCIA / GLAND PLATE

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In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon/De conformidad con

Certificato nr. MEST076309 / 2024 /
Prüfung/Test/Essai/Num. de certificado

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INDRA S.R.L.
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Tipo di Elaborazione: E+AOD
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Melting process
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Método de fusión

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Marca: MVAPML (MAXIVAL)
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Produttore :
Hersteller/Item/Usine productrice/Productor

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes
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Marcas de fábrica

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Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage / Sello

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD`S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

WBPDRAAB8864221FDEDDCBA784F0B235

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13/11/2024

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 05/06/2024 VCQ012 - MEST076309	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité/Gerente de calidad **R.BERTELLI**	Direzione Prodotto Produktmanagement/Product Management/Direction Produit/Gerente de producto **P.MESSORI**	Pagina 5 di 7

FLANGIA PREMITRECCIA / GLAND PLATE

	Acciaierie Valbruna S.p.A. 36100 VICENZA (Italia) - Viale della scienza, 25 z.i. Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4	**CERTIFICATO** Certificate - Zeugnis - Certificat **N° UT24003464**	Pag 6 di 7
		CONTROLLO CON ULTRASUONI *Ultrasonic testing - Ultraschallprüfung - Controle par ultrasons*	

mod. UT02

MEST076309 / 2024 /

Cliente : INDRA S.R.L. *Customer*				**Lotto nr : 314706260** *Mill order*	
MARCA *Grade*	**DIMENSIONI - mm** *Size*	**COLATA** *Heat*	**BARRE** *Bars*	**PESO** *Weight*	**LUNGHEZZA - mm** *Length*
MVAPML	Tondo 130,000	294158	N. 2	KG : 1280,0	5990 / 6132

T. TERMICO *Heat Treetement*	**ESECUZIONE** *Condition*	**RUGOSITA'** *Roughness*	**TOLLERANZA** *Tolerance*
Solubilizzato	Pelato	µm	k12

Istruzione : PROC CND 040 *Work Instruction*		**Criteri Accettabilità : A388/API 6A PSL3-EN 10308 cl.3-ASME B16.34/IV** Acceptance Criteria

ELETTRONICA : Olympus Quickscan LT
Equipment

ACCOPPIANTE : ACQUA + 0253 SA
Couplant

VEL.CONTROLLO : 207 mm/sec
Testing Speed

TRASDUTTORI *Probes*	**TIPO ONDA** *Type of wave*	**FREQUENZA (MHZ)** *Frequency*	**DIMENSIONI (MM)** *Dimension*	**ANGOLO** *Angle*	**TARATURA** *Calibration*
64EL. 2.25MHZ	LONG.	2,25	128X25	0°	DAC

CONTROLLO AUTOMATICO [X] *Automatic inspection*	**CONTROLLO MANUALE** *Manual inspection*

NOTE :
Notes

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CONFORME [X] *Compliant*	**CONFORME IN DEROGA [ ]** *See Deviation*	**NON CONFORME [ ]** *Not Compliant*

ISPEZIONATO DA Inspected by **FIRMA**	**VERIFICATO DA** Verified by **FIRMA**	**APPROVATO DA** Approved by **G.Parlato** ISO 9712 LEV. 2 IND2401253 **FIRMA**	**COLLAUDATORE** Inspector - Abnahmesachsverst - Inspecteur

Date - Date **05/06/2024**

Operatori, strumenti e documenti di riferimento, utilizzati per il collaudo del materiale, sono identificati, controllati e/o calibrati in accordo alle norme EN, ISO e ASTM, richiamate nelle pratiche operative e istruzioni di pertinenza / *Operators, Equipment and reference documents, used for material inspection, are identified, checked and/or calibrated in accordance with EN/ISO or ASTM standards, reported in relevant documents.*

Acciaierie Valbruna S.p.A.
36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4

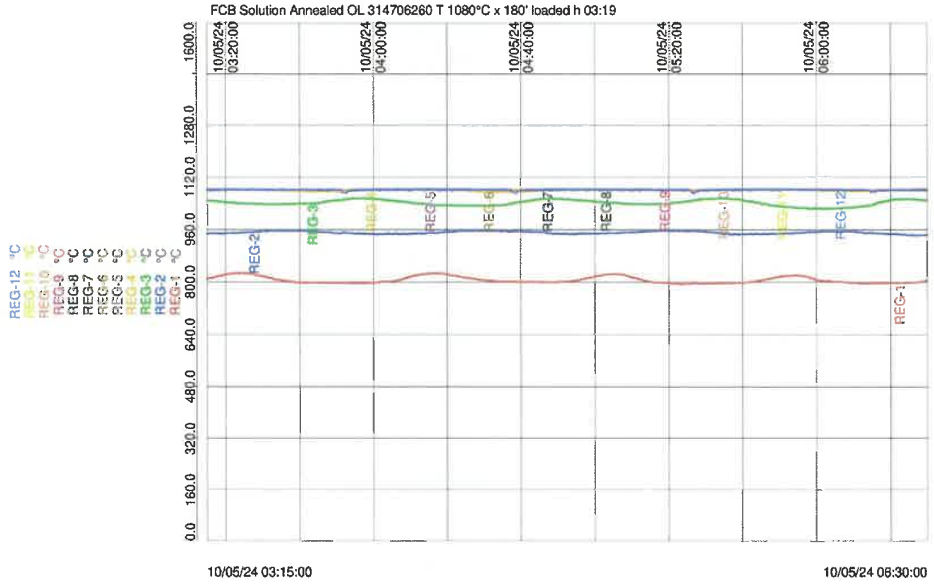
CERTIFICATO Certificate - Zeugnis - Certificat **N° GT24001144** **Pag 7 di 7**

Diagrammi di trattamento termico **MEST076309 / 2024 /**

Heat Treatment charts - Waermebehandlungs diagramm - Diagramme de traitement thermique

N° LOTTO : 314706260 Lot Number	**Note Dettaglio :** Detail Notes	**Note:** Notes

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TEMPERATURE (°C)

TIME (HOURS)

Approved by:

VITE FLANGIA PREMITRECCIA / GLAND PLATE BOLT

COMVITEA s.r.l.
Via Isonzo 32/C - 20078 Turate (CO) Tel 02.9697121 - Fax 02 96754113

CERTIFICATO DI COLLAUDO EN 10204
INSPECTION CERTIFICATE EN 10204

Azienda CERTIFICATA - UNI EN ISO 9001:2015
3.1 AD 2000 MERKBLATT W0 - PED Directive 2014/68/EU

Certificato/Certificate N°	**1369552**	Pag. **1 / 1**	Cliente/Customer	**INDRA SRL**	
Data cert /Date cert.	**18/07/2024**		Vs. ordine/Order.	**AF24 01968**	
d.d.t./Delivery note n.	**4664**	**18/07/2024**	Ns.rif./Int. ref.	**3902**	**27/06/2024**

Descrizione Materiale / Material Description

Item	Qty	Articolo / Article	Materiale / Material	Pos-Rifer / Your pos-ref.
1	40	Tirante tutto filetto ASTM/ASME A/SA 193 B8M cl.2 M10x40	ASTM/ASME A/SA 193 B8M cl.2	101.99.0375SS
2	60	Tirante tutto filetto ASTM/ASME A/SA 193 B8M cl.2 M20x70	ASTM/ASME A/SA 193 B8M cl.2	101.99.1098SS
3	215	Tirante tutto filetto ASTM/ASME A/SA 193 B8M cl.2 5/8"-11UNCx75	ASTM/ASME A/SA 193 B8M cl.2	101.99.1160SS
4	260	Vite ASTM/ASME A/SA 193 B8M cl.2 UNI 5931 / DIN 912 M8x20	ASTM/ASME A/SA 193 B8M cl.2	96.50.0014SS
5	45	Vite ASTM/ASME A/SA 193 B8M cl.2 UNI 5931 / DIN 912 M10x80	ASTM/ASME A/SA 193 B8M cl.2	101.99.1161SS
→ 6	45	Vite ASTM/ASME A/SA 193 B8M cl.2 UNI 5931 / DIN 912 TF M10x60	ASTM/ASME A/SA 193 B8M cl.2	101.99.0911SS

COLATA-ANALISI CHIMICA come da certificato di acciaieria / HEAT-CHEMICAL ANALYSIS according to mill certificate

Item	Colata/Heat	C	Cr	Mn	Mo	Ni	P	S	Si	NORME/STANDARDS
1	172522	0,0240	16,6200	1,8100	2,0100	10,1700	0,0310	0,0280	0,3800	ASME II Part A ed. 2021
2	291913	0,0160	16,6400	1,4200	2,0300	10,0500	0,0320	0,0010	0,3800	ASME II Part A ed. 2021
3	Z5XR	0,0160	16,6850	1,3520	2,0270	10,2850	0,0300	0,0260	0,3750	ASME II Part A ed. 2021
4	304113	0,0210	16,6500	1,5800	2,0200	10,1500	0,0320	0,0290	0,3900	ASME II Part A ed. 2021
5	847049	0,0630	16,5820	1,3120	2,0320	10,0850	0,0297	0,0227	0,4130	ASME II Part A ed. 2021
→ 6	847049	0,0630	16,5820	1,3120	2,0320	10,0850	0,0297	0,0227	0,4130	ASME II Part A ed. 2021

PROPRIETA' MECCANICHE / MECHANICAL PROPERTIES

	OTTENUTE / OBTAINED							RICHIESTE / REQUIRED							
	Rm	Re	A	Z	Dur/hard.		Resilienza/Impact test	Rm (N/mm²)		Re (N/mm²)		A %	Z %	Dur/hard. HB		Resilienza/Impact test	
Item	N/mm²	N/mm²	%	%	HB		KV - Joule °C	min	max	min	max	min	min	min	max	KV - Joule	°C
1	960	900	22,60	67,40	281	288	20								321		20
2	854	748	24,00	61,00	273	277	20								321		20
3	898	724	26,00	71,00	255	260	20								321		20
4	868	730	24,00	62,00	280	285	20								321		20
5	851	699	27,00	64,00	240	243	20								321		20
→ 6	851	699	27,00	64,00	240	243	20								321		20

Item	Trattamento Termico Tempering - °C	Dur./Hard. HB dadi/nuts h	°C	>=	HB	Prova allarg. per dadi Cone stripping on nuts	ESAME VISIVO-VIS.EXAM
1	Carbide solution treated and strain hardened 1060°						Positivo / Positive
2	Carbide solution treated and strain hardened 1060°						Positivo / Positive
3	Carbide solution treated and strain hardened 1060°						Positivo / Positive
4	Carbide solution treated and strain hardened 1060°						Positivo / Positive
5	Carbide solution treated and strain hardened 1060°						Positivo / Positive
→ 6	Carbide solution treated and strain hardened 1060°						Positivo / Positive

Note:

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Certifichiamo che i materiali sono stati fabbricati, campionati, testati e ispezionati in conformità alle specifiche e conformi alle prescrizioni degli ordini.
We certify that the fasteners were manufactured, sampled, tested and inspected in accordance with the specification and are consistent with order prescriptions.

Oscar Uboldi - Quality Assurance

PIASTRA SUPPORTO SFERA / BALL SUPPORT FLANGE

CERTIFICAT DE RECEPTION 3.1 / EN 10204:2004 Inspection Certificate 3.1 / EN 10204:2004 Prüfbescheinigung 3.1 / EN 10204:2004	Numéro de document Rev 00 Document number Bescheinigungnummer 2024-107037	Page 001 / 012 Sheet Seite	40244 ArcelorMittal

Client - Purchaser - Besteller	Centro Servizi Metalli S.P.A.
Référence client - Purchase order - Kaufauftrag	OF1012400019
Projet - Project - Projekt	

Industeel Belgium
Site : Rue de Châtelet 266 6030 Marchienne-au-Pont

ISO 9001 (Cert C602171, Valid 02/06/2026) + MAQ REV 01 du 25/04/2022
ISO 9001 (Cert C602171, Valid 02/06/2026) + QAM REV 01 of 25/04/2022

Produit - Product - Erzeugnis	Standardized product
Commande / Poste - Internal order - Werksbestellung	200009337 / 000060
Bordereau de livraison - Delivery note - Lieferungsdokument	80440409

#010 - PRODUITS LIVRES - DELIVERED PRODUCTS - GELIEFERTEN GEGENSTÄNDE

Nuance - Grade - Werkstoff	Selon norme - According to - Entsprechend
X5CrNiMo17-12-2 (1.4401)	EN 10088-2:2014
X2CrNiMo17-12-2 (1.4404)	EN 10088-2:2014
UNS S31600 (316)	ASTM A 240/M ED.2023a
UNS S31603 (316L)	ASTM A 240/M ED.2023a
UNS S31600 (316)	ASME IIA ED.2023 SA 240/M
UNS S31603 (316L)	ASME IIA ED.2023 SA 240/M
X5CrNiMo17-12-2 (1.4401)	EN 10028-7:2016+AD2000W2+ADW10
X2CrNiMo17-12-2 (1.4404)	EN 10028-7:2016+AD2000W2+ADW10
X5CrNiMo17-12-2 (1.4401)	EN 10088-4:2009
X2CrNiMo17-12-2 (1.4404)	EN 10088-4:2009

UK CA
0086
23
0086-CPR-795365
EN 10088-4:2009
Hot rolled structural steel plates
Intended use : Building constructions or civil engineering
X5CrNiMo17-12-2 (1.4401)
X2CrNiMo17-12-2 (1.4404)
https://industeel.arcelormittal.com/downloads/certifications-quality/
DOPIB008_1.4401_UK
DOPIB009_1.4404_UK

CE
1148
06
1148-CPR-20060925
EN 10088-4:2009
Hot rolled structural steel plates
Intended use : Building constructions or civil engineering
X5CrNiMo17-12-2 (1.4401)
X2CrNiMo17-12-2 (1.4404)
https://industeel.arcelormittal.com/downloads/certifications-quality/
DOPIB008_1.4401
DOPIB009_1.4404

Epaisseur - Thickness - Dicke	25,00 mm	Largeur - Width - Breite	2,500 mm	Longueur - Length - Länge	6,000 mm

Spécification - Specification - Spezifikation

https://eservices.industeel.be

Etat thermique de livraison - Heat treatment state of delivery - Wärmebehandlung Lieferzustand

Hypertrempe à l'air (1050 °C - 1 min/mm) - Solution annealed and air quenched - Luft vergütet

Procédé d'élaboration - Melting process - Erschmelzungsart

Electric-arc furnace - VOD - Finish n°1 - 1D - HRAP

Nbre Nbr Stz	N° produit Product Erzeugnis	N° de coulée Ladle nr. Schmelze nr.	N° de lot de contrôle Inspection lot nr. Prüflos nr.	Nbre Nbr Stz	N° produit Product Erzeugnis	N° de coulée Ladle nr. Schmelze nr.	N° de lot de contrôle Inspection lot nr. Prüflos nr.
01	626045001	43421	626045.1001 / 626045.2004 / 626045.4001 / 626045.5001	01	626045002	43421	626045.1001 / 626045.2004 / 626045.4001 / 626045.5001

Total - Total - Gesamtzahl 002

This supply complies with the main requirements of PED 2014/68/EU relating to the basis materials regardless of the specific terms of service.
Cette fourniture est conforme aux exigences de la PED 2014/68/UE relatives aux matériaux de base indépendamment des conditions de services spécifiques.
Radioactivity in conformity with 2013/59/EUROATOM
Hot rolled, annealed and pickled
According to ASTM A480/A480M and ASME SA480/SA480M
Norsok M-650/M-630 MDS S01
Food contract:(CE) N°1935/2004 - FR Arrêté du 13/01/1976 - IT Decreto 11/11/2013 N°140

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Nous certifions que les produits ci-dessus sont conformes aux prescriptions de la commande.
We hereby certify that the above mentioned products are complying with the order requirements.
Wir bestätigen hiermit, dass die obengenannten Erzeugnisse den Bestellungvorschriften entsprechen.

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Mill inspector
Werksbeauftragte

PIASTRA SUPPORTO SFERA / BALL SUPPORT FLANGE

CERTIFICAT DE RECEPTION 3.1 / EN 10204:2004 Inspection Certificate 3.1 / EN 10204:2004 Prüfbescheinigung 3.1 / EN 10204:2004	Numéro de document Rev 00 Document number Bescheinigungnummer 2024-107037	Page 002 / 012 Sheet Seite	ArcelorMittal
Client - Purchaser - Besteller	Centro Servizi Metalli S.P.A.		
Référence client - Purchase order - Kaufauftrag	OF1012400019		
Projet - Project - Projekt			
Industeel Belgium Site : Rue de Châtelet 266 6030 Marchienne-au-Pont	ISO 9001 (Cert C602171, Valid 02/06/2026) + MAQ REV 01 du 25/04/2022 ISO 9001 (Cert C602171, Valid 02/06/2026) + QAM REV 01 of 25/04/2022		
Produit - Product - Erzeugnis	Standardized product		
Commande / Poste - Internal order - Werksbestellung	200009337 / 000060		
Bordereau de livraison - Delivery note - Lieferungsdokument	80440409		

#020 - ANALYSE CHIMIQUE DE COULEE - HEAT CHEMICAL COMPOSITION - SCHMELZE CHEMISCHE ZUSAMMENSETZUNG

	C	Mn	P	S	Si	Cu	Ni	Cr	Mo
	%	%	%	%	%	%	%	%	%
Min.							10.000	16.500	2.000
43421	0.023	1.879	0.0349	0.0021	0.298	0.378	10.000	16.578	2.000
Max.	0.030	2.000	0.0450	0.0150	0.750	0.750	13.000	18.000	2.500
	Nb	Ti	N	Co	Al	B			
	%	%	%	%	%	%			
Min.									
43421	0.008	0.002	0.0305	0.182	0.005	0.0015			
Max.	0.100	0.100	0.1000						

#041 - PMI - POSITIVE MATERIAL IDENTIFICATION - VERWECHSLUNGSPRÜFUNG

Non confusion de matière - Positive material identification - PMI Conform

Résultat du contrôle - Examination result - Prüfergebnis

Conforme aux spécifications précitées - Conforming to above specifications - Entspricht der vorgenannten vorschriften

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Client - Purchaser - Besteller	Centro Servizi Metalli S.P.A.		
Référence client - Purchase order - Kaufauftrag	OF1012400019		
Projet - Project - Projekt			
Industeel Belgium Site : Rue de Châtelet 266 6030 Marchienne-au-Pont		ISO 9001 (Cert C602171, Valid 02/06/2026) + MAQ REV 01 du 25/04/2022 ISO 9001 (Cert C602171, Valid 02/06/2026) + QAM REV 01 of 25/04/2022	
Produit - Product - Erzeugnis		Standardized product	
Commande / Poste - Internal order - Werksbestellung		200009337 / 000060	
Bordereau de livraison - Delivery note - Lieferungsdokument		80440409	

#072 ESSAIS MECANIQUES - MECHANICAL TESTS - MECHANISCHE PRÜFUNGEN

DURETE SUR COUPON - HARDNESS ON SAMPLE - HÄRTE AUF COUPON

Brinell HB Brinell HB - Brinell HB								HB10 Ind	HB10 Ind	HB10 Ind	HB10 Aver								
N° lot QM	Etat	Loc	Epr.	T°	Uni	Mac	Uni	HB	HB	HB	HB								
							Min												
							Max	217	217	217	217								
626045.1001	000	T3/4	PSS	20	°C			171	172	172	172								

DURETE SUR COUPON - HARDNESS ON SAMPLE - HÄRTE AUF COUPON

NACE MR0175 / ISO 15156-3 NACE MR0175 / ISO 15156-3 - NACE MR0175 / ISO 15156-3																			
N° lot QM	Etat	Loc	Epr.	T°	Uni	Mac													
626045.5001	000	T3/4	PSS	20	°C														
Test result							HRC < 22												

DURETE SUR COUPON - HARDNESS ON SAMPLE - HÄRTE AUF COUPON

NACE MR0103 / ISO 17945 NACE MR0103 / ISO 17945 - NACE MR0103 / ISO 17945																			
N° lot QM	Etat	Loc	Epr.	T°	Uni	Mac													
626045.5001	000	T3/4	PSS	20	°C														
Test result							HRC < 22												

TRACTION A L' AMBIANTE - ROOM TEMPERATURE TENSILE TEST - ZUGVERSUCH BEI RT

Traction Tensile test - Zugversuch								Rp 0,2%	Rp1%	Rm	A Lo=50mm	A Lo=5,65V So							
N° lot QM	Etat	Loc	Epr.	T°	Uni	Mac	Uni	MPa	MPa	MPa	%	%							
							Min	220	260	520	40	45							
							Max			670									
626045.1001	000	T3/4	PST	20	°C			271	304	589	56	49							

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CERTIFICAT DE RECEPTION 3.1 / EN 10204:2004 Inspection Certificate 3.1 / EN 10204:2004 Prüfbescheinigung 3.1 / EN 10204:2004	Numéro de document Rev 00 Document number Bescheinigungnummer 2024-107037	Page 004 Sheet / Seite 012	ArcelorMittal
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Référence client - Purchase order - Kaufauftrag	OF1012400019		
Projet - Project - Projekt			
Industeel Belgium Site : Rue de Châtelet 266 6030 Marchienne-au-Pont		ISO 9001 (Cert C602171, Valid 02/06/2026) + MAQ REV 01 du 25/04/2022 ISO 9001 (Cert C602171, Valid 02/06/2026) + QAM REV 01 of 25/04/2022	
Produit - Product - Erzeugnis		Standardized product	
Commande / Poste - Internal order - Werksbestellung		200009337 / 000060	
Bordereau de livraison - Delivery note - Lieferungsdokument		80440409	

TRACTION A L' AMBIANTE - ROOM TEMPERATURE TENSILE TEST - ZUGVERSUCH BEI RT

Traction Tensile test - Zugversuch								Rp 0,2%	Rp1%	Rm	A Lo=5,65V So
N° lot QM	Etat	Loc	Epr.	T°	Uni	Mac	Uni	MPa	MPa	MPa	%
							Min	220	260	520	45
							Max			670	
626045.2004	000	P1/4	PST	20	°C			270	311	587	46

RESILIENCE - TOUGHNESS - KERBSCHLAGZÄHIGKEIT

KCV EN 10X10mm KCV EN 10X10mm - KCV EN 10X10mm								Energ Ind	Energ Ind	Energ Ind	Energ Ave
N° lot QM	Etat	Loc	Epr.	T°	Uni	Mac	Uni	J	J	J	J
							Min	42	42	42	60
							Max				
626045.1001	000	T3/4	PST	20	°C			302	292	315	303

RESILIENCE - TOUGHNESS - KERBSCHLAGZÄHIGKEIT

KCV EN 10X10mm KCV EN 10X10mm - KCV EN 10X10mm								Energ Ind	Energ Ind	Energ Ind	Energ Ave
N° lot QM	Etat	Loc	Epr.	T°	Uni	Mac	Uni	J	J	J	J
							Min	42	42	42	60
							Max				
626045.2004	000	P1/4	PST	20	°C			298	298	277	291

Loc	1/4	Quart - 1/4 Width - 1/4 Breite
Loc	3/4	Trois-Quart - 3/4 Width - 3/4 Breite
Loc	P	Pied - Bottom - Fuß
Loc	T	Tête - Top - Kopf
Epr. Epaisseur	P	Peau - Rolled Surface - Walzfläche
Epr. Face	S	Supérieure - Upper face - obere
Epr. Sens	S	Standard - Standard - Standard
Epr. Sens	T	Travers - Transverse - Quer
Etat	000	Etat thermique de livraison - Heat treatment state of delivery - Wärmebehandlung Lieferustand
Epr.Ep./Face/Sens	PSS	Peau - Rolled Surface - Walzfläche / Supérieure - Upper face - obere / Standard - Standard - Standard
Epr.Ep./Face/Sens	PST	Peau - Rolled Surface - Walzfläche / Supérieure - Upper face - obere / Travers - Transverse - Quer
T°	RT	Température ambiante - Room Temperature - Raumtemperatur

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We hereby certify that the above mentioned products are complying with the order requirements.
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CERTIFICAT DE RECEPTION 3.1 / EN 10204:2004 Inspection Certificate 3.1 / EN 10204:2004 Prüfbescheinigung 3.1 / EN 10204:2004	Numéro de document Rev 00 Document number Bescheinigungnummer 2024-107037	Page 005 Sheet / Seite 012	ArcelorMittal
Client - Purchaser - Besteller	Centro Servizi Metalli S.P.A.		
Référence client - Purchase order - Kaufauftrag	OF1012400019		
Projet - Project - Projekt			
Industeel Belgium Site : Rue de Châtelet 266 6030 Marchienne-au-Pont		ISO 9001 (Cert C602171, Valid 02/06/2026) + MAQ REV 01 du 25/04/2022 ISO 9001 (Cert C602171, Valid 02/06/2026) + QAM REV 01 of 25/04/2022	
Produit - Product - Erzeugnis		Standardized product	
Commande / Poste - Internal order - Werksbestellung		200009337 / 000060	
Bordereau de livraison - Delivery note - Lieferungsdokument		80440409	

#082 ESSAIS TECHNOLOGIQUES - TECHNOLOGICAL TESTS - TECHNOLOGISCHE PRÜFUNGEN

FERRITE SUR COUPON - FERRITE ON SAMPLE - FERRIT AUF COUPON

Ferrite De Long Ferrite De Long - Ferrite De Long								% Ferrite
N° lot QM	Etat	Loc	Epr.	T°	Uni	Mac	Uni	%
							Min	
							Max	
626045.4001	000	T3/4	SSS	20	°C			4.20

Test result: Satisfactory as per specification

FERRITE SUR COUPON - FERRITE ON SAMPLE - FERRIT AUF COUPON

ASTM E562 ASTM E562 - ASTM E562						
N° lot QM	Etat	Loc	Epr.	T°	Uni	Mac
626045.4001	000	T3/4	SSS	20	°C	

Standard	ASTM E562/E1245
Number of Fields	5
Etchant	N°96 (ASTM E407)
Magnification	500X
Test result	Satisfactory as per specification

N°	Location - Localisation - Lage	Picture - Image - Bild
01	Top Surface	AN_0200009337_000080_626044003_001_0001
02	1/4 thickness	AN_0200009337_000080_626044003_001_0002
03	1/2 thickness	AN_0200009337_000080_626044003_001_0003
04	3/4 thickness	AN_0200009337_000080_626044003_001_0004
05	Bottom Surface	AN_0200009337_000080_626044003_001_0005

Results - Résultats - Ergebnisse

		Ferrite (%)		
N°	Location Localisation - Stelle	Measurements Mesures - Messungen	Requirement Requis - Bedarf Min	Max
01	Up	0.99	0.00	0.00
02	1/4 thickness up	0.77	0.00	0.00
03	1/2 thickness	0.97	0.00	0.00
04	1/4 thickness bottom	0.71	0.00	0.00
05	Bottom	0.64	0.00	0.00
Average- Moyenne - Mittel		0.82	0.00	0.00
Std Deviation		0.16		
95% CI		0.20		
% RA		23.90		

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PIASTRA SUPPORTO SFERA / BALL SUPPORT FLANGE

CERTIFICAT DE RECEPTION 3.1 / EN 10204:2004 Inspection Certificate 3.1 / EN 10204:2004 Prüfbescheinigung 3.1 / EN 10204:2004	Numéro de document Rev 00 Document number Bescheinigungnummer 2024-107037	Page 006 / 012 Sheet Seite	ArcelorMittal
Client - Purchaser - Besteller	Centro Servizi Metalli S.P.A.		
Référence client - Purchase order - Kaufauftrag	OF1012400019		
Projet - Project - Projekt			
Industeel Belgium Site : Rue de Châtelet 266 6030 Marchienne-au-Pont		ISO 9001 (Cert C602171, Valid 02/06/2026) + MAQ REV 01 du 25/04/2022 ISO 9001 (Cert C602171, Valid 02/06/2026) + QAM REV 01 of 25/04/2022	
Produit - Product - Erzeugnis		Standardized product	
Commande / Poste - Internal order - Werksbestellung		200009337 / 000060	
Bordereau de livraison - Delivery note - Lieferungsdokument		80440409	

CORROSION - CORROSION - KORROSION — Sensibilisé - Sensitized -Sensibilisiert

EN ISO 3651-2 A
Test description - Prüfbeschreibung

N° lot QM	Etat	Loc	Epr.	T°	Uni	Mac													
626045.5001	001	T3/4	SSS	20	°C														

Test result — Satisfactory as per specification

CORROSION - CORROSION - KORROSION — Sensibilisé - Sensitized -Sensibilisiert

ASTM A262 E
ASTM A262 E - ASTM A262 E

N° lot QM	Etat	Loc	Epr.	T°	Uni	Mac													
626045.5001	002	T3/4	SSS	20	°C														

Test result — Satisfactory as per specification

Loc	3/4	Trois-Quart - 3/4 Width - 3/4 Breite
Loc	T	Tête - Top - Kopf
Epr. Epaisseur	S	Standard - Standard - Standard
Epr. Face	S	Supérieure - Upper face - obere
Epr. Sens	S	Standard - Standard - Standard
Etat	000	Etat thermique de livraison - Heat treatment state of delivery - Wärmebehandlung Lieferustand
Etat	001	SENSI - Sensitization (From 350 °C at 220 °C/h to 700 °C (-10/+10) (min: 30 min) - Down to 350 °C at 220 °C/h - 1 Cycle) - SENSI
Etat	002	SENSI - Sensitization (From 350 °C at 220 °C/h to 675 °C (-25/+0) (min: 60 min) - Down to 350 °C at 220 °C/h - 1 Cycle) - SENSI
Epr.Ep./Face/Sens	SSS	Standard - Standard - Standard / Supérieure - Upper face - obere / Standard - Standard - Standard
T°	RT	Température ambiante - Room Temperature - Raumtemperatur

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PIASTRA SUPPORTO SFERA / BALL SUPPORT FLANGE

CERTIFICAT DE RECEPTION 3.1 / EN 10204:2004 Inspection Certificate 3.1 / EN 10204:2004 Prüfbescheinigung 3.1 / EN 10204:2004	Numéro de document Rev 00 Document number Bescheinigungnummer 2024-107037	Page 007 / 012 Sheet Seite	ArcelorMittal

Client - Purchaser - Besteller	Centro Servizi Metalli S.P.A.
Référence client - Purchase order - Kaufauftrag	OF1012400019
Projet - Project - Projekt	

Industeel Belgium
Site : Rue de Châtelet 266 6030 Marchienne-au-Pont

ISO 9001 (Cert C602171, Valid 02/06/2026) + MAQ REV 01 du 25/04/2022
ISO 9001 (Cert C602171, Valid 02/06/2026) + QAM REV 01 of 25/04/2022

Produit - Product - Erzeugnis	Standardized product
Commande / Poste - Internal order - Werksbestellung	200009337 / 000060
Bordereau de livraison - Delivery note - Lieferungsdokument	80440409

#101 - DIMENSIONNEL - DIMENSIONAL CHECK - MASSKONTROLLE

Cahier des charges Longueur - Specification Length -	ISO 18286 CLASSE A
Cahier des charges Largeur - Specification Width -	ISO 18286 CLASSE A
Cahier des charges Epaisseur - Specification Thickness -	ISO 18286

Résultat du contrôle - Examination result - Prüfergebnis

Conforme aux spécifications précitées - Conforming to above specifications - Entspricht der vorgenannten vorschriften

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CERTIFICAT DE RECEPTION 3.1 / EN 10204:2004 Inspection Certificate 3.1 / EN 10204:2004 Prüfbescheinigung 3.1 / EN 10204:2004	Numéro de document Rev 00 Document number Bescheinigungnummer 2024-107037	Page 008 / 012 Sheet Seite	ArcelorMittal
Client - Purchaser - Besteller	Centro Servizi Metalli S.P.A.		
Référence client - Purchase order - Kaufauftrag	OF1012400019		
Projet - Project - Projekt			
Industeel Belgium Site : Rue de Châtelet 266 6030 Marchienne-au-Pont		ISO 9001 (Cert C602171, Valid 02/06/2026) + MAQ REV 01 du 25/04/2022 ISO 9001 (Cert C602171, Valid 02/06/2026) + QAM REV 01 of 25/04/2022	
Produit - Product - Erzeugnis		Standardized product	
Commande / Poste - Internal order - Werksbestellung		200009337 / 000060	
Bordereau de livraison - Delivery note - Lieferungsdokument		80440409	

#111 - VISUEL-ETAT DE SURFACE - VISUAL EXAMINATION-SURFACE CONDITION - SICHTPRÜFUNG-OBERFLÄCHENZUSTAND

Norme applicable 1 - Applicable standard 1 - EN 10163 CL.B S-CL.3

Résultat du contrôle - Examination result - Prüfergebnis

Conforme aux spécifications précitées - Conforming to above specifications - Entspricht der vorgenannten vorschriften

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CERTIFICAT DE RECEPTION 3.1 / EN 10204:2004 Inspection Certificate 3.1 / EN 10204:2004 Prüfbescheinigung 3.1 / EN 10204:2004	Numéro de document Rev 00 Document number Bescheinigungnummer 2024-107037	Page 009 Sheet / Seite 012	ArcelorMittal
Client - Purchaser - Besteller	Centro Servizi Metalli S.P.A.		
Référence client - Purchase order - Kaufauftrag	OF1012400019		
Projet - Project - Projekt			
Industeel Belgium Site : Rue de Châtelet 266 6030 Marchienne-au-Pont		ISO 9001 (Cert C602171, Valid 02/06/2026) + MAQ REV 01 du 25/04/2022 ISO 9001 (Cert C602171, Valid 02/06/2026) + QAM REV 01 of 25/04/2022	
Produit - Product - Erzeugnis		Standardized product	
Commande / Poste - Internal order - Werksbestellung		200009337 / 000060	
Bordereau de livraison - Delivery note - Lieferungsdokument		80440409	

#171 - PLANEITE - FLATNESS - EBENHEIT

Cahier des Charges Planéité - Flatness standard - Ebenheit norm	ISO 18286 CLASSE N - TYPE A
Résultat du contrôle - Examination result - Prüfergebnis	
Conforme aux spécifications précitées - Conforming to above specifications - Entspricht der vorgenannten vorschriften	

x CROSSWIND
13/11/24

Nous certifions que les produits ci-dessus sont conformes aux prescriptions de la commande.
We hereby certify that the above mentioned products are complying with the order requirements.
Wir bestätigen hiermit, dass die obengenannten Erzeugnisse den Bestellungvorschriften entsprechen.

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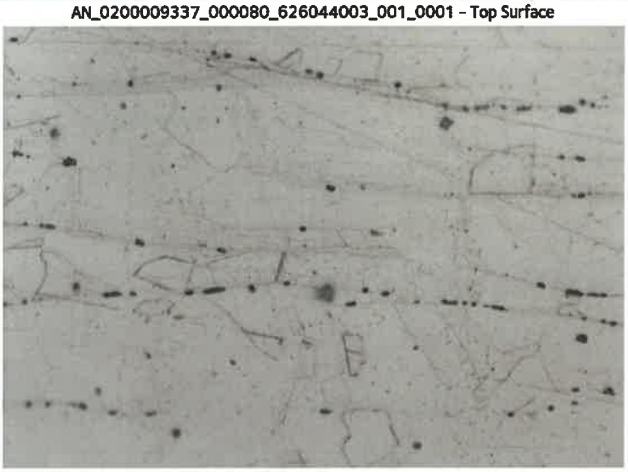
LEONARDA ALLEGRO
19/03/2024
Gestionnaire Commande
Mill Inspector
Werksbeauftragte

PIASTRA SUPPORTO SFERA / BALL SUPPORT FLANGE

CERTIFICAT DE RECEPTION 3.1 / EN 10204:2004 Inspection Certificate 3.1 / EN 10204:2004 Prüfbescheinigung 3.1 / EN 10204:2004	Numéro de document Rev 00 Document number Bescheinigungnummer 2024-107037	Page 010 Sheet / Seite 012	ArcelorMittal
Client - Purchaser - Besteller	Centro Servizi Metalli S.P.A.		
Référence client - Purchase order - Kaufauftrag	OF1012400019		
Projet - Project - Projekt			

ANNEXES - APPENDIX - ANLAGEN	626045001	AN_0200009337_000080_626044003_001_0001 AN_0200009337_000080_626044003_001_0002

AN_0200009337_000080_626044003_001_0001 - Top Surface



AN_0200009337_000080_626044003_001_0002 - 1/4 thickness



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19/03/2024
Gestionnaire Commande
Mill Inspector
Werksbeauftragte

PIASTRA SUPPORTO SFERA / BALL SUPPORT FLANGE

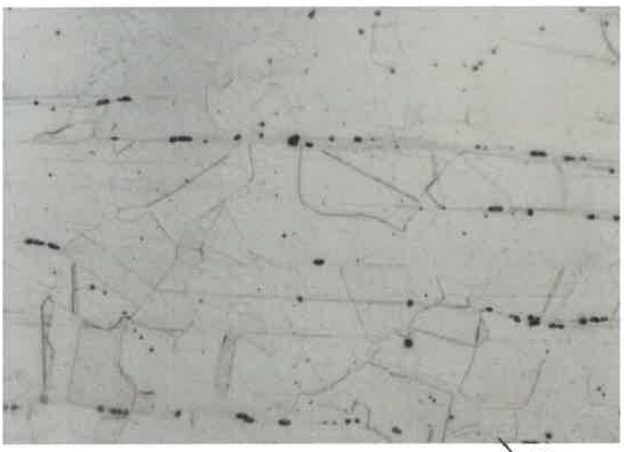
CERTIFICAT DE RECEPTION 3.1 / EN 10204:2004 Inspection Certificate 3.1 / EN 10204:2004 Prüfbescheinigung 3.1 / EN 10204:2004	Numéro de document Rev 00 Document number Bescheinigungnummer 2024-107037	Page 011 Sheet / Seite 012	ArcelorMittal
Client - Purchaser - Besteller	Centro Servizi Metalli S.P.A.		
Référence client - Purchase order - Kaufauftrag	OF1012400019		
Projet - Project - Projekt			

ANNEXES - APPENDIX - ANLAGEN	626045001	AN_0200009337_000080_626044003_001_0003 AN_0200009337_000080_626044003_001_0004

AN_0200009337_000080_626044003_001_0003 - 1/2 thickness



AN_0200009337_000080_626044003_001_0004 - 3/4 thickness



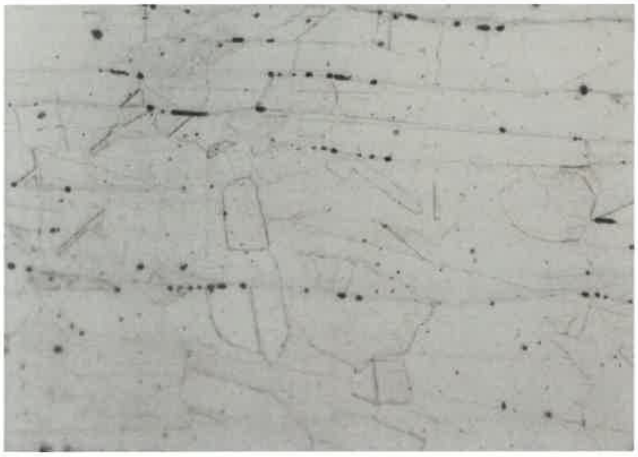
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PIASTRA SUPPORTO SFERA / BALL SUPPORT FLANGE

CERTIFICAT DE RECEPTION 3.1 / EN 10204:2004 Inspection Certificate 3.1 / EN 10204:2004 Prüfbescheinigung 3.1 / EN 10204:2004	Numéro de document Rev 00 Document number Bescheinigungnummer 2024-107037	Page 012 Sheet / Seite 012	ArcelorMittal
Client - Purchaser - Besteller	Centro Servizi Metalli S.P.A.		
Référence client - Purchase order - Kaufauftrag	OF1012400019		
Projet - Project - Projekt			

ANNEXES - APPENDIX - ANLAGEN	626045001	AN_0200009337_000080_626044003_001_0005

AN_0200009337_000080_626044003_001_0005 - Bottom Surface



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STELO SFERA / BALL STEM

ROLDAN, S.A. - Stainless Steels

FACTORY

Santo Tomás de las Ollas, S/N
Apdo. de Correos 11
PONFERRADA (LEÓN)
TEL.: +34 987 44 61 00
FAX: +34 987 44 61 01
E-MAIL: rdn_fabrica@acerinox.com

HEAD OFFICE

Santiago de Compostela, 100-3°
28035 MADRID (ESPAÑA)
TEL.: +34 913 98 52 57
FAX: +34 913 98 51 93
E-MAIL: roldan@acerinox.com

INSPECTION CERTIFICATE
EN 10204 3.1

Z01 Declaration: the Product is in compliance with the order

MADE IN SPAIN - EUROPEAN UNION

TÜVRheinland CERTIFICADO
Sistema de Gestión ISO 9001:2015 ISO 14001:2015 ISO 50001:2018
www.tuv.com ID 0091003143

CE 0432 11 0432-CPR-00190-01

CERTIFICATE N° 2023/014186	DATE 13/11/2023	SHEET 1	DELIVERY NOTE N° 2023/004023

GRADE ROLDAMAX-339 EN10088:3 (1.4404.)

DIMENSIONS	70,00 mm.	Surface finish according EN10088-3 Table 7:1X	
LENGTH	6.100 mm.	TOLERANCE	ISO k12
PRODUCT	[30] Round bar, annealed, smooth turned		
REQUIREMENTS	EN10088:3	CUSTOMER ORDER	OA23-0003676
TENSILE TEST	EN ISO 6892-1		
ACCORDING TO	EN 10272	EDITION	AD2000 W0, W2 & W10
INTERGRANULAR CORROSION	EN ISO 3651-2 method A: SATISFACTORY		WITHOUT OBJETIONS
SURFACE AND DIMENSIONS CONTROL	WITHOUT OBJECTIONS	Spektrometrical Identity Test: O.K.	
IMPACT TEST, SAMPLE DIMENSIONS	EN ISO 148-1	MATERIAL FREE FROM RADIOACTIVITY	

EN 10.088:5

ORDER N°	WORKS N°	MARKS / BOX	HEAT NUMBER	SAMPLE	WEIGHT
SE04839 5		20031 / RK45665	2VCV	2VCV	569
		23264 / RK42228	2VCV		757
		23280 / RK42527	2VCV		573

PRODUCTION PROCESS
EAF + AOD +CC

TRADE MARK
RDN

MARKING
HEAT NUMBER
GRADE (ACX-339)

INSPECTOR STAMP
R3

QUALITY INSPECTOR
JUAN JOSE ALVAREZ RODRIGUEZ
QUALITY CONTROL REPRESENTATIVE

MECHANICAL PROPERTIES

CAST	SAMPLE	SAMPLE DIMENSIONS mm.	Observ. T°.	Rm MPa	Rp 0,2% MPa	Rp 1% MPa	Z %	A % L=5Ø	A % L=4Ø	Agt %	IMPACT STRENGHT ISO-V (J) 20°C	IMPACT STRENGHT ISO-V (J) -196°C		HARDNESS HB	FATIGUE TEST	BEND TEST	CROSS SECTIONAL AREA mm²	Kg / m
2VCV	2VCV	20,00	20°C	600	251	329	71	57	59		257			156				
REQUIREMENTS		EN ISO 377		500 700	200	235		40			100			215				

CHEMICAL COMPOSITION %

CAST	C	P	S	Si	Mn	Cr	Ni	Mo	Ti	N	Cu	Co
2VCV	0,0210	0,0270	0,0250	0,3450	1,4780	16,7300	10,3350	2,0870	0,0050	0,0410	0,4040	0,3250
REQUIREMENTS	0,0300	0,0450	0,0300	1,0000	2,0000	16,5000 18,5000	10,0000 13,0000	2,0000 3,0000		0,1000		

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OBSERVATIONS

ASTM A-182. ASTM A-193 Class 1 Grade B8M. ASTM A-276 Condition A. ASTM A-320 Class 1 Grade B8M.
ASTM A-479 Condition A. ASME SA-182. ASME SA-193 Class 1 Grade B8M. ASME SA-320 Class 1 Grade B8M.
ASME SA-479 Condition A. AMS 5648. AMS 5653. AMS QQ-S-763. AISI 316/316L. UNS S31600/S31603.
NACE MR0175 & MR0103.
MADE IN SPAIN.

CROSS WIND 13/11/2023

OTHER TEST RESULTS		REQUIREMENTS	AD2000 W0,W2,W10 | 2014/68/EU(PED) | UKCA PER 2016/1105
HEAT TREATMENT	1.050 °C AND WATERCOOLED	Crack tested acc. to EN10277 table 3 class 2 (Eddy current)	

CER_IN4

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VAT: IT00571320078 - R.E.A. n. AO-50474

Company with Management Systems certified according to ISO 9001, ITAF 16949, EN 9100, ISO 14001 and ISO 45001.

INSPECTION CERTIFICATE 3.1 (EN 10204:2004)

DOCUMENT NUMBER 2024003430

SEGGIO / SEAT

CUSTOMER'S ORDER:	52		
MANUFACTURER'S WORKS:	AOSTA, VIA PARAVERA 16 - ITALY		
PRODUCER OF THE DOC:	OUALITY DEPARTMENT		
MANUFACTURER'S WORKS ORDER NO:	0001138795 / 000010		
MARK OF THE MANUFACTURER:	COGNE		
DISPATCH NOTE:	0081591335 / 000010 WEIGHT: 267 KG / 589 LB		
INTERNAL SPEC:	STOCKBARREW2	TECHNICAL RULE:	AD2000
PRODUCT:	SPE ROUGHPEELED ROUND BARS	TOLERANCE:	+ 2,000 - 0,0000 (+ 0,0788 - 0 in)
SURFACE FINISH:	1X Hot Finished		
PRODUCT DELIVERY CONDITION:	RS SOLUTION ANNEALED		
PRODUCT DIMENSIONS (mm):	210,000 (8,268 in)	LENGTH (mm)	03000 06000 (00118 00236 in)
GRADE:	316L-S31600/31603-1.4404/4401	INTERNAL GRADE:	F316L5 IMCO
IDENTIFICATION HEAT NO:	301859	IDENTIFICATION LOT NO:	992630
MARKING OF THE PRODUCT:	1.4404	TEST PIECE N:	263

REFERENCE NORMS: EN 10088-3 (14), EN 10272 (16), ASTM A276-r17/ASME SA276-21, ASTM A479-r21/ASME SA479-21, ASTM A193-23 B8M CLASSE 1D, ISO15156-3/NACE MR0175 (15), NACE MR0103/ISO 17945 (15).
REFERENCE NORMS FOR CHEMICAL COMPOSITION AND MECHANICAL PROPERTIES: ASTM A182-23/ ASME SA182-21.
REFERENCE NORMS FOR CHEMICAL COMPOSITION ONLY: EN 10222-5 (17), ASTM A484-22, ASTM A403-22b, ASTM A314-23.
AISI 316/316L - UNS S31600/S31603 - 1.4404/1.4401
STEELMAKING EAF + AOD
REFERENCE FOR APPLICABLE ASME STANDARD: SECTION II PART A ED. 2015-2017-2019-2021
HOT FORGED
REDUCTION RATIO 7,0

CHEMICAL LADLE ANALYSIS ACCORDING TO ASTM A751 - EN ISO 14284
Control lot No. - Weight :020000986683 - 82.494 KG - 181.865 LB

ELEMENTS	C	Si	Mn	P	S	N	Cr	Mo	Ni	Cu
MEASUREMENT UNIT	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w
OBTAINED	0,025	0,38	1,34	0,030	0,027	0,091	16,58	2,08	10,30	0,40

ELEMENTS	Co
MEASUREMENT UNIT	% w/w
OBTAINED	0,17

HARDNESS TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000986941 - 5.841 KG - 12.877 LB
SPECIFICATION ENISO6506 HARDNESS TEST HB TESTING METHOD: 10/3000
OBTAINED 154

IMPACT TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000986941 - 5.841 KG - 12.877 LB
SPECIFICATION EN ISO 148-1-KV2 DIRECTION OF THE TEST PIECE: T
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 20
MEASUREMENT UNIT J

OBTAINED										
	442	432	425	439	442	431	441	441	442	431
	433	441								

DATE 25.01.2024 MORABITO ROSA CF(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne

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SEGGIO / SEAT

TENSILE TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000986941 - 5.841 KG - 12.877 LB
SPECIFICATION EN-ISO6892-1 DIRECTION OF THE TEST PIECE: T

	RM	RP02	A5	Z	RP1
MEASUREMENT UNIT	MPA	MPA	% 5.0 D	%	MPA
OBTAINED	573	265	52,8	65,3	299
	573	263	50,9	65,4	299
	572	254	53,0	64,1	290
	575	255	51,7	61,2	301

GRAIN SIZE
Control lot No. - Weight :020000986941 - 5.841 KG - 12.877 LB
SPECIFICATION ASTME112 --
OBTAINED 4

IMPACT TEST
Control lot No. - Weight :020000986941 - 5.841 KG - 12.877 LB
SPECIFICATION EN ISO 148-1 DIRECTION OF THE TEST PIECE: T
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 196-
MEASUREMENT UNIT J
OBTAINED 112 91 112 100 92 96 109 93 96 96
108 92

TENSILE TEST
Control lot No. - Weight :020000986941 - 5.841 KG - 12.877 LB
SPECIFICATION ASTMA370-E8-0.5"SPEC DIRECTION OF THE TEST PIECE: T

	RMB	RP02B	RA	EL4
MEASUREMENT UNIT	KSI	KSI	%	% 4,0 D
OBTAINED	83	36	61,8	54,2
	83	35	62,2	57,0
	83	35	62,4	54,1
	82	35	64,9	61,3

TENSILE TEST
Control lot No. - Weight :020000986941 - 5.841 KG - 12.877 LB
SPECIFICATION ASTMA370-E8-0.5"SPEC DIRECTION OF THE TEST PIECE: L

	Rm_C	Rp02_C	A	Z_C
MEASUREMENT UNIT	MPA	MPA	% 5.0 D	%
OBTAINED	565	248	57,5	69,3

DATE 25.01.2024 MORABITO ROSA CF(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne

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SEGGIO / SEAT

COUNTRY OF MELTING AND ORIGIN: ITALY, THE MATERIAL COMPLIES WITH FAR DFARS 252.225-7009 ALT 1.
DOCUMENT ISSUED IN AGREEMENT WITH TUEV BAYERN(11.1972) WAVING OF COUNTERSIGNING (SEE TUEV BAYERN LETTER DATED 17.01.80).
MARKING: SYMBOL OF THE MANUF. WORK, MATERIAL N. , CAST N., LOT N., RECEIVING AGENT STAMP
CORROSION TEST ACCORDING TO ASTM A262/02A Practice.E EN ISO 3651-2 A: SATISFACTORY.
VISUAL INSPECTION OF SURFACE AND DIMENSIONAL CONTROL ACCORDING TO EN 10221 CLASS C AND EN 10060: SATISFACTORY.
ULTRASONIC TEST ACCORDING TO EN 10308 Class 3, equivalent to ASTM A388 FBH 5 (DIAM. 100-250) and FBH 8 (DIAM. 250-400) or to EN10228-4 Class 3: SATISFACTORY.
ANTIMIX TEST WITH PORTABLE SPECTROMETER: SATISFACTORY.
NO WELDING REPAIR ON THE MATERIAL.
FREE FROM RADIOACTIVE CONTAMINATION.
ULTRASONIC TEST ACCORDING TO EN 10308 Class.3, EN 10228 Class.3, ASTM A388 FBH 5 (diam. 102-250), FBH 8 (diam. 250,01-400).
RADIOACTIVITY CONTROL PERFORMED WITH A GAMMA SPECTROMETER: ASTM E181.
GAMMA ACTIVITY ON THE PRODUCTS BELOW 0.1 BQ/G ACCORDING TO EU RESOLUTION 2013/59/EURATOM , IAEA RS-G-1.7 AND IAEA SSG-17.
MATERIAL IN COMPLIANCE WITH THE NORSOK M-630 MDS S01
REFERENCE NORMS: EN 10088-3 (14), EN 10272 (16), ASTM A276-r17/ASME SA276-21, ASTM A479/A479M-r21, ASTM A193-23 B8MCLASSE 1D, ASME SA276/SA276M-21,ASME SA479/SA479M-21, AMS 5653J, AMS 5648N, ISO15156-3/NACE MR0175 (15), NACE MR0103/ISO 17945 (15), NORSOK M630 MDSS01 REV5.
REFERENCE NORMS FOR CHEMICAL COMPOSITION AND MECHANICAL PROPERTIES: ASTM A182-23/ ASME SA182-21.
REFERENCE NORMS ONLY FOR CHEMICAL COMPOSITION: EN 10222-5 (17),ASTM A403-22b, ASTM A484-22, ASTM A314-23, AMS-QQ-S-763D.
ASME SECT.II PART A EDITION 2015-2017-2019-2021.
QUALITY SYSTEM CERTIFIED BY KIWA CERMET ACCORDING TO UNI EN ISO 9001:2015 -IATF 16949:2016 (THE LAST ONE ONLY FOR WIRE ROD AND HOT ROLLED-PEELED-GROUND STAINLESS STEEL BARS).
INSPECTOR'S STAMP LF
MATERIAL CONFORM TO: 2015/863/UE (RoHS3) - 2011/65/UE (RoHS2) - 2000/53/UE - 2002/95/UE (RoHS) - 2003/11/UE - 2005/618/UE - PED 2014/68/UE e PE(S)R 2016/1105
THE MATERIAL IS FREE OF ANY MERCURY, MERCURY COMPOUNDS AND OR RADIUM CONTAMINATION AT TIME OF SHIPMENT AND WAS PRODUCED WITHOUT USING OZONE DEPLETING SUBSTANCES OF CLASS I AND II.
THE PRODUCT IS CONFORMING TO THE CONTRACT AGREEMENT AND TO THE RULE AD2000-MERKBLATT W0/W2.
WHERE NOT SPECIFIED ALL THE NORMS MENTIONED ARE INTENDED IN THEIR LAST REVISION AT THE DATE OF ISSUE OF THIS DOCUMENT.
ASTM A484 DOES NOT APPLY FOR SIZE AND LENGTH TOLERANCES.

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13/11/24

DATE 25.01.2024

MORABITO ROSA CF(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE

-Cogne

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Company with Management Systems certified according to ISO 9001, IATF 16949, EN 9100, ISO 14001 and ISO 45001.

INSPECTION CERTIFICATE 3.1 (EN 10204:2004)
DOCUMENT NUMBER 2021055970

SFERA / BALL

CUSTOMER'S ORDER:	66
MANUFACTURER'S WORKS:	AOSTA, VIA PARAVERA 16 - ITALY
PRODUCER OF THE DOC:	OUALITY DEPARTMENT
MANUFACTURER'S WORKS ORDER NO:	0001135990 / 000010
MARK OF THE MANUFACTURER:	COGNE
DISPATCH NOTE:	81559993 / 000010 WEIGHT: 74 KG / 163 LB
INTERNAL SPEC:	AMSQQS763
PRODUCT:	SPE ROUGHPEELED ROUND BARS TOLERANCE: + 2,000 - 0,0000 (+ 0,0788 - 0 in)
SURFACE FINISH:	1X Hot Finished
PRODUCT DELIVERY CONDITION:	RS SOLUTION ANNEALED
PRODUCT DIMENSIONS (mm):	250,000 (9,843 in) LENGTH (mm) 04000 06000 (00157 00236 in)
GRADE:	AISI 316/316L - UNS31600/31603 INTERNAL GRADE: F316L IMCO
IDENTIFICATION HEAT NO:	101823 IDENTIFICATION LOT NO: 916620
MARKING OF THE PRODUCT:	316L TEST PIECE N: 662

REFERENCE NORMS: ASTM A276/276M(17), ASTM A479/A479M(18), ASTM A484/A484M(18a), ASTM A193/A193M(17) B8MCL1, ASME SA276(17), ASME SA479(17), ASME SA484(17), ASME SA193(17) B8MCL1, AMS5653J, AMS5648M, AMS-QQS-763D2015, NACE MR0175/ISO15156-3(15), NACE MR0103/ISO 17945, NORSOK M630 MDS S01 Rev5, EN 10272(16).
REFERENCE NORMS FOR CHEMICAL COMPOSITION AND MECHANICAL PROPERTIES: ASTM A182/A182M(18)/ASME SA182(17), ASTM A314/A314M(19)/ASME SA314(17), ASTM A320/A320M(18)/ASME SA320 (15)B8MCL1, EN 10222-5(2017).
AISI 316/316L UNS S31600/S31603, EN 1.4401/1.4404.
SOLUTION TREATED AT 1050°C / 1 min x mm / WATER.
STEELMAKING EAF + AOD
MACROSTRUCTURE CONFORMING TO THE SPEC. ASTM E340.
QTC ON PROLONGATION OF BARS TESTS AT MID RADIUS (CENTER POS. FOR SIZES <2 INCHES).
HOT FORGED
REDUCTION RATIO 6,8

CHEMICAL LADLE ANALYSIS ACCORDING TO ASTM A751 - EN ISO 14284
Control lot No. - Weight :020000891643 - 80.978 KG - 178.523 LB

ELEMENTS	C	Si	Mn	P	S	N	Cr	Mo	Ni	Cu
MEASUREMENT UNIT	%	%	%	%	%	%	%	%	%	%
OBTAINED	0,018	0,41	1,83	0,027	0,024	0,078	16,80	2,09	10,34	0,33

ELEMENTS	Co
MEASUREMENT UNIT	%
OBTAINED	0,14

HARDNESS TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000891742 - 4.744 KG - 10.459 LB
SPECIFICATION ASTMA370-E10 HARDNESS TEST HB TESTING METHOD: 10/3000
OBTAINED 162

x CROSSWIND
13/12/21

DATE 02.12.2021 BARBARA VIETTI MV(QUALITY CERTIFICATOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne
REVIEW DATE 02.12.2022 N. REVIEW 3

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Company with Management Systems certified according to ISO 9001, ITAF 16949, EN 9100, ISO 14001 and ISO 45001.

SFERA / BALL

IMPACT TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000891742 - 4.744 KG - 10.459 LB
SPECIFICATION EN ISO 148-1-KV2 DIRECTION OF THE TEST PIECE: T
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 196-
MEASUREMENT UNIT J
OBTAINED 115 106 106

TENSILE TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000891742 - 4.744 KG - 10.459 LB
SPECIFICATION EN-ISO6892-1 DIRECTION OF THE TEST PIECE: L

	Rm	Rp02%	A	Z	Rp1%
MEASUREMENT UNIT	MPA	MPA	% 5.0 D	%	MPA
OBTAINED	567	293	50,0	58,7	330

GRAIN SIZE
Control lot No. - Weight :020000891742 - 4.744 KG - 10.459 LB
SPECIFICATION ASTME112 --
OBTAINED 2

HEAT TREATMENT PERFORMED IN CALIBRATED FURNACES ACCORDING TO INTERNAL PROCEDURE PR-GDQ.ITT COMPLYING WITH API6A Annex M.
CORROSION TEST ACCORDING TO ASTM A262 Practice E EN ISO 3651-2 (NO SIGNS OF FISSURES OR CRACKS AT 20X MAGNIFICATION): SATISFACTORY.
SURFACE CONTROL BY VISUAL INSPECTION: CONFORMING.
DIMENSIONAL CONTROL ACCORDING TO ASTM A484: CONFORMING.
ULTRASONIC TEST ACCORDING TO EN 10308 Class.3, equivalent to
ASTM A388 FBH5 (for sizez <=250 mm) and FBH8 (sizes >250 mm): SATISFACTORY.
ANTIMIX TEST: SATISFACTORY.
TENSILE TEST
Control lot No. - Weight :020000891742 - 4.744 KG - 10.459 LB
SPECIFICATION ASTMA370-E8-0.5"SPEC DIRECTION OF THE TEST PIECE: T

	UTS	YS	RA	EL
MEASUREMENT UNIT	KSI	KSI	%	% 4,0 D
OBTAINED	82	42	60,9	56,7

NO WELDING REPAIR ON THE MATERIAL.
MARKING: PRODUCER LOGO, MATERIAL NO, HEAT NO, LOT NR.
THE PRODUCT SATISFIES THE DIRECTIVES: 2015/863/EU (ROHS3) - 2011/65/EU (ROHS2) - 2000/53/EU - 2002/95/EU(RoHS) - 2003/11/EU-2005/618/EU AND PED 2014/68/EU.
THE MATERIAL IS FREE OF ANY MERCURY, MERCURY COMPOUNDS AND OR RADIUM CONTAMINATION AT TIME OF SHIPMENT AND WAS PRODUCED WITHOUT USING OZONE DEPLETING SUBSTANCES OF CLASS I AND II.
THE ABOVE ARE TRUE AND CORRECT RESULTS OF TESTS ON SAMPLES OF THE MATERIAL. RESULTS ARE CONFORM TO THE SPECIFICATION(S) APPLICABLE AND ARE RECORDED.
THE RECORDING OF FALSE, FICTIOUS OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHABLE AS A FELONY UNDER U.S. FEDERAL STATUTES.

DATE 02.12.2021 BARBARA VIETTI MV(QUALITY CERTIFICATOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne
REVIEW DATE 02.12.2022 N. REVIEW 3

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COGNE ACCIAI SPECIALI S.p.a.
ITALY - 11100 AOSTA - VIA PARAVERA, 16
TEL +39.0165.3021 - FAX +39.0165.302296
CAP. SOC. 250.000.000 EUR INT. VERS.
C.F. 02187380967
VAT: IT00571320078 - R.E.A. n. AO-50474

Company with Management Systems certified according to ISO 9001, ITAF 16949, EN 9100, ISO 14001 and ISO 45001.

SFERA / BALL

ALL THE NORMS MENTIONED ARE INTENDED IN THEIR LAST REVISION AT THE DATE OF ISSUE OF THIS DOCUMENT.
COUNTRY OF MELTING AND ORIGIN: ITALY, THE MATERIAL COMPLIES WITH FAR DFARS
252.225-7009 ALT 1.
HEAT TREATMENT PERFORMED IN FURNACE CALIBRATED ACC. TO API 6A, 6D, 6DSS LAST ED
SOLUTION ANNEALED 1050°C/WATER COOLING

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REVIEW DATE 02.12.2022 N. REVIEW 3

CORPO BONNET / BONNET BODY

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
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CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST040838 / 2024 /

Ordine nr: ORD.24000161
Bestell / Your order / Commande

Conferma ordine nr: **AN24000318**
Werks/Our Order/Ref nr.

Avviso di Spedizione: **A-AN24000296**
Lieferanzeige/Packing list/B.L.

Stato di fornitura: Lieferzustand / Delivery state / Etat de livraison	Laminato - Solubilizzato FINITO A FREDDO	Produttore: Hersteller/Item/Usine productrice: **ACCIAIERIE VALBRUNA S.P.A.**
Tipo di Elaborazione: Erschmelzungsart / Melting process / Mode d'elaboration	E+AOD	Marchi di Fabbrica: Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice: AV
Qualità: Werkstoff/Grade/Nuance	1.4401/1.4404/316/316L	Punzone del Collaudatore: Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur: MR
Marca: Markenbezeichnung / Brand / Nuance	MVAPML (MAXIVAL)	Punzonatura: 1.4401/1.4404 Kennzeichnung / Marking / Marquage

SPECIFICHE : / Anforderungen / Requirements / Exigences

Note: / Aufzeichnungen / Notes / Notes

VAL STOCK W2 A/1 1.4404/316L A,CF
AD 2000-M. W 2 2022 1.4401 A,CF (0)
AD 2000-M. W 2 2022 1.4404 A,CF (1)
AISI . 316/316L
AMS-QQ-S-763 D 316/316L A,CF
ASME SA182 2023 S31600/03 A (2)
ASME SA276 2023 S31600/03 A,CF (3)
ASME SA479 2023 S31600/03 A (4)
ASTM A182 2023 S31600/03 A (5)
ASTM A262 PR. E 2015 316/316L (6)
ASTM A276 2024A S31600/03 A,CF
ASTM A370 2022 .
ASTM A479 2023A S31600/03 A
ASTM E10 2023 .
ASTM E8 2022 .
EN 10088 PART 3 2014 1.4401 A,CF
EN 10088 PART 3 2014 1.4404 A,CF
EN 10272 2016. 1.4401 A,CF
EN 10272 2016. 1.4404 A,CF
ISO 148-1 2016 .
ISO 3651-2 98 METHOD A T1
ISO 6506-1 2014 .
ISO 6892-1 2019 .
NACE MR0103 2015 S31600/03 A (7)
NACE MR0175 4 S31600/03 A (8)
QQ-S-763 F 316/316L A,CF
ACH CO . .
KV L -196C . ISO 148-1
MDS S01 5 316 A,CF (9)
ASTM A479 2023A S31600 A

(0)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
(1)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
(2)Section II Part A 2023 EDITION For products machined directly from bar refer to ASME SA479.
(3)Section II Part A 2023 EDITION
(4)Section II Part A 2023 EDITION
(5)For products machined directly from bar refer also to ASTM A479.
(6)Reapproved 2021
(7)ANSI/NACE MR0103/ISO 17945 November 23, 2015
(8)ANSI/NACE MR0175/ISO 15156-3:2020 Fourth edition, approved 21 Sep 2022.
(9)Norsok-standard M-630 Edition 6, October 2013

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Tolleranza: h11 - DIN668/EN10278
Toleranz/Allowance/Tolerance

Pos. nr.	Oggetto	Dimensioni - mm	Lunghezza - mm	Colata	Pezzi	Peso - KG	Lotto nr.
0010	Esagono	22,000	3030/ 3030	291893		901,0	217704270

x CROSSWIND 13/11/MR

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 21/03/2024 VCQ012 - MEST040838	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 1 di 4

Acciaierie Valbruna S.p.A.

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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST040838 / 2024 /

Ordine nr: ORD.24000161
Bestell / Your order / Commande

Conferma ordine nr: AN24000318
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-AN24000296
Lieferanzeige/Packing list/B.L.

Stato di fornitura: Laminato - Solubilizzato FINITO A FREDDO
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice: AV

Punzone del Collaudatore / Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur: MR

Punzonatura / Kennzeichnung / Marking / Marquage: 1.4401/1.4404

TEST ALLO STATO DI FORNITURA

Test on delivery condition / Prüfung auf lieferbereitem produkt / test a l'etat de fourniture / Prueba sobre el material así come entregado

1) L=longitudinale/Längs, T=trasversale/quer, O=Tangenziale/tangential

TEST	Provetta/ Probestab Speciman/Eprouvette Lung.diam Spess. Breite Diam. Dicke Width Diam. Thickness Lang. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement A5 %		Strizione Einschnürung Reduction of area Striction Z %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Harte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		200	235	500 900	20	-	-	-	-			- 315		
A	10	20	L	480	548	678	44		67					224		
G	10	20	L	484	550	683	43		65					227		

TEST ALLO STATO DI FORNITURA

Test on delivery condition / Prüfung auf lieferbereitem produkt / Test a l'etat de fourniture / Prueba sobre el material así come entregado

TEST		min	max	
G	Dimensioni grano x ASTM E112			5

Charpy per ISO 148-1

1) L=longitudinale/Längs, T=trasversale/quer, O=Tangenziale/tangential

TEST	Provetta/ Probestab Speciman/Eprouvette Lung.diam Spess. Breite Diam. Dicke Width Diam. Thickness Lang. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement	Resilienza Kerbschlagarbeit Impact Value Resilience KV_2 J			Espansione laterale - Lateral Expansion - Lateral ex mm			Shear - Shear - % Shear %		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		-	-	-	-	-	-	-	-	-
B	10X10	-196	L	129	134	139	1,487	1,328	1,210	60	58	60

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/Längs, T=trasversale/quer, O=Tangenziale/tangential

TEST	Provetta/ Probestab Speciman/Eprouvette Lung.diam Spess. Breite Diam. Dicke Width Diam. Thickness Lang. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Harte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		210	-	517	-	35	-	50	-			- 235		
C	12,5	20	L	483		681		46		69				222		

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13/11/24

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Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1 (Nach/According to/Selon)

Certificato nr. MEST040838 / 2024 / (Prüfung/Test/Essai)

Ordine nr: ORD.24000161 (Bestell / Your order / Commande)

Conferma ordine nr: AN24000318 (Werks/Our Order/Ref nr.)

Avviso di Spedizione: A-AN24000296 (Lieferanzeige/Packing list/B.L.)

Stato di fornitura: Laminato - Solubilizzato FINITO A FREDDO (Lieferzustand / Delivery state / Etat de livraison)

Tipo di Elaborazione: E+AOD (Erschmelzungsart / Melting process / Mode d'elaboration)

Qualità: 1.4401/1.4404/316/316L (Werkstoff/Grade/Nuance)

Marca: MVAPML (MAXIVAL) (Markenbezeichnung / Brand / Nuance)

Produttore: (Hersteller/Item/Usine productrice)
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: (Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice) AV

Punzone del Collaudatore: (Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur) MR

Punzonatura: 1.4401/1.4404 (Kennzeichnung / Marking / Marquage)

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, O=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam. Spess. Side Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probelage Location Emplacement	Resilienza Notch toughness Impact Value Résilience KV_2 J			Espansione laterale - Lateral Expansion -			Shear - Shear -		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		100	100	100	-	-	-	-	-	-
F	10X10	20	L	189	194	199						
H	10X10	20	L	180	190	186						

Tensile testing according to ISO 6892-1
Impact testing according to ISO 148-1
Mechanical properties according to ASTM A370.
Brinnell hardness according to ASTM E10
Tensile testing according to ASTM E8
Brinnell hardness according to ISO 6506-1

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Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat Schmelze/Coulée	C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	Co %	P %	S %	N %
min - max	0,030	1,00	2,00	16,50 18,00	2,00 2,50	1,00	10,00 13,00		0,045	0,030	0,100
291893	0,019	0,52	1,55	16,65	2,01	0,48	10,17	0,140	0,030	0,030	0,066

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 21/03/2024
VCQ012 - MEST040838

Direzione Qualità (Qualitätsmanagement/Quality Management/Gestion Qualité)
R.BERTELLI

Direzione Prodotto (Produktmanagement/Product Management/Direction Produit)
P.MESSORI

Pagina 3 di 4

CORPO BONNET / BONNET BODY

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CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST040838 / 2024 /

Ordine nr: ORD.24000161
Bestell / Your order / Commande

Conferma ordine nr: AN24000318
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-AN24000296
Lieferanzeige/Packing list/B.L.

Stato di fornitura: Laminato - Solubilizzato FINITO A FREDDO
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore / Herstellerltem/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Lieferwerkes / Trade marks / Sigles de fusine productrice: AV

Punzone del Collaudatore / Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur: MR

Punzonatura: 1.4401/1.4404
Kennzeichnung / Marking / Marquage

Reduction ratio = 78,0 : 1
Solution annealed 1060°C for 180'(total time)/water cooled.
SURFACE QUALITY COMPLIANT TO EN 10088-3 TAB.1 COND. 2H
"Issued in agreement with TÜV SÜD Industrie Service GMBH
(07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by
Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

Sono state soddisfatte tutte le condizioni richieste Die gestellen Anforderungen sind IL Anlage erfüllt The material has been furnished in accordance with the requirements Le material à été trouvé conforme aux exigences	Controllo antimescolanza con tecnica XRF/OES portatile : OK Verwechslungprüfung: durch XRF/OES Gerät geführt : OK Antimixing testing performed with XRF/OES portable : OK Contrôle antimélange svt technique XRF/OES portable : OK	Controllo visivo e dimensionale: soddisfa le esigenze Besichtigufig und Ausmessung: ohne Beanstandung Visual inspection and dimensional checks:satisfactory Contrôle visuel et dimensions: satisfaisant

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD'S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 21/03/2024 VCQ012 - MEST040838	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 4 di 4

STELO / STEM

Rodacciai

23842 Bosisio Parini (LC) – Via Giuseppe Roda 1 – Italia
Tel. +39 031878111 – Fax +39 031878312
www.rodacciai.com – info@rodacciai.com

Azienda con sistema di gestione certificato da IGQ secondo UNI EN ISO 9001:2015

The Company's Quality Management System is certified by IGQ according to UNI EN ISO 9001:2015

CERTIFICATO DI CONTROLLO Inspection Certif N. 174495 Date 14/11/2023

Secondo According to . . . . . EN 10204:2004 3.1

ORDINE - Order N. 372 Date 10/11/2023

D.d.T. - Delivery note N. 11714/04 Date 14/11/2023

Weight KG 411,00 **Odp. Nr.** 2022/A/58282
Tolerance ISO286-2 h9 + 0,000 - 0,036 mm **Bars Length** 3.000 - 3.050 mm

QUALITA' - Grade

STANDARD	EN 10088-3:2014	X2CrNiMo17-12-2	1.4404 / 316L
STANDARD	EN 10088-3:2023	X5CrNiMo17-12-2	1.4401 / 316

Mark RODACCIAI . . . . . 316 PLUS
PROFILO - Shape . . . . . ROUND
DIMENSIONE - Size . . . . . mm 10,00
ESECUZIONE - Form of delivery . . . . . ROUGH GROU.

COLATA - Heat 172303

ANALISI CHIMICA DI COLATA - Cast analysis % by mass

C	Mn	Si	S	P	Cr	Ni	Mo	Cu	Co	N
0,021	1,820	0,360	0,0220	0,025	16,640	10,100	2,100	0,360	0,150	0,0760

CARATTERISTICHE MECCANICHE ALLO STATO DI FORNITURA
Mechanical properties of the delivered material

		Tested
Tensile Strength	Rm (MPa)	746,0
Proof Stress	Rp (1) (MPa)	692,0
Proof Stress	Rp (0,2) (MPa)	612,0
Elongation	A 5 (%)	32,0
Hardness	HBW	226,0
Reduction of area	Z (%)	51,0

NOTE - Notes

Processo di Fusione: E + A. O. D.
Trattamento termico: Temperatura di Solubilizzazione 1060°C
Tempo Mantenimento: 4 Ore, Raffreddamento in Acqua
Prova di Corrosione Intergranularena: ASTM A262-15 "E"
Materiale Conforme a NACE MR-0175/ISO 15156-3:2015
NACE MR-103/ISO 17495-1:2016

Pag. 1 / Segue

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Azienda con sistema di gestione certificato da IGQ secondo UNI EN ISO 9001:2015

The Company's Quality Management System is certified by IGQ according to UNI EN ISO 9001:2015

Segue certificato di controllo N. 174495 Date 14/11/2023
Inspection Certificate's continuance

NOTE - Notes

Materiale conforme a: ASTM A276-24a / A479-23a/ A182-24
ASME SA: 479-21 276-21 182; UNS 31600 - 31630 AISI 316-316L
Corrosione Intercristallina EN ISO 3651-2:98 Met.A

Melting Process: E + A. O. D
Heat treatment: annealed temperature 1060°C
Soaking time: 4 Hours, Cooling in water
Intergranular corrosion tested to ASTM A262-15 "E"
According to: NACE MR-0175 / ISO 15156-3:2015
NACE MR-103/ISO 17495-1:2016
Material Compliant to: ASTM A276-24a / A479-23a/ A182-24
ASME SA: 479-21 276-21 182; UNS 31600 - 31630 AISI 316-316L
Intergranular Corrosion according to EN ISO 3651-2:98 Met.A

Surface quality condition 2H conforming also to EN 10277 class 3

We certify hereby, that the above mentioned products are consistent with the order prescriptions.
This certificate was generated by data system acc. to EN 10204, it is not necessary to be signed for validity.

Materiale conforme alle seguenti direttive/regolamenti europee:
- Regolamento REACH 2006/1907/CE e tutti successivi aggiornamenti, compresa la modifica M80 Direttiva Delegata 2022/1632, e SVHC Candidate List aggiornata al 17/0172023.
- Direttiva ROHS 2011/657UE e tutti i successivi aggiornamenti, compresa la modifica M80 attraverso la Direttiva Delegata 2022/1632, e Decreto Legislativo 27 del 04/03/2014.
- Direttiva RAEE 2012/19/UE e tutti successivi aggiornamenti, compresa la modifica M1 attraverso la Direttiva 2018/849.
- Direttiva ELV (End-of-Life Vehicles) 2000/53/CE e tutti i successivi aggiornamenti, compresa la modifica M15 attraverso la Direttiva 2020/363
- Contaminazione Radioattiva, Direttiva 2013/59/EURATOM e Decreto Legislativo N.101 del 31 Luglio 2020.
- Canadian List 168 aggiornata al 16/03/2022.
- Minerali di Conflitto, Regolamento (UE) 2017/821 e tutti i successivi aggiornamenti, compresa la modifica M1 attraverso il Regolamento Delegato 2020/1588, e Dodd-Frank Wall Street Reform and Consumer Protection Act Section 1502.

Material conforming to the following European directives/regulation:
- REACH regulation 2006/1907/EC and all subsequent updates, including modification M80 Delegate Directive, and SVHC Candidate List updated to 01/17/2023.
- ROHS Directive 2011/65/EU and all subsequent updates, including the M80 amendment through the Delegated Directive 2022/1632, and Italian Legislative Decree 27 of 03/04/2014.
- WEEE Directive 2012/19/EU and all subsequent updates, including the M1 amendment through Directive 2018/849.
- ELV (End-of-Life Vehicles) Directive 2000/53/EC and all subsequent updates, including the modification M15 through Directive 2020/363
- Radioactive Contamination, Directive 2013/59/EURATOM and Italian Legislative Decree No. 101 of 31 July 2020.
- Canadian List 168 updated 03/16/2022.
- Conflict Minerals, Regulation (EU) 2017/821 and all subsequent updates, including amendment M1 through Delegated Regulation 2020/1588, and Dodd-Frank Wall Street Reform and Consumer Protection Act Section 1502.

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Pag. 2 / 2 RODACCIAI: The Work Inspector
Alessia Porta

OTTURATORE / TIP

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST140440 / 2023 /
Prüfung/Test/Essai

Ordine nr: VS ORD MAIL
Bestell
Your order
Commande

Conferma ordine nr: AN23001468
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-AN23000875
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Laminato - Solubilizzato FINITO A FREDDO
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung
Marking
Marquage

SPECIFICHE : Anforderungen / Requirements / Exigences	Note: Aufzeichnungen / Notes / Notes
VAL STOCK W2 A/1 1.4404/316L A,CF	
AD 2000-M. W 2 2022 1.4401 A,CF (0)	(0)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
AD 2000-M. W 2 2022 1.4404 A,CF (1)	(1)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
AISI . 316/316L	
ASME SA182 2021 S31600/03 A (2)	(2)Section II Part A 2021 EDITION For products machined directly from bar refer to ASME SA479.
ASME SA276 2021 S31600/03 A,CF (3)	(3)Section II Part A 2021 EDITION
ASME SA479 2021 S31600/03 A (4)	(4)Section II Part A 2021 EDITION
ASTM A182 2023 S31600/03 A (5)	(5)For products machined directly from bar refer also to ASTM A479.
ASTM A262 PR. E 2015 316/316L (6)	(6)Reapproved 2021
ASTM A276 2023 S31600/03 A,CF	
ASTM A370 2022 .	
ASTM A479 2023A S31600/03 A	
ASTM E10 2023 .	
ASTM E8 2022 .	
EN 10088 PART 3 2014 1.4401 A,CF	
EN 10088 PART 3 2014 1.4404 A,CF	
EN 10272 2016. 1.4401 A,CF	
EN 10272 2016. 1.4404 A,CF	
ISO 3651-2 98 METHOD A T1	
ISO 6506-1 2014 .	
ISO 6892-1 2019 .	
ACH CO . .	
PME HB L . .	
NACE MR0175 4 S31600/03 A (7)	(7)ANSI/NACE MR0175/ISO 15156-3:2020 Fourth edition, approved 21 Sep 2022.
NACE MR0103 2015 S31600/03 A (8)	(8)ANSI/NACE MR0103/ISO 17945 November 23, 2015

		Tolleranza: h9 - DIN671/EN10278 Toleranz/Allowance/Tolerance					
Pos. nr. Pos. nr Rang nr Nr. de poste	Oggetto Gegenstand Product description Désignation du produit	Dimensioni - mm Abmessungen Dimension Dimension	Lunghezza - mm Länge Length Longueur	Colata Schmelze Heat Coulée	Pezzi Stückzahl Pieces Pièces	Peso - KG Gewicht Weight Poids	Lotto nr. Losnr Lot nr Lot nr
0010	Tondo	9,000	3000/ 3050	290962		162,0	210502620

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 15/11/2023	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité	Direzione Prodotto Produktmanagement/Product Management/Direction Produit	Pagina
VCQ012 - MEST140440	R.BERTELLI	P.MESSORI	1 di 3

OTTURATORE / TIP

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST140440 / 2023 /

Ordine nr: VS ORD MAIL
Bestell / Your order / Commande

Conferma ordine nr: AN23001468
Werks/Our Order/Ref nr

Avviso di Spedizione: A-AN23000875
Lieferanzeige/Packing list/B.L.

Stato di fornitura: Laminato - Solubilizzato FINITO A FREDDO
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore: ACCIAIERIE VALBRUNA S.P.A.
Hersteller/Item/Usine productrice

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung / Marking / Marquage

TEST ALLO STATO DI FORNITURA
Test on delivery condition / Prüefung auf lieferbereitem produkt / test a l'etat de fourniture / Prueba sobre el material así come entregado

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam spess mm	°C		Posiz. Saggio Probenlage Location Emplacement	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement A5 %		Strizione Einschnürung Reduction of area Striction Z %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti / Anforderungen/Required values / Valeurs demandées		min			200	235	500	20	-	-	-	-			-		
		max					900								315		
A	9	20	L		637	686	720	31		73					234		
E	9	20	L		639	690	726	30		71					235		

TEST ALLO STATO DI FORNITURA
Test on delivery condition / Prüefung auf lieferbereitem produkt / Test a l'etat de fourniture / Prueba sobre el material así come entregado

TEST		min	max	
A	Dimensioni grano x ASTM E112			5

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam spess mm	°C		Posiz. Saggio Probenlage Location Emplacement	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti / Anforderungen/Required values / Valeurs demandées		min			310	-	620	-	30	-	50	-			-		
		max													235		
D	6	20	L		640		723		33		74				230		

Tensile testing according to ISO 6892-1
Mechanical properties according to ASTM A370.
Brinnell hardness according to ASTM E10
Tensile testing according to ASTM E8
Brinnell hardness according to ISO 6506-1

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Analisi chimica
Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat Schmelze/Coulée		C %	Si %	Mn %	Cr %	Mo %	Ni %	Co %	P %	S %	N %
	min -	-	-	-	16,50	2,00	10,00	-	-	-	-
	max 0,030	1,00	2,00	18,00	2,50	13,00	-	0,045	0,030	0,100	-
290962		0,015	0,46	1,48	16,68	2,03	10,23	0,127	0,030	0,023	0,048

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 15/11/2023	Direzione Qualità / Qualitätsmanagement/Quality Management/Gestion Qualité	Direzione Prodotto / Produktmanagement/Product Management/Direction Produit	Pagina
VCQ012 - MEST140440	R.BERTELLI	P.MESSORI	2 di 3

OTTURATORE / TIP

Acciaierie Valbruna S.p.A.

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CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST140440 / 2023 /

Ordine nr: VS ORD MAIL
Bestell / Your order / Commande

Conferma ordine nr: AN23001468
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-AN23000875
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Stato di fornitura: Laminato - Solubilizzato FINITO A FREDDO
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung / Marking / Marquage

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

Reduction ratio = 457,3 : 1
Material annealed 1040°C for 135'(total time)/water cooled.
SURFACE QUALITY COMPLIANT TO EN 10088-3 TAB.1 COND. 2H
"Issued in agreement with TÜV SÜD Industrie Service GMBH (07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

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Sono state soddisfatte tutte le condizioni richieste / Die gestellen Anforderungen sind rt. Anlage erfüllt / The material has been furnished in accordance with the requirements / Le materiel à été trouvé conforme aux exigences

Controllo antimescolanza con tecnica XRF/OES portatile : OK / Verwechslungprüfung: durch XRF/OES Gerät geführt : OK / Antimixing testing performed with XRF/OES portable : OK / Contrôle antimélange svt technique XRF/OES portable : OK

Controllo visivo e dimensionale: soddisfa le esigenze / Besichtigung und Ausmessung: ohne Beanstandung / Visual inspection and dimensional checks satisfactory / Contrôle visuel et dimensions: satisfaisant

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD'S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 15/11/2023 VCQ012 - MEST140440	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité **R.BERTELLI**	Direzione Prodotto Produktmanagement/Product Management/Direction Produit **P.MESSORI**	Pagina 3 di 3

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ROSETTI MARINO ITEM 200

COD. VLBLNN01280100

TAG:

BLPH-MV-269, BLPH-MV-271,

BLPH-MV-409

INDRA ITEM 200

COD. 00.VSF.2697/V

indra VALVES - ITALY	***Certificazione dei materiali*** ***EN 10204 3.1 come da allegati*** ***Material certification*** ***EN 10204 3.1 as per attachments***	**MD-02-04-IT-UK / VSF** **Rev. 16** **Data: 08-Nov-2018** **CM/IT/UK**

Nr. *No.* **24-2005** **Data / *Date :*** **16-Oct-2024**

Cliente / *Customer* **ROSETTI MARINO SPA**

Vs. ordine Nr. / *Your order Nr.* **1724000798 REV.2** **Data / *Date :*** **26-Jun-2024**

Ns. commessa Nr. / *Our job Nr.* **24 01216** **Data / *Date :*** **3-Jul-2024**

Ns. D.D.T. Nr. / *Our advise note Nr.* **Data / *Date :***

Ordine di produzione / Production order number : 24 01216/200 - 36804

Lotto / Material batch number : 36804

Pos. Cliente *Customer Item*	*Pos. Indra* *Indra Item*	*Codice / Code* *Ns./ Our*	 *Vs. / Your*	*Q.tà / Q.ty*	*Nr. di serie* *Serial Number*	*Descrizione /Description*
200	200	00.VSF.2697/V	VLBLNN01280100	3	106024,106025 106026	INDRA BALL VALVE SBB-798-25-F150RF3-F-D-LF2-DL-CA3-N-PG-Y3-L13-TG-TGW-TV-PMI2-PD2-BI-CR-TA-FS-SPC1

Elenco / List

Componente / *Component*	Colata / Heat	Materiale *Material*	Numero del certificato Certificate number
Corpo Valvola / Valve Body	36804	ASTM A350 LF2 NACE	111 - 2150 - UT 3
Closure F150RF3	36804	ASTM A350 LF2 NACE	111 - 2150 - UT 3
Tirante / Stud bolt	BE1859	ASTM A193 B7M + HDG	5218
Dado / Nut	BD4437	ASTM A194 Gr.2HM + HDG	5166
Stelo antiespulsione sfera / Ball stem	E30822	AISI 316/316L NACE	173501
Sfera / Ball	072244	AISI 316/316L NACE	2020018438
Corpo bonnet/ Bonnet body	P0RI1500042203	ASTM A350 LF2 NACE	7497 - 741
Stelo spillo / Stem needle	290765	AISI 316/316L NACE	MEST056657/2023/1
Otturatore / Tip	272849	AISI 316/316L NACE	499910
Vite bonnet / Bonnet bolting	BB7389	ASTM A193 B7M + HDG	2402533

NOTE / **REMARKS :** TAG: BLPH-MV-269, BLPH-MV-271, BLPH-MV-409

PREPARATO DA: **ELEONORA RANZANI**
PREPARED BY: **DOCUMENTION MANAGER**

APPROVATO DA: **LUCIA NOSOTTI**
APPROVED BY: **QUALITY ASSURANCE MANAGER**

20013 Magenta (MI) Italy - Via Novara, 10/B-C
Tel. +39 02 97298663 r.a. - Fax +39 02 97291855
E-mail: indra@indra.it - http://www.indra.it

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30/10/24 R

STEEL S.P.A.
AZIENDA CERTIFICATA UNI EN ISO 9001:2015

VIA C. COLOMBO 21
29010 SARMATO (PIACENZA)
TEL. 0523/886111 - FAX 0523/886298
E-MAIL: info@steelacciai.it

ATTESTATO DI CONTROLLO

TEST REPORT – RELEVE' DE CONTROLE – WERKSZEUGNIS N° 111 DATA 12.01.2024

CLIENTE / Customer / Client / Besteller: INDRA SRL

ORDINE / Order / Commande / Bestelung: 3454 DATA 18.12.2023 CONFERMA / Confirmation / Confirmation de commande / Auftragsheslaligung
DDT 46 DATA 12.01.2024

ACCIAIO / Steel / Acier / Stahl: A105/ A350 LF2 ASTM

PROFILO / Shape / Section / Profil: T. 125 KG=590

COLATA / Reel / Coulée / Sclinetze: 36804

STATO DI FORNITURA / Delivery state / Elait de livraison / Lieferzusland: HOT ROLLED NORMALIZED

	COMPOSIZIONE CHIMICA % - CHEMICAL ANALYSIS % - COMPOSITION CHIMIQUE % - CHEMISCHE ZUSAMMENSETZUNG %															
	C	SI	MN	P	S	CR	NI	MO	AL	CU	V	NB	SN	TI	H/ppm	CEQ
DI COLATA / On heat Sur coulée / Vonder Schmelze	.165	.190	.950	.011	.004	.160	.060	.010	.030	.180	.003	.001	.017	.006	2.3	.37
SUL PRODOTTO / On product Sur prod. / Am Erzeugnis																

	CARATTERISTICHE MECCANICHE – MECHANICAL PROPERTIES – CARACTERISTIQUES MECANIQUES – MECHANISCHE EIGENSCHAFTEN												
	TRATTAMENTO TERMICO Heat treatment / Traitement thermique / Warmebehandlung	Diameter Nominal mm	Weight Tollerance /m	Diameter Actual mm	Re Y. Strenght N/mm²	Rm T. Strenght N/mm²	A Elongation %	Z Reduction %	Rm/Re	KV -46°CJ	HB Brinell h. on product		
DI COLATA / On heat Sur coulée / Vonder Schmelze	NORMALIZED				373	533	41	72		54 57 55	160		
SUL PRODOTTO / On product Sur prod. / Am Erzeugnis													

ALTRE PROVE / Other test / Autres essais / Sonstige Prufungen: CERTIFICATO TTP N° 2150 DATA 17.11.2023
CONTROL UT 100% IN ACC. TO ASTM A388

COMMENTI / Remarks / Remarques / Andere Bemerkungen: Si attesta che i prodotti sopra descritti sono conformi ai requisiti contrattuali. NORME UNI EN 10204 3.1 - NACE MR 01-75 -NACE MR0103
We certify hereby that the above mentioned product are in accordance with the order prescriptions

Controllo Qualità / Quality control4 / Controle de qualitè / Quelstraisablellung

STEEL s.p.a.

mod. 214 – REV. 01

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Trattamenti Termici Piacentini

T.T.P. s.r.l.
AZIENDA CERTIFICATA UNI EN ISO 9001:2015
Via C. Colombo snc 29010 Sarmato (PC)
Tel 0523.888115 (r.a.) Fax 0523-848002
P.Iva e C.F. 01456790334

ATTESTATO DI CONTROLLO

TEST REPORT – RELEVE' DE CONTROLE – WERKSZEUGNIS N° 2150 DATA 17.11.2023

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CLIENTE Customer Client Besteller	STEEL S.P.A.			ORDINE Order Commande Bestelung		CONFERMA Confirmation Confirmation de commande Auftragsheslaligung			
ACCIAIO Steel Acier Stahl	A105 /A350 LF2 ASTM	PROFILO Shape Section Profil	D. 125 mm	COLATA Reel Coulée Sclinetze	36804	STATO DI FORNITURA Delivery state Elait de livraison Lieferzusland	LAMINATO NORMALIZZATO		

	CARATTERISTICHE MECCANICHE – MECHANICAL PROPERTIES – CARACTERISTIQUES MECANIQUES – MECHANISCHE EIGENSCHAFTEN											
	TRATTAMENTO TERMICO Heat treatment / Traitement thermique Warmebehandlung	Diameter Nominal mm	Weight Tollerance /m	Diameter Actual mm	Re Y. Strenght N/mm²	Rm T. Strenght N/mm²	A Elongation %	Z Reduction %	Rm/Re	KV -46°CJ	HB Brinell h. on product		
DI COLATA / On heat Sur coulée / Vonder Schmelze	NORMALIZZAZIONE				373	533	41	72		54 57 55	160		
SUL PRODOTTO / On product Sur prod. / Am Erzeugnis													

ALTRE PROVE Other test Autres essais Sonstige Prufungen	POSIZIONE PRELIEVO / TEST POSITION ¼ L ASTM A370 API 6D ANNEX H
COMMENTI Remarks Remarques Andere Bemerkungen	Si attesta che i prodotti sopra descritti sono conformi ai requisiti contrattuali. Come da NORME UNI EN 10204 3.1

Controllo Qualità
Quality control
Controle de qualitè
Quelstralsablellung

TTP srl

mod. 214 – REV. 01

Trattamenti Termici Piacentini	UT QUALIFICATION RECORD	N° 3 DATE: 12.01.2024
CUSTOMER: INDRA SRL		ODP N° 3454/AF23 del 18/12/2023
ACTIVITY\PHASE: QUALIFICATION RECORD		
UT.Q.R. SPECIFICATION\ACCEPTANCE CRITERIA: IN ACC. TO ASTM A388 UT 100%		
MATERIAL GRADE: A350 LF2 / A105 Ø 125 mm		
EQUIPMENT: INSTRUMENT MANUFACTURER: KRAUTKRAMER TYPE: USM 36 MAT. N°: 37462 SERIAL-No: 18107591 PROBE MANUFACTURER: KRAUTKRAMER TYPE: B2S MAT.N°: 17816 PROBE MHz: 2 0° SIZE mm: 24.0 CABLE: LEMO 1 L=2m BLOCK TYPE: V1 COUPLANT: GEL		
SCANNING DGS SENSIVITY: sui blocchi campione ECOGLOBAL DGS1 42 Db		
SCANNING SENSIVITY ON MATERIAL: 51 Db		
SET RANGE: (AVG) 3 mm		
SURFACE CONDITIONS : HOT ROLLED +N		
TEMPERATURE: °C 8		
REMARKS:		
LEVEL II EN ISO 9712:2012 OPERATOR: Marco Braghieri TTP srl		

INDRA s.r.l.
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Trattamenti Termici Piacentini	UT INSPECTION REPORT	N°: 3 DATE: 12.01.2024
CUSTOMER: INDRA SRL	ODP N° 3454/AF23 del 18/12/2023	HEAT: 36804
ACTIVITY: CONTROLLO UT IN ACC. TO ASTM A388 UT 100%		
UT.QR N° 3		
MATERIAL: A350 LF2 / A105	Ø 125 mm	

MATERIAL IDENTIFICATION	LOCATION OF INDICATIONS TO THE END POS.	W.T.POS. mm	DIM mm	RESULTS
HEAT: 36804 L=6100				Conforme
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				

NOTE:

LEVEL II EN ISO 9712:2012
OPERATOR: Marco Braghieri
TTP srl

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TIRANTE / STUD BOLT t.e.c.n.o BOLT

CERTIFICATE

Nr. 5218 **02-10-24**

Page 1/1

INDRA SRL
VIA NOVARA 10/B-C
20013 MAGENTA MI
ITALIA

EN ISO 10204 3.1
CERTIFIED MATERIAL TEST REPORT

Your order: AF24 02329 REV.02 16-07-24 Delivery note: 2454 02-10-24

Item	Materials	Description	Sizes	Batch	Heat	Quantity
6	ASTM A 193 B7M 980.99.0260CS Pos.285 CKD/SM/18/03/2022	Tirante DIN 976/UNI 6610 ASTM A 193 B7M M HDG	10X30	8582	BE1859 N.	40

CHEMICAL ANALYSIS

6		%C %	%Mn %	%P %	%S %	%Si %	%Cr %	%Mo %	%H.T. Q+T
	REQ. MIN.	0,37	0,65			0,15	0,75	0,15	T=1100 F
	REQ. MAX.	0,49	1,10	0,035	0,040	0,35	1,20	0,25	
	ACT.VAL.	0,420	0,830	0,010	0,026	0,230	1,040	0,180	Q+T

MECHANICAL PROPERTIES

6		UTS MPa	YS0,2 MPa	E %	R.A. %	H HB	I.T. °C Kv J-22 C
	REQ. MIN.	860	720	16	50		
	REQ. MAX.					321	
	ACT. VAL.	1000	804	22,6	61	298	N.A.

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We state that the material or fasteners, or both, were manufactered, sampled, tested and inspected in accordance with the specification and any supplementary requirements designated in the purchase/sales order and it was found to meet those requirements

DADO / NUT

t·e·c·n·o BOLT

CERTIFICATE	
Nr. 5166	18-09-24
Page 1/1	

INDRA SRL
VIA NOVARA 10/B-C
20013 MAGENTA MI
ITALIA

EN ISO 10204 3.1
CERTIFIED MATERIAL TEST REPORT

Your order: AF24 02329 REV.02 16-07-24 Delivery note: 2307 18-09-24

Item	Materials	Description	Sizes	Batch	Heat	Quantity
3	ASTM A 194 Gr.2HM 980.99.0188 Pos.170, 180, 190, 330 CKD/DR/30/05/16	Dado UNI 5588/DIN 934 ASTM A 194 Gr.2HM M Esagonale HDG	10	8581	BD4437 N.	70

VOCE DOGANALE 73181900

MERCE DI ORIGINE ITALIANA

CHEMICAL ANALYSIS

3	%C %	%Mn %	%P %	%S %	%Si %	%H.T. Q+T	%Ni %	%Cr %	%Mo %
REQ. MIN.	0,40					T=850 F			
REQ. MAX.		1	0,040	0,050	0,40				
ACT.VAL.	0,435	0,790	0,007	0,029	0,230	Q+T	0,070	0,190	0,020

MECHANICAL PROPERTIES

3	H HRC	P.L. N/mm
REQ. MIN.		1205
REQ. MAX.		
ACT. VAL.	32-34	1205

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We state that the material or fasteners, or both, were manufactered, sampled, tested and inspected in accordance with the specification and any supplementary requirements designated in the purchase/sales order and it was found to meet those requirements

tecnoBOLT s.r.l. - 20822 Seveso (MB) ITALY - way vignone n.7 - info@tecnobolt.com - www.tecnobolt.com

STELO SFERA / BALL STEM

Rodacciai

23842 Bosisio Parini (LC) – Via Giuseppe Roda 1 – Italia
Tel. +39 031878111 – Fax +39 031878312
www.rodacciai.com – info@rodacciai.com

Azienda con sistema di gestione certificato da IGQ secondo UNI EN ISO 9001:2015

The Company's Quality Management System is certified by IGQ according to UNI EN ISO 9001:2015

CERTIFICATO DI CONTROLLO Inspection Certif N. 173501 Date 13/11/2023

Secondo According to . . . . . EN 10204:2004 3.1

ORDINE - Order N. 23/3822 Date 10/11/2023

D.d.T. - Delivery note N. 11634/04 Date 13/11/2023

Weight KG 128,00 **Odp. Nr.** 2022/A/13380
Tolerance ISO286-2 h9 + 0,000 - 0,043 mm **Bars Length** 3.000 - 3.050 mm

QUALITA' - Grade

STANDARD	EN 10088-3:2014	X2CrNiMo17-12-2	1.4404 / 316L
STANDARD	EN 10088-3:2023	X5CrNiMo17-12-2	1.4401 / 316

Mark RODACCIAI . . . . . 316 PLUS
PROFILO - Shape . . . . . ROUND
DIMENSIONE - Size . . . . . mm 18,00
ESECUZIONE - Form of delivery . . . . . ROUGH GROU.

COLATA - Heat E30822

ANALISI CHIMICA DI COLATA - Cast analysis % by mass

C	Mn	Si	S	P	Cr	Ni	Mo	Cu	Co	N
0,020	1,540	0,554	0,0290	0,031	16,620	10,020	2,030	0,441	0,280	0,0520

CARATTERISTICHE MECCANICHE ALLO STATO DI FORNITURA
Mechanical properties of the delivered material

		Tested
Tensile Strength	Rm (MPa)	695,3
Proof Stress	Rp (1) (MPa)	648,0
Proof Stress	Rp (0,2) (MPa)	580,7
Elongation	A 4 (%)	44,3
Elongation	A 5 (%)	41,1
Hardness	HBW	211,0
Reduction of area	Z (%)	68,0

NOTE - Notes

Processo di Fusione: E + A. O. D.
Prova di Corrosione Intergranularena: ASTM A262-15 "E"
Trattamento termico: Temperatura di Solubilizzazione 1060°C
Tempo Mantenimento: 4 Ore, Raffreddamento in Acqua
Materiale conforme a: ASTM A276-16a / A479-16a / A182-24
ASME: SA479; SA276; SA182 - UNS 31600 - 31630 AISI 316-316L

Pag. 1 / Segue

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Azienda con sistema di gestione certificato da IGQ
secondo UNI EN ISO 9001:2015

The Company's Quality Management System
is certified by IGQ according to UNI EN ISO 9001:2015

Segue certificato di controllo N. 173501 Date 13/11/2023
Inspection Certificate's continuance

NOTE - Notes

Materiale Conforme a NACE MR-0175/ISO 15156-3:2015
NACE MR-103/ISO 17495-1:2016
Corrosione Intercristallina EN ISO 3651-2:98 Met.A

Melting Process: E + A. O. D
Intergranular corrosion tested to ASTM A262-15 "E"
Heat treatment: annealed temperature 1060°C
Soaking time: 4 Hours, Cooling in water
Material Compliant to: ASTM A276-16a / A479-16a / A182-24
ASME: SA479; SA276; SA182 - UNS 31600 - 31630 AISI 316-316L
According to: NACE MR-0175 / ISO 15156-3:2015
NACE MR-103/ISO 17495-1:2016
Intergranular Corrosion according to EN ISO 3651-2:98 Met.A

Surface quality condition 2H conforming also to EN 10277 class 3

We certify hereby, that the above mentioned products are consistent with the order prescriptions.
This certificate was generated by data system acc. to EN 10204, it is not necessary to be signed for validity.

Materiale conforme alle seguenti direttive/regolamenti europee:
. Regolamento REACH 2006/1907/CE e tutti successivi aggiornamenti, compresa la modifica M80 Direttiva Delegata 2022/1632, e SVHC Candidate List aggiornata al 17/01/2023.
. Direttiva ROHS 2011/65/UE e tutti i successivi aggiornamenti, compresa la modifica M80 attraverso la Direttiva Delegata 2022/1632, e Decreto Legislativo 27 del 04/03/2014.
. Direttiva RAEE 2012/19/UE e tutti successivi aggiornamenti, compresa la modifica M1 attraverso la Direttiva 2018/849.
. Direttiva ELV (End-of-Life Vehicles) 2000/53/CE e tutti i successivi aggiornamenti, compresa la modifica M15 attraverso la Direttiva 2020/363
. Contaminazione Radioattiva, Direttiva 2013/59/EURATOM e Decreto Legislativo N.101 del 31 Luglio 2020.
. Canadian List 168 aggiornata al 16/03/2022.
. Minerali di Conflitto, Regolamento (UE) 2017/821 e tutti i successivi aggiornamenti, compresa la modifica M1 attraverso il Regolamento Delegato 2020/1588, e Dodd-Frank Wall Street Reform and Consumer Protection Act Section 1502.

Material conforming to the following European directives/regulation:
. REACH regulation 2006/1907/EC and all subsequent updates, including modification M80 Delegate Directive, and SVHC Candidate List updated to 01/17/2023.
. ROHS Directive 2011/65/EU and all subsequent updates, including the M80 amendment through the Delegated Directive 2022/1632, and Italian Legislative Decree 27 of 03/04/2014.
. WEEE Directive 2012/19/EU and all subsequent updates, including the M1 amendment through Directive 2018/849.
. ELV (End-of-Life Vehicles) Directive 2000/53/EC and all subsequent updates, including the modification M15 through Directive 2020/363
. Radioactive Contamination, Directive 2013/59/EURATOM and Italian Legislative Decree No. 101 of 31 July 2020.
. Canadian List 168 updated 03/16/2022.
. Conflict Minerals, Regulation (EU) 2017/821 and all subsequent updates, including amendment M1 through Delegated Regulation 2020/1588, and Dodd-Frank Wall Street Reform and Consumer Protection Act Section 1502.

 RODACCIAI: The Work Inspector
Alessia Porta

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COGNE ACCIAI SPECIALI S.p.a.
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CAP. SOC. 200.000.000 EUR INT. VERS.
C.F. 02167360067
VAT: IT00571320078 - R.E.A. n. AO-50474

Company with Management Systems certified according to ISO 9001, IATF 16949, EN 9100 and ISO 14001.

INSPECTION CERTIFICATE 3.1 (EN 10204:2004)
DOCUMENT NUMBER 2020018438

SFERA / BALL

CUSTOMER'S ORDER:	254		
MANUFACTURER'S WORKS:	AOSTA, VIA PARAVERA 16 - ITALY		
PRODUCER OF THE DOC:	QUALITY DEPARTMENT		
MANUFACTURER'S WORKS ORDER NO:	0001118068 / 000010		
MARK OF THE MANUFACTURER:	COGNE		
DISPATCH NOTE:	81346050 / 000010 WEIGHT: 232 KG / 512 LB		
THE CERTIFIED PRODUCTS ARE COMPLYING TO THE PURCHASE ORDER, EXCEPT FOR EXEMPTIONS AGREED WITH THE CUSTOMER, IF ANY.			
INTERNAL SPEC:	STOCKBARREW2	TECHNICAL RULE:	AD2000
PRODUCT:	PEL PEELED ROUND BARS TOLERANCE: ISOK11		
SURFACE FINISH:	2B Cold Finished		
PRODUCT DELIVERY CONDITION:	RS SOLUTION ANNEALED		
PRODUCT DIMENSIONS (mm):	45,000 (1,772 in)	LENGTH (mm)	06000 06200 (00236 00244 in)
GRADE:	AISI 316/316L EN1.4401/4404	INTERNAL GRADE:	F316L IMCO
IDENTIFICATION HEAT NO:	072244	IDENTIFICATION LOT NO:	201970
MARKING OF THE PRODUCT:	1.4404	TEST PIECE N:	197

REFERENCE NORMS: EN 10088-3 2014, EN 10272 2016, ASTM A276/A276M, ASTM A479/A479M, ASTM A193 B8MCLASSE 1D, ASME SA276/SA276M, ASME SA479/SA479M, AMS 5653J, AMS 5648M, ISO15156-3/NACE MR0175 2015, NACE MR0103/ISO 17945, NORSOK M630 MDSS01 REV5.
REFERENCE NORMS FOR CHEMICAL COMPOSITION AND MECHANICAL PROPERTIES: ASTM A182, ASME SA182.
REFERENCE NORMS ONLY FOR CHEMICAL COMPOSITION: EN 10222-5 2017,ASTM A403-07a, ASTM A484-18a,ASTM A314-08, AMS-QQ-S-763D.
ASME SECT.II PART A EDITION 2015-2017-2019
THE PRODUCT IS CONFORMING TO THE CONTRACT AGREEMENT AND TO THE RULE AD2000-MERKBLATT W0/W2.
ASTM A484 DOES NOT APPLY FOR SIZE AND LENGTH TOLERANCES.
STEELMAKING EAF + AOD + CONTINUOUS CASTING
REFERENCE NORM ASME BPVC.II.A-2015.
HOT ROLLED
REDUCTION RATIO 14,8

CHEMICAL LADLE ANALYSIS ACCORDING TO ASTM A751 - EN ISO 14284
Control lot No. - Weight :020000828767 - 83.288 KG - 183.616 LB

ELEMENTS	C	Si	Mn	P	S	N	Cr	Mo	Ni	Cu
OBTAINED	0,015	0,34	1,74	0,027	0,024	0,080	16,78	2,05	10,21	0,41

ELEMENTS	Co
OBTAINED	0,16

HARDNESS TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000828961 - 2.300 KG - 5.071 LB
SPECIFICATION ENISO6506 HARDNESS TEST HB TESTING METHOD: 10/3000
OBTAINED 171

IMPACT TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000828961 - 2.300 KG - 5.071 LB
SPECIFICATION EN ISO 148-1-KV2 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 20
MEASUREMENT UNIT J

OBTAINED	430	432	440	430	439	434	434	440	438	433
	431	439								

DATE 18.05.2020 BARBARA VIETTI MV(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne
REVIEW DATE 01.12.2021 N. REVIEW 1

INDRA S.r.l.
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Company with Management Systems certified according to ISO 9001, IATF 16949, EN 9100 and ISO 14001.

SFERA / BALL

TENSILE TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000828961 - 2.300 KG - 5.071 LB
SPECIFICATION EN-ISO6892-1 DIRECTION OF THE TEST PIECE: L

	RM	RP02	A5	Z	RP1
MEASUREMENT UNIT	MPA	MPA	% 5,0 D	%	NMM
OBTAINED	578	286	56,1	80,5	321
	592	287	55,6	80,1	321
	582	274	54,2	79,4	306
	585	274	55,6	81,2	312

GRAIN SIZE
Control lot No. - Weight :020000828961 - 2.300 KG - 5.071 LB
SPECIFICATION ASTME112 --
OBTAINED 5 7

MATERIAL IN COMPLIANCE WITH THE NORSOK M-630 MDS S01
IMPACT TEST
Control lot No. - Weight :020000828961 - 2.300 KG - 5.071 LB
SPECIFICATION EN ISO 148-1 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 196-
MEASUREMENT UNIT J

OBTAINED	181	183	188	177	175	200	188	174	194	183
	197	173								

TENSILE TEST
Control lot No. - Weight :020000828961 - 2.300 KG - 5.071 LB
SPECIFICATION ASTMA370-E8-0.5"SPEC DIRECTION OF THE TEST PIECE: L

	RMB	RP02B	ZB	AL2B
MEASUREMENT UNIT	KSI	KSI	%	% 4,0 D
OBTAINED	85	40	80,7	59,7
	85	42	81,2	60,3
	86	42	81,3	60,1
	85	41	81,0	58,6

COUNTRY OF MELTING AND ORIGIN: ITALY, THE MATERIAL COMPLIES WITH FAR DFARS 252.225-7009 ALT 1.
The products delivered are conforming to EN10088-5 and bear the CE marking on the basis of the test results here reported and the continuous surveillance, assessment and approval by MPA NRW (certificate no. 0432-CPR-00166-01)
Material produced according to the system #Regulation 305/2011/EU of the European Parliament and of the Council of 9 March 2011#
DOCUMENT ISSUED IN AGREEMENT WITH TUEV BAYERN(11.1972) WAVING OF COUNTERSIGNING (SEE TUEV BAYERN LETTER DATED 17.01.80).
MARKING: SYMBOL OF THE MANUF. WORK, MATERIAL N. , CAST N., LOT N., RECEIVING AGENT STAMP
CORROSION TEST ACCORDING TO ASTM A262 PRACTICE E EN ISO 3651-2 PRACTICE A: SATISFACTORY.

DATE 18.05.2020 BARBARA VIETTI MV(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne
REVIEW DATE 01.12.2021 N. REVIEW 1

INDRA S.r.l.
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Company with Management Systems certified according to ISO 9001, IATF 16949, EN 9100 and ISO 14001.

SFERA / BALL

ANTIMIXING TEST BY PORTABLE SPECTROMETRE: CONFORMING
EDDY CURRENT INSPECTION OF SURFACE ACCORDING TO EN 10277 CLASS 4.
DIMENSIONAL CONTROL ACCORDING TO EN 10278: SATISFACTORY.
NO WELDING REPAIR ON THE MATERIAL.
ULTRASONIC TEST ACCORDING TO EN 10308 Class.3: SATISFACTORY
QUALITY SYSTEM CERTIFIED TO UNI EN ISO 9001:2015 -IATF 16949:2016 (THE LAST ONE ONLY FOR WIRE ROD AND HOT ROLLED-PEELED-GROUND STAINLESS STEEL BARS).
MATERIAL ACCORDING TO NORSOK M630 EDITION 6.
INSPECTOR'S STAMP LF
THE PRODUCT SATISFIES THE DIRECTIVES: 2015/863/EU (ROHS3) - 2011/65/EU (ROHS2) - 2000/53/EU - 2002/95/EU(RoHS) - 2003/11/EU-2005/618/EU AND PED 2014/68/EU.
THE MATERIAL IS FREE OF ANY MERCURY, MERCURY COMPOUNDS AND OR RADIUM CONTAMINATION AT TIME OF SHIPMENT AND WAS PRODUCED WITHOUT USING OZONE DEPLETING SUBSTANCES OF CLASS I AND II.
RADIOACTIVITY CONTROL PERFORMED WITH A GAMMA SPECTROMETER: ASTM E181.
GAMMA ACTIVITY ON THE PRODUCTS BELOW 0.1 BQ/G ACCORDING TO EU RESOLUTION 2013/59/EURATOM , IAEA RS-G-1.7 AND IAEA SSG-17.

CE 0432

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DATE 18.05.2020 BARBARA VIETTI MV(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne
REVIEW DATE 01.12.2021 N. REVIEW 1

STEEL S.P.A.
AZIENDA CERTIFICATA UNI EN ISO 9001:2008

VIA C. COLOMBO 21
29010 SARMATO (PIACENZA)
TEL. 0523/886111 - FAX 0523/886298
E-MAIL: info@steelacciai.it
Societa' soggetta a direzione e coordinamento
della STEEL HOLDING S.A.P.A di Stefano e Marco Gatti

ATTESTATO DI CONTROLLO

TEST REPORT – RELEVE' DE CONTROLE – WERKSZEUGNIS N° 7497 DATA 18.07.2017

CLIENTE / Customer / Client / Besteller: INDRA S.R.L.
ORDINE / Order / Commande / Bestelung: F17-02430 del 11.07.2017 — DDT 2333 del 18.07.2017
CONFERMA / Confirmation / Confirmation de commande / Auftragsheslaligung

ACCIAIO / Steel / Acier / Stahl: ASTM A350 LF2 CL.1
PROFILO / Shape / Section / Profil: T.65
COLATA / Reel / Coulée / Sclinetze: P0RI1500042203
STATO DI FORNITURA / Delivery state / Elait de livraison / Lieferzusland: HOT ROLLED NORMALIZED

	COMPOSIZIONE CHIMICA % - CHEMICAL ANALYSIS % - COMPOSITION CHIMIQUE % - CHEMISCHE ZUSAMMENSETZUNG %															
	C	SI	MN	P	S	CR	NI	MO	AL	CU	V	NB	CEQ			
DI COLATA / On heat Sur coulée / Vonder Schmelze	.20	.23	.98	.010	.007	.11	.06	.010	.022	.10	.003	.002	.3986			
SUL PRODOTTO / On product Sur prod. / Am Erzeugnis																

	CARATTERISTICHE MECCANICHE – MECHANICAL PROPERTIES – CARACTERISTIQUES MECANIQUES – MECHANISCHE EIGENSCHAFTEN												
	TRATTAMENTO TERMICO Heat treatment / Traitement thermique Warmebehandlung	Diameter Nominal mm	Weight Tollerance /m	Diameter Actual mm	Re Y. Strenght N/mm²	Rm T. Strenght N/mm²	A Elongation %	Z Reduction %	Rm/Re	KV-46°CJ	HB Brinell h. on product		
DI COLATA / On heat Sur coulée / Vonder Schmelze	NORMALIZED				349	507	22.8	49.8		79 74 74	152		
SUL PRODOTTO / On product Sur prod. / Am Erzeugnis													

ALTRE PROVE / Other test / Autres essais / Sonstige Prufungen: CERTIFICATO TTP N° 741 del 04.11.2016

COMMENTI / Remarks / Remarques / Andere Bemerkungen: Si attesta che i prodotti sopra descritti sono conformi ai requisiti contrattuali. NORME UNI EN 10204.3.1 – NACE MR 01-75 / MR 01-03
We certify hereby that the above mentioned product are in accordance with the order prescriptions

Controllo Qualità / Quality control / Controle de qualité / Quelstraisablellung: STEEL s.p.a.

mod. 214 – REV. 01

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Trattamenti Termici Piacentini
T.T.P. s.r.l.
AZIENDA CERTIFICATA UNI EN ISO 9001:2008
Via C. Colombo snc 29010 Sarmato (PC)
Tel 0523.888115 (r.a.) Fax 0523-848002
P.Iva e C.F. 01456790334
Società soggetta a direzione e coordinamento
della STEEL HOLDING S.A.P.A di Stefano e Marco Gatti

CERTIFICATO DI CONTROLLO

TEST REPORT – RELEVE' DE CONTROLE – WERKSZEUGNIS N° 741 DATA 04.11.2016

CLIENTE Customer / Client / Besteller: STEEL ACCIAI S.P.A.
ORDINE Order / Commande / Bestelung:
CONFERMA Confirmation / Confirmation de commande / Auftragsbestatigung
ACCIAIO Steel / Acier / Stahl: ASTM A350 LF2 CL.1
PROFILO Shape / Section / Profil: T. 65
COLATA Reel / Coulée / Schmelze: P0RI1500042203
STATO DI FORNITURA Delivery state / Etait de livraison / Lieferzusland: HOT ROLLED NORMALIZED

	CARATTERISTICHE MECCANICHE – MECHANICAL PROPERTIES – CARACTERISTIQUES MECANIQUES – MECHANISCHE EIGENSCHAFTEN												
	TRATTAMENTO TERMICO Heat treatment / Traitement thermique Wärmebehandlung	Diameter Nominal mm	Weight Tollerance /m	Diameter Actual mm	Re Y. Strenght N/mm²	Rm T. Strenght N/mm²	A Elongation %	Z Reduction %	Rm/Re	KV-46°CJ		HB Brinell h. on product	
DI COLATA / On heat Sur coulée / Vonder Schmelze	NORMALIZED				349	507	22.8	49.8		79 74 74	152		
SUL PRODOTTO / On product Sur prod. / Am Erzeugnis													

ALTRE PROVE Other test / Autres essais / Sonstige Prufungen: POSIZIONE PRELIEVO / TEST POSITION ¼ L ASTM A370

COMMENTI Remarks / Remarques / Andere Bemerkungen

Si attesta che i prodotti sopra descritti sono conformi ai requisiti contrattuali.
Come da NORME UNI EN 10204.3.1

Controllo Qualità / Quality control / Controle de qualité / Qualitratsablellung

TTP srl

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mod. 214 – REV. 01

STELO / STEM

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST056657 / 2023 / 1
Prüfung/Test/Essai

Ordine nr: 2300258
Bestell / Your order / Commande

Conferma ordine nr: MI23003306
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23002720
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Hot rolled - Annealed COLD PROCESSED
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Liefernwerkes / Trade marks / Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung / Marking / Marquage

SPECIFICHE :	Note:
Anforderungen / Requirements / Exigences	Aufzeichnungen / Notes / Notes
VAL STOCK W2 A/1 1.4404/316L A,CF	
AD 2000-M. W 2 01/20 1.4401 A,CF (0)	(0)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
AD 2000-M. W 2 01/20 1.4404 A,CF (1)	(1)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
AISI . 316/316L	
AMS-QQ-S-763 D 316/316L A,CF	
ASME SA182 2021 S31600/03 A (2)	(2)Section II Part A 2021 EDITION For products machined directly from bar refer to ASME SA479.
ASME SA276 2021 S31600/03 A,CF (3)	(3)Section II Part A 2021 EDITION
ASME SA479 2021 S31600/03 A (4)	(4)Section II Part A 2021 EDITION
ASTM A182 2022A S31600/03 A (5)	(5)For products machined directly from bar refer also to ASTM A479.
ASTM A262 PR. E 2015 316/316L (6)	(6)Reapproved 2021
ASTM A276 2017 S31600/03 A,CF	
ASTM A370 2022 .	
ASTM A479 2021 S31600/03 A	
ASTM E10 2018 .	
ASTM E8 2022 .	
EN 10088 PART 3 2014 1.4401 A,CF	
EN 10088 PART 3 2014 1.4404 A,CF	
EN 10272 2016. 1.4401 A,CF	
EN 10272 2016. 1.4404 A,CF	
ISO 148-1 2016 .	
ISO 3651-2 98 METHOD A T1	
ISO 6506-1 2014 .	
ISO 6892-1 2019 .	
NACE MR0103 2015 S31600/03 A (7)	(7)ANSI/NACE MR0103/ISO 17945 November 23, 2015
NACE MR0175 2015 S31600/03 A (8)	(8)ANSI/NACE MR0175/ISO 15156-3, third edition November 23,2015
QQ-S-763 F 316/316L A,CF	
ACH CO . .	
KV L -196C . ISO 148-1	
MDS S01 5 316 A (9)	(9)Norsok-standard M-630 Edition 6, October 2013
ASTM A479 2021 S31600 A	

		Tolleranza: h9 - DIN671/EN10278 Toleranz/Allowance/Tolerance					
Pos. nr. Pos. nr. Item nr. Nr. de poste	Oggetto Gegenstand Product description Descrip. du produit	Dimensioni - mm Abmessungen Dimension Dimension	Lunghezza - mm Lange Length Longueur	Colata Schmelze Heat Coulée	Pezzi Stückzahl Pieces Pieces	Peso - KG Gewicht Weight Poids	Lotto nr. Losnr Lot nr Lot nr.
0060	Round	25,000	3000/ 3040	290765		164,0	209804470

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 29/05/2023 VCQ052 - MEST071270	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 1 di 4

STELO / STEM

Acciaierie Valbruna S.p.A.

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In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST056657 / 2023 / 1
Prüfung/Test/Essai

Ordine nr: 2300258
Bestell
Your order
Commande

Conferma ordine nr: MI23003306
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23002720
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Hot rolled - Annealed COLD PROCESSED
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore:
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung
Marking
Marquage

TEST ALLO STATO DI FORNITURA

Test on delivery condition Prüefung auf lieferbereitem produkt test a l'etat de fourniture Prueba sobre el material asi come entregado

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam epais. mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement A5 %		Strizione Einschnürung Reduction of area Striction Z %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs demandées		min		200	235	500	20	-	-	-	-			-		
		max				900									315	
A	10	20	L	512	567	679	40		65					230		
H	10	20	L	504	571	682	38		62					232		

TEST ALLO STATO DI FORNITURA

Test on delivery condition / Prüefung auf lieferbereitem produkt / Test a l'etat de fourniture / Prueba sobre el material asi come entregado

TEST		min	max	
A	Grain size for ASTM E112			4

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam epais. mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs demandées		min		-	-	-	-	-	-	-	-	-
		max										
F	10X10	-196	L	185	180	178	1,502	1,456	1,474	60	60	60

Test on delivery condition per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam epais. mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs demandées		min		210	-	517	-	35	-	50	-			-		
		max													235	
D	12,5	20	L	527		685		40		69				226		

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 29/05/2023	Direzione Qualità	Direzione Prodotto	Pagina
VCQ052 - MEST071270	Qualitätsmanagement/Quality Management/Gestion Qualité	Produktmanagement/Product Management/Direction Produit	2 di 4
	R.BERTELLI	P.MESSORI	

Acciaierie Valbruna S.p.A.

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Certificato nr. MEST056657 / 2023 / 1
Prüfung/Test/Essai

Ordine nr: 2300258
Bestell Your order Commande

Conferma ordine nr: MI23003306
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23002720
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Hot rolled - Annealed COLD PROCESSED
Lieferzustand Delivery state Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart Melting process Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes Trade marks Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werksachverständigen Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung Marking Marquage

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C		Posiz. Saggio Prelevatoge Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion			Shear Shear		
Valori richiesti Anforderungen/Required values Valeurs demendées		min max			100	100	100	-	-	-	-	-	-
E	10X10	20	L		231	228	235						
G	10X10	20	L		227	220	221						

Tensile testing according to ISO 6892-1
Impact testing according to ISO 148-1
Mechanical properties according to ASTM A370.
Brinnell hardness according to ASTM E10
Tensile testing according to ASTM E8
Brinnell hardness according to ISO 6506-1

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Analisi chimica
Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat Schmelze/Coulée	C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	Co %	P %	S %	N %				
	min -	-	-	16,50	2,00	-	10,00	-	-	-	-	-	-	-	-
	max 0,030	1,00	2,00	18,00	2,50	1,00	13,00	-	0,045	0,030	0,100	-	-	-	-
290765	0,017	0,51	1,58	16,95	2,04	0,55	10,00	0,133	0,028	0,027	0,067				

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 29/05/2023
VCQ052 - MEST071270

Direzione Qualità
Qualitätsmanagement/Quality Management/Gestion Qualité
R.BERTELLI

Direzione Prodotto
Produktmanagement/Product Management/Direction Produit
P.MESSORI

Pagina 3 di 4

STELO / STEM

Acciaierie Valbruna S.p.A.

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Certificato nr. MEST056657 / 2023 / 1
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Ordine nr: 2300258
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Conferma ordine nr: MI23003306
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23002720
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Hot rolled - Annealed COLD PROCESSED
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore:
Stempel des Werksachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung
Marking
Marquage

Reduction ratio = 61,1 : 1
Solution annealed 1040°C for 135'(total time)/water cooled.
SURFACE QUALITY COMPLIANT TO EN 10088-3 TAB.1 COND. 2H
"Issued in agreement with TÜV SÜD Industrie Service GMBH
(07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by
Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

Sono state soddisfatte tutte le condizioni richieste
Die gestellen Anforderungen sind lt. Anlage erfüllt
The material has been furnished in accordance with the requirements
Le materiel à été trouvé conforme aux exigences

Controllo antimescolanza con tecnica XRF/OES portatile : OK
Verwechslungprüfung: durch XRF/QES Gerät geführt : OK
Antimixing testing performed with XRF/OES portable : OK
Contrôle antimélange svt technique XRF/QES portable : OK

Controllo visivo e dimensionale: soddisfa le esigenze
Besichtigung und Ausmessung: ohne Beanstandung
Visual inspection and dimensional checks:satisfactory
Contrôle visuel et dimensions: satisfaisant

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD`S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

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Vicenza, 29/05/2023 VCQ052 - MEST071270	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 4 di 4

OTTURATORE / TIP

ACEROS INOXIDABLES OLARRA S.A.
Cm. Larrabarri. Elotxelerri. 1
48180 Loiu, Bizkaia
España
www.olarra.com

Management Systems Certified by LRQA
ISO 9001 / SGI 6000360
ISO 14001 / SGI 1870678

ACEROS INOXIDABLES OLARRA

OLARRA ITALIA, S.R.L.
P.LE MEDAGLIE D'ORO, 1
20135 MILANO - ITALIA

Trade Mark - Zeichen des Lieferwerkes / Anagrama del suministrador

Works Inspector Stamp - Werkssachverständiger / Sello del Inspector: 3

Certificate type - APZ Nach / Certificado tipo	Certificate nº - Prüf-Nr / Certificado nº	Date - Datum - Fecha
EN 10204/3.1	499910	21 - 07 - 2022

Our order Nº / Werks - Nr / Nº de Referencia	Heat / Schmelze / Colada	Your order Nº / Bestell - Nr / Pedido Nº
786381	272849	80/2022ALM

Steel Grade / Werkstoff / Calidad	According to / Entsprechend / Corresponde
X-2-CRNIMO-17-12-2 / 1.4404 MECAMAX	EN 10272-2016.

Shape and Size - Gegenstad / Perfil y dimensión	Tolerance - Toleranz / Tolerancia	Bundles / Bunde / Bultos	Bars / Stäbe / Barras	Weight / Gewicht / Peso
HEXAGON 12 mm	h11 /DIN 176 /EN 10278	1		520 Kg

Requirements - Anforderungen - Exigencias

EN 10088-3 2014.
ASTM A 479 / A 479M-21.
ASME SA 479 / SA 479M-21.
AD-2000-W2 2022/W10 2020.
NACE MR-0175/ISO 15156-3 2015.
ASTM A 276/A 276M-17.
Type 316-Type 316L.
PED 2014/68/EU, Annex I, Parag.4.3/DGR 2014/68/EU
Anhang I Absatz 4.3 Certificate/Zertifikat Nr. 348/2008/MUC

Melting process / Erschmelzungsart / Proceso de Fusión	Heat treatment / Wärmebehandlung / Tratamiento térmico
E.A.F. / A.O.D.	1060C 4H/Std WATER/WASSER/AGUA

Solution annealed/Abgeschreckt/Hipertemple-Cold drawn/Gezogen/Estirado-

Test results - Ergebnis der Prüfungen - Resultados de los ensayos

Reference standard / Bezugsnorm / Norma de referencia		Rp0,2% N/mm2 MPA	Rp 1% N/mm2 MPA	Rm N/mm2 MPA	A %L 5D	A %L 4D	Z %	Hardness Härte HBw	Impact test / Kerbschlagzaehigkeit / Resiliencia ISO V Jules
ISO 6892	Min.	200	235	500	20				
	Max.			900				315	
Temperature ºC: 20 / Spec. Nº. Probe Nr. Pro Nº.: 1		643	719	741	30		60	235	

	C	Si	Mn	P	S	Cr	Mo	Ni	N	Co	
Min.						16,50	2,00	10,00			
Max.	0,030	1,00	2,00	0,045	0,030	18,50	2,50	13,00	0,1000		
	0,021	0,543	1,49	0,030	0,027	16,61	2,04	10,05	0,0480	0,294	

Visual and dimensional inspection / Besichtingung und Ausmessung / Control visual y dimensional	Radioactivity inspection / Radioaktivitätskontrolle / Control de Radioactividad	Antimixing test / Spektrosk Verwechslungspr / Antimezcla	Grain Size / Korngrösse / Tamaño de grano
O.K.	O.K.	O.K.	

Remarks - Bemerkungen - Observaciones

IC test acc./IK prüfung nach EN ISO 3651-2/98 Met.A. OK

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EDV / EDP
Acc. EN 10204
Marian Tejedo
Quality Mng.

Works Inspector
Der Werkssachverständige
Inspector de fábrica

We hereby certify that material described herein complies with the requirements agreed on the order.

Firmado digitalmente por / Signed digitally by:
ACEROS INOXIDABLES OLARRA SA - CIF A48663546
Fecha / Date:21-07-2022 08:51

VITE BONNET / BONNET BOLTING

IPL S.r.l.
BULLONERIA - TIRANTERIA
SPECIALE E STANDARD

Via Papa Giovanni Paolo I, 306
21040 UBOLDO (VA)

Customer: **INDRA SRL**
C.SO XXII MARZO, 8
20135 MILANO (MI)

Date, 16-09-24 **Our Ref.** DDT 3254 / OC 1696 **of** 16-09-24 **Your Ref.** AF24 02662 01-08-24

CERTIFICATE UNI EN 10204 - 3.1 N.2402533

ITEM		QUANTITY	HEAT TREATMENT	PROTECTION	LOT nr.	HEAT nr.
59317M008020NF	HEX SOCKET HEAD CAP SCREW UNI 5931/ISO4762/DIN912 - A/SA/SA193 B7M M 8 x 20 HDG	30,00	quenched tempered	HOT DIP GALVANIZED ASTM A153 Cl. "C" / F2329	834977	BB7389*

101.99.0986CS

MECHANICAL PROPERTIES

values	R (MPa)	Rp 0,2 (MPa)	A4 (%)	Z (%)	HB (min. - max)
required	690 min	550 min	18 min.	50 min.	200 - 235
actual	697	570	32,0	64,1	206

CHEMICAL COMPOSITION

values	C (%)	Mn (%)	Si (%)	P (%)	S (%)	Cr (%)	Mo (%)
required	0,380 - 0,480	0,750 - 1,000	0,150 - 0,350	0,035 max	0,040 max	0,800 - 1,100	0,150 - 0,250
actual	0,435	0,770	0,190	0,011	0,0260	1,070	0,160

INDRA s.r.l.
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remarks: chemical and mechanical values, at delivery condition, are quoted by the relevant steel work certificate. VISUAL AND DIMENSIONAL TEST SATISFACTORY
According to: ASME II part. A ed. 2021. Macroetch test according to ASTM E381 result: S1; R1; C1.

If not mentioned the above test are performed at room temperature.
We certify that the fasteners were manufactured, sampled, tested and inspected in accordance with the specification and are consistent with order prescriptions.
Quality assurance system in accordance to European Directive 2014/68/EU annex I par. 4.3 (PED) and AD 2000 Merkblatt W0.
Certificates 0045/202/WZ1921/23 and TN/AD2000-W0/1921/23 TÜV NORD Systems GmbH & Co. KG.

IPL S.R.L.
RSQ A. Grisetti

ROSETTI MARINO ITEM 210

COD. VLBLNN01291H00

TAG:

BLPH-MV-278

INDRA ITEM 210

COD. 00.VSF.2699/V

indra VALVES - ITALY	***Certificazione dei materiali*** ***EN 10204 3.1 come da allegati*** ***Material certification*** ***EN 10204 3.1 as per attachments***	**MD-02-04-IT-UK / VSF** **Rev. 16** **Data: 08-Nov-2018** **CM/IT/UK**

Nr. *No.* **24-2006** — **Data /** *Date :* **16-Oct-2024**

Cliente / *Customer* **ROSETTI MARINO SPA**

Vs. ordine Nr. / *Your order Nr.* **1724000798 REV.2** — **Data /** *Date :* **26-Jun-2024**

Ns. commessa Nr. / *Our job Nr.* **24 01216** — **Data /** *Date :* **3-Jul-2024**

Ns. D.D.T. Nr. / *Our advise note Nr.* — **Data /** *Date :*

Ordine di produzione / Production order number : 24 01216/210 - 458031

Lotto / Material batch number : 458031

Pos. Cliente *Customer Item*	*Pos. Indra* *Indra Item*	*Codice / Code* *Ns./ Our*	 *Vs. / Your*	*Q.tà / Q.ty*	*Nr. di serie* *Serial Number*	*Descrizione /Description*
210	210	00.VSF.2699/V	VLBLNN01291H00	1	106027	INDRA BALL VALVE SBB-798-40-H150RF3-H-D-LF2-DL-CA3-N-PG-Y3-L13-TG-TGW-TV-PMI2-PD2-BI-CR-TA-FS-SPC1

Elenco / List

Componente / *Component*	Colata / Heat	Materiale *Material*	Numero del certificato Certificate number
Corpo Valvola / Valve Body	458031	ASTM A350 LF2 NACE	6229 - 942
Closure H150RF3	458031	ASTM A350 LF2 NACE	6229 - 942
Tirante / Stud bolt	283509	ASTM A193 B7M + HDG	2402707
Dado / Nut	79325	ASTM A194 Gr.2HM + HDG	2402706
Stelo antiespulsione sfera / Ball stem	291905	AISI 316/316L NACE	MEST084078/2023/
Sfera / Ball	372447	AISI 316/316L NACE	2023013898
Corpo bonnet/ Bonnet body	P0RI1500042203	ASTM A350 LF2 NACE	7497 - 741
Stelo spillo / Stem needle	290765	AISI 316/316L NACE	MEST056657/2023/1
Otturatore / Tip	272849	AISI 316/316L NACE	499910
Vite bonnet / Bonnet bolting	BB7389	ASTM A193 B7M + HDG	2402531

NOTE / **REMARKS :** TAG: BLPH-MV-278

PREPARATO DA: **ELEONORA RANZANI** — PREPARED BY: **DOCUMENTION MANAGER**

APPROVATO DA: **LUCIA NOSOTTI** — APPROVED BY: **QUALITY ASSURANCE MANAGER**

20013 Magenta (MI) Italy - Via Novara, 10/B-C
Tel. +39 02 97298663 r.a. - Fax +39 02 97291855
E-mail: indra@indra.it - http://www.indra.it

Ball valve + CROSS WIND
30/10/24

STEEL S.P.A.
AZIENDA CERTIFICATA UNI EN ISO 9001:2015

VIA C. COLOMBO 21
29010 SARMATO (PIACENZA)
TEL. 0523/886111 - FAX 0523/886298
E-MAIL: info@steelaccial.it

ATTESTATO DI CONTROLLO

TEST REPORT – RELEVE' DE CONTROLE – WERKSZEUGNIS N° 6229 DATA 24.07.2024

CLIENTE Customer / Client / Besteller: INDRA S.R.L

ORDINE Order / Commande / Bestelung: 2405 DATA 12.07.2024 — DDT 2111 DATA 24.07.2024

CONFERMA Confirmation / Confirmation de commande / Auftragsheslaligung

ACCIAIO Steel / Acier / Stahl: A350 LF2/A105 — ASTM

PROFILO Shape / Section / Profil: T. 180 — KG=1220

COLATA Reel / Coulée / Sclinetze: 458031

STATO DI FORNITURA Delivery state / Elait de livraison / Lieferzusland: HOT ROLLED NORMALIZED

INDRA S.r.l.
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	COMPOSIZIONE CHIMICA % - CHEMICAL ANALYSIS % - COMPOSITION CHIMIQUE % - CHEMISCHE ZUSAMMENSETZUNG %															
	C	SI	MN	P	S	CR	NI	MO	CU	AL	V	SN	NB	TI	B	CEQ
DI COLATA / On heat Sur coulée / Vonder Schmelze	.180	.23	1.10	.009	.010	.10	.07	.02	.11	.031	.005	.006	.002	.0027	.0001	.40
SUL PRODOTTO / On product Sur prod. / Am Erzeugnis																

	CARATTERISTICHE MECCANICHE – MECHANICAL PROPERTIES – CARACTERISTIQUES MECANIQUES – MECHANISCHE EIGENSCHAFTEN												
	TRATTAMENTO TERMICO Heat treatment / Traitement thermique Warmebehandlung	Diameter Nominal mm	Weight Tollerance /m	Diameter Actual mm	Re Y. Strenght N/mm²	Rm T. Strenght N/mm²	A Elongation %	Z Reduction %	Rm/Re	KV -46° C J	HB Brinell h. on product		
DI COLATA / On heat Sur coulée / Vonder Schmelze	NORMALIZED				373	533	33	67		58 52 50	160		
SUL PRODOTTO / On product Sur prod. / Am Erzeugnis													

ALTRE PROVE
Other test / Autres essais / Sonstige Prufungen

CERTIFICATO TTP N° 942 DATA 23.07.2024
VISUAL AND DIMENSIONAL SATISFACTORY
CONTROL UT 100% IN ACC. TO ASTM A388

COMMENTI
Remarks / Remarques / Andere Bemerkungen

Si attesta che i prodotti sopra descritti sono conformi ai requisiti contrattuali. NORME UNI EN 10204 3.1 – NACE MR 01-75 / ISO 15156 / MR 01-03
We certify hereby that the above mentioned product are in accordance with the order prescriptions

Controllo Qualità
Quality control
Controle de qualitè
Quelstraisablellung

STEEL s.p.a.

mod. 214 – REV. 01

Trattamenti Termici Piacentini

T.T.P. s.r.l.
AZIENDA CERTIFICATA UNI EN ISO 9001:2015
Via C. Colombo snc 29010 Sarmato (PC)
Tel 0523.888115 (r.a.) Fax 0523-848002
P.Iva e C.F. 01456790334

ATTESTATO DI CONTROLLO

TEST REPORT – RELEVE' DE CONTROLE – WERKSZEUGNIS N° 942 DATA 23.07.2024

INDRA S.r.l.
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CLIENTE Customer Client Besteller	STEEL S.P.A.			ORDINE Order Commande Bestelung		CONFERMA Confirmation Confirmation de commande Auftragsheslaligung	
ACCIAIO Steel Acier Stahl	A350 LF2/A105 ASTM	PROFILO Shape Section Profil	D. 180 mm	COLATA Reel Coulée Sclinetze	458031	STATO DI FORNITURA Delivery state Elait de livraison Lieferzusland	HOT ROLLED NORMALIZED

	CARATTERISTICHE MECCANICHE – MECHANICAL PROPERTIES – CARACTERISTIQUES MECANIQUES – MECHANISCHE EIGENSCHAFTEN												
	TRATTAMENTO TERMICO Heat treatment / Traitement thermique Warmebehandlung	Diameter Nominal mm	Weight Tollerance /m	Diameter Actual mm	Re Y. Strenght N/mm²	Rm T. Strenght N/mm²	A Elongation %	Z Reduction %	Rm/Re	KV-46° C J	HB Brinell h. on product		
DI COLATA / On heat Sur coulée / Vonder Schmelze	NORMALIZATION				373	533	33	67		58 52 50	160		
SUL PRODOTTO / On product Sur prod. / Am Erzeugnis													

ALTRE PROVE Other test Autres essais Sonstige Prufungen	POSIZIONE PRELIEVO / TEST POSITION ¼ L ASTM A370 API 6D Annex h INPUT TEMPERATURE: 100°C HOLDING TEMPERATURE: 910 °C – HOLDING TIME: 3 h COOLING: IN STILL AIR FORNO N. 1 / 2013 ELTI
COMMENTI Remarks Remarques Andere Bemerkungen	Si attesta che i prodotti sopra descritti sono conformi ai requisiti contrattuali. Come da NORME UNI EN 10204 3.1

Controllo Qualità TTP srl
Quality control
Controle de qualité
Quelstralsablellung

mod. 214 – REV. 01

TIRANTE / STUD BOLT

IPL S.r.l.
BULLONERIA - TIRANTERIA
SPECIALE E STANDARD

Via Papa Giovanni Paolo I, 306
21040 UBOLDO (VA)

Customer: INDRA SRL
C.SO XXII MARZO, 8
20135 MILANO (MI)

Date, 30-09-24 **Our Ref.** DDT 3479 / OC 1700 **of** 30-09-24 **Your Ref.** AF24 02342 AGG. 1 31-07-24

CERTIFICATE UNI EN 10204 - 3.1 N.2402707

ITEM		QUANTITY	HEAT TREATMENT	PROTECTION	LOT nr.	HEAT nr.
TIR.7M010040NF	STUDBOLT UNI6610/DIN976B - A/SA193 B7M M 10 x 40 HDG → 101.99.0187CS-PED46	5,00	quenched tempered	HOT DIP GALVANIZED ASTM A153 Cl. "C" / F2329	835021	283509*
TIR.7M012040NF	STUDBOLT UNI6610/DIN976B - A193 B7M M 12 x 40 H.D.G. 101.99.0664CS-PED46	5,00	quenched tempered	HOT DIP GALVANIZED ASTM A153 Cl. "C" / F2329	835022	283509*

MECHANICAL PROPERTIES

values	R (MPa)	Rs 0,2 (MPa)	A4 (%)	Z (%)	HB	I.T. KV - 73°C (J)
required	690 min.	550 min.	18 min.	50 min.	235 max	20 min. 27 av.
actual	700	570	28,0	66,0	220-215-220	143 - 147 - 117

CHEMICAL COMPOSITION

values	C (%)	Mn (%)	Si (%)	P (%)	S (%)	Cr (%)	Mo (%)	Al (%)
required	0,38 - 0,48	0,75 - 1,00	0,15 - 0,35	0,035 max	0,040 max	0,80 - 1,10	0,15 - 0,25	
actual	0,415	0,771	0,219	0,009	0,0300	1,035	0,159	0,022

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remarks: Chemical values, at delivery condition, are quoted by the relevant steel work certificate. Mechanical values see IRCM cert. 1438/24.
According to: ASME II part. A ed. 2021. Macroetch test according to ASTM E381 result: S1 R1 C1. VISUAL AND DIMENSIONAL TEST SATISFACTORY

If not mentioned the above test are performed at room temperature.
We certify that the fasteners were manufactured, sampled, tested and inspected in accordance with the specification and are consistent with order prescriptions.
Quality assurance system in accordance to European Directive 2014/68/EU annex I par. 4.3 (PED) and AD 2000 Merkblatt W0.
Certificates 0045/202/WZ1921/23 and TN/AD2000-W0/1921/23 TÜV NORD Systems GmbH & Co. KG.

IPL S.R.L.
RSQ A. Grisetti

DADO / NUT

IPL S.r.l.
BULLONERIA - TIRANTERIA
SPECIALE E STANDARD

Via Papa Giovanni Paolo I, 306
21040 UBOLDO (VA)

Customer: **INDRA SRL**
C.SO XXII MARZO, 8
20135 MILANO (MI)

Date, 30-09-24 **Our Ref.** DDT 3480 / OC 1557 **of** 30-09-24 **Your Ref.** AF24 02342 10-07-24

CERTIFICATE UNI EN 10204 - 3.1 N.2402706

ITEM		QUANTITY	HEAT TREATMENT	PROTECTION	LOT nr.	HEAT nr.
55882M010000F	HEX NUT UNI 5588/ISO4032/DIN934 H=0,8 d - A/SA194 2HM M 10 HDG 980.99.0188CS-PED46	15,00	quenched tempered @ 560°c	HOT DIP GALVANIZED ASTM A153 Cl. "C" / F2329	834262	79325 *

MECHANICAL PROPERTIES

values	HB (min-max)	HB after 24 hrs (min)	PROOF LOAD	I.T. ISO-V -46°C (J)
required	159 - 235	159		
actual	211 - 215	188	POSITIVE	28 - 30 - 28

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CHEMICAL COMPOSITION

values	C (%)	Mn (%)	Si (%)	P (%)	S (%)
required	0,400 min	1,000 max	0,400 max	0,040 max	0,050 max
actual	0,450	0,770	0,280	0,015	0,020

remarks: chemical values, at delivery condition, are quoted by the relevant steel work certificate. VISUAL AND DIMENSIONAL TEST SATISFACTORY
Nuts hardness test after 24 HRS tempering at 540°C.

If not mentioned the above test are performed at room temperature.
We certify that the fasteners were manufactured, sampled, tested and inspected in accordance with the specification and are consistent with order prescriptions.
Quality assurance system in accordance to European Directive 2014/68/EU annex I par. 4.3 (PED) and AD 2000 Merkblatt W0.
Certificates 0045/202/WZ1921/23 and TN/AD2000-W0/1921/23 TÜV NORD Systems GmbH & Co. KG.

IPL S.R.L.
RSQ A. Grisetti

STELO SFERA / BALL STEM

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST084078 / 2023 /
Prüfung/Test/Essai

Ordine nr: ORD.N.2300396
Bestell / Your order / Commande

Conferma ordine nr: MI23004818
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23003903
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Hot rolled - Annealed COLD PROCESSED
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Liefermwerkes / Trade marks / Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung / Marking / Marquage

SPECIFICHE :
Anforderungen / Requirements / Exigences

Note:
Aufzeichnungen / Notes / Notes

VAL STOCK W2 A/1 1.4404/316L A,CF
AD 2000-M. W 2 01/20 1.4401 A,CF (0)
AD 2000-M. W 2 01/20 1.4404 A,CF (1)
AISI . 316/316L
AMS-QQ-S-763 D 316/316L A,CF
ASME SA182 2021 S31600/03 A (2)
ASME SA276 2021 S31600/03 A,CF (3)
ASME SA479 2021 S31600/03 A (4)
ASTM A182 2022A S31600/03 A (5)
ASTM A262 PR. E 2015 316/316L (6)
ASTM A276 2017 S31600/03 A,CF
ASTM A370 2022 .
ASTM A479 2021 S31600/03 A
ASTM E10 2018 .
ASTM E8 2022 .
EN 10088 PART 3 2014 1.4401 A,CF
EN 10088 PART 3 2014 1.4404 A,CF
EN 10272 2016. 1.4401 A,CF
EN 10272 2016. 1.4404 A,CF
ISO 148-1 2016 .
ISO 3651-2 98 METHOD A T1
ISO 6506-1 2014 .
ISO 6892-1 2019 .
NACE MR0103 2015 S31600/03 A (7)
NACE MR0175 2015 S31600/03 A (8)
QQ-S-763 F 316/316L A,CF
ACH CO . .
KV L -196C . ISO 148-1

(0)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
(1)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
(2)Section II Part A 2021 EDITION For products machined directly from bar refer to ASME SA479.
(3)Section II Part A 2021 EDITION
(4)Section II Part A 2021 EDITION
(5)For products machined directly from bar refer also to ASTM A479.
(6)Reapproved 2021

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(7)ANSI/NACE MR0103/ISO 17945 November 23, 2015
(8)ANSI/NACE MR0175/ISO 15156-3, third edition November 23,2015

		Tolleranza: h9 - DIN671/EN10278 Toleranz/Allowance/Tolerance					
Pos. nr. Pos. nr. Item nr. Nr. de poste	Oggetto Gegenstand Product description Descrip. du produit	Dimensioni - mm Abmessungen Dimension Dimension	Lunghezza - mm Länge Length Longueur	Colata Schmelze Heat Coulée	Pezzi Stückzahl Pieces Pieces	Peso - KG Gewicht Weight Poids	Lotto nr. Losnr Lot nr. Lot nr.
0010	Round	25,000	3000/ 3040	291905		58,0	304610390

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 26/06/2023 VCQ052 - MEST084078	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité **R.BERTELLI**	Direzione Prodotto Produktmanagement/Product Management/Direction Produit **P.MESSORI**	Pagina 1 di 4

STELO SFERA / BALL STEM

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST084078 / 2023 /
Prüfung/Test/Essai

Ordine nr: ORD.N.2300396
Bestell
Your order
Commande

Conferma ordine nr: MI23004818
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23003903
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Hot rolled - Annealed COLD PROCESSED
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung
Marking
Marquage

TEST ALLO STATO DI FORNITURA
Test on delivery condition Prüefung auf lieferbereitem produkt test a l'etat de fourniture Prueba sobre el material así come entregado

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement A5 %		Strizione Einschnürung Reduction of area Striction Z %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs démandées		min		200	235	500	20	-	-	-	-			-		
		max				900									315	
A	10	20	L	480	568	694	43		65					231		
G	10	20	L	485	571	699	42		64					234		

TEST ALLO STATO DI FORNITURA
Test on delivery condition / Prüefung auf lieferbereitem produkt / Test a l'etat de fourniture / Prueba sobre el material así come entregado

TEST		min	max	
A	Grain size for ASTM E112			5

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagerbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expension Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs démandées		min		-	-	-	-	-	-	-	-	-
		max										
B	10X10	-196	L	168	170	162	1,758	1,485	1,328	65	60	59

Test on delivery condition per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagerbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs démandées		min		210	-	517	-	30	-	50	-			-		
		max													235	
C	12,5	20	L	502		697		43		69				233		

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STELO SFERA / BALL STEM

Acciaierie Valbruna S.p.A.

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Telefono 0444.968211 - Fax 0444.963836
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Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST084078 / 2023 /
Prüfung/Test/Essai

Ordine nr: ORD.N.2300396
Bestell Your order Commande

Conferma ordine nr: MI23004818
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23003903
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Hot rolled - Annealed COLD PROCESSED
Lieferzustand Delivery state Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart Melting process Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes Trade marks Sigles de l'usine productrice

Punzone del Collaudatore:
Stempel des Werkssachverständigen Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung Marking Marquage

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess Breite Diam. Dicke Width Diam. Thickness Larg diam epais mm	°C	Posiz. Saggio Probenlage Location Emplacement	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion			Shear Shear		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		100	100	100	-	-	-	-	-	-
F	10X10	20	L	201	198	200						
H	10X10	20	L	209	191	194						

Tensile testing according to ISO 6892-1
Impact testing according to ISO 148-1
Mechanical properties according to ASTM A370.
Brinnell hardness according to ASTM E10
Tensile testing according to ASTM E8
Brinnell hardness according to ISO 6506-1

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Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat Schmelze/Coulée																
	min - max	- 0,030	- 1,00	- 2,00	16,50 18,00	2,00 2,50	- 1,00	10,00 13,00	- -	- 0,045	- 0,030	- 0,100	- -	- -	- -	- -
	C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	Co %	P %	S %	N %				
291905	0,015	0,54	1,50	16,86	2,01	0,42	10,13	0,168	0,031	0,029	0,058				

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 26/06/2023	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité	Direzione Prodotto Produktmanagement/Product Management/Direction Produit	Pagina 3 di 4
VCQ052 - MEST084078	R.BERTELLI	P.MESSORI	

STELO SFERA / BALL STEM

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST084078 / 2023 /

Ordine nr: ORD.N.2300396
Bestell / Your order / Commande

Conferma ordine nr: MI23004818
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23003903
Lieferanzeige/Packing list/B.L.

Stato di fornitura / Lieferzustand / Delivery state / Etat de livraison: Hot rolled - Annealed COLD PROCESSED

Tipo di Elaborazione / Erschmelzungsart / Melting process / Mode d'elaboration: E+AOD

Qualità / Werkstoff/Grade/Nuance: 1.4401/1.4404/316/316L

Marca / Markenbezeichnung / Brand / Nuance: MVAPML (MAXIVAL)

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Liefernwerkes / Trade marks / Sigles de l'usine productrice: AV

Punzone del Collaudatore / Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur: MR

Punzonatura / Kennzeichnung / Marking / Marquage: 1.4401/1.4404

Reduction ratio = 61,1 : 1
Solution annealed 1040°C for 135'(total time)/water cooled.
SURFACE QUALITY COMPLIANT TO EN 10088-3 TAB.1 COND. 2H
"Issued in agreement with TÜV SÜD Industrie Service GMBH
(07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by
Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

Sono state soddisfatte tutte le condizioni richieste	Controllo antimescolanza con tecnica XRF/OES portatile : OK	Controllo visivo e dimensionale: soddisfa le esigenze
Die gestellen Anforderungen sind it. Anlage erfüllt	Verwechslungprüfung: durch XRF/QES Gerät geführt : OK	Besichtigung und Ausmessung: ohne Beanstandung
The material has been furnished in accordance with the requirements	Antimixing testing performed with XRF/OES portable : OK	Visual inspection and dimensional checks:satisfactory
Le materiel à été trouvé conforme aux exigences	Contrôle antimélange svt technique XRF/QES portable : OK	Contrôle visuel et dimensions: satisfaisant

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD`S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

WRP70R1ECFFC851C0900A70110FC853F0

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 26/06/2023 VCQ052 - MEST084078	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 4 di 4

COGNE ACCIAI SPECIALI S.p.a.
ITALY - 11100 AOSTA - VIA PARAVERA, 16
TEL +39.0165.3021 - FAX +39.0165.302296
CAP. SOC. 250.000.000 EUR INT. VERS.
C.F. 02187360967
VAT: IT00571320076 - R.E.A. n. AO-50474

Company with Management Systems certified according to ISO 9001, ITAF 16949, EN 9100, ISO 14001 and ISO 45001.

INSPECTION CERTIFICATE 3.1 (EN 10204:2004)

SFERA / BALL

CUSTOMER'S ORDER:	mail		
MANUFACTURER'S WORKS:	AOSTA, VIA PARAVERA 16 - ITALY		
PRODUCER OF THE DOC:	QUALITY DEPARTMENT		
MANUFACTURER'S WORKS ORDER NO:	0001135656 / 000010		
MARK OF THE MANUFACTURER:	**COGNE**		
DISPATCH NOTE:	81560368 / 000010 WEIGHT: 424 KG / 935 LB		
INTERNAL SPEC:	STOCKBARREW2	TECHNICAL RULE:	AD2000
PRODUCT:	PEL PEELED ROUND BARS TOLERANCE: ISOK11		
SURFACE FINISH:	2B Cold Finished		
PRODUCT DELIVERY CONDITION:	RS SOLUTION ANNEALED		
PRODUCT DIMENSIONS (mm):	75,000 (2,953 in)	LENGTH (mm)	04000 06200 (00157 00244 in)
GRADE:	316L-S31600/31603-1.4404/1.4401 INTERNAL GRADE:		F316L IMCO
IDENTIFICATION HEAT NO:	372447	IDENTIFICATION LOT NO:	725530
MARKING OF THE PRODUCT:	1.4404	TEST PIECE N:	553

REFERENCE NORMS: EN 10088-3 2014, EN 10272 2016, ASTM A276/A276M, ASTM A479/A479M, ASTM A193 B8MCLASSE 1D, ASME SA276/SA276M, ASME SA479/SA479M, AMS 5653J, AMS 5648N, ISO15156-3/NACE MR0175 2015, NACE MR0103/ISO 17945, NORSOK M630 MDSS01 REV5.
REFERENCE NORMS FOR CHEMICAL COMPOSITION AND MECHANICAL PROPERTIES: ASTM A182, ASME SA182.
REFERENCE NORMS ONLY FOR CHEMICAL COMPOSITION: EN 10222-5 2017,ASTM A403-07a, ASTM A484-18a,ASTM A314-08, AMS-QQ-S-763D.
ASME SECT.II PART A EDITION 2015-2017-2019-2021
AISI 316/316L - UNS S31600/S31603 - 1.4404/1.4401
THE PRODUCT IS CONFORMING TO THE CONTRACT AGREEMENT AND TO THE RULE AD2000-MERKBLATT W0/W2.
STEELMAKING EAF + AOD + CONTINUOUS CASTING
ASTM A484 DOES NOT APPLY FOR SIZE AND LENGTH TOLERANCES.
STEELMAKING EAF + AOD + CONTINUOUS CASTING
REFERENCE FOR APPLICABLE ASME STANDARD: SECTION II PART A ED. 2015-2017-2019-2021
HOT ROLLED
REDUCTION RATIO 5,2

CHEMICAL LADLE ANALYSIS ACCORDING TO ASTM A751 - EN ISO 14284
Control lot No. - Weight :020000959784 - 79.906 KG - 176.160 LB

ELEMENTS	C	Si	Mn	P	S	N	Cr	Mo	Ni	Cu
MEASUREMENT UNIT	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w
OBTAINED	0,015	0,35	1,80	0,030	0,029	0,076	16,88	2,11	10,33	0,39

ELEMENTS	Co
MEASUREMENT UNIT	% w/w
OBTAINED	0,17

HARDNESS TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000960596 - 7.776 KG - 17.143 LB
SPECIFICATION ENISO6506 HARDNESS TEST HB TESTING METHOD: 10/3000
OBTAINED 154

DATE 20.03.2023 BARBARA VIETTI MV(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne

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COGNE ACCIAI SPECIALI S.p.a.
ITALY - 11100 AOSTA - VIA PARAVERA, 16
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IMPACT TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000960596 - 7.776 KG - 17.143 LB
SPECIFICATION EN ISO 148-1-KV2 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 20
MEASUREMENT UNIT J

OBTAINED	431	434	425	427	430	434	428	425	431	441
	427	435								

TENSILE TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000960596 - 7.776 KG - 17.143 LB
SPECIFICATION EN-ISO6892-1 DIRECTION OF THE TEST PIECE: L

	RM	RP02	A5	Z	RP1
MEASUREMENT UNIT	MPA	MPA	%	%	NMM
			5.0 D		
OBTAINED	596	271	54,1	75,6	316
	594	267	54,7	78,2	315
	608	290	50,4	74,9	318
	604	268	53,3	79,3	315

GRAIN SIZE
Control lot No. - Weight :020000960596 - 7.776 KG - 17.143 LB
SPECIFICATION ASTME112 --
OBTAINED 6

MATERIAL IN COMPLIANCE WITH THE NORSOK M-630 MDS S01
IMPACT TEST
Control lot No. - Weight :020000960596 - 7.776 KG - 17.143 LB
SPECIFICATION EN ISO 148-1 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 196-
MEASUREMENT UNIT J

OBTAINED	196	190	187	185	187	171	171	198	199	171
	173	199								

TENSILE TEST
Control lot No. - Weight :020000960596 - 7.776 KG - 17.143 LB
SPECIFICATION ASTMA370-E8-0.5"SPEC DIRECTION OF THE TEST PIECE: L

	RMB	RP02B	ZB	AL2B
MEASUREMENT UNIT	KSI	KSI	%	%
				4,0 D
OBTAINED	88	39	77,4	51,8
	88	39	79,0	59,1
	88	39	74,8	59,3
	89	39	75,2	52,9

DATE 20.03.2023 BARBARA VIETTI MV(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne

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COUNTRY OF MELTING AND ORIGIN: ITALY, THE MATERIAL COMPLIES WITH FAR DFARS 252.225-7009 ALT 1.
The products delivered are conforming to EN10088-5 and bear the CE marking on the basis of the test results here reported and the continuous surveillance, assessment and approval by MPA NRW (certificate no. 0432-CPR-00166-01)
Material produced according to the system #Regulation 305/2011/EU of the European Parliament and of the Council of 9 March 2011#
DOCUMENT ISSUED IN AGREEMENT WITH TUEV BAYERN(11.1972) WAVING OF COUNTERSIGNING (SEE TUEV BAYERN LETTER DATED 17.01.80).
MARKING: SYMBOL OF THE MANUF. WORK, MATERIAL N. , CAST N., LOT N., RECEIVING AGENT STAMP
CORROSION TEST ACCORDING TO ASTM A262 PRACTICE E EN ISO 3651-2 PRACTICE A: SATISFACTORY.
ANTIMIXING TEST BY PORTABLE SPECTROMETRE: CONFORMING
EDDY CURRENT INSPECTION OF SURFACE ACCORDING TO EN 10277 CLASS 4.
DIMENSIONAL CONTROL ACCORDING TO EN 10278: SATISFACTORY.
NO WELDING REPAIR ON THE MATERIAL.
ULTRASONIC TEST ACCORDING TO EN 10308 Class.3: SATISFACTORY
QUALITY SYSTEM CERTIFIED BY KIWA CERMET ACCORDING TO UNI EN ISO 9001:2015 -IATF 16949:2016 (THE LAST ONE ONLY FOR WIRE ROD AND HOT ROLLED-PEELED-GROUND STAINLESS STEEL BARS).
INSPECTOR'S STAMP LF
MATERIAL CONFORM TO: 2015/863/UE (RoHS3) - 2011/65/UE (RoHS2) - 2000/53/UE - 2002/95/UE (RoHS) - 2003/11/UE - 2005/618/UE - PED 2014/68/UE e PE(S)R 2016/1105
THE MATERIAL IS FREE OF ANY MERCURY, MERCURY COMPOUNDS AND OR RADIUM CONTAMINATION AT TIME OF SHIPMENT AND WAS PRODUCED WITHOUT USING OZONE DEPLETING SUBSTANCES OF CLASS I AND II.
RADIOACTIVITY CONTROL PERFORMED WITH A GAMMA SPECTROMETER: ASTM E181.
GAMMA ACTIVITY ON THE PRODUCTS BELOW 0.1 BQ/G ACCORDING TO EU RESOLUTION 2013/59/EURATOM , IAEA RS-G-1.7 AND IAEA SSG-17.

CE 0432

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INDRA s.r.l.

DATE 20.03.2023

BARBARA VIETTI MV(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE

-Cogne

steel Acciai speciali

STEEL S.P.A.
AZIENDA CERTIFICATA UNI EN ISO 9001:2008

VIA C. COLOMBO 21
29010 SARMATO (PIACENZA)
TEL. 0523/886111 - FAX 0523/886298
E-MAIL: info@steelacciai.it
Societa' soggetta a direzione e coordinamento
della STEEL HOLDING S.A.P.A di Stefano e Marco Gatti

ATTESTATO DI CONTROLLO

TEST REPORT – RELEVE' DE CONTROLE – WERKSZEUGNIS N° 7497 DATA 18.07.2017

CLIENTE Customer / Client / Besteller: INDRA S.R.L.

ORDINE Order / Commande / Bestelung: F17-02430 del 11.07.2017 DDT 2333 del 18.07.2017

CONFERMA Confirmation / Confirmation de commande / Auftragsheslaligung

ACCIAIO Steel / Acier / Stahl: ASTM A350 LF2 CL.1

PROFILO Shape / Section / Profil: T.65

COLATA Reel / Coulée / Sclinetze: P0RI1500042203

STATO DI FORNITURA Delivery state / Elait de livraison / Lieferzusland: HOT ROLLED NORMALIZED

	COMPOSIZIONE CHIMICA % - CHEMICAL ANALYSIS % - COMPOSITION CHIMIQUE % - CHEMISCHE ZUSAMMENSETZUNG %															
	C	SI	MN	P	S	CR	NI	MO	AL	CU	V	NB	CEQ			
DI COLATA / On heat Sur coulée / Vonder Schmelze	.20	.23	.98	.010	.007	.11	.06	.010	.022	.10	.003	.002	.3986			
SUL PRODOTTO / On product Sur prod. / Am Erzeugnis																

	CARATTERISTICHE MECCANICHE – MECHANICAL PROPERTIES – CARACTERISTIQUES MECANIQUES – MECHANISCHE EIGENSCHAFTEN												
	TRATTAMENTO TERMICO Heat treatment / Traitement thermique Warmebehandlung	Diameter Nominal mm	Weight Tolerance /m	Diameter Actual mm	Re Y. Strenght N/mm²	Rm T. Strenght N/mm²	A Elongation %	Z Reduction %	Rm/Re	KV-46°CJ	HB Brinell h. on product		
DI COLATA / On heat Sur coulée / Vonder Schmelze	NORMALIZED				349	507	22.8	49.8		79 74 74	152		
SUL PRODOTTO / On product Sur prod. / Am Erzeugnis													

ALTRE PROVE Other test / Autres essais / Sonstige Prufungen: CERTIFICATO TTP N° 741 del 04.11.2016

COMMENTI Remarks / Remarques / Andere Bemerkungen: Si attesta che i prodotti sopra descritti sono conformi ai requisiti contrattuali. NORME UNI EN 10204.3.1 – NACE MR 01-75 / MR 01-03
We certify hereby that the above mentioned product are in accordance with the order prescriptions

Controllo Qualità Quality control / Controle de qualité / Quelstratsableilung: STEEL s.p.a.

mod. 214 – REV. 01

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Trattamenti Termici Piacentini TTP
T.T.P. s.r.l.
AZIENDA CERTIFICATA UNI EN ISO 9001:2008
Via C. Colombo snc 29010 Sarmato (PC)
Tel 0523.888115 (r.a.) Fax 0523-848002
P.Iva e C.F. 01456790334
Societa' soggetta a direzione e coordinamento
della STEEL HOLDING S.A.P.A di Stefano e Marco Gatti

CERTIFICATO DI CONTROLLO

TEST REPORT – RELEVE' DE CONTROLE – WERKSZEUGNIS N° 741 DATA 04.11.2016

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INDRA S.r.l.

CLIENTE Customer Client Besteller	STEEL ACCIAI S.P.A.	ORDINE Order Commande Bestelung		CONFERMA Confirmation Confirmation de commande Auftragsbestaligung	
ACCIAIO Steel Acier Stahl	ASTM A350 LF2 CL.1	PROFILO Shape Section Profil	T. 65	COLATA Reel Coulée Sclinetze	P0RI1500042203
STATO DI FORNITURA Delivery state Elait de livraison Lieferzusland	HOT ROLLED NORMALIZED				

	CARATTERISTICHE MECCANICHE – MECHANICAL PROPERTIES – CARACTERISTIQUES MECANIQUES – MECHANISCHE EIGENSCHAFTEN												
	TRATTAMENTO TERMICO Heat treatment / Traitement thermique Warmebehandlung	Diameter Nominal mm	Weight Tollerance /m	Diameter Actual mm	Re Y. Strenght N/mm²	Rm T. Strenght N/mm²	A Elongation %	Z Reduction %	Rm/Re	KV-46°CJ	HB Brinell h. on product		
DI COLATA / On heat Sur coulée / Vonder Schmelze	NORMALIZED				349	507	22.8	49.8		79 74 74	152		
SUL PRODOTTO / On product Sur prod. / Am Erzeugnis													

ALTRE PROVE Other test Autres essais Sonstige Prufungen	POSIZIONE PRELIEVO / TEST POSITION ¼ L ASTM A370
COMMENTI Remarks Remarques Andere Bemerkungen	Si attesta che i prodotti sopra descritti sono conformi ai requisiti contrattuali. Come da NORME UNI EN 10204.3.1

Controllo Qualità
Quality control
Controle de qualité
Quelstralsabteilung

TTP srl

mod. 214 – REV. 01

STELO / STEM

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST056657 / 2023 / 1
Prüfung/Test/Essai

Ordine nr: 2300258
Bestell
Your order
Commande

Conferma ordine nr: MI23003306
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23002720
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Hot rolled - Annealed COLD PROCESSED
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore:
Stempel des Werksachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung
Marking
Marquage

SPECIFICHE : Anforderungen / Requirements / Exigences	Note: Aufzeichnungen / Notes / Notes
VAL STOCK W2 A/1 1.4404/316L A,CF	
AD 2000-M. W 2 01/20 1.4401 A,CF (0)	(0)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
AD 2000-M. W 2 01/20 1.4404 A,CF (1)	(1)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
AISI . 316/316L	
AMS-QQ-S-763 D 316/316L A,CF	
ASME SA182 2021 S31600/03 A (2)	(2)Section II Part A 2021 EDITION For products machined directly from bar refer to ASME SA479.
ASME SA276 2021 S31600/03 A,CF (3)	(3)Section II Part A 2021 EDITION
ASME SA479 2021 S31600/03 A (4)	(4)Section II Part A 2021 EDITION
ASTM A182 2022A S31600/03 A (5)	(5)For products machined directly from bar refer also to ASTM A479.
ASTM A262 PR. E 2015 316/316L (6)	(6)Reapproved 2021
ASTM A276 2017 S31600/03 A,CF	
ASTM A370 2022 .	
ASTM A479 2021 S31600/03 A	
ASTM E10 2018 .	
ASTM E8 2022 .	
EN 10088 PART 3 2014 1.4401 A,CF	
EN 10088 PART 3 2014 1.4404 A,CF	
EN 10272 2016. 1.4401 A,CF	
EN 10272 2016. 1.4404 A,CF	
ISO 148-1 2016 .	
ISO 3651-2 98 METHOD A T1	
ISO 6506-1 2014 .	
ISO 6892-1 2019 .	
NACE MR0103 2015 S31600/03 A (7)	(7)ANSI/NACE MR0103/ISO 17945 November 23, 2015
NACE MR0175 2015 S31600/03 A (8)	(8)ANSI/NACE MR0175/ISO 15156-3, third edition November 23,2015
QQ-S-763 F 316/316L A,CF	
ACH CO . .	
KV L -196C . ISO 148-1	
MDS S01 5 316 A (9)	(9)Norsok-standard M-630 Edition 6, October 2013
ASTM A479 2021 S31600 A	

		Tolleranza: h9 - DIN671/EN10278 Toleranz/Allowance/Tolerance					
Pos. nr. Pos. nr. Item nr. Nr. de poste	Oggetto Gegenstand Product description Descrip. du produit	Dimensioni - mm Abmessungen Dimension Dimension	Lunghezza - mm Länge Length Longueur	Colata Schmelze Heat Coulée	Pezzi Stückzahl Pieces Pieces	Peso - KG Gewicht Weight Poids	Lotto nr. Losnr Lot nr Lot nr.
0060	Round	25,000	3000/ 3040	290765		164,0	209804470

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 29/05/2023	Direzione Qualità	Direzione Prodotto	Pagina
VCQ052 - MEST071270	Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Produktmanagement/Product Management/Direction Produit P.MESSORI	1 di 4

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST056657 / 2023 / 1
Prüfung/Test/Essai

Ordine nr: 2300258
Bestell
Your order
Commande

Conferma ordine nr: MI23003306
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23002720
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Hot rolled - Annealed COLD PROCESSED
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore:
Stempel des Werksachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung
Marking
Marquage

TEST ALLO STATO DI FORNITURA
Test on delivery condition Prüefung auf lieferbereitem produkt test a l'etat de fourniture Prueba sobre el material así come entregado

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.dam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais. mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement A5 %		Strizione Einschnürung Reduction of area Striction Z %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs demandées		min		200	235	500	20	-	-	-	-			-		
		max				900									315	
A	10	20	L	512	567	679	40		65					230		
H	10	20	L	504	571	682	38		62					232		

TEST ALLO STATO DI FORNITURA
Test on delivery condition / Prüefung auf lieferbereitem produkt / Test a l'etat de fourniture / Prueba sobre el material así come entregado

TEST		min	max	
A	Grain size for ASTM E112			4

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.dam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais. mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs demandées		min		-	-	-	-	-	-	-	-	-
		max										
F	10X10	-196	L	185	180	178	1,502	1,456	1,474	60	60	60

Test on delivery condition per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.dam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais. mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs demandées		min		210	-	517	-	35	-	50	-			-		
		max													235	
D	12,5	20	L	527		685		40		69				226		

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 29/05/2023	Direzione Qualità	Direzione Prodotto	Pagina
VCQ052 - MEST071270	Qualitätsmanagement/Quality Management/Gestion Qualité	Produktmanagement/Product Management/Direction Produit	2 di 4
	R.BERTELLI	P.MESSORI	

STELO / STEM

Acciaierie Valbruna S.p.A.

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Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST056657 / 2023 / 1

Ordine nr: 2300258 (Bestell / Your order / Commande)

Conferma ordine nr: MI23003306 (Werks/Our Order/Ref nr.)

Avviso di Spedizione: A-MI23002720 (Lieferanzeige/Packing list/B.L.)

Stato di fornitura: Hot rolled - Annealed COLD PROCESSED (Lieferzustand / Delivery state / Etat de livraison)

Tipo di Elaborazione: E+AOD (Erschmelzungsart / Melting process / Mode d'elaboration)

Qualità: 1.4401/1.4404/316/316L (Werkstoff/Grade/Nuance)

Marca: MVAPML (MAXIVAL) (Markenbezeichnung / Brand / Nuance)

Produttore: (Hersteller/Item/Usine productrice)

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: (Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice) AV

Punzone del Collaudatore: (Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur) MR

Punzonatura: 1.4401/1.4404 (Kennzeichnung / Marking / Marquage)

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion			Shear Shear		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		100	100	100	-	-	-	-	-	-
E	10X10	20	L	231	228	235						
G	10X10	20	L	227	220	221						

Tensile testing according to ISO 6892-1
Impact testing according to ISO 148-1
Mechanical properties according to ASTM A370.
Brinnell hardness according to ASTM E10
Tensile testing according to ASTM E8
Brinnell hardness according to ISO 6506-1

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Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat Schmelze/Coulée	C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	Co %	P %	S %	N %				
	min -	-	-	16,50	2,00	-	10,00	-	-	-	-	-	-	-	-
	max 0,030	1,00	2,00	18,00	2,50	1,00	13,00	-	0,045	0,030	0,100	-	-	-	-
290765	0,017	0,51	1,58	16,95	2,04	0,55	10,00	0,133	0,028	0,027	0,067				

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 29/05/2023
VCQ052 - MEST071270

Direzione Qualità
Qualitätsmanagement/Quality Management/Gestion Qualité
R.BERTELLI

Direzione Prodotto
Produktmanagement/Product Management/Direction Produit
P.MESSORI

STELO / STEM

Acciaierie Valbruna S.p.A.

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CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST056657 / 2023 / 1
Prüfung/Test/Essai

Ordine nr: 2300258
Bestell / Your order / Commande

Conferma ordine nr: MI23003306
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23002720
Lieferanzeige/Packing list/B.L

Stato di fornitura : Hot rolled - Annealed COLD PROCESSED
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung / Marking / Marquage

Reduction ratio = 61,1 : 1
Solution annealed 1040°C for 135'(total time)/water cooled.
SURFACE QUALITY COMPLIANT TO EN 10088-3 TAB.1 COND. 2H
"Issued in agreement with TÜV SÜD Industrie Service GMBH
(07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by
Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

Sono state soddisfatte tutte le condizioni richieste	Controllo antimescolanza con tecnica XRF/OES portatile : OK	Controllo visivo e dimensionale: soddisfa le esigenze
Die gestellen Anforderungen sind lt. Anlage erfüllt	Verwechslungprüfung: durch XRF/QES Gerät geführt : OK	Besichtigung und Ausmessung: ohne Beanstandung
The material has been furnished in accordance with the requirements	Antimixing testing performed with XRF/OES portable : OK	Visual inspection and dimensional checks:satisfactory
Le materiel à été trouvé conforme aux edgences	Contrôle antimélange svt technique XRF/QES portable : OK	Contrôle visuel et dimensions: satisfaisant

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD`S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

W9FED25084E80F83074DF3D62E3C62D45F

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 29/05/2023 VCQ052 - MEST071270	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité **R.BERTELLI**	Direzione Prodotto Produktmanagement/Product Management/Direction Produit **P.MESSORI**	Pagina 4 di 4

OTTURATORE / TIP

ACEROS INOXIDABLES OLARRA S.A
Cm. Larrabarri. Elotxelerri. 1
48180 Loiu. Bizkaia
España
www.olarra.com

Management Systems Certified by LRQA
ISO 9001 / SGI 6000360
ISO 14001 / SGI 1870678

ACEROS INOXIDABLES OLARRA

OLARRA ITALIA, S.R.L.
P.LE MEDAGLIE D'ORO, 1
20135 MILANO - ITALIA

Trade Mark - Zeichen des Lieferwerkes / Anagrama del suministrador

Works Inspector Stamp - Werkssachverständiger / Sello del Inspector 3

Certificate type - APZ Nach / Certificado tipo	Certificate nº - Prüf-Nr / Certificado nº	Date - Datum - Fecha
EN 10204/3.1	499910	21 - 07 - 2022

Our order Nº / Werks - Nr / Nº de Referencia	Heat / Schmelze / Colada	Your order Nº / Bestell - Nr / Pedido Nº
786381	272849	80/2022ALM

Steel Grade / Werkstoff / Calidad	According to / Entsprechend / Corresponde
X-2-CRNIMO-17-12-2 / 1.4404 MECAMAX	EN 10272-2016.

Shape and Size - Gegenstad / Perfil y dimensión	Tolerance - Toleranz / Tolerancia	Bundles / Bunde / Bultos	Bars / Stäbe / Barras	Weight / Gewicht / Peso
HEXAGON 12 mm	h11 /DIN 176 /EN 10278	1		520 Kg

Requirements - Anforderungen - Exigencias

EN 10088-3 2014.
ASTM A 479 / A 479M-21.
ASME SA 479 / SA 479M-21.
AD-2000-W2 2022/W10 2020.
NACE MR-0175/ISO 15156-3 2015.
ASTM A 276/A 276M-17.
Type 316-Type 316L.
PED 2014/68/EU, Annex I, Parag.4.3/DGR 2014/68/EU
Anhang I Absatz 4.3 Certificate/Zertifikat Nr. 348/2008/MUC

Melting process / Erschmelzungsart / Proceso de Fusión	Heat treatment / Wärmebehandlung / Tratamiento térmico
E.A.F. / A.O.D.	1060C 4H/Std WATER/WASSER/AGUA

Solution annealed/Abgeschreckt/Hipertemple-Cold drawn/Gezogen/Estirado-

Test results - Ergebnis der Prüfungen - Resultados de los ensayos

Reference standard / Bezugsnorm / Norma de referencia		Rp0,2% N/mm2 MPA	Rp 1% N/mm2 MPA	Rm N/mm2 MPA	A %L 5D	A %L 4D	Z %	Hardness Härte HBw	Impact test / Kerbschlagzaehigkeit / Resiliencia ISO V Jules
ISO 6892	Min.	200	235	500	20				
	Max.			900				315	
Temperature°C 20	Spec. Nº. / Probe Nr. / Pro Nº. 1	643	719	741	30		60	235	

	C	Si	Mn	P	S	Cr	Mo	Ni	N	Co	
Min.						16,50	2,00	10,00			
Max.	0,030	1,00	2,00	0,045	0,030	18,50	2,50	13,00	0,1000		
	0,021	0,543	1,49	0,030	0,027	16,61	2,04	10,05	0,0480	0,294	

Visual and dimensional inspection / Besichtigung und Ausmessung / Control visual y dimensional	Radioactivity inspection / Radioaktivitätskontrolle / Control de Radioactividad	Antimixing test / Spektrosk Verwechslungspr / Antimezcla	Grain Size / Korngrösse / Tamaño de grano
O.K.	O.K.	O.K.	

Remarks - Bemerkungen - Observaciones

IC test acc./IK prüfung nach EN ISO 3651-2/98 Met.A. OK

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EDV / EDP
Acc. EN 10204
Marian Tejedo
Quality Mng.

Works Inspector
Der Werkssachverständige
Inspector de fábrica

We hereby certify that material described herein complies with the requirements agreed on the order.

Firmado digitalmente por / Signed digitally by:
ACEROS INOXIDABLES OLARRA SA - CIF A48663546
Fecha / Date:21-07-2022 08:51

VITE BONNET / BONNET BOLTING

IPL S.r.l.
BULLONERIA - TIRANTERIA
SPECIALE E STANDARD

Via Papa Giovanni Paolo I, 306
21040 UBOLDO (VA)

Customer: **INDRA SRL**
C.SO XXII MARZO, 8
20135 MILANO (MI)

Date, 16-09-24 **Our Ref.** DDT 3256 / OC 1677 **of** 16-09-24 **Your Ref.** AF24 02616 29-07-24

CERTIFICATE UNI EN 10204 - 3.1 N.2402531

ITEM		QUANTITY	HEAT TREATMENT	PROTECTION	LOT nr.	HEAT nr.
59317M008020NF	HEX SOCKET HEAD CAP SCREW UNI 5931/ISO4762/DIN912 - A/SA/SA193 B7M M 8 x 20 HDG	10,00	quenched tempered	HOT DIP GALVANIZED ASTM A153 Cl. "C" / F2329	834803	BB7389*

101.99.0986CS-PED46

MECHANICAL PROPERTIES

values	R (MPa)	Rp 0,2 (MPa)	A4 (%)	Z (%)	HB (min. - max)	I.T. ISO-V -46 °C (J)
required	690 min	550 min	18 min.	50 min.	200 - 235	
actual	697	570	32,0	64,1	206	68 - 66 - 78

CHEMICAL COMPOSITION

values	C (%)	Mn (%)	Si (%)	P (%)	S (%)	Cr (%)	Mo (%)
required	0,380 - 0,480	0,750 - 1,000	0,150 - 0,350	0,035 max	0,040 max	0,800 - 1,100	0,150 - 0,250
actual	0,435	0,770	0,190	0,011	0,0260	1,070	0,160

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remarks: chemical and mechanical values, at delivery condition, are quoted by the relevant steel work certificate. VISUAL AND DIMENSIONAL TEST SATISFACTORY
According to: ASME II part. A ed. 2021. Macroetch test according to ASTM E381 result: S1; R1; C1.

If not mentioned the above test are performed at room temperature.
We certify that the fasteners were manufactured, sampled, tested and inspected in accordance with the specification and are consistent with order prescriptions.
Quality assurance system in accordance to European Directive 2014/68/EU annex I par. 4.3 (PED) and AD 2000 Merkblatt W0.
Certificates 0045/202/WZ1921/23 and TN/AD2000-W0/1921/23 TÜV NORD Systems GmbH & Co. KG.

IPL S.R.L.
RSQ A. Grisetti

ROSETTI MARINO ITEM 220

COD. VLBLNN01320100

TAG:

BLPH-MV-007, BLPH-MV-009

INDRA ITEM 220

COD. 00.VSF.2701/V

indra VALVES - ITALY	***Certificazione dei materiali*** ***EN 10204 3.1 come da allegati*** ***Material certification*** ***EN 10204 3.1 as per attachments***	**MD-02-04-IT-UK / VSF** **Rev. 16** **Data: 08-Nov-2018** **CM/IT/UK**

Nr. / *No.* **24-1835** — **Data** / *Date :* **23-Sep-2024**

Cliente / *Customer* **ROSETTI MARINO SPA**

Vs. ordine Nr. / *Your order Nr.* **1724000798 REV.2** — **Data** / *Date :* **26-Jun-2024**

Ns. commessa Nr. / *Our job Nr.* **24 01216** — **Data** / *Date :* **3-Jul-2024**

Ns. D.D.T. Nr. / *Our advise note Nr.* — **Data** / *Date :*

Ordine di produzione / Production order number : 24 01216/220 - 437405

Lotto / Material batch number : 437405

Pos. Cliente Customer Item	*Pos. Indra Indra Item*	*Codice / Code*		*Q.tà / Q.ty*	*Nr. di serie Serial Number*	*Descrizione /Description*
		Ns./ Our	*Vs. / Your*			
220	220	00.VSF.2701/V	VLBLNN01320100	2	106028,106029	INDRA BALL VALVE SBB-798-HR-25-F150RF3-F-D-DLF-DL-N-PG-L13-TG-TGW-TV-DP-PMI2-PD2-BI-GT-CR-TA-FE2-FS-FE-SPC1

Elenco / List

Componente / *Component*	Colata / Heat	Materiale *Material*	Numero del certificato Certificate number
Corpo Valvola / Valve Body	437405	AISI 316/316L NACE	MEST080041/2024/ - UT24003643
Closure F150RF3	435799	AISI 316/316L NACE	MEST080040/2024/ - UT24003628
Tirante / Stud bolt	281154	ASTM A193 B8M Cl.2	5086
Dado / Nut	160903S05	ASTM A194 Gr.8M	5066
Stelo antiespulsione sfera / Ball stem	E30822	AISI 316/316L NACE	173501
Sfera / Ball	072244	AISI 316/316L NACE	2020018438
Corpo bonnet/ Bonnet body	291893	AISI 316/316L NACE	MEST040838/2024/
Stelo spillo / Stem needle	172303	AISI 316/316L NACE	174495
Otturatore / Tip	290962	AISI 316/316L NACE	MEST140440/2023/

NOTE / **REMARKS :** TAG: BLPH-MV-007, BLPH-MV-009

PREPARATO DA: **ELEONORA RANZANI**
PREPARED BY: **DOCUMENTION MANAGER**

APPROVATO DA: **LUCIA NOSOTTI**
APPROVED BY: **QUALITY ASSURANCE MANAGER**

20013 Magenta (MI) Italy - Via Novara, 10/B-C
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CORPO VALVOLA / VALVE BODY

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST080041 / 2024 /
Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 01954
Bestell
Your order
Commande

Conferma ordine nr: MI24004883
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24003675
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage

SPECIFICHE :	Note:
Anforderungen / Requirements / Exigences	Aufzeichnungen / Notes / Notes
AV 316L VALVES A/1 1.4401/1.4404 A	
IS107 01 316 A	
MDS S01 5 316 A (0)	(0)Norsok-standard M-630 Edition 6, October 2013
MDS S17 1 316 A (1)	(1)Norsok-standard M-630: 2020 (2020-09-30)
AD 2000-M. W 2 2022 1.4401 A (2)	(2)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
AD 2000-M. W 2 2022 1.4404 A (3)	(3)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
API 6A 21 ANNEX M (4)	(4)Errata 1 (04/2019), Errata 2 (06/2020), Errata 3 (09/2020). Addendum 1 (July 2020) and Addendum 2 (June 2021).
API 6D 25 ANNEX H (5)	(5)Revision November 2021
ASME SA182 2023 S31600/03 A (6)	(6)Section II Part A 2023 EDITION For products machined directly from bar refer to ASME SA479.
ASME SA276 2023 S31600/03 A (7)	(7)Section II Part A 2023 EDITION
ASME SA479 2023 S31600/03 A (8)	(8)Section II Part A 2023 EDITION
ASTM A182 2024 S31600/03 A (9)	(9)For products machined directly from bar refer also to ASTM A479.
ASTM A262 PR. E 2015 316/316L (A)	(A)Reapproved 2021
ASTM A276 2024A S31600/03 A	
ASTM A370 2024 .	
ASTM A479 2023A S31600/03 A	
ASTM E381 2022 .	
ASTM E562 2019 . (B)	(B)19E01
EN 10088 PART 3 2014 1.4401 A	
EN 10088 PART 3 2014 1.4404 A	
EN 10222 PART 5 2017 1.4401 A	
EN 10222 PART 5 2017 1.4404 A	
EN 10272 2016. 1.4401 A	
EN 10272 2016. 1.4404 A	
ISO 148-1 2016 .	
ISO 6892-1 2019 .	
NACE MR0103 2015 S31600/03 A (C)	(C)ANSI/NACE MR0103/ISO 17945 November 23, 2015
NACE MR0175 4 S31600/03 A (D)	(D)ANSI/NACE MR0175/ISO 15156-3:2020 Fourth edition, approved 21 Sep 2022.

		Tolleranza: k12 Toleranz/Allowance/Tolerance					
Pos. nr. Pos. nr. Item nr. Nr. de poste	Oggetto Gegenstand Product description Descrip. du produit	Dimensioni - mm Abmessungen Dimension Dimension	Lunghezza - mm Länge Length Longueur	Colata Schmelze Heat Coulée	Pezzi Stückzahl Pieces Pièces	Peso - KG Gewicht Weight Poids	Lotto nr. Losnr. Lot nr. Lot nr
0010	Tondo	110,000	5814/ 6034	437405	1	440,0	314603170

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 13/06/2024 VCQ012 - MEST080041	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 1 di 7

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Avviso di Spedizione: A-MI24003675
Lieferanzeige/Packing list/B.L.

Stato di fornitura: Fucinato Solubilizzato - Pelato
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung / Marking / Marquage

TEST ALLO STATO DI FORNITURA
Test on delivery condition — Prüefung auf lieferbereitem produkt — test a l'etat de fourniture — Prueba sobre el material así come entregado

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg diam epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement A5 %		Strizione Einschnürung Reduction of area Striction Z %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti / Anforderungen/Required values / Valeurs démandées		min / max		205	240	510 / 690	45	-	-	-	-			- / 215		
A	10	20	L	276	309	573	59		69					151		
I	10	20	L	271	305	570	61		70					154		

TEST ALLO STATO DI FORNITURA
Test on delivery condition / Prüefung auf lieferbereitem produkt / Test a l'etat de fourniture / Prueba sobre el material así come entregado

TEST		min	max	
I	Dimensioni grano x ASTM E112			3
I	Ferrite delta %			0.8 %

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg diam epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti / Anforderungen/Required values / Valeurs démandées		min / max		60	60	60	-	-	-	-	-	-
B	10X10	-196	L	320	316	312	2,563	2,499	2,504	75	75	75

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg diam epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti / Anforderungen/Required values / Valeurs démandées		min / max		205	-	515	-	40	-	50	-			- / 215		
C	12,5	20	L	276		573		56		76				150		

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Vicenza, 13/06/2024 VCQ012 - MEST080041	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 2 di 7

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Certificato nr. Prüfung/Test/Essai — MEST080041 / 2024 /

Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 01954
Bestell / Your order / Commande

Conferma ordine nr: MI24004883
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24003675
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Lieferzustand / Delivery state / Etat de livraison — Fucinato Solubilizzato - Pelato

Tipo di Elaborazione: Erschmelzungsart / Melting process / Mode d'elaboration — E+AOD

Qualità: Werkstoff/Grade/Nuance — 1.4401/1.4404/316/316L

Marca: Markenbezeichnung / Brand / Nuance — MVAPML (MAXIVAL)

Produttore : Hersteller/Item/Usine productrice
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice — AV

Punzone del Collaudatore: Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur — MR

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung / Marking / Marquage

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs démandées		min		205	-	515	-	40	-	50	-			-		215
		max														
M	4,25	20	T	260		557		53		66				154		

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs démandées		min		60	60	60	-	-	-	-	-	-
		max										
D	10X10	-196	T	63	68	64	0,783	0,711	0,682	30	30	30

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion			Shear Shear		
Valori richiesti Anforderungen/Required values Valeurs démandées		min		100	100	100	-	-	-	-	-	-
		max										
H	10X10	20	L	343	340	338						
L	10X10	20	L	338	342	336						

Tensile testing according to ISO 6892-1
Impact testing according to ISO 148-1
Mechanical properties according to ASTM A370.
Ferrite content tested according to ASTM E562.

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Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata / Heat Schmelze/Coulée		PRE	C %	Si %	Mn %	Cr %	Mo %	Ni %	Co %	P %	S %	N %
	min	23,0	-	-	-	16,50	2,00	10,00	-	-	-	-
	max	28,0	0,030	1,00	2,00	18,00	2,50	13,00	-	0,045	0,030	0,100
437405		25,0	0,019	0,44	1,73	16,99	2,05	10,08	0,108	0,028	0,026	0,077

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 13/06/2024
VCQ012 - MEST080041

Direzione Qualità
Qualitätsmanagement/Quality Management/Gestion Qualité
R.BERTELLI

Direzione Prodotto
Produktmanagement/Product Management/Direction Produit
P.MESSORI

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Conferma ordine nr: MI24004883
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Avviso di Spedizione: A-MI24003675
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Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Liefernwerkes
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Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage

Colata /Heat Schmelze/Coulée	min 14,0 max 20,0	-	-	-	-	-	-	-
437405	Ni+(2*Mo) 14,2							

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

Furnace calibrated according to API 6A REV 21th ED ANNEX M.
Furnace calibrated according to API 6D REV 25th ED ANNEX H.
Macroetch test per ASTM E381: acceptable.
Reduction ratio = 28,8 : 1
SURFACE QUALITY GUARANTEE BY ET INSPECTION (max defect depth 1% DIAMETER)
UT ACC. TO A388/API 6A PSL3-EN 10308cl.3-ASME B16.34/IV
Treatment made on date 11/11/2023 in continuous
furnace FCB calibration expiry date 18/01/2024.
Solution annealed 1080°C for 160'(total time)/water cooled.
"Issued in agreement with TÜV SÜD Industrie Service GMBH
(07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by
Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

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Allegati / Anlagen / Enclosure / Attachments :
UT24003643 GT24001196

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Sono state soddisfatte tutte le condizioni richieste Die gestellen Anforderungen sind it. Anlage erfüllt The material has been furnished in accordance with the requirements Le materiel à été trouvé conforme aux exigences	Controllo antimescolanza con tecnica XRF/OES portatile : OK Verwechslungprüfung: durch XRF/QES Gerät geführt : OK Antimixing testing performed with XRF/OES portable : OK Contrôle antimélange svt technique XRF/QES portable : OK	Controllo visivo e dimensionale: soddisfa le esigenze Besichtigufg und Ausmessung: ohne Beanstandung Visual inspection and dimensional checks:satisfactory Contrôle visuel et dimensions: satisfaisant

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 13/06/2024 VCQ012 - MEST080041	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité **R.BERTELLI**	Direzione Prodotto Produktmanagement/Product Management/Direction Produit **P.MESSORI**	Pagina 4 di 7

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Conferma ordine nr / Werks/Our Order/Ref nr.: MI24004883

Avviso di Spedizione / Lieferanzeige/Packing list/B.L.: A-MI24003675

Stato di fornitura / Lieferzustand / Delivery state / Etat de livraison: Fucinato Solubilizzato - Pelato

Tipo di Elaborazione / Erschmelzungsart / Melting process / Mode d'elaboration: E+AOD

Qualità / Werkstoff/Grade/Nuance: 1.4401/1.4404/316/316L

Marca / Markenbezeichnung / Brand / Nuance: MVAPML (MAXIVAL)

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice: AV

Punzone del Collaudatore / Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur: MR

Punzonatura / Kennzeichnung / Marking / Marquage: 1.4401/1.4404/316/316L

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD`S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

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Vicenza, 13/06/2024 VCQ012 - MEST080041	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 5 di 7

CORPO VALVOLA / VALVE BODY

	Acciaierie Valbruna S.p.A. 36100 VICENZA (Italia) - Viale della scienza, 25 z.i. Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4	**CERTIFICATO** Certificate - Zeugnis - Certificat **N° UT24003643**	Pag 6 di 7
		CONTROLLO CON ULTRASUONI *Ultrasonic testing - Ultraschallprüfung - Controle par ultrasons*	

mod. UT02

MEST080041 / 2024 /

Cliente : INDRA S.R.L. *Customer*				**Lotto nr : 314603170** *Mill order*		
MARCA *Grade*	**DIMENSIONI - mm** *Size*	**COLATA** *Heat*	**BARRE** *Bars*	**PESO** *Weight*	**LUNGHEZZA - mm** *Length*	
MVAPML	Tondo 110,000	437405	N. 1	KG : 440,0	5814	6034

T. TERMICO *Heat Treatement*	**ESECUZIONE** *Condition*	**RUGOSITA'** *Roughness*	**TOLLERANZA** *Tolerance*
Solubilizzato	Pelato	µm	k12

Istruzione : PROC CND 040 *Work Instruction*		**Criteri Accettabilità : A388/API 6A PSL3-EN 10308 cl.3-ASME B16.34/IV** Acceptance Criteria

ELETTRONICA : Olympus Quickscan LT
Equipment

ACCOPPIANTE : ACQUA + 0253 SA
Couplant

VEL.CONTROLLO : 315 mm/sec
Testing Speed

TRASDUTTORI *Probes*	**TIPO ONDA** *Type of wave*	**FREQUENZA (MHZ)** *Frequency*	**DIMENSIONI (MM)** *Dimension*	**ANGOLO** *Angle*	**TARATURA** *Calibration*
64EL. 2.25MHZ	LONG.	2,25	128X25	0°	DAC

CONTROLLO AUTOMATICO [X] *Automatic inspection*	**CONTROLLO MANUALE** *Manual inspection*

NOTE :
Notes

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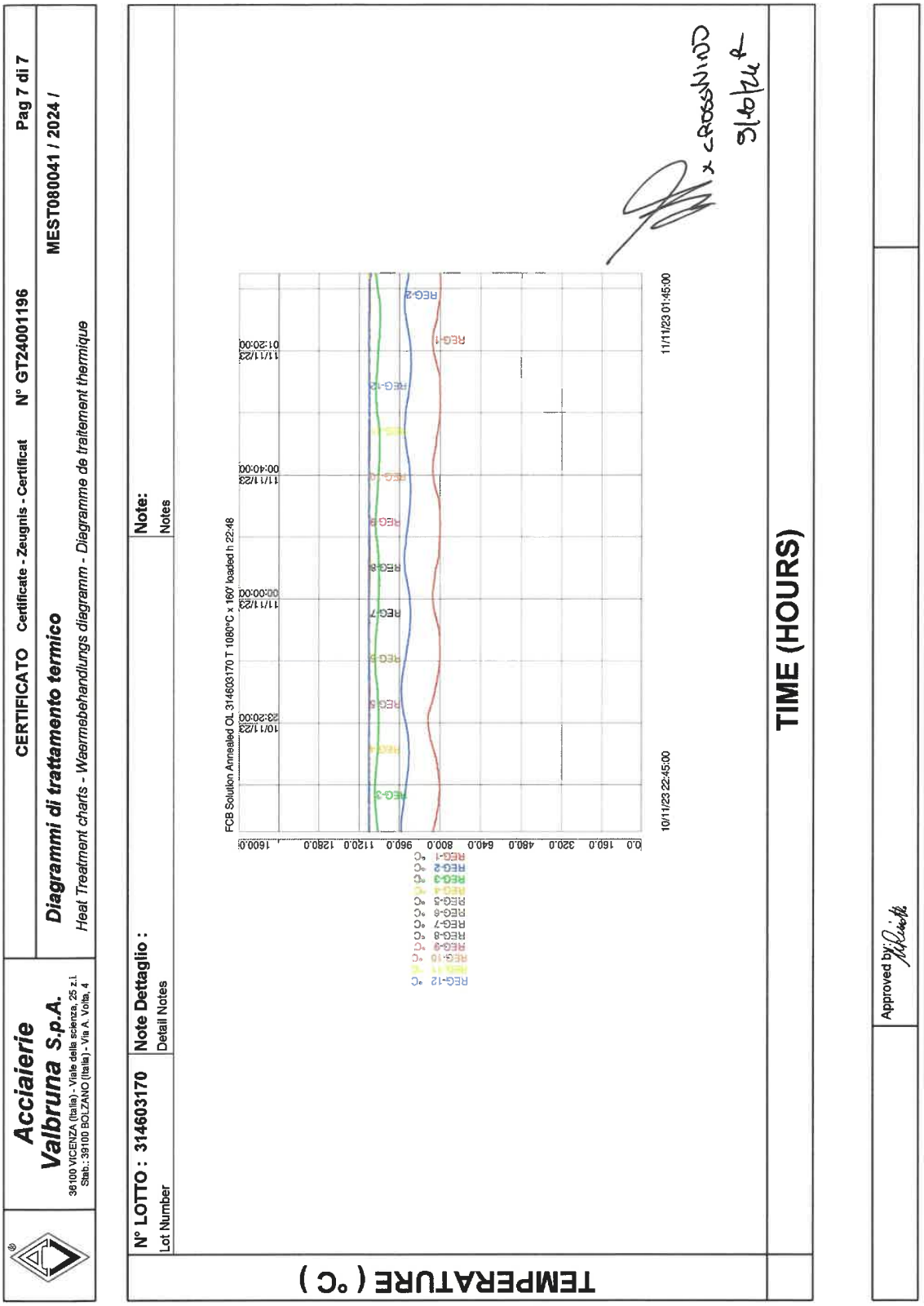
CONFORME [X] *Compliant*	**CONFORME IN DEROGA [ ]** *See Deviation*	**NON CONFORME [ ]** *Not Compliant*

ISPEZIONATO DA Inspected by	**VERIFICATO DA** Verified by	**APPROVATO DA** Approved by	**COLLAUDATORE** Inspector - Abnahmesachsverst - Inspecteur
FIRMA	**FIRMA**	**G.Parlato** ISO 9712 LEV. 2 IND2401253 **FIRMA**	

Date - Date **24/04/2024**

Operatori, strumenti e documenti di riferimento, utilizzati per il collaudo del materiale, sono identificati, controllati e/o calibrati in accordo alle norme EN, ISO e ASTM, richiamate nelle pratiche operative e istruzioni di pertinenza / *Operators, Equipment and reference documents, used for material inspection, are identified, checked and/or calibrated in accordance with EN/ISO or ASTM standards, reported in relevant documents.*

CORPO VALVOLA / VALVE BODY



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Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST080040 / 2024 /
Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 01954
Bestell
Your order
Commande

Conferma ordine nr: MI24004883
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24003675
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage

SPECIFICHE :
Anforderungen / Requirements / Exigences

AV 316L VALVES A/1 1.4401/1.4404 A
IS107 01 316 A
MDS S01 5 316 A (0)
MDS S17 1 316 A (1)
AD 2000-M. W 2 2022 1.4401 A (2)
AD 2000-M. W 2 2022 1.4404 A (3)
API 6A 21 ANNEX M (4)
API 6D 25 ANNEX H (5)
ASME SA182 2023 S31600/03 A (6)
ASME SA276 2023 S31600/03 A (7)
ASME SA479 2023 S31600/03 A (8)
ASTM A182 2024 S31600/03 A (9)
ASTM A262 PR. E 2015 316/316L (A)
ASTM A276 2024A S31600/03 A
ASTM A370 2024 .
ASTM A479 2023A S31600/03 A
ASTM E381 2022 .
ASTM E562 2019 . (B)
EN 10088 PART 3 2014 1.4401 A
EN 10088 PART 3 2014 1.4404 A
EN 10222 PART 5 2017 1.4401 A
EN 10222 PART 5 2017 1.4404 A
EN 10272 2016. 1.4401 A
EN 10272 2016. 1.4404 A
ISO 148-1 2016 .
ISO 6892-1 2019 .
NACE MR0103 2015 S31600/03 A (C)
NACE MR0175 4 S31600/03 A (D)

Note:
Aufzeichnungen / Notes / Notes

(0)Norsok-standard M-630 Edition 6, October 2013
(1)Norsok-standard M-630: 2020 (2020-09-30)
(2)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
(3)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
(4)Errata 1 (04/2019), Errata 2 (08/2020), Errata 3 (09/2020). Addendum 1 (July 2020) and Addendum 2 (June 2021).
(5)Revision November 2021
(6)Section II Part A 2023 EDITION For products machined directly from bar refer to ASME SA479.
(7)Section II Part A 2023 EDITION
(8)Section II Part A 2023 EDITION
(9)For products machined directly from bar refer also to ASTM A479.
(A)Reapproved 2021
(B)19E01
(C)ANSI/NACE MR0103/ISO 17945 November 23, 2015
(D)ANSI/NACE MR0175/ISO 15156-3:2020 Fourth edition, approved 21 Sep 2022.

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Pos. nr. Pos nr Item nr Nr. de poste	Oggetto Gegenstand Product description Descrip. du produit	Tolleranza: k12 Toleranz/Allowance/Tolerance Dimensioni - mm Abmessungen Dimension Dimension	Lunghezza - mm Lange Length Longueur	Colata Schmelze Heat Coulée	Pezzi Stückzahl Pieces Pièces	Peso - KG Gewicht Weight Poids	Lotto nr. Losnr Lot nr Lot nr.
0010	Tondo	110,000	5320/ 5563	435799	2	824,0	207704610

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31/05/24

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 13/06/2024	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité	Direzione Prodotto Produktmanagement/Product Management/Direction Produit	Pagina
VCQ012 - MEST080040	R.BERTELLI	P.MESSORI	1 di 7

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INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 01954
Bestell
Your order
Commande

Conferma ordine nr: MI24004883
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24003675
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage

TEST ALLO STATO DI FORNITURA
Test on delivery condition Prüefung auf lieferbereitem produkt test a l'etat de fourniture Prueba sobre el material asi come entregado

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement A5 %		Strizione Einschnürung Reduction of area Striction Z %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Heerte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs démandées		min max		205	240	510 690	45	-	-	-	-			-	215	
A	10	20	L	276	308	568	54		73					149		
I	10	20	L	279	313	573	54		73					153		

TEST ALLO STATO DI FORNITURA
Test on delivery condition / Prüefung auf lieferbereitem produkt / Test a l'etat de fourniture / Prueba sobre el material asi come entregado

TEST		min	max	
A	Dimensioni grano x ASTM E112			4
A	Ferrite delta %			1,4 %

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale - Lateral Expension - Lateral ex mm			Shear - Shear - % Shear %		
Valori richiesti Anforderungen/Required values Valeurs démandées		min max		60	60	60	-	-	-	-	-	-
E	10X10	-196	L	236	233	230	1,990	2,015	2,023	70	70	70

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Heerte Hardness Durete		
Valori richiesti Anforderungen/Required values Valeurs démandées		min max		205	-	515	-	40	-	50	-			-		
C	12,5	20	L	272		566		57		75						

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 13/06/2024 VCQ012 - MEST080040	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 2 di 7

Acciaierie Valbruna S.p.A.

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CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST080040 / 2024 /
Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 01954
Bestell
Your order
Commande

Conferma ordine nr: MI24004883
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24003675
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C		Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs demandées		min			60	60	60	-	-	-	-	-	-
		max											
F	10X10	-196	T		97	84	92	0,946	0,931	1,010	40	40	40

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C		Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion			Shear Shear		
Valori richiesti Anforderungen/Required values Valeurs demandées		min			100	100	100	-	-	-	-	-	-
		max											
D	10X10	20	L		265	260	261						
L	10X10	20	L		269	264	253						

Tensile testing according to ISO 6892-1
Impact testing according to ISO 148-1
Mechanical properties according to ASTM A370.
Ferrite content tested according to ASTM E562.

Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat Schmelze/Coulée																	
	min	23,0	-	-	-	16,50	2,00	10,00	-	-	-	-	-	-	-	-	-
	max	28,0	0,030	1,00	2,00	18,00	2,50	13,00	-	0,045	0,030	0,100	-	-	-	-	
	PRE		C %	Si %	Mn %	Cr %	Mo %	Ni %	Co %	P %	S %	N %					
435799	24,8		0,018	0,65	1,76	16,81	2,07	10,34	0,117	0,029	0,028	0,073					

Colata /Heat Schmelze/Coulée												
	min	14,0	-	-	-	-	-	-	-	-	-	-
	max	20,0	-	-	-	-	-	-	-	-	-	-
	Ni+(2*Mo)											
435799	14,5											

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 13/06/2024	Direzione Qualità	Direzione Prodotto	Pagina
VCQ012 - MEST080040	Qualitätsmanagement/Quality Management/Gestion Qualité	Produktmanagement/Product Management/Direction Produit	3 di 7
	R.BERTELLI	P.MESSORI	

Acciaierie Valbruna S.p.A.

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Certificato nr. MEST080040 / 2024 /
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INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 01954
Bestell
Your order
Commande

Conferma ordine nr: MI24004883
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24003675
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

Furnace calibrated according to API 6A REV 21th ED ANNEX M.
Furnace calibrated according to API 6D REV 24th ED ANNEX F.
Macroetch test per ASTM E381: acceptable.
Reduction ratio = 28,8 : 1
ET ACC. TO EN 10088-3 TAB.1
UT ACC. TO A388/API 6A PSL3-EN 10308cl.3-ASME B16.34/IV
Treatment made on date 02/09/2022 in continuous furnace
FCB calibration expiry date 29/09/2022.
Solution annealed 1080°C for 160'(total time)/water cooled.
"Issued in agreement with TÜV SÜD Industrie Service GMBH (07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

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Allegati / Anlagen / Enclosure / Attachments :
UT24003628 GT24001195

Sono state soddisfatte tutte le condizioni richieste
Die gestellen Anforderungen sind it. Anlage erfüllt
The material has been furnished in accordance with the requirements
Le materiel à été trouvé conforme aux exigences

Controllo antimescolanza con tecnica XRF/OES portatile : OK
Verwechslungprüfung: durch XRF/QES Gerät geführt : OK
Antimixing testing performed with XRF/OES portable : OK
Contrôle antimélange svt technique XRF/QES portable : OK

Controllo visivo e dimensionale: soddisfa le esigenze
Besichtigung und Ausmessung: ohne Beanstandung
Visual inspection and dimensional checks:satisfactory
Contrôle visuel et dimensions: satisfaisant

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 13/06/2024 VCQ012 - MEST080040	**Direzione Qualità** Qualitätsmanagement/Quality Management/Gestion Qualité **R.BERTELLI**	**Direzione Prodotto** Produktmanagement/Product Management/Direction Produit **P.MESSORI**	Pagina 4 di 7

CLOSURE F150RF3

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
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Stato di fornitura : Fucinato Solubilizzato - Pelato
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Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werksachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD`S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

W9P5CABA85300A753FC951EB0A73FB741D9

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	Acciaierie Valbruna S.p.A. 36100 VICENZA (Italia) - Viale della scienza, 25 z.i. Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4	**CERTIFICATO** Certificate - Zeugnis - Certificat **N° UT24003628**	**Pag 6 di 7**
		CONTROLLO CON ULTRASUONI *Ultrasonic testing - Ultraschallprüfung - Controle par ultrasons*	

mod. UT02

MEST080040 / 2024 /

Cliente : INDRA S.R.L. *Customer*				**Lotto nr : 207704610** *Mill order*		
MARCA *Grade*	**DIMENSIONI - mm** *Size*	**COLATA** *Heat*	**BARRE** *Bars*	**PESO** *Weight*	**LUNGHEZZA - mm** *Length*	
MVAPML	Tondo 110,000	435799	N. 2	KG : 824,0	5320	5563

T. TERMICO *Heat Treatement*	**ESECUZIONE** *Condition*	**RUGOSITA'** *Roughness*	**TOLLERANZA** *Tolerance*
Solubilizzato	Pelato	µm	k12

Istruzione : PROC CND 040 *Work Instruction*		**Criteri Accettabilità : ASTM A388** Acceptance Criteria

ELETTRONICA : Olympus Quickscan LT *Equipment*	
ACCOPPIANTE : ACQUA + 0253 SA *Couplant*	**VEL.CONTROLLO : 303 mm/sec** *Testing Speed*

TRASDUTTORI *Probes*	**TIPO ONDA** *Type of wave*	**FREQUENZA (MHZ)** *Frequency*	**DIMENSIONI (MM)** *Dimension*	**ANGOLO** *Angle*	**TARATURA** *Calibration*
64EL. 2.25MHZ	LONG.	2,25	128X25	0°	DAC

CONTROLLO AUTOMATICO [X] *Automatic inspection*	**CONTROLLO MANUALE** *Manual inspection*

NOTE :
Notes

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31/10/24

CONFORME [X] *Compliant*	**CONFORME IN DEROGA [ ]** *See Deviation*	**NON CONFORME [ ]** *Not Compliant*

ISPEZIONATO DA Inspected by **FIRMA**	**VERIFICATO DA** Verified by **FIRMA**	**APPROVATO DA** Approved by **G.Parlato** ISO 9712 LEV. 2 IND2401253 **FIRMA**	**COLLAUDATORE** Inspector - Abnahmesachsverst - Inspecteur

Date - Date **22/03/2023**

Operatori, strumenti e documenti di riferimento, utilizzati per il collaudo del materiale, sono identificati, controllati e/o calibrati in accordo alle norme EN, ISO e ASTM, richiamate nelle pratiche operative e istruzioni di pertinenza / *Operators, Equipment and reference documents, used for material inspection, are identified, checked and/or calibrated in accordance with EN/ISO or ASTM standards, reported in relevant documents.*

Acciaierie Valbruna S.p.A.
36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4

CERTIFICATO Certificate - Zeugnis - Certificat N° GT24001195 Pag 7 di 7

Diagrammi di trattamento termico MEST080040 / 2024 /

Heat Treatment charts - Waermebehandlungs diagramm - Diagramme de traitement thermique

N° LOTTO : 207704610
Lot Number

Note Dettaglio :
Detail Notes

Note:
Notes

TEMPERATURE (°C)

TIME (HOURS)

Approved by:

INDRA s.r.l.
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TIRANTE / STUD BOLT

t·e·c·n·o BOLT

CERTIFICATE

Nr. 5086 **05-08-24**

Page 1/1

INDRA SRL
VIA NOVARA 10/B-C
20013 MAGENTA MI
ITALIA

EN ISO 10204 3.1
CERTIFIED MATERIAL TEST REPORT

Your order: AF24 01970 24-06-24 Delivery note: 2072 05-08-24

Item	Materials	Description	Sizes	Batch	Heat		Quantity
1	ASTM A 193 B8M cl.2 101.99.0962SS	Tirante DIN 976/UNI 6610 ASTM A 193 B8M cl.2 M	10X30	66451	281154	N.	330

Pos. 110 - 120 - 130 - 140 - 150 - 160 - 165 VOCE DOGANALE 73181900 MERCE DI ORIGINE:ITALIA

CHEMICAL ANALYSIS

1		%C %	%Mn %	%P %	%S %	%Si %	%Cr %	%Ni %	%Mo %	%H.T. CST+SH
	REQ. MIN.						16	10	2	
	REQ. MAX.	0,080	2	0,045	0,030	1	18	14	3	
	ACT.VAL.	0,015	1,520	0,032	0,022	0,540	16,530	10,130	2,060	CST+SH

MECHANICAL PROPERTIES

1		UTS MPa	YS0,2 MPa	E %	R.A. %	H HB
	REQ. MIN.	760	655	15	45	
	REQ. MAX.					321
	ACT. VAL.	851	738	20,1	52	258

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9/10/24 R

We state that the material or fasteners, or both, were manufactered, sampled, tested and inspected in accordance with the specification and any supplementary requirements designated in the purchase/sales order and it was found to meet those requirements

tecnoBOLT s.r.l. - 20822 Seveso (MB) ITALY - way vignone n.7 - info@tecnobolt.com - www.tecnobolt.com

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DADO / NUT

t·e·c·n·o BOLT

CERTIFICATE

Nr. 5066 **26-07-24**

Page 1/1

INDRA SRL
VIA NOVARA 10/B-C
20013 MAGENTA MI
ITALIA

EN ISO 10204 3.1
CERTIFIED MATERIAL TEST REPORT

Your order: AF24 01970 24-06-24 Delivery note: 2000 26-07-24

Item	Materials	Description	Sizes	Batch	Heat		Quantity
9	ASTM A 194 Gr.8M 980.99.0002 Pos. 170 - 180 - 190 - 200 - 210 - 220 - 230 - 240 - 300	Dado UNI 5588/DIN 934 ASTM A 194 Gr.8M M Esagonale	10	64533	160903S05	N.	380



VOCE DOGANALE 73181900

MERCE DI ORIGINE ITALIA

CHEMICAL ANALYSIS

9		%C %	%Mn %	%P %	%S %	%Si %	%Cr %	%Ni %	%Mo %
	REQ. MIN.						16	10	2
	REQ. MAX.	0,08	2	0,045	0,030	1	18	14	3
	ACT.VAL.	0.033	0.950	0.033	0.002	0.340	16.400	10.050	2.020

MECHANICAL PROPERTIES

9		H HB	P.L. KN
	REQ. MIN.	126	
	REQ. MAX.	300	
	ACT. VAL.	147-156	29.9

x CROSSWIND
31/10/24 R

We state that the material or fasteners, or both, were manufactered, sampled, tested and inspected in accordance with the specification and any supplementary requirements designated in the purchase/sales order and it was found to meet those requirements

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STELO SFERA / BALL STEM

Rodacciai

23842 Bosisio Parini (LC) – Via Giuseppe Roda 1 – Italia
Tel. +39 031878111 – Fax +39 031878312
www.rodacciai.com – info@rodacciai.com

Azienda con sistema di gestione certificato da IGQ
secondo UNI EN ISO 9001:2015

The Company's Quality Management System
is certified by IGQ according to UNI EN ISO 9001:2015

CERTIFICATO DI CONTROLLO Inspection Certif N. 173501 Date 13/11/2023

Secondo According to . . . . . EN 10204:2004 3.1

ORDINE - Order N. 23/3822 Date 10/11/2023

D.d.T. - Delivery note N. 11634/04 Date 13/11/2023

Weight KG 128,00 **Odp. Nr.** 2022/A/13380
Tolerance ISO286-2 h9 + 0,000 - 0,043 mm **Bars Length** 3.000 - 3.050 mm

QUALITA' - Grade

STANDARD	EN 10088-3:2014	X2CrNiMo17-12-2	1.4404 / 316L
STANDARD	EN 10088-3:2023	X5CrNiMo17-12-2	1.4401 / 316

Mark RODACCIAI . . . . . 316 PLUS
PROFILO - Shape . . . . . ROUND
DIMENSIONE - Size . . . . . mm 18,00
ESECUZIONE - Form of delivery . . . . . ROUGH GROU.

COLATA - Heat E30822

ANALISI CHIMICA DI COLATA - Cast analysis % by mass

C	Mn	Si	S	P	Cr	Ni	Mo	Cu	Co	N
0,020	1,540	0,554	0,0290	0,031	16,620	10,020	2,030	0,441	0,280	0,0520

CARATTERISTICHE MECCANICHE ALLO STATO DI FORNITURA
Mechanical properties of the delivered material

		Tested
Tensile Strength	Rm (MPa)	695,3
Proof Stress	Rp (1) (MPa)	648,0
Proof Stress	Rp (0,2) (MPa)	580,7
Elongation	A 4 (%)	44,3
Elongation	A 5 (%)	41,1
Hardness	HBW	211,0
Reduction of area	Z (%)	68,0

NOTE - Notes

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Processo di Fusione: E + A. O. D.
Prova di Corrosione Intergranularena: ASTM A262-15 "E"
Trattamento termico: Temperatura di Solubilizzazione 1060°C
Tempo Mantenimento: 4 Ore, Raffreddamento in Acqua
Materiale conforme a: ASTM A276-16a / A479-16a / A182-24
ASME: SA479; SA276; SA182 - UNS 31600 - 31630 AISI 316-316L

Pag. 1 / Segue

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STELO SFERA / BALL STEM

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www.rodacciai.com – info@rodacciai.com

Azienda con sistema di gestione certificato da IGQ secondo UNI EN ISO 9001:2015

The Company's Quality Management System is certified by IGQ according to UNI EN ISO 9001:2015

Segue certificato di controllo N. 173501 Date 13/11/2023
Inspection Certificate's continuance

NOTE - Notes

Materiale Conforme a NACE MR-0175/ISO 15156-3:2015
NACE MR-103/ISO 17495-1:2016
Corrosione Intercristallina EN ISO 3651-2:98 Met.A

Melting Process: E + A. O. D
Intergranular corrosion tested to ASTM A262-15 "E"
Heat treatment: annealed temperature 1060°C
Soaking time: 4 Hours, Cooling in water
Material Compliant to: ASTM A276-16a / A479-16a / A182-24
ASME: SA479; SA276; SA182 - UNS 31600 - 31630 AISI 316-316L
According to: NACE MR-0175 / ISO 15156-3:2015
NACE MR-103/ISO 17495-1:2016
Intergranular Corrosion according to EN ISO 3651-2:98 Met.A

Surface quality condition 2H conforming also to EN 10277 class 3

We certify hereby, that the above mentioned products are consistent with the order prescriptions.
This certificate was generated by data system acc. to EN 10204, it is not necessary to be signed for validity.

Materiale conforme alle seguenti direttive/regolamenti europee:
. Regolamento REACH 2006/1907/CE e tutti successivi aggiornamenti, compresa la modifica M80 Direttiva Delegata 2022/1632, e SVHC Candidate List aggiornata al 17/01/2023.
. Direttiva ROHS 2011/657UE e tutti i successivi aggiornamenti, compresa la modifica M80 attraverso la Direttiva Delegata 2022/1632, e Decreto Legislativo 27 del 04/03/2014.
. Direttiva RAEE 2012/19/DE e tutti successivi aggiornamenti, compresa la modifica M1 attraverso la Direttiva 2018/849.
. Direttiva ELV (End-of-Life Vehicles) 2000/53/CE e tutti i successivi aggiornamenti, compresa la modifica M15 attraverso la Direttiva 2020/363
. Contaminazione Radioattiva, Direttiva 2013/59/EURATOM e Decreto Legislativo N.101 del 31 Luglio 2020.
. Canadian List 168 aggiornata al 16/03/2022.
. Minerali di Conflitto, Regolamento (UE) 2017/821 e tutti i successivi aggiornamenti, compresa la modifica M1 attraverso il Regolamento Delegato 2020/1588, e Dodd-Frank Wall Street Reform and Consumer Protection Act Section 1502.

Material conforming to the following European directives/regulation:
. REACH regulation 2006/1907/EC and all subsequent updates, including modification M80 Delegate Directive, and SVHC Candidate List updated to 01/17/2023.
. ROHS Directive 2011/65/EU and all subsequent updates, including the M80 amendment through the Delegated Directive 2022/1632, and Italian Legislative Decree 27 of 03/04/2014.
. WEEE Directive 2012/19/EU and all subsequent updates, including the M1 amendment through Directive 2018/849.
. ELV (End-of-Life Vehicles) Directive 2000/53/EC and all subsequent updates, including the modification M15 through Directive 2020/363
. Radioactive Contamination, Directive 2013/59/EURATOM and Italian Legislative Decree No. 101 of 31 July 2020.
. Canadian List 168 updated 03/16/2022.
. Conflict Minerals, Regulation (EU) 2017/821 and all subsequent updates, including amendment M1 through Delegated Regulation 2020/1588, and Dodd-Frank Wall Street Reform and Consumer Protection Act Section 1502.

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Pag. 2 / 2 RODACCIAI: The Work Inspector
Alessia Porta

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COGNE ACCIAI SPECIALI S.p.a.
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CAP. SOC. 200.000.000 EUR INT. VERS.
C.F. 02187360067
VAT: IT00571320076 - R.E.A. n. AO-50474

Company with Management Systems certified according to ISO 9001, IATF 16949, EN 9100 and ISO 14001.

INSPECTION CERTIFICATE 3.1 (EN 10204:2004)

DOCUMENT NUMBER 2020018438

SFERA / BALL

CUSTOMER'S ORDER:	254		
MANUFACTURER'S WORKS:	AOSTA, VIA PARAVERA 16 - ITALY		
PRODUCER OF THE DOC:	QUALITY DEPARTMENT		
MANUFACTURER'S WORKS ORDER NO:	0001118068 / 000010		
MARK OF THE MANUFACTURER:	COGNE		
DISPATCH NOTE:	81346050 / 000010 WEIGHT: 232 KG / 512 LB		
THE CERTIFIED PRODUCTS ARE COMPLYING TO THE PURCHASE ORDER, EXCEPT FOR EXEMPTIONS AGREED WITH THE CUSTOMER, IF ANY.			
INTERNAL SPEC:	STOCKBARREW2	TECHNICAL RULE:	AD2000
PRODUCT:	PEL PEELED ROUND BARS TOLERANCE: ISOK11		
SURFACE FINISH:	2B Cold Finished		
PRODUCT DELIVERY CONDITION:	RS SOLUTION ANNEALED		
PRODUCT DIMENSIONS (mm):	45,000 (1,772 in)	LENGTH (mm)	06000 06200 (00236 00244 in)
GRADE:	AISI 316/316L EN1.4401/4404	INTERNAL GRADE:	F316L IMCO
IDENTIFICATION HEAT NO:	072244	IDENTIFICATION LOT NO:	201970
MARKING OF THE PRODUCT:	1.4404	TEST PIECE N:	197

REFERENCE NORMS: EN 10088-3 2014, EN 10272 2016, ASTM A276/A276M, ASTM A479/A479M, ASTM A193 B8MCLASSE 1D, ASME SA276/SA276M, ASME SA479/SA479M, AMS 5653J, AMS 5648M, ISO15156-3/NACE MR0175 2015, NACE MR0103/ISO 17945, NORSOK M630 MDSS01 REV5.
REFERENCE NORMS FOR CHEMICAL COMPOSITION AND MECHANICAL PROPERTIES: ASTM A182, ASME SA182.
REFERENCE NORMS ONLY FOR CHEMICAL COMPOSITION: EN 10222-5 2017,ASTM A403-07a, ASTM A484-18a,ASTM A314-08, AMS-QQ-S-763D.
ASME SECT.II PART A EDITION 2015-2017-2019
THE PRODUCT IS CONFORMING TO THE CONTRACT AGREEMENT AND TO THE RULE AD2000-MERKBLATT W0/W2.
ASTM A484 DOES NOT APPLY FOR SIZE AND LENGTH TOLERANCES.
STEELMAKING EAF + AOD + CONTINUOUS CASTING
REFERENCE NORM ASME BPVC.II.A-2015.
HOT ROLLED
REDUCTION RATIO 14,8

CHEMICAL LADLE ANALYSIS ACCORDING TO ASTM A751 - EN ISO 14284
Control lot No. - Weight :020000828767 - 83.288 KG - 183.616 LB

ELEMENTS	C	Si	Mn	P	S	N	Cr	Mo	Ni	Cu
OBTAINED	0,015	0,34	1,74	0,027	0,024	0,080	16,78	2,05	10,21	0,41

ELEMENTS	Co
OBTAINED	0,16

HARDNESS TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000828961 - 2.300 KG - 5.071 LB
SPECIFICATION ENISO6506 HARDNESS TEST HB TESTING METHOD: 10/3000
OBTAINED 171

IMPACT TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000828961 - 2.300 KG - 5.071 LB
SPECIFICATION EN ISO 148-1-KV2 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 20
MEASUREMENT UNIT J

OBTAINED	430	432	440	430	439	434	434	440	438	433
	431	439								

DATE 18.05.2020 BARBARA VIETTI MV(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne
REVIEW DATE 01.12.2021 N. REVIEW 1

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xcrossw.wd
01/10/21

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SFERA / BALL

TENSILE TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000828961 - 2.300 KG - 5.071 LB
SPECIFICATION EN-ISO6892-1 DIRECTION OF THE TEST PIECE: L

	RM	RP02	A5	Z	RP1
MEASUREMENT UNIT	MPA	MPA	% 5.0 D	%	NMM
OBTAINED	578	286	56,1	80,5	321
	592	287	55,6	80,1	321
	582	274	54,2	79,4	306
	585	274	55,6	81,2	312

GRAIN SIZE
Control lot No. - Weight :020000828961 - 2.300 KG - 5.071 LB
SPECIFICATION ASTME112 --
OBTAINED 5 7

MATERIAL IN COMPLIANCE WITH THE NORSOK M-630 MDS S01
IMPACT TEST
Control lot No. - Weight :020000828961 - 2.300 KG - 5.071 LB
SPECIFICATION EN ISO 148-1 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 196-
MEASUREMENT UNIT J
OBTAINED 181 183 188 177 175 200 188 174 194 183
197 173

TENSILE TEST
Control lot No. - Weight :020000828961 - 2.300 KG - 5.071 LB
SPECIFICATION ASTMA370-E8-0.5"SPEC DIRECTION OF THE TEST PIECE: L

	RMB	RP02B	ZB	AL2B
MEASUREMENT UNIT	KSI	KSI	%	% 4,0 D
OBTAINED	85	40	80,7	59,7
	85	42	81,2	60,3
	86	42	81,3	60,1
	85	41	81,0	58,6

xcROSSWIND 9/10/24 R

COUNTRY OF MELTING AND ORIGIN: ITALY, THE MATERIAL COMPLIES WITH FAR DFARS 252.225-7009 ALT 1.
The products delivered are conforming to EN10088-5 and bear the CE marking on the basis of the test results here reported and the continuous surveillance, assessment and approval by MPA NRW (certificate no. 0432-CPR-00166-01)
Material produced according to the system #Regulation 305/2011/EU of the European Parliament and of the Council of 9 March 2011#
DOCUMENT ISSUED IN AGREEMENT WITH TUEV BAYERN(11.1972) WAVING OF COUNTERSIGNING (SEE TUEV BAYERN LETTER DATED 17.01.80).
MARKING: SYMBOL OF THE MANUF. WORK, MATERIAL N. , CAST N., LOT N., RECEIVING AGENT STAMP
CORROSION TEST ACCORDING TO ASTM A262 PRACTICE E EN ISO 3651-2 PRACTICE A: SATISFACTORY.

DATE 18.05.2020 BARBARA VIETTI MV(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne
REVIEW DATE 01.12.2021 N. REVIEW 1

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Company with Management Systems certified according to ISO 9001, IATF 16949, EN 9100 and ISO 14001.

SFERA / BALL

ANTIMIXING TEST BY PORTABLE SPECTROMETRE: CONFORMING
EDDY CURRENT INSPECTION OF SURFACE ACCORDING TO EN 10277 CLASS 4.
DIMENSIONAL CONTROL ACCORDING TO EN 10278: SATISFACTORY.
NO WELDING REPAIR ON THE MATERIAL.
ULTRASONIC TEST ACCORDING TO EN 10308 Class.3: SATISFACTORY
QUALITY SYSTEM CERTIFIED TO UNI EN ISO 9001:2015 -IATF 16949:2016 (THE LAST ONE ONLY FOR WIRE ROD AND HOT ROLLED-PEELED-GROUND STAINLESS STEEL BARS).
MATERIAL ACCORDING TO NORSOK M630 EDITION 6.
INSPECTOR'S STAMP LF
THE PRODUCT SATISFIES THE DIRECTIVES: 2015/863/EU (ROHS3) - 2011/65/EU (ROHS2) - 2000/53/EU - 2002/95/EU(RoHS) - 2003/11/EU-2005/618/EU AND PED 2014/68/EU.
THE MATERIAL IS FREE OF ANY MERCURY, MERCURY COMPOUNDS AND OR RADIUM CONTAMINATION AT TIME OF SHIPMENT AND WAS PRODUCED WITHOUT USING OZONE DEPLETING SUBSTANCES OF CLASS I AND II.
RADIOACTIVITY CONTROL PERFORMED WITH A GAMMA SPECTROMETER: ASTM E181.
GAMMA ACTIVITY ON THE PRODUCTS BELOW 0.1 BQ/G ACCORDING TO EU RESOLUTION 2013/59/EURATOM , IAEA RS-G-1.7 AND IAEA SSG-17.

CE 0432

INDRA S.r.l.
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DATE 18.05.2020 BARBARA VIETTI MV(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne
REVIEW DATE 01.12.2021 N. REVIEW 1

CORPO BONNET / BONNET BODY

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST040838 / 2024 /
Prüfung/Test/Essai

Ordine nr: ORD.24000161
Bestell / Your order / Commande

Conferma ordine nr: **AN24000318**
Werks/Our Order/Ref nr.

Avviso di Spedizione: **A-AN24000296**
Lieferanzeige/Packing list/B.L.

Stato di fornitura: Laminato - Solubilizzato FINITO A FREDDO
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore:
Hersteller/Item/Usine productrice
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung / Marking / Marquage

SPECIFICHE :
Anforderungen / Requirements / Exigences

Note:
Aufzeichnungen / Notes / Notes

VAL STOCK W2 A/1 1.4404/316L A,CF
AD 2000-M. W 2 2022 1.4401 A,CF (0)
AD 2000-M. W 2 2022 1.4404 A,CF (1)
(0)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
(1)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022

AISI . 316/316L
AMS-QQ-S-763 D 316/316L A,CF
ASME SA182 2023 S31600/03 A (2)
(2)Section II Part A 2023 EDITION For products machined directly from bar refer to ASME SA479.

ASME SA276 2023 S31600/03 A,CF (3)
(3)Section II Part A 2023 EDITION

ASME SA479 2023 S31600/03 A (4)
(4)Section II Part A 2023 EDITION

ASTM A182 2023 S31600/03 A (5)
(5)For products machined directly from bar refer also to ASTM A479.

ASTM A262 PR. E 2015 316/316L (6)
ASTM A276 2024A S31600/03 A,CF
ASTM A370 2022 .
(6)Reapproved 2021

ASTM A479 2023A S31600/03 A
ASTM E10 2023 .
ASTM E8 2022 .
EN 10088 PART 3 2014 1.4401 A,CF
EN 10088 PART 3 2014 1.4404 A,CF
EN 10272 2016. 1.4401 A,CF
EN 10272 2016. 1.4404 A,CF
ISO 148-1 2016 .
ISO 3651-2 98 METHOD A T1
ISO 6506-1 2014 .
ISO 6892-1 2019 .

NACE MR0103 2015 S31600/03 A (7)
(7)ANSI/NACE MR0103/ISO 17945 November 23, 2015

NACE MR0175 4 S31600/03 A (8)
(8)ANSI/NACE MR0175/ISO 15156-3:2020 Fourth edition, approved 21 Sep 2022.

QQ-S-763 F 316/316L A,CF
ACH CO . .
KVL -196C . ISO 148-1
MDS S01 5 316 A,CF (9)
ASTM A479 2023A S31600 A
(9)Norsok-standard M-630 Edition 6, October 2013

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Tolleranza: h11 - DIN668/EN10278
Toleranz/Allowance/Tolerance

Pos. nr.	Oggetto	Dimensioni - mm	Lunghezza - mm	Colata	Pezzi	Peso - KG	Lotto nr.
0010	Esagono	22,000	3030/ 3030	291893		901,0	217704270

CROSSWIND 21/10/24

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 21/03/2024 VCQ012 - MEST040838	**Direzione Qualità** Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	**Direzione Prodotto** Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 1 di 4

CORPO BONNET / BONNET BODY

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST040838 / 2024 /
Prüfung/Test/Essai

Ordine nr: ORD.24000161
Bestell Your order Commande

Conferma ordine nr: AN24000318
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-AN24000296
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Laminato - Solubilizzato FINITO A FREDDO
Lieferzustand Delivery state Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart Melting process Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes Trade marks Sigles de l'usine productrice

Punzone del Collaudatore:
Stempel des Werkssachverständigen Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung Marking Marquage

TEST ALLO STATO DI FORNITURA
Test on delivery condition Prüefung auf lieferbereitem produkt test a l'etat de fourniture Prueba sobre el material así come entregado

1) L=longitudinale/Längs, T=trasversale/quer, O=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg./diam. Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement A5 %		Strizione Einschnürung Reduction of area Striction Z %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Härte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		200	235	500 900	20	-	-	-	-			-		315
A	10	20	L	480	548	678	44		67					224		
G	10	20	L	484	550	683	43		65					227		

TEST ALLO STATO DI FORNITURA
Test on delivery condition / Prüefung auf lieferbereitem produkt / Test a l'etat de fourniture / Prueba sobre el material así come entregado

TEST		min	max	
G	Dimensioni grano x ASTM E112			5

Charpy per ISO 148-1

1) L=longitudinale/Längs, T=trasversale/quer, O=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg./diam. Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		-	-	-	-	-	-	-	-	-
B	10X10	-196	L	129	134	139	1,487	1,328	1,210	60	58	60

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/Längs, T=trasversale/quer, O=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg./diam. Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Härte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		210	-	517	-	35	-	50	-			-		235
C	125	20	L	483		681		46		69				222		

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 21/03/2024	Direzione Qualità	Direzione Prodotto	Pagina
VCQ012 - MEST040838	Qualitätsmanagement/Quality Management/Gestion Qualité	Produktmanagement/Product Management/Direction Produit	2 di 4
	R.BERTELLI	P.MESSORI	

CORPO BONNET / BONNET BODY

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1 (Nach/According to/Selon)

Certificato nr. MEST040838 / 2024 / (Prüfung/Test/Essai)

Ordine nr: ORD.24000161 (Bestell / Your order / Commande)

Conferma ordine nr: AN24000318 (Werks/Our Order/Ref nr.)

Avviso di Spedizione: A-AN24000296 (Lieferanzeige/Packing list/B.L.)

Stato di fornitura: Laminato - Solubilizzato FINITO A FREDDO (Lieferzustand / Delivery state / Etat de livraison)

Tipo di Elaborazione: E+AOD (Erschmelzungsart / Melting process / Mode d'elaboration)

Qualità: 1.4401/1.4404/316/316L (Werkstoff/Grade/Nuance)

Marca: MVAPML (MAXIVAL) (Markenbezeichnung / Brand / Nuance)

Produttore: (Hersteller/Item/Usine productrice)

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: (Zeichen des Liefermwerkes / Trade marks / Sigles de fusine productrice)

Punzone del Collaudatore: (Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur)

Punzonatura: 1.4401/1.4404 (Kennzeichnung / Marking / Marquage)

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Lung.class Spess. Barre Diam. Dicke Width Diam. Thick Mass Lang. diam. epais mm	°C		Posiz. Saggio Prelievo Location Emplacement	Resilienza Heat-affected zone Impact Value Résilience KV2 J			Espansione laterale Lateral Expansion			Shear Shear		
Valori richiesti Anforderungswerte Required values Valeurs demandées		min max			100	100	100	-	-	-	-	-	-
F	10X10	20	L		189	194	199						
H	10X10	20	L		180	190	186						

Tensile testing according to ISO 6892-1
Impact testing according to ISO 148-1
Mechanical properties according to ASTM A370.
Brinnell hardness according to ASTM E10
Tensile testing according to ASTM E8
Brinnell hardness according to ISO 6506-1

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Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata / Heat Schmelze/Coulée	C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	Co %	P %	S %	N %
min - max	0,030	1,00	2,00	16,50 18,00	2,00 2,50	1,00	10,00 13,00		0,045	0,030	0,100
291893	0,019	0,52	1,55	16,65	2,01	0,48	10,17	0,140	0,030	0,030	0,066

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 21/03/2024
VCQ012 - MEST040838

Direzione Qualità (Qualitätsmanagement/Quality Management/Gestion Qualité)
R.BERTELLI

Direzione Prodotto (Produktmanagement/Product Management/Direction Produit)
P.MESSORI

CORPO BONNET / BONNET BODY

Acciaierie Valbruna S.p.A.

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Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST040838 / 2024 /
Prüfung/Test/Essai

Ordine nr: ORD.24000161
Bestell / Your order / Commande

Conferma ordine nr: AN24000318
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-AN24000296
Lieferanzeiger/Packing list/B.L

Stato di fornitura: Laminato - Solubilizzato FINITO A FREDDO
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore:
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice

Punzone del Collaudatore:
Stempel des Werkssachverständigen / Inspector's stamp/Poingon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung / Marking / Marquage

Reduction ratio = 78,0 : 1
Solution annealed 1060°C for 180'(total time)/water cooled.
SURFACE QUALITY COMPLIANT TO EN 10088-3 TAB.1 COND. 2H
"Issued in agreement with TÜV SÜD Industrie Service GMBH
(07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by
Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

Sono state soddisfatte tutte le condizioni richieste Die gestellen Anforderungen sind lt. Anlage erfüllt The material has been furnished in accordance with the requirements Le materiel à été trouvé conforme aux exigences	Controllo antimescolanza con tecnica XRF/OES portatile : OK Verwechslungprüfung: durch XRF/OES Gerät geführt : OK Antimixing testing performed with XRF/OES portable : OK Contrôle antimélange svt technique XRF/OES portable : OK	Controllo visivo e dimensionale: soddisfa le esigenze Besichtigufig und Ausmessung: ohne Beanstandung Visual inspection and dimensional checks:satisfactory Contrôle visuel et dimensions: satisfaisant

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD'S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

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9/10/24

STELO / STEM

Rodacciai

23842 Bosisio Parini (LC) – Via Giuseppe Roda 1 – Italia
Tel. +39 031878111 – Fax +39 031878312
www.rodacciai.com – info@rodacciai.com

Azienda con sistema di gestione certificato da IGQ secondo UNI EN ISO 9001:2015

The Company's Quality Management System is certified by IGQ according to UNI EN ISO 9001:2015

CERTIFICATO DI CONTROLLO Inspection Certif N. 174495 Date 14/11/2023

Secondo According to . . . . . EN 10204:2004 3.1

ORDINE - Order N. 372 Date 10/11/2023

D.d.T. - Delivery note N. 11714/04 Date 14/11/2023

Weight KG 411,00 **Odp. Nr.** 2022/A/58282
Tolerance ISO286-2 h9 + 0,000 - 0,036 mm **Bars Length** 3.000 - 3.050 mm

QUALITA' - Grade

STANDARD	EN 10088-3:2014	X2CrNiMo17-12-2	1.4404 / 316L
STANDARD	EN 10088-3:2023	X5CrNiMo17-12-2	1.4401 / 316

Mark RODACCIAI . . . . . 316 PLUS
PROFILO - Shape . . . . . ROUND
DIMENSIONE - Size . . . . . mm 10,00
ESECUZIONE - Form of delivery . . . . . ROUGH GROU.

COLATA - Heat 172303

ANALISI CHIMICA DI COLATA - Cast analysis % by mass

C	Mn	Si	S	P	Cr	Ni	Mo	Cu	Co	N
0,021	1,820	0,360	0,0220	0,025	16,640	10,100	2,100	0,360	0,150	0,0760

CARATTERISTICHE MECCANICHE ALLO STATO DI FORNITURA
Mechanical properties of the delivered material

		Tested
Tensile Strength	Rm (MPa)	746,0
Proof Stress	Rp (1) (MPa)	692,0
Proof Stress	Rp (0,2) (MPa)	612,0
Elongation	A 5 (%)	32,0
Hardness	HBW	226,0
Reduction of area	Z (%)	51,0

NOTE - Notes

Processo di Fusione: E + A. O. D.
Trattamento termico: Temperatura di Solubilizzazione 1060°C
Tempo Mantenimento: 4 Ore, Raffreddamento in Acqua
Prova di Corrosione Intergranularena: ASTM A262-15 "E"
Materiale Conforme a NACE MR-0175/ISO 15156-3:2015
NACE MR-103/ISO 17495-1:2016

Pag. 1 / Segue

CROSSWIND
9/10/24

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www.rodacciai.com – info@rodacciai.com

Azienda con sistema di gestione certificato da IGQ secondo UNI EN ISO 9001:2015

The Company's Quality Management System is certified by IGQ according to UNI EN ISO 9001:2015

Segue certificato di controllo N. 174495 Date 14/11/2023
Inspection Certificate's continuance

NOTE - Notes

Materiale conforme a: ASTM A276-24a / A479-23a/ A182-24
ASME SA: 479-21 276-21 182; UNS 31600 - 31630 AISI 316-316L
Corrosione Intercristallina EN ISO 3651-2:98 Met.A

Melting Process: E + A. O. D
Heat treatment: annealed temperature 1060°C
Soaking time: 4 Hours, Cooling in water
Intergranular corrosion tested to ASTM A262-15 "E"
According to: NACE MR-0175 / ISO 15156-3:2015
NACE MR-103/ISO 17495-1:2016
Material Compliant to: ASTM A276-24a / A479-23a/ A182-24
ASME SA: 479-21 276-21 182; UNS 31600 - 31630 AISI 316-316L
Intergranular Corrosion according to EN ISO 3651-2:98 Met.A

Surface quality condition 2H conforming also to EN 10277 class 3

We certify hereby, that the above mentioned products are consistent with the order prescriptions.
This certificate was generated by data system acc. to EN 10204, it is not necessary to be signed for validity.

Materiale conforme alle seguenti direttive/regolamenti europee:
. Regolamento REACH 2006/1907/CE e tutti successivi aggiornamenti, compresa la modifica M80 Direttiva Delegata 2022/1632, e SVHC Candidate List aggiornata al 17/01/2023.
. Direttiva ROHS 2011/65/UE e tutti i successivi aggiornamenti, compresa la modifica M80 attraverso la Direttiva Delegata 2022/1632, e Decreto Legislativo 27 del 04/03/2014.
. Direttiva RAEE 2012/19/UE e tutti successivi aggiornamenti, compresa la modifica M1 attraverso la Direttiva 2018/849.
. Direttiva ELV (End-of-Life Vehicles) 2000/53/CE e tutti i successivi aggiornamenti, compresa la modifica M15 attraverso la Direttiva 2020/363
. Contaminazione Radioattiva, Direttiva 2013/59/EURATOM e Decreto Legislativo N.101 del 31 Luglio 2020.
. Canadian List 168 aggiornata al 16/03/2022.
. Minerali di Conflitto, Regolamento (UE) 2017/821 e tutti i successivi aggiornamenti, compresa la modifica M1 attraverso il Regolamento Delegato 2020/1588, e Dodd-Frank Wall Street Reform and Consumer Protection Act Section 1502.

Material conforming to the following European directives/regulation:
. REACH regulation 2006/1907/EC and all subsequent updates, including modification M80 Delegate Directive, and SVHC Candidate List updated to 01/17/2023.
. ROHS Directive 2011/65/EU and all subsequent updates, including the M80 amendment through the Delegated Directive 2022/1632, and Italian Legislative Decree 27 of 03/04/2014.
. WEEE Directive 2012/19/EU and all subsequent updates, including the M1 amendment through Directive 2018/849.
. ELV (End-of-Life Vehicles) Directive 2000/53/EC and all subsequent updates, including the modification M15 through Directive 2020/363
. Radioactive Contamination, Directive 2013/59/EURATOM and Italian Legislative Decree No. 101 of 31 July 2020.
. Canadian List 168 updated 03/16/2022.
. Conflict Minerals, Regulation (EU) 2017/821 and all subsequent updates, including amendment M1 through Delegated Regulation 2020/1588, and Dodd-Frank Wall Street Reform and Consumer Protection Act Section 1502.

CROSSWIND

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Pag. 2 / 2 RODACCIAI: The Work Inspector
Alessia Porta

OTTURATORE / TIP

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST140440 / 2023 /
Prüfung/Test/Essai

Ordine nr: VS ORD MAIL
Bestell Your order Commande

Conferma ordine nr: AN23001468
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-AN23000875
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Laminato - Solubilizzato FINITO A FREDDO
Lieferzustand Delivery state Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart Melting process Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes Trade marks Sigles de l'usine productrice

Punzone del Collaudatore:
Stempel des Werkssachverständigen Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung Marking Marquage

SPECIFICHE : Anforderungen / Requirements / Exigences	Note: Aufzeichnungen / Notes / Notes
VAL STOCK W2 A/1 1.4404/316L A,CF	
AD 2000-M. W 2 2022 1.4401 A,CF (0)	(0)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
AD 2000-M. W 2 2022 1.4404 A,CF (1)	(1)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
AISI . 316/316L	
ASME SA182 2021 S31600/03 A (2)	(2)Section II Part A 2021 EDITION For products machined directly from bar refer to ASME SA479.
ASME SA276 2021 S31600/03 A,CF (3)	(3)Section II Part A 2021 EDITION
ASME SA479 2021 S31600/03 A (4)	(4)Section II Part A 2021 EDITION
ASTM A182 2023 S31600/03 A (5)	(5)For products machined directly from bar refer also to ASTM A479.
ASTM A262 PR. E 2015 316/316L (6)	(6)Reapproved 2021
ASTM A276 2023 S31600/03 A,CF	
ASTM A370 2022 .	
ASTM A479 2023A S31600/03 A	
ASTM E10 2023 .	
ASTM E8 2022 .	
EN 10088 PART 3 2014 1.4401 A,CF	
EN 10088 PART 3 2014 1.4404 A,CF	
EN 10272 2016. 1.4401 A,CF	
EN 10272 2016. 1.4404 A,CF	
ISO 3651-2 98 METHOD A T1	
ISO 6506-1 2014 .	
ISO 6892-1 2019 .	
ACH CO . .	
PME HB L . .	
NACE MR0175 4 S31600/03 A (7)	(7)ANSI/NACE MR0175/ISO 15156-3:2020 Fourth edition, approved 21 Sep 2022.
NACE MR0103 2015 S31600/03 A (8)	(8)ANSI/NACE MR0103/ISO 17945 November 23, 2015

		Tolleranza: h9 - DIN671/EN10278 Toleranz/Allowance/Tolerance					
Pos. nr. Pos. nr. Item nr. Nr. de poste	Oggetto Gegenstand Product description Descrip. du produit	Dimensioni - mm Abmessungen Dimension Dimension	Lunghezza - mm Länge Length Longueur	Colata Schmelze Heat Coulée	Pezzi Stückzahl Pieces Pieces	Peso - KG Gewicht Weight Poids	Lotto nr. Losnr. Lot nr Lot nr
0010	Tondo	9,000	3000/ 3050	290962		162,0	210502620

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OTTURATORE / TIP

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST140440 / 2023 /
Prüfung/Test/Essai

Ordine nr: VS ORD MAIL
Bestell / Your order / Commande

Conferma ordine nr: AN23001468
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-AN23000875
Lieferanzeige/Packing list/B.L.

Stato di fornitura: Laminato - Solubilizzato FINITO A FREDDO
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore:
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice

Punzone del Collaudatore:
Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung / Marking / Marquage

TEST ALLO STATO DI FORNITURA
Test on delivery condition Prüefung auf lieferbereitem produkt test a l'etat de fourniture Prueba sobre el material así come entregado

1) L=longitudinale/längs, T=trasversale/quer, O=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement A5 %		Strizione Einschnürung Reduction of area Striction Z %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Harte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs demandées		min		200	235	500	20	-	-	-	-			-		
		max				900								315		
A	9	20	L	637	686	720	31		73					234		
E	9	20	L	639	690	726	30		71					235		

TEST ALLO STATO DI FORNITURA
Test on delivery condition / Prüefung auf lieferbereitem produkt / Test a l'etat de fourniture / Prueba sobre el material así come entregado

TEST		min	max	
A	Dimensioni grano x ASTM E112			5

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, O=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Harte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs demandées		min		310	-	620	-	30	-	50	-			-		
		max												235		
D	6	20	L	640		723		33		74				230		

Tensile testing according to ISO 6892-1
Mechanical properties according to ASTM A370.
Brinnell hardness according to ASTM E10
Tensile testing according to ASTM E8
Brinnell hardness according to ISO 6506-1

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Analisi chimica
Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat Schmelze/Coulée		C %	Si %	Mn %	Cr %	Mo %	Ni %	Co %	P %	S %	N %
	min -	-	-	-	16,50	2,00	10,00	-	-	-	-
	max 0,030	1,00	2,00	18,00	2,50	13,00	-	0,045	0,030	0,100	-
290962		0,015	0,46	1,48	16,68	2,03	10,23	0,127	0,030	0,023	0,048

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 15/11/2023 VCQ012 - MEST140440	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 2 di 3

Acciaierie Valbruna S.p.A.

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Stato di fornitura : Laminato - Solubilizzato FINITO A FREDDO
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Herstellwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore:
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung
Marking
Marquage

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

Reduction ratio = 457,3 : 1
Material annealed 1040°C for 135'(total time)/water cooled.
SURFACE QUALITY COMPLIANT TO EN 10088-3 TAB.1 COND. 2H
"Issued in agreement with TÜV SÜD Industrie Service GMBH (07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

Sono state soddisfatte tutte le condizioni richieste
Die gestellen Anforderungen sind it. Anlage erfüllt
The material has been furnished in accordance with the requirements
Le materiel à été trouvé conforme aux exigences

Controllo antimescolanza con tecnica XRF/OES portatile : OK
Verwechslungprüfung: durch XRF/QES Gerät geführt : OK
Antimixing testing performed with XRF/OES portable : OK
Contrôle antimélange svt technique XRF/QES portable : OK

Controllo visivo e dimensionale: soddisfa le esigenze
Besichtigung und Ausmessung: ohne Beanstandung
Visual inspection and dimensional checks:satisfactory
Contrôle visuel et dimensions: satisfaisant

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD'S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 15/11/2023 VCQ012 - MEST140440	**Direzione Qualità** Qualitätsmanagement/Quality Management/Gestion Qualité **R.BERTELLI**	**Direzione Prodotto** Produktmanagement/Product Management/Direction Produit **P.MESSORI**	Pagina 3 di 3

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ROSETTI MARINO ITEM 230

COD. VLBLNN01381H00

TAG:

BLPH-MV-043, BLPH-MV-050

INDRA ITEM 230

COD. 00.VSF.2698(T)

indra VALVES - ITALY	***Certificazione dei materiali*** ***EN 10204 3.1 come da allegati*** ***Material certification*** ***EN 10204 3.1 as per attachments***	**MD-02-04-IT-UK / VSF** **Rev. 16** **Data: 08-Nov-2018** **CM/IT/UK**

Nr. *No.* **24-2007** **Data / *Date :*** **16-Oct-2024**

Cliente / *Customer* **ROSETTI MARINO SPA**

Vs. ordine Nr. / *Your order Nr.* **1724000798 REV.2** **Data / *Date :*** **26-Jun-2024**

Ns. commessa Nr. / *Our job Nr.* **24 01216** **Data / *Date :*** **3-Jul-2024**

Ns. D.D.T. Nr. / *Our advise note Nr.* **Data / *Date :***

Ordine di produzione / Production order number : 24 01216/230 - 200930

Lotto / Material batch number : 200930

Pos. Cliente Customer Item	*Pos. Indra Indra Item*	*Codice / Code*		*Q.tà / Q.ty*	*Nr. di serie Serial Number*	*Descrizione /Description*
		Ns./ Our	*Vs. / Your*			
230	230	00.VSF.2698(T)	VLBLNN01381H00	2	106030,106031	INDRA BALL VALVE SBB-798-40-H150RF3-H-D-F55F-F55-N-PG-ESX100-EXY3-L13-TG-TGW-IT2-PMI2-PD2-BI-CR-TA-FS-SPC1-SPC2

Elenco / List

Componente / *Component*	Colata / Heat	Materiale *Material*	Numero del certificato Certificate number
Corpo Valvola / Valve Body	200930	F55 NACE	2300218 Rev.1 - UT 2300218
Closure H150RF3	200930	F55 NACE	2300218 Rev.1 - UT 2300218
Tirante / Stud bolt	283509	ASTM A193 B7M + HDG	2402706
Dado / Nut	79325	ASTM A194 Gr.2HM + HDG	2402706
Stelo antiespulsione sfera / Ball stem	278285	F55 NACE	2023013924 - N.US.523/23
Sfera / Ball	370169	F55 NACE	2014054694 - N.US.1306/14
Corpo bonnet/ Bonnet body	178391	F55 NACE	2201656 - UT 2201656
Stelo spillo / Stem needle	566657	F55 NACE	DN071162-Z17040U1 - A/23-151118
Otturatore / Tip	870052	F55 NACE	2018036042 - N.US.1217/18
Vite bonnet / Bonnet bolting	BB7389	ASTM A193 B7M + HDG	2402531

NOTE / **REMARKS :** TAG: BLPH-MV-043, BLPH-MV-050

PREPARATO DA: **ELEONORA RANZANI** PREPARED BY: **DOCUMENTION MANAGER**

APPROVATO DA: **LUCIA NOSOTTI** APPROVED BY: **QUALITY ASSURANCE MANAGER**

20013 Magenta (MI) Italy - Via Novara, 10/B-C
Tel. +39 02 97298663 r.a. - Fax +39 02 97291855
E-mail: indra@indra.it - http://www.indra.it

flow x crosswind
30/10/24 R

FORGIATURA MODERNA ARESE

CERTIFICATO DI COLLAUDO

Inspection certificate / Certificat de recette

EN10204/3.1 MD 752011.000

N° 2300218 Rev.1*

Del 20/02/23

Foglio 1 di 1

CLIENTE Purchaser/Client	ORDINE Order/Commande	MATERIALE Material/Matiere
INDRA S.R.L.	AF22 02440	ASTM A182 F55

SPECIFICHE RICHIESTE
Specification request/Specifications technique

ASTM + NACE MR0175/ISO15156/MR0103 + API 6A 60K PSL4 + SPEC. G0064B REV.0

DESCRIZIONE MATERIALE Material description	DISEGNO/DIMEN. Drawing/Dimension	COLATA Heat/Coulee	PROVA Test N°	COMM. Prod. Ord.	POS.
N°9 FORGED BAR, SOLUTIONED AT 1100°C	Ø 187 X MT46	200930	222091	1280/2	20

CARATTERISTICHE MECCANICHE
Mechanical requirements/Caracteristiques mecaniques

PROVA Specimen	DIREZ. Direction	Ø mm	Lo mm		Rp - Yp N/mm2	Rm - Ts N/mm2	A - E %	Z - Ra %	KV-46°C Joule	KV-50°C* Joule		HB
				Min	550	750	25	45	27/20	27/20		174
				Max		895						310
222091	Lg.	12,50	50,00		588	809	37,6	74,8	135-149-145	126-132-122		242-245-242
	Tr.		10x10						122-120-132	124-118-130		

CARATTERISTICHE CHIMICHE
Chemical requirements/Caracteristiques chimiques

		C	Mn	Si	P	S	Cr	Ni	Mo	Al	Cu	N	W	PRE
Colata	Min						24,00	6,00	3,00		0,50	0,20	0,50	40
Heat	Max	0,03	1,00	1,00	0,015	0,010	26,00	8,00	4,00		1,00	0,30	1,00	
200930		0,019	0,36	0,66	0,015	0,0006	25,16	6,91	3,67	0,014	0,56	0,24	0,53	41

STEEL MAKING PRACTICE: EAF + AOD

VISUAL AND DIMENSIONAL INSPECTION CONFORMS TO CONTRACTUAL REQUIREMENTS - THE PRODUCTS ARE IN COMPLIANCE WITH THE REQUIREMENTS OF THE ORDER

Forgiatura Moderna Arese S.p.A
Stefano Ferrandi
Servizio Controllo Qualità
Quality Department

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FORGIATURA MODERNA ARESE

CERTIFICATO DI CONTROLLO ULTRASONORO

Ultrasonic control certificate

MD 752005.000

N°UT 2300218
Del 20-Feb-2023
Foglio 1 di 1

CLIENTE - Cod. A1162 Purchaser/Client	ORDINE Order/Commande	MATERIALE Material/Matiere
INDRA S.R.L.	AF22 02440	ASTM A182 F55

DESCRIZIONE MATERIALE Material description	DISEGNO/DIMEN. Drawing/Dimension	COLATA Heat/Coulee	PROVA Test N°	COMM. Prod. Ord.	POS.
N°9 FORGED BAR, SOLUTIONED AT 1100°C	Ø 187 X MT46	200930	222091	1280/2	20

SPECIFICA Specification	ESTENSIONE DELL'ESAME Test area / Extension de l'examen
ASTM A388 + MDSI REV.0	100% ALL SURFACES

TECNICE DELL'ESAME Inspection technique / Tecnique de l'examen	TARATURA Settings/Etalonnage	AMPLIFICAZIONE Amplification
BY REFLECTION	ACC. TO SPECIFICATION	+6dB

CONDIZIONI SUPERFICIALI Test surfaces status / Etat de surface	MEZZO DI ACCOPPIAMENTO Means of coupling / Moyen d'accouplement	TIPO DI APPARECCHIATURA Type of apparatus / Type d'appareil
PRE-MACHINED	CELLULOSA	GE USMGO

SONDA Probe / Palpeur	FREQUENZA Frequency / Frequence	ANGOLO DI EMISSIONE Emission Angle / Angle de emission	DIMENSIONI Dimension
GE B2S	2 Mhz	0°	Ø 24 mm.
GE SEB2	2 Mhz	0° (T/R)	7x18 mm.

RILEVAMENTO SCHEMATICO
Sketch of anomalies found / Croquis des anomalies trouves

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RISULTATI Results / Resultats	CONTROLLO ESEGUITO DA TECNICO QUALIFICATO II LIVELLO SNT-TC-1A & ISO 9712 Test personnel qualified to level II according to SNT-TC-1A & ISO 9712
CONFORMS TO SPECIFICATION	

NOTE:
Notes

Forgiatura Moderna Arese
Luca Di Noi
II LEVEL
SNT-TC-1A/UNI EN ISO 9712

TIRANTE / STUD BOLT

IPL S.r.l.
BULLONERIA - TIRANTERIA
SPECIALE E STANDARD

Via Papa Giovanni Paolo I, 306
21040 UBOLDO (VA)

Customer: INDRA SRL
C.SO XXII MARZO, 8
20135 MILANO (MI)

Date, 30-09-24 **Our Ref.** DDT 3480 / OC 1557 **of** 30-09-24 **Your Ref.** AF24 02342 10-07-24

CERTIFICATE UNI EN 10204 - 3.1 N.2402706

ITEM		QUANTITY	HEAT TREATMENT	PROTECTION	LOT nr.	HEAT nr.
TIR.7M010040NF	STUDBOLT UNI6610/DIN976B - A/SA193 B7M M 10 x 40 HDG → *101.99.0187CS-PED46*	10,00	quenched tempered	HOT DIP GALVANIZED ASTM A153 Cl. "C" / F2329	834265	283509*
TIR.7M012040NF	STUDBOLT UNI6610/DIN976B - A193 B7M M 12 x 40 H.D.G. *101.99.0664CS-PED46*	10,00	quenched tempered	HOT DIP GALVANIZED ASTM A153 Cl. "C" / F2329	834266	283509*
TIR.7M010035NF	STUDBOLT UNI6610/DIN976B - A/SA193 B7M M 10 x 35 HDG *101.99.0984CS-PED46*	10,00	quenched tempered	HOT DIP GALVANIZED ASTM A153 Cl. "C" / F2329	834264	283509*

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If not mentioned the above test are performed at room temperature.
We certify that the fasteners were manufactured, sampled, tested and inspected in accordance with the specification and are consistent with order prescriptions.
Quality assurance system in accordance to European Directive 2014/68/EU annex I par. 4.3 (PED) and AD 2000 Merkblatt W0.
Certificates 0045/202/WZ1921/23 and TN/AD2000-W0/1921/23 TÜV NORD Systems GmbH & Co. KG.

IPL S.R.L.
RSQ A. Grisetti

TIRANTE / STUD BOLT

IPL S.r.l.
BULLONERIA - TIRANTERIA
SPECIALE E STANDARD

Via Papa Giovanni Paolo I, 306
21040 UBOLDO (VA)

Customer: **INDRA SRL**
C.SO XXII MARZO, 8
20135 MILANO (MI)

Date, 30-09-24 **Our Ref.** DDT 3480 / OC 1557 **of** 30-09-24 **Your Ref.** AF24 02342 10-07-24

CERTIFICATE UNI EN 10204 - 3.1 N.2402706

ITEM						QUANTITY	HEAT TREATMENT	PROTECTION	LOT nr.	HEAT nr.

MECHANICAL PROPERTIES

values	R (MPa)	Rs 0,2 (MPa)	A4 (%)	Z (%)	HB	I.T. KV - 73°C (J)
required	690 min.	550 min.	18 min.	50 min.	235 max	20 min. 27 av.
actual	700	570	28,0	66,0	220-215-220	143 - 147 - 117

CHEMICAL COMPOSITION

values	C (%)	Mn (%)	Si (%)	P (%)	S (%)	Cr (%)	Mo (%)	Al (%)
required	0,38 - 0,48	0,75 - 1,00	0,15 - 0,35	0,035 max	0,040 max	0,80 - 1,10	0,15 - 0,25	
actual	0,415	0,771	0,219	0,009	0,0300	1,035	0,159	0,022

remarks: Chemical values, at delivery condition, are quoted by the relevant steel work certificate. Mechanical values see IRCM cert. 1438/24.
According to: ASME II part. A ed. 2021. Macroetch test according to ASTM E381 result: S1 R1 C1. VISUAL AND DIMENSIONAL TEST SATISFACTORY

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DADO / NUT

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C.SO XXII MARZO, 8
20135 MILANO (MI)

Date, 30-09-24 **Our Ref.** DDT 3480 / OC 1557 **of** 30-09-24 **Your Ref.** AF24 02342 10-07-24

CERTIFICATE UNI EN 10204 - 3.1 N.2402706

ITEM		QUANTITY	HEAT TREATMENT	PROTECTION	LOT nr.	HEAT nr.
55882M010000F	HEX NUT UNI 5588/ISO4032/DIN934 H=0,8 d - A/SA194 2HM M 10 HDG 980.99.0188CS-PED46	15,00	quenched tempered @ 560°c	HOT DIP GALVANIZED ASTM A153 Cl. "C" / F2329	834262	79325 *

MECHANICAL PROPERTIES

values	HB (min-max)	HB after 24 hrs (min)	PROOF LOAD	I.T. ISO-V -46°C (J)
required	159 - 235	159		
actual	211 - 215	188	POSITIVE	28 - 30 - 28

CHEMICAL COMPOSITION

values	C (%)	Mn (%)	Si (%)	P (%)	S (%)
required	0,400 min	1,000 max	0,400 max	0,040 max	0,050 max
actual	0,450	0,770	0,280	0,015	0,020

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remarks: chemical values, at delivery condition, are quoted by the relevant steel work certificate. VISUAL AND DIMENSIONAL TEST SATISFACTORY
Nuts hardness test after 24 HRS tempering at 540°C.

If not mentioned the above test are performed at room temperature.
We certify that the fasteners were manufactured, sampled, tested and inspected in accordance with the specification and are consistent with order prescriptions.
Quality assurance system in accordance to European Directive 2014/68/EU annex I par. 4.3 (PED) and AD 2000 Merkblatt W0.
Certificates 0045/202/WZ1921/23 and TN/AD2000-W0/1921/23 TÜV NORD Systems GmbH & Co. KG.

IPL S.R.L.
RSQ A. Grisetti

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C.F. 02187360987
VAT: IT00571320076 - R.E.A. n. AO-50474

Company with Management Systems certified according to ISO 9001, ITAF 16949, EN 9100, ISO 14001 and ISO 45001.

INSPECTION CERTIFICATE 3.1 (EN 10204:2004)

DOCUMENT NUMBER 2023013924

CUSTOMER:	C.S.C. SPA		
CUSTOMER'S ORDER:	A202273SSS		
MANUFACTURER'S WORKS:	AOSTA, VIA PARAVERA 16 - ITALY		
PRODUCER OF THE DOC:	QUALITY DEPARTMENT		
MANUFACTURER'S WORKS ORDER NO:	0025289160 / 000020		
MARK OF THE MANUFACTURER:	COGNE		
DISPATCH NOTE:	0081539758 / 000010 WEIGHT: 1092 KG / 2408 LB		
INTERNAL SPEC:	NORSOKREV5		
PRODUCT:	PEL PEELED ROUND BARS TOLERANCE: ISOK11		
SURFACE FINISH:	2B Cold Finished		
PRODUCT DELIVERY CONDITION:	RS SOLUTION ANNEALED		
PRODUCT DIMENSIONS (mm):	25,000 (0,984 in)	LENGTH (mm)	04000 06200 (00157 00244 in)
GRADE:	F55 UNSS32760 1.4501	INTERNAL GRADE:	329S
IDENTIFICATION HEAT NO:	278285	IDENTIFICATION LOT NO:	864020
MARKING OF THE PRODUCT:	1.4501	TEST PIECE N:	402

REFERENCE NORMS:EN 10088-3:2014, EN 10272:2016, ASTM A276/ASME SA276-R17, ASTM A479/ASME SA479-R21, ISO15156-3/NACE MR0175, NACE MR0103, API 6A-PSL3, NORSOK M-650 REV.4/M-630, MDS D57 REV.5.
REFERENCE NORMS ONLY FOR CHEMICAL COMPOSITION:
EN 10222-5:2017, ASTM A182/ASME SA182, ASTM A484-21.
HEAT TREATMENT: SOLUBILIZATION 1100 ° C 1.5 min / mm COOLING WATER TEMPERATURE BELOW 260 °C (FURNACE THERMOCOUPLES)
ASTM G48 A/ASTM A923 C TESTING CONDITIONS: Sample surface 120 GRIT, Solution 100g FeCl3.6H2O+900ml H20, T 50°C, 24h, no pitting at 20X.
STEELMAKING EAF + AOD + CONTINUOUS CASTING
HOT ROLLED
REDUCTION RATIO 100,1

CHEMICAL LADLE ANALYSIS ACCORDING TO ASTM A751 - EN ISO 14284
Control lot No. - Weight :020000944128 - 80.713 KG - 177.939 LB

ELEMENTS	C	Si	Mn	P	S	N	Cr	Mo	Ni	Cu
MEASUREMENT UNIT	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w
OBTAINED	0,017	0,38	0,58	0,019	0,0006	0,25	25,00	3,66	6,93	0,55

ELEMENTS	W	CV_F8
MEASUREMENT UNIT	% w/w	% w/w
OBTAINED	0,53	41

CV_F8 = CR+(3.3*MO)+(16*N2)

HARDNESS TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000946846 - 1.736 KG - 3.827 LB
SPECIFICATION ENISO6506 HARDNESS TEST HB TESTING METHOD: 10/3000
OBTAINED 240

IMPACT TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000946846 - 1.736 KG - 3.827 LB
SPECIFICATION EN ISO 148-1-KV2 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 20
MEASUREMENT UNIT J
OBTAINED 425 418 437

DATE 20.03.2023 BARBARA VIETTI MV(QUALITY CERTIFICATOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne

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DOCUMENT NUMBER 2023013924

TENSILE TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000946846 - 1.736 KG - 3.827 LB
SPECIFICATION ASTMA370-E8-0.5"SPEC DIRECTION OF THE TEST PIECE: L

	Rm	Rp02%	Z	A12
MEASUREMENT UNIT	MPA	MPA	%	% 4,0 D
OBTAINED	807	550	80,8	42,6

CORROSION
Control lot No. - Weight :020000946846 - 1.736 KG - 3.827 LB
SPECIFICATION ASTM G48 A
OBTAINED 0,2

FERRITE %
Control lot No. - Weight :020000946846 - 1.736 KG - 3.827 LB
SPECIFICATION ASTME562 --
OBTAINED 48,6

MICROSTRUCTURE
Control lot No. - Weight :020000946846 - 1.736 KG - 3.827 LB
SPECIFICATION -- --
OBTAINED SATISFACTORY -

LATERAL EXPANSION
Control lot No. - Weight :020000946846 - 1.736 KG - 3.827 LB
SPECIFICATION ASTMA370 --
OBTAINED 2,6 2,5 2,6

SHEAR %
Control lot No. - Weight :020000946846 - 1.736 KG - 3.827 LB
SPECIFICATION ASTMA370 --
OBTAINED 100 100 100

REFERENCE NORMS:EN 10088-3, EN 10272, ASTM A276/ASME SA276, ASTM A479/ASME SA479, ISO 15156-3/NACE MR0175, ISO 17945/NACE MR0103, NORSOK M-650 REV.4/M-630, MDS D57 REV.5.
REFERENCE NORMS FOR CHEMICAL ANALYSIS, MECHANICAL PROPERTIES, HEAT TREATMENT: ASTM A182/ASME SA182, API 6A-PSL3
REFERENCE NORMS ONLY FOR CHEMICAL COMPOSITION: EN 10222-5, ASTM A484
HARDNESS TEST
Control lot No. - Weight :020000946846 - 1.736 KG - 3.827 LB
SPECIFICATION ASTMA370-E18 HARDNESS TEST HRC TESTING METHOD:
OBTAINED 20

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INSPECTION CERTIFICATE 3.1 (EN 10204:2004)
DOCUMENT NUMBER 2023013924

IMPACT TEST
Control lot No. - Weight :020000946846 - 1.736 KG - 3.827 LB
SPECIFICATION ASTM A370-E23 TYPE A DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 50-
MEASUREMENT UNIT J
OBTAINED 318 330 316

TENSILE TEST
Control lot No. - Weight :020000946846 - 1.736 KG - 3.827 LB
SPECIFICATION EN-ISO6892-1 DIRECTION OF THE TEST PIECE: L

	Rm_C	Rp02_C	A	Z_C
MEASUREMENT UNIT	MPA	MPA	% 5.0 D	%
OBTAINED	807	564	39,8	85,1

STEELMAKING EAF + AOD + CONTINUOUS CASTING
HOT ROLLED
METALLOGRAPHIC INSPECTION ACCORDING TO ASTM A923 METHOD A: SATISFACTORY.
IMPACT TEST VALUES AT -46°C ARE NOT LESS THAN THOSE AT -50°C HERE STATED.
QTC ON PROLONGATION OF BARS TESTS AT MID RADIUS (CENTER POS. FOR SIZES <2 INCHES).
ASTM A484 DOES NOT APPLY FOR SIZE AND LENGTH TOLERANCES.
MARKING: PRODUCER LOGO, MATERIAL NO, HEAT NO, LOT NR.
ALL THE NORMS MENTIONED ARE INTENDED IN THEIR LAST REVISION AT THE DATE OF ISSUE OF THIS DOCUMENT.
COUNTRY OF MELTING AND ORIGIN: ITALY, THE MATERIAL COMPLIES WITH FAR DFARS 252.225-7009 ALT 1.
THE PRODUCT SATISFIES THE DIRECTIVES: 2015/863/EU (ROHS3) - 2011/65/EU (ROHS2) - 2000/53/EU - 2002/95/EU(RoHS) - 2003/11/EU-2005/618/EU AND PED 2014/68/EU.
THE MATERIAL IS FREE OF ANY MERCURY, MERCURY COMPOUNDS AND OR RADIUM CONTAMINATION AT TIME OF SHIPMENT AND WAS PRODUCED WITHOUT USING OZONE DEPLETING SUBSTANCES OF CLASS I AND II.
VISUAL SURFACE INSPECTION AND EDDY CURRENT WITH ROTATING HEAD ACCORDING TO EN 10277 Class 4 : SATISFACTORY . DIMENSIONAL TEST ACCORDING TO EN 10278 : SATISFACTORY . ULTRASONIC TEST IN ACCORDING TO EN 10308 , Class 3 : SATISFACTORY . ANTIMIX SPECTROMETER CONTROL WITH PORTABLE PRODUCT : SATISFACTORY . NOT BEEN MADE BY ANY REPAIR MATERIAL WELDING
CORROSION TEST ACCORDING TO ASTM A262 Method E EN ISO 3651-2 A: SATISFACTORY. NO CRACKS AT 20X MAGNIFICATION

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CERTIFICATO DI COLLAUDO ULTRASUONI
CERTIFICAT DE CONTROLE PAR ULTRASONS
ULTRASCHALL PRUEFZEUGNIS
REPORT OF ULTRASONIC INSPECTION
ОТЧЕТ ОБ УЛЬТРАЗВУКОВОМ КОНТРОЛЕ

N. US.
523/23

CLIENTE *CLIENTSGG* *BESTELLER* *CUSTOMER* ЗАКАЗЧИК			*CONFERMA* *CONFIRMATION* *AUFTRAGSBESTRAKTIGUNG* *CONFIRMATION* ПОДТВЕРЖД. ЗАКАЗА		
MARCA *NUANCES* *WERKESTOFF* *GRADE* МАРКА	329S W.No 1.4501		*ORDINE* *COMMANDE* *AUFTRAG* *ORDER* ЗАКАЗ		
SPECIFICA *SPECIFICATION* *PRUKEVORSCHRIFT* *SPECIFICATION* ТЕХ. ТРЕБОВАНИЯ	EN10308 prospetto3 cl3		*COLATA* *COULEE* *SCHMELZE* *HEAT* ПЛАВКА	278285	*SCHEDA* *LOT* *LAUFKARTE* *LOT* ПАРТИЯ 864020
PRODOTTO *PRODUIT* *ERZEUGNISFORM* *PRODUCT* ИЗДЕЛИЕ	ROUND BARS 25 mm		*STATO DI LAVORAZIONE* *STADE DU PRODUIT* *LIEFERZUSTAND* *WORKING STEP* ОБРАБОТКА	PEELED	
TIPO DI APPARECCHIO *TIPE D'APPAREILPARUS* *PRUEFGERAT TYP* *INSTRUMENT TYPE* ТИП АППАРАТА	MAC2	UT-100mm	*COSTRUTTORE* *CONSTRUCTEUR* *BAUART* *MAKE* ИЗГОТОВИТЕЛЬ	MAC	
TIPO DI SONDA *TIPE DE PALPEUR* *PRUFKOPT* *PROBETYPE* ТИП ЗОНДА	U113T9 16C02JCM U11391		*FREQUENZA* *FREQUENCE* *FREQUENZ* *FREQUENCY* ЧАСТОТА	5 MHz S/N 5 MHz S/N 5 MHz S/N	XDCR225N 389-087-130 XDCR210N

DIREZIONE D'ESAME
DIRECTION D'EXAMEN
PRUEFRICHTUNG
SCANNING DIRECTION
НАПРАВЛЕНИЕ ПРИ

- [X] *RADIALE - RADIAL*
- [ ] *ASSIALE - AXIAL*
- [ ] *SONDE ANGOLATE - ANGLE BEAMS*

- [X] *MATRICOLA BLOCCO CAMPIONE* 29
  DENTIFICATION BLOC DE REFERENCE MUSTER BLOCK
  MUSTER BLOCK
  TEST BLOCK NR
  № ОБРАЗЦА ДЛЯ ИСПЫТАНИЯ

- [ ] *AVG SCALE*
  ECRANS ABAQUES AVG
  AVG SKALEN
  AVG SCALE
  ШКАЛА *AVG*

- [ ] *AVG DIAGRAMMI*
  DIAGRAMMES AVG
  AVG DIAGRAMM
  AVG DIAGRAM
  ДИАГРАММЫ *AVG*

- [ ] V1
- [ ] V2

RISULTATODELL'ESAME
RESULTAT DE L' ESSAI
PRUEFERGERBNISSE
RESULT OF THE TEST
РЕЗУЛЬТАТ
ИСПЫТАНИЯ

EXAM DATA : 16/03/2023
INSPECTED N. BARS 46

THE MATERIAL IS IN ACCORDANCE TO THE FOLLOWING SPECIFICATIONS:
EN10308 prospetto3 cl3

L'ISPETTORE CND ZUSTANDER CND L'INSPECTEUR CND CND INSPECTOR ИНСПЕКТОР НРК NADALIN SIMONE Liv.II - ISO 9712 N° Cert.32040/PND/C	III LIV.CND III УРОВЕНЬ НРК BAISOTTI MARCO Liv.III - ISO 9712 N° Cert.34194/PND/C		DATA DATUM DATE DATE ДАТА 20/03/2023

(Mod. Certus Rev. 6)

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All.N 1

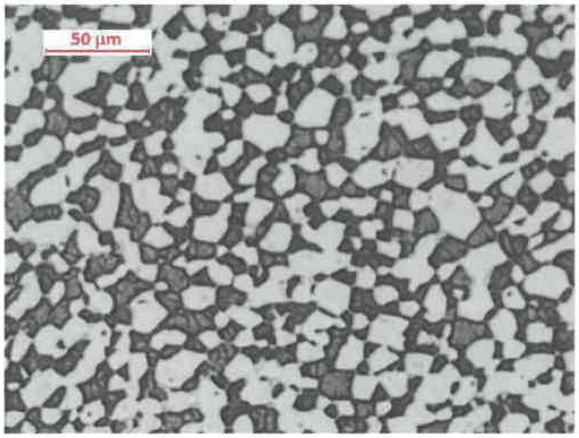
MARCA *NUANCES* *WERKESTOFF* *GRADE* *МАРКА*	329S	***LOTTO DI CONTROLLO*** *LOT DE CONTRÔLE* *LAUFKARTE* *CONTROL LOT* *ПАРТИЯ КОНТРОЛЯ*	020000946846
COLATA *COULEE* *SCHMELZE* *HEAT* *ПЛАВКА*	278285	***REAGENTE*** *RÉACTIF* *REAGENS* *ETCHANT* *РЕАГЕНТ*	20 % NaOH electrolyte
TIPO DI APPARECCHIO *TIPE D'APPAREIL* *PRUEFGERAT TYP* *INSTRUMENT TYPE* *ТИП АППАРАТА*		**MICROSCOPE – LEICA** **MEF4M МИКРОСКОП**	
INGRANDIMENTO *AGRANDISSEMENT* *VERGRÖSSERUNG* *ENLARGEMENT* *УВЕЛИЧЕНИЕ*		**400 X**	

DIREZIONE D'ESAME
DIRECTION D'EXAMEN
PRUEFRICHTUNG
SCANNING DIRECTION
НАПРАВЛЕНИЕ
ПРИ ИССЛЕДОВАНИИ

☐ **LONGITUDINALE - LONGITUDINAL - ПРОДОЛЬНОЕ**

☒ **TRASVERSALE – TRANSVERSAL – KREUZEND-ПОПЕРЕЧНОЕ**

PHOTO (ELECTRONIC IMAGE) – ФОТОСНИМКИ (ЭЛЕКТРОННОЕ ИЗОБРАЖЕНИЕ)



	FIRMA / SIGNATURE / ПОДПИСЬ	DATA / DATE / ДАТА
NOTE: ПРИМЕЧАНИЯ: "Free from Intermetallic Phases"	C. Del Guerra	26/01/23

Mod.Micro Rev.4

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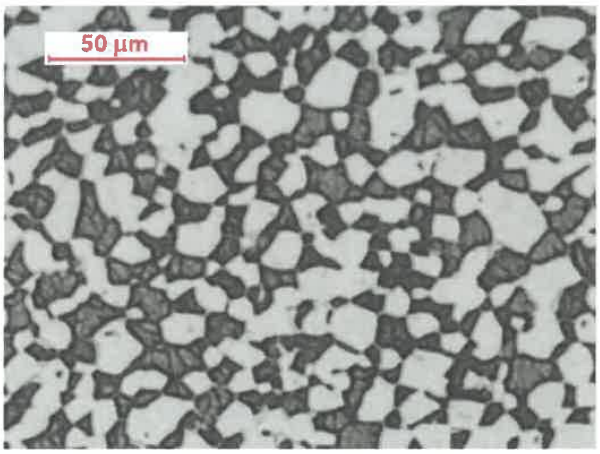
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All.N 2

MARCA *NUANCES* *WERKESTOFF* *GRADE* *МАРКА*	329S	***LOTTO DI CONTROLLO*** *LOT DE CONTRÔLE* *LAUFKARTE* *CONTROL LOT* *ПАРТИЯ КОНТРОЛЯ*	020000946846
COLATA *COULEE* *SCHMELZE* *HEAT* *ПЛАВКА*	278285	***REAGENTE*** *RÉACTIF* *REAGENS* *ETCHANT* *РЕАГЕНТ*	20 % NaOH electrolyte
TIPO DI APPARECCHIO *TIPE D'APPAREIL* *PRUEFGERAT TYP* *INSTRUMENT TYPE* *ТИП АППАРАТА*		**MICROSCOPE – LEICA** **MEF4M МИКРОСКОП**	
INGRANDIMENTO *AGRANDISSEMENT* *VERGRÖSSERUNG* *ENLARGEMENT* *УВЕЛИЧЕНИЕ*		**500 X**	
DIREZIONE D'ESAME *DIRECTION D'EXAMEN* *PRUEFRICHTUNG* SCANNING DIRECTION НАПРАВЛЕНИЕ ПРИ ИССЛЕДОВАНИИ	☐ **LONGITUDINALE - LONGITUDINAL - ПРОДОЛЬНОЕ** ☒ **TRASVERSALE – TRANSVERSAL – KREUZEND-ПОПЕРЕЧНОЕ**		

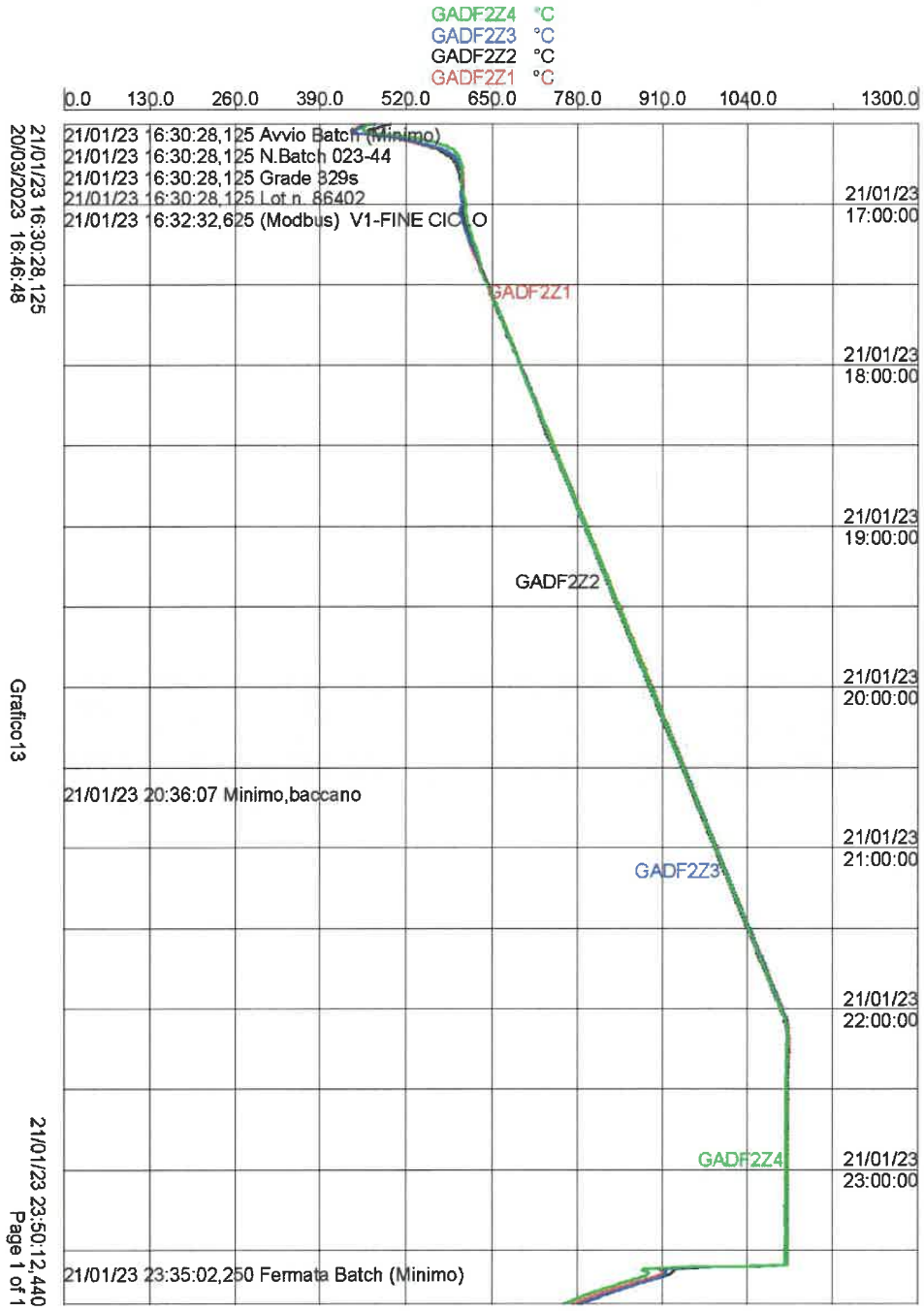
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NOTE: ПРИМЕЧАНИЯ:	FIRMA / UNTERSCHRIFT SIGNATURE / SIGNATURE ПОДПИСЬ	DATA / DATUM DATE / DATE ДАТА
"Free from Intermetallic Phases"	C. Del Guerra	26/01/23

Mod.Micro Rev.4

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INSPECTION CERTIFICATE 3.1 (EN 10204:2004)
DOCUMENT NUMBER 2014054694

SFERA / BALL

CUSTOMER:	INDRA SRL		
CUSTOMER'S ORDER:	F17-01895		
MANUFACTURER'S WORKS:	AOSTA, VIA PARAVERA 16 - ITALY		
PRODUCER OF THE DOC:	QUALITY DEPARTMENT		
MANUFACTURER'S WORKS ORDER NO: 1096962 /10	MARK OF THE MANUFACTURER:	**COGNE**	
DISPATCH NOTE:	81124846 /10	WEIGHT:	140,00
THE CERTIFIED PRODUCTS ARE COMPLYING TO THE PURCHASE ORDER			
INTERNAL SPEC:	NORSOK	TECHNICAL RULE:	
PRODUCT:	25950 PEL PEELED ROUND BARS	TOLERANCE:	ISOK11
SURFACE FINISH:	2B Cold Finished		
PRODUCT DELIVERY CONDITION:	RS SOLUTION ANNEALED		
PRODUCT DIMENSIONS (mm):	88,900	LENGTH (mm)	04000 /06200
GRADE:	AISTMF55 UNSS32760 EN1.4501	INTERNAL GRADE:	329S
IDENTIFICATION HEAT NO:	370169	IDENTIFICATION LOT NO:	383400
MARKING OF THE PRODUCT:	1.4501	TEST PIECE N:	340

REFERENCE NORMS: EN 10088-3, ASTM A276, ASTM A479/ ASME SA479, ISO15156-3/NACE MR0175, NACE MR0103, API 6A-PSL1-3 75K L, NORSOK M-650/M-630 MDS D57 Rev.3, STATOIL D35.
REFERENCE NORMS FOR CHEMICAL COMPOSITION ONLY: EN 10222-5. REFERENCE NORMS FOR CHEMICAL COMPOSITION AND MECHANICAL PROPERTIES: ASTM A182/ASME SA182.
ASTM A484 DOES NOT APPLY FOR SIZE AND LENGTH TOLERANCES.
IMPACT TEST VALUES AT -46°C ARE NOT LESS THAN THOSE AT -50°C HERE STATED.
HEAT TREATMENT: SOLUTION ANNEALING AT 1100-1140°C + WATER QUENCHING DOWN TO 260°C.MIN.SOAKING TIME 1 Min./mm THICKNESS.
STEELMAKING EAF + AOD + CONTINUOUS CASTING
HOT ROLLED
REDUCTION RATIO 8,6

CHEM. COMP. (%W/W) - LADLE ANALYSIS ACCORDING TO ASTME1019-A751-E1086-E415-A580
Control lot No. - Weight :020000516772 - 83.000 KG

ELEMENTS	C	Si	Mn	P	S	N	Cr	Mo	Ni	Cu
OBTAINED	0,011	0,43	0,62	0,023	0,0005	0,25	25,01	3,69	6,76	0,53

ELEMENTS	W	CV_F8
OBTAINED	0,54	41

CV_F8 = CR+(3.3*MO)+(16*N2)

HARDNESS TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000542616 - 3.336 KG
SPECIFICATION ENISO6506 HARDNESS TEST HB TESTING METHOD: 10/3000
OBTAINED 228

IMPACT TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000542616 - 3.336 KG
SPECIFICATION EN ISO 148-1-KV2 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 20
MEASUREMENT UNIT J
OBTAINED 299 299 299

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VAT: IT00571320078 - R.E.A. n. AO-50474

Company with management systems IGQ approved and certified according to ISO 9001, ISO/TS 16949 e ISO 14001.

CORROSION
Control lot No. - Weight :020000542616 - 3.336 KG
SPECIFICATION ASTM G48 A
OBTAINED 0,027

FERRITE %
Control lot No. - Weight :020000542616 - 3.336 KG
SPECIFICATION ASTME562 --
OBTAINED 46,04

IMPACT TEST
Control lot No. - Weight :020000542616 - 3.336 KG
SPECIFICATION EN ISO 148-1-KV2 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 50-
MEASUREMENT UNIT J
OBTAINED 296 296 297

TENSILE TEST
Control lot No. - Weight :020000542616 - 3.336 KG
SPECIFICATION EN-ISO6892-1 DIRECTION OF THE TEST PIECE: L

	Rm	Rp02%	A	Z
MEASUREMENT UNIT	MPA	MPA	% 5.0 D	%
OBTAINED	809	568	37,2	78,3

TENSILE TEST
Control lot No. - Weight :020000542616 - 3.336 KG
SPECIFICATION ASTMA370-E8-0.5"SPEC DIRECTION OF THE TEST PIECE: L

	Rm B	Rp02 B	Z B	Al2 B
MEASUREMENT UNIT	KSI	KSI	%	% 4,0 D
OBTAINED	116	82	78,5	40,2

CORROSION TEST ACCORDING TO ASTM A262 Practice E EN ISO 3651-2: SATISFACTORY.
ROTARY HEAD EDDY CURRENT AND VISUAL INSPECTION OF SURFACE ACCORDING TO EN 10277-1 Class4: SATISFACTORY.
DIMENSIONAL CONTROL ACCORDING TO EN 10278 :SATISFACTORY.
ULTRASONIC TEST ACCORDING TO EN 10308 CLASS 4, EQUIVALENT TO SEP 1920 GROUP 3 CLASS C (CLASS B FOR SIZES > 75 MM) AND ASTM A388 FBH 5(ONLY FOR SIZES > 100 MM): SATISFACTORY.
ANTIMIX TEST WITH PORTABLE SPECTROMETER: SATISFACTORY.
NO WELDING REPAIR ON THE MATERIAL.
THE PRODUCT SATISFIES CE DIRECTIVES: 2011/65 (ROHS2) - 2000/53 - 2002/95(RoHS) - 2003/11 - 2005/618 AND PED 2014/68/EU.
MARKING: PRODUCER LOGO, MATERIAL NO, HEAT NO, LOT NR.
QUALITY SYSTEM CERTIFIED BY I.G.Q ACCORDING TO UNI EN ISO 9001:2008 - ISO/TS 16949:2009 (THE LAST ONE ONLY FOR HOT ROLLED-PEELED-GROUND, STAINLESS STEEL BARS AND ATOMIZED METALLIC POWDERS).

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COPIA CONFORME ALL'ORIGINALE
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COGNE ACCIAI SPECIALI S.p.a.
ITALY - 11100 AOSTA - VIA PARAVERA, 16
TEL +39.0165.3021 - FAX +39.0165.302296
CAP. SOC. 100.000.000 EUR INT. VERS.
C.F. 02187360987
VAT: IT00571320076 - R.E.A. n. AO-50474

Company with management systems IQG approved and certified according to ISO 9001, ISO/TS 16949 e ISO 14001.

ALL THE NORMS MENTIONED ARE INTENDED IN THEIR LATEST REVISION AT THE DATE OF ISSUE OF THIS DOCUMENT.
ASTM G48 Met.A TESTING CONDITIONS: Sample surface 120 GRIT, Solution 100g FeCl3.6H2O+900ml H20, T 50°C, 24h, no pitting at 20X

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DATE 07.10.2014

VANESSA MICONI MV

Cogne Acciai Speciali S.p.a.

COGNE ACCIAI SPECIALI S.p.a.
Via Paravera, 16
I-11100 AOSTA

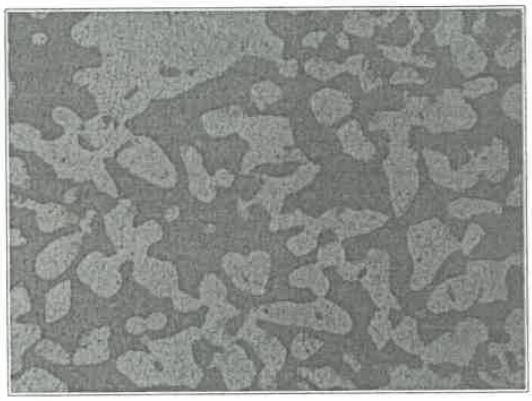
MICRO PHOTO

All.N°1

MARCA *NUANCES* *WERKESTOFF* *GRADE*	329S	*LOTTO DI CONTROLLO* *LOT DE CONTRÔLE* *LAUFKARTE* *CONTROL LOT*	020000542616
COLATA *COULEE* *SCHMELZE* *HEAT*	370169	*REAGENTE* *RÉACTIF* *REAGENS* *ETCHANT*	Etchant #212 ASTM E407
TIPO DI APPARECCHIO *TIPE D'APPAREIL* *PRUEFGERAT TYP* *INSTRUMENT TYPE*	MICROSCOPE – LEICA MEF4M		
INGRANDIMENTO *AGRANDISSEMENT* *VERGRÖSSERUNG* *ENLARGEMENT*	X 500		
DIREZIONE D'ESAME *DIRECTION D'EXAMEN* *PRUEFRICHTUNG* *SCANNING DIRECTION*	☐ LONGITUDINALE - LONGITUDINAL ☒ TRASVERSALE – TRANSVERSAL - KREUZEND		

PHOTO (ELECTRONIC IMAGE)

RISULTATO DELL'ESAME
RESULTAT DE L' ESSAI
PRUXFERGERBNISSE
RESULT OF THE TEST

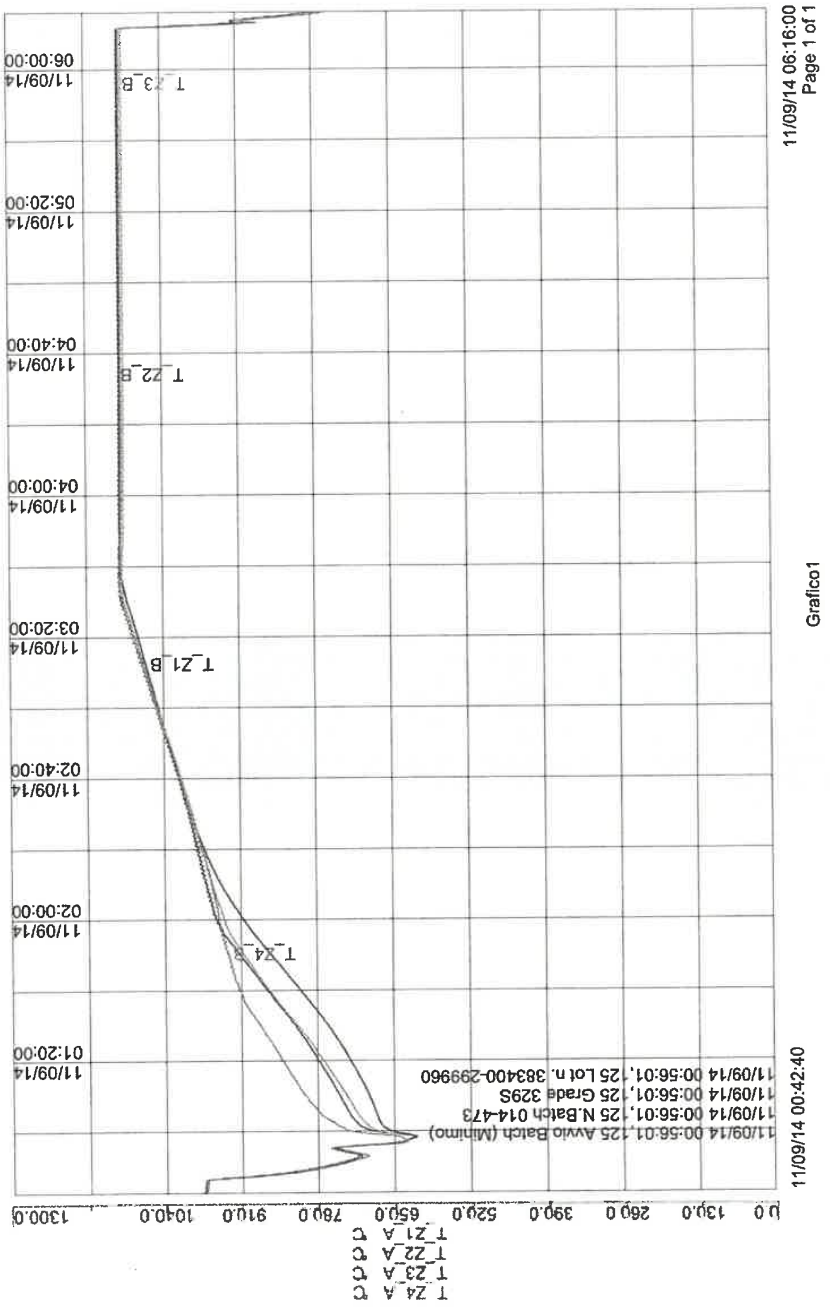


NOTE:
" Free from Intermetallic Phases and Precipitates"

FIRMA SIGNATURE UNTERSCHRIFT SIGNATURE	DATA DATE DATUM DATE
Fabio Frison	17/9/14

Mod.Micro Rev.2

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N.US.1306/14

COGNE ACCIAI SPECIALI s.r.l.

CERTIFICATO DI COLLAUDO ULTRASUONI
CERTIFICAT DE CONTROLE PAR ULTRASONS
ULTRASCHALL PRUEFZEUGNIS
REPORT OF ULTRASONIC INSPECTION

CLIENTE / CLIENTSGG / BESTELLER / CUSTOMER		CONFERMA / CONFIRMATION / AUFTRAGSBESTRAKTIGUNG / CONFIRMATION	
MARCA / NUANCES / WERKESTOFF / GRADE	329S W.No 1.4501	ORDINE / COMMANDE / AUFTRAG / ORDER	
SPECIFICA / SPECIFICATION / PRUKEVORSCHRIFT / SPECIFICATION	EN 10308 Cl 3	COLATA / COULEE / SCHMELZE / HEAT	370169
		SCHEDA / LOT / LAUFKARTE / LOT	383400
PRODOTTO / PRODUIT / ERZEUGNISFORM / PRODUCT	Bars Ø 88,9 mm	STATO DI LAVORAZIONE / STADE DU PRODUIT / LIEFERZUSTAND / WORKING STEP	PEELED SOLUTION TREATED
TIPO DI APPARECCHIO / TIPE D'APPAREILPARUS / PRUEFGERAT TYP / INSTRUMENT TYPE	USN 58	COSTRUTTORE / CONSTRUCTEUR / BAUART / MAKE	Krautkramer
TIPO DI SONDA / TIPE DE PALPEUR / PRUFKOPT / PROBETYPE	DL4R	FREQUENZA / FREQUENCE / FREQUENZ / FREQUENCY	4 MHz

DIREZIONE D'ESAME / DIRECTION D'EXAMEN / PRUEFRICHTUNG / SCANNING DIRECTION

☒ RADIALE - RADIAL

☐ ASSIALE – AXIAL – ACHSIAL – AXIAL-(ANGLE)

☐ CIRCONFERENZIALE –CIRCOFERENTIAL – CREISLINIE – CIRCUMFERENTIAL

☐ MATRICOLA BLOCCO CAMPIONE / DENTIFICATION BLOC DE REFERENCE MUSTER BLOCK / MUSTER BLOCK / TEST BLOCK NR

☐ AVG SCALE / ECRANS ABAQUES AVG / AVG SKALEN / AVG SCALE

☒ AVG DIAGRAMMI / DIAGRAMMES AVG / AVG DIAGRAMM / AVG DIAGRAM ☒ V1 ☐ V2

RISULTATO DELL'ESAME / RESULTAT DE L' ESSAI / PRUXFERGERBNISSE / RESULT OF THE TEST

EXAM DATA: 03/10/2014

INSPECTED NO 12 BARS

NO DEFECTS HAVE BEEN DETECTED

THE MATERIAL IS IN ACCORDANCE TO THE FOLLOWING SPECIFICATIONS:

EN 10308 Cl 3

L'ISPETTORE CND / L'INSPECTEUR CND / ZUSTANDIGER CND / CND INSPECTOR	III LIV.CND		DATA / DATE / DATUM / DATE
BAISOTTI MARCO Liv.II - EN473 N° Cert.20741/PND/C	OLIVERO DIMITRI Liv.III - EN473 N° Cert.23340/PND/C		06/10/2014

(Mod. Certus Rev. 3)

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FORGIATURA MODERNA ARESE

CERTIFICATO DI COLLAUDO

Inspection certificate / Certificat de recette

EN10204/3.1

MD 752011.000

N° 2201656

Del 09/11/22

Foglio 1 di 1

CLIENTE - Cod. A1162 Purchaser/Client	ORDINE Order/Commande	MATERIALE Material/Matiere
INDRA S.R.L.	AF22 02440	ASTM A479 USN32760 (F55) - API 6A 60K

SPECIFICHE RICHIESTE
Specification request/Specifications technique

ASTM + NACE MR0175/ISO15156/MR0103 + API 6A 60K PSL4 + SPEC. G0064BT REV.0

DESCRIZIONE MATERIALE Material description	DISEGNO/DIMEN. Drawing/Dimension	COLATA Heat/Coulee	PROVA Test N°	COMM. Prod. Ord.	POS
N°1 ROUND BAR, SOLUTIONED AT 1100°C	Ø 55 X MT.21	178391	221852	1280/4	40

CARATTERISTICHE MECCANICHE
Mechanical requirements/Caracteristiques mecaniques

					Rp - Yp N/mm2	Rm - Ts N/mm2	A - E %	Z - Ra %	KV -46°C Joule			HB
PROVA Specimen	DIREZ. Direction	Ø mm	Lo mm	Min Max	550	760	25	35	27/20			174 310
221852	Lg. Tr.	12,50	50,00 10x10		562	794	43,1	79,2	338-353-349 105-98-129			237-235-235

CARATTERISTICHE CHIMICHE
Chemical requirements/Caracteristiques chimiques

		C	Mn	Si	P	S	Cr	Ni	Mo	N	Cu	W	PRE
Colata	Min						24,00	6,00	3,00	0,20	0,50	0,50	40
Heat	Max	0,030	1,00	1,00	0,015	0,010	26,00	8,00	4,00	0,30	1,00	1,00	
178391		0,021	0,61	0,36	0,015	0,0005	25,05	7,01	3,67	0,23	0,54	0,53	41

STEEL MAKING PRACTICE: EAF + AOD

VISUAL AND DIMENSIONAL INSPECTION CONFORMS TO CONTRACTUAL REQUIREMENTS - THE PRODUCTS ARE IN COMPLIANCE WITH THE REQUIREMENTS OF THE ORDER

Forgiatura Moderna Arese S.p.A.
Filippelli Serafino
Servizio Controllo Qualità
Quality Department

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FORGIATURA MODERNA ARESE

CERTIFICATO DI CONTROLLO ULTRASONORO

Ultrasonic control certificate

MD 752005.000

N°UT 2201656
Del 9-Nov-2022
Foglio 1 di 1

CLIENTE Customer/Client	ORDINE Order/Commande	MATERIALE Material/Matiere
INDRA S.R.L.	AF22 02440	ASTM A479 USN32760 (F55) - API 6A 60K

DESCRIZIONE MATERIALE Material description	DISEGNO/DIMEN. Drawing/Dimension	COLATA Heat/Coulee	PROVA Test N°	COMM. Prod. Ord.	POS
N°1 ROUND BAR, SOLUTIONED AT 1100°C	Ø 55 X MT.21	178391	221852	1280/4	40

SPECIFICA Specification	ESTENSIONE DELL'ESAME Test area / Extension de l'examen
ASTM A388 + MDSI REV.0	100% ALL SURFACES

TECNICE DELL'ESAME Inspection technique / Tecnique de l'examen	TARATURA Settings/Etalonnage	AMPLIFICAZIONE Amplification
BY REFLECTION	ACC. TO SPECIFICATION	+6dB
CONDIZIONI SUPERFICIALI Test surfaces status / Etat de surface	**MEZZO DI ACCOPPIAMENTO** Means of coupling / Moyen d'accouplement	**TIPO DI APPARECCHIATURA** Type of apparatus / Type d'appareil
NOT-MACHINED	CELLULOSA	GE USMGO

SONDA Probe / Palpeur	FREQUENZA Frequency / Frequence	ANGOLO DI EMISSIONE Emission Angle / Angle de emission	DIMENSIONI Dimension
GE B2S	2 Mhz	0°	Ø 24 mm.

RILEVAMENTO SCHEMATICO
Sketch of anomalies found / Croquis des anomalies trouves

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RISULTATI Results / Resultats	CONTROLLO ESEGUITO DA TECNICO QUALIFICATO II LIVELLO SNT-TC-1A & ISO 9712 Test personnel qualified to level II according to SNT-TC-1A & ISO 9712
CONFORMS TO SPECIFICATION	

NOTE:
Notes
ONLY WARRANTY

Forgiatura Moderna Arese
Luca Di Noi
II LEVEL
SNT-TC-1A/UNI EN ISO 9712

Langley Alloys Ltd
The Wharf
504-506 Lowfield Drive
Newcastle
Staffordshire
ST5 0UU

Tel: +44 (0)1782 610250
Email: sales@langleyalloys.com
Company No: 03059791
VAT No: GB 576 220 247

MATERIAL TEST CERTIFICATE No:DN071162-Z17040U1

ALLOY 32760

Customer Details	ZZ1612E	Order Details	
Indra Srl Via Novara 10/B-C 20013 Magenta {MI} Italy 20013		Date	05/03/2024
		Lot No	Z17040U1
		Cast / Heat No	566657
		Form	S-DUPLEX 32760 5/8" Dia Machined Bar

Conforming Specifications	UNS S32760, ASTM A276-24 S32760, ASTM A479-21 S32760, BS EN 10088-3:2023 1.4501, NACE MR 0175/ ISO 15156-3:2015

Works Order No.	SO197696	Cust Order No.	AF24 00836
Item 1	3 Each	LA0000729781	27.50 Kgs
Item 2	1 Each	LA0000729782	1.70 Kgs

Enclosures

Mill Certificate
Ultrasonic Test Certificate

The following results are actual values taken from tests carried out on a sample from this Lot

Chemical Analysis (WT%)

Element:	C	Si	P	S	Cr	Ni
Specification:	0.000 - 0.030	0.00 - 1.00	0.000 - 0.030	0.0000 - 0.0100	24.00 - 26.00	6.00 - 8.00
Actual:	0.016	0.36	0.021	<0.0005	25.26	6.78

Element:	Mo	W	Cu	N	Mn	Sn
Specification:	3.00 - 4.00	0.50 - 1.00	0.50 - 1.00	0.200 - 0.300	0.00 - 1.00	
Actual:	3.73	0.56	0.53	0.273	0.60	

Element:	Al	Pb	Fe
Specification:			
Actual:	0.016		Balance

MELTED & MANUFACTURED BY AN ISO:9001 APPROVED BODY WITHIN WESTERN EUROPE
MELTING IS CARRIED OUT BY ELECTRIC ARC FURNACE
THIS MATERIAL HAS BEEN REFINED BY ARGON-OXYGEN DECARBURIZATION
THIS MATERIAL HAS BEEN REFINED BY LADLE REFINERY FURNACE
HOT ROLLED PEELED BAR, NO WELD REPAIR, NO MERCURY CONTAMINATION
THE MATERIAL SUPPLIED IS FREE FROM RADIOACTIVE CONTAMINATION

Certified that the whole of the supplies hereon has been inspected, tested and unless otherwise stated above conforms in all respects with their requirements of the contract or order. The quality control arrangements adopted in respect of these supplies have accorded with the conditions of our BS EN ISO 9001 approval.
This test certificate is issued in accordance with EN 10204:2004 3.1.

Signed  Date 05/03/2024

Gary Wilson- Quality Manager

Certificate not valid without QA stamp

LA 1

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Test Certificate No: DN071162 - Z17040U1

Mechanical Results

Diameter / Thickness	mm	15.88	Tensile Strength Long	N/mm²	867.0
Pitting Resistance Equiv No.		41.9	Elongation 4D% (A4)	%	39.0
PREN-W		42.9	Brinell Hardness	BHN	256
0.2% Proof Stress	N/mm²	685.0	Rockwell C	HRC	25.7

HEAT TREATMENT

Solution Treated followed by Water Quenching 1,100 °C 0.50 Hrs

NDT TESTING

Ultrasonic Testing	ULTRASONIC INSPECTION: 100% SATISFACTORY, method to ASTM A388, acceptance to ASTM A388 S1 and API 6A PSL3

ANCILLIARY TESTING

Ferrite Count ASTM E562	Ferrite content according to ASTM E562 54.30 %

PHOTOMICROGRAPH



Etched Photomicrograph
Magnification: X 500

Certified that the whole of the supplies hereon has been inspected, tested and unless otherwise stated above conforms in all respects with their requirements of the contract or order. The quality control arrangements adopted in respect of these supplies have accorded with the conditions of our BS EN ISO 9001 approval.
This test certificate is issued in accordance with EN 10204:2004 3.1.

Signed  Date 05/03/2024

Gary Wilson- Quality Manager *Certificate not valid without QA stamp*

LA 1

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Z17040 CE

Alleima **CERTIFICATE** A03/Z02 **No. A/23-151118** **Rev** 00
Date 2023-04-13 Page 1/4

A02/Z03
INSPECTION CERTIFICATE acc to
EN 10204 3.1

INSPECTION STAMP
SVQ

A06
LANGLEY ALLOYS LIMITED
THE WHARF
504-506 LOWFIELD DRIVE
ST5 0UU NEWCASTLE UNDER LYME
UNITED KINGDOM

Customer References A07
PO271530 SAF32760

Customer order
2022-09-06

180-00991 LANGLE CON

Alleima References A08

Order No.	Subs No.	Dispatch note
589814	713801	42149/53

Suppl. No	C.Code
284-63532	03

Material description B01/B04
HOT WORKED BAR STEEL
ROLLED
ANNEALED & STRAIGHTENED
PEEL TURNED

Metallurgical process **Origin** C70
E+AOD+LRF Sweden

Steel/material Designations B02

Alleima	UNS
SAF 32760+	S32760

EN no
1.4501

Technical requirements B03
Langley PS:SD3276:B Rev.10 + Alleima DDR
EN 10088-3:-2014, EN10272:-2016*, EN10060:2003, EN 10221:1996
EN10222-5:-2017*, PED 2014/68/EU, ISO 17781:2017:QL1,IOGP S-563:2018
NACE MR0175/ISO 15156-3:-2015, NACE MR0103/ISO 17945-1:-2015
ASTM A-276-17, ASME SA-276-ED-21 SECT II PART A,
ASTM A-479-21, ASME SA-479-ED-21 SECT II PART A,
ASTM A-484-22, ASTM A-182-22A*, ASTM A-1049-18*, ASTM A-314-19*,
NORSOK M-630:2020, NORSOK MDS D57 REV. 6*, *Please see the appendix

EXTENT OF DELIVERY B07-B13

It	Product designation	Heat	Lot	Pieces	Kg
01	XMBR-SAF32760-5/8 SD3276D015.88MCD	566657	91091	205	1859.0
			Total	205	1859.0

Heat		Recycled material(%)
566657	Continuous casting	75.6

TEST RESULTS
Reduction ratio (times)

Lot	
91091	426.1

Chemical composition (weight%) acc. to ASTM A-751

Heat	PRE	PRE2 + W
566657	41.9	42.9

Verified True Copy of Original Mill Cert
Z17040
Langley Alloys

Quality assurance – Erik Jansson/QA-manager Primary Products A05/Z02
MTC Service / Certificates

A01 Alleima Tube AB
SE-81181 SANDVIKEN SWEDEN
Reg No. 556234-6832 VAT No. SE556234683201
www.alleima.com mtc_service@alleima.com

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Alleima **CERTIFICATE** **No. A/23-151118** **Rev 00**
Date 2023-04-13 **Page** 2/4

Chemical composition (weight%)

Heat	C	Si	Mn	P	S	Cr	Ni	Mo
566657	0.016	0.36	0.60	0.021	<0.0005	25.26	6.78	3.73
	W	Co	V	Ti	Cu	Al	Nb	B
566657	0.56	0.084	0.061	0.003	0.53	0.016	0.01	0.0025
	O	N						
566657	0.0031	0.273						

Tensile test at room temperature acc to ASTM A-370
Longitudinal
Location radius

	Yield strength		Tensile strength	Elongation	
	Mpa	MPa	Mpa	%	%
Lot	Rp0.2	Rp1.0	Rm	A	2"
91091	685	733	867	39	29

	Red.of Area
	%
	Z
	75

Hardness test acc. to ASTM E-10
Location center

Lot	HRC	HRC	HRC
91091	27	25	25

Impact test, J, Longitudinal acc. to ASTM A-370/ISO 148-1
Location radius

	Single values			Avg.	Temperature
Lot	Joule			Joule	°C
91091	220	210	244	225	-50
	303	280	283	289	20

Lateral expansion

				Temperature
Lot	mm			°C
91091	1.60	1.81	1.98	-50

Corrosion test according to ASTM G-48A, 50°C +/-1°C for 24 hours.
In delivery condition. No pitting corrosion found at 20x enlargement.
Test location acc to NORSOK MDS D57

	Specimen weight loss
Lot	g/m2
91091	0.00

Ferrite acc to ASTM E-562
Tested at surface, half radius and center.
20 Fields and 25 Points per Field (*)

Lot	%
91091	53.3
	54.3
	53.8

Austenite Spacing
acc. to DNV-RP-F112 Section 7

Lot	mym
91091	11.4

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Alleima CERTIFICATE No. A/23-151118 Rev 00
Date 2023-04-13 Page 3/4

Following controls/tests have been satisfactorily performed:
- Material Identification.
- Ultrasonic testing (*)
- Visual inspection and dimensional control.

HEAT TREATMENT:
Up to 74.9 mm: Batch furnace. Material soaking 1100°C, min. 30 minutes. Quenched in water. Water temp. pre-quench max 38°C, after quench max 49°C.
Transfer time furnace to quenching <150 seconds.

75 - 180mm: Continuous heat treatment furnace. Material soaking 1090°C, min. 30 minutes. Alleima is using a continuous water spray quenching process. Water temp pre-quench max 38°C, after quench max 49°C. Transfer time furnace to quenching <60 seconds.

>180 - 250mm: Batch furnace. Material soaking 1100°C, min. 60 minutes. Quenched in water. Water temp pre-quench max 38°C, after quench max 49°C.
Transfer time furnace to quenching <150 seconds.

The raw material is free from radioactive contamination.

Microscopic Examination X 500 acc. to ASTM A 923 Method A/NORSOK M630
Free from grain boundary carbides and intermetallic phases.

Material free from mercury contamination.

No welding or weld repair.

Certified acc. Pressure Equipment Directive (2014/68/EU Annex 1 para 4.3) TUEV CERT-Certification body for pressure equipment of the TUEV NORD GRUPPE; notified body, reg.-no. 0045.

The delivered products comply with the specifications and requirements of the order.

The material is manufactured according to a Quality system, approved and registered to ISO 9001:2015.

No unauthorized alterations. The contents of this Inspection Certificate may not be modified or revised in any way without the prior written approval of Alleima.
Unauthorized alterations to the Inspection Certificate, including introduction of false, fictitious or fraudulent statements or entries, may be punishable by fines, imprisonment, or both. This Inspection Certificate may be copied only in the manner and for the purposes specified in Section 6 of EN 10204:2004. Contravention of this notice will be prosecuted to the fullest extent of applicable law.

The certificate is produced with EDP and valid without signature.

Alleima Tube AB
SE-81181 SANDVIKEN SWEDEN
Reg No. 556234-6832 VAT No. SE556234683201
www.alleima.com mtc_service@alleima.com

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Alleima **CERTIFICATE** **No. A/23-151118** **Rev 00**
Date 2023-04-13 **Page** 4/4

ADDITIONAL INFORMATION

Lab accreditation
Our lab is accredited under SWEDAC Accreditation number 1636 for testing as per ISO/IEC 17025

Applicable only to specific dimensions
12,5mm - 160mm: EN 10088-5 EN (Only valid for CE marked products together with Alleima Declaration of Performance certificate).
12,5mm - 160mm: PED 2014/68/EU EN 10272 (Stainless steel bars for pressure purposes)
12,5mm - 250mm: EN 10222-5 (Chemical composition only)
12,5mm - 180mm: NORSOK M-630 - NORSOK MDS D57 (for length max 7500 mm)

Suitable for manufacturing of components in acc, with ASTM A-182 (F55), ASTM A-1049 & ASTM A-314.

Test location
Mechanical, ferrite testing:
Bar dim < 50 mm - Longitudinal test pieces in center of the bar.
Bar dim > 50mm & < 100 mm - Longitudinal test pieces, 1/4 T and minimum 100 mm from any second surface.
Bar dim > 100 mm & < 250 mm - Longitudinal test pieces, 1/4 T and minimum 100 mm from any second surface. Transversal test pieces, 1/4 T and minimum 100 mm from any second surface.

One set of test samples per heat treatment lot.
Maximum lot size 15 ton.

Micro: To ensure a sound, and unaffected structure all through the material three samples are taken, one close to surface, half radius, and in the center of the bar.

Furnace calibration every third month according to API 6A 21th Edition Annex M, Thermocouples of S-type (+/- 5°C tolerance) are used to monitor the Furnace temperature.

Ferrite Testing: Alleima ferrite testing per ASTM E-562 at 20 fields and 25 points, is fulfilling the requirements of ASTM E-562 testing at 30 fields and 16 points.

Ultrasonic test
Dim 29 - 74 mm: EN 10308 quality class 3
Dim 75 mm - : EN 10228-4, Tab 3 Scan coverage 1a 100%, Tab 5 Quality Class 3, ASTM A-388, API 6A PSL3/3G.

Alleima, formerly Sandvik Materials Technology. During a brand transition period, both Sandvik and Alleima marking on products may exist.

Alleima Tube AB
SE-81181 SANDVIKEN SWEDEN
Reg No. 556234-6832 VAT No. SE556234683201
www.alleima.com mtc_service@alleima.com

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Söderfors Steel AB

Heat Treatment Report

Furnace: 2
Heat treating number: 2529

Production no:	Internal grade:
256168	985,2

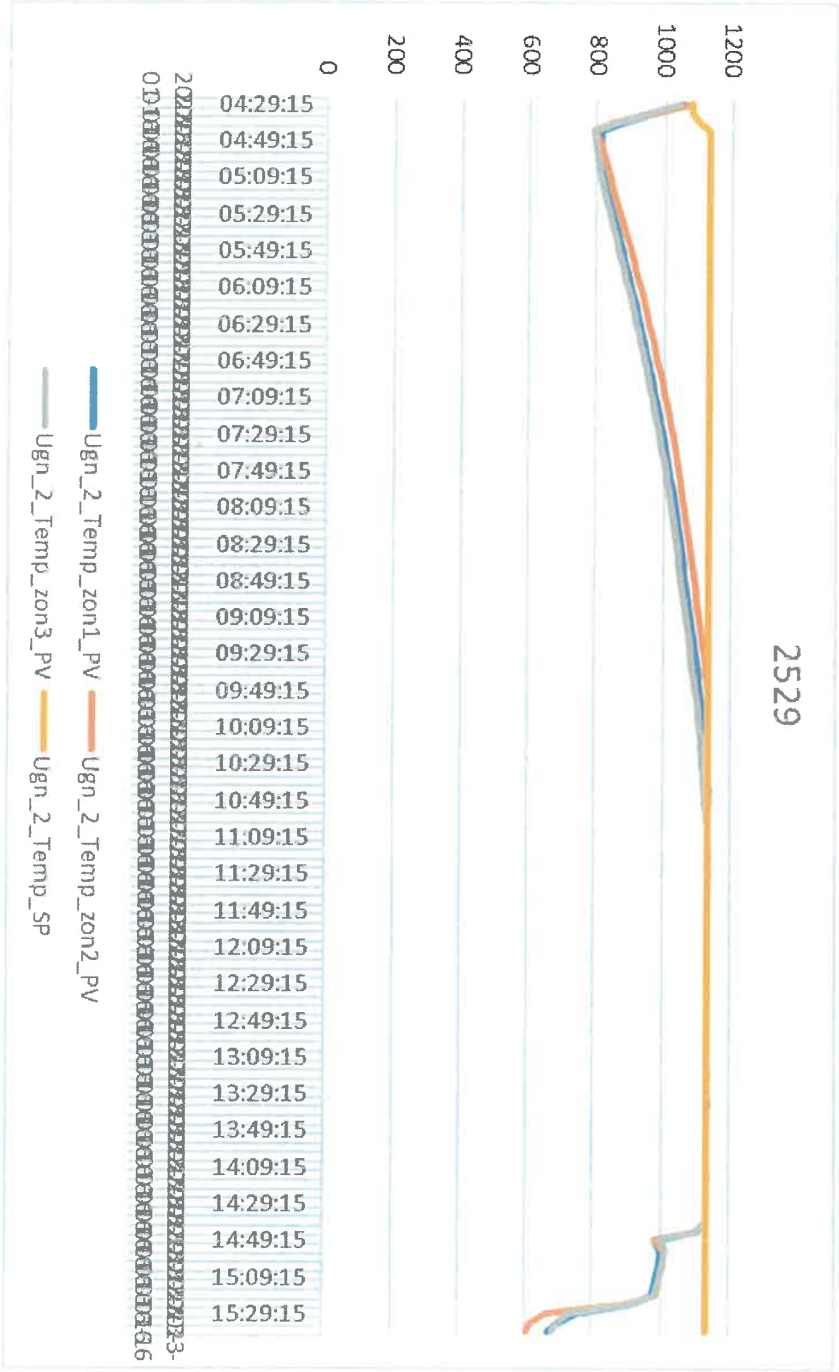
Dimension (mm x mm):	19,0	x	0,0
Weight:	2430		
Internal heat treatment recipe:	61135		
Protective gas:	Manual		
Customer lot no:			91091
Heat lot no:	566657		
Quenching in water(transfer time):			108 s

Water temperature(start/stop of quenching):
2,0 / 13,9 °C

Comments:
SANDVIK
10H
10KVÄVE

Start time:	2023-01-16 04:33
Calculated stoptime:	23-01-16 KL 14:33
Actual stoptime:	2023-01-16 15:39

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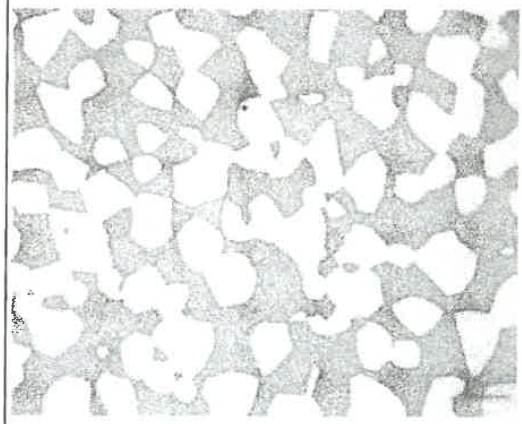
Microstructure Examination Report

Page 1 of 1

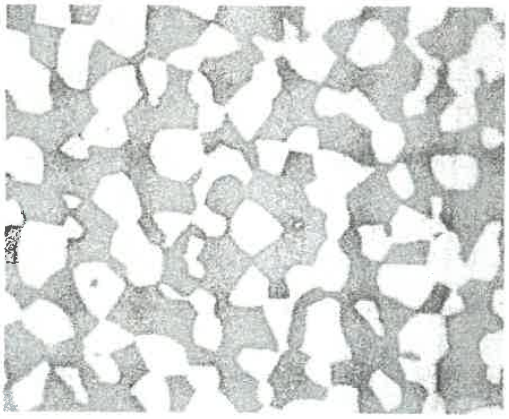
Material Information	
Grade	SAF32760
Heat	566657
Lot	91091
Dim	15.88 x

Technical Information	
Certificate No.	A/23-151118
Test Date	2023-02-27
Etchant	NAOH
Test Result	OK

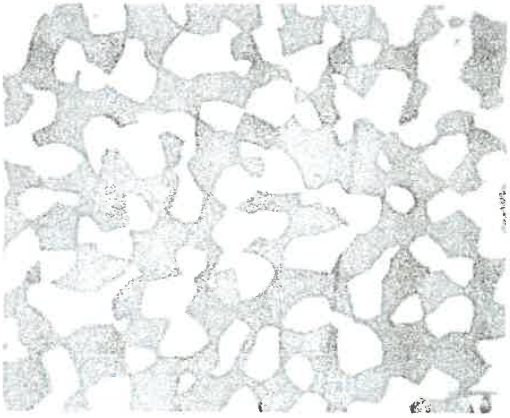
Test No: 1733 O | Magnification: 500X



Test No: 1734 R | Magnification: 500X



Test No: 1735 C | Magnification: 500X



STQD:Emelie Karlsson (mtritech\ek83272)

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CAP. SOC. 115.000.000 EUR INT. VERS.
C.F. 02187360987
VAT: IT00571320076 - R.E.A. n. AO-50474

Company with management systems IQG approved and certified according to ISO 9001, ISO/TS 16949 e ISO 14001.

INSPECTION CERTIFICATE 3.1 (EN 10204:2004)
DOCUMENT NUMBER 2018036042

CUSTOMER'S ORDER:	635		
MANUFACTURER'S WORKS:	AOSTA, VIA PARAVERA 16 - ITALY		
PRODUCER OF THE DOC:	QUALITY DEPARTMENT		
MANUFACTURER'S WORKS ORDER NO: 1105304 /10	MARK OF THE MANUFACTURER:	**COGNE**	
DISPATCH NOTE:	81219530 /10	WEIGHT: 14 KG	
THE CERTIFIED PRODUCTS ARE COMPLYING TO THE PURCHASE ORDER			
INTERNAL SPEC:	NORSOKREV5	TECHNICAL RULE:	
PRODUCT:	60362 PEL PEELED ROUND BARS TOLERANCE: ISOK11		
SURFACE FINISH:	2B Cold Finished		
PRODUCT DELIVERY CONDITION:	RS SOLUTION ANNEALED		
PRODUCT DIMENSIONS (mm):	30,000	LENGTH (mm)	04000 /06200
GRADE:	F55 UNSS32760 1.4501	INTERNAL GRADE:	329S
IDENTIFICATION HEAT NO:	870052	IDENTIFICATION LOT NO:	673930
MARKING OF THE PRODUCT:	1.4501	TEST PIECE N:	393

REFERENCE NORMS:EN 10088-3, EN 10272, ASTM A276/ASME SA276, ASTM A479/ASME SA479, ISO15156-3/NACE MR0175, NACE MR0103, API 6A-PSL3, NORSOK M-650 REV.4/M-630 MDS D57 REV.5 QTR04 (up to 101.6mm), QTR05 (101.61-250mm). REFERENCE NORMS ONLY FOR CHEMICAL COMPOSITION: EN 10222-5, ASTM A182/ASME SA182, ASTM A484
HEAT TREATMENT: SOLUBILIZATION 1100 ° C 1.5 min / mm COOLING WATER TEMPERATURE BELOW 260 °C (FURNACE THERMOCOUPLES)
ASTM G48 A/ASTM A923 C TESTING CONDITIONS: Sample surface 120 GRIT, Solution 100g FeCl3.6H2O+900ml H20, T 50°C, 24h, no pitting at 20X.
STEELMAKING EAF + AOD + CONTINUOUS CASTING
HOT ROLLED
REDUCTION RATIO 76,3

CHEM. COMP. (%W/W) - LADLE ANALYSIS ACCORDING TO ASTME1019-A751-E1086-E415-A580
Control lot No. - Weight :020000736050 - 80.312 KG

ELEMENTS	C	Si	Mn	P	S	N	Cr	Mo	Ni	Cu
OBTAINED	0,019	0,38	0,56	0,021	0,0005	0,25	24,87	3,68	6,88	0,54

ELEMENTS	W	CV_F8
OBTAINED	0,54	41

CV_F8 = CR+(3.3*MO)+(16*N2)

HARDNESS TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000739366 - 1.784 KG
SPECIFICATION ENISO6506 HARDNESS TEST HB TESTING METHOD: 10/3000
OBTAINED 240

IMPACT TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000739366 - 1.784 KG
SPECIFICATION EN ISO 148-1-KV2 DIRECTION OF THE TEST PIECE: L

TYPE OF TEST PIECE	KV		
TEST TEMPERATURE °C		20	
MEASUREMENT UNIT	J		
OBTAINED	298	297	297

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DOCUMENT NUMBER 2018036042

TENSILE TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000739366 - 1.784 KG
SPECIFICATION ASTMA370-E8-0.5"SPEC DIRECTION OF THE TEST PIECE: L

MEASUREMENT UNIT	Rm MPA	Rp02% MPA	Z %	A12 % 4,0 D
OBTAINED	798	552	79,9	48,9

CORROSION
Control lot No. - Weight :020000739366 - 1.784 KG
SPECIFICATION ASTM G48 A
OBTAINED 0,1046

FERRITE %
Control lot No. - Weight :020000739366 - 1.784 KG
SPECIFICATION ASTME562 --
OBTAINED 53,75

MICROSTRUCTURE
Control lot No. - Weight :020000739366 - 1.784 KG
SPECIFICATION -- --
SATISFACTORY
OBTAINED -

LATERAL EXPANSION
Control lot No. - Weight :020000739366 - 1.784 KG
SPECIFICATION ASTMA370 --
OBTAINED 2,5 2,6 2,7

SHEAR %
Control lot No. - Weight :020000739366 - 1.784 KG
SPECIFICATION ASTMA370 --
OBTAINED 100 100 100

HARDNESS TEST
Control lot No. - Weight :020000739366 - 1.784 KG
SPECIFICATION ASTMA370-E18 HARDNESS TEST HRC TESTING METHOD:
OBTAINED 25

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INSPECTION CERTIFICATE 3.1 (EN 10204:2004)
DOCUMENT NUMBER 2018036042

IMPACT TEST
Control lot No. - Weight :020000739366 - 1.784 KG
SPECIFICATION ASTM A370-E23 TYPE A DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 50-
MEASUREMENT UNIT J
OBTAINED 296 297 296

TENSILE TEST
Control lot No. - Weight :020000739366 - 1.784 KG
SPECIFICATION EN-ISO6892-1 DIRECTION OF THE TEST PIECE: L

	Rm_C	Rp02_C	A	Z_C
MEASUREMENT UNIT	MPA	MPA	% 5.0 D	%
OBTAINED	806	552	38,5	79,4

STEELMAKING EAF + AOD + CONTINUOUS CASTING
HOT ROLLED
METALLOGRAPHIC INSPECTION ACCORDING TO ASTM A923 METHOD A: SATISFACTORY.
IMPACT TEST VALUES AT -46°C ARE NOT LESS THAN THOSE AT -50°C HERE STATED.
QTC ON PROLONGATION OF BARS TESTS AT MID RADIUS (CENTER POS. FOR SIZES <2 INCHES).
ASTM A484 DOES NOT APPLY FOR SIZE AND LENGTH TOLERANCES.
MARKING: PRODUCER LOGO, MATERIAL NO, HEAT NO, LOT NR.
ALL THE NORMS MENTIONED ARE INTENDED IN THEIR LAST REVISION AT THE DATE OF ISSUE OF THIS DOCUMENT.
COUNTRY OF ORIGIN: ITALY, THE MATERIAL COMPLIES WITH FAR DFARS
252.225-7009 ALT 1.
THE PRODUCT SATISFIES CE DIRECTIVES: 2011/65 (ROHS2) - 2000/53 - 2002/95(RoHS) - 2003/11 - 2005/618 AND PED 2014/68/EU.
THE MATERIAL IS FREE OF ANY MERCURY, MERCURY COMPOUNDS AND OR RADIUM CONTAMINATION AT TIME OF SHIPMENT AND WAS PRODUCED WITHOUT USING OZONE DEPLETING SUBSTANCES OF CLASS I AND II.
VISUAL SURFACE INSPECTION AND EDDY CURRENT WITH ROTATING HEAD ACCORDING TO EN 10277-1 Class 4 : SATISFACTORY . DIMENSIONAL TEST ACCORDING TO EN 10278 : SATISFACTORY . ULTRASONIC TEST IN ACCORDING TO EN 10308 , Class 3 : SATISFACTORY . ANTIMIX SPECTROMETER CONTROL WITH PORTABLE PRODUCT : SATISFACTORY . NOT BEEN MADE BY ANY REPAIR MATERIAL WELDING
CORROSION TEST ACCORDING TO ASTM A262 Method E EN ISO 3651-2: SATISFACTORY. NO CRACKS AT 20X MAGNIFICATION

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DATE 28.06.2018 MORABITO ROSA CF(QUALITY CERTIFICATOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne

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Via Paravera, 16
I-11100 AOSTA

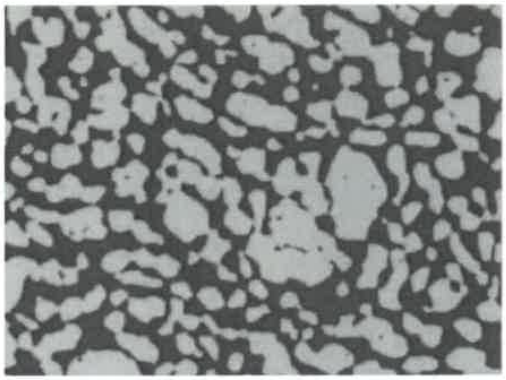
MICROPHOTO
МИКРОСЪЁМКА
All.N 1

MARCA NUANCES WERKESTOFF GRADE МАРКА	329S	LOTTO DI CONTROLLO LOT DE CONTRÔLE LAUFKARTE CONTROL LOT ПАРТИЯ КОНТРОЛЯ	020000739366
COLATA COULEE SCHMELZE HEAT ПЛАВКА	870052	REAGENTE RÉACTIF REAGENS ETCHANT РЕАГЕНТ	20 % NaOH electrolyte
TIPO DI APPARECCHIO TIPE D'APPAREIL PRUEFGERAT TYP INSTRUMENT TYPE ТИП АППАРАТА		MICROSCOPE – LEICA МЕР4М МИКРОСКОП	
INGRANDIMENTO AGRANDISSEMENT VERGROSSERUNG ENLARGEMENT УВЕЛИЧЕНИЕ		400 X	

DIREZIONE D'ESAME
DIRECTION D'EXAMEN
PRUEFRICHTUNG
SCANNING DIRECTION
НАПРАВЛЕНИЕ
ПРИ ИССЛЕДОВАНИИ

☐ LONGITUDINALE - LONGITUDINAL - ПРОДОЛЬНОЕ
☒ TRASVERSALE – TRANSVERSAL – KREUZEND-ПОПЕРЕЧНОЕ

PHOTO (ELECTRONIC IMAGE) – ФОТОСНИМКИ (ЭЛЕКТРОННОЕ ИЗОБРАЖЕНИЕ)



NOTE:
ПРИМЕЧАНИЯ:
"Free from Intermetallic Phases"

FIRMA / SIGNATURE / ПОДПИСЬ	UNTERSCHRIFT / SIGNATURE	DATA / DATE / ДАТА	DATUM / DATE
Christian Del Guerra		20/06/18	

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MICROPHOTO All.N 2
МИКРОСЪЁМКА

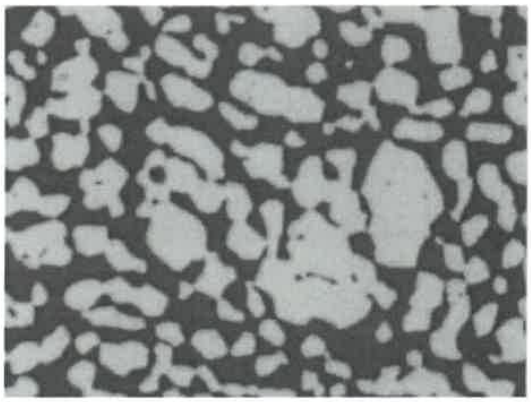
MARCA / *NUANCES* / *WERKESTOFF* / *GRADE* / *МАРКА*	329S	*LOTTO DI CONTROLLO* / *LOT DE CONTRÔLE* / *LAUFKARTE* / *CONTROL LOT* / *ПАРТИЯ КОНТРОЛЯ*	020000739366
COLATA / *COULEE* / *SCHMELZE* / *HEAT* / *ПЛАВКА*	870052	*REAGENTE* / *RÉACTIF* / *REAGENS* / *ETCHANT* / *РЕАГЕНТ*	20 % NaOH electrolyte
TIPO DI APPARECCHIO / *TIPE D'APPAREIL* / *PRUEFGERAT TYP* / *INSTRUMENT TYPE* / *ТИП АППАРАТА*		**MICROSCOPE – LEICA MEF4M МИКРОСКОП**	
INGRANDIMENTO / *AGRANDISSEMENT* / *VERGROSSERUNG* / *ENLARGEMENT* / *УВЕЛИЧЕНИЕ*		**500 X**	

DIREZIONE D'ESAME / *DIRECTION D'EXAMEN* / *PRUEFRICHTUNG* / SCANNING DIRECTION / НАПРАВЛЕНИЕ ПРИ ИССЛЕДОВАНИИ

☐ **LONGITUDINALE - LONGITUDINAL - ПРОДОЛЬНОЕ**

☒ **TRASVERSALE – TRANSVERSAL – KREUZEND-ПОПЕРЕЧНОЕ**

PHOTO (ELECTRONIC IMAGE) – ФОТОСНИМКИ (ЭЛЕКТРОННОЕ ИЗОБРАЖЕНИЕ)

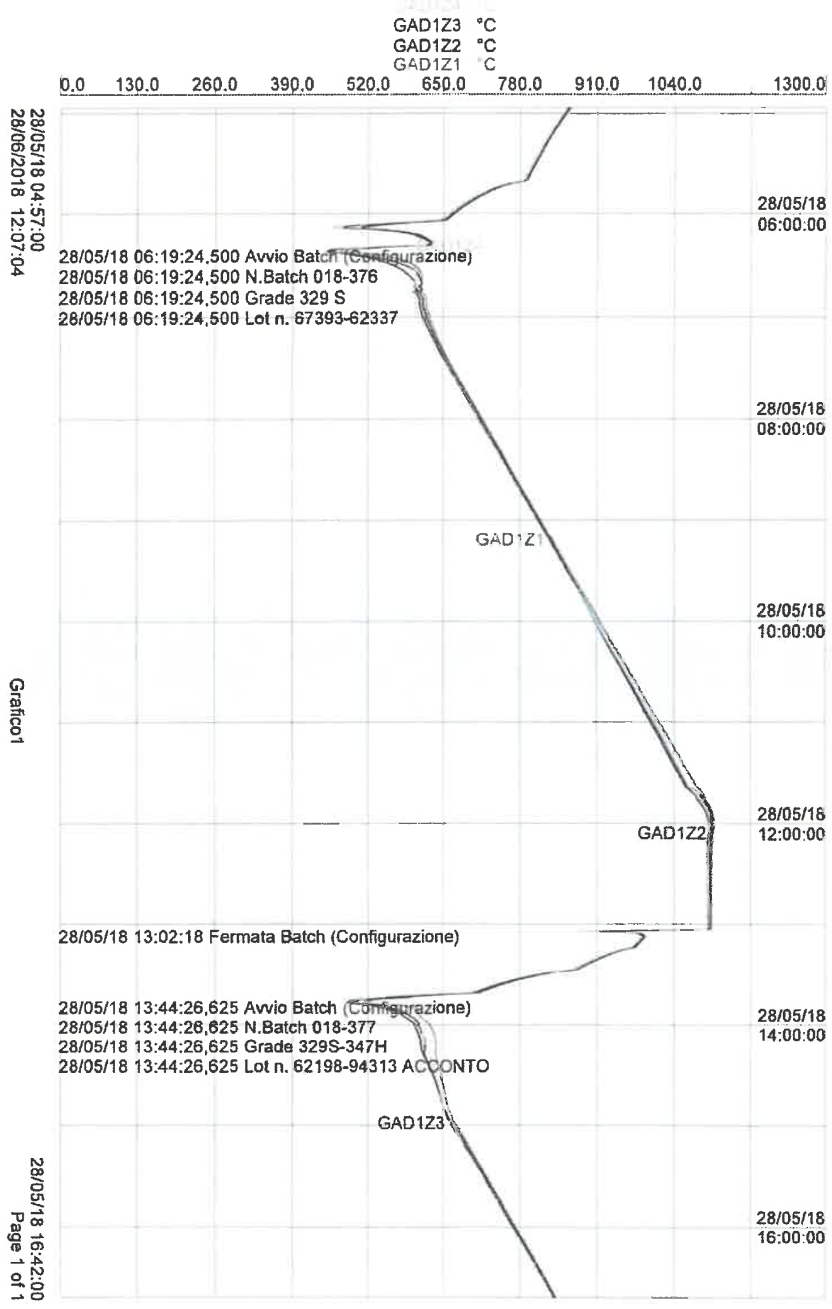


NOTE:
ПРИМЕЧАНИЯ:
"Free from Intermetallic Phases"

FIRMA / SIGNATURE / ПОДПИСЬ	UNTERSCHRIFT / SIGNATURE	DATA / DATE / ДАТА	DATUM / DATE
Christian Del Guerra		20/06/18	

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CERTIFICATO DI COLLAUDO ULTRASUONI
CERTIFICAT DE CONTROLE PAR ULTRASONS
ULTRASCHALL PRUEFZEUGNIS
REPORT OF ULTRASONIC INSPECTION
ОТЧЕТ ОБ УЛЬТРАЗВУКОВОМ КОНТРОЛЕ

N. US.
1217/18

CLIENTE / *CLIENTSGG* / *BESTELLER* / *CUSTOMER* / ЗАКАЗЧИК			*CONFERMA* / *CONFIRMATION* / *AUFTRAGSBESTRAKTIGUNG* / *CONFIRMATION* / ПОДТВЕРЖД. ЗАКАЗА		
MARCA / *NUANCES* / *WERKESTOFF* / *GRADE* / МАРКА	329S W No 1.4501		*ORDINE* / *COMMANDE* / *AUFTRAG* / *ORDER* / ЗАКАЗ		
SPECIFICA / *SPECIFICATION* / *PRUEFVORSCHRIFT* / *SPECIFICATION* / ТЕХ. ТРЕБОВАНИЯ	EN10308 prospetto3 cl3		*COLATA* / *COULEE* / *SCHMELZE* / *HEAT* / ПЛАВКА	870052	*SCHEDA* / *LOT* / *LAUFKARTE* / *LOT* / ПАРТИЯ 673930
PRODOTTO / *PRODUIT* / *ERZEUGNISFORM* / *PRODUCT* / ИЗДЕЛИЕ	ROUND BARS 30 mm		*STATO DI LAVORAZIONE* / *STADE DU PRODUIT* / *LIEFERZUSTAND* / *WORKING STEP* / ОБРАБОТКА	PEELED	
TIPO DI APPARECCHIO / *TIPE D'APPAREIL/PARUS* / *PRUEFGERAT TYP* / *INSTRUMENT TYPE* / ТИП АППАРАТА	USN60 L SW	16L021RC	*COSTRUTTORE* / *CONSTRUCTEUR* / *BAUART* / *MAKE* / ИЗГОТОВИТЕЛЬ	KRAUTKRAMER	
TIPO DI SONDA / *TIPE DE PALPEUR* / *PRUFKOPT* / *PROBETYPE* / ТИП ЗОНДА	MSEB4S-E		*FREQUENZA* / *FREQUENCE* / *FREQUENZ* / *FREQUENCY* / ЧАСТОТА	4 MHz	

DIREZIONE D'ESAME / *DIRECTION D'EXAMEN* / *PRUEFRICHTUNG* / *SCANNING DIRECTION* / НАПРАВЛЕНИЕ ПРИ

- [X] *RADIALE - RADIAL*
- [ ] *ASSIALE - AXIAL*
- [ ] *SONDE ANGOLATE - ANGLE BEAMS*

- [ ] ***MATRICOLA BLOCCO CAMPIONE*** / ***DENTIFICATION BLOC DE REFERENCE MUSTER BLOCK*** / ***MUSTER BLOCK*** / ***TEST BLOCK NR*** / № ОБРАЗЦА ДЛЯ ИСПЫТАНИЯ

- [ ] *AVG SCALE* / *ECRANS ABAQUES AVG* / *AVG SKALEN* / *AVG SCALE* / ШКАЛА *AVG*
- [X] *AVG DIAGRAMMI* / *DIAGRAMMES AVG* / *AVG DIAGRAMM* / *AVG DIAGRAM* / ДИАГРАММЫ *AVG*
- [ ] V1
- [ ] V2

RISULTATODELL'ESAME / **RESULTAT DE L' ESSAI** / **PRUEFERGERBNISSE** / **RESULT OF THE TEST** / **РЕЗУЛЬТАТ**

EXAM DATA : 28/06/2018
INSPECTED N. BARS 39

THE MATERIAL IS IN ACCORDANCE TO THE FOLLOWING SPECIFICATIONS:

EN10308 prospetto3 cl3

L'ISPETTORE CND / **L'INSPECTEUR CND** / **ZUSTANDER CND** / **CND INSPECTOR** / **ИНСПЕКТОР НРК**	**III LIV.CND** / **III УРОВЕНЬ НРК**		**DATA DATUM** / **DATE DATE** / **ДАТА**
BAISOTTI MARCO Liv.II - EN473 N° Cert.20741/PND/C	OLIVERO DIMITRI Liv.III - EN473 N° Cert.23340/PND/C		28/06/2018

(Mod. Certus Rev. 6)

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IPL S.r.l.
BULLONERIA - TIRANTERIA
SPECIALE E STANDARD

Via Papa Giovanni Paolo I, 306
21040 UBOLDO (VA)

Customer: **INDRA SRL**
C.SO XXII MARZO, 8
20135 MILANO (MI)

Date, 16-09-24 **Our Ref.** DDT 3256 / OC 1677 **of** 16-09-24 **Your Ref.** AF24 02616 29-07-24

CERTIFICATE UNI EN 10204 - 3.1 N.2402531

ITEM		QUANTITY	HEAT TREATMENT	PROTECTION	LOT nr.	HEAT nr.
59317M008020NF	HEX SOCKET HEAD CAP SCREW UNI 5931/ISO4762/DIN912 - A/SA/SA193 B7M M 8 x 20 HDG	10,00	quenched tempered	HOT DIP GALVANIZED ASTM A153 Cl. "C" / F2329	834803	BB7389*

101.99.0986CS-PED46

MECHANICAL PROPERTIES

values	R (MPa)	Rp 0,2 (MPa)	A4 (%)	Z (%)	HB (min. - max)	I.T. ISO-V -46 °C (J)
required	690 min	550 min	18 min.	50 min.	200 - 235	
actual	697	570	32,0	64,1	206	68 - 66 - 78

CHEMICAL COMPOSITION

values	C (%)	Mn (%)	Si (%)	P (%)	S (%)	Cr (%)	Mo (%)
required	0,380 - 0,480	0,750 - 1,000	0,150 - 0,350	0,035 max	0,040 max	0,800 - 1,100	0,150 - 0,250
actual	0,435	0,770	0,190	0,011	0,0260	1,070	0,160

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remarks: chemical and mechanical values, at delivery condition, are quoted by the relevant steel work certificate. VISUAL AND DIMENSIONAL TEST SATISFACTORY
According to: ASME II part. A ed. 2021. Macroetch test according to ASTM E381 result: S1; R1; C1.

If not mentioned the above test are performed at room temperature.
We certify that the fasteners were manufactured, sampled, tested and inspected in accordance with the specification and are consistent with order prescriptions.
Quality assurance system in accordance to European Directive 2014/68/EU annex I par. 4.3 (PED) and AD 2000 Merkblatt W0.
Certificates 0045/202/WZ1921/23 and TN/AD2000-W0/1921/23 TÜV NORD Systems GmbH & Co. KG.

IPL S.R.L.
RSQ A. Grisetti

ROSETTI MARINO ITEM 240

COD. VLBLNN01410100

TAG:

BLPH-MV-001

INDRA ITEM 240

COD. 00.VSF.2696/V

indra VALVES - ITALY	***Certificazione dei materiali*** ***EN 10204 3.1 come da allegati*** ***Material certification*** ***EN 10204 3.1 as per attachments***	**MD-02-04-IT-UK / VSF** **Rev. 16** **Data: 08-Nov-2018** **CM/IT/UK**

Nr. *No.* **24-1836** **Data /** *Date :* **23-Sep-2024**

Cliente / *Customer* **ROSETTI MARINO SPA**

Vs. ordine Nr. / *Your order Nr.* **1724000798 REV.2** **Data /** *Date :* **26-Jun-2024**

Ns. commessa Nr. / *Our job Nr.* **24 01216** **Data /** *Date :* **3-Jul-2024**

Ns. D.D.T. Nr. / *Our advise note Nr.* **Data /** *Date :*

Ordine di produzione / Production order number : 24 01216/240 - 437405

Lotto / Material batch number : 437405

Pos. Cliente *Customer Item*	*Pos. Indra* *Indra Item*	*Codice / Code* *Ns./ Our*	*Codice / Code* *Vs. / Your*	*Q.tà / Q.ty*	*Nr. di serie* *Serial Number*	*Descrizione /Description*
240	240	00.VSF.2696/V	VLBLNN01410100	1	106032	INDRA BALL VALVE SBB-798-25-F150RF3-F-D-DLF-DL-N-PG-ESX100-EXY3-L13-TG-TGW-TV-PMI2-PD2-BI-CR-TA-FS-SPC1

Elenco / List

Componente / *Component*	Colata / Heat	Materiale *Material*	Numero del certificato Certificate number
Corpo Valvola / Valve Body	437405	AISI 316/316L NACE	MEST080041/2024/ - UT24003643
Closure F150RF3	437405	AISI 316/316L NACE	MEST080041/2024/ - UT24003643
Tirante / Stud bolt	281154	ASTM A193 B8M Cl.2	5086
Dado / Nut	160903S05	ASTM A194 Gr.8M	5066
Stelo antiespulsione sfera / Ball stem	E30822	AISI 316/316L NACE	173501
Sfera / Ball	072244	AISI 316/316L NACE	2020018438
Corpo bonnet/ Bonnet body	292255	AISI 316/316L NACE	MEST004991/2024/
Stelo spillo / Stem needle	283925	AISI 316/316L NACE	MEST690625/2021/
Otturatore / Tip	272849	AISI 316/316L NACE	499910
Vite bonnet / Bonnet bolting	304113	ASTM A193 B8M Cl.2	1369552

NOTE / **REMARKS :** TAG: BLPH-MV-001

PREPARATO DA: **ELEONORA RANZANI**
PREPARED BY: **DOCUMENTION MANAGER**

APPROVATO DA: **LUCIA NOSOTTI**
APPROVED BY: **QUALITY ASSURANCE MANAGER**

20013 Magenta (MI) Italy - Via Novara, 10/B-C
Tel. +39 02 97298663 r.a. - Fax +39 02 97291855
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CORPO VALVOLA / VALVE BODY - CLOSURE F150RF3

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST080041 / 2024 /
Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 01954
Bestell
Your order
Commande

Conferma ordine nr: MI24004883
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24003675
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage

SPECIFICHE :
Anforderungen / Requirements / Exigences

Note:
Aufzeichnungen / Notes / Notes

AV 316L VALVES A/1 1.4401/1.4404 A	
IS107 01 316 A	
MDS S01 5 316 A (0)	(0)Norsok-standard M-630 Edition 6, October 2013
MDS S17 1 316 A (1)	(1)Norsok-standard M-630: 2020 (2020-09-30)
AD 2000-M. W 2 2022 1.4401 A (2)	(2)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
AD 2000-M. W 2 2022 1.4404 A (3)	(3)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
API 6A 21 ANNEX M (4)	(4)Errata 1 (04/2019), Errata 2 (06/2020), Errata 3 (09/2020). Addendum 1 (July 2020) and Addendum 2 (June 2021).
API 6D 25 ANNEX H (5)	(5)Revision November 2021
ASME SA182 2023 S31600/03 A (6)	(6)Section II Part A 2023 EDITION For products machined directly from bar refer to ASME SA479.
ASME SA276 2023 S31600/03 A (7)	(7)Section II Part A 2023 EDITION
ASME SA479 2023 S31600/03 A (8)	(8)Section II Part A 2023 EDITION
ASTM A182 2024 S31600/03 A (9)	(9)For products machined directly from bar refer also to ASTM A479.
ASTM A262 PR. E 2015 316/316L (A)	(A)Reapproved 2021
ASTM A276 2024A S31600/03 A	
ASTM A370 2024 .	
ASTM A479 2023A S31600/03 A	
ASTM E381 2022 .	
ASTM E562 2019 . (B)	(B)19E01
EN 10088 PART 3 2014 1.4401 A	
EN 10088 PART 3 2014 1.4404 A	
EN 10222 PART 5 2017 1.4401 A	
EN 10222 PART 5 2017 1.4404 A	
EN 10272 2016. 1.4401 A	
EN 10272 2016. 1.4404 A	
ISO 148-1 2016 .	
ISO 6892-1 2019 .	
NACE MR0103 2015 S31600/03 A (C)	(C)ANSI/NACE MR0103/ISO 17945 November 23, 2015
NACE MR0175 4 S31600/03 A (D)	(D)ANSI/NACE MR0175/ISO 15156-3:2020 Fourth edition, approved 21 Sep 2022.

		Tolleranza: k12 Toleranz/Allowance/Tolerance					
Pos. nr. Pos. nr. Item nr. Nr. de poste	Oggetto Gegenstand Product description Descrip. du produit	Dimensioni - mm Abmessungen Dimension Dimension	Lunghezza - mm Lange Length Longueur	Colata Schmelze Heat Coulée	Pezzi Stückzahl Pieces Pièces	Peso - KG Gewicht Weight Poids	Lotto nr. Losnr. Lot nr. Lot nr
0010	Tondo	110,000	5814/ 6034	437405	1	440,0	314603170

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 13/06/2024 VCQ012 - MEST080041	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 1 di 7

CORPO VALVOLA / VALVE BODY - CLOSURE F150RF3

Acciaierie Valbruna S.p.A.

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Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
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CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST080041 / 2024 /

Cliente / Besteller/Purchaser/Client:
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr / Bestell / Your order / Commande: AF24 01954

Conferma ordine nr / Werks/Our Order/Ref nr.: MI24004883

Avviso di Spedizione / Lieferanzeige/Packing list/B.L.: A-MI24003675

Stato di fornitura / Lieferzustand / Delivery state / Etat de livraison: Fucinato Solubilizzato - Pelato

Tipo di Elaborazione / Erschmelzungsart / Melting process / Mode d'elaboration: E+AOD

Qualità / Werkstoff/Grade/Nuance: 1.4401/1.4404/316/316L

Marca / Markenbezeichnung / Brand / Nuance: MVAPML (MAXIVAL)

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice: AV

Punzone del Collaudatore / Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur: MR

Punzonatura / Kennzeichnung / Marking / Marquage: 1.4401/1.4404/316/316L

TEST ALLO STATO DI FORNITURA
Test on delivery condition – Prüefung auf lieferbereitem produkt – test a l'etat de fourniture – Prueba sobre el material así come entregado

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam epais. mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement A5 %		Strizione Einschnürung Reduction of area Striction Z %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti / Anforderungen/Required values / Valeurs démandées		min / max		205	240	510 / 690	45	-	-	-	-			- / 215		
A	10	20	L	276	309	573	59		69					151		
I	10	20	L	271	305	570	61		70					154		

TEST ALLO STATO DI FORNITURA
Test on delivery condition / Prüefung auf lieferbereitem produkt / Test a l'etat de fourniture / Prueba sobre el material así come entregado

TEST		min	max	
I	Dimensioni grano x ASTM E112			3
I	Ferrite delta %			0,8 %

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam epais. mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti / Anforderungen/Required values / Valeurs démandées		min / max		60	60	60	-	-	-	-	-	-
B	10X10	-196	L	320	316	312	2,563	2,499	2,504	75	75	75

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam epais. mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti / Anforderungen/Required values / Valeurs démandées		min / max		205	-	515	-	40	-	50	-			- / 215		
C	12,5	20	L	276		573		56		76				150		

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 13/06/2024	Direzione Qualità / Qualitätsmanagement/Quality Management/Gestion Qualité	Direzione Prodotto / Produktmanagement/Product Management/Direction Produit	Pagina
VCQ012 - MEST080041	R.BERTELLI	P.MESSORI	2 di 7

CORPO VALVOLA / VALVE BODY - CLOSURE F150RF3

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
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Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST080041 / 2024 /
Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 01954
Besteli
Your order
Commande

Conferma ordine nr: MI24004883
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24003675
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werksachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Hearte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs démandées		min max		205	-	515	-	40	-	50	-			-		215
M	4,25	20	T	260		557		53		66				154		

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs démandées		min max		60	60	60	-	-	-	-	-	-
D	10X10	-196	T	63	68	64	0,783	0,711	0,682	30	30	30

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion			Shear Shear		
Valori richiesti Anforderungen/Required values Valeurs démandées		min max		100	100	100	-	-	-	-	-	-
H	10X10	20	L	343	340	338						
L	10X10	20	L	338	342	336						

Tensile testing according to ISO 6892-1
Impact testing according to ISO 148-1
Mechanical properties according to ASTM A370.
Ferrite content tested according to ASTM E562.

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Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat / Schmelze/Coulée																
	min 23,0	-	-	-	-	16,50	2,00	10,00	-	-	-	-	-	-	-	-
	max 28,0	0,030	1,00	2,00		18,00	2,50	13,00	-	0,045	0,030	0,100	-	-	-	-
	PRE	C %	Si %	Mn %	Cr %	Mo %	Ni %	Co %	P %	S %	N %					
437405	25,0	0,019	0,44	1,73	16,99	2,05	10,08	0,108	0,028	0,026	0,077					

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 13/06/2024
VCQ012 - MEST080041

Direzione Qualità
Qualitätsmanagement/Quality Management/Gestion Qualité
R.BERTELLI

Direzione Prodotto
Produktmanagement/Product Management/Direction Produit
P.MESSORI

CORPO VALVOLA / VALVE BODY - CLOSURE F150RF3

Acciaierie Valbruna S.p.A.

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Telefono 0444.968211 - Fax 0444.963836
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Telefono 0471.924111 - Fax 0471.924497

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Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 01954
Bestell
Your order
Commande

Conferma ordine nr: MI24004883
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24003675
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'essayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage

Colata /Heat Schmelze/Coulée	min 14,0 max 20,0	-	-	-	-	-	-	-
437405	Ni+(2*Mo) 14,2							

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

Furnace calibrated according to API 6A REV 21th ED ANNEX M.
Furnace calibrated according to API 6D REV 25th ED ANNEX H.
Macroetch test per ASTM E381: acceptable.
Reduction ratio = 28,8 : 1
SURFACE QUALITY GUARANTEE BY ET INSPECTION (max defect depth 1% DIAMETER)
UT ACC. TO A388/API 6A PSL3-EN 10308cl.3-ASME B16.34/IV
Treatment made on date 11/11/2023 in continuous
furnace FCB calibration expiry date 18/01/2024.
Solution annealed 1080°C for 160'(total time)/water cooled.
"Issued in agreement with TÜV SÜD Industrie Service GMBH
(07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by
Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

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Allegati / Anlagen / Enclosure / Attachments :
UT24003643 GT24001196

Sono state soddisfatte tutte le condizioni richieste
Die gestellen Anforderungen sind il. Anlage erfüllt
The material has been furnished in accordance with the requirements
Le materiel à été trouvé conforme aux exigences

Controllo antimescolanza con tecnica XRF/OES portatile : OK
Verwechslungprüfung: durch XRF/QES Gerät geführt : OK
Antimixing testing performed with XRF/OES portable : OK
Contrôle antimélange svt technique XRF/QES portable : OK

Controllo visivo e dimensionale: soddisfa le esigenze
Besichtigung und Ausmessung: ohne Beanstandung
Visual inspection and dimensional checks:satisfactory
Contrôle visuel et dimensions: satisfaisant

Vicenza, 13/06/2024
VCQ012 - MEST080041

Direzione Qualità
Qualitätsmanagement/Quality Management/Gestion Qualité
R.BERTELLI

Direzione Prodotto
Produktmanagement/Product Management/Direction Produit
P.MESSORI

Acciaierie Valbruna S.p.A.

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Certificato nr. / Prüfung/Test/Essai: MEST080041 / 2024 /

Cliente / Besteller/Purchaser/Client:
INDRA S.R.L.
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20013 - MAGENTA - MI

Ordine nr / Bestell Your order Commande: AF24 01954

Conferma ordine nr / Werks/Our Order/Ref nr.: MI24004883

Avviso di Spedizione / Lieferanzeige/Packing list/B.L.: A-MI24003675

Stato di fornitura / Lieferzustand Delivery state Etat de livraison: Fucinato Solubilizzato - Pelato

Tipo di Elaborazione / Erschmelzungsart Melting process Mode d'elaboration: E+AOD

Qualità / Werkstoff/Grade/Nuance: 1.4401/1.4404/316/316L

Marca / Markenbezeichnung Brand / Nuance: MVAPML (MAXIVAL)

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Lieferwerkes Trade marks Sigles de l'usine productrice: AV

Punzone del Collaudatore / Stempel des Werkssachverständigen Inspector's stamp/Poinçon de l'assayeur: MR

Punzonatura / Kennzeichnung Marking Marquage: 1.4401/1.4404/316/316L

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD`S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

W8P8985AD000D8615A63EA62F873F8749D7

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 13/06/2024 VCQ012 - MEST080041	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité **R.BERTELLI**	Direzione Prodotto Produktmanagement/Product Management/Direction Produit **P.MESSORI**	Pagina 5 di 7

CORPO VALVOLA / VALVE BODY - CLOSURE F150RF3

	Acciaierie Valbruna S.p.A. 36100 VICENZA (Italia) - Viale della scienza, 25 z.i. Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4	**CERTIFICATO** Certificate - Zeugnis - Certificat **N° UT24003643**	Pag 6 di 7
		CONTROLLO CON ULTRASUONI *Ultrasonic testing - Ultraschallprüfung - Controle par ultrasons*	

mod. UT02 MEST080041 / 2024 /

Cliente : INDRA S.R.L. *Customer*				**Lotto nr : 314603170** *Mill order*		
MARCA *Grade*	**DIMENSIONI - mm** *Size*	**COLATA** *Heat*	**BARRE** *Bars*	**PESO** *Weight*	**LUNGHEZZA - mm** *Length*	
MVAPML	Tondo 110,000	437405	N. 1	KG : 440,0	5814	6034

T. TERMICO *Heat Treatement*	**ESECUZIONE** *Condition*	**RUGOSITA'** *Roughness*	**TOLLERANZA** *Tolerance*
Solubilizzato	Pelato	µm	k12

Istruzione : PROC CND 040 *Work Instruction*		**Criteri Accettabilità : A388/API 6A PSL3-EN 10308 cl.3-ASME B16.34/IV** Acceptance Criteria

ELETTRONICA : Olympus Quickscan LT *Equipment*					
ACCOPPIANTE : ACQUA + 0253 SA *Couplant*				**VEL.CONTROLLO :** 315 mm/sec *Testing Speed*	
TRASDUTTORI *Probes*	**TIPO ONDA** *Type of wave*	**FREQUENZA (MHZ)** *Frequency*	**DIMENSIONI (MM)** *Dimension*	**ANGOLO** *Angle*	**TARATURA** *Calibration*
64EL. 2.25MHZ	LONG.	2,25	128X25	0°	DAC

CONTROLLO AUTOMATICO [X] *Automatic inspection*	**CONTROLLO MANUALE** *Manual inspection*

NOTE :
Notes

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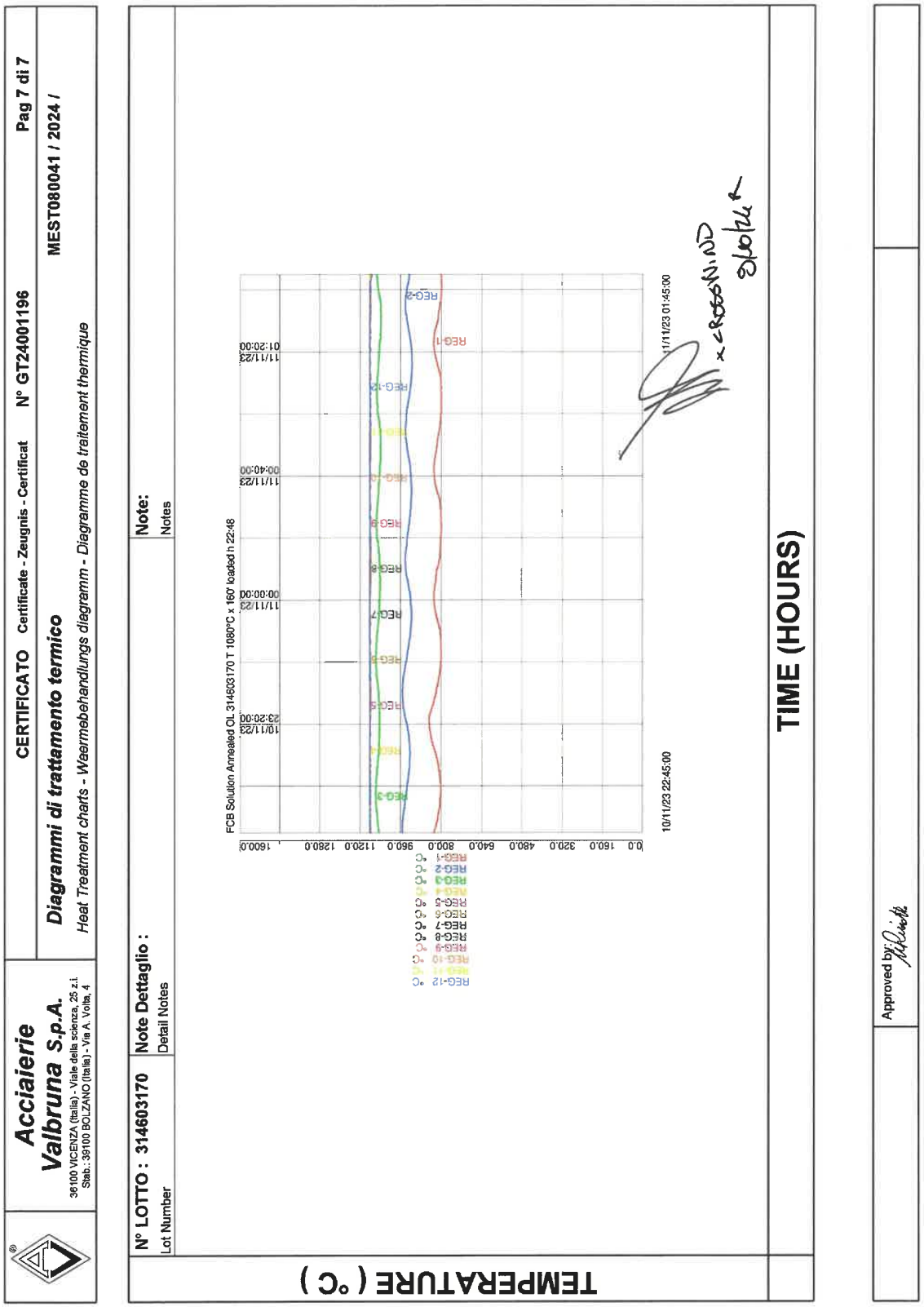
CONFORME [X] *Compliant*	**CONFORME IN DEROGA** [ ] *See Deviation*	**NON CONFORME** [ ] *Not Compliant*

ISPEZIONATO DA Inspected by	**VERIFICATO DA** Verified by	**APPROVATO DA** Approved by **G.Parlato** ISO 9712 LEV. 2 IND2401253	**COLLAUDATORE** Inspector - Abnahmesachsverst - Inspecteur
FIRMA	**FIRMA**	**FIRMA**	

Date - Date **24/04/2024**

Operatori, strumenti e documenti di riferimento, utilizzati per il collaudo del materiale, sono identificati, controllati e/o calibrati in accordo alle norme EN, ISO e ASTM, richiamate nelle pratiche operative e istruzioni di pertinenza / *Operators, Equipment and reference documents, used for material inspection, are identified, checked and/or calibrated in accordance with EN/ISO or ASTM standards, reported in relevent documents.*

CORPO VALVOLA / VALVE BODY - CLOSURE F150RF3



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CERTIFICATE	
Nr. 5086	05-08-24
Page 1/1	

INDRA SRL
VIA NOVARA 10/B-C
20013 MAGENTA MI
ITALIA

EN ISO 10204 3.1
CERTIFIED MATERIAL TEST REPORT

Your order: AF24 01970 24-06-24 Delivery note: 2072 05-08-24

Item	Materials	Description	Sizes	Batch	Heat		Quantity
1	ASTM A 193 B8M cl.2 101.99.0962SS	Tirante DIN 976/UNI 6610 ASTM A 193 B8M cl.2 M	10X30	66451	281154	N.	330

Pos. 110 - 120 - 130 - 140 - 150 - 160 - 165 VOCE DOGANALE 73181900 MERCE DI ORIGINE:ITALIA

CHEMICAL ANALYSIS

1		%C %	%Mn %	%P %	%S %	%Si %	%Cr %	%Ni %	%Mo %	%H.T. CST+SH
	REQ. MIN.						16	10	2	
	REQ. MAX.	0,080	2	0,045	0,030	1	18	14	3	
	ACT.VAL.	0,015	1,520	0,032	0,022	0,540	16,530	10,130	2,060	CST+SH

MECHANICAL PROPERTIES

1		UTS MPa	YS0,2 MPa	E %	R.A. %	H HB
	REQ. MIN.	760	655	15	45	
	REQ. MAX.					321
	ACT. VAL.	851	738	20,1	52	258

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We state that the material or fasteners, or both, were manufactered, sampled, tested and inspected in accordance with the specification and any supplementary requirements designated in the purchase/sales order and it was found to meet those requirements

tecnoBOLT s.r.l. - 20822 Seveso (MB) ITALY - way vignone n.7 - info@tecnobolt.com - www.tecnobolt.com

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DADO / NUT

t·e·c·n·o BOLT

CERTIFICATE

Nr. 5066	26-07-24

Page 1/1

INDRA SRL
VIA NOVARA 10/B-C
20013 MAGENTA MI
ITALIA

EN ISO 10204 3.1
CERTIFIED MATERIAL TEST REPORT

Your order: AF24 01970 24-06-24 Delivery note: 2000 26-07-24

Item	Materials	Description	Sizes	Batch	Heat		Quantity
9	ASTM A 194 Gr.8M 980.99.0002 Pos. 170 - 180 - 190 - 200 - 210 - 220 - 230 - 240 - 300	Dado UNI 5588/DIN 934 ASTM A 194 Gr.8M M Esagonale	10	64533	160903S05	N.	380



VOCE DOGANALE 73181900

MERCE DI ORIGINE ITALIA

CHEMICAL ANALYSIS

9		%C %	%Mn %	%P %	%S %	%Si %	%Cr %	%Ni %	%Mo %
	REQ. MIN.						16	10	2
	REQ. MAX.	0,08	2	0,045	0,030	1	18	14	3
	ACT.VAL.	0.033	0.950	0.033	0.002	0.340	16.400	10.050	2.020

MECHANICAL PROPERTIES

9		H HB	P.L. KN
	REQ. MIN.	126	
	REQ. MAX.	300	
	ACT. VAL.	147-156	29.9



We state that the material or fasteners, or both, were manufactered, sampled, tested and inspected in accordance with the specification and any supplementary requirements designated in the purchase/sales order and it was found to meet those requirements

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STELO SFERA / BALL STEM

Rodacciai

23842 Bosisio Parini (LC) – Via Giuseppe Roda 1 – Italia
Tel. +39 031878111 – Fax +39 031878312
www.rodacciai.com – info@rodacciai.com

Azienda con sistema di gestione certificato da IGQ secondo UNI EN ISO 9001:2015

The Company's Quality Management System is certified by IGQ according to UNI EN ISO 9001:2015

CERTIFICATO DI CONTROLLO Inspection Certif N. 173501 Date 13/11/2023

Secondo According to . . . . . EN 10204:2004 3.1

ORDINE - Order N. 23/3822 Date 10/11/2023

D.d.T. - Delivery note N. 11634/04 Date 13/11/2023

Weight KG 128,00 **Odp. Nr.** 2022/A/13380
Tolerance ISO286-2 h9 + 0,000 - 0,043 mm **Bars Length** 3.000 - 3.050 mm

QUALITA' - Grade

STANDARD	EN 10088-3:2014	X2CrNiMo17-12-2	1.4404 / 316L
STANDARD	EN 10088-3:2023	X5CrNiMo17-12-2	1.4401 / 316

Mark RODACCIAI . . . . . 316 PLUS
PROFILO - Shape . . . . . ROUND
DIMENSIONE - Size . . . . . mm 18,00
ESECUZIONE - Form of delivery . . . . . ROUGH GROU.

COLATA - Heat E30822

ANALISI CHIMICA DI COLATA - Cast analysis % by mass

C	Mn	Si	S	P	Cr	Ni	Mo	Cu	Co	N
0,020	1,540	0,554	0,0290	0,031	16,620	10,020	2,030	0,441	0,280	0,0520

CARATTERISTICHE MECCANICHE ALLO STATO DI FORNITURA
Mechanical properties of the delivered material

		Tested
Tensile Strength	Rm (MPa)	695,3
Proof Stress	Rp (1) (MPa)	648,0
Proof Stress	Rp (0,2) (MPa)	580,7
Elongation	A 4 (%)	44,3
Elongation	A 5 (%)	41,1
Hardness	HBW	211,0
Reduction of area	Z (%)	68,0

NOTE - Notes

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Processo di Fusione: E + A. O. D.
Prova di Corrosione Intergranularena: ASTM A262-15 "E"
Trattamento termico: Temperatura di Solubilizzazione 1060°C
Tempo Mantenimento: 4 Ore, Raffreddamento in Acqua
Materiale conforme a: ASTM A276-16a / A479-16a / A182-24
ASME: SA479; SA276; SA182 - UNS 31600 - 31630 AISI 316-316L

Pag. 1 / Segue

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Segue certificato di controllo N. 173501 Date 13/11/2023
Inspection Certificate's continuance

NOTE - Notes

Materiale Conforme a NACE MR-0175/ISO 15156-3:2015
NACE MR-103/ISO 17495-1:2016
Corrosione Intercristallina EN ISO 3651-2:98 Met.A

Melting Process: E + A. O. D
Intergranular corrosion tested to ASTM A262-15 "E"
Heat treatment: annealed temperature 1060°C
Soaking time: 4 Hours, Cooling in water
Material Compliant to: ASTM A276-16a / A479-16a / A182-24
ASME: SA479; SA276; SA182 - UNS 31600 - 31630 AISI 316-316L
According to: NACE MR-0175 / ISO 15156-3:2015
NACE MR-103/ISO 17495-1:2016
Intergranular Corrosion according to EN ISO 3651-2:98 Met.A

Surface quality condition 2H conforming also to EN 10277 class 3

We certify hereby, that the above mentioned products are consistent with the order prescriptions.
This certificate was generated by data system acc. to EN 10204, it is not necessary to be signed for validity.

Materiale conforme alle seguenti direttive/regolamenti europee:
. Regolamento REACH 2006/1907/CE e tutti successivi aggiornamenti, compresa la modifica M80 Direttiva Delegata 2022/1632, e SVHC Candidate List aggiornata al 17/01/2023.
. Direttiva ROHS 2011/657UE e tutti i successivi aggiornamenti, compresa la modifica M80 attraverso la Direttiva Delegata 2022/1632, e Decreto Legislativo 27 del 04/03/2014.
. Direttiva RAEE 2012/19/UE e tutti successivi aggiornamenti, compresa la modifica M1 attraverso la Direttiva 2018/849.
. Direttiva ELV (End-of-Life Vehicles) 2000/53/CE e tutti i successivi aggiornamenti, compresa la modifica M15 attraverso la Direttiva 2020/363
. Contaminazione Radioattiva, Direttiva 2013/59/EURATOM e Decreto Legislativo N.101 del 31 Luglio 2020.
. Canadian List 168 aggiornata al 16/03/2022.
. Minerali di Conflitto, Regolamento (UE) 2017/821 e tutti i successivi aggiornamenti, compresa la modifica M1 attraverso il Regolamento Delegato 2020/1588, e Dodd-Frank Wall Street Reform and Consumer Protection Act Section 1502.

Material conforming to the following European directives/regulation:
. REACH regulation 2006/1907/EC and all subsequent updates, including modification M80 Delegate Directive, and SVHC Candidate List updated to 01/17/2023.
. ROHS Directive 2011/65/EU and all subsequent updates, including the M80 amendment through the Delegated Directive 2022/1632, and Italian Legislative Decree 27 of 03/04/2014.
. WEEE Directive 2012/19/EU and all subsequent updates, including the M1 amendment through Directive 2018/849.
. ELV (End-of-Life Vehicles) Directive 2000/53/EC and all subsequent updates, including the modification M15 through Directive 2020/363
. Radioactive Contamination, Directive 2013/59/EURATOM and Italian Legislative Decree No. 101 of 31 July 2020.
. Canadian List 168 updated 03/16/2022.
. Conflict Minerals, Regulation (EU) 2017/821 and all subsequent updates, including amendment M1 through Delegated Regulation 2020/1588, and Dodd-Frank Wall Street Reform and Consumer Protection Act Section 1502.

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 RODACCIAI: The Work Inspector
Alessia Porta

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VAT: IT00571320078 - R.E.A. n. AO-50474

Company with Management Systems certified according to ISO 9001, IATF 16949, EN 9100 and ISO 14001.

INSPECTION CERTIFICATE 3.1 (EN 10204:2004)
DOCUMENT NUMBER 2020018438
PAGE 1/3

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CUSTOMER'S ORDER:	254		
MANUFACTURER'S WORKS:	AOSTA, VIA PARAVERA 16 - ITALY		
PRODUCER OF THE DOC:	QUALITY DEPARTMENT		
MANUFACTURER'S WORKS ORDER NO:	0001118068 / 000010		
MARK OF THE MANUFACTURER:	**COGNE**		
DISPATCH NOTE:	81346050 / 000010 WEIGHT:	232 KG / 512 LB	
THE CERTIFIED PRODUCTS ARE COMPLYING TO THE PURCHASE ORDER, EXCEPT FOR EXEMPTIONS AGREED WITH THE CUSTOMER, IF ANY.			
INTERNAL SPEC:	STOCKBARREW2	TECHNICAL RULE:	AD2000
PRODUCT:	PEL PEELED ROUND BARS TOLERANCE:	ISOK11	
SURFACE FINISH:	2B Cold Finished		
PRODUCT DELIVERY CONDITION:	RS SOLUTION ANNEALED		
PRODUCT DIMENSIONS (mm):	45,000 (1,772 in)	LENGTH (mm)	06000 06200 (00236 00244 in)
GRADE:	AISI 316/316L EN1.4401/4404	INTERNAL GRADE:	F316L IMCO
IDENTIFICATION HEAT NO:	072244	IDENTIFICATION LOT NO:	201970
MARKING OF THE PRODUCT:	1.4404	TEST PIECE N:	197

REFERENCE NORMS: EN 10088-3 2014, EN 10272 2016, ASTM A276/A276M, ASTM A479/A479M, ASTM A193 B8MCLASSE 1D, ASME SA276/SA276M, ASME SA479/SA479M, AMS 5653J, AMS 5648M, ISO15156-3/NACE MR0175 2015, NACE MR0103/ISO 17945, NORSOK M630 MDSS01 REV5.
REFERENCE NORMS FOR CHEMICAL COMPOSITION AND MECHANICAL PROPERTIES: ASTM A182, ASME SA182.
REFERENCE NORMS ONLY FOR CHEMICAL COMPOSITION: EN 10222-5 2017,ASTM A403-07a, ASTM A484-18a,ASTM A314-08, AMS-QQ-S-763D.
ASME SECT.II PART A EDITION 2015-2017-2019
THE PRODUCT IS CONFORMING TO THE CONTRACT AGREEMENT AND TO THE RULE AD2000-MERKBLATT W0/W2.
ASTM A484 DOES NOT APPLY FOR SIZE AND LENGTH TOLERANCES.
STEELMAKING EAF + AOD + CONTINUOUS CASTING
REFERENCE NORM ASME BPVC.II.A-2015.
HOT ROLLED
REDUCTION RATIO 14,8

CHEMICAL LADLE ANALYSIS ACCORDING TO ASTM A751 - EN ISO 14284
Control lot No. - Weight :020000828767 - 83.288 KG - 183.616 LB

ELEMENTS	C	Si	Mn	P	S	N	Cr	Mo	Ni	Cu
OBTAINED	0,015	0,34	1,74	0,027	0,024	0,080	16,78	2,05	10,21	0,41

ELEMENTS	Co
OBTAINED	0,16

HARDNESS TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000828961 - 2.300 KG - 5.071 LB
SPECIFICATION ENISO6506 HARDNESS TEST HB TESTING METHOD: 10/3000
OBTAINED 171

IMPACT TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000828961 - 2.300 KG - 5.071 LB
SPECIFICATION EN ISO 148-1-KV2 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 20
MEASUREMENT UNIT J

OBTAINED	430	432	440	430	439	434	434	440	438	433
	431	439								

DATE 18.05.2020 BARBARA VIETTI MV(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne
REVIEW DATE 01.12.2021 N. REVIEW 1

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C.F. 02187360997
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Company with Management Systems certified according to ISO 9001, IATF 16949, EN 9100 and ISO 14001.

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TENSILE TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000828961 - 2.300 KG - 5.071 LB
SPECIFICATION EN-ISO6892-1 DIRECTION OF THE TEST PIECE: L

	RM	RP02	A5	Z	RP1
MEASUREMENT UNIT	MPA	MPA	% 5.0 D	%	NMM
OBTAINED	578	286	56,1	80,5	321
	592	287	55,6	80,1	321
	582	274	54,2	79,4	306
	585	274	55,6	81,2	312

GRAIN SIZE
Control lot No. - Weight :020000828961 - 2.300 KG - 5.071 LB
SPECIFICATION ASTME112 --
OBTAINED 5 7

MATERIAL IN COMPLIANCE WITH THE NORSOK M-630 MDS S01
IMPACT TEST
Control lot No. - Weight :020000828961 - 2.300 KG - 5.071 LB
SPECIFICATION EN ISO 148-1 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 196-
MEASUREMENT UNIT J

OBTAINED	181	183	188	177	175	200	188	174	194	183
	197	173								

TENSILE TEST
Control lot No. - Weight :020000828961 - 2.300 KG - 5.071 LB
SPECIFICATION ASTMA370-E8-0.5"SPEC DIRECTION OF THE TEST PIECE: L

	RMB	RP02B	ZB	AL2B
MEASUREMENT UNIT	KSI	KSI	%	% 4,0 D
OBTAINED	85	40	80,7	59,7
	85	42	81,2	60,3
	86	42	81,3	60,1
	85	41	81,0	58,6

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COUNTRY OF MELTING AND ORIGIN: ITALY, THE MATERIAL COMPLIES WITH FAR DFARS 252.225-7009 ALT 1.
The products delivered are conforming to EN10088-5 and bear the CE marking on the basis of the test results here reported and the continuous surveillance, assessment and approval by MPA NRW (certificate no. 0432-CPR-00166-01)
Material produced according to the system #Regulation 305/2011/EU of the European Parliament and of the Council of 9 March 2011#
DOCUMENT ISSUED IN AGREEMENT WITH TUEV BAYERN(11.1972) WAVING OF COUNTERSIGNING (SEE TUEV BAYERN LETTER DATED 17.01.80).
MARKING: SYMBOL OF THE MANUF. WORK, MATERIAL N. , CAST N., LOT N., RECEIVING AGENT STAMP
CORROSION TEST ACCORDING TO ASTM A262 PRACTICE E EN ISO 3651-2 PRACTICE A: SATISFACTORY.

DATE 18.05.2020 BARBARA VIETTI MV(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne
REVIEW DATE 01.12.2021 N. REVIEW 1

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ANTIMIXING TEST BY PORTABLE SPECTROMETRE: CONFORMING
EDDY CURRENT INSPECTION OF SURFACE ACCORDING TO EN 10277 CLASS 4.
DIMENSIONAL CONTROL ACCORDING TO EN 10278: SATISFACTORY.
NO WELDING REPAIR ON THE MATERIAL.
ULTRASONIC TEST ACCORDING TO EN 10308 Class.3: SATISFACTORY
QUALITY SYSTEM CERTIFIED TO UNI EN ISO 9001:2015 -IATF 16949:2016 (THE LAST ONE ONLY FOR WIRE ROD AND HOT ROLLED-PEELED-GROUND STAINLESS STEEL BARS).
MATERIAL ACCORDING TO NORSOK M630 EDITION 6.
INSPECTOR'S STAMP LF
THE PRODUCT SATISFIES THE DIRECTIVES: 2015/863/EU (ROHS3) - 2011/65/EU (ROHS2) - 2000/53/EU - 2002/95/EU(RoHS) - 2003/11/EU-2005/618/EU AND PED 2014/68/EU.
THE MATERIAL IS FREE OF ANY MERCURY, MERCURY COMPOUNDS AND OR RADIUM CONTAMINATION AT TIME OF SHIPMENT AND WAS PRODUCED WITHOUT USING OZONE DEPLETING SUBSTANCES OF CLASS I AND II.
RADIOACTIVITY CONTROL PERFORMED WITH A GAMMA SPECTROMETER: ASTM E181.
GAMMA ACTIVITY ON THE PRODUCTS BELOW 0.1 BQ/G ACCORDING TO EU RESOLUTION 2013/59/EURATOM , IAEA RS-G-1.7 AND IAEA SSG-17.

CE 0432

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DATE 18.05.2020 BARBARA VIETTI MV(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne
REVIEW DATE 01.12.2021 N. REVIEW 1

CORPO BONNET / BONNET BODY

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST004991 / 2024 /

Ordine nr: ORD.N.3
Bestell / Your order / Commande

Conferma ordine nr: MI24000105
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24000308
Lieferanzeige/Packing list/B.L.

Stato di fornitura / Lieferzustand / Delivery state / Etat de livraison: Laminato - Solubilizzato Pelato

Tipo di Elaborazione / Erschmelzungsart / Melting process / Mode d'elaboration: E+AOD

Qualità / Werkstoff/Grade/Nuance: 1.4401/1.4404/316/316L

Marca / Markenbezeichnung / Brand / Nuance: MVAPML (MAXIVAL)

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice: AV

Punzone del Collaudatore / Stempel des Werkesachverständigen / Inspector's stamp/Poinçon de l'assayeur: MR

Punzonatura / Kennzeichnung / Marking / Marquage: 1.4401/1.4404

SPECIFICHE : / Anforderungen / Requirements / Exigences	Note: / Aufzeichnungen / Notes / Notes
VAL STOCK W2 A/1 1.4404/316L A	
MDS S01 5 316 A (0)	(0)Norsok-standard M-630 Edition 6, October 2013
MDS S17 1 316 A (1)	(1)Norsok-standard M-630: 2020 (2020-09-30)
AD 2000-M. W 2 01/20 1.4401 A (2)	(2)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
AD 2000-M. W 2 01/20 1.4404 A (3)	(3)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
AISI . 316/316L	
ASME SA182 2021 S31600/03 A (4)	(4)Section II Part A 2021 EDITION For products machined directly from bar refer to ASME SA479.
ASME SA193 2021 B8M CLASS 1D (5)	(5)Section II Part A 2021 EDITION
ASME SA276 2021 S31600/03 A (6)	(6)Section II Part A 2021 EDITION
ASME SA320 2021 B8M CLASS 1 (7)	(7)Section II Part A 2021 EDITION
ASME SA479 2021 S31600/03 A (8)	(8)Section II Part A 2021 EDITION
ASTM A182 2023 S31600/03 A (9)	(9)For products machined directly from bar refer also to ASTM A479.
ASTM A193 2023 B8M CLASS 1D	
ASTM A262 PR. E 2015 316/316L (A)	(A)Reapproved 2021
ASTM A276 2017 S31600/03 A	
ASTM A320 2022 B8M CLASS 1 CLASS1	
ASTM A370 2022 .	
ASTM A479 2023A S31600/03 A	
ASTM E10 2018 .	
ASTM E8 2022 .	
EN 10088 PART 3 2014 1.4401 A	
EN 10088 PART 3 2014 1.4404 A	
EN 10272 2016. 1.4401 A	
EN 10272 2016. 1.4404 A	
ISO 148-1 2016 .	
ISO 3651-2 98 METHOD A T1	
ISO 6506-1 2014 .	
ISO 6892-1 2019 .	
NACE MR0103 2015 S31600/03 A (B)	(B)ANSI/NACE MR0103/ISO 17945 November 23, 2015
NACE MR0175 2015 S31600/03 A (C)	(C)ANSI/NACE MR0175/ISO 15156-3, third edition November 23,2015
ACH CO . .	
KV L -196C . ISO 148-1	

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CROSSWIND
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Tolleranza: k12
Toleranz/Allowance/Tolerance

Pos. nr. / Pos. nr. / Item nr. / Nr. de poste	Oggetto / Gegenstand / Product description / Descrip. du produit	Dimensioni - mm / Abmessungen / Dimension / Dimension	Lunghezza - mm / Länge / Length / Longueur	Colata / Schmelze / Heat / Coulée	Pezzi / Stückzahl / Pieces / Pieces	Peso - KG / Gewicht / Weight / Poids	Lotto nr. / Losnr / Lot nr / Lot nr.
0030	Tondo	55,000	6090/ 6160	292255		813,0	306706960

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 17/01/2024
VCQ008 - MEST004991

Direzione Qualità / Qualitätsmanagement/Quality Management/Gestion Qualité
R.BERTELLI

Direzione Prodotto / Produktmanagement/Product Management/Direction Produit
P.MESSORI

CORPO BONNET / BONNET BODY

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST004991 / 2024 /
Prüfung/Test/Essai

Stato di fornitura : Laminato - Solubilizzato Pelato
Lieferzustand / Delivery state / Etat de livraison

Produttore :
Hersteller/Item/Usine productrice
ACCIAIERIE VALBRUNA S.P.A.

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Marchi di Fabbrica:
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice

Ordine nr: ORD.N.3
Bestell / Your order / Commande

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Punzone del Collaudatore: MR
Stempel des Werkesachverständigen / Inspector's stamp/Poinçon de l'assayeur

Conferma ordine nr: MI24000105
Werks/Our Order/Ref nr.

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Punzonatura: 1.4401/1.4404
Kennzeichnung / Marking / Marquage

Avviso di Spedizione: A-MI24000308
Lieferanzeige/Packing list/B.L.

TEST ALLO STATO DI FORNITURA
Test on delivery condition Prüefung auf lieferbereitem produkt test a l'etat de fourniture Prueba sobre el material asi come entregado

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg diam epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement A5 %		Strizione Einschnürung Reduction of area Striction Z %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		200	235	500 700	40	-	-	-	-			- 215		
A	10	20	L	316	374	628	52		68					184		
G	10	20	L	310	379	625	53		67					185		

TEST ALLO STATO DI FORNITURA
Test on delivery condition / Prüefung auf lieferbereitem produkt / Test a l'etat de fourniture / Prueba sobre el material asi come entregado

TEST		min	max	
A	Dimensioni grano x ASTM E112			5

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg diam epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		-	-	-	-	-	-	-	-	-
B	10X10	-196	L	186	185	190	1,714	1,668	1,718	62	60	60

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg diam epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		205	-	515	-	40	-	50	-			- 223		
C	12,5	20	L	312		635		54		66				183		

CROSSWIND

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Acciaierie Valbruna S.p.A.

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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST004991 / 2024 /

Ordine nr: ORD.N.3 (Bestell / Your order / Commande)

Conferma ordine nr: MI24000105 (Werks/Our Order/Ref nr.)

Avviso di Spedizione: A-MI24000308 (Lieferanzeige/Packing list/B.L.)

Stato di fornitura: Laminato - Solubilizzato Pelato (Lieferzustand / Delivery state / Etat de livraison)

Tipo di Elaborazione: E+AOD (Erschmelzungsart / Melting process / Mode d'elaboration)

Qualità: 1.4401/1.4404/316/316L (Werkstoff/Grade/Nuance)

Marca: MVAPML (MAXIVAL) (Markenbezeichnung / Brand / Nuance)

Produttore / Hersteller/Item/Usine productrice: **ACCIAIERIE VALBRUNA S.P.A.**

Marchi di Fabbrica / Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice: AV

Punzone del Collaudatore / Stempel des Werksachverständigen / Inspector's stamp/Poinçon de l'assayeur: MR

Punzonatura / Kennzeichnung / Marking / Marquage: 1.4401/1.4404

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. spais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2			Espansione laterale Lateral Expansion			Shear Shear		
Valori richiesti Anforderungen/Required values Valeurs demandées		min		100	100	100	-	-	-	-	-	-
		max										
F	10X10	20	L	254	244	242						

Tensile testing according to ISO 6892-1
Impact testing according to ISO 148-1
Mechanical properties according to ASTM A370.
Brinnell hardness according to ASTM E10
Tensile testing according to ASTM E8
Brinnell hardness according to ISO 6506-1

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Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat Schmelze/Coulée	C %	Si %	Mn %	Cr %	Mo %	Ni %	Co %	P %	S %	N %					
min	-	-	-	16,50	2,00	10,00	-	-	-	-	-	-	-	-	-
max	0,030	1,00	2,00	18,00	2,50	13,00	-	0,045	0,030	0,100	-	-	-	-	-
292255	0,022	0,45	1,40	16,57	2,07	10,05	0,150	0,029	0,026	0,056					

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, **17/01/2024**
VCQ008 - MEST004991

Direzione Qualità / Qualitätsmanagement/Quality Management/Gestion Qualité: **R.BERTELLI**

Direzione Prodotto / Produktmanagement/Product Management/Direction Produit: **P.MESSORI**

Pagina 3 di 4

CORPO BONNET / BONNET BODY

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST004991 / 2024 /

Ordine nr: ORD.N.3
Bestell / Your order / Commande

Conferma ordine nr: MI24000105
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24000308
Lieferanzeige/Packing list/B.L.

Stato di fornitura: Laminato - Solubilizzato Pelato
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice: AV

Punzone del Collaudatore / Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur: MR

Punzonatura / Kennzeichnung / Marking / Marquage: 1.4401/1.4404

Solution annealing by process annealing 1040°C min /
/ cooling rapidly
Controlled rolled
Reduction ratio = 12,7 : 1
SURFACE QUALITY COMPLIANT TO EN 10088-3 TAB.1 COND. 1X
"Issued in agreement with TÜV SÜD Industrie Service GMBH
(07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by
Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

Sono state soddisfatte tutte le condizioni richieste	Controllo antimescolanza con tecnica XRF/OES portatile : OK	Controllo visivo e dimensionale: soddisfa le esigenze
Die gestellen Anforderungen sind lt. Anlage erfüllt The material has been furnished in accordance with the requirements Le materiel à été trouvé conforme aux exigences	Verwechslungprüfung: durch XRF/QES Gerät geführt : OK Antimbdng testing performed with XRF/OES portable : OK Contrôle antimélange svt technique XRF/QES portable : OK	Besichtigufig und Ausmessung: ohne Beanstandung Visual inspection and dimensional checks:satisfactory Contrôle visuel et dimensions: satisfaisant

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD`S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

WSPAVE187SIBDAd538AAAA 8642F0973 FCA

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 17/01/2024 VCQ008 - MEST004991	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 4 di 4

STELO / STEM

Acciaierie Valbruna S.p.A.

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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST690625 / 2021 /
Prüfung/Test/Essai

Ordine nr: ORD.N.2100110
Bestell / Your order / Commande

Conferma ordine nr: MI21001763
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI21001420
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Hot rolled - Annealed COLD PROCESSED
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werksachverständigen / Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/4/316/L
Kennzeichnung / Marking / Marquage

SPECIFICHE : Anforderungen / Requirements / Exigences	Note: Aufzeichnungen / Notes / Notes
VAL STOCK 2020 1.4404/316L A,CF	
AISI 316	
AISI 316L	
AMS 5648 M S31600 A	
AMS 5653 H S31603 A,CF	
ASME SA182 2019 S31600 A (0)	(0)Section II Part A 2019 EDITION For products machined directly from bar refer to ASME SA479.
ASME SA182 2019 S31603 A (1)	(1)Section II Part A 2019EDITION For products machined directly from bar refer to ASME SA479.
ASME SA276 2019 S31600 A,CF (2)	(2)Section II Part A 2019 EDITION
ASME SA276 2019 S31603 A,CF (3)	(3)Section II Part A 2019 EDITION
ASME SA479 2019 S31600 A (4)	(4)Section II Part A 2019 EDITION
ASME SA479 2019 S31603 A (5)	(5)Section II Part A 2019 EDITION
ASTM A182 2020 S31600 A (6)	(6)For products machined directly from bar refer also to ASTM A479.
ASTM A182 2020 S31603 (7)	(7)For products machined directly from bar refer also to ASTM A479.
ASTM A262 2015 PRACTICE E	
ASTM A276 2017 S31600 A,CF	
ASTM A276 2017 S31603 A,CF	
ASTM A314 2019 S31600	
ASTM A314 2019 S31603	
ASTM A370 2020 . (8)	(8)2019E1
ASTM A479 2020 S31600 A	
ASTM A479 2020 S31603 A	
ASTM E10 2018 .	
ASTM E8 2016A .	
EN 10088-3 2014 1.4401 A,CF	
EN 10088-3 2014 1.4404 A,CF	
EN 10272 2007 1.4401 A,CF	
EN 10272 2007 1.4404 A,CF	
ISO 148-1 2016 .	
ISO 6506-1 2014 .	
ISO 6892-1 2019 .	
NACE MR0103 2015 S31600 A (9)	(9)ANSI/NACE MR0103/ISO 17945 November 23, 2015
NACE MR0103 2015 S31603 A (A)	(A)ANSI/NACE MR0103/ISO 17945 November 23, 2015
NACE MR0175 2015 S31600 A (B)	(B)ANSI/NACE MR0175/ISO 15156-3, third edition November 23,2015
NACE MR0175 2015 S31603 A (C)	(C)ANSI/NACE MR0175/ISO 15156-3, third edition November 23,2015
QQ-S-763 F 316 A,CF	
QQ-S-763 F 316L A,CF	

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9/10/24

Tolleranza: h9 - DIN671/EN10278
Toleranza/Allowance/Tolerance

Pos. nr. / Item nr. / Nr. de posa	Oggetto / Gegenstand / Product description / Descrip. du produit	Dimensioni - mm / Abmessungen / Dimension / Dimension	Lunghezza - mm / Länge / Length / Longueur	Colata / Schmelze / Heat / Coulée	Pezzi / Stückzahl / Pieces / Pièces	Peso - KG / Gewicht / Weight / Poids	Lotto nr. / Losnr. / Lot nr. / Lot nr.
0090	Round	20,000	3020/ 3040	283925		150,0	123101680

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 25/02/2021
VCQ052 - MEST690625

Direzione Qualità
Qualitätsmanagement/Quality Management/Gestion Qualité
R.BERTELLI

Direzione Prodotto
Produktmanagement/Product Management/Direction Produit
P.MESSORI

STELO / STEM

Acciaierie Valbruna S.p.A.

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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1 — Certificato nr. MEST690625 / 2021 /

Nach/According to/Selon — Prüfung/Test/Essai

Ordine nr: ORD.N.2100110 (Bestell / Your order / Commande)

Conferma ordine nr: MI21001763 (Werks/Our Order/Ref nr.)

Avviso di Spedizione: A-MI21001420 (Lieferanzeige/Packing list/B.L.)

Stato di fornitura: Hot rolled - Annealed COLD PROCESSED (Lieferzustand / Delivery state / Etat de livraison)

Tipo di Elaborazione: E+AOD (Erschmelzungsart / Melting process / Mode d'elaboration)

Qualità: 1.4401/1.4404/316/316L (Werkstoff/Grade/Nuance)

Marca: MVAPML (MAXIVAL) (Markenbezeichnung / Brand / Nuance)

Produttore : Hersteller/Item/Usine productrice
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice — AV

Punzone del Collaudatore: Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur — MR

Punzonatura: 1.4401/4/316/L (Kennzeichnung / Marking / Marquage)

TEST ALLO STATO DI FORNITURA
Test on delivery condition — Prüefung auf lieferbereitem produkt — test a l'etat de fourniture — Prueba sobre el material así come entregado

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess / Breite Diam. Dicke / Width Diam. Thickness / Larg diem epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement A5 %	Allungamento E 4d %	Strizione Einschnürung Reduction of area Striction Z %	Strizione RA %	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Durezza Haerte Hardness Durete HB		
Valori richiesti / Anforderungen/Required values / Valeurs démandées		min / max		207	235	517 / 900	20	30	-	50	100			140 / 235		
A	10	20	L	598	686	742	37	39	71	71	258	261	255	234		
B	10	20	L	601	684	744	39	41	66	66	256	255	251	233		

TEST ALLO STATO DI FORNITURA
Test on delivery condition / Prüefung auf lieferbereitem produkt / Test a l'etat de fourniture / Prueba sobre el material así come entregado

TEST		min	max	
B	Grain size for ASTM E112			6

Mechanical properties according to ASTM A370.
Brinnell hardness according to ASTM E10
Tensile testing according to ASTM E8
Impact testing according to ISO 148-1
Brinnell hardness according to ISO 6506-1
Tensile testing according to ISO 6892-1

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Analisi chimica
Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat Schmelze/Coulée	C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	P %	S %	N %
	min -	-	1,25	16,50	2,00	-	10,00	-	-	-
	max 0,030	1,00	2,00	18,00	2,50	1,00	13,00	0,040	0,030	0,100
283925	0,013	0,46	1,50	16,60	2,11	0,45	10,06	0,030	0,030	0,061

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	SATISFACTORY

x CROSSWIND 9/10/24 R

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 25/02/2021	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité	Direzione Prodotto Produktmanagement/Product Management/Direction Produit	Pagina 2 di 3
VCQ052 - MEST690625	R.BERTELLI	P.MESSORI	

STELO / STEM

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST690625 / 2021 /
Prüfung/Test/Essai

Ordine nr: ORD.N.2100110
Bestell / Your order / Commande

Conferma ordine nr: MI21001763
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI21001420
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Hot rolled - Annealed COLD PROCESSED
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice

Punzone del Collaudatore:
Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/4/316/L
Kennzeichnung / Marking / Marquage

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	SATISFACTORY

Reduction ratio = 93,6 : 1
Material solution annealed 1040°C for 2.5h/water cooled.

Sono state soddisfatte tutte le condizioni richieste
Die gestellen Anforderungen sind it. Anlage erfüllt
The material has been furnished in accordance with the requirements
Le materiel à été trouvé conforme aux exigences

Controllo antimescolanza con tecnica XRF/OES portatile : OK
Verwechslungprüfung: durch XRF/QES Gerät geführt.
Antimixing testing performed with XRF/OES portable : OK
Contrôle antimélange svt technique XRF/QES portable : OK

Controllo visivo e dimensionale: soddisfa le esigenze
Besichtigung und Ausmessung: ohne Beanstandung
Visual inspection and dimensional checks:satisfactory
Contrôle visuel et dimensions: satisfaisant

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD`S
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

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3/10/2021

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 25/02/2021 VCQ052 - MEST690625	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité **R.BERTELLI**	Direzione Prodotto Produktmanagement/Product Management/Direction Produit **P.MESSORI**	Pagina 3 di 3

OTTURATORE / TIP

ACEROS INOXIDABLES OLARRA S.A
Cm. Larrabarri. Elotxelerri, 1
48180 Loiu, Bizkaia
España
www.olarra.com

Management Systems Certified by LRQA
ISO 9001 / SGI 6000360
ISO 14001 / SGI 1870678

ACEROS INOXIDABLES OLARRA

OLARRA ITALIA, S.R.L.
P.LE MEDAGLIE D'ORO, 1
20135 MILANO - ITALIA

Trade Mark - Zeichen des Lieferwerkes / Anagrama del suministrador

Works Inspector Stamp - Werkssachverständiger / Sello del Inspector: 3

Certificate type - APZ Nach / Certificado tipo	Certificate nº - Prüf-Nr / Certificado nº	Date - Datum - Fecha
EN 10204/3.1	499910	21 - 07 - 2022

Our order Nº / Werks - Nr / Nº de Referencia	Heat / Schmelze / Colada	Your order Nº / Bestell - Nr / Pedido Nº
786381	272849	80/2022ALM

Steel Grade / Werkstoff / Calidad	According to / Entsprechend / Corresponde
X-2-CRNIMO-17-12-2 / 1.4404 MECAMAX	EN 10272-2016.

Shape and Size - Gegenstad / Perfil y dimensión	Tolerance - Toleranz / Tolerancia	Bundles / Bunde / Bultos	Bars / Stäbe / Barras	Weight / Gewicht / Peso
HEXAGON 12 mm	h11 /DIN 176 /EN 10278	1		520 Kg

Requirements - Anforderungen - Exigencias

EN 10088-3 2014.
ASTM A 479 / A 479M-21.
ASME SA 479 / SA 479M-21.
AD-2000-W2 2022/W10 2020.
NACE MR-0175/ISO 15156-3 2015.
ASTM A 276/A 276M-17.
Type 316-Type 316L.
PED 2014/68/EU, Annex I, Parag.4.3/DGR 2014/68/EU
Anhang I Absatz 4.3 Certificate/Zertifikat Nr. 348/2008/MUC

Melting process / Erschmelzungsart / Proceso de Fusión	Heat treatment / Wärmebehandlung / Tratamiento térmico
E.A.F. / A.O.D.	1060C 4H/Std WATER/WASSER/AGUA

Solution annealed/Abgeschreckt/Hipertemple-Cold drawn/Gezogen/Estirado-

Test results - Ergebnis der Prüfungen - Resultados de los ensayos

Reference standard / Bezugsnorm / Norma de referencia		Rp0,2% N/mm2 MPA	Rp 1% N/mm2 MPA	Rm N/mm2 MPA	A %L 5D	A %L 4D	Z %	Hardness Härte HBw	Impact test / Kerbschlagzaehigkeit / Resiliencia ISO V Jules
ISO 6892	Min.	200	235	500	20				
	Max.			900				315	
Temperature°C 20	Spec. Nº. / Probe Nr. / Pro Nº. 1	643	719	741	30		60	235	

	C	Si	Mn	P	S	Cr	Mo	Ni	N	Co	
Min.						16,50	2,00	10,00			
Max.	0,030	1,00	2,00	0,045	0,030	18,50	2,50	13,00	0,1000		
	0,021	0,543	1,49	0,030	0,027	16,61	2,04	10,05	0,0480	0,294	

Visual and dimensional inspection / Besichtigung und Ausmessung / Control visual y dimensional	Radioactivity inspection / Radioaktivitätskontrolle / Control de Radioactividad	Antimixing test / Spektrosk Verwechslungspr / Antimezcla	Grain Size / Korngrösse / Tamaño de grano
O.K.	O.K.	O.K.	

Remarks - Bemerkungen - Observaciones

IC test acc./IK prüfung nach EN ISO 3651-2/98 Met.A. OK

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31/01/24 R

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EDV / EDP
Acc. EN 10204
Marian Tejedo
Quality Mng.

Works Inspector
Der Werkssachverständige
Inspector de fábrica

We hereby certify that material described herein complies with the requirements agreed on the order.

Firmado digitalmente por / Signed digitally by:
ACEROS INOXIDABLES OLARRA SA - CIF A48663546
Fecha / Date:21-07-2022 08:51

VITE BONNET / BONNET BOLTING

COMVITEA s.r.l.
Via Isonzo 32/C - 20078 Turate (CO) Tel 02.9697121 - Fax 02 96754113

CERTIFICATO DI COLLAUDO EN 10204
INSPECTION CERTIFICATE EN 10204

3.1 Azienda CERTIFICATA - UNI EN ISO 9001:2015
AD 2000 MERKBLATT W0 - PED Directive 2014/68/EU

Certificato/Certificate N°	1369552	Pag. 1 / 1	Cliente/Customer	INDRA SRL	
Data cert /Date cert.	18/07/2024		Vs. ordine/Order.	AF24 01968	
d.d.t./Delivery note n.	4664	18/07/2024	Ns.rif./Int. ref.	3902	27/06/2024

Descrizione Materiale / Material Description

Item	Qty	Articolo / Article	Materiale / Material	Pos-Rifer / Your pos-ref.
1	40	Tirante tutto filetto ASTM/ASME A/SA 193 B8M cl.2 M10x40	ASTM/ASME A/SA 193 B8M cl.2	101.99.0375SS
2	60	Tirante tutto filetto ASTM/ASME A/SA 193 B8M cl.2 M20x70	ASTM/ASME A/SA 193 B8M cl.2	101.99.1098SS
3	215	Tirante tutto filetto ASTM/ASME A/SA 193 B8M cl.2 5/8"-11UNCx75	ASTM/ASME A/SA 193 B8M cl.2	101.99.1160SS
→ 4	260	Vite ASTM/ASME A/SA 193 B8M cl.2 UNI 5931 / DIN 912 M8x20	ASTM/ASME A/SA 193 B8M cl.2	96.50.0014SS
5	45	Vite ASTM/ASME A/SA 193 B8M cl.2 UNI 5931 / DIN 912 M10x80	ASTM/ASME A/SA 193 B8M cl.2	101.99.1161SS
6	45	Vite ASTM/ASME A/SA 193 B8M cl.2 UNI 5931 / DIN 912 TF M10x60	ASTM/ASME A/SA 193 B8M cl.2	

COLATA-ANALISI CHIMICA come da certificato di acciaieria / HEAT-CHEMICAL ANALYSIS according to mill certificate

Item	Colata/Heat	C	Cr	Mn	Mo	Ni	P	S	Si	NORME/STANDARDS
1	172522	0,0240	16,6200	1,8100	2,0100	10,1700	0,0310	0,0280	0,3800	ASME II Part A ed. 2021
2	291913	0,0160	16,6400	1,4200	2,0300	10,0500	0,0320	0,0010	0,3800	ASME II Part A ed. 2021
3	Z5XR	0,0160	16,6850	1,3520	2,0270	10,2850	0,0300	0,0260	0,3750	ASME II Part A ed. 2021
→ 4	304113	0,0210	16,6500	1,5800	2,0200	10,1500	0,0320	0,0290	0,3900	ASME II Part A ed. 2021
5	847049	0,0630	16,5820	1,3120	2,0320	10,0850	0,0297	0,0227	0,4130	ASME II Part A ed. 2021
6	847049	0,0630	16,5820	1,3120	2,0320	10,0850	0,0297	0,0227	0,4130	ASME II Part A ed. 2021

PROPRIETA' MECCANICHE / MECHANICAL PROPERTIES

	OTTENUTE / OBTAINED							RICHIESTE / REQUIRED							
	Rm	Re	A	Z	Dur/hard.		Resilienza/Impact test	Rm (N/mm²)		Re (N/mm²)		A %	Z %	Dur/hard.	Resilienza/Impact test	
Item	N/mm²	N/mm²	%	%	HB		KV - Joule °C	min	max	min	max	min	min	min HB max	KV - Joule	°C
1	960	900	22,60	67,40	281	288	20							321		20
2	854	748	24,00	61,00	273	277	20							321		20
3	898	724	26,00	71,00	255	260	20							321		20
→ 4	868	730	24,00	62,00	280	285	20							321		20
5	851	699	27,00	64,00	240	243	20							321		20
6	851	699	27,00	64,00	240	243	20							321		20

Item	Trattamento Termico Tempering - °C	Dur./Hard. HB dadi/nuts h	°C	>=	HB	Prova allarg. per dadi Cone stripping on nuts	ESAME VISIVO-VIS.EXAM
1	Carbide solution treated and strain hardened 1060°						Positivo / Positive
2	Carbide solution treated and strain hardened 1060°						Positivo / Positive
3	Carbide solution treated and strain hardened 1060°						Positivo / Positive
→ 4	Carbide solution treated and strain hardened 1060°						Positivo / Positive
5	Carbide solution treated and strain hardened 1060°						Positivo / Positive
6	Carbide solution treated and strain hardened 1060°						Positivo / Positive

Note: x CROSSWIND 9/20/24 R

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Certifichiamo che i materiali sono stati fabbricati, campionati, testati e ispezionati in conformità alle specifiche e conformi alle prescrizioni degli ordini.
We certify that the fasteners were manufactured, sampled, tested and inspected in accordance with the specification and are consistent with order prescriptions.

Oscar Uboldi - Quality Assurance

ROSETTI MARINO ITEM 250

COD. VLBLNN0143020

TAG:

BLPH-MV-002M, BLPH-MV-016

INDRA ITEM 250

COD. 00.VSF.2702/V

indra VALVES - ITALY	***Certificazione dei materiali*** ***EN 10204 3.1 come da allegati*** ***Material certification*** ***EN 10204 3.1 as per attachments***	**MD-02-04-IT-UK / VSF** **Rev. 16** **Data: 08-Nov-2018** **CM/IT/UK**

Nr. *No.* **24-1837** — **Data /** *Date :* **23-Sep-2024**

Cliente / *Customer* **ROSETTI MARINO SPA**

Vs. ordine Nr. / *Your order Nr.* **1724000798 REV.2** — **Data /** *Date :* **26-Jun-2024**

Ns. commessa Nr. / *Our job Nr.* **24 01216** — **Data /** *Date :* **3-Jul-2024**

Ns. D.D.T. Nr. / *Our advise note Nr.* — **Data /** *Date :*

Ordine di produzione / Production order number : 24 01216/250 - 294062

Lotto / Material batch number : 294062

Pos. Cliente *Customer Item*	*Pos. Indra* *Indra Item*	*Codice / Code* *Ns./ Our*	*Codice / Code* *Vs. / Your*	*Q.tà / Q.ty*	*Nr. di serie* *Serial Number*	*Descrizione /Description*
250	250	00.VSF.2702/V	VLBLNN0143020	2	106033,106034	INDRA BALL VALVE SBB-798-HR-50-J150RF3-J-D-DLF-DL-N-PG-L13-TG-TGW-TV-DP-PMI2-PD2-BI-GT-CR-TA-FE2-FS-FE-SPC1

Elenco / List

Componente / *Component*	Colata / Heat	Materiale *Material*	Numero del certificato Certificate number
Corpo Valvola / Valve Body	294062	AISI 316/316L NACE	MEST083699/2024/
Closure J150RF3	294062	AISI 316/316L NACE	MEST080043/2024/ - UT24003626
Tirante / Stud bolt	1KNK	ASTM A193 B8M Cl.2	2402183
Dado / Nut	283942	ASTM A194 Gr.8M	2402252
Stelo antiespulsione sfera / Ball stem	291905	AISI 316/316L NACE	MEST084078/2023/
Sfera / Ball	272823	AISI 316/316L NACE	2022021445
Corpo bonnet/ Bonnet body	291893	AISI 316/316L NACE	MEST040838/2024/
Stelo spillo / Stem needle	172303	AISI 316/316L NACE	174495
Otturatore / Tip	290962	AISI 316/316L NACE	MEST140440/2023/

NOTE / **REMARKS :** TAG: BLPH-MV-002, BLPH-MV-016

PREPARATO DA: **ELEONORA RANZANI** — PREPARED BY: **DOCUMENTION MANAGER**

APPROVATO DA: **LUCIA NOSOTTI** — APPROVED BY: **QUALITY ASSURANCE MANAGER**

20013 Magenta (MI) Italy - Via Novara, 10/B-C
Tel. +39 02 97298663 r.a. - Fax +39 02 97291855
E-mail: indra@indra.it - http://www.indra.it

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CORPO VALVOLA / VALVE BODY

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497
https://www.valbruna-stainless-steel.com/

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION - CERTIFICADO DE INSPECCIÓN

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon/De conformidad con

Certificato nr. MEST083699 / 2024 /
Prüfung/Test/Essai/Num. de certificado

Cliente / Besteller/Purchaser/Client/Cliente
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 02072
Bestell / Your order / Commande / Num. de pedido

Conferma ordine nr: MI24005187
Werks/Our Order/Ref nr. / Num. de confirmación de pedido

Avviso di Spedizione: A-MI24003826
Lieferanzeige/Packing list/B.L. / Aviso de embarque

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand / Delivery state / Etat de livraison / Estado de la entrega

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration / Método de fusión

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance / Calidad

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance / Marca

Produttore :
Hersteller/Item/Usine productrice/Producto

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice / Marcas de fábrica

Punzone del Collaudatore: MR
Stempel des Werksachverständigen / Inspector's stamp/Poinçon de l'assayeur / Sello del Comprobador

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung / Marking / Marquage / Sello

SPECIFICHE : Anforderungen / Requirements / Exigences / Especificaciones	Note: Aufzeichnungen / Notes / Notes / Notas
AV 316L VALVES A/1 1.4401/1.4404 A	
IS107 01 316 A	
MDS S01 5 316 A (0)	(0)Norsok-standard M-630 Edition 6, October 2013
MDS S17 1 316 A (1)	(1)Norsok-standard M-630: 2020 (2020-09-30)
AD 2000-M. W 2 2022 1.4401 A (2)	(2)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
AD 2000-M. W 2 2022 1.4404 A (3)	(3)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
API 6A 21 ANNEX M (4)	(4)Errata 1 (04/2019), Errata 2 (06/2020), Errata 3 (09/2020). Addendum 1 (July 2020) and Addendum 2 (June 2021).
API 6D 25 ANNEX H (5)	(5)Revision November 2021
ASME SA182 2023 S31600/03 A (6)	(6)Section II Part A 2023 EDITION For products machined directly from bar refer to ASME SA479.
ASME SA276 2023 S31600/03 A (7)	(7)Section II Part A 2023 EDITION
ASME SA479 2023 S31600/03 A (8)	(8)Section II Part A 2023 EDITION
ASTM A182 2024 S31600/03 A (9)	(9)For products machined directly from bar refer also to ASTM A479.
ASTM A262 PR. E 2015 316/316L (A)	(A)Reapproved 2021
ASTM A276 2024A S31600/03 A	
ASTM A370 2022 .	
ASTM A479 2023A S31600/03 A	
ASTM E381 2022 .	
ASTM E562 2019 . (B)	(B)19E01
EN 10088 PART 3 2014 1.4401 A (C)	(C)Chemical and mechanical properties only.
EN 10088 PART 3 2014 1.4404 A (D)	(D)Chemical and mechanical properties only.
EN 10222 PART 5 2017 1.4401 A	
EN 10222 PART 5 2017 1.4404 A	
EN 10272 2016. 1.4401 A	
EN 10272 2016. 1.4404 A	
ISO 148-1 2016 .	
ISO 6892-1 2019 .	
NACE MR0103 2015 S31600/03 A (E)	(E)ANSI/NACE MR0103/ISO 17945 November 23, 2015
NACE MR0175 4 S31600/03 A (F)	(F)ANSI/NACE MR0175/ISO 15156-3:2020 Fourth edition, approved 21 Sep 2022.

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Pos. nr.	Oggetto	Tolleranza: k12 Dimensioni - mm	Lunghezza - mm	Colata	Pezzi	Peso - KG	Lotto nr.
Pos. nr. / Item nr. / Nr. de poste / Número de artículo	Gegenstand / Product description / Descrip. du produit / Descripción del producto	Abmessungen / Dimension / Dimension / Dimensiones	Länge / Length / Longueur / Longitud	Schmelze / Heat / Coulée / Colada	Stückzahl / Pieces / Pièces / Piezas	Gewicht / Weight / Poids / Peso	Losnr. / Lot nr. / Lot nr. / Lote nro.
0030	Tondo	170,000	5095/ 5517	294062	2	1916,0	319310880

CROSSWIND
21/06/24

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 20/06/2024	Direzione Qualità	Direzione Prodotto	Pagina
VCQ052 - MEST083699	Qualitätsmanagement/Quality Management/Gestion Qualité/Gerente de calidad R.BERTELLI	Produktmanagement/Product Management/Direction Produit/Gerente de producto P.MESSORI	1 di 6

CORPO VALVOLA / VALVE BODY

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497
https://www.valbruna-stainless-steel.com/

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION - CERTIFICADO DE INSPECCIÓN

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon/De conformidad con

Certificato nr. MEST083699 / 2024 /
Prüfung/Test/Essai/Num. de certificado

Cliente / Besteller/Purchaser/Client/Cliente
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 02072
Bestell / Your order / Commande / Num. de pedido

Conferma ordine nr: MI24005187
Werks/Our Order/Ref nr. / Num. de confirmación de pedido

Avviso di Spedizione: A-MI24003826
Lieferanzeige/Packing list/B.L. / Aviso de embarque

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand / Delivery state / Etat de livraison / Estado de la entrega

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration / Método de fusión

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance / Calidad

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance / Marca

Produttore :
Hersteller/Item/Usine productrice/Productor

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice / Marcas de fábrica

Punzone del Collaudatore: MR
Stempel des Werksachverständigen / Inspector's stamp/Poinçon de l'assayeur / Sello del Comprobador

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung / Marking / Marquage / Sello

TEST ALLO STATO DI FORNITURA

TEST		min	max	
A	Dimensioni grano x ASTM E112			1
A	Ferrite delta %			1,2 %

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais. mm / Probeta	°C	Posiz. Saggio Probenlage Location Emplacement Ubicación 1)	Resilienza Kerbschlagarbeit Impact Value Resilience / Prueba de impacto KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs démandées / Valores requeridos		min		60	60	60	-	-	-	-	-	-
		max										
B	10X10	-196	L	250	258	255	2,188	2,156	2,144	70	70	70

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais. mm / Probeta	°C	Posiz. Saggio Probenlage Location Emplacement Ubicación 1)	Snervamento Streckgrenze/Yield Stress Limite elastique Limite elástico Rp 0,2% N/mm2	Snervamento Streckgrenze/Yield Stress Limite elastique Limite elástico	Resistenza Zugfestigkeit/Tensile strength Resistance à la traction Resistencia a la tracción Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement / Elongación E 4d %		Strizione Einschnürung Reduction of area Striction / Reducción de área RA %		Resilienza Kerbschlagarbeit Impact Value/ Resilience Prueba de impacto			Durezza Haerte Hardness Durete / Dureza HB		
Valori richiesti Anforderungen/Required values Valeurs démandées / Valores requeridos		min		205	-	515	-	40	-	50	-			-		
		max												235		
C	12,5	20	L	266		551		59		69				159		

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais. mm / Probeta	°C	Posiz. Saggio Probenlage Location Emplacement Ubicación 1)	Snervamento Streckgrenze/Yield Stress Limite elastique Limite elástico Rp 0,2% N/mm2	Snervamento Streckgrenze/Yield Stress Limite elastique Limite elástico	Resistenza Zugfestigkeit/Tensile strength Resistance à la traction Resistencia a la tracción Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement / Elongación E 4d %		Strizione Einschnürung Reduction of area Striction / Reducción de área RA %		Resilienza Kerbschlagarbeit Impact Value/ Resilience Prueba de impacto			Durezza Haerte Hardness Durete / Dureza		
Valori richiesti Anforderungen/Required values Valeurs démandées / Valores requeridos		min		205	-	515	-	40	-	50	-			-		
		max														
D	12.5	20	T	262		547		52		63						

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 20/06/2024	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité/Gerente de calidad	Direzione Prodotto Produktmanagement/Product Management/Direction Produit/Gerente de producto	Pagina
VCQ052 - MEST083699	R.BERTELLI	P.MESSORI	2 di 6

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Telefono 0471.924111 - Fax 0471.924497
https://www.valbruna-stainless-steel.com/

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION - CERTIFICADO DE INSPECCIÓN

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon/De conformidad con

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VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 02072
Bestell
Your order
Commande
Num. de pedido

Conferma ordine nr: MI24005187
Werks/Our Order/Ref nr.
Num. de confirmación de pedido

Avviso di Spedizione: A-MI24003826
Lieferanzeige/Packing list/B.L.
Aviso de embarque

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand
Delivery state
Etat de livraison
Estado de la entrega

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration
Método de fusión

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance
Calidad

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance / Marca

Produttore :
Hersteller/Item/Usine productrice/Productor

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice
Marcas de fábrica

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur
Sello del Comprobador

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage / Sello

Prova di trazione per ISO 6892-1

1) L=longitudinale/längs, T=trasversale/quer, O=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg diam epas mm / Probeta	°C		Posiz. Saggio Probenlage Location Emplacement Ubicación 1)	Snervamento Streckgrenze/Yield Strength Limite élastique Límite elástico Rp 0,2% N/mm2	Snervamento Streckgrenze/Yield Strength Limite élastique Límite elástico Rp 1% N/mm2	Resistenza Zugfestigkeit/Tensile strength Résistance à traction Resistencia a la tracción Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement / Elongación A5 %		Strizione Einschnürung Reduction of area Striction / Reducción de área Z %		Resilienza Kerbschlagarbeit Impact Value/ Resilience Prueba de impacto			Durezza Haerte Hardness Durete / Dureza HB		
Valori richiesti Anforderungen/Required values Valeurs démandées / Valores requeridos		min max			205	240	510 690	35	-	-	-	-			-	215	
E	10	20	T		270	301	548	49		61					158		
L	10	20	T		267	304	550	48		60					159		

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, O=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg diam epas mm / Probeta	°C		Posiz. Saggio Probenlage Location Emplacement Ubicación 1)	Resilienza Kerbschlagarbeit Impact Value Resilience / Prueba de impacto KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs démandées / Valores requeridos		min max			-	-	-	-	-	-	-	-	-
F	10X10	-196	T		78	76	76	0,708	0,715	0,721	30	30	30

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, O=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg diam epas mm / Probeta	°C		Posiz. Saggio Probenlage Location Emplacement Ubicación 1)	Resilienza Kerbschlagarbeit Impact Value Resilience / Prueba de impacto KV2 J			Espansione laterale Lateral Expansion			Shear Shear		
Valori richiesti Anforderungen/Required values Valeurs démandées / Valores requeridos		min max			60	60	60	-	-	-	-	-	-
J	10X10	20	T		80	85	82						
K	10X10	20	T		81	78	80						

Tensile testing according to ISO 6892-1
Impact testing according to ISO 148-1
Mechanical properties according to ASTM A370.
Ferrite content tested according to ASTM E562.

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 20/06/2024 VCQ052 - MEST083699	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité/Gerente de calidad **R.BERTELLI**	Direzione Prodotto Produktmanagement/Product Management/Direction Produit/Gerente de producto **P.MESSORI**	Pagina 3 di 6

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VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 02072
Bestell
Your order
Commande
Num. de pedido

Conferma ordine nr: MI24005187
Werks/Our Order/Ref nr.
Num. de confirmación de pedido

Avviso di Spedizione: A-MI24003826
Lieferanzeige/Packing list/B.L.
Aviso de embarque

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand
Delivery state
Etat de livraison
Estado de la entrega

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration
Método de fusión

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance
Calidad

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance / Marca

Produttore :
Hersteller/Item/Usine productrice/Producto

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice
Marcas de fábrica

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur
Sello del Comprobador

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage / Sello

Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique/Análisis químico

Colata/Heat/Coulée	min	23,0	-	-	-	16,50	2,00	10,00	-	-	-	-	-	-	-
Schmelze/Colada	max	28,0	0,030	1,00	2,00	18,00	2,50	13,00	-	0,045	0,030	0,100	-	-	-	-
	PRE		C %	Si %	Mn %	Cr %	Mo %	Ni %	Co %	P %	S %	N %				
294062	24,8		0,024	0,39	1,62	16,87	2,02	10,11	0,155	0,033	0,020	0,082				

Colata/Heat/Coulée	min	14,0	-	-	-	-	-
Schmelze/Colada	max	20,0	-	-	-	-	-
	Ni+(2*Mo)						
294062	14,2						

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Furnace calibrated according to API 6A REV 21th ED ANNEX M.
Furnace calibrated according to API 6D REV 25th ED ANNEX H.
Macroetch test per ASTM E381: acceptable.
Reduction ratio = 12,6 : 1
Solution annealed 1080°C for 3.5h/water cooled.
Treatment made on date 18/04/2024 in batch
furnace M3B calibration expiry date 13/07/2024.
SURFACE QUALITY GUARANTEE BY ET INSPECTION (max defect depth 1% DIAMETER)
UT ACC. TO A388/API 6A PSL3-EN 10308cl.3-ASME B16.34/IV
"Issued in agreement with TÜV SÜD Industrie Service GMBH (07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

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Vicenza, 20/06/2024 VCQ052 - MEST083699	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité/Gerente de calidad **R.BERTELLI**	Direzione Prodotto Produktmanagement/Product Management/Direction Produit/Gerente de producto **P.MESSORI**	Pagina 4 di 6

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Ordine nr: AF24 02072
Bestell
Your order
Commande
Num. de pedido

Conferma ordine nr: MI24005187
Werks/Our Order/Ref nr.
Num. de confirmación de pedido

Avviso di Spedizione: A-MI24003826
Lieferanzeige/Packing list/B.L.
Aviso de embarque

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand
Delivery state
Etat de livraison
Estado de la entrega

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration
Método de fusión

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance
Calidad

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance / Marca

Produttore :
Hersteller/Item/Usine productrice/Productor

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice
Marcas de fábrica

Punzone del Collaudatore:
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur
Sello del Comprobador

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage / Sello

Allegati / Anlagen / Enclosure / Attachments :
GT24001056

Sono state soddisfatte tutte le condizioni richieste	Controllo antimescolanza con tecnica XRF/OES portatile : OK	Controllo visivo e dimensionale: soddisfa le esigenze
Die gestellen Anforderungen sind lt. Anlage erfüllt The material has been furnished in accordance with the requirements Le materiel á été trouvé conforme aux exigences El material cumple de acuerdo a los requisitos	Verwechslungprüfung: durch XRF/OES Gerät geführt : OK Antimbing testing performed with XRF/OES portable : OK Contrôle antimélange svt technique XRF/OES portable : OK Prueba de anti mezcla con técnica XRF/OES portátil: OK	Besichtigung und Ausmessung: ohne Beanstandung Visual inspection and dimensional checks:satisfactory Contrôle visuel et dimensions: satisfaisant Inspección visual y dimensional: cumple los requisitos

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD`S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

W3FED73F3FAE29BD17AD7AC3B6B794BA

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CERTIFICATO Certificate - Zeugnis - Certificat **N° GT24001056** **Pag 6 di 6**

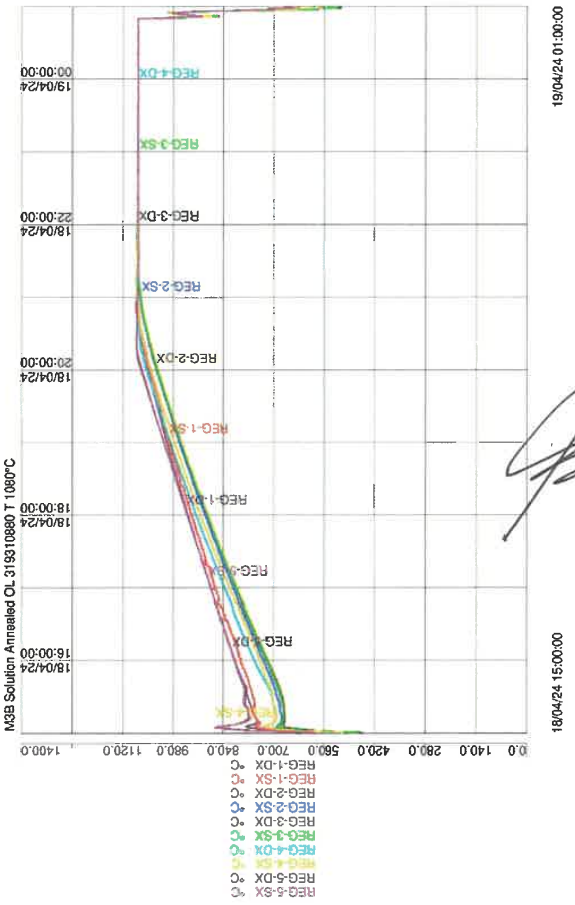
Diagrammi di trattamento termico **MEST083699 / 2024 /**

Heat Treatment charts - Waermebehandlungs diagramm - Diagramme de traitement thermique

N° LOTTO : 319310880 Lot Number

Note Dettaglio : Detail Notes

Note: Notes



Approved by:

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CLOSURE J150RF3

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Nach/According to/Selon

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VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 01999
Bestell / Your order / Commande

Conferma ordine nr: MI24005018
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24003675
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werksachverständigen / Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung / Marking / Marquage

SPECIFICHE :
Anforderungen / Requirements / Exigences

Note:
Aufzeichnungen / Notes / Notes

AV 316L VALVES A/1 1.4401/1.4404 A	
IS107 01 316 A	
MDS S01 5 316 A (0)	(0)Norsok-standard M-630 Edition 6, October 2013
MDS S17 1 316 A (1)	(1)Norsok-standard M-630: 2020 (2020-09-30)
AD 2000-M. W 2 2022 1.4401 A (2)	(2)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
AD 2000-M. W 2 2022 1.4404 A (3)	(3)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
API 6A 21 ANNEX M (4)	(4)Errata 1 (04/2019), Errata 2 (08/2020), Errata 3 (09/2020). Addendum 1 (July 2020) and Addendum 2 (June 2021).
API 6D 25 ANNEX H (5)	(5)Revision November 2021
ASME SA182 2023 S31600/03 A (6)	(6)Section II Part A 2023 EDITION For products machined directly from bar refer to ASME SA479.
ASME SA276 2023 S31600/03 A (7)	(7)Section II Part A 2023 EDITION
ASME SA479 2023 S31600/03 A (8)	(8)Section II Part A 2023 EDITION
ASTM A182 2024 S31600/03 A (9)	(9)For products machined directly from bar refer also to ASTM A479.
ASTM A262 PR. E 2015 316/316L (A)	(A)Reapproved 2021
ASTM A276 2024A S31600/03 A	
ASTM A370 2024 .	
ASTM A479 2023A S31600/03 A	
ASTM E381 2022 .	
ASTM E562 2019 . (B)	(B)18E01
EN 10088 PART 3 2014 1.4401 A (C)	(C)Chemical and mechanical properties only.
EN 10088 PART 3 2014 1.4404 A (D)	(D)Chemical and mechanical properties only.
EN 10222 PART 5 2017 1.4401 A	
EN 10222 PART 5 2017 1.4404 A	
EN 10272 2016. 1.4401 A	
EN 10272 2016. 1.4404 A	
ISO 148-1 2016 .	
ISO 6892-1 2019 .	
NACE MR0103 2015 S31600/03 A (E)	(E)ANSI/NACE MR0103/ISO 17945 November 23, 2015
NACE MR0175 4 S31600/03 A (F)	(F)ANSI/NACE MR0175/ISO 15156-3:2020 Fourth edition, approved 21 Sep 2022.

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		Tolleranza: k12 Toleranz/Allowance/Tolerance					
Pos. nr. Pos. nr. Item nr Nr. de poste	Oggetto Gegenstand Product description Descrip. du produit	Dimensioni - mm Abmessungen Dimension Dimension	Lunghezza - mm Lange Length Longueur	Colata Schmelze Heat Coulée	Pezzi Stückzahl Pieces Pieces	Peso - KG Gewicht Weight Poids	Lotto nr. Losnr. Lot nr. Lot nr.
0010	Tondo	170,000	5396/ 5396	294062	1	977,0	314007080

x CROSSWOOD
31/10/24

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 13/06/2024 VCQ012 - MEST080043	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité **R.BERTELLI**	Direzione Prodotto Produktmanagement/Product Management/Direction Produit **P.MESSORI**	Pagina 1 di 7

CLOSURE J150RF3

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST080043 / 2024 /
Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 01999
Bestell
Your order
Commande

Conferma ordine nr: MI24005018
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24003675
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werksachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage

TEST ALLO STATO DI FORNITURA

TEST		min	max	
A	Dimensioni grano x ASTM E112			2
A	Ferrite delta %			1,0 %

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg diem epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs démandées		min max		60	60	60	-	-	-	-	-	-
B	10X10	-196	L	238	236	232	1,834	1,862	1,848	70	70	70

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg diem epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Härte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs démandées		min max		205	-	515	-	40	-	50	-			- 235		
C	12,5	20	L	266		553		62		76				158		

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg diem epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Härte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs démandées		min max		205	-	515	-	40	-	50	-			- 235		
L	12,5	20	T	252		549		52		63				159		

CROSSWIND 21/10/24

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 13/06/2024	Direzione Qualità	Direzione Prodotto	Pagina
VCQ012 - MEST080043	Qualitätsmanagement/Quality Management/Gestion Qualité	Produktmanagement/Product Management/Direction Produit	2 di 7
	R.BERTELLI	P.MESSORI	

CLOSURE J150RF3

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In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST080043 / 2024 /

Cliente / Besteller/Purchaser/Client:
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 01999
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Conferma ordine nr: MI24005018
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24003675
Lieferanzeige/Packing list/B.L.

Stato di fornitura: Fucinato Solubilizzato - Pelato
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore:
Hersteller/Item/Usine productrice
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung / Marking / Marquage

Prova di trazione per ISO 6892-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais. mm	°C		Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement A5 %		Strizione Einschnürung Reduction of area Striction Z %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti / Anforderungen/Required values / Valeurs demandées		min			205	240	510	35	-	-	-	-			-		
		max					690								215		
D	10	20	T		279	308	555	54		57					159		
K	10	20	T		283	311	557	55		58					157		

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais. mm	°C		Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale - Lateral Expansion - Lateral ex mm			Shear - Shear - % Shear %		
Valori richiesti / Anforderungen/Required values / Valeurs demandées		min			-	-	-	-	-	-	-	-	-
		max											
E	10X10	-196	T		75	70	70	0,626	0,634	0,615	30	30	30

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais. mm	°C		Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale - Lateral Expansion -			Shear - Shear -		
Valori richiesti / Anforderungen/Required values / Valeurs demandées		min			60	60	60	-	-	-	-	-	-
		max											
I	10X10	20	T		96	96	98						
J	10X10	20	T		91	85	93						

Tensile testing according to ISO 6892-1
Impact testing according to ISO 148-1
Mechanical properties according to ASTM A370.
Ferrite content tested according to ASTM E562.

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9/10/24 R

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Lieferanzeige/Packing list/B.L.

Stato di fornitura: Fucinato Solubilizzato - Pelato
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore:
Hersteller/Item/Usine productrice
ACCIAIERIE VALBRUNA S.P.A.

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Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung / Marking / Marquage

Analisi chimica
Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat	min	23,0	-	-	-	16,50	2,00	10,00	-	-	-	-	-	-	-
Schmelze/Coulée	max	28,0	0,030	1,00	2,00	18,00	2,50	13,00	-	0,045	0,030	0,100	-	-	-	-

	PRE	C %	Si %	Mn %	Cr %	Mo %	Ni %	Co %	P %	S %	N %				
294062	24,8	0,024	0,39	1,62	16,87	2,02	10,11	0,155	0,033	0,020	0,082				

Colata /Heat	min	14,0	-	-	-	-	-	-
Schmelze/Coulée	max	20,0	-	-	-	-	-	-

	Ni+(2*Mo)						
294062	14,2						

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Furnace calibrated according to API 6A REV 21th ED ANNEX M.
Furnace calibrated according to API 6D REV 25th ED ANNEX H.
Macroetch test per ASTM E381: acceptable.
Reduction ratio = 12,6 : 1
Solution annealed 1080°C for 3h/water cooled.
Treatment made on date 14/04/2024 in batch
furnace M9A calibration expiry date 11/05/2024.
SURFACE QUALITY GUARANTEE BY ET INSPECTION (max defect depth 1% DIAMETER)
UT ACC. TO A388/API 6A PSL3-EN 10308cl.3-ASME B16.34/IV
"Issued in agreement with TÜV SÜD Industrie Service GMBH
(07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by
Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 13/06/2024 VCQ012 - MEST080043	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité **R.BERTELLI**	Direzione Prodotto Produktmanagement/Product Management/Direction Produit **P.MESSORI**	Pagina 4 di 7

Acciaierie Valbruna S.p.A.

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Telefono 0444.968211 - Fax 0444.963836
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Certificato nr. MEST080043 / 2024 /
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Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 01999
Bestell
Your order
Commande

Conferma ordine nr: MI24005018
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24003675
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage

Allegati / Anlagen / Enclosure / Attachments :
UT24003626 GT24001194

Sono state soddisfatte tutte le condizioni richieste Die gestellen Anforderungen sind it. Anlage erfüllt The material has been furnished in accordance with the requirements Le materiel á été trouvé conforme aux exigences	Controllo antimescolanza con tecnica XRF/OES portatile : OK Verwechslungprüfung: durch XRF/QES Gerät geführt : OK Antimbing testing performed with XRF/OES portable : OK Contrôle antimélange svt technique XRF/QES portable : OK	Controllo visivo e dimensionale: soddisfa le esigenze Besichtigufg und Ausmessung: ohne Beanstandung Visual inspection and dimensional checks:satisfactory Contrôle visuel et dimensions: satisfaisant

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD`S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

W8P1BA8547D6847BDA91EC867FC9531EB

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CLOSURE J150RF3

	Acciaierie Valbruna S.p.A. 36100 VICENZA (Italia) - Viale della scienza, 25 z.i. Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4	**CERTIFICATO** Certificate - Zeugnis - Certificat **N° UT24003626**	Pag 6 di 7
		CONTROLLO CON ULTRASUONI *Ultrasonic testing - Ultraschallprüfung - Controle par ultrasons*	

mod. UT02 MEST080043 / 2024 /

Cliente : INDRA S.R.L. *Customer*				**Lotto nr : 314007080** *Mill order*		
MARCA *Grade*	**DIMENSIONI - mm** *Size*	**COLATA** *Heat*	**BARRE** *Bars*	**PESO** *Weight*	**LUNGHEZZA - mm** *Length*	
MVAPML	Tondo 170,000	294062	N. 1	KG : 977,0	5396	5396

T. TERMICO *Heat Treatement*	**ESECUZIONE** *Condition*	**RUGOSITA'** *Roughness*	**TOLLERANZA** *Tolerance*
Solubilizzato	Pelato	µm	k12

Istruzione : PROC CND 040 *Work Instruction*	**Criteri Accettabilità : A388/API 6A PSL3-EN 10308 cl.3-ASME B16.34/IV** Acceptance Criteria

ELETTRONICA : Olympus Quickscan LT *Equipment*					
ACCOPPIANTE : ACQUA + 0253 SA *Couplant*				**VEL.CONTROLLO :** *Testing Speed*	**231 mm/sec**
TRASDUTTORI *Probes*	**TIPO ONDA** *Type of wave*	**FREQUENZA (MHZ)** *Frequency*	**DIMENSIONI (MM)** *Dimension*	**ANGOLO** *Angle*	**TARATURA** *Calibration*
64EL. 2.25MHZ	LONG.	2,25	128X25	0°	DAC

CONTROLLO AUTOMATICO [X] *Automatic inspection*	**CONTROLLO MANUALE** *Manual inspection*

NOTE :
Notes

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CONFORME [X] *Compliant*	**CONFORME IN DEROGA [ ]** *See Deviation*	**NON CONFORME [ ]** *Not Compliant*

ISPEZIONATO DA Inspected by	**VERIFICATO DA** Verified by	**APPROVATO DA** Approved by **G.Parlato** ISO 9712 LEV. 2 IND2401253	**COLLAUDATORE** Inspector - Abnahmesachsverst - Inspecteur
FIRMA	**FIRMA**	**FIRMA**	

Date - Date **06/05/2024**

Operatori, strumenti e documenti di riferimento, utilizzati per il collaudo del materiale, sono identificati, controllati e/o calibrati in accordo alle norme EN, ISO e ASTM, richiamate nelle pratiche operative e istruzioni di pertinenza / *Operators, Equipment and reference documents, used for material inspection, are identified, checked and/or calibrated in accordance with EN/ISO or ASTM standards, reported in relevant documents*

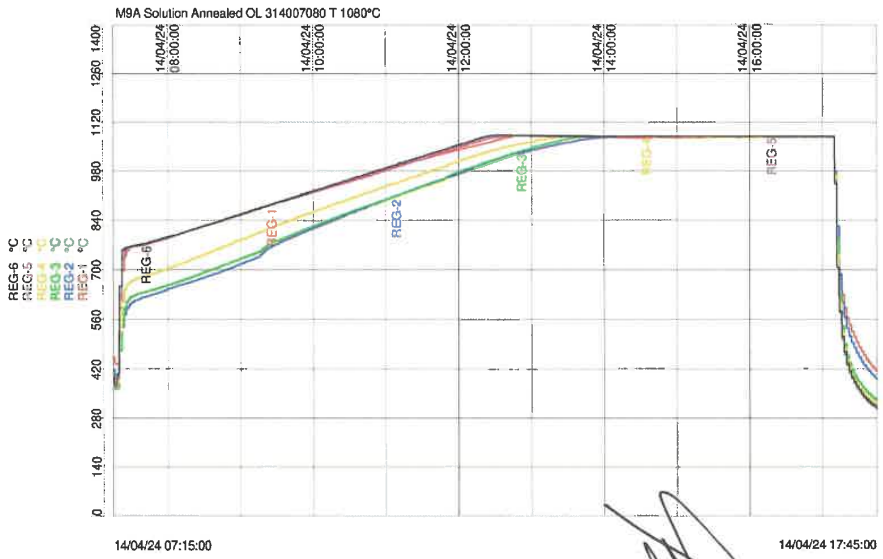
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36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4

CERTIFICATO Certificate - Zeugnis - Certificat **N° GT24001194** **Pag 7 di 7**

Diagrammi di trattamento termico **MEST080043 / 2024 /**

Heat Treatment charts - Waermebehandlungs diagramm - Diagramme de traitement thermique

N° LOTTO : 314007080 Lot Number	**Note Dettaglio :** Detail Notes	**Note:** Notes



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Approved by:

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TIRANTE / STUD BOLT

IPL S.r.l.
BULLONERIA - TIRANTERIA
SPECIALE E STANDARD

Via Papa Giovanni Paolo I, 306
21040 UBOLDO (VA)

Customer: **INDRA SRL**
C.SO XXII MARZO, 8
20135 MILANO (MI)

Date, 25-07-24 **Our Ref.** DDT 2902 / OC 1332 **of** 25-07-24 **Your Ref.** AF24 02034 13-06-24

CERTIFICATE UNI EN 10204 - 3.1 N.2402183

ITEM		QUANTITY	HEAT TREATMENT	PROTECTION	LOT nr.	HEAT nr.
TIR.820160601-5	STUDBOLT UNI6610/DIN976B - A/SA193/320 B8M CL.2 M 16 x 1,5 x 60 *101.99.0570SS*	45,00	carb. sol. tr. + strain hard.		833219	1KNK
TIR.820160681-5	STUDBOLT UNI6610/DIN976B - A/SA193/320 B8M CL.2 M 16 x 1,5 x 68 → *98J.99.0035SS*	20,00	carb. sol. tr. + strain hard.		833220	1KNK

MECHANICAL PROPERTIES

values	R (MPa)	Rs 0,2 (MPa)	A4 (%)	Z (%)	HB (min-max)
required	760 min	655 min	15 min.	45 min.	321 max
actual	920	657	28,0	63,0	265

CHEMICAL COMPOSITION

values	C (%)	Mn (%)	Si (%)	P (%)	S (%)	Ni (%)	Cr (%)	Mo (%)
required	0,08 max	2,00 max	1,00 max	0,045 max	0,030 max	10,00 - 14,00	16,00 - 18,00	2,00 - 3,00
actual	0,0280	1,4620	0,3970	0,0250	0,0270	10,3850	16,6750	2,0570

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remarks: chemical and mechanical values, at delivery condition, are quoted by the relevant steel work certificate. VISUAL AND DIMENSIONAL TEST SATISFACTORY
According to: ASME II part. A ed. 2023

x CROSSWIND 9/6/24 R

If not mentioned the above test are performed at room temperature.
We certify that the fasteners were manufactured, sampled, tested and inspected in accordance with the specification and are consistent with order prescriptions.
Quality assurance system in accordance to European Directive 2014/68/EU annex I par. 4.3 (PED) and AD 2000 Merkblatt W0.
Certificates 0045/202/WZ1921/23 and TN/AD2000-W0/1921/23 TÜV NORD Systems GmbH & Co. KG.

IPL S.R.L.
RSQ A. Grisetti

DADO / NUT

IPL S.r.l.
BULLONERIA - TIRANTERIA
SPECIALE E STANDARD

Via Papa Giovanni Paolo I, 306
21040 UBOLDO (VA)

Customer: **INDRA SRL**
C.SO XXII MARZO, 8
20135 MILANO (MI)

Date, 25-07-24 **Our Ref.** DDT 2899 / OC 1332 **of** 25-07-24 **Your Ref.** AF24 02034 13-06-24

CERTIFICATE UNI EN 10204 - 3.1 N.2402252

ITEM		QUANTITY	HEAT TREATMENT	PROTECTION	LOT nr.	HEAT nr.
55888M0161-5	HEX NUT UNI 5588/ISO4032/DIN934 H=0,8 d - A/SA194 G8M M 16 x 1,5	40,00	carbide solution tr.		833216	283942*
	101.99.0571SS					
86738M0161-5	HEX NUT ISO 8673 - A/SA194 G8M M 16 x 1,5	20,00	carbide solution tr.		833218	283942*
	→ 980.99.0012					

MECHANICAL PROPERTIES

values	HB (min-max)	PROOF LOAD
required	126 - 300	
actual	218 - 221	POSITIVE

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CHEMICAL COMPOSITION

values	C (%)	Mn (%)	Si (%)	P (%)	S (%)	Ni (%)	Cr (%)	Mo (%)	N (%)
required	0,08 max	2,00 max	1,00 max	0,045 max	0,030 max	10,0 - 14,0	16,0 - 18,0	2,00 - 3,00	
actual	0,016	1,50	0,46	0,030	0,028	10,10	16,52	2,04	0,050

remarks: chemical and mechanical values, at delivery condition, are quoted by the relevant steel work certificate. VISUAL AND DIMENSIONAL TEST SATISFACTORY
According to : ASME II part. A ed. 2019. Corrosion test acc. to UNI EN ISO 3651-2 Method A: OK

x CROSSWIND
31/07/24

If not mentioned the above test are performed at room temperature.
We certify that the fasteners were manufactured, sampled, tested and inspected in accordance with the specification and are consistent with order prescriptions.
Quality assurance system in accordance to European Directive 2014/68/EU annex I par. 4.3 (PED) and AD 2000 Merkblatt W0.
Certificates 0045/202/WZ1921/23 and TN/AD2000-W0/1921/23 TÜV NORD Systems GmbH & Co. KG.

IPL S.R.L.
RSQ A. Grisetti

STELO SFERA / BALL STEM

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST084078 / 2023 /
Prüfung/Test/Essai

Ordine nr: ORD.N.2300396
Bestell Your order Commande

Conferma ordine nr: MI23004818
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23003903
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Hot rolled - Annealed COLD PROCESSED
Lieferzustand Delivery state Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart Melting process Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes Trade marks Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung Marking Marquage

SPECIFICHE :
Anforderungen / Requirements / Exigences

VAL STOCK W2 A/1 1.4404/316L A,CF
AD 2000-M. W 2 01/20 1.4401 A,CF (0)
AD 2000-M. W 2 01/20 1.4404 A,CF (1)
AISI . 316/316L
AMS-QQ-S-763 D 316/316L A,CF
ASME SA182 2021 S31600/03 A (2)
ASME SA276 2021 S31600/03 A,CF (3)
ASME SA479 2021 S31600/03 A (4)
ASTM A182 2022A S31600/03 A (5)
ASTM A262 PR. E 2015 316/316L (6)
ASTM A276 2017 S31600/03 A,CF
ASTM A370 2022 .
ASTM A479 2021 S31600/03 A
ASTM E10 2018 .
ASTM E8 2022 .
EN 10088 PART 3 2014 1.4401 A,CF
EN 10088 PART 3 2014 1.4404 A,CF
EN 10272 2016. 1.4401 A,CF
EN 10272 2016. 1.4404 A,CF
ISO 148-1 2016 .
ISO 3651-2 98 METHOD A T1
ISO 6506-1 2014 .
ISO 6892-1 2019 .
NACE MR0103 2015 S31600/03 A (7)
NACE MR0175 2015 S31600/03 A (8)
QQ-S-763 F 316/316L A,CF
ACH CO . .
KV L -196C . ISO 148-1

Note:
Aufzeichnungen / Notes / Notes

(0)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
(1)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
(2)Section II Part A 2021 EDITION For products machined directly from bar refer to ASME SA479.
(3)Section II Part A 2021 EDITION
(4)Section II Part A 2021 EDITION
(5)For products machined directly from bar refer also to ASTM A479.
(6)Reapproved 2021
(7)ANSI/NACE MR0103/ISO 17945 November 23, 2015
(8)ANSI/NACE MR0175/ISO 15156-3, third edition November 23,2015

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		Tolleranza: h9 - DIN671/EN10278 Toleranz/Allowance/Tolerance					
Pos. nr. Pos. nr. Item nr. Nr. de poste	Oggetto Gegenstand Product description Descrip. du produit	Dimensioni - mm Abmessungen Dimension Dimension	Lunghezza - mm Länge Length Longueur	Colata Schmelze Heat Coulée	Pezzi Stückzahl Pieces Pieces	Peso - KG Gewicht Weight Poids	Lotto nr. Losnr Lot nr. Lot nr.
0010	Round	25,000	3000/ 3040	291905		58,0	304610390

x CROSSWIND 9/10/24 R

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 26/06/2023 VCQ052 - MEST084078	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 1 di 4

STELO SFERA / BALL STEM

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST084078 / 2023 /
Prüfung/Test/Essai

Stato di fornitura : Hot rolled - Annealed COLD PROCESSED
Lieferzustand / Delivery state / Etat de livraison

Produttore :
Hersteller/Item/Usine productrice
ACCIAIERIE VALBRUNA S.P.A.

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice

Ordine nr: ORD.N.2300396
Bestell / Your order / Commande

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur

Conferma ordine nr: MI23004818
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23003903
Lieferanzeige/Packing list/B.L.

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Punzonatura: 1.4401/1.4404
Kennzeichnung / Marking / Marquage

TEST ALLO STATO DI FORNITURA
Test on delivery condition Prüefung auf lieferbereitem produkt test a l'etat de fourniture Prueba sobre el material así come entregado

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement A5 %		Strizione Einschnürung Reduction of area Striction Z %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		200	235	500 900	20	-	-	-	-			- 315		
A	10	20	L	480	568	694	43		65					231		
G	10	20	L	485	571	699	42		64					234		

TEST ALLO STATO DI FORNITURA
Test on delivery condition / Prüefung auf lieferbereitem produkt / Test a l'etat de fourniture / Prueba sobre el material así come entregado

TEST		min	max	
A	Grain size for ASTM E112			5

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		-	-	-	-	-	-	-	-	-
B	10X10	-196	L	168	170	162	1,758	1,485	1,328	65	60	59

Test on delivery condition per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		210	-	517	-	30	-	50	-			- 235		
C	12,5	20	L	502		697		43		69				233		

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 26/06/2023 VCQ052 - MEST084078	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 2 di 4

STELO SFERA / BALL STEM

Acciaierie Valbruna S.p.A.

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CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST084078 / 2023 /
Prüfung/Test/Essai

Ordine nr: ORD.N.2300396
Bestell / Your order / Commande

Conferma ordine nr: MI23004818
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23003903
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Hot rolled - Annealed COLD PROCESSED
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung / Marking / Marquage

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess Breite Diam. Dicke Width Diam. Thickness Larg diam epais mm	°C	Posiz. Saggio Probenlage Location Emplacement	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion			Shear Shear		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		100	100	100	-	-	-	-	-	-
F	10X10	20	L	201	198	200						
H	10X10	20	L	209	191	194						

Tensile testing according to ISO 6892-1
Impact testing according to ISO 148-1
Mechanical properties according to ASTM A370.
Brinnell hardness according to ASTM E10
Tensile testing according to ASTM E8
Brinnell hardness according to ISO 6506-1

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Analisi chimica
Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat Schmelze/Coulée	C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	Co %	P %	S %	N %				
min - max	- 0,030	- 1,00	- 2,00	16,50 18,00	2,00 2,50	- 1,00	10,00 13,00	- -	- 0,045	- 0,030	- 0,100	- -	- -	- -	- -
291905	0,015	0,54	1,50	16,86	2,01	0,42	10,13	0,168	0,031	0,029	0,058				

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 26/06/2023	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité	Direzione Prodotto Produktmanagement/Product Management/Direction Produit	Pagina 3 di 4
VCQ052 - MEST084078	**R.BERTELLI**	**P.MESSORI**	

STELO SFERA / BALL STEM

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST084078 / 2023 /
Prüfung/Test/Essai

Ordine nr: ORD.N.2300396
Bestell / Your order / Commande

Conferma ordine nr: MI23004818
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23003903
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Hot rolled - Annealed COLD PROCESSED
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Liefernwerkes / Trade marks / Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung / Marking / Marquage

Reduction ratio = 61,1 : 1
Solution annealed 1040°C for 135'(total time)/water cooled.
SURFACE QUALITY COMPLIANT TO EN 10088-3 TAB.1 COND. 2H
"Issued in agreement with TÜV SÜD Industrie Service GMBH
(07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by
Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

Sono state soddisfatte tutte le condizioni richieste Die gestellen Anforderungen sind lt. Anlage erfüllt The material has been furnished in accordance with the requirements Le materiel á eté trouvé conforme aux exigences	Controllo antimescolanza con tecnica XRF/OES portatile : OK Verwechslungprüfung: durch XRF/OES Gerät geführt : OK Antimixing testing performed with XRF/OES portable : OK Contrôle antimélange svt technique XRF/QES portable : OK	Controllo visivo e dimensionale: soddisfa le esigenze Besichtigung und Ausmessung: ohne Beanstandung Visual inspection and dimensional checks:satisfactory Contrôle visuel et dimensions: satisfaisant

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD`S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

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CROSSWIND

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 26/06/2023 VCQ052 - MEST084078	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité **R.BERTELLI**	Direzione Prodotto Produktmanagement/Product Management/Direction Produit **P.MESSORI**	Pagina 4 di 4

COGNE ACCIAI SPECIALI S.p.a.

ITALY - 11100 AOSTA - VIA PARAVERA, 16
TEL +39.0165.3021 - FAX +39.0165.302296
CAP. SOC. 250.000.000 EUR INT. VERS.
C.F. 02187360967
VAT: IT00571320076 - R.E.A. n. AO-50474

Company with Management Systems certified according to ISO 9001, IATF 16949, EN 9100 and ISO 14001.

INSPECTION CERTIFICATE 3.1 (EN 10204:2004)
DOCUMENT NUMBER 2022021445

SFERA / BALL

CUSTOMER:	SWISS STEEL ITALIA S.R.L.		
CUSTOMER'S ORDER:	2058038281		
MANUFACTURER'S WORKS:	AOSTA, VIA PARAVERA 16 - ITALY		
PRODUCER OF THE DOC:	QUALITY DEPARTMENT		
MANUFACTURER'S WORKS ORDER NO:	0025290568 / 000120		
MARK OF THE MANUFACTURER:	**COGNE**		
DISPATCH NOTE:	81480988 / 000010 WEIGHT: 1840 KG / 4057 LB		
THE CERTIFIED PRODUCTS ARE COMPLYING TO THE PURCHASE ORDER, EXCEPT FOR EXEMPTIONS AGREED WITH THE CUSTOMER, IF ANY.			
INTERNAL SPEC:	AD2000MERKBLATTW10	TECHNICAL RULE:	AD2000
PRODUCT:	PEL PEELED ROUND BARS TOLERANCE: ISOK11		
SURFACE FINISH:	2B Cold Finished		
PRODUCT DELIVERY CONDITION:	RS SOLUTION ANNEALED		
PRODUCT DIMENSIONS (mm):	95,000 (3,740 in)	LENGTH (mm)	04000 06200 (00157 00244 in)
GRADE:	316L-S31600/31603-1.4404/1.4401	INTERNAL GRADE:	F316L IMCO
IDENTIFICATION HEAT NO:	272823	IDENTIFICATION LOT NO:	135920
MARKING OF THE PRODUCT:	1.4404	TEST PIECE N:	592

AISI 316/316L - UNS S31600/S31603 - 1.4404/1.4401
THE MATERIAL IS PRODUCED ACCORDING TO SPECIFICATION AD2000-MERKBLATT W2/W10
DOCUMENT ISSUED IN AGREEMENT WITH TUEV BAYERN(11.1972) WAVING OF COUNTERSIGNING (SEE TUEV BAYERN LETTER DATED 17.01.80).
REFERENCE NORMS: EN 10088-3 2014, EN 10272 2016, ASTM A276/A276M, ASTM A479/A479M, ASTM A193 B8MCLASSE 1D, ASME SA276/SA276M, ASME SA479/SA479M, AMS 5653J, AMS 5648M, ISO15156-3/NACE MR0175 2015, NACE MR0103/ISO 17945, NORSOK M630 MDSS01 REV5.
REFERENCE NORMS FOR CHEMICAL COMPOSITION AND MECHANICAL PROPERTIES: ASTM A182, ASME SA182.
REFERENCE NORMS ONLY FOR CHEMICAL COMPOSITION: EN 10222-5 2017,ASTM A403-07a, ASTM A484-18a,ASTM A314-08, AMS-QQ-S-763D.
ASME SECT.II PART A EDITION 2015-2017-2019-2021
MATERIAL ACCORDING TO NACE MR0103/ISO 17945
HOT ROLLED
REDUCTION RATIO 3,3

CHEMICAL LADLE ANALYSIS ACCORDING TO ASTM A751 - EN ISO 14284
Control lot No. - Weight :020000918793 - 85.286 KG - 188.020 LB

ELEMENTS	C	Si	Mn	P	S	N	Cr	Mo	Ni	Cu
OBTAINED	0,017	0,34	1,81	0,028	0,026	0,076	16,89	2,09	10,16	0,47

ELEMENTS	Co
OBTAINED	0,21

HARDNESS TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000919124 - 15.314 KG - 33.761 LB
SPECIFICATION ENISO6506 HARDNESS TEST HB TESTING METHOD: 10/3000
OBTAINED 172

IMPACT TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000919124 - 15.314 KG - 33.761 LB
SPECIFICATION EN ISO 148-1-KV2 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 20
MEASUREMENT UNIT J

OBTAINED									
427	433	427	443	433	428	427	438	430	428
432	431								

DATE 28.04.2022 MORABITO ROSA CF(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne

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COGNE ACCIAI SPECIALI S.p.a.
ITALY - 11100 AOSTA - VIA PARAVERA, 16
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CAP. SOC. 250.000.000 EUR INT. VERS.
C.F. 02187360967
VAT: IT00571320076 - R.E.A. n. AO-50474

Company with Management Systems certified according to ISO 9001, IATF 16949, EN 9100 and ISO 14001.

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TENSILE TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000919124 - 15.314 KG - 33.761 LB
SPECIFICATION EN-ISO6892-1 DIRECTION OF THE TEST PIECE: L

MEASUREMENT UNIT	RM MPA	RP02 MPA	A5 % 5.0 D	Z %	RP1 NMM
OBTAINED	580	241	57,8	77,4	286
	582	241	55,0	77,3	285
	590	256	53,8	72,3	290
	578	244	55,0	78,2	286

GRAIN SIZE
Control lot No. - Weight :020000919124 - 15.314 KG - 33.761 LB
SPECIFICATION ASTME112 --
OBTAINED 5

CORROSION TEST ACCORDING TO ASTM A262 PRACTICE E EN ISO 3651-2 PRACTICE A: SATISFACTORY.
MATERIAL ACCORDING TO ASME SEC. II Ed. 2015
IMPACT TEST
Control lot No. - Weight :020000919124 - 15.314 KG - 33.761 LB
SPECIFICATION EN ISO 148-1 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 196-
MEASUREMENT UNIT J

OBTAINED	190	182	176	196	174	171	186	170	197	200
	175	188								

TENSILE TEST
Control lot No. - Weight :020000919124 - 15.314 KG - 33.761 LB
SPECIFICATION ASTMA370-E8-0.5"SPEC DIRECTION OF THE TEST PIECE: L

MEASUREMENT UNIT	RMB KSI	RP02B KSI	ZB %	AL2B % 4,0 D
OBTAINED	85	35	78,7	54,2
	84	34	79,5	59,4
	84	35	74,8	62,9
	84	34	78,6	60,4

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The products delivered are conforming to EN10088-5 and bear the CE marking on the basis of the test results here reported and the continuous surveillance, assessment and approval by MPA NRW
(certificate no. 0432-CPR-00166-01)
Material produced according to the system #Regulation 305/2011/EU of the European Parliament and of the Council of 9 March 2011#
ULTRASONIC TEST ACCORDING TO EN 10308 Class.3: SATISFACTORY
EDDY CURRENT INSPECTION OF SURFACE ACCORDING TO EN 10277 CLASS 4.
DIMENSIONAL CONTROL ACCORDING TO EN 10278: SATISFACTORY.
NO WELDING REPAIR ON THE MATERIAL.

DATE 28.04.2022 MORABITO ROSA CF(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne

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Company with Management Systems certified according to ISO 9001, IATF 16949, EN 9100 and ISO 14001.

SFERA / BALL

ANTIMIXING TEST BY PORTABLE SPECTROMETRE: CONFORMING
MARKING: SYMBOL OF THE MANUF. WORK, MATERIAL N. , CAST N., LOT N., RECEIVING AGENT STAMP
COUNTRY OF MELTING AND ORIGIN: ITALY, THE MATERIAL COMPLIES WITH FAR DFARS
252.225-7009 ALT 1.
THE PRODUCT SATISFIES THE DIRECTIVES: 2015/863/EU (ROHS3) - 2011/65/EU (ROHS2) - 2000/53/EU - 2002/95/EU(RoHS) - 2003/11/EU-2005/618/EU AND PED 2014/68/EU.
ALL THE NORMS MENTIONED ARE INTENDED IN THEIR LAST REVISION AT THE DATE OF ISSUE OF THIS DOCUMENT.
MATERIAL ACCORDING TO NACE MR0103/ISO 17945
INSPECTOR'S STAMP LF
QUALITY SYSTEM CERTIFIED BY KIWA CERMET ACCORDING TO UNI EN ISO 9001:2015 -IATF 16949:2016 (THE LAST ONE ONLY FOR WIRE ROD AND HOT ROLLED-PEELED-GROUND STAINLESS STEEL BARS).
THE MATERIAL IS FREE OF ANY MERCURY, MERCURY COMPOUNDS AND OR RADIUM CONTAMINATION AT TIME OF SHIPMENT AND WAS PRODUCED WITHOUT USING OZONE DEPLETING SUBSTANCES OF CLASS I AND II.
RADIOACTIVITY CONTROL PERFORMED WITH A GAMMA SPECTROMETER: ASTM E181.
GAMMA ACTIVITY ON THE PRODUCTS BELOW 0.1 BQ/G ACCORDING TO EU RESOLUTION 2013/59/EURATOM , IAEA RS-G-1.7 AND IAEA SSG-17.

CE 0432

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DATE 28.04.2022

MORABITO ROSA CF(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE

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CORPO BONNET / BONNET BODY

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a (Nach/According to/Selon): EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. (Prüfung/Test/Essai): MEST040838 / 2024 /

Ordine nr: ORD.24000161
Bestell / Your order / Commande

Conferma ordine nr: **AN24000318**
Werks/Our Order/Ref nr.

Avviso di Spedizione: **A-AN24000296**
Lieferanzeige/Packing list/B.L.

Stato di fornitura: Lieferzustand / Delivery state / Etat de livraison	Laminato - Solubilizzato FINITO A FREDDO	Produttore: Hersteller/Item/Usine productrice: **ACCIAIERIE VALBRUNA S.P.A.**
Tipo di Elaborazione: Erschmelzungsart / Melting process / Mode d'elaboration	E+AOD	Marchi di Fabbrica: Zeichen des Herstellers / Trade marks / Sigles de l'usine productrice: AV
Qualità: Werkstoff/Grade/Nuance	1.4401/1.4404/316/316L	Punzone del Collaudatore: Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur: MR
Marca: Markenbezeichnung / Brand / Nuance	MVAPML (MAXIVAL)	Punzonatura: 1.4401/1.4404 Kennzeichnung / Marking / Marquage

SPECIFICHE : (Anforderungen / Requirements / Exigences)

Note: (Aufzeichnungen / Notes / Notes)

VAL STOCK W2 A/1 1.4404/316L A,CF	
AD 2000-M. W 2 2022 1.4401 A,CF (0)	(0)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
AD 2000-M. W 2 2022 1.4404 A,CF (1)	(1)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
AISI . 316/316L	
AMS-QQ-S-763 D 316/316L A,CF	
ASME SA182 2023 S31600/03 A (2)	(2)Section II Part A 2023 EDITION For products machined directly from bar refer to ASME SA479.
ASME SA276 2023 S31600/03 A,CF (3)	(3)Section II Part A 2023 EDITION
ASME SA479 2023 S31600/03 A (4)	(4)Section II Part A 2023 EDITION
ASTM A182 2023 S31600/03 A (5)	(5)For products machined directly from bar refer also to ASTM A479.
ASTM A262 PR. E 2015 316/316L (6)	(6)Reapproved 2021
ASTM A276 2024A S31600/03 A,CF	
ASTM A370 2022 .	
ASTM A479 2023A S31600/03 A	
ASTM E10 2023 .	
ASTM E8 2022 .	
EN 10088 PART 3 2014 1.4401 A,CF	
EN 10088 PART 3 2014 1.4404 A,CF	
EN 10272 2016. 1.4401 A,CF	
EN 10272 2016. 1.4404 A,CF	
ISO 148-1 2016 .	
ISO 3651-2 98 METHOD A T1	
ISO 6506-1 2014 .	
ISO 6892-1 2019 .	
NACE MR0103 2015 S31600/03 A (7)	(7)ANSI/NACE MR0103/ISO 17945 November 23, 2015
NACE MR0175 4 S31600/03 A (8)	(8)ANSI/NACE MR0175/ISO 15156-3:2020 Fourth edition, approved 21 Sep 2022.
QQ-S-763 F 316/316L A,CF	
ACH CO . .	
KV L -196C . ISO 148-1	
MDS S01 5 316 A,CF (9)	(9)Norsok-standard M-630 Edition 6, October 2013
ASTM A479 2023A S31600 A	

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Tolleranza: h11 - DIN668/EN10278
Toleranz/Allowance/Tolerance

Pos. nr.	Oggetto	Dimensioni - mm	Lunghezza - mm	Colata	Pezzi	Peso - KG	Lotto nr.
Pos. nr. / Item nr. / Nr. de poste	Degenstand / Product description / Descrip. de produit	Abmessungen / Dimensions / Dimensions	Länge / Length / Longueur	Schmelze / Heat / Coulée	Stückzahl / Pieces / Pièces	Gewicht / Weight / Poids	Losnr. / Lot no. / Lot nr.
0010	Esagono	22,000	3030/ 3030	291893		901,0	217704270

x CROSSWIND 3/10/24 R

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 21/03/2024 VCQ012 - MEST040838	**Direzione Qualità** Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	**Direzione Prodotto** Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 1 di 4

CORPO BONNET / BONNET BODY

Acciaierie Valbruna S.p.A.

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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1 — Certificato nr. MEST040838 / 2024 /

Nach/According to/Selon — Prüfung/Test/Essai

Stato di fornitura: Laminato - Solubilizzato FINITO A FREDDO
Lieferzustand / Delivery state / Etat de livraison

Produttore:
Hersteller/Item/Usine productrice
ACCIAIERIE VALBRUNA S.P.A.

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice

Ordine nr: ORD.24000161
Bestell / Your order / Commande

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur

Conferma ordine nr: AN24000318
Works/Our Order/Ref nr.

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Punzonatura: 1.4401/1.4404
Kennzeichnung / Marking / Marquage

Avviso di Spedizione: A-AN24000296
Lieferanzeige/Packing list/B.L.

TEST ALLO STATO DI FORNITURA
Test on delivery condition — Prüfung auf lieferbereitem produkt — test a l'etat de fourniture — Prueba sobre el material así come entregado

1) L=longitudinale/Längs, T=trasversale/quer, O=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Prelievo/Location/Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance a traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement A5 %		Strizione Einschnürung Reduction of area Striction Z %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Härte Hardness Durete HB		
Valori richiesti / Anforderungen/Requirements/Valeurs demandées		min		200	235	500	20	-	-	-	-			-		
		max				900								315		
A	10	20	L	480	548	678	44		67					224		
G	10	20	L	484	550	683	43		65					227		

TEST ALLO STATO DI FORNITURA
Test on delivery condition / Prüfung auf lieferbereitem produkt / Test a l'etat de fourniture / Prueba sobre el material así come entregado

TEST		min	max	
G	Dimensioni grano x ASTM E112			5

Charpy per ISO 148-1

1) L=longitudinale/Längs, T=trasversale/quer, O=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Prelievo/Location/Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear % Shear %		
Valori richiesti / Anforderungen/Requirements/Valeurs demandées		min		-	-	-	-	-	-	-	-	-
		max										
B	10X10	-196	L	129	134	139	1,487	1,328	1,210	60	58	60

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/Längs, T=trasversale/quer, O=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Prelievo/Location/Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance a traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Härte Hardness Durete HB		
Valori richiesti / Anforderungen/Requirements/Valeurs demandées		min		210	-	517	-	35	-	50	-			-		
		max												235		
C	12,5	20	L	483		681		46		69				222		

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 21/03/2024	Direzione Qualità	Direzione Prodotto	Pagina
VCQ012 - MEST040838	Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Produktmanagement/Product Management/Direction Produit P.MESSORI	2 di 4

CORPO BONNET / BONNET BODY

Acciaierie Valbruna S.p.A.

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Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1 (Nach/According to/Selon)

Certificato nr. MEST040838 / 2024 / (Prüfung/Test/Essai)

Stato di fornitura: Laminato - Solubilizzato FINITO A FREDDO (Lieferzustand / Delivery state / Etat de livraison)

Produttore: (Hersteller/Item/Usine productrice)
ACCIAIERIE VALBRUNA S.P.A.

Tipo di Elaborazione: E+AOD (Erschmelzungsart / Melting process / Mode d'elaboration)

Marchi di Fabbrica: (Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice)

Ordine nr: ORD.24000161 (Bestell / Your order / Commande)

Qualità: 1.4401/1.4404/316/316L (Werkstoff/Grade/Nuance)

Punzone del Collaudatore: (Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur)
MR

Conferma ordine nr: AN24000318 (Weks/Our Order/Ref nr.)

Avviso di Spedizione: A-AN24000296 (Lieferanzeige/Packing list/B.L.)

Marca: MVAPML (MAXIVAL) (Markenbezeichnung / Brand / Nuance)

Punzonatura: 1.4401/1.4404 (Kennzeichnung / Marking / Marquage)

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Lung.diam Spess. Breite Diam. Dicke Width Diam. Thickness Lag. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement	Resilienza Kerbschlagarbeit Impact Value Resilience KV_2 J			Espansione laterale - Lateral Expansion -			Shear - Shear -		
Valori richiesti Anforderungen/Required values Valeurs demandées		min		100	100	100	-	-	-	-	-	-
		max										
F	10X10	20	L	189	194	199						
H	10X10	20	L	180	190	186						

Tensile testing according to ISO 6892-1
Impact testing according to ISO 148-1
Mechanical properties according to ASTM A370.
Brinnell hardness according to ASTM E10
Tensile testing according to ASTM E8
Brinnell hardness according to ISO 6506-1

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9/10/24

Analisi chimica
Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat Schmelze/Coulée	C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	Co %	P %	S %	N %
min -	-	-	-	16,50	2,00	-	10,00	-	-	-	-
max	0,030	1,00	2,00	18,00	2,50	1,00	13,00	-	0,045	0,030	0,100
291893	0,019	0,52	1,55	16,65	2,01	0,48	10,17	0,140	0,030	0,030	0,066

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 21/03/2024
VCQ012 - MEST040838

Direzione Qualità (Qualitätsmanagement/Quality Management/Gestion Qualité)
R.BERTELLI

Direzione Prodotto (Produktmanagement/Product Management/Direction Produit)
P.MESSORI

CORPO BONNET / BONNET BODY

Acciaierie Valbruna S.p.A.

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Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST040838 / 2024 /
Prüfung/Test/Essai

Ordine nr: ORD.24000161
Bestell / Your order / Commande

Conferma ordine nr: AN24000318
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-AN24000296
Lieferanzeige/Packing list/B.L.

Stato di fornitura: Laminato - Solubilizzato FINITO A FREDDO
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore:
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice

Punzone del Collaudatore:
Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung / Marking / Marquage

Reduction ratio = 78,0 : 1
Solution annealed 1060°C for 180'(total time)/water cooled.
SURFACE QUALITY COMPLIANT TO EN 10088-3 TAB.1 COND. 2H
"Issued in agreement with TÜV SÜD Industrie Service GMBH
(07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by
Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

Sono state soddisfatte tutte le condizioni richieste Die gestellen Anforderungen sind lt. Anlage erfüllt The material has been furnished in accordance with the requirements Le materiel á été trouvé conforme aux exigences	Controllo antimescolanza con tecnica XRF/OES portatile : OK Verwechslungprüfung: durch XRF/OES Gerät geführt : OK Antimixing testing performed with XRF/OES portable : OK Contrôle antimélange svt technique XRF/OES portable : OK	Controllo visivo e dimensionale: soddisfa le esigenze Besichtigufg und Ausmessung: ohne Beanstandung Visual inspection and dimensional checks:satisfactory Contrôle visuel et dimensions: satisfaisant

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD`S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

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9/10/24

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 21/03/2024 VCQ012 - MEST040838	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 4 di 4

STELO / STEM

Rodacciai

23842 Bosisio Parini (LC) – Via Giuseppe Roda 1 – Italia
Tel. +39 031878111 – Fax +39 031878312
www.rodacciai.com – info@rodacciai.com

Azienda con sistema di gestione certificato da IGQ secondo UNI EN ISO 9001:2015

The Company's Quality Management System is certified by IGQ according to UNI EN ISO 9001:2015

CERTIFICATO DI CONTROLLO Inspection Certif N. 174495 Date 14/11/2023

Secondo According to . . . . . EN 10204:2004 3.1

ORDINE - Order N. 372 Date 10/11/2023

D.d.T. - Delivery note N. 11714/04 Date 14/11/2023

Weight KG 411,00 **Odp. Nr.** 2022/A/58282
Tolerance ISO286-2 h9 + 0,000 - 0,036 mm **Bars Length** 3.000 - 3.050 mm

QUALITA' - Grade

STANDARD	EN 10088-3:2014	X2CrNiMo17-12-2	1.4404 / 316L
STANDARD	EN 10088-3:2023	X5CrNiMo17-12-2	1.4401 / 316

Mark RODACCIAI . . . . . 316 PLUS
PROFILO - Shape . . . . . ROUND
DIMENSIONE - Size . . . . . mm 10,00
ESECUZIONE - Form of delivery . . . . . ROUGH GROU.

COLATA - Heat 172303

ANALISI CHIMICA DI COLATA - Cast analysis % by mass

C	Mn	Si	S	P	Cr	Ni	Mo	Cu	Co	N
0,021	1,820	0,360	0,0220	0,025	16,640	10,100	2,100	0,360	0,150	0,0760

CARATTERISTICHE MECCANICHE ALLO STATO DI FORNITURA
Mechanical properties of the delivered material

		Tested
Tensile Strength	Rm (MPa)	746,0
Proof Stress	Rp (1) (MPa)	692,0
Proof Stress	Rp (0,2) (MPa)	612,0
Elongation	A 5 (%)	32,0
Hardness	HBW	226,0
Reduction of area	Z (%)	51,0

NOTE - Notes

Processo di Fusione: E + A. O. D.
Trattamento termico: Temperatura di Solubilizzazione 1060°C
Tempo Mantenimento: 4 Ore, Raffreddamento in Acqua
Prova di Corrosione Intergranularena: ASTM A262-15 "E"
Materiale Conforme a NACE MR-0175/ISO 15156-3:2015
NACE MR-103/ISO 17495-1:2016

Pag. 1 / Segue

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9/10/24 R

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Segue certificato di controllo N. 174495 Date 14/11/2023
Inspection Certificate's continuance

NOTE - Notes

Materiale conforme a: ASTM A276-24a / A479-23a/ A182-24
ASME SA: 479-21 276-21 182; UNS 31600 - 31630 AISI 316-316L
Corrosione Intercristallina EN ISO 3651-2:98 Met.A

Melting Process: E + A. O. D
Heat treatment: annealed temperature 1060°C
Soaking time: 4 Hours, Cooling in water
Intergranular corrosion tested to ASTM A262-15 "E"
According to: NACE MR-0175 / ISO 15156-3:2015
NACE MR-103/ISO 17495-1:2016
Material Compliant to: ASTM A276-24a / A479-23a/ A182-24
ASME SA: 479-21 276-21 182; UNS 31600 - 31630 AISI 316-316L
Intergranular Corrosion according to EN ISO 3651-2:98 Met.A

Surface quality condition 2H conforming also to EN 10277 class 3

We certify hereby, that the above mentioned products are consistent with the order prescriptions.
This certificate was generated by data system acc. to EN 10204, it is not necessary to be signed for validity.

Materiale conforme alle seguenti direttive/regolamenti europee:
. Regolamento REACH 2006/1907/CE e tutti successivi aggiornamenti, compresa la modifica M80 Direttiva Delegata 2022/1632, e SVHC Candidate List aggiornata al 17/01/2023.
. Direttiva ROHS 2011/65/UE e tutti i successivi aggiornamenti, compresa la modifica M80 attraverso la Direttiva Delegata 2022/1632, e Decreto Legislativo 27 del 04/03/2014.
. Direttiva RAEE 2012/19/UE e tutti successivi aggiornamenti, compresa la modifica M1 attraverso la Direttiva 2018/849.
. Direttiva ELV (End-of-Life Vehicles) 2000/53/CE e tutti i successivi aggiornamenti, compresa la modifica M15 attraverso la Direttiva 2020/363
. Contaminazione Radioattiva, Direttiva 2013/59/EURATOM e Decreto Legislativo N.101 del 31 Luglio 2020.
. Canadian List 168 aggiornata al 16/03/2022.
. Minerali di Conflitto, Regolamento (UE) 2017/821 e tutti i successivi aggiornamenti, compresa la modifica M1 attraverso il Regolamento Delegato 2020/1588, e Dodd-Frank Wall Street Reform and Consumer Protection Act Section 1502.

Material conforming to the following European directives/regulation:
. REACH regulation 2006/1907/EC and all subsequent updates, including modification M80 Delegate Directive, and SVHC Candidate List updated to 01/17/2023.
. ROHS Directive 2011/65/EU and all subsequent updates, including the M80 amendment through the Delegated Directive 2022/1632, and Italian Legislative Decree 27 of 03/04/2014.
. WEEE Directive 2012/19/EU and all subsequent updates, including the M1 amendment through Directive 2018/849.
. ELV (End-of-Life Vehicles) Directive 2000/53/EC and all subsequent updates, including the modification M15 through Directive 2020/363
. Radioactive Contamination, Directive 2013/59/EURATOM and Italian Legislative Decree No. 101 of 31 July 2020.
. Canadian List 168 updated 03/16/2022.
. Conflict Minerals, Regulation (EU) 2017/821 and all subsequent updates, including amendment M1 through Delegated Regulation 2020/1588, and Dodd-Frank Wall Street Reform and Consumer Protection Act Section 1502.

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Pag. 2 / 2 RODACCIAI: The Work Inspector
Alessia Porta

OTTURATORE / TIP

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST140440 / 2023 /
Prüfung/Test/Essai

Ordine nr: VS ORD MAIL
Bestell/Your order/Commande

Conferma ordine nr: AN23001468
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-AN23000875
Lieferanzeige/Packing list/B.L.

Stato di fornitura: Laminato - Solubilizzato FINITO A FREDDO
Lieferzustand/Delivery state/Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart/Melting process/Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung/Brand / Nuance

Produttore:
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes/Trade marks/Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werksschwerständigen/Inspector's stamp/Poingon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung/Marking/Marquage

SPECIFICHE : Anforderungen / Requirements / Exigences	Note: Aufzeichnungen / Notes / Notes
VAL STOCK W2 A/1 1.4404/316L A,CF	
AD 2000-M. W 2 2022 1.4401 A,CF (0)	(0)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
AD 2000-M. W 2 2022 1.4404 A,CF (1)	(1)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
AISI . 316/316L	
ASME SA182 2021 S31600/03 A (2)	(2)Section II Part A 2021 EDITION For products machined directly from bar refer to ASME SA479.
ASME SA276 2021 S31600/03 A,CF (3)	(3)Section II Part A 2021 EDITION
ASME SA479 2021 S31600/03 A (4)	(4)Section II Part A 2021 EDITION
ASTM A182 2023 S31600/03 A (5)	(5)For products machined directly from bar refer also to ASTM A479.
ASTM A262 PR. E 2015 316/316L (6)	(6)Reapproved 2021
ASTM A276 2023 S31600/03 A,CF	
ASTM A370 2022 .	
ASTM A479 2023A S31600/03 A	
ASTM E10 2023 .	
ASTM E8 2022 .	
EN 10088 PART 3 2014 1.4401 A,CF	
EN 10088 PART 3 2014 1.4404 A,CF	
EN 10272 2016. 1.4401 A,CF	
EN 10272 2016. 1.4404 A,CF	
ISO 3651-2 98 METHOD A T1	
ISO 6506-1 2014 .	
ISO 6892-1 2019 .	
ACH CO . .	
PME HB L . .	
NACE MR0175 4 S31600/03 A (7)	(7)ANSI/NACE MR0175/ISO 15156-3:2020 Fourth edition, approved 21 Sep 2022.
NACE MR0103 2015 S31600/03 A (8)	(8)ANSI/NACE MR0103/ISO 17945 November 23, 2015

Tolleranza: h9 - DIN671/EN10278
Toleranz/Allowance/Tolerance

Pos. nr. Pos. nr Item nr. Nr. de poste	Oggetto Gegenstand Product description Descrip. du produit	Dimensioni - mm Abmessungen Dimension Dimension	Lunghezza - mm Länge Length Longueur	Colata Schmelze Heat Coulée	Pezzi Stückzahl Pieces Pieces	Peso - KG Gewicht Weight Poids	Lotto nr. Losnr Lot nr Lot nr
0010	Tondo	9,000	3000/ 3050	290962		162,0	210502620

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 15/11/2023 VCQ012 - MEST140440	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 1 di 3

OTTURATORE / TIP

Acciaierie Valbruna S.p.A.

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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST140440 / 2023 /
Prüfung/Test/Essai

Ordine nr: VS ORD MAIL
Bestell / Your order / Commande

Conferma ordine nr: AN23001468
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-AN23000875
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Laminato - Solubilizzato FINITO A FREDDO
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice

Punzone del Collaudatore:
Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung / Marking / Marquage

TEST ALLO STATO DI FORNITURA
Test on delivery condition Prüefung auf lieferbereitem produkt test a l'etat de fourniture Prueba sobre el material así come entregado

1) L=longitudinale/längs, T=trasversale/quer, O=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais. mm	°C	Posiz. Saggio Probelage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement A5 %		Strizione Einschnürung Reduction of area Striction Z %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs demandées		min		200	235	500	20	-	-	-	-			-		
		max				900								315		
A	9	20	L	637	686	720	31		73					234		
E	9	20	L	639	690	726	30		71					235		

TEST ALLO STATO DI FORNITURA
Test on delivery condition / Prüefung auf lieferbereitem produkt / Test a l'etat de fourniture / Prueba sobre el material así come entregado

TEST		min	max	
A	Dimensioni grano x ASTM E112			5

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, O=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais. mm	°C	Posiz. Saggio Probelage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs demandées		min		310	-	620	-	30	-	50	-			-		
		max												235		
D	6	20	L	640		723		33		74				230		

Tensile testing according to ISO 6892-1
Mechanical properties according to ASTM A370.
Brinnell hardness according to ASTM E10
Tensile testing according to ASTM E8
Brinnell hardness according to ISO 6506-1

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Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat Schmelze/Coulée		C %	Si %	Mn %	Cr %	Mo %	Ni %	Co %	P %	S %	N %					
	min -	-	-	-	16,50	2,00	10,00	-	-	-	-	-	-	-	-	-
	max	0,030	1,00	2,00	18,00	2,50	13,00	-	0,045	0,030	0,100	-	-	-	-	-
290962		0,015	0,46	1,48	16,68	2,03	10,28	0,127	0,030	0,023	0,048					

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 15/11/2023	Direzione Qualità	Direzione Prodotto	Pagina
VCQ012 - MEST140440	Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Produktmanagement/Product Management/Direction Produit P.MESSORI	2 di 3

OTTURATORE / TIP

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CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST140440 / 2023 /

Ordine nr: VS ORD MAIL
Bestell / Your order / Commande

Conferma ordine nr: AN23001468
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-AN23000875
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Stato di fornitura: Laminato - Solubilizzato FINITO A FREDDO
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Herstellerwerkes / Trade marks / Sigles de l'usine productrice: AV

Punzone del Collaudatore / Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur: MR

Punzonatura / Kennzeichnung / Marking / Marquage: 1.4401/1.4404

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

Reduction ratio = 457,3 : 1
Material annealed 1040°C for 135'(total time)/water cooled.
SURFACE QUALITY COMPLIANT TO EN 10088-3 TAB.1 COND. 2H
"Issued in agreement with TÜV SÜD Industrie Service GMBH (07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

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Sono state soddisfatte tutte le condizioni richieste / Die gestellen Anforderungen sind it. Anlage erfüllt / The material has been furnished in accordance with the requirements / Le materiel à été trouvé conforme aux exigences

Controllo antimescolanza con tecnica XRF/OES portatile : OK / Verwechslungprüfung: durch XRF/OES Gerät geführt : OK / Antimixing testing performed with XRF/OES portable : OK / Contrôle antimélange svt technique XRF/OES portable : OK

Controllo visivo e dimensionale: soddisfa le esigenze / Besichtigung und Ausmessung: ohne Beanstandung / Visual inspection and dimensional checks:satisfactory / Contrôle visuel et dimensions: satisfaisant

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD'S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 15/11/2023 VCQ012 - MEST140440	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité **R.BERTELLI**	Direzione Prodotto Produktmanagement/Product Management/Direction Produit **P.MESSORI**	Pagina 3 di 3

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ROSETTI MARINO ITEM 260

COD. VLBLNN01450400

TAG:

BLPH-MV-006, BLPH-MV-033, BLPH-MV-191, BLPH-MV-194 BLPH-MV-196, BLPH-MV-199, BLPH-MV-201

INDRA ITEM 260

COD. 00.VSF.2700/V

indra VALVES - ITALY

Certificazione dei materiali
EN 10204 3.1 come da allegati

Material certification
EN 10204 3.1 as per attachments

MD-02-04-IT-UK / VSF
Rev. 16
Data: 08-Nov-2018
CM/IT/UK

Nr. / *No.* 24-1967 — **Data** / *Date :* 8-Oct-2024

Cliente / *Customer* ROSETTI MARINO SPA

Vs. ordine Nr. / *Your order Nr.* 1724000798 REV.2 — **Data** / *Date :* 26-Jun-2024

Ns. commessa Nr. / *Our job Nr.* 24 01216 — **Data** / *Date :* 3-Jul-2024

Ns. D.D.T. Nr. / *Our advise note Nr.* — **Data** / *Date :*

Ordine di produzione / Production order number : 24 01216/260 - 294714

Lotto / Material batch number : 294714

Pos. Cliente Customer Item	Pos. Indra Indra Item	Codice / Code		Q.tà / Q.ty	Nr. di serie Serial Number	Descrizione /Description
		Ns./ Our	Vs. / Your			
260	260	00.VSF.2700/V	VLBLNN01450400	7	From 106035 to 106041	INDRA BALL VALVE SBB-798-HR-100-N150RF3-N-D-DLF-DL-N-RG-L13-TG-TGW-TV-DP-PMI2-PD2-BI-GT-CR-TA-FE2-FS-FE-SPC1

Elenco / List

Componente / Component	Colata / Heat	Materiale Material	Numero del certificato Certificate number
Corpo Valvola / Valve Body	294714	AISI 316/316L NACE	MEST083701/2024/
Closure N150RF3	292904	AISI 316/316L NACE	MEST007281/2024/ - UT24000320
Tirante / Stud bolt	1KNK	ASTM A193 B8M Cl.2	2402183
Dado / Nut	072330	ASTM A194 Gr.8M	1367248
Stelo antiespulsione sfera / Ball stem	073183	AISI 316/316L NACE	2021002663
Sfera / Ball	288405	AISI 316/316L NACE	MEST091415/2023/ - UT23003880
Flangia leva / Cover plate	377292	AISI 316/316L NACE	2023041944
Vite flangia leva / Cover plate bolt	503334	ASTM A193 B8M Cl.2	2402183
Corpo bonnet/ Bonnet body	291893	AISI 316/316L NACE	MEST040838/2024/
Stelo spillo / Stem needle	172303	AISI 316/316L NACE	174495
Otturatore / Tip	290962	AISI 316/316L NACE	MEST140440/2023/

NOTE / **REMARKS :** TAG: BLPH-MV-006, BLPH-MV-033, BLPH-MV-191, BLPH-MV-194, BLPH-MV-196, BLPH-MV-199, BLPH-MV-201

PREPARATO DA: **ELEONORA RANZANI**
PREPARED BY: **DOCUMENTION MANAGER**

APPROVATO DA: **LUCIA NOSOTTI**
APPROVED BY: **QUALITY ASSURANCE MANAGER**

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Tel. +39 02 97298863 r.a. - Fax +39 02 97291855
E-mail: indra@indra.it - http://www.indra.it

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23/10/24

CORPO VALVOLA / VALVE BODY

Acciaierie Valbruna S.p.A.

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Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497
https://www.valbruna-stainless-steel.com/

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION - CERTIFICADO DE INSPECCIÓN

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon/De conformidad con

Certificato nr. MEST083701 / 2024 /
Prüfung/Test/Essai/Num. de certificado

Cliente / Besteller/Purchaser/Client/Cliente
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 02072
Bestell
Your order
Commande
Num. de pedido

Conferma ordine nr: MI24005187
Werks/Our Order/Ref nr.
Num. de confirmación de pedido

Avviso di Spedizione: A-MI24003826
Lieferanzeige/Packing list/B.L.
Aviso de embarque

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand
Delivery state
Etat de livraison
Estado de la entrega

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration
Método de fusión

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance
Calidad

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance / Marca

Produttore :
Hersteller/Item/Usine productrice/Productor

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Liefernwerkes
Trade marks
Sigles de l'usine productrice
Marcas de fábrica

Punzone del Collaudatore:
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur
Sello del Comprobador

Punzonatura: 1.4401/1.4404
Kennzeichnung
Marking
Marquage / Sello

SPECIFICHE : Anforderungen / Requirements / Exigences / Especificaciones	Note: Aufzeichnungen / Notes / Notes / Notas
VAL STOCK W2 A/1 1.4404/316L A IS107 01 316 A MDS S01 5 316 A (0)	(0)Norsok-standard M-630 Edition 6, October 2013
MDS S17 1 316 A (1)	(1)Norsok-standard M-630: 2020 (2020-09-30)
AD 2000-M. W 2 2022 1.4401 A (2)	(2)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
AD 2000-M. W 2 2022 1.4404 A (3)	(3)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
AISI . 316/316L AMS-QQ-S-763 D 316/316L A ASME SA182 2023 S31600/03 A (4)	(4)Section II Part A 2023 EDITION For products machined directly from bar refer to ASME SA479.
ASME SA193 2023 B8M CLASS 1 (5)	(5)Section II Part A 2023 EDITION
ASME SA276 2023 S31600/03 A (6)	(6)Section II Part A 2023 EDITION
ASME SA320 2023 B8M CLASS 1 (7)	(7)Section II Part A 2021 EDITION
ASME SA479 2023 S31600/03 A (8)	(8)Section II Part A 2023 EDITION
ASTM A182 2024 S31600/03 A (9)	(9)For products machined directly from bar refer also to ASTM A479.
ASTM A193 2023 B8M CLASS 1	
ASTM A262 PR. E 2015 316/316L (A)	(A)Reapproved 2021
ASTM A276 2024A S31600/03 A ASTM A320 2022 B8M CLASS 1 CLASS1 ASTM A370 2024 . ASTM A479 2023A S31600/03 A ASTM E10 2023 . ASTM E8 2024 . EN 10088 PART 3 2014 1.4401 A EN 10088 PART 3 2014 1.4404 A EN 10222 PART 5 2017 1.4401 A EN 10222 PART 5 2017 1.4404 A EN 10272 2016. 1.4401 A EN 10272 2016. 1.4404 A ISO 148-1 2016 . ISO 3651-2 98 METHOD A T1 ISO 6506-1 2014 . ISO 6892-1 2019 .	
NACE MR0103 2015 S31600/03 A (B)	(B)ANSI/NACE MR0103/ISO 17945 November 23, 2015
NACE MR0175 4 S31600/03 A (C)	(C)ANSI/NACE MR0175/ISO 15156-3:2020 Fourth edition, approved 21 Sep 2022.
QQ-S-763 F 316/316L A ACH CO . . KV L -196C . ISO 148-1 KV T -196C . ISO 148-1	

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 20/06/2024 VCQ008 - MEST083701	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité/Gerente de calidad R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit/Gerente de producto P.MESSORI	Pagina 1 di 5

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Conferma ordine nr: MI24005187
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Num. de confirmación de pedido

Avviso di Spedizione: A-MI24003826
Lieferanzeige/Packing list/B.L.
Aviso de embarque

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand
Delivery state
Etat de livraison
Estado de la entrega

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration
Método de fusión

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance
Calidad

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance / Marca

Produttore :
Hersteller/Item/Usine productrice/Productor

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice
Marcas de fábrica

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur
Sello del Comprobador

Punzonatura: 1.4401/1.4404
Kennzeichnung
Marking
Marquage / Sello

Pos. nr.	Oggetto	Tolleranza: k12 Dimensioni - mm	Lunghezza - mm	Colata	Pezzi	Peso - KG	Lotto nr.
Pos. nr. / Item nr. / Nr. de poste / Número de artículo	Gegenstand / Product description / Descrip. du produit / Descripción del producto	Toleranz/Allowance/Tolerance/Tolerancia Abmessungen / Dimension / Dimension / Dimensiones	Länge / Length / Longueur / Longitud	Schmelze / Heat / Coulée / Colada	Stückzahl / Pieces / Pièces / Piezas	Gewicht / Weight / Poids / Peso	Losnr. / Lot nr. / Lot nro
0050	Tondo	240,000	1000/ 1000	294714	1	359,0	402606990

TEST ALLO STATO DI FORNITURA

TEST		min	max	
A	Dimensioni grano x ASTM E112			2

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab / Specimen/Eprouvette / Larg.diam Spess. / Breite Diam. Dicke / Width Diam. Thickness / Larg. diam epais mm / Probeta	°C	Posiz. Saggio / Probenlage / Location / Emplacement / Ubicación 1)	Resilienza Kerbschlagarbeit / Impact Value / Resilience / Prueba de impacto KV2 J			Espansione laterale / Lateral Expansion / Lateral ex mm			Shear / % Shear %		
Valori richiesti / Anforderungen/Required values / Valeurs demandées / Valores requeridos		min		-	-	-	-	-	-	-	-	-
		max										
B	10X10	-196	L	220	219	215	1,750	1,855	1,700	70	70	73

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab / Specimen/Eprouvette / Larg.diam Spess. / Breite Diam. Dicke / Width Diam. Thickness / Larg. diam epais mm / Probeta	°C	Posiz. Saggio / Probenlage / Location / Emplacement / Ubicación 1)	Snervamento Streckgrenze/Yield Stress Limite elastique Limite elástico Rp 0,2% N/mm2	Snervamento Streckgrenze/Yield Stress Limite elastique Limite elástico	Resistenza Zugfestigkeit/Tensile strength Resistance à traction Resistencia a la tracción Rm N/mm2	Allungamento Bruchdehnung / Elongation / Allongement / Elongación E 4d %		Strizione Einschnürung / Reduction of area / Striction / Reducción de área RA %		Resilienza Kerbschlagarbeit / Impact Value/ Resilience / Prueba de impacto			Durezza Haerte / Hardness / Dureza / Dureza HB		
Valori richiesti / Anforderungen/Required values / Valeurs demandées / Valores requeridos		min		210	-	520	-	40	-	50	-			-		
		max				790									223	
C	12,5	20	L	257		560		60		70				158		

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Vicenza, 20/06/2024 VCQ008 - MEST083701	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité/Gerente de calidad R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit/Gerente de producto P.MESSORI	Pagina 2 di 5

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CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION - CERTIFICADO DE INSPECCIÓN

In conformità a / Nach/According to/Selon/De conformidad con: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai/Num. de certificado: MEST083701 / 2024 /

Cliente / Besteller/Purchaser/Client/Cliente:
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr. / Bestell / Your order / Commande / Num. de pedido: AF24 02072

Conferma ordine nr. / Werks/Our Order/Ref nr. / Num. de confirmación de pedido: MI24005187

Avviso di Spedizione / Lieferanzeige/Packing list/B.L. / Aviso de embarque: A-MI24003826

Stato di fornitura / Lieferzustand / Delivery state / Etat de livraison / Estado de la entrega: Fucinato Solubilizzato - Pelato

Tipo di Elaborazione / Erschmelzungsart / Melting process / Mode d'elaboration / Método de fusión: E+AOD

Qualità / Werkstoff/Grade/Nuance / Calidad: 1.4401/1.4404/316/316L

Marca / Markenbezeichnung / Brand / Nuance / Marca: MVAPML (MAXIVAL)

Produttore / Hersteller/Item/Usine productrice/Productor:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Liefernwerkes / Trade marks / Sigles de l'usine productrice / Marcas de fábrica: AV

Punzone del Collaudatore / Stempel des Werksachverständigen / Inspector's stamp/Poinçon de l'assayeur / Sello del Comprobador: MR

Punzonatura / Kennzeichnung / Marking / Marquage / Sello: 1.4401/1.4404

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, O=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais. mm / Probeta	°C	Posiz. Saggio Probenlage Location Emplacement Ubicación 1)	Snervamento Streckgrenze/Yield Stress Limite elastique Limite elástico Rp 0,2% N/mm2	Snervamento Streckgrenze/Yield Stress Limite elastique Limite elástico	Resistenza Zugfestigkeit/Tensile strength Resistance à traction Resistencia a la tracción Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement / Elongación E 4d %		Strizione Einschnürung Reduction of area Striction / Reducción de área RA %		Resilienza Kerbschlagarbeit Impact Value/ Resilience Prueba de impacto			Durezza Heerte Hardness Dureté / Dureza		
Valori richiesti / Anforderungen/Required values / Valeurs démandées / Valores requeridos		min / max		205	-	515	-	40	-	50	-			-		
D	12,5	20	T	255		556		54		65						

Prova di trazione per ISO 6892-1

1) L=longitudinale/längs, T=trasversale/quer, O=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais. mm / Probeta	°C	Posiz. Saggio Probenlage Location Emplacement Ubicación 1)	Snervamento Streckgrenze/Yield Stress Limite elastique Limite elástico Rp 0,2% N/mm2	Snervamento Streckgrenze/Yield Stress Limite elastique Limite elástico Rp 1% N/mm2	Resistenza Zugfestigkeit/Tensile strength Resistance à traction Resistencia a la tracción Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement / Elongación A5 %		Strizione Einschnürung Reduction of area Striction / Reducción de área Z %		Resilienza Kerbschlagarbeit Impact Value/ Resilience Prueba de impacto			Durezza Heerte Hardness Dureté / Dureza HB		
Valori richiesti / Anforderungen/Required values / Valeurs démandées / Valores requeridos		min / max		205	240	510 / 690	35	-	-	-	-			- / 215		
E	10	20	T	250	293	553	55		67					156		
J	10	20	T	248	295	552	56		66					158		

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, O=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais. mm / Probeta	°C	Posiz. Saggio Probenlage Location Emplacement Ubicación 1)	Resilienza Kerbschlagarbeit Impact Value Resilience / Prueba de impacto KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti / Anforderungen/Required values / Valeurs démandées / Valores requeridos		min / max		-	-	-	-	-	-	-	-	-
F	10X10	-196	T	99	99	104	0,810	0,685	0,700	20	24	20

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, O=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais. mm / Probeta	°C	Posiz. Saggio Probenlage Location Emplacement Ubicación 1)	Resilienza Kerbschlagarbeit Impact Value Resilience / Prueba de impacto KV2 J			Espansione laterale Lateral Expansion			Shear Shear		
Valori richiesti / Anforderungen/Required values / Valeurs démandées / Valores requeridos		min / max		60	60	60	-	-	-	-	-	-
I	10X10	20	T	103	98	93						
K	10X10	20	T	96	91	98						

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 20/06/2024
VCQ008 - MEST083701

Direzione Qualità / Qualitätsmanagement/Quality Management/Gestion Qualité/Gerente de calidad
R.BERTELLI

Direzione Prodotto / Produktmanagement/Product Management/Direction Produit/Gerente de producto
P.MESSORI

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CORPO VALVOLA / VALVE BODY

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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497
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CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION - CERTIFICADO DE INSPECCIÓN

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon/De conformidad con

Certificato nr. MEST083701 / 2024 /
Prüfung/Test/Essai/Num. de certificado

Cliente / Besteller/Purchaser/Client/Cliente
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 02072
Bestell
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Conferma ordine nr: MI24005187
Werks/Our Order/Ref nr.
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Avviso di Spedizione: A-MI24003826
Lieferanzeige/Packing list/B.L.
Aviso de embarque

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand
Delivery state
Etat de livraison
Estado de la entrega

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration
Método de fusión

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance
Calidad

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance / Marca

Produttore :
Hersteller/Item/Usine productrice/Productor

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
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Sigles de l'usine productrice
Marcas de fábrica

Punzone del Collaudatore:
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur
Sello del Comprobador

Punzonatura: 1.4401/1.4404
Kennzeichnung
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Marquage / Sello

Tensile testing according to ISO 6892-1
Impact testing according to ISO 148-1
Mechanical properties according to ASTM A370.
Brinnell hardness according to ASTM E10
Tensile testing according to ASTM E8
Brinnell hardness according to ISO 6506-1

Analisi chimica
Chemische Zusammensetzung/Chemical Analysis/Analyse chimique/Análisis químico

Colata/Heat/Coulée / Schmelze/Colada																
	min	23,0	-	-	-	16,50	2,00	-	10,00	-	-	-	-	-	-	-
	max	28,0	0,030	1,00	2,00	18,00	2,50	1,00	13,00	-	0,045	0,030	0,100	-	-	-
	PRE		C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	Co %	P %	S %	N %			
294714	24,6		0,012	0,42	1,69	16,70	2,05	0,57	10,22	0,132	0,031	0,021	0,074			

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Furnace calibrated according to API 6A REV 21th ED ANNEX M.
Furnace calibrated according to API 6D REV 25th ED ANNEX H.
Reduction ratio = 5,7 : 1
Solution annealed 1080°C for 5,5 h /water cooled.
SURFACE QUALITY GUARANTEE BY ET INSPECTION (max defect depth 1% DIAMETER)
UT ACC.TO ASTM A388; EN 10308 Cl.1 :PASS
"Issued in agreement with TÜV SÜD Industrie Service GMBH
(07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by
Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

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Vicenza, 20/06/2024 VCQ008 - MEST083701	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité/Gerente de calidad R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit/Gerente de producto P.MESSORI	Pagina 4 di 5

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Lieferzustand
Delivery state
Etat de livraison
Estado de la entrega

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration
Método de fusión

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance
Calidad

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance / Marca

Produttore :
Hersteller/Item/Usine productrice/Productor

ACCIAIERIE VALBRUNA S.P.A.

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Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice
Marcas de fábrica

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Sello del Comprobador

Punzonatura: 1.4401/1.4404
Kennzeichnung
Marking
Marquage / Sello

Sono state soddisfatte tutte le condizioni richieste	Controllo antimescolanza con tecnica XRF/OES portatile : OK	Controllo visivo e dimensionale: soddisfa le esigenze
Die gestellen Anforderungen sind it. Anlage erfüllt The material has been furnished in accordance with the requirements Le materiel à été trouvé conforme aux exigences El material cumple de acuerdo a los requisitos	Verwechslungprüfung: durch XRF/OES Gerät geführt : OK Antimixing testing performed with XRF/OES portable : OK Contrôle antimélange svt technique XRF/QES portable : OK Prueba de anti mezcla con técnica XRF/OES portátil: OK	Besichtigung und Ausmessung: ohne Beanstandung Visual inspection and dimensional checks:satisfactory Contrôle visuel et dimensions: satisfaisant Inspección visual y dimensional: cumple los requisitos

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD`S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

WSPC317C0841D6B63FC063BE863F866564

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23/10/24

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 20/06/2024 VCQ008 - MEST083701	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité/Gerente de calidad **R.BERTELLI**	Direzione Prodotto Produktmanagement/Product Management/Direction Produit/Gerente de producto **P.MESSORI**	Pagina 5 di 5

CLOSURE N150RF3

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST007281 / 2024 /

Cliente / Besteller/Purchaser/Client:
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 00016
Bestell / Your order / Commande

Conferma ordine nr: MI24000193
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24000312
Lieferanzeige/Packing list/B.L.

Stato di fornitura: Fucinato - Solubilizzato Pelato
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore:
Hersteller/Item/Usine productrice
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung / Marking / Marquage

SPECIFICHE :
Anforderungen / Requirements / Exigences

Note:
Aufzeichnungen / Notes / Notes

VAL STOCK W2 A/1 1.4404/316L A
MDS S01 5 316 A (0)
MDS S17 1 316 A (1)
AD 2000-M. W 2 2022 1.4401 A (2)
AD 2000-M. W 2 2022 1.4404 A (3)
AISI . 316/316L
AMS-QQ-S-763 D 316/316L A
ASME SA182 2023 S31600/03 A (4)
ASME SA193 2023 B8M CLASS 1 (5)
ASME SA276 2023 S31600/03 A (6)
ASME SA320 2021 B8M CLASS 1 (7)
ASME SA479 2023 S31600/03 A (8)
ASTM A182 2023 S31600/03 A (9)
ASTM A193 2023 B8M CLASS 1
ASTM A262 PR. E 2015 316/316L (A)
ASTM A276 2023 S31600/03 A
ASTM A320 2022 B8M CLASS 1 CLASS1
ASTM A370 2022 .
ASTM A479 2023A S31600/03 A
ASTM E10 2023 .
ASTM E8 2022 .
EN 10088 PART 3 2014 1.4401 A
EN 10088 PART 3 2014 1.4404 A
EN 10222 PART 5 2017 1.4401 A
EN 10222 PART 5 2017 1.4404 A
EN 10272 2016. 1.4401 A
EN 10272 2016. 1.4404 A
ISO 148-1 2016 .
ISO 3651-2 98 METHOD A T1
ISO 6506-1 2014 .
ISO 6892-1 2019 .
NACE MR0103 2015 S31600/03 A (B)
NACE MR0175 4 S31600/03 A (C)
QQ-S-763 F 316/316L A
ACH CO . .
KV L -196C . ISO 148-1
KV T -196C . ISO 148-1

(0)Norsok-standard M-630 Edition 6, October 2013
(1)Norsok-standard M-630: 2020 (2020-09-30)
(2)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
(3)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
(4)Section II Part A 2023 EDITION For products machined directly from bar refer to ASME SA479.
(5)Section II Part A 2023 EDITION
(6)Section II Part A 2023 EDITION
(7)Section II Part A 2021 EDITION
(8)Section II Part A 2023 EDITION
(9)For products machined directly from bar refer also to ASTM A479.
(A)Reapproved 2021
(B)ANSI/NACE MR0103/ISO 17945 November 23, 2015
(C)ANSI/NACE MR0175/ISO 15156-3:2020 Fourth edition, approved 21 Sep 2022.

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 17/01/2024 VCQ012 - MEST007281	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 1 di 6

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1 (Nach/According to/Selon)

Certificato nr. MEST007281 / 2024 / (Prüfung/Test/Essai)

Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 00016 (Bestell / Your order / Commande)

Conferma ordine nr: MI24000193 (Werks/Our Order/Ref nr.)

Avviso di Spedizione: A-MI24000312 (Lieferanzeige/Packing list/B.L.)

Stato di fornitura : Fucinato - Solubilizzato Pelato (Lieferzustand / Delivery state / Etat de livraison)

Tipo di Elaborazione: E+AOD (Erschmelzungsart / Melting process / Mode d'elaboration)

Qualità: 1.4401/1.4404/316/316L (Werkstoff/Grade/Nuance)

Marca: MVAPML (MAXIVAL) (Markenbezeichnung / Brand / Nuance)

Produttore : (Hersteller/Item/Usine productrice)
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV (Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice)

Punzone del Collaudatore: MR (Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur)

Punzonatura: 1.4401/1.4404 (Kennzeichnung / Marking / Marquage)

		Tolleranza: k12 (Toleranz/Allowance/Tolerance)					
Pos. nr. (Pos nr. / Item nr. / Nr. de poste)	Oggetto (Gegenstand / Product description / Descrip. du produit)	Dimensioni - mm (Abmessungen / Dimension / Dimension)	Lunghezza - mm (Länge / Length / Longueur)	Colata (Schmelze / Heat / Coulée)	Pezzi (Stückzahl / Pieces / Pieces)	Peso - KG (Gewicht / Weight / Poids)	Lotto nr. (Losnr. / Lot nr. / Lot nr.)
0090	Tondo	240,000	3290/ 3290	292904		1186,0	300304051

TEST ALLO STATO DI FORNITURA

TEST		min	max	
A	Dimensioni grano x ASTM E112			2

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.dem.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. dem. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expension Lateral ex mm			Shear Shear % Shear %		
Valori richiesti (Anforderungen/Required values / Valeurs demandées)		min / max		-	-	-	-	-	-	-	-	-
B	10X10	-196	L	228	229	237	2,581	1,859	1,748	74	62	70

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.dem.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. dem. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti (Anforderungen/Required values / Valeurs demandées)		min / max		210	-	520 / 790	-	40	-	50	-			-		223
C	12,5	20	L	260		562		63		70				160		

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23/10/24

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 17/01/2024	Direzione Qualità (Qualitätsmanagement/Quality Management/Gestion Qualité)	Direzione Prodotto (Produktmanagement/Product Management/Direction Produit)	
VCQ012 - MEST007281	R.BERTELLI	P.MESSORI	Pagina 2 di 6

Acciaierie Valbruna S.p.A.

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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST007281 / 2024 /

Cliente / Besteller/Purchaser/Client:
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 00016
Bestell / Your order / Commande

Conferma ordine nr: MI24000193
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24000312
Lieferanzeige/Packing list/B.L.

Stato di fornitura: Fucinato - Solubilizzato Pelato
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice: AV

Punzone del Collaudatore / Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur: MR

Punzonatura / Kennzeichnung / Marking / Marquage: 1.4401/1.4404

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg dem Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probestage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete		
Valori richiesti Anforderungen/Required values Valeurs démandées		min max		205	-	515	-	40	-	50	-			-		
D	12,5	20	T	258		567		54		67						

Prova di trazione per ISO 6892-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg dem Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probestage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement A5 %		Strizione Einschnürung Reduction of area Striction Z %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs démandées		min max		205	240	510 690	35	-	-	-	-			- 215		
E	10	20	T	253	292	560	53		66					158		
J	10	20	T	254	297	566	52		64					161		

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg dem Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probestage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale - Lateral Expension - Lateral ex mm			Shear - Shear - % Shear %		
Valori richiesti Anforderungen/Required values Valeurs démandées		min max		-	-	-	-	-	-	-	-	-
F	10X10	-196	T	80	89	91	0,700	0,325	0,528	27	20	21

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg dem Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probestage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale - Lateral Expension -			Shear - Shear -		
Valori richiesti Anforderungen/Required values Valeurs démandées		min max		60	60	60	-	-	-	-	-	-
I	10X10	20	T	81	80	89						
K	10X10	20	T	88	85	79						

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 17/01/2024	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité	Direzione Prodotto Produktmanagement/Product Management/Direction Produit	Pagina
VCQ012 - MEST007281	R.BERTELLI	P.MESSORI	3 di 6

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Acciaierie Valbruna S.p.A.

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Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST007281 / 2024 /
Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 00016
Bestell
Your order
Commande

Conferma ordine nr: MI24000193
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24000312
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato - Solubilizzato Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Liefernwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung
Marking
Marquage

Tensile testing according to ISO 6892-1
Impact testing according to ISO 148-1
Mechanical properties according to ASTM A370.
Brinnell hardness according to ASTM E10
Tensile testing according to ASTM E8
Brinnell hardness according to ISO 6506-1

Analisi chimica
Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat Schmelze/Coulée	C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	Co %	P %	S %	N %				
	min - max 0,030	- 1,00	- 2,00	16,50 18,00	2,00 2,50	- 1,00	10,00 13,00	- -	- 0,045	- 0,030	- 0,100	- -	- -	- -	- -
292904	0,020	0,46	1,80	16,63	2,08	0,45	10,04	0,163	0,032	0,026	0,074				

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Reduction ratio = 5,7 : 1
Solution annealed 1080°C for 5,5h/water cooled.
ET ACC. TO EN 10088-3 TAB.1
UT ACC. TO ASTM A388; EN 10308 Cl.1
"Issued in agreement with TÜV SÜD Industrie Service GMBH (07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 17/01/2024	Direzione Qualità	Direzione Prodotto	Pagina
VCQ012 - MEST007281	Qualitätsmanagement/Quality Management/Gestion Qualité	Produktmanagement/Product Management/Direction Produit	4 di 6
	R.BERTELLI	P.MESSORI	

Acciaierie Valbruna S.p.A.

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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST007281 / 2024 /
Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 00016
Bestell
Your order
Commande

Conferma ordine nr: MI24000193
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24000312
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato - Solubilizzato Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung
Marking
Marquage

Allegati / Anlagen / Enclosure / Attachments :
UT24000320

Sono state soddisfatte tutte le condizioni richieste	Controllo antimescolanza con tecnica XRF/OES portatile : OK	Controllo visivo e dimensionale: soddisfa le esigenze
Die gestellen Anforderungen sind it. Anlage erfüllt	Verwechslungprüfung: durch XRF/QES Gerät geführt : OK	Besichtigung und Ausmessung: ohne Beanstandung
The material has been furnished in accordance with the requirements	Antimixing testing performed with XRF/OES portable : OK	Visual inspection and dimensional checks:satisfactory
Le materiel à eté trouvé conforme aux exigences	Contrôle antimélange svt technique XRF/QES portable : OK	Contrôle visuel et dimensions: satisfaisant

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD`S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

W6P610A1FCB6020053127C19452EA73F844

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 17/01/2024 VCQ012 - MEST007281	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 5 di 6

CLOSURE N150RF3

	Acciaierie Valbruna S.p.A. 36100 VICENZA (Italia) - Viale della scienza, 25 z.i. Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4	**CERTIFICATO** Certificate - Zeugnis - Certificat **N° UT24000320**	Pag 6 di 6
		CONTROLLO CON ULTRASUONI *Ultrasonic testing - Ultraschallprüfung - Controle par ultrasons*	

mod. UT02

MEST007281 / 2024 /

Cliente : INDRA S.R.L. *Customer*				**Lotto nr : 300304051** *Mill order*		
MARCA *Grade*	**DIMENSIONI - mm** *Size*	**COLATA** *Heat*	**BARRE** *Bars*	**PESO** *Weight*	**LUNGHEZZA - mm** *Length*	
MVAPML	Tondo 240,000	292904		KG : 1186,0	3290	3290

T. TERMICO *Heat Treatement*	**ESECUZIONE** *Condition*	**RUGOSITA'** *Roughness*	**TOLLERANZA** *Tolerance*
Solubilizzato	Pelato	µm	k12

Istruzione : PROC CND 040 *Work Instruction*		**Criteri Accettabilità : ASTM A388** Acceptance Criteria

ELETTRONICA : Olympus Quickscan LT
Equipment

ACCOPPIANTE : ACQUA + 0253 SA
Couplant

VEL.CONTROLLO : 450 mm/sec
Testing Speed

TRASDUTTORI *Probes*	**TIPO ONDA** *Type of wave*	**FREQUENZA (MHZ)** *Frequency*	**DIMENSIONI (MM)** *Dimension*	**ANGOLO** *Angle*	**TARATURA** *Calibration*
64EL. 2.25MHZ	LONG.	2,25	128X25	0°	DAC

CONTROLLO AUTOMATICO [X] *Automatic inspection*	**CONTROLLO MANUALE** *Manual inspection*

NOTE :
Notes

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CONFORME [X] *Compliant*	**CONFORME IN DEROGA [ ]** *See Deviation*	**NON CONFORME [ ]** *Not Compliant*

ISPEZIONATO DA Inspected by	**VERIFICATO DA** Verified by	**APPROVATO DA** Approved by **G.Parlato** ISO 9712 LEV. 2 IND1901054	**COLLAUDATORE** Inspector - Abnahmesachsverst - Inspecteur
FIRMA 17/01/2024 Date - Date	**FIRMA**	**FIRMA**	

Operatori, strumenti e documenti di riferimento, utilizzati per il collaudo del materiale, sono identificati, controllati e/o calibrati in accordo alle norme EN, ISO e ASTM, richiamate nelle pratiche operative e istruzioni di pertinenza / *Operators, Equipment and reference documents, used for material inspection, are identified, checked and/or calibrated in accordance with EN/ISO or ASTM standards, reported in relevant documents.*

TIRANTE / STUD BOLT

IPL S.r.l.
BULLONERIA - TIRANTERIA
SPECIALE E STANDARD

Via Papa Giovanni Paolo I, 306
21040 UBOLDO (VA)

Customer: **INDRA SRL**
C.SO XXII MARZO, 8
20135 MILANO (MI)

Date, 25-07-24 **Our Ref.** DDT 2902 / OC 1332 **of** 25-07-24 **Your Ref.** AF24 02034 13-06-24

CERTIFICATE UNI EN 10204 - 3.1 N.2402183

ITEM		QUANTITY	HEAT TREATMENT	PROTECTION	LOT nr.	HEAT nr.
TIR.820160601-5	STUDBOLT UNI6610/DIN976B - A/SA193/320 B8M CL.2 M 16 x 1,5 x 60 → *101.99.0570SS*	45,00	carb. sol. tr. + strain hard.		833219	1KNK
TIR.820160681-5	STUDBOLT UNI6610/DIN976B - A/SA193/320 B8M CL.2 M 16 x 1,5 x 68 *98J.99.0035SS*	20,00	carb. sol. tr. + strain hard.		833220	1KNK

MECHANICAL PROPERTIES

values	R (MPa)	Rs 0,2 (MPa)	A4 (%)	Z (%)	HB (min-max)
required	760 min	655 min	15 min.	45 min.	321 max
actual	920	657	28,0	63,0	265

CHEMICAL COMPOSITION

values	C (%)	Mn (%)	Si (%)	P (%)	S (%)	Ni (%)	Cr (%)	Mo (%)
required	0,08 max	2,00 max	1,00 max	0,045 max	0,030 max	10,00 - 14,00	16,00 - 18,00	2,00 - 3,00
actual	0,0280	1,4620	0,3970	0,0250	0,0270	10,3850	16,6750	2,0570

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remarks: chemical and mechanical values, at delivery condition, are quoted by the relevant steel work certificate. VISUAL AND DIMENSIONAL TEST SATISFACTORY
According to: ASME II part. A ed. 2023

If not mentioned the above test are performed at room temperature.
We certify that the fasteners were manufactured, sampled, tested and inspected in accordance with the specification and are consistent with order prescriptions.
Quality assurance system in accordance to European Directive 2014/68/EU annex I par. 4.3 (PED) and AD 2000 Merkblatt W0.
Certificates 0045/202/WZ1921/23 and TN/AD2000-W0/1921/23 TÜV NORD Systems GmbH & Co. KG.

IPL S.R.L.
RSQ A. Grisetti

DADO / NUT

COMVITEA s.r.l.
Via Isonzo 32/C - 20078 Turate (CO) Tel 02.9697121 - Fax 02 96754113

CERTIFICATO DI COLLAUDO EN 10204
INSPECTION CERTIFICATE EN 10204

3.1

Azienda CERTIFICATA - UNI EN ISO 9001:2015
AD 2000 MERKBLATT W0 - PED Directive 2014/68/EU

Certificato/Certificate N°	1367248	Pag. 1 / 2	Cliente/Customer	INDRA SRL	
Data cert /Date cert.	20/02/2024		Vs. ordine/Order.	AF24 00029	
d.d.t./Delivery note n.	1135	20/02/2024	Ns.rif./Int. ref.	315	16/01/2024

Descrizione Materiale / Material Description

Item	Qty	Articolo / Article	Materiale / Material	Pos-Rifer / Your pos-ref.
1	50	Dado A4 UNI 5588 / DIN 934 PF M18x1.5	A4	98.99.0042
→ 2	50	Dado ASTM/ASME A/SA 194 gr.8M UNI 5588 / DIN 934 PF M16x1.5	ASTM/ASME A/SA 194 gr.8M	101.99.0571SS
3	70	Tirante tutto filetto ASTM/ASME A/SA 193 B8M cl.2 M16x1.5x60	ASTM/ASME A/SA 193 B8M cl.2	101.99.0570SS
4	30	Tirante tutto filetto ASTM/ASME A/SA 193 B8M cl.2 M16x1.5x70	ASTM/ASME A/SA 193 B8M cl.2	101.99.0671SS
5	35	Tirante tutto filetto ASTM/ASME A/SA 193 B8M cl.2 M8x25	ASTM/ASME A/SA 193 B8M cl.2	980.99.0123SS
6	50	Vite A4 UNI 5933 / DIN 7991 M8x10	A4	98.99.0088
7	500	Vite ASTM/ASME A/SA 193 B8M cl.2 UNI 5931 / DIN 912 M5x30	ASTM/ASME A/SA 193 B8M cl.2	101.99.1157SS
8	500	Vite ASTM/ASME A/SA 193 B8M cl.2 UNI 5931 / DIN 912 M8x20	ASTM/ASME A/SA 193 B8M cl.2	96.50.0014SS

COLATA-ANALISI CHIMICA come da certificato di acciaieria / HEAT-CHEMICAL ANALYSIS according to mill certificate

Item	Colata/Heat	C	Cr	Mn	Mo	Ni	P	S	Si	NORME/STANDARDS
1	802323	0,0300	16,2500	1,2300	2,2300	10,8300	0,0290	0,0110	0,3900	
→ 2	072330	0,0120	16,9200	1,6200	2,0900	11,2600	0,0270	0,0010	0,3900	ASME II Part A ed. 2021
3	472915	0,0200	16,9700	1,8200	2,0900	10,0500	0,0260	0,0240	0,3200	ASME II Part A ed. 2021
4	472915	0,0200	16,9700	1,8200	2,0900	10,0500	0,0260	0,0240	0,3200	ASME II Part A ed. 2021
5	304113	0,0210	16,6500	1,5800	2,0200	10,1500	0,0320	0,0290	0,3900	ASME II Part A ed. 2021
6	772-0450	0,0300	16,0100	0,8200	2,1200	10,1500	0,0350	0,0040	0,0500	
7	304113	0,0210	16,6500	1,5800	2,0200	10,1500	0,0320	0,0290	0,3900	ASME II Part A ed. 2021
8	304113	0,0210	16,6500	1,5800	2,0200	10,1500	0,0320	0,0290	0,3900	ASME II Part A ed. 2021

PROPRIETA' MECCANICHE / MECHANICAL PROPERTIES

	OTTENUTE / OBTAINED							RICHIESTE / REQUIRED								
	Rm	Re	A	Z	Dur/hard.		Resilienza/Impact test	Rm (N/mm²)		Re (N/mm²)		A %	Z %	Dur/hard.		Resilienza/Impact test	
Item	N/mm²	N/mm²	%	%	HB		KV - Joule °C	min	max	min	max	min	min	HB min	HB max	KV - Joule	°C
1					233	239	20										20
→ 2					286	296	20							126	300		20
3	856	772	27,40	67,50	273	276	20								321		20
4	856	772	27,40	67,50	273	276	20								321		20
5	868	730	24,00	62,00	280	285	20								321		20
6	930	780					20										20
7	868	730	24,00	62,00	280	285	20								321		20
8	868	730	24,00	62,00	280	285	20								321		20

Item	Trattamento Termico Tempering - °C	Dur./Hard. HB dadi/nuts h	°C	>=	HB	Prova allarg. per dadi Cone stripping on nuts		ESAME VISIVO-VIS.EXAM
1								Positivo / Positive
→ 2	Carbide solution treated					Positive	Proof load positive	Positivo / Positive
3	Carbide solution treated and strain hardened 1060°							Positivo / Positive
4	Carbide solution treated and strain hardened 1060°							Positivo / Positive
5	Carbide solution treated and strain hardened 1060°							Positivo / Positive
6								Positivo / Positive
7	Carbide solution treated and strain hardened 1060°							Positivo / Positive
8	Carbide solution treated and strain hardened 1060°							Positivo / Positive

Note:

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Certifichiamo che i materiali sono stati fabbricati, campionati, testati e ispezionati in conformità alle specifiche e conformi alle prescrizioni degli ordini.
We certify that the fasteners were manufactured, sampled, tested and inspected in accordance with the specification and are consistent with order prescriptions.

Oscar Uboldi - Quality Assurance

DADO / NUT

COMVITEA s.r.l.
Via Isonzo 32/C - 20078 Turate (CO) Tel 02.9697121 - Fax 02 96754113

CERTIFICATO DI COLLAUDO EN 10204
INSPECTION CERTIFICATE EN 10204

3.1 Azienda CERTIFICATA - UNI EN ISO 9001:2015
AD 2000 MERKBLATT W0 - PED Directive 2014/68/EU

Certificato/Certificate N°	1367248	Pag. 2 / 2	Cliente/Customer	INDRA SRL	
Data cert /Date cert.	20/02/2024		Vs. ordine/Order.	AF24 00029	
d.d.t./Delivery note n.	1135	20/02/2024	Ns.rif./Int. ref.	315	16/01/2024

Descrizione Materiale / Material Description

Item	Qty	Articolo / Article	Materiale / Material	Pos-Rifer / Your pos-ref.
9	20	Vite ASTM/ASME A/SA 193 B8M cl.2 UNI 5931 / DIN 912 / ISO 4762 M10x25	ASTM/ASME A/SA 193 B8M cl.2	101.99.0572SS

COLATA-ANALISI CHIMICA come da certificato di acciaieria / HEAT-CHEMICAL ANALYSIS according to mill certificate

Item	Colata/Heat	C	Cr	Mn	Mo	Ni	P	S	Si
9	847049	0,0630	16,5820	1,3120	2,0320	10,0850	0,0297	0,0227	0,4130

NORME/STANDARDS

ASME II Part A ed. 2021

PROPRIETA' MECCANICHE / MECHANICAL PROPERTIES

	OTTENUTE / OBTAINED							RICHIESTE / REQUIRED							
	Rm	Re	A	Z	Dur/hard.		Resilienza/Impact test	Rm (N/mm²)		Re (N/mm²)		A %	Z %	Dur/hard.	Resilienza/Impact test
Item	N/mm²	N/mm²	%	%	HB		KV - Joule °C	min	max	min	max	min	min	min HB max	KV - Joule °C
9	851	699	27,00	64,00	240	243	20							321	20

Item	Trattamento Termico Tempering - °C	Dur./Hard. HB dadi/nuts h	°C	>=	HB	Prova allarg. per dadi Cone stripping on nuts	ESAME VISIVO-VIS.EXAM
9	Carbide solution treated and strain hardened 1060°						Positivo / Positive

Note:

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Certifichiamo che i materiali sono stati fabbricati, campionati, testati e ispezionati in conformità alle specifiche e conformi alle prescrizioni degli ordini.
We certify that the fasteners were manufactured, sampled, tested and inspected in accordance with the specification and are consistent with order prescriptions.

23/10/24 Oscar Uboldi - Quality Assurance

COGNE ACCIAI SPECIALI S.p.a.
ITALY - 11100 AOSTA - VIA PARAVERA, 16
TEL +39.0165.3021 - FAX +39.0165.302296
CAP. SOC. 140.000.000 EUR INT. VERS.
C.F. 02187380997
VAT: IT00571320076 - R.E.A. n. AO-50474

Company with Management Systems certified according to ISO 9001, IATF 16949, EN 9100 and ISO 14001.

INSPECTION CERTIFICATE 3.1 (EN 10204:2004)
DOCUMENT NUMBER 2021002663

STELO ANTIESPULSIONE SFERA / BALL STEM

CUSTOMER'S ORDER:	MAIL		
MANUFACTURER'S WORKS:	AOSTA, VIA PARAVERA 16 - ITALY		
PRODUCER OF THE DOC:	QUALITY DEPARTMENT		
MANUFACTURER'S WORKS ORDER NO:	0001122639 / 000080		
MARK OF THE MANUFACTURER:	COGNE		
DISPATCH NOTE:	81394303 / 20 WEIGHT: 98 KG		
INTERNAL SPEC:	STOCKBARREW2	TECHNICAL RULE:	AD2000
PRODUCT:	PEL PEELED ROUND BARS TOLERANCE: ISOK11		
SURFACE FINISH:	2B Cold Finished		
PRODUCT DELIVERY CONDITION:	RS SOLUTION ANNEALED		
PRODUCT DIMENSIONS (mm):	50,000	LENGTH (mm)	06000 /06200
GRADE:	AISI 316/316L EN1.4401	INTERNAL GRADE:	F316L IMCO
IDENTIFICATION HEAT NO:	073183	IDENTIFICATION LOT NO:	528350
MARKING OF THE PRODUCT:	1.4404	TEST PIECE N:	835

REFERENCE NORMS: EN 10088-3 2014, EN 10272 2016, ASTM A276/A276M-17, ASTM A479/A479M-18, ASTM A193 B8MCLASSE 1D-17, ASME SA276/SA276M-17, ASME SA479/SA479M-17, AMS 5653J, AMS 5648M, ISO15156-3/NACE MR0175 2015, NACE MR0103/ISO 17945, NORSOK M630 MDSS01 REV5.
REFERENCE NORMS FOR CHEMICAL COMPOSITION AND MECHANICAL PROPERTIES: ASTM A182, ASME SA182.
REFERENCE NORMS ONLY FOR CHEMICAL COMPOSITION: EN 10222-5 2017,ASTM A403-07a, ASTM A484-18a,ASTM A314-08, AMS-QQ-S-763D.
THE PRODUCT IS CONFORMING TO THE CONTRACT AGREEMENT AND TO THE RULE AD2000-MERKBLATT W0/W2.
ASTM A484 DOES NOT APPLY FOR SIZE AND LENGTH TOLERANCES.
STEELMAKING EAF + AOD + CONTINUOUS CASTING
REFERENCE NORM ASME BPVC.II.A-2015.
HOT ROLLED
REDUCTION RATIO 11,8

CHEMICAL LADLE ANALYSIS ACCORDING TO ASTM A751 - EN ISO 14284
Control lot No. - Weight :020000858551 - 81.600 KG

ELEMENTS	C	Si	Mn	P	S	N	Cr	Mo	Ni	Cu
OBTAINED	0,022	0,34	1,82	0,025	0,026	0,074	16,77	2,03	10,00	0,40

ELEMENTS	Co
OBTAINED	0,16

HARDNESS TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000858913 - 7.441 KG
SPECIFICATION ENISO6506 HARDNESS TEST HB TESTING METHOD: 10/3000
OBTAINED 184

IMPACT TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000858913 - 7.441 KG
SPECIFICATION EN ISO 148-1-KV2 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 20
MEASUREMENT UNIT J

OBTAINED	435	440	433	431	440	433	435	437	432	432
	433	430								

DATE 25.01.2021 MORABITO ROSA CF(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne
REVIEW DATE 18.03.2021 N. REVIEW 1

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Company with Management Systems certified according to ISO 9001, IATF 16949, EN 9100 and ISO 14001.

STELO ANTIESPULSIONE SFERA / BALL STEM

TENSILE TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000858913 - 7.441 KG
SPECIFICATION EN-ISO6892-1 DIRECTION OF THE TEST PIECE: L

	RM	RP02	A5	Z	RP1
MEASUREMENT UNIT	MPA	MPA	% 5.0 D	%	NMM
OBTAINED	621	274	57,3	79,9	300
	619	281	56,9	80,6	304
	595	281	54,8	79,8	315
	607	277	56,8	80,1	307

GRAIN SIZE
Control lot No. - Weight :020000858913 - 7.441 KG
SPECIFICATION ASTME112 --
OBTAINED 5 7

MATERIAL IN COMPLIANCE WITH THE NORSOK M-630 MDS S01
IMPACT TEST
Control lot No. - Weight :020000858913 - 7.441 KG
SPECIFICATION EN ISO 148-1 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 196-
MEASUREMENT UNIT J
OBTAINED 178 188 172 171 196 192 174 183 176 183
172 178

TENSILE TEST
Control lot No. - Weight :020000858913 - 7.441 KG
SPECIFICATION ASTMA370-E8-0.5"SPEC DIRECTION OF THE TEST PIECE: L

	RMB	RP02B	ZB	AL2B
MEASUREMENT UNIT	KSI	KSI	%	% 4,0 D
OBTAINED	90	39	80,0	60,9
	90	39	79,9	60,7
	89	40	80,7	59,4
	88	40	79,5	61,1

x CROSSWIND
23/10/24

COUNTRY OF MELTING AND ORIGIN: ITALY, THE MATERIAL COMPLIES WITH FAR DFARS 252.225-7009 ALT 1.
The products delivered are conforming to EN10088-5 and bear the CE marking on the basis of the test results here reported and the continuous surveillance, assessment and approval by MPA NRW (certificate no. 0432-CPR-00166-01)
Material produced according to the system #Regulation 305/2011/EU of the European Parliament and of the Council of 9 March 2011#
DOCUMENT ISSUED IN AGREEMENT WITH TUEV BAYERN(11.1972) WAVING OF COUNTERSIGNING (SEE TUEV BAYERN LETTER DATED 17.01.80).
MARKING: SYMBOL OF THE MANUF. WORK, MATERIAL N. , CAST N., LOT N., RECEIVING AGENT STAMP
CORROSION TEST ACCORDING TO ASTM A262 PRACTICE E EN ISO 3651-2 PRACTICE A: SATISFACTORY.

DATE 25.01.2021 MORABITO ROSA CF(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne
REVIEW DATE 18.03.2021 N. REVIEW 1

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CAP. SOC. 140.000.000 EUR INT. VERS.
C.F. 02167360967
VAT: IT00571320076 - R.E.A. n. AO-50474

Company with Management Systems certified according to ISO 9001, IATF 16949, EN 9100 and ISO 14001.

ANTIMIXING TEST BY PORTABLE SPECTROMETRE: CONFORMING
EDDY CURRENT INSPECTION OF SURFACE ACCORDING TO EN 10277-1 CLASS 4.
DIMENSIONAL CONTROL ACCORDING TO EN 10278: SATISFACTORY.
NO WELDING REPAIR ON THE MATERIAL.
ULTRASONIC TEST ACCORDING TO EN 10308 Class.3: SATISFACTORY
QUALITY SYSTEM CERTIFIED BY I.G.Q ACCORDING TO UNI EN ISO 9001:2015 -IATF 16949:2016 (THE LAST ONE ONLY FOR WIRE ROD AND HOT ROLLED-PEELED-GROUND STAINLESS STEEL BARS).
NORSOK M630 ED. 6 MDS S001 REV 5
INSPECTOR'S STAMP LF
THE PRODUCT SATISFIES CE DIRECTIVES EU: 2015/863 (ROHS3) - 2011/65 (ROHS2) - 2000/53 - 2002/95(RoHS) - 2003/11 - 2005/618 AND PED 2014/68.
THE MATERIAL IS FREE OF ANY MERCURY, MERCURY COMPOUNDS AND OR RADIUM CONTAMINATION AT TIME OF SHIPMENT AND WAS PRODUCED WITHOUT USING OZONE DEPLETING SUBSTANCES OF CLASS I AND II.
RADIOACTIVITY CONTROL PERFORMED WITH A GAMMA SPECTROMETER: ASTM E181.
GAMMA ACTIVITY ON THE PRODUCTS BELOW 0.1 BQ/G ACCORDING TO EU RESOLUTION 2013/59/EURATOM , IAEA RS-G-1.7 AND IAEA SSG-17.

CE 0432

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23/10/24

DATE 25.01.2021 MORABITO ROSA CF(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne
REVIEW DATE 18.03.2021 N. REVIEW 1

SFERA / BALL

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST091415 / 2023 /

Cliente / Besteller/Purchaser/Client:
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: N. AF23 01871
Bestell / Your order / Commande

Conferma ordine nr: MI23005210
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23004231
Lieferanzeige/Packing list/B.L.

Stato di fornitura / Lieferzustand / Delivery state / Etat de livraison: Fucinato - Solubilizzato Pelato

Tipo di Elaborazione / Erschmelzungsart / Melting process / Mode d'elaboration: E+AOD

Qualità / Werkstoff/Grade/Nuance: 1.4401/1.4404/316/316L

Marca / Markenbezeichnung / Brand / Nuance: MVAPML (MAXIVAL)

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice: AV

Punzone del Collaudatore / Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur: MR

Punzonatura / Kennzeichnung / Marking / Marquage: 1.4401/1.4404/316/316L

SPECIFICHE :
Anforderungen / Requirements / Exigences

Note:
Aufzeichnungen / Notes / Notes

AV 316L VALVES A 1.4401/1.4404 A	
MDS S01 5 316 A (0)	(0)Norsok-standard M-630 Edition 6, October 2013
AD 2000-M. W 2 01/20 1.4401 A (1)	(1)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
AD 2000-M. W 2 01/20 1.4404 A (2)	(2)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
API 6A 21 ANNEX M (3)	(3)Errata 1, April 2019-Errata 2, June 2020-Add. 1, July 2020
API 6D 25 ANNEX H (4)	(4)Revision November 2021
ASME SA182 2021 S31600/03 A (5)	(5)Section II Part A 2021 EDITION For products machined directly from bar refer to ASME SA479.
ASME SA276 2021 S31600/03 A (6)	(6)Section II Part A 2021 EDITION
ASME SA479 2021 S31600/03 A (7)	(7)Section II Part A 2021 EDITION
ASTM A182 2023 S31600/03 A (8)	(8)For products machined directly from bar refer also to ASTM A479.
ASTM A262 PR. E 2015 316/316L (9)	(9)Reapproved 2021
ASTM A276 2017 S31600/03 A	
ASTM A370 2022 .	
ASTM A479 2023A S31600/03 A	
ASTM E381 2022 .	
ASTM E562 2019 . (A)	(A)19E01
EN 10088 PART 3 2014 1.4401 A (B)	(B)Chemical and mechanical properties only.
EN 10088 PART 3 2014 1.4404 A (C)	(C)Chemical and mechanical properties only.
EN 10222 PART 5 2017 1.4401 A	
EN 10222 PART 5 2017 1.4404 A	
EN 10272 2016. 1.4401 A	
EN 10272 2016. 1.4404 A	
ISO 148-1 2016 .	
ISO 6892-1 2019 .	
NACE MR0103 2015 S31600/03 A (D)	(D)ANSI/NACE MR0103/ISO 17945 November 23, 2015
NACE MR0175 2015 S31600/03 A (E)	(E)ANSI/NACE MR0175/ISO 15156-3, third edition November 23,2015

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23/10/2023

		Tolleranza: k12 Toleranz/Allowance/Tolerance					
Pos. nr. Pos. nr. / Item nr. / Nr. de poste	Oggetto Gegenstand / Product description / Descrip. du produit	Dimensioni - mm Abmessungen / Dimension / Dimension	Lunghezza - mm Länge / Length / Longueur	Colata Schmelze / Heat / Coulée	Pezzi Stückzahl / Pieces / Pieces	Peso - KG Gewicht / Weight / Poids	Lotto nr. Losnr. / Lot nr. / Lot nr.
0030	Tondo	170,000	5401/ 5401	288405	1	974,0	216805510

TEST ALLO STATO DI FORNITURA

TEST		min	max	
A	Dimensioni grano x ASTM E112			2
A	Ferrite delta %			1.7 %

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 11/07/2023 VCQ012 - MEST091415	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 1 di 6

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Acciaierie Valbruna S.p.A.

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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST091415 / 2023 /

Cliente / Besteller/Purchaser/Client:
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr. / Bestell / Your order / Commande: N. AF23 01871

Conferma ordine nr. / Werks/Our Order/Ref nr.: MI23005210

Avviso di Spedizione / Lieferanzeige/Packing list/B.L.: A-MI23004231

Stato di fornitura / Lieferzustand / Delivery state / Etat de livraison: Fucinato - Solubilizzato Pelato

Tipo di Elaborazione / Erschmelzungsart / Melting process / Mode d'elaboration: E+AOD

Qualità / Werkstoff/Grade/Nuance: 1.4401/1.4404/316/316L

Marca / Markenbezeichnung / Brand / Nuance: MVAPML (MAXIVAL)

Produttore / Hersteller/Iten/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice: AV

Punzone del Collaudatore / Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur: MR

Punzonatura / Kennzeichnung / Marking / Marquage: 1.4401/1.4404/316/316L

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam epais. mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		60	60	60	-	-	-	-	-	-
E	10X10	-196	L	229	216	215	2,055	2,012	1,974	65	65	65

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam epais. mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		205	-	515	-	40	-	50		-		- 235		
D	12,5	20	L	265		541		61		73				142		

Prova di trazione per ISO 6892-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam epais. mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement A5 %		Strizione Einschnürung Reduction of area Striction Z %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		205	240	510 690	35	-	-	-		-		- 215		
F	10	20	T	243	274	530	55		62					140		
J	10	20	T	246	279	536	54		61					144		

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam epais. mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		-	-	-	-	-	-	-	-	-
H	10X10	-196	T	114	109	105	0,809	0,795	0,755	45	45	45

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 11/07/2023	Direzione Qualità / Qualitätsmanagement/Quality Management/Gestion Qualité	Direzione Prodotto / Produktmanagement/Product Management/Direction Produit	Pagina
VCQ012 - MEST091415	R.BERTELLI	P.MESSORI	2 di 6

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Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST091415 / 2023 /
Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: N. AF23 01871
Bestell
Your order
Commande

Conferma ordine nr: MI23005210
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23004231
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato - Solubilizzato Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werksachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, O=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais. mm	°C	Posiz. Saggio Probentage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale - Lateral Expansion			Shear Shear		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		60	60	60	-	-	-	-	-	-
G	10X10	20	T	128	130	122						
K	10X10	20	T	121	128	120						

Tensile testing according to ISO 6892-1
Impact testing according to ISO 148-1
Mechanical properties according to ASTM A370.
Ferrite content tested according to ASTM E562.

Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat Schmelze/Coulée															
	min 23,0 max 28,0	- 0,030	- 1,00	- 2,00	16,50 18,00	2,00 2,50	10,00 13,00	- -	- 0,045	- 0,030	- 0,100	-	-	-	-
	PRE	C %	Si %	Mn %	Cr %	Mo %	Ni %	Co %	P %	S %	N %				
288405	24,9	0,019	0,49	1,66	16,92	2,05	10,03	0,136	0,029	0,028	0,076				

Colata /Heat Schmelze/Coulée							
	min 14,0 max 20,0	- -	- -	- -	- -	- -	- -
	Ni+(2*Mo)						
288405	14,1						

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	SATISFACTORY

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 11/07/2023	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité	Direzione Prodotto Produktmanagement/Product Management/Direction Produit	Pagina
VCQ012 - MEST091415	R.BERTELLI	P.MESSORI	3 di 6

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CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST091415 / 2023 /

Cliente / Besteller/Purchaser/Client:
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr / Bestell / Your order / Commande: N. AF23 01871

Conferma ordine nr / Werks/Our Order/Ref nr.: MI23005210

Avviso di Spedizione / Lieferanzeige/Packing list/B.L.: A-MI23004231

Stato di fornitura / Lieferzustand / Delivery state / Etat de livraison: Fucinato - Solubilizzato Pelato

Tipo di Elaborazione / Erschmelzungsart / Melting process / Mode d'elaboration: E+AOD

Qualità / Werkstoff/Grade/Nuance: 1.4401/1.4404/316/316L

Marca / Markenbezeichnung / Brand / Nuance: MVAPML (MAXIVAL)

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice: AV

Punzone del Collaudatore / Stempel des Werksachverständigen / Inspector's stamp/Poinçon de l'assayeur: MR

Punzonatura / Kennzeichnung / Marking / Marquage: 1.4401/1.4404/316/316L

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Furnace calibrated according to API 6A REV 21th ED ANNEX M.
Furnace calibrated according to API 6D REV 25th ED ANNEX H.
Macroetch test per ASTM E381: acceptable.
Reduction ratio = 12,6 : 1
ET ACC. TO EN 10088-3 TAB.1
UT ACC. TO A388/API 6A PSL3-EN 10308cl.3-ASME B16.34/IV
Treatment made on date 07/11/2022 in batch
furnace M3B calibration expiry date 29/03/2023.
Solution annealed 1080°C for 4 h / water cooled.
"Issued in agreement with TÜV SÜD Industrie Service GMBH (07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

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Allegati / Anlagen / Enclosure / Attachments :
UT23003880 GT23001052

Sono state soddisfatte tutte le condizioni richieste	Controllo antimescolanza con tecnica XRF/OES portatile : OK	Controllo visivo e dimensionale: soddisfa le esigenze
Die gestellten Anforderungen sind it. Anlage erfüllt	Verwechslungprüfung: durch XRF/OES Gerät geführt : OK	Besichtigung und Ausmessung: ohne Beanstandung
The material has been furnished in accordance with the requirements	Antimbing testing performed with XRF/OES portable : OK	Visual inspection and dimensional checks:satisfactory
Le material á até trouvé conforme aux exigences	Contrôle antimélange svt technique XRF/OES portable : OK	Contrôle visuel et dimensions: satisfaisant

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD`S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

WSPEC14999ABCDEF1234528D37ABCDF124

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 11/07/2023 VCQ012 - MEST091415	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 4 di 6

SFERA / BALL

	Acciaierie Valbruna S.p.A. 36100 VICENZA (Italia) - Viale della scienza, 25 z.i. Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4	**CERTIFICATO** Certificate - Zeugnis - Certificat **N° UT23003880**	Pag 5 di 6
		CONTROLLO CON ULTRASUONI *Ultrasonic testing - Ultraschallprüfung - Controle par ultrasons*	

mod. UT02

MEST091415 / 2023 /

Cliente : INDRA S.R.L. *Customer*				**Lotto nr : 216805510** *Mill order*		
MARCA *Grade*	**DIMENSIONI - mm** *Size*	**COLATA** *Heat*	**BARRE** *Bars*	**PESO** *Weight*	**LUNGHEZZA - mm** *Length*	
MVAPML	Tondo 170,000	288405	N. 1	KG : 974,0	5401	5401

T. TERMICO *Heat Treatement*	**ESECUZIONE** *Condition*	**RUGOSITA'** *Roughness*	**TOLLERANZA** *Tolerance*
Solubilizzato	Pelato	µm	k12

Istruzione : PROC CND 040 *Work Instruction*		**Criteri Accettabilità :** **ASTM A388** Acceptance Criteria

ELETTRONICA : Olympus Quickscan LT *Equipment*	
ACCOPPIANTE : ACQUA + 0253 SA *Couplant*	**VEL.CONTROLLO :** **498 mm/sec** *Testing Speed*

TRASDUTTORI *Probes*	**TIPO ONDA** *Type of wave*	**FREQUENZA (MHZ)** *Frequency*	**DIMENSIONI (MM)** *Dimension*	**ANGOLO** *Angle*	**TARATURA** *Calibration*
64EL. 2.25MHZ	LONG.	2,25	128X25	0°	DAC

CONTROLLO AUTOMATICO [X] *Automatic inspection*	**CONTROLLO MANUALE** *Manual inspection*

NOTE :
Notes

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× crosswind
23/10/24

CONFORME [X] *Compliant*	**CONFORME IN DEROGA** [ ] *See Deviation*	**NON CONFORME** [ ] *Not Compliant*

ISPEZIONATO DA Inspected by	**VERIFICATO DA** Verified by	**APPROVATO DA** Approved by **G.Parlato** ISO 9712 LEV. 2 IND1901054	**COLLAUDATORE** Inspector - Abnahmesachsverst - Inspecteur
FIRMA 11/07/2023 Date - Date	**FIRMA**	**FIRMA**	

Operatori, strumenti e documenti di riferimento, utilizzati per il collaudo del materiale, sono identificati, controllati e/o calibrati in accordo alle norme EN, ISO e ASTM, richiamate nelle pratiche operative e istruzioni di pertinenza / *Operators, Equipment and reference documents, used for material inspection, are identified, checked and/or calibrated in accordance with EN/ISO or ASTM standards, reported in relevant documents.*

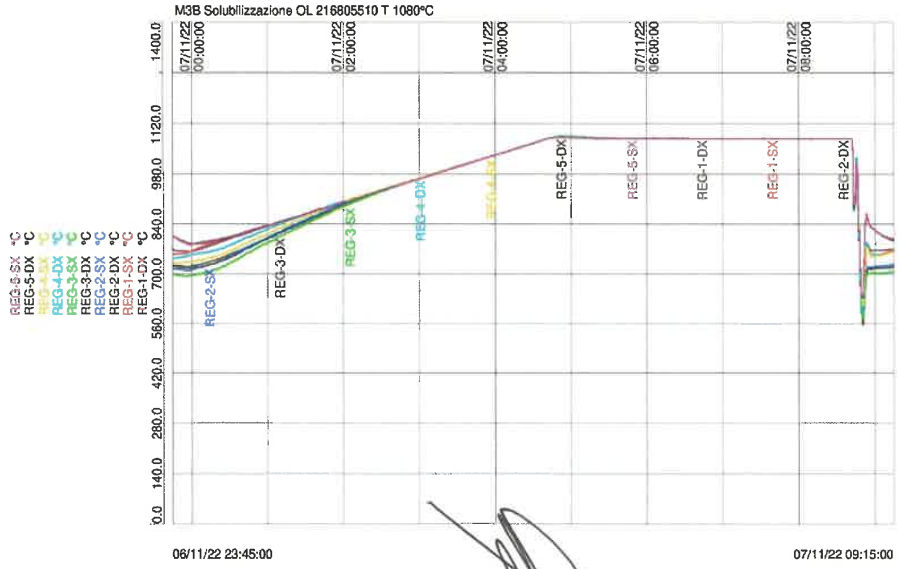
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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4

CERTIFICATO Certificate - Zeugnis - Certificat **N° GT23001052** **Pag 6 di 6**

Diagrammi di trattamento termico **MEST091415 / 2023 /**

Heat Treatment charts - Waermebehandlungs diagramm - Diagramme de traitement thermique

N° LOTTO : 216805510	Note Dettaglio :	Note:
Lot Number	Detail Notes	Notes



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Approved by:

INDRA s.r.l.
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COGNE ACCIAI SPECIALI S.p.a.
ITALY - 11100 AOSTA - VIA PARAVERA, 16
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CAP. SOC. 250.000.000 EUR INT. VERS.
C.F. 02187360967
VAT: IT00571320076 - R.E.A. n. AO-50474

Company with Management Systems certified according to ISO 9001, ITAF 16949, EN 9100, ISO 14001 and ISO 45001.

INSPECTION CERTIFICATE 3.1 (EN 10204:2004)

DOCUMENT NUMBER 2023041944

FLANGIA LEVA / COVER PLATE

CUSTOMER'S ORDER:	mail		
MANUFACTURER'S WORKS:	AOSTA, VIA PARAVERA 16 - ITALY		
PRODUCER OF THE DOC:	QUALITY DEPARTMENT		
MANUFACTURER'S WORKS ORDER NO:	0001136282 / 000010		
MARK OF THE MANUFACTURER:	COGNE		
DISPATCH NOTE:	0081567596 / 000010 WEIGHT: 850 KG / 1874 LB		
INTERNAL SPEC:	STOCKBARREW2	TECHNICAL RULE:	AD2000
PRODUCT:	SPE ROUGHPEELED ROUND BARS	TOLERANCE:	+ 1,500 - 0,0000 (+ 0,0591 - 0 in)
SURFACE FINISH:	1X Hot Finished		
PRODUCT DELIVERY CONDITION:	RS SOLUTION ANNEALED		
PRODUCT DIMENSIONS (mm):	105,000 (4,134 in)	LENGTH (mm)	04000 06000 (00157 00236 in)
GRADE:	316L-S31600/31603-1.4404/4401	INTERNAL GRADE:	F316L IMCO
IDENTIFICATION HEAT NO:	377292	IDENTIFICATION LOT NO:	940260
MARKING OF THE PRODUCT:	1.4404	TEST PIECE N:	026

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STEELMAKING EAF + AOD + CONTINUOUS CASTING
AISI 316/316L - UNS S31600/S31603 - 1.4404/1.4401
ASTM A484 DOES NOT APPLY FOR SIZE AND LENGTH TOLERANCES.
REFERENCE NORMS: EN 10088-3 (14), EN 10272 (16), ASTM A276-r17/ASME SA276-21, ASTM A479/A479M-r21, ASTM A193-23 B8MCLASSE 1D, ASME SA276/SA276M-21,ASME SA479/SA479M-21, AMS 5653J, AMS 5648N, ISO15156-3/NACE MR0175 (15), NACE MR0103/ISO 17945 (15), NORSOK M630 MDSS01 REV5.
REFERENCE NORMS FOR CHEMICAL COMPOSITION AND MECHANICAL PROPERTIES: ASTM A182-23/ ASME SA182-21.
REFERENCE NORMS ONLY FOR CHEMICAL COMPOSITION: EN 10222-5 (17),ASTM A403-22b, ASTM A484-22, ASTM A314-23, AMS-QQ-S-763D.
ASME SECT.II PART A EDITION 2015-2017-2019-2021.
REFERENCE FOR APPLICABLE ASME STANDARD: SECTION II PART A ED. 2015-2017-2019-2021
HOT ROLLED
REDUCTION RATIO 5,9

CHEMICAL LADLE ANALYSIS ACCORDING TO ASTM A751 - EN ISO 14284
Control lot No. - Weight :020000975855 - 89.292 KG - 196.852 LB

ELEMENTS	C	Si	Mn	P	S	N	Cr	Mo	Ni	Cu
MEASUREMENT UNIT	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w
OBTAINED	0,021	0,35	1,75	0,029	0,023	0,075	16,66	2,07	10,09	0,42

ELEMENTS	Co
MEASUREMENT UNIT	% w/w
OBTAINED	0,18

HARDNESS TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000976596 - 15.472 KG - 34.109 LB
SPECIFICATION ENISO6506 HARDNESS TEST HB TESTING METHOD: 10/3000
OBTAINED 153

x CROSSWIND 23/10/24

DATE 12.09.2023 BARBARA VIETTI MV(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne

COGNE ACCIAI SPECIALI S.p.a.
ITALY - 11100 AOSTA - VIA PARAVERA, 18
TEL +39.0165.3021 - FAX +39.0165.302296
CAP. SOC. 250.000.000 EUR INT. VERS.
C.F. 02187360967
VAT: IT00571320076 - R.E.A. n. AO-50474

Company with Management Systems certified according to ISO 9001, ITAF 16949, EN 9100, ISO 14001 and ISO 45001.

FLANGIA LEVA / COVER PLATE

IMPACT TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000976596 - 15.472 KG - 34.109 LB
SPECIFICATION EN ISO 148-1-KV2 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 20
MEASUREMENT UNIT J

OBTAINED	427	427	435	430	430	433	431	427	438	433
	441	443								

TENSILE TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000976596 - 15.472 KG - 34.109 LB
SPECIFICATION EN-ISO6892-1 DIRECTION OF THE TEST PIECE: L

	RM	RP02	A5	Z	RP1
MEASUREMENT UNIT	MPA	MPA	%	%	MPA
			5.0 D		
OBTAINED	571	243	54,9	79,5	287
	577	242	56,5	75,3	290
	580	242	58,5	76,9	291
	575	241	55,9	79,3	290

GRAIN SIZE
Control lot No. - Weight :020000976596 - 15.472 KG - 34.109 LB
SPECIFICATION ASTME112 --
OBTAINED 5

IMPACT TEST
Control lot No. - Weight :020000976596 - 15.472 KG - 34.109 LB
SPECIFICATION EN ISO 148-1 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 196-
MEASUREMENT UNIT J

OBTAINED	171	200	170	175	196	178	171	170	174	179
	199	180								

TENSILE TEST
Control lot No. - Weight :020000976596 - 15.472 KG - 34.109 LB
SPECIFICATION ASTMA370-E8-0.5"SPEC DIRECTION OF THE TEST PIECE: L

	TS	YS	RA	EL
MEASUREMENT UNIT	KSI	KSI	%	%
				4,0 D
OBTAINED	83	34	79,1	58,5
	83	35	75,9	57,9
	85	33	77,0	55,6
	85	34	74,7	55,8

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DATE 12.09.2023 BARBARA VIETTI MV(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne

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ITALY - 11100 AOSTA - VIA PARAVERA, 16
TEL.+39.0165.3021 - FAX.+39.0165.302296
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C.F. 02187360967
VAT: IT00571320076 - R.E.A. n. AO-50474

Company with Management Systems certified according to ISO 9001, ITAF 16949, EN 9100, ISO 14001 and ISO 45001.

COUNTRY OF MELTING AND ORIGIN: ITALY, THE MATERIAL COMPLIES WITH FAR DFARS
252.225-7009 ALT 1.
DOCUMENT ISSUED IN AGREEMENT WITH TUEV BAYERN(11.1972) WAVING OF COUNTERSIGNING (SEE TUEV BAYERN LETTER DATED 17.01.80).
MARKING: SYMBOL OF THE MANUF. WORK, MATERIAL N. , CAST N., LOT N., RECEIVING AGENT STAMP
CORROSION TEST ACCORDING TO ASTM A262/02A Practice.E EN ISO 3651-2 A: SATISFACTORY.
VISUAL INSPECTION OF SURFACE AND DIMENSIONAL CONTROL ACCORDING TO EN 10221 CLASS C AND EN 10060: SATISFACTORY.
ULTRASONIC TEST ACCORDING TO EN 10308 Class 3, equivalent to ASTM A388 FBH 5 (DIAM. 100-250) and FBH 8 (DIAM. 250-400) or to EN10228-4 Class 3: SATISFACTORY.
ANTIMIX TEST WITH PORTABLE SPECTROMETER: SATISFACTORY.
NO WELDING REPAIR ON THE MATERIAL.
FREE FROM RADIOACTIVE CONTAMINATION.
ULTRASONIC TEST ACCORDING TO EN 10308 Class.3, EN 10228 Class.3, ASTM A388 FBH 5 (diam. 102-250), FBH 8 (diam. 250,01-400).
MATERIAL IN COMPLIANCE WITH THE NORSOK M-630 MDS S01
RADIOACTIVITY CONTROL PERFORMED WITH A GAMMA SPECTROMETER: ASTM E181.
GAMMA ACTIVITY ON THE PRODUCTS BELOW 0.1 BQ/G ACCORDING TO EU RESOLUTION 2013/59/EURATOM , IAEA RS-G-1.7 AND IAEA SSG-17.
QUALITY SYSTEM CERTIFIED BY KIWA CERMET ACCORDING TO UNI EN ISO 9001:2015 -IATF 16949:2016 (THE LAST ONE ONLY FOR WIRE ROD AND HOT ROLLED-PEELED-GROUND STAINLESS STEEL BARS).
THE PRODUCT IS CONFORMING TO THE CONTRACT AGREEMENT AND TO THE RULE AD2000-MERKBLATT W0/W2.
INSPECTOR'S STAMP LF
MATERIAL CONFORM TO: 2015/863/UE (RoHS3) - 2011/65/UE (RoHS2) - 2000/53/UE - 2002/95/UE (RoHS) - 2003/11/UE - 2005/618/UE - PED 2014/68/UE e PE(S)R 2016/1105
THE MATERIAL IS FREE OF ANY MERCURY, MERCURY COMPOUNDS AND OR RADIUM CONTAMINATION AT TIME OF SHIPMENT AND WAS PRODUCED WITHOUT USING OZONE DEPLETING SUBSTANCES OF CLASS I AND II.
REFERENCE NORMS: EN 10088-3 (14), EN 10272 (16), ASTM A276-r17/ASME SA276-21, ASTM A479/A479M-r21, ASTM A193-23 B8MCLASSE 1D, ASME SA276/SA276M-21,ASME SA479/SA479M-21, AMS 5653J, AMS 5648N, ISO15156-3/NACE MR0175 (15), NACE MR0103/ISO 17945 (15), NORSOK M630 MDSS01 REV5.
REFERENCE NORMS FOR CHEMICAL COMPOSITION AND MECHANICAL PROPERTIES: ASTM A182-23/ ASME SA182-21.
REFERENCE NORMS ONLY FOR CHEMICAL COMPOSITION: EN 10222-5 (17),ASTM A403-22b, ASTM A484-22, ASTM A314-23, AMS-QQ-S-763D.
ASME SECT.II PART A EDITION 2015-2017-2019-2021.
ALL THE NORMS MENTIONED ARE INTENDED IN THEIR LAST REVISION AT THE DATE OF ISSUE OF THIS DOCUMENT.
ASTM A484 DOES NOT APPLY FOR SIZE AND LENGTH TOLERANCES.

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xCROSSNIJO
23/10/24

DATE 12.09.2023

BARBARA VIETTI MV(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE

-Cogne

VITE FLANGIA LEVA / COVER PLATE BOLT

IPL S.r.l.
BULLONERIA - TIRANTERIA
SPECIALE E STANDARD

Via Papa Giovanni Paolo I, 306
21040 UBOLDO (VA)

Customer: **INDRA SRL**
C.SO XXII MARZO, 8
20135 MILANO (MI)

Date, 25-07-24 **Our Ref.** DDT 2902 / OC 1332 **of** 25-07-24 **Your Ref.** AF24 02034 13-06-24

CERTIFICATE UNI EN 10204 - 3.1 N.2402183

ITEM		QUANTITY	HEAT TREATMENT	PROTECTION	LOT nr.	HEAT nr.
593182010025	HEX SOCKET HEAD CAP SCREW UNI 5931/ISO4762/DIN912 - A/SA193-320 B8M CL.2 M 10 x 25	21,00	carb. sol. tr. + strain hard.		833217	503334

101.99.0572SS

MECHANICAL PROPERTIES

values	R (MPa)	Rs 0,2 (MPa)	A4 (%)	Z (%)	HB (min-max)
required	760 min	655 min	15 min.	45 min.	321 max
actual	823,4	722,1	30,4	64,2	255

CHEMICAL COMPOSITION

values	C (%)	Mn (%)	Si (%)	P (%)	S (%)	Ni (%)	Cr (%)	Mo (%)
required	0,08 max	2,00 max	1,00 max	0,045 max	0,030 max	10,00 - 14,00	16,00 - 18,00	2,00 - 3,00
actual	0,026	1,590	0,360	0,038	0,0280	10,080	16,530	2,010

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remarks: chemical and mechanical values, at delivery condition, are quoted by the relevant steel work certificate. VISUAL AND DIMENSIONAL TEST SATISFACTORY
According to: ASME II part. A ed. 2021

+ CROSSWIND 23/10/24

If not mentioned the above test are performed at room temperature.
We certify that the fasteners were manufactured, sampled, tested and inspected in accordance with the specification and are consistent with order prescriptions.
Quality assurance system in accordance to European Directive 2014/68/EU annex I par. 4.3 (PED) and AD 2000 Merkblatt W0.
Certificates 0045/202/WZ1921/23 and TN/AD2000-W0/1921/23 TÜV NORD Systems GmbH & Co. KG.

IPL S.R.L.
RSQ A. Grisetti

CORPO BONNET / BONNET BODY

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1 (Nach/According to/Selon)

Certificato nr. MEST040838 / 2024 / (Prüfung/Test/Essai)

Ordine nr: ORD.24000161 (Bestell / Your order / Commande)

Conferma ordine nr: **AN24000318** (Werks/Our Order/Ref nr.)

Avviso di Spedizione: **A-AN24000296** (Lieferanzeige/Packing list/B.L.)

Stato di fornitura: Laminato - Solubilizzato FINITO A FREDDO (Lieferzustand / Delivery state / Etat de livraison)

Tipo di Elaborazione: E+AOD (Erschmelzungsart / Melting process / Mode d'elaboration)

Qualità: 1.4401/1.4404/316/316L (Werkstoff/Grade/Nuance)

Marca: MVAPML (MAXIVAL) (Markenbezeichnung / Brand / Nuance)

Produttore: (Hersteller/Item/Usine productrice)
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV (Zeichen des Liefermerkes / Trade marks / Sigles de fusine productrice)

Punzone del Collaudatore: MR (Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur)

Punzonatura: 1.4401/1.4404 (Kennzeichnung / Marking / Marquage)

SPECIFICHE : (Anforderungen / Requirements / Exigences)

Note: (Aufzeichnungen / Notes / Notes)

VAL STOCK W2 A/1 1.4404/316L A,CF	
AD 2000-M. W 2 2022 1.4401 A,CF (0)	(0)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
AD 2000-M. W 2 2022 1.4404 A,CF (1)	(1)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
AISI . 316/316L	
AMS-QQ-S-763 D 316/316L A,CF	
ASME SA182 2023 S31600/03 A (2)	(2)Section II Part A 2023 EDITION For products machined directly from bar refer to ASME SA479.
ASME SA276 2023 S31600/03 A,CF (3)	(3)Section II Part A 2023 EDITION
ASME SA479 2023 S31600/03 A (4)	(4)Section II Part A 2023 EDITION
ASTM A182 2023 S31600/03 A (5)	(5)For products machined directly from bar refer also to ASTM A479.
ASTM A262 PR. E 2015 316/316L (6)	(6)Reapproved 2021
ASTM A276 2024A S31600/03 A,CF	
ASTM A370 2022 .	
ASTM A479 2023A S31600/03 A	
ASTM E10 2023 .	
ASTM E8 2022 .	
EN 10088 PART 3 2014 1.4401 A,CF	
EN 10088 PART 3 2014 1.4404 A,CF	
EN 10272 2016. 1.4401 A,CF	
EN 10272 2016. 1.4404 A,CF	
ISO 148-1 2016 .	
ISO 3651-2 98 METHOD A T1	
ISO 6506-1 2014 .	
ISO 6892-1 2019 .	
NACE MR0103 2015 S31600/03 A (7)	(7)ANSI/NACE MR0103/ISO 17945 November 23, 2015
NACE MR0175 4 S31600/03 A (8)	(8)ANSI/NACE MR0175/ISO 15156-3:2020 Fourth edition, approved 21 Sep 2022.
QQ-S-763 F 316/316L A,CF	
ACH CO . .	
KV L -196C . ISO 148-1	
MDS S01 5 316 A,CF (9)	(9)Norsok-standard M-630 Edition 6, October 2013
ASTM A479 2023A S31600 A	

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		Tolleranza: h11 - DIN668/EN10278 (Toleranz/Allowance/Tolerance)					
Pos. nr. (Pos. nr. / Item nr. / Nr. de poste)	Oggetto (Gegenstand / Product description / Descrip. de produit)	Dimensioni - mm (Abmessungen / Dimension / Dimension)	Lunghezza - mm (Länge / Length / Longueur)	Colata (Schmelze / Heat / Coulée)	Pezzi (Stückzahl / Piece / Pièces)	Peso - KG (Gewicht / Weight / Poids)	Lotto nr. (Losnr. / Lot nr. / Lot nr.)
0010	Esagono	22,000	3030/ 3030	291893		901,0	217704270

CROSSWIND 23/10/2024

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 21/03/2024 VCQ012 - MEST040838	**Direzione Qualità** Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	**Direzione Prodotto** Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 1 di 4

Acciaierie Valbruna S.p.A.

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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST040838 / 2024 /

Ordine nr: ORD.24000161 (Bestell / Your order / Commande)

Conferma ordine nr: AN24000318 (Werks/Our Order/Ref nr.)

Avviso di Spedizione: A-AN24000296 (Lieferanzeige/Packing list/B.L.)

Stato di fornitura: Laminato - Solubilizzato FINITO A FREDDO (Lieferzustand / Delivery state / Etat de livraison)

Tipo di Elaborazione: E+AOD (Erschmelzungsart / Melting process / Mode d'elaboration)

Qualità: 1.4401/1.4404/316/316L (Werkstoff/Grade/Nuance)

Marca: MVAPML (MAXIVAL) (Markenbezeichnung / Brand / Nuance)

Produttore: ACCIAIERIE VALBRUNA S.P.A. (Hersteller/Item/Usine productrice)

Marchi di Fabbrica: AV (Zeichen des Lieferwerkes / Trade marks / Sigles de fusine productrice)

Punzone del Collaudatore: MR (Stempel des Werksachverständigen / Inspector's stamp/Poinçon de l'assayeur)

Punzonatura: 1.4401/1.4404 (Kennzeichnung / Marking / Marquage)

TEST ALLO STATO DI FORNITURA

Test on delivery condition / Prüfung auf lieferbereitem produkt / test a l'etat de fourniture / Prueba sobre el material asi come entregado

1) L=longitudinale/Längs, T=trasversale/quer, O=Tangenziale/tangential

TEST	Provetta / Probestab Specimen/Eprouvette Lung.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Lag. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement A5 %		Strizione Einschnürung Reduction of area Striction Z %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Harte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs demandées		min		200	235	500	20	-	-	-	-			-		
		max				900								315		
A	10	20	L	480	548	678	44		67					224		
G	10	20	L	484	550	683	43		65					227		

TEST ALLO STATO DI FORNITURA

Test on delivery condition / Prüfung auf lieferbereitem produkt / Test a l'etat de fourniture / Prueba sobre el material asi come entregado

TEST		min	max	
G	Dimensioni grano x ASTM E112			5

Charpy per ISO 148-1

1) L=longitudinale/Längs, T=trasversale/quer, O=Tangenziale/tangential

TEST	Provetta / Probestab Specimen/Eprouvette Lung.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Lag. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs demandées		min		-	-	-	-	-	-	-	-	-
		max										
B	10X10	-196	L	129	134	139	1,487	1,328	1,210	60	58	60

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/Längs, T=trasversale/quer, O=Tangenziale/tangential

TEST	Provetta / Probestab Specimen/Eprouvette Lung.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Lag. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Harte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs demandées		min		210	-	517	-	35	-	50	-			-		
		max												235		
C	12,5	20	L	483		681		46		69				222		

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23/10/24

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 21/03/2024	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité	Direzione Prodotto Produktmanagement/Product Management/Direction Produit	Pagina
VCQ012 - MEST040838	R.BERTELLI	P.MESSORI	2 di 4

CORPO BONNET / BONNET BODY

Acciaierie Valbruna S.p.A.

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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST040838 / 2024 /

Ordine nr: ORD.24000161 (Bestell / Your order / Commande)

Conferma ordine nr: AN24000318 (Werks/Our Order/Ref nr.)

Avviso di Spedizione: A-AN24000296 (Lieferanzeige/Packing list/B.L.)

Stato di fornitura / Lieferzustand / Delivery state / Etat de livraison: Laminato - Solubilizzato FINITO A FREDDO

Tipo di Elaborazione / Einschmelzungsart / Melting process / Mode d'elaboration: E+AOD

Qualità / Werkstoff/Grade/Nuance: 1.4401/1.4404/316/316L

Marca / Markenbezeichnung / Brand / Nuance: MVAPML (MAXIVAL)

Produttore / Hersteller/Item/Usine productrice: **ACCIAIERIE VALBRUNA S.P.A.**

Marchi di Fabbrica / Zeichen des Liefermwerkes / Trade marks / Sigles de fusine productrice: AV

Punzone del Collaudatore / Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur: MR

Punzonatura / Kennzeichnung / Marking / Marquage: 1.4401/1.4404

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, O=Tangenziale/tangential

TEST	Provetta / Probestab Specimen/Eprouvette Larg.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Prüfentnahme Location Emplacement	Resilienza Kerbschlagarbeit Impact Value Resilience KV_2 J			Espansione laterale - Lateral Expansion -			Shear - Shear -		
Valori richiesti / Anforderungswerte / Required values / Valeurs demandées		min		100	100	100	-	-	-	-	-	-
		max										
F	10X10	20	L	189	194	199						
H	10X10	20	L	180	190	186						

Tensile testing according to ISO 6892-1
Impact testing according to ISO 148-1
Mechanical properties according to ASTM A370.
Brinnell hardness according to ASTM E10
Tensile testing according to ASTM E8
Brinnell hardness according to ISO 6506-1

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23/10/2024

Analisi chimica

Chemische Zusammensetzung / Chemical Analysis / Analyse chimique

Colata / Heat Schmelze/Coulée	C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	Co %	P %	S %	N %
min - max	0,030	1,00	2,00	16,50 - 18,00	2,00 - 2,50	1,00	10,00 - 13,00		0,045	0,030	0,100
291893	0,019	0,52	1,55	16,65	2,01	0,48	10,17	0,140	0,030	0,030	0,066

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 21/03/2024
VCQ012 - MEST040838

Direzione Qualità / Qualitätsmanagement/Quality Management/Gestion Qualité
R.BERTELLI

Direzione Prodotto / Produktmanagement/Product Management/Direction Produit
P.MESSORI

CORPO BONNET / BONNET BODY

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST040838 / 2024 /
Prüfung/Test/Essai

Ordine nr: ORD.24000161
Bestell / Your order / Commande

Conferma ordine nr: AN24000318
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-AN24000296
Lieferanzeige/Packing list/B.L.

Stato di fornitura: Laminato - Solubilizzato FINITO A FREDDO
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore:
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice

Punzone del Collaudatore:
Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung / Marking / Marquage

Reduction ratio = 78,0 : 1
Solution annealed 1060°C for 180'(total time)/water cooled.
SURFACE QUALITY COMPLIANT TO EN 10088-3 TAB.1 COND. 2H
"Issued in agreement with TÜV SÜD Industrie Service GMBH (07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

Sono state soddisfatte tutte le condizioni richieste Die gestellen Anfordeerungen sind lt. Anlage erfüllt The material has been furnished in accordance with the requirements Le materiel á été trouvé conforme aux exigences	Controllo antimescolanza con tecnica XRF/OES portatile : OK Verwechslungprüfung: durch XRF/OES Gerät geführt : OK Antimixing testing performed with XRF/OES portable : OK Contrôle antimélange svt technique XRF/OES portable : OK	Controllo visivo e dimensionale: soddisfa le esigenze Besichtigufig und Ausmessung: ohne Beanstandung Visual inspection and dimensional checks:satisfactory Contrôle visuel et dimensions: satisfaisant

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD'S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

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23/10/2024

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 21/03/2024 VCQ012 - MEST040838	**Direzione Qualità** Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	**Direzione Prodotto** Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 4 di 4

Rodacciai

23842 Bosisio Parini (LC) – Via Giuseppe Roda 1 – Italia
Tel. +39 031878111 – Fax +39 031878312
www.rodacciai.com – info@rodacciai.com

Azienda con sistema di gestione certificato da IGQ
secondo UNI EN ISO 9001:2015

The Company's Quality Management System
is certified by IGQ according to UNI EN ISO 9001:2015

CERTIFICATO DI CONTROLLO Inspection Certif N. 174495 Date 14/11/2023

Secondo According to . . . . . EN 10204:2004 3.1

ORDINE - Order N. 372 Date 10/11/2023

D.d.T. - Delivery note N. 11714/04 Date 14/11/2023

Weight KG 411,00 **Odp. Nr.** 2022/A/58282
Tolerance ISO286-2 h9 + 0,000 - 0,036 mm **Bars Length** 3.000 - 3.050 mm

QUALITA' - Grade

STANDARD	EN 10088-3:2014	X2CrNiMo17-12-2	1.4404 / 316L
STANDARD	EN 10088-3:2023	X5CrNiMo17-12-2	1.4401 / 316

Mark RODACCIAI . . . . . 316 PLUS
PROFILO - Shape . . . . . ROUND
DIMENSIONE - Size . . . . . mm 10,00
ESECUZIONE - Form of delivery . . . . . ROUGH GROU.

COLATA - Heat 172303

ANALISI CHIMICA DI COLATA - Cast analysis % by mass

C	Mn	Si	S	P	Cr	Ni	Mo	Cu	Co	N
0,021	1,820	0,360	0,0220	0,025	16,640	10,100	2,100	0,360	0,150	0,0760

CARATTERISTICHE MECCANICHE ALLO STATO DI FORNITURA
Mechanical properties of the delivered material

		Tested
Tensile Strength	Rm (MPa)	746,0
Proof Stress	Rp (1) (MPa)	692,0
Proof Stress	Rp (0,2) (MPa)	612,0
Elongation	A 5 (%)	32,0
Hardness	HBW	226,0
Reduction of area	Z (%)	51,0

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23/10/24

NOTE - Notes

Processo di Fusione: E + A. O. D.
Trattamento termico: Temperatura di Solubilizzazione 1060°C
Tempo Mantenimento: 4 Ore, Raffreddamento in Acqua
Prova di Corrosione Intergranularena: ASTM A262-15 "E"
Materiale Conforme a NACE MR-0175/ISO 15156-3:2015
NACE MR-103/ISO 17495-1:2016

Pag. 1 / Segue

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www.rodacciai.com – info@rodacciai.com

Azienda con sistema di gestione certificato da IGQ secondo UNI EN ISO 9001:2015

The Company's Quality Management System is certified by IGQ according to UNI EN ISO 9001:2015

Segue certificato di controllo N. 174495 Date 14/11/2023
Inspection Certificate's continuance

NOTE - Notes

Materiale conforme a: ASTM A276-24a / A479-23a/ A182-24
ASME SA: 479-21 276-21 182; UNS 31600 - 31630 AISI 316-316L
Corrosione Intercristallina EN ISO 3651-2:98 Met.A

Melting Process: E + A. O. D
Heat treatment: annealed temperature 1060°C
Soaking time: 4 Hours, Cooling in water
Intergranular corrosion tested to ASTM A262-15 "E"
According to: NACE MR-0175 / ISO 15156-3:2015
NACE MR-103/ISO 17495-1:2016
Material Compliant to: ASTM A276-24a / A479-23a/ A182-24
ASME SA: 479-21 276-21 182; UNS 31600 - 31630 AISI 316-316L
Intergranular Corrosion according to EN ISO 3651-2:98 Met.A

Surface quality condition 2H conforming also to EN 10277 class 3

We certify hereby, that the above mentioned products are consistent with the order prescriptions.
This certificate was generated by data system acc. to EN 10204, it is not necessary to be signed for validity.

Materiale conforme alle seguenti direttive/regolamenti europee:
. Regolamento REACH 2006/1907/CE e tutti successivi aggiornamenti, compresa la modifica M80 Direttiva Delegata 2022/1632, e SVHC Candidate List aggiornata al 17/01/2023.
. Direttiva ROHS 2011/657UE e tutti i successivi aggiornamenti, compresa la modifica M80 attraverso la Direttiva Delegata 2022/1632, e Decreto Legislativo 27 del 04/03/2014.
. Direttiva RAEE 2012/19/UE e tutti successivi aggiornamenti, compresa la modifica M1 attraverso la Direttiva 2018/849.
. Direttiva ELV (End-of-Life Vehicles) 2000/53/CE e tutti i successivi aggiornamenti, compresa la modifica M15 attraverso la Direttiva 2020/363
. Contaminazione Radioattiva, Direttiva 2013/59/EURATOM e Decreto Legislativo N.101 del 31 Luglio 2020.
. Canadian List 168 aggiornata al 16/03/2022.
. Minerali di Conflitto, Regolamento (UE) 2017/821 e tutti i successivi aggiornamenti, compresa la modifica M1 attraverso il Regolamento Delegato 2020/1588, e Dodd-Frank Wall Street Reform and Consumer Protection Act Section 1502.

Material conforming to the following European directives/regulation:
. REACH regulation 2006/1907/EC and all subsequent updates, including modification M80 Delegate Directive, and SVHC Candidate List updated to 01/17/2023.
. ROHS Directive 2011/65/EU and all subsequent updates, including the M80 amendment through the Delegated Directive 2022/1632, and Italian Legislative Decree 27 of 03/04/2014.
. WEEE Directive 2012/19/EU and all subsequent updates, including the M1 amendment through Directive 2018/849.
. ELV (End-of-Life Vehicles) Directive 2000/53/EC and all subsequent updates, including the modification M15 through Directive 2020/363
. Radioactive Contamination, Directive 2013/59/EURATOM and Italian Legislative Decree No. 101 of 31 July 2020.
. Canadian List 168 updated 03/16/2022.
. Conflict Minerals, Regulation (EU) 2017/821 and all subsequent updates, including amendment M1 through Delegated Regulation 2020/1588, and Dodd-Frank Wall Street Reform and Consumer Protection Act Section 1502.

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23/10/24

Pag. 2 / 2 RODACCIAI: The Work Inspector
Alessia Porta

Acciaierie Valbruna S.p.A.

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Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST140440 / 2023 /
Prüfung/Test/Essai

Ordine nr: VS ORD MAIL
Bestell
Your order
Commande

Conferma ordine nr: AN23001468
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-AN23000875
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Laminato - Solubilizzato FINITO A FREDDO
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung
Marking
Marquage

SPECIFICHE :
Anforderungen / Requirements / Exigences

VAL STOCK W2 A/1 1.4404/316L A,CF
AD 2000-M. W 2 2022 1.4401 A,CF (0)
AD 2000-M. W 2 2022 1.4404 A,CF (1)
AISI . 316/316L
ASME SA182 2021 S31600/03 A (2)
ASME SA276 2021 S31600/03 A,CF (3)
ASME SA479 2021 S31600/03 A (4)
ASTM A182 2023 S31600/03 A (5)
ASTM A262 PR. E 2015 316/316L (6)
ASTM A276 2023 S31600/03 A,CF
ASTM A370 2022 .
ASTM A479 2023A S31600/03 A
ASTM E10 2023 .
ASTM E8 2022 .
EN 10088 PART 3 2014 1.4401 A,CF
EN 10088 PART 3 2014 1.4404 A,CF
EN 10272 2016. 1.4401 A,CF
EN 10272 2016. 1.4404 A,CF
ISO 3651-2 98 METHOD A T1
ISO 6506-1 2014 .
ISO 6892-1 2019 .
ACH CO . .
PME HB L . .
NACE MR0175 4 S31600/03 A (7)
NACE MR0103 2015 S31600/03 A (8)

Note:
Aufzeichnungen / Notes / Notes

(0)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
(1)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
(2)Section II Part A 2021 EDITION For products machined directly from bar refer to ASME SA479.
(3)Section II Part A 2021 EDITION
(4)Section II Part A 2021 EDITION
(5)For products machined directly from bar refer also to ASTM A479.
(6)Reapproved 2021
(7)ANSI/NACE MR0175/ISO 15156-3:2020 Fourth edition, approved 21 Sep 2022.
(8)ANSI/NACE MR0103/ISO 17945 November 23, 2015

		Tolleranza: h9 - DIN671/EN10278 Toleranz/Allowance/Tolerance					
Pos. nr. Pos. nr Item nr Nr. de poste	Oggetto Gegenstand Product description Descrip. du produit	Dimensioni - mm Abmessungen Dimension Dimension	Lunghezza - mm Länge Length Longueur	Colata Schmelze Heat Coulée	Pezzi Stückzahl Pieces Pieces	Peso - KG Gewicht Weight Poids	Lotto nr. Los nr Lot nr Lot nr
0010	Tondo	9,000	3000/ 3050	290962		162,0	210502620

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23/10/2023

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 15/11/2023 VCQ012 - MEST140440	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité **R.BERTELLI**	Direzione Prodotto Produktmanagement/Product Management/Direction Produit **P.MESSORI**	Pagina 1 di 3

OTTURATORE / TIP

Acciaierie Valbruna S.p.A.

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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1 — Certificato nr. MEST140440 / 2023 /

Stato di fornitura: Laminato - Solubilizzato FINITO A FREDDO

Produttore: ACCIAIERIE VALBRUNA S.P.A.

Tipo di Elaborazione: E+AOD

Marchi di Fabbrica: AV

Ordine nr: VS ORD MAIL

Qualità: 1.4401/1.4404/316/316L

Punzone del Collaudatore: MR

Conferma ordine nr: AN23001468

Avviso di Spedizione: A-AN23000875

Marca: MVAPML (MAXIVAL)

Punzonatura: 1.4401/1.4404

TEST ALLO STATO DI FORNITURA

Test on delivery condition — Prüefung auf lieferbereitem produkt — test a l'etat de fourniture — Prueba sobre el material así come entregado

1) L=longitudinale/längs, T=trasversale/quer, O=Tangenziale/tangential

TEST	Provetta/ Probestab		°C	Posiz. Saggio	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement A5 %		Strizione Einschnürung Reduction of area Striction Z %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti			min		200	235	500	20	-	-	-	-			-		
			max				900								315		
A	9	20	L		637	686	720	31		73					234		
E	9	20	L		639	690	726	30		71					235		

TEST ALLO STATO DI FORNITURA

Test on delivery condition / Prüefung auf lieferbereitem produkt / Test a l'etat de fourniture / Prueba sobre el material así come entregado

TEST		min	max	
A	Dimensioni grano x ASTM E112			5

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, O=Tangenziale/tangential

TEST	Provetta/ Probestab		°C	Posiz. Saggio	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti			min		310	-	620	-	30	-	50	-			-		
			max												235		
D	6	20	L		640		723		33		74				230		

Tensile testing according to ISO 6892-1
Mechanical properties according to ASTM A370.
Brinnell hardness according to ASTM E10
Tensile testing according to ASTM E8
Brinnell hardness according to ISO 6506-1

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Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat Schmelze/Coulée		C %	Si %	Mn %	Cr %	Mo %	Ni %	Co %	P %	S %	N %
	min -	-	-	-	16,50	2,00	10,00	-	-	-	-
	max 0,030	1,00	2,00	18,00	2,50	13,00	-	0,045	0,030	0,100	
290962		0,015	0,46	1,48	16,68	2,03	10,23	0,127	0,030	0,023	0,048

x CROSSWIND 23/10/24

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 15/11/2023	Direzione Qualità	Direzione Prodotto	Pagina
VCQ012 - MEST140440	Qualitätsmanagement/Quality Management/Gestion Qualité	Produktmanagement/Product Management/Direction Produit	2 di 3
	R.BERTELLI	P.MESSORI	

OTTURATORE / TIP

Acciaierie Valbruna S.p.A.

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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST140440 / 2023 /
Prüfung/Test/Essai

Ordine nr: VS ORD MAIL
Bestell
Your order
Commande

Conferma ordine nr: AN23001468
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-AN23000875
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Laminato - Solubilizzato FINITO A FREDDO
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Liefernwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore:
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung
Marking
Marquage

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

Reduction ratio = 457,3 : 1
Material annealed 1040°C for 135'(total time)/water cooled.
SURFACE QUALITY COMPLIANT TO EN 10088-3 TAB.1 COND. 2H
"Issued in agreement with TÜV SÜD Industrie Service GMBH
(07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by
Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

Sono state soddisfatte tutte le condizioni richieste
Die gestellen Anforderungen sind it. Anlage erfüllt
The material has been furnished in accordance with the requirements
Le materiel à été trouvé conforme aux exigences

Controllo antimescolanza con tecnica XRF/OES portatile : OK
Verwechslungprüfung: durch XRF/OES Gerät geführt : OK
Antimixing testing performed with XRF/OES portable : OK
Contrôle antimélange svt technique XRF/QES portable : OK

Controllo visivo e dimensionale: soddisfa le esigenze
Besichtigung und Ausmessung: ohne Beanstandung
Visual inspection and dimensional checks:satisfactory
Contrôle visuel et dimensions: satisfaisant

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD'S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 15/11/2023
VCQ012 - MEST140440

Direzione Qualità
Qualitätsmanagement/Quality Management/Gestion Qualité
R.BERTELLI

Direzione Prodotto
Produktmanagement/Product Management/Direction Produit
P.MESSORI

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x CROSSLAND
23/10/24

ROSETTI MARINO ITEM 270

COD. VLBLNN01460600

TAG:

BLPH-MV-005

INDRA ITEM 270

COD. 00.VSFT.0224/V

indra VALVES - ITALY

Certificazione dei materiali
EN 10204 3.1 ed. 2004 come da allegati

Material certification
EN 10204 3.1 ed. 2004 as per attachments

MD-02-04-IT-UK / VSF / TRU
Rev. 16
Data: 08-Nov-2018
CM/IT/UK

Nr. / *No.* 24-2008 — **Data / Date :** 16-Oct-2024

Cliente / *Customer* ROSETTI MARINO SPA

Vs. ordine Nr. / *Your order Nr.* 1724000798 REV.2 — **Data / Date :** 26-Jun-2024

Ns. commessa Nr. / *Our job Nr.* 24 01216 — **Data / Date :** 3-Jul-2024

Ns. D.D.T. Nr. / *Our advise note Nr.* — **Data /** *Date :*

Ordine di produzione / Production order number : 24 01216/270 - 293867

Lotto / Material batch number : 293867

Pos. Cliente / Customer Item	Pos. Indra / Indra Item	Codice / Code		Q.tà / Q.ty	Nr. di serie Serial Number	Descrizione /Description
		Ns./ Our	Vs. / Your			
270	270	00.VSFT.0224/V	VLBLNN01460600	1	106048	INDRA BALL VALVE SB-598-TRU-HR-150-Q150RF3-Q-DLF-DL-N-RG-GE1-L1-TG-TGW-TV-DP-PMI2-PD2-BI-GT-CR-TA-FE2-FS-FE-SPC1-SPC2

Elenco / List

Componente / *Component*	Colata / Heat	Materiale *Material*	Numero del certificato Certificate number
Corpo Valvola / Valve Body	293867	AISI 316/316L NACE	MEST017246/2024/ - UT24000815
Closure Q150RF3	293771	AISI 316/316L NACE	MEST017245/2024/ - UT24000814
Tirante / Stud bolt	Z5XR	ASTM A193 B8M Cl.2	1369552
Dado / Nut	YA27099	ASTM A194 Gr.8M	5066
Flangia premitreccia / Gland plate	294158	AISI 316/316L NACE	MEST076309/2024/ - UT24003464
Vite flangia premitreccia / Gland plate bolt	847049	ASTM A193 B8M Cl.2	1369552
Piastra supporto sfera / Ball support flange	43421	AISI 316/316L NACE	2024-107037
Stelo antiespulsione sfera / Ball stem	2VCV	AISI 316/316L NACE	2023/014186
Seggio / Seat	301859	AISI 316/316L NACE	2024003430
Sfera / Ball	101823	AISI 316/316L NACE	2021055970

*NOTE / **REMARKS** :* TAG : BLPH-MV-005

PREPARATO DA: **ELEONORA RANZANI**
PREPARED BY: **DOCUMENTATION MANAGER**

APPROVATO DA: **LUCIA NOSOTTI**
APPROVED BY: **QUALITY ASSURANCE MANAGER**

20013 Magenta (MI) Italy - Via Novara, 10/B-C
Tel. +39 02 97298663 r.a. - Fax +39 02 97291855
E-mail: indra@indra.it - http://www.indra.it

fabbri x CROSSMIND
30/10/24

CORPO VALVOLA / VALVE BODY

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST017246 / 2024 /
Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 00257
Bestell
Your order
Commande

Conferma ordine nr: MI24000724
Works/Our Order/Ref nr.

Avviso di Spedizione: A-MI24000778
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato - Solubilizzato Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage

SPECIFICHE : Anforderungen / Requirements / Exigences	Note: Aufzeichnungen / Notes / Notes
VAL STOCK A/1 1.4404/316L A MDS S01 5 316 A (0) AISI . 316/316L	(0)Norsok-standard M-630 Edition 6, October 2013
AMS-QQ-S-763 D 316/316L A	
ASME SA182 2023 S31600/03 A (1)	(1)Section II Part A 2023 EDITION For products machined directly from bar refer to ASME SA479.
ASME SA193 2023 B8M CLASS 1 (2)	(2)Section II Part A 2023 EDITION
ASME SA276 2023 S31600/03 A (3)	(3)Section II Part A 2023 EDITION
ASME SA320 2021 B8M CLASS 1 (4)	(4)Section II Part A 2021 EDITION
ASME SA479 2023 S31600/03 A (5)	(5)Section II Part A 2023 EDITION
ASTM A182 2023 S31600/03 A (6)	(6)For products machined directly from bar refer also to ASTM A479.
ASTM A193 2023 B8M CLASS 1	
ASTM A262 PR. E 2015 316/316L (7)	(7)Reapproved 2021
ASTM A276 2024 S31600/03 A	
ASTM A320 2022 B8M CLASS 1 CLASS1	
ASTM A370 2022 .	
ASTM A479 2023A S31600/03 A	
ASTM E10 2023 .	
ASTM E8 2022 .	
EN 10088 PART 3 2014 1.4401 A (8)	(8)Chemical and mechanical properties only.
EN 10088 PART 3 2014 1.4404 A (9)	(9)Chemical and mechanical properties only.
EN 10272 2016. 1.4401 A	
EN 10272 2016. 1.4404 A	
ISO 148-1 2016 .	
ISO 3651-2 98 METHOD A T1	
ISO 6506-1 2014 .	
ISO 6892-1 2019 .	
NACE MR0103 2015 S31600/03 A (A)	(A)ANSI/NACE MR0103/ISO 17945 November 23, 2015
NACE MR0175 4 S31600/03 A (B)	(B)ANSI/NACE MR0175/ISO 15156-3:2020 Fourth edition, approved 21 Sep 2022.
QQ-S-763 F 316/316L A	
ACH CO . .	
KV L -196C . ISO 148-1	
KV T -196C . ISO 148-1	

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Tolleranza: -0/+1%
Toleranz/Allowance/Tolerance

Pos. nr. Pos. nr. Item nr. Nr. de poste	Oggetto Gegenstand Product description Descrip. du produit	Dimensioni - mm Abmessungen Dimension Dimension	Lunghezza - mm Länge Length Longueur	Colata Schmelze Heat Coulée	Pezzi Stückzahl Pieces Pieces	Peso - KG Gewicht Weight Poids	Lotto nr. Losnr. Lot nr. Lot nr.
0030	Tondo	340,000	615/ 615	293867		1371,0	323404770

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 06/02/2024 VCQ012 - MEST017246	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 1 di 5

CORPO VALVOLA / VALVE BODY

Acciaierie Valbruna S.p.A.

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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

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In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST017246 / 2024 /
Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 00257
Bestell
Your order
Commande

Conferma ordine nr: MI24000724
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24000778
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato - Solubilizzato Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage

TEST ALLO STATO DI FORNITURA

TEST		min	max	
A	Dimensioni grano x ASTM E112			1

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C		Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max			-	-	-	-	-	-	-	-	-
B	10X10	-196	L		215	225	212	1,855	1,910	1,879	74	69	70

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C		Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max			210	-	520 790	-	40	-	50	-			-		223
C	12,5	20	L		259		561		60		71				160		

Prova di trazione per ISO 6892-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C		Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement A5 %		Strizione Einschnürung Reduction of area Striction Z %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max			200	235	500 700	30	-	-	-	-			-		215
D	10	20	T		254	299	558	55		65					157		
J	10	20	T		250	302	559	54		68					158		

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 06/02/2024 VCQ012 - MEST017246	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 2 di 5

CORPO VALVOLA / VALVE BODY

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CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST017246 / 2024 /

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Conferma ordine nr: MI24000724
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24000778
Lieferanzeige/Packing list/B.L.

Stato di fornitura: Fucinato - Solubilizzato Pelato
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werksachverständigen / Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung / Marking / Marquage

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam Dicke Width Diam Thickness Larg diam epais mm	°C		Posiz. Saggio Prüfstelle Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max			-	-	-	-	-	-	-	-	-
E	10X10	-196	T		91	97	93	0,800	0,855	0,910	24	27	21

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam Dicke Width Diam Thickness Larg diam epais mm	°C		Posiz. Saggio Prüfstelle Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion			Shear Shear		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max			60	60	60	-	-	-	-	-	-
H	10X10	20	T		91	91	94						
K	10X10	20	T		96	89	88						

Mechanical properties according to ASTM A370.
Brinnell hardness according to ASTM E10
Tensile testing according to ASTM E8
Impact testing according to ISO 148-1
Brinnell hardness according to ISO 6506-1
Tensile testing according to ISO 6892-1

Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat Schmelze/Coulée	C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	Co %	P %	S %	N %				
min -	-	-	-	16,50	2,00	-	10,00	-	-	-	-	-	-	-	-
max 0,030	1,00	2,00	18,00	2,50	1,00	13,00	-	0,045	0,030	0,100	-	-	-	-
293867	0,018	0,42	1,69	16,78	2,05	0,71	10,07	0,149	0,030	0,027	0,076				

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CORPO VALVOLA / VALVE BODY

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Certificato nr. / Prüfung/Test/Essai: MEST017246 / 2024 /

Cliente / Besteller/Purchaser/Client:
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 00257
Bestell / Your order / Commande

Conferma ordine nr: MI24000724
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24000778
Lieferanzeige/Packing list/B.L.

Stato di fornitura: Fucinato - Solubilizzato Pelato
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore:
Hersteller/Item/Usine productrice
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung / Marking / Marquage

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Reduction ratio = 4,4 : 1
Solution annealed 1080°C for 9,5 h /water cooled.
SURFACE QUALITY WITH MAX DEFECT DEPTH 1% DIAMETER
UT ACC. TO ASTM A388

Allegati / Anlagen / Enclosure / Attachments :
UT24000815

Sono state soddisfatte tutte le condizioni richieste
Die gestellen Anforderungen sind it. Anlage erfüllt
The material has been furnished in accordance with the requirements
Le materiel à été trouvé conforme aux exigences

Controllo antimescolanza con tecnica XRF/OES portatile : OK
Verwechslungprüfung: durch XRF/QES Gerät geführt : OK
Antimixing testing performed with XRF/OES portable : OK
Contrôle antimélange svt technique XRF/QES portable : OK

Controllo visivo e dimensionale: soddisfa le esigenze
Besichtigufg und Ausmessung: ohne Beanstandung
Visual inspection and dimensional checks:satisfactory
Contrôle visuel et dimensions: satisfaisant

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

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The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD`S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

WBF7D8575406B842BB8E6841D3332DEB

CORPO VALVOLA / VALVE BODY

	Acciaierie Valbruna S.p.A. 36100 VICENZA (Italia) - Viale della scienza, 25 z.i. Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4	**CERTIFICATO** Certificate - Zeugnis - Certificat **N° UT24000815**	Pag 5 di 5
		CONTROLLO CON ULTRASUONI *Ultrasonic testing - Ultraschallprüfung - Controle par ultrasons*	

mod. UT02 MEST017246 / 2024 /

Cliente : INDRA S.R.L. *Customer*				**Lotto nr : 323404770** *Mill order*		
MARCA *Grade*	**DIMENSIONI - mm** *Size*	**COLATA** *Heat*	**BARRE** *Bars*	**PESO** *Weight*	**LUNGHEZZA - mm** *Length*	
MVAPML	Tondo 340,000	293867		KG : 1371,0	615	615

T. TERMICO *Heat Treatement*	**ESECUZIONE** *Condition*	**RUGOSITA'** *Roughness*	**TOLLERANZA** *Tolerance*
Solubilizzato	Pelato	µm	-0/+1%

Istruzione : PROC CND 026 *Work Instruction*	**Criteri Accettabilità : ASTM A388** Acceptance Criteria

ELETTRONICA : Olympus Epoch 650
Equipment

ACCOPPIANTE : ACQUA + COUPLANT FYp NDT
Couplant

VEL.CONTROLLO : 100 mm/s
Testing Speed

TRASDUTTORI *Probes*	**TIPO ONDA** *Type of wave*	**FREQUENZA (MHZ)** *Frequency*	**DIMENSIONI (MM)** *Dimension*	**ANGOLO** *Angle*	**TARATURA** *Calibration*
B1S-E	LONGITUDINALE	1	T 24	0°	AVG-DGS

CONTROLLO AUTOMATICO *Automatic inspection*	**CONTROLLO MANUALE [X]** *Manual inspection*

NOTE :
Notes

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CONFORME [X] *Compliant*	**CONFORME IN DEROGA [ ]** *See Deviation*	**NON CONFORME[ ]** *Not Compliant*

ISPEZIONATO DA Inspected by **FIRMA**	**VERIFICATO DA** Verified by **FIRMA**	**APPROVATO DA** Approved by **G.Parlato** ISO 9712 LEV. 2 IND1901054 **FIRMA**	**COLLAUDATORE** Inspector - Abnahmesachsverst - Inspecteur

Date - Date **06/02/2024**

Operatori, strumenti e documenti di riferimento, utilizzati per il collaudo del materiale, sono identificati, controllati e/o calibrati in accordo alle norme EN, ISO e ASTM, richiamate nelle pratiche operative e istruzioni di pertinenza / *Operators, Equipment and reference documents, used for materiel inspection, are identified, checked and/or calibrated in accordance with EN/ISO or ASTM standards, reported in relevant documents.*

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST017245 / 2024 /

Cliente / Besteller/Purchaser/Client:
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 00257
Bestell / Your order / Commande

Conferma ordine nr: MI24000724
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24000778
Lieferanzeige/Packing list/B.L.

Stato di fornitura: Fucinato - Solubilizzato Pelato
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice
AV

Punzone del Collaudatore:
Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur
MR

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung / Marking / Marquage

SPECIFICHE :	Note:
Anforderungen / Requirements / Exigences	Aufzeichnungen / Notes / Notes
VAL STOCK A/1 1.4404/316L A	
MDS S01 5 316 A (0)	(0)Norsok-standard M-630 Edition 6, October 2013
AISI . 316/316L	
AMS-QQ-S-763 D 316/316L A	
ASME SA182 2023 S31600/03 A (1)	(1)Section II Part A 2023 EDITION For products machined directly from bar refer to ASME SA479.
ASME SA193 2023 B8M CLASS 1 (2)	(2)Section II Part A 2023 EDITION
ASME SA276 2023 S31600/03 A (3)	(3)Section II Part A 2023 EDITION
ASME SA320 2021 B8M CLASS 1 (4)	(4)Section II Part A 2021 EDITION
ASME SA479 2023 S31600/03 A (5)	(5)Section II Part A 2023 EDITION
ASTM A182 2023 S31600/03 A (6)	(6)For products machined directly from bar refer also to ASTM A479.
ASTM A193 2023 B8M CLASS 1	
ASTM A262 PR. E 2015 316/316L (7)	(7)Reapproved 2021
ASTM A276 2024 S31600/03 A	
ASTM A320 2022 B8M CLASS 1 CLASS1	
ASTM A370 2022 .	
ASTM A479 2023A S31600/03 A	
ASTM E10 2023 .	
ASTM E8 2022 .	
EN 10088 PART 3 2014 1.4401 A (8)	(8)Chemical and mechanical properties only.
EN 10088 PART 3 2014 1.4404 A (9)	(9)Chemical and mechanical properties only.
EN 10272 2016. 1.4401 A	
EN 10272 2016. 1.4404 A	
ISO 148-1 2016 .	
ISO 3651-2 98 METHOD A T1	
ISO 6506-1 2014 .	
ISO 6892-1 2019 .	
NACE MR0103 2015 S31600/03 A (A)	(A)ANSI/NACE MR0103/ISO 17945 November 23, 2015
NACE MR0175 4 S31600/03 A (B)	(B)ANSI/NACE MR0175/ISO 15156-3:2020 Fourth edition, approved 21 Sep 2022.
QQ-S-763 F 316/316L A	
ACH CO . .	
KV L -196C . ISO 148-1	
KV T -196C . ISO 148-1	

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		Tolleranza: k13 Toleranz/Allowance/Tolerance					
Pos. nr. Pos. nr. Item nr. Nr. de poste	Oggetto Gegenstand Product description Descrip. du produit	Dimensioni - mm Abmessungen Dimension Dimension	Lunghezza - mm Lange Length Longueur	Colata Schmelze Heat Coulée	Pezzi Stückzahl Pieces Pieces	Peso - KG Gewicht Weight Poids	Lotto nr. Losnr Lot nr Lot nr.
0010	Tondo	325,000	822/ 822	293771		1673,0	311700530

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 06/02/2024 VCQ012 - MEST017245	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité **R.BERTELLI**	Direzione Prodotto Produktmanagement/Product Management/Direction Produit **P.MESSORI**	Pagina 1 di 5

Acciaierie Valbruna S.p.A.

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CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

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Certificato nr. / Prüfung/Test/Essai: MEST017245 / 2024 /

Cliente / Besteller/Purchaser/Client:
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 00257
Bestell / Your order / Commande

Conferma ordine nr: MI24000724
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24000778
Lieferanzeige/Packing list/B.L.

Stato di fornitura: Fucinato - Solubilizzato Pelato
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore:
Hersteller/Item/Usine productrice
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werksachverständigen / Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung / Marking / Marquage

TEST ALLO STATO DI FORNITURA

TEST		min	max	
A	Dimensioni grano x ASTM E112			1

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, C=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam epais. mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expension Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		-	-	-	-	-	-	-	-	-
B	10X10	-196	L	211	205	218	1,575	1,685	1,810	67	61	71

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, C=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam epais. mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		210	-	520 790	-	40	-	50	-			-		223
C	12,5	20	L	259		561		60		71				160		

Prova di trazione per ISO 6892-1

1) L=longitudinale/längs, T=trasversale/quer, C=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam epais. mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement A5 %		Strizione Einschnürung Reduction of area Striction Z %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		200	235	500 700	30	-	-	-	-			-		215
D	10	20	T	248	293	558	55		64					157		
J	10	20	T	251	296	563	54		63					162		

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CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST017245 / 2024 /
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Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
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20013 - MAGENTA - MI

Ordine nr: AF24 00257
Bestell
Your order
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Conferma ordine nr: MI24000724
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Avviso di Spedizione: A-MI24000778
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato - Solubilizzato Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werksachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam Dicke Width Diam. Thickness Larg. diam epais mm	°C	Posiz. Saggio Probestage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		-	-	-	-	-	-	-	-	-
E	10X10	-196	T	89	80	83	0,494	0,510	0,705	21	20	23

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam Dicke Width Diam. Thickness Larg. diam epais mm	°C	Posiz. Saggio Probestage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion			Shear Shear		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		60	60	60	-	-	-	-	-	-
H	10X10	20	T	88	91	87						
K	10X10	20	T	81	99	82						

Mechanical properties according to ASTM A370.
Brinnell hardness according to ASTM E10
Tensile testing according to ASTM E8
Impact testing according to ISO 148-1
Brinnell hardness according to ISO 6506-1
Tensile testing according to ISO 6892-1

Analisi chimica
Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat Schmelze/Coulée		C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	Co %	P %	S %	N %				
	min -	-	-	-	16,50	2,00	-	10,00	-	-	-	-	-	-	-	-
	max 0,030	1,00	2,00	18,00	2,50	1,00	13,00	-	0,045	0,030	0,100	-	-	-	-	
293771		0,021	0,47	1,74	16,89	2,01	0,35	10,00	0,160	0,034	0,021	0,089				

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 06/02/2024	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité	Direzione Prodotto Produktmanagement/Product Management/Direction Produit	Pagina
VCQ012 - MEST017245	R.BERTELLI	P.MESSORI	3 di 5

Acciaierie Valbruna S.p.A.

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Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werksachverständigen / Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung / Marking / Marquage

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Reduction ratio = 13,0 : 1
Solution annealed 1080°C for 6 h /water cooled.
SURFACE QUALITY WITH MAX DEFECT DEPTH 1% DIAMETER
UT ACC. TO ASTM A388

Allegati / Anlagen / Enclosure / Attachments :
UT24000814

Sono state soddisfatte tutte le condizioni richieste
Die gestellen Anforderungen sind it. Anlage erfüllt
The material has been furnished in accordance with the requirements
Le materiel à été trouvé conforme aux exigences

Controllo antimescolanza con tecnica XRF/OES portatile : OK
Verwechslungprüfung: durch XRF/QES Gerät geführt : OK
Antimixing testing performed with XRF/OES portable : OK
Contrôle antimélange svt technique XRF/QES portable : OK

Controllo visivo e dimensionale: soddisfa le esigenze
Besichtigufg und Ausmessung: ohne Beanstandung
Visual inspection and dimensional checks:satisfactory
Contrôle visuel et dimensions: satisfaisant

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

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The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD`S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

WSPSF2229BA5A763E0B7E24B8143F8B52F

Vicenza, 06/02/2024 VCQ012 - MEST017245	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 4 di 5

CLOSURE Q150RF3

	Acciaierie Valbruna S.p.A. 36100 VICENZA (Italia) - Viale della scienza, 25 z.i. Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4	**CERTIFICATO** Certificate - Zeugnis - Certificat **N° UT24000814**	**Pag 5 di 5**
		CONTROLLO CON ULTRASUONI *Ultrasonic testing - Ultraschallprüfung - Controle par ultrasons*	

mod. UT02

MEST017245 / 2024 /

Cliente : INDRA S.R.L. *Customer*				**Lotto nr : 311700530** *Mill order*		
MARCA *Grade*	**DIMENSIONI - mm** *Size*	**COLATA** *Heat*	**BARRE** *Bars*	**PESO** *Weight*	**LUNGHEZZA - mm** *Length*	
MVAPML	Tondo 325,000	293771		KG : 1673,0	822	822

T. TERMICO *Heat Treatement*	**ESECUZIONE** *Condition*	**RUGOSITA'** *Roughness*	**TOLLERANZA** *Tolerance*
Solubilizzato	Pelato	µm	k13

Istruzione : PROC CND 026 *Work Instruction*		**Criteri Accettabilità : ASTM A388** Acceptance Criteria

ELETTRONICA : Olympus Epoch 650
Equipment

ACCOPPIANTE : ACQUA + COUPLANT FYp NDT
Couplant

VEL.CONTROLLO : 100 mm/s
Testing Speed

TRASDUTTORI *Probes*	**TIPO ONDA** *Type of wave*	**FREQUENZA (MHZ)** *Frequency*	**DIMENSIONI (MM)** *Dimension*	**ANGOLO** *Angle*	**TARATURA** *Calibration*
B1S-E	LONGITUDINALE	1	T 24	0°	AVG-DGS

CONTROLLO AUTOMATICO *Automatic inspection*	**CONTROLLO MANUALE [X]** *Manual inspection*

NOTE :
Notes

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CONFORME [X] *Compliant*	**CONFORME IN DEROGA [ ]** *See Deviation*	**NON CONFORME [ ]** *Not Compliant*

ISPEZIONATO DA Inspected by	**VERIFICATO DA** Verified by	**APPROVATO DA** Approved by **G.Parlato** ISO 9712 LEV. 2 IND1901054	**COLLAUDATORE** Inspector - Abnahmesachsverst - Inspecteur
FIRMA	**FIRMA**	**FIRMA**	

Date - Date **06/02/2024**

Operatori, strumenti e documenti di riferimento, utilizzati per il collaudo del materiale, sono identificati, controllati e/o calibrati in accordo alle norme EN, ISO e ASTM, richiamate nelle pratiche operative e istruzioni di pertinenza / *Operators, Equipment and reference documents, used for material inspection, are identified, checked and/or calibrated in accordance with EN/ISO or ASTM standerds, reported in relevant documents.*

TIRANTE / STUD BOLT

COMVITEA s.r.l.
Via Isonzo 32/C - 20078 Turate (CO) Tel 02.9697121 - Fax 02.96754113

CERTIFICATO DI COLLAUDO EN 10204
INSPECTION CERTIFICATE EN 10204

3.1

Azienda CERTIFICATA - UNI EN ISO 9001:2015
AD 2000 MERKBLATT W0 - PED Directive 2014/68/EU

Certificato/Certificate N°	**1369552**	Pag. **1 / 1**	Cliente/Customer	**INDRA SRL**	
Data cert /Date cert.	**18/07/2024**		Vs. ordine/Order.	**AF24 01968**	
d.d.t./Delivery note n.	**4664**	**18/07/2024**	Ns.rif./Int. ref.	**3902**	**27/06/2024**

Descrizione Materiale / Material Description

Item	Qty	Articolo / Article	Materiale / Material	Pos-Rifer / Your pos-ref.
1	40	Tirante tutto filetto ASTM/ASME A/SA 193 B8M cl.2 M10x40	ASTM/ASME A/SA 193 B8M cl.2	101.99.0375SS
2	60	Tirante tutto filetto ASTM/ASME A/SA 193 B8M cl.2 M20x70	ASTM/ASME A/SA 193 B8M cl.2	101.99.1098SS
→ 3	215	Tirante tutto filetto ASTM/ASME A/SA 193 B8M cl.2 5/8"-11UNCx75	ASTM/ASME A/SA 193 B8M cl.2	101.99.1160SS
4	260	Vite ASTM/ASME A/SA 193 B8M cl.2 UNI 5931 / DIN 912 M8x20	ASTM/ASME A/SA 193 B8M cl.2	96.50.0014SS
5	45	Vite ASTM/ASME A/SA 193 B8M cl.2 UNI 5931 / DIN 912 M10x80	ASTM/ASME A/SA 193 B8M cl.2	101.99.1161SS
6	45	Vite ASTM/ASME A/SA 193 B8M cl.2 UNI 5931 / DIN 912 TF M10x60	ASTM/ASME A/SA 193 B8M cl.2	101.99.0911SS

COLATA-ANALISI CHIMICA come da certificato di acciaieria / HEAT-CHEMICAL ANALYSIS according to mill certificate

Item	Colata/Heat	C	Cr	Mn	Mo	Ni	P	S	Si
1	172522	0,0240	16,6200	1,8100	2,0100	10,1700	0,0310	0,0280	0,3800
2	291913	0,0160	16,6400	1,4200	2,0300	10,0500	0,0320	0,0010	0,3800
→ 3	Z5XR	0,0160	16,6850	1,3520	2,0270	10,2850	0,0300	0,0260	0,3750
4	304113	0,0210	16,6500	1,5800	2,0200	10,1500	0,0320	0,0290	0,3900
5	847049	0,0630	16,5820	1,3120	2,0320	10,0850	0,0297	0,0227	0,4130
6	847049	0,0630	16,5820	1,3120	2,0320	10,0850	0,0297	0,0227	0,4130

NORME/STANDARDS

ASME II Part A ed. 2021
ASME II Part A ed. 2021
ASME II Part A ed. 2021
ASME II Part A ed. 2021
ASME II Part A ed. 2021
ASME II Part A ed. 2021

PROPRIETA' MECCANICHE / MECHANICAL PROPERTIES

	OTTENUTE / OBTAINED							RICHIESTE / REQUIRED							
	Rm	Re	A	Z	Dur/hard.		Resilienza/Impact test	Rm (N/mm²)		Re (N/mm²)		A %	Z %	Dur/hard. HB	Resilienza/Impact test
Item	N/mm²	N/mm²	%	%	HB		KV - Joule °C	min	max	min	max	min	min	min max	KV - Joule °C
1	960	900	22,60	67,40	281	288	20							321	20
2	854	748	24,00	61,00	273	277	20							321	20
→ 3	898	724	26,00	71,00	255	260	20							321	20
4	868	730	24,00	62,00	280	285	20							321	20
5	851	699	27,00	64,00	240	243	20							321	20
6	851	699	27,00	64,00	240	243	20							321	20

	Trattamento Termico	Dur./Hard. HB dadi/nuts				Prova allarg. per dadi	ESAME VISIVO-VIS.EXAM
Item	Tempering - °C	h	°C	>=	HB	Cone stripping on nuts	
1	Carbide solution treated and strain hardened 1060°						Positivo / Positive
2	Carbide solution treated and strain hardened 1060°						Positivo / Positive
→ 3	Carbide solution treated and strain hardened 1060°						Positivo / Positive
4	Carbide solution treated and strain hardened 1060°						Positivo / Positive
5	Carbide solution treated and strain hardened 1060°						Positivo / Positive
6	Carbide solution treated and strain hardened 1060°						Positivo / Positive

Note:

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Certifichiamo che i materiali sono stati fabbricati, campionati, testati e ispezionati in conformità alle specifiche e conformi alle prescrizioni degli ordini.
We certify that the fasteners were manufactured, sampled, tested and inspected in accordance with the specification and are consistent with order prescriptions.

Oscar Uboldi - Quality Assurance

DADO / NUT

t·e·c·n·o BOLT

CERTIFICATE

Nr. 5066 **26-07-24**

Page 1/1

INDRA SRL
VIA NOVARA 10/B-C
20013 MAGENTA MI
ITALIA

EN ISO 10204 3.1
CERTIFIED MATERIAL TEST REPORT

Your order: AF24 01970 24-06-24 Delivery note: 2000 26-07-24

Item	Materials	Description	Sizes	Batch	Heat		Quantity
3	ASTM A 194 Gr.8M 101.99.0616SS	Dado Pesante H=d ANSI/ASME B18.2.2 ASTM A 194 Gr.8M ASME B.1.1 UNC Esagonale	5/8"	48340	YA27099	N.	215

Pos. 50 - 60 - 270



CHEMICAL ANALYSIS

3		%C %	%Mn %	%P %	%S %	%Si %	%Cr %	%Ni %	%Mo %
	REQ. MIN.						16	10	2
	REQ. MAX.	0,08	2	0,045	0,030	1	18	14	3
	ACT.VAL.	0,025	1,180	0,038	0,002	0,310	16,930	10,050	2,020

MECHANICAL PROPERTIES

3		H HB	P.L. lbf
	REQ. MIN.	126	18080
	REQ. MAX.	300	
	ACT. VAL.	173-179	18080

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We state that the material or fasteners, or both, were manufactered, sampled, tested and inspected in accordance with the specification and any supplementary requirements designated in the purchase/sales order and it was found to meet those requirements

tecnoBOLT s.r.l. - 20822 Seveso (MB) ITALY - way vignone n.7 - info@tecnobolt.com - www.tecnobolt.com

FLANGIA PREMITRECCIA / GLAND PLATE

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497
https://www.valbruna-stainless-steel.com/

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION - CERTIFICADO DE INSPECCIÓN

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon/De conformidad con

Certificato nr. MEST076309 / 2024 /
Prüfung/Test/Essai/Num. de certificado

Cliente / Besteller/Purchaser/Client/Cliente
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: N. AF2401382
Bestell
Your order
Commande
Num. de pedido

Conferma ordine nr: MI24003281
Werks/Our Order/Ref nr.
Num. de confirmación de pedido

Avviso di Spedizione: A-MI24003462
Lieferanzeige/Packing list/B.L.
Aviso de embarque

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand
Delivery state
Etat de livraison
Estado de la entrega

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration
Método de fusión

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance
Calidad

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance / Marca

Produttore :
Hersteller/Item/Usine productrice/Producto

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice
Marcas de fábrica

Punzone del Collaudatore: MR
Stempel des Werksachverständigen
Inspector's stamp/Poinçon de l'assayeur
Sello del Comprobador

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage / Sello

SPECIFICHE : Anforderungen / Requirements / Exigences / Especificaciones	Note: Aufzeichnungen / Notes / Notes / Notas
AV 316L VALVES A/1 1.4401/1.4404 A IS107 01 316 A MDS S01 5 316 A (0)	(0)Norsok-standard M-630 Edition 6, October 2013
MDS S17 1 316 A (1)	(1)Norsok-standard M-630: 2020 (2020-09-30)
AD 2000-M. W 2 2022 1.4401 A (2)	(2)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
AD 2000-M. W 2 2022 1.4404 A (3)	(3)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
API 6A 21 ANNEX M (4) API 6D 25 ANNEX H (5)	(4)Errata 1 (04/2019), Errata 2 (08/2020), Errata 3 (09/2020). Addendum 1 (July 2020) and Addendum 2 (June 2021). (5)Revision November 2021
ASME SA182 2023 S31600/03 A (6)	(6)Section II Part A 2023 EDITION For products machined directly from bar refer to ASME SA479.
ASME SA276 2023 S31600/03 A (7)	(7)Section II Part A 2023 EDITION
ASME SA479 2023 S31600/03 A (8)	(8)Section II Part A 2023 EDITION
ASTM A182 2024 S31600/03 A (9)	(9)For products machined directly from bar refer also to ASTM A479.
ASTM A262 PR. E 2015 316/316L (A) ASTM A276 2024A S31600/03 A ASTM A370 2024 . ASTM A479 2023A S31600/03 A ASTM E381 2022 .	(A)Reapproved 2021
ASTM E562 2019 . (B)	(B)19E01
EN 10088 PART 3 2014 1.4401 A EN 10088 PART 3 2014 1.4404 A EN 10222 PART 5 2017 1.4401 A EN 10222 PART 5 2017 1.4404 A EN 10272 2016. 1.4401 A EN 10272 2016. 1.4404 A ISO 148-1 2016 . ISO 6892-1 2019 .	
NACE MR0103 2015 S31600/03 A (C)	(C)ANSI/NACE MR0103/ISO 17945 November 23, 2015
NACE MR0175 4 S31600/03 A (D)	(D)ANSI/NACE MR0175/ISO 15156-3:2020 Fourth edition, approved 21 Sep 2022

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		Tolleranza: k12 Toleranz/Allowance/Tolerance/Tolerancia					
Pos. nr. Pos. nr. / Item nr. Nr. de poste Número de artículo	Oggetto Gegenstand / Product description Descrip. du produit Descripción del producto	Dimensioni - mm Abmessungen Dimension Dimension / Dimensiones	Lunghezza - mm Länge Length Longueur / Longitud	Colata Schmelze Heat Coulée / Colada	Pezzi Stückzahl Pieces Pièces / Piezas	Peso - KG Gewicht Weight Poids / Peso	Lotto nr. Losnr. Lot nr. Lot nr. / Lote nro.
0040	Tondo	130,000	5990/ 6132	294158	2	1280,0	314706260

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 05/06/2024 VCQ012 - MEST076309	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité/Gerente de calidad R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit/Gerente de producto P.MESSORI	Pagina 1 di 7

FLANGIA PREMITRECCIA / GLAND PLATE

Acciaierie Valbruna S.p.A.

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Telefono 0471.924111 - Fax 0471.924497
https://www.valbruna-stainless-steel.com/

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION - CERTIFICADO DE INSPECCIÓN

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon/De conformidad con

Certificato nr. MEST076309 / 2024 /
Prüfung/Test/Essai/Num. de certificado

Cliente / Besteller/Purchaser/Client/Cliente
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: N. AF2401382
Bestell
Your order
Commande
Num. de pedido

Conferma ordine nr: MI24003281
Werks/Our Order/Ref nr.
Num. de confirmación de pedido

Avviso di Spedizione: A-MI24003462
Lieferanzeige/Packing list/B.L.
Aviso de embarque

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand
Delivery state
Etat de livraison
Estado de la entrega

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration
Método de fusión

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance
Calidad

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance / Marca

Produttore :
Hersteller/Item/Usine productrice/Productor

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice
Marcas de fábrica

Punzone del Collaudatore:
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur
Sello del Comprobador

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage / Sello

TEST ALLO STATO DI FORNITURA
Test on delivery condition Prüefung auf lieferbereitem produkt test a l'etat de fourniture Prueba sobre el material así come entregado

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. spais mm / Probeta	°C	Posiz. Saggio Probenlage Location Emplacement Ubicación 1)	Snervamento Streckgrenze/Yield Stress Limite elastique Límite elástico Rp 0,2% N/mm2	Snervamento Streckgrenze/Yield Stress Limite elastique Límite elástico Rp 1% N/mm2	Resistenza Zugfestigkeit/Tensile strength Resistance à traction Resistencia a la tracción Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement / Elongación A5 %		Strizione Einschnürung Reduction of area Striction / Reducción de área Z %		Resilienza Kerbschlagarbeit Impact Value/ Resilience Prueba de impacto			Durezza Heerte Hardness Dureté / Dureza HB		
Valori richiesti Anforderungen/Required values Valeurs démandées / Valores requeridos		min max		205	240	510 690	45	-	-	-	-			-	215	
A	10	20	L	298	331	582	47		69					159		
I	10	20	L	299	330	586	45		67					162		

TEST ALLO STATO DI FORNITURA
Test on delivery condition / Prüefung auf lieferbereitem produkt / Test a l'etat de fourniture / Prueba sobre el material así come entregado

TEST		min	max	
A	Dimensioni grano x ASTM E112			2
A	Ferrite delta %			1,4 %

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. spais mm / Probeta	°C	Posiz. Saggio Probenlage Location Emplacement Ubicación 1)	Resilienza Kerbschlagarbeit Impact Value Resilience / Prueba de impacto KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs démandées / Valores requeridos		min max		60	60	60	-	-	-	-	-	-
B	10X10	-196	L	313	310	305	2,722	2,743	2,758	70	70	70

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. spais mm / Probeta	°C	Posiz. Saggio Probenlage Location Emplacement Ubicación 1)	Snervamento Streckgrenze/Yield Stress Limite elastique Límite elástico Rp 0,2% N/mm2	Snervamento Streckgrenze/Yield Stress Limite elastique Límite elástico	Resistenza Zugfestigkeit/Tensile strength Resistance à traction Resistencia a la tracción Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement / Elongación E 4d %		Strizione Einschnürung Reduction of area Striction / Reducción de área RA %		Resilienza Kerbschlagarbeit Impact Value/ Resilience Prueba de impacto			Durezza Heerte Hardness Dureté / Dureza		
Valori richiesti Anforderungen/Required values Valeurs démandées / Valores requeridos		min max		205	-	515	-	40	-	50	-			-		
C	12,5	20	L	293		577		49		78						

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Vicenza, 05/06/2024 VCQ012 - MEST076309	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité/Gerente de calidad **R.BERTELLI**	Direzione Prodotto Produktmanagement/Product Management/Direction Produit/Gerente de producto **P.MESSORI**	Pagina 2 di 7

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https://www.valbruna-stainless-steel.com/

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In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon/De conformidad con

Certificato nr. MEST076309 / 2024 /
Prüfung/Test/Essai/Num. de certificado

Cliente / Besteller/Purchaser/Client/Cliente
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: N. AF2401382
Bestell
Your order
Commande
Num. de pedido

Conferma ordine nr: MI24003281
Werks/Our Order/Ref nr.
Num. de confirmación de pedido

Avviso di Spedizione: A-MI24003462
Lieferanzeige/Packing list/B.L.
Aviso de embarque

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand
Delivery state
Etat de livraison
Estado de la entrega

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration
Método de fusión

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance
Calidad

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance / Marca

Produttore :
Hersteller/Item/Usine productrice/Productor

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice
Marcas de fábrica

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur
Sello del Comprobador

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage / Sello

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, O=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm / Probeta	°C	Posiz. Saggio Probentage Location Emplacement Ubicación 1)	Snervamento Streckgrenze/Yield Stress Limite elastique Límite elástico Rp 0,2% N/mm2	Snervamento Streckgrenze/Yield Stress Limite elastique Límite elástico	Resistenza Zugfestigkeit/Tensile strength Resistance à traction Resistencia a la tracción Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement / Elongación E 4d %		Strizione Einschnürung Reduction of area Striction / Reducción de área RA %		Resilienza Kerbschlagarbeit Impact Value/ Resilience Prueba de impacto			Durezza Härte Hardness Dureté / Dureza HB		
Valori richiesti Anforderungen/Required values Valeurs démandées / Valores requeridos		min max		205	-	515	-	40	-	50	-			-		215
J	6.25	20	T	298		582		46		76				163		

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, O=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm / Probeta	°C	Posiz. Saggio Probentage Location Emplacement Ubicación 1)	Resilienza Kerbschlagarbeit Impact Value Resilience / Prueba de impacto KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs démandées / Valores requeridos		min max		60	60	60	-	-	-	-	-	-
D	10X10	-196	T	80	75	75	0,722	0,734	0,708	30	30	30

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, O=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm / Probeta	°C	Posiz. Saggio Probentage Location Emplacement Ubicación 1)	Resilienza Kerbschlagarbeit Impact Value Resilience / Prueba de impacto KV2 J			Espansione laterale Lateral Expansion			Shear Shear		
Valori richiesti Anforderungen/Required values Valeurs démandées / Valores requeridos		min max		100	100	100	-	-	-	-	-	-
H	10X10	20	L	325	322	319						
K	10X10	20	L	331	329	310						

Tensile testing according to ISO 6892-1
Impact testing according to ISO 148-1
Mechanical properties according to ASTM A370.
Ferrite content tested according to ASTM E562.

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Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique/Análisis químico

Colata/Heat/Coulée	min	23,0	-	-	-	18,50	2,00	10,00	-	-	-	-	-	-	-	-	-
Schmelze/Colada	max	28,0	0,030	1,00	2,00	18,00	2,50	13,00	-	0,045	0,030	0,100	-	-	-	-	
	PRE		C %	Si %	Mn %	Cr %	Mo %	Ni %	Co %	P %	S %	N %					
294158	25,0		0,018	0,45	1,78	16,76	2,09	10,11	0,212	0,033	0,020	0,084					

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 05/06/2024
VCQ012 - MEST076309

Direzione Qualità
Qualitätsmanagement/Quality Management/Gestion Qualité/Gerente de calidad
R.BERTELLI

Direzione Prodotto
Produktmanagement/Product Management/Direction Produit/Gerente de producto
P.MESSORI

FLANGIA PREMITRECCIA / GLAND PLATE

Acciaierie Valbruna S.p.A.

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CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION - CERTIFICADO DE INSPECCIÓN

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon/De conformidad con

Certificato nr. MEST076309 / 2024 /
Prüfung/Test/Essai/Num. de certificado

Cliente / Besteller/Purchaser/Client/Cliente
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: N. AF2401382
Bestell
Your order
Commande
Num. de pedido

Conferma ordine nr: MI24003281
Werks/Our Order/Ref nr.
Num. de confirmación de pedido

Avviso di Spedizione: A-MI24003462
Lieferanzeige/Packing list/B.L.
Aviso de embarque

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand
Delivery state
Etat de livraison
Estado de la entrega

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration
Método de fusión

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance
Calidad

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance / Marca

Produttore :
Hersteller/Item/Usine productrice/Productor
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice
Marcas de fábrica

Punzone del Collaudatore:
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur
Sello del Comprobador

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage / Sello

Colata/Heat/Coulée Schmelze/Colada	min 14,0 max 20,0	-	-	-	-	-	-	-
294158	Ni+(2*Mo) 14,3							

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

Furnace calibrated according to API 6A REV 21th ED ANNEX M.
Furnace calibrated according to API 6D REV 25th ED ANNEX H.
Macroetch test per ASTM E381: acceptable.
Reduction ratio = 20,2 : 1
Solution annealed 1080°C for 180'(total time)/water cooled.
Treatment made on date 10/05/24 in continuous furnace
FCB calibration expiry date 08/06/24.
SURFACE QUALITY GUARANTEE BY ET INSPECTION (max defect depth 1% DIAMETER)
UT ACC. TO A388/API 6A PSL3-EN 10308cl.3-ASME B16.34/IV :
PASS
"Issued in agreement with TÜV SÜD Industrie Service GMBH
(07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by
Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

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Allegati / Anlagen / Enclosure / Attachments :
UT24003464 GT24001144

Sono state soddisfatte tutte le condizioni richieste	Controllo antimescolanza con tecnica XRF/OES portatile : OK	Controllo visivo e dimensionale: soddisfa le esigenze
Die gestellten Anforderungen sind lt. Anlage erfüllt The material has been furnished in accordance with the requirements Le materiel a été trouvé conforme aux exigences El material cumple de acuerdo a los requisitos	Verwechslungprüfung: durch XRF/OES Gerät geführt : OK Antimixing testing performed with XRF/OES portable : OK Contrôle antimélange svt technique XRF/OES portable : OK Prueba de anti mezcla con técnica XRF/OES portátil: OK	Besichtigung und Ausmessung: ohne Beanstandung Visual inspection and dimensional checks:satisfactory Contrôle visuel et dimensions: satisfaisant Inspección visual y dimensional: cumple los requisitos

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 05/06/2024 VCQ012 - MEST076309	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité/Gerente de calidad **R.BERTELLI**	Direzione Prodotto Produktmanagement/Product Management/Direction Produit/Gerente de producto **P.MESSORI**	Pagina 4 di 7

FLANGIA PREMITRECCIA / GLAND PLATE

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497
https://www.valbruna-stainless-steel.com/

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION - CERTIFICADO DE INSPECCIÓN

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon/De conformidad con

Certificato nr. MEST076309 / 2024 /
Prüfung/Test/Essai/Num. de certificado

Cliente / Besteller/Purchaser/Client/Cliente
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: N. AF2401382
Bestell
Your order
Commande
Num. de pedido

Conferma ordine nr: MI24003281
Werks/Our Order/Ref nr.
Num. de confirmación de pedido

Avviso di Spedizione: A-MI24003462
Lieferanzeige/Packing list/B.L.
Aviso de embarque

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand
Delivery state
Etat de livraison
Estado de la entrega

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration
Método de fusión

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance
Calidad

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance / Marca

Produttore :
Hersteller/Item/Usine productrice/Productor

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice
Marcas de fábrica

Punzone del Collaudatore: MR
Stempel des Werksachverständigen
Inspector's stamp/Poinçon de l'assayeur
Sello del Comprobador

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage / Sello

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD`S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

IWBPDBAAAB9B864331FDEDDCBA740FD8336

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FLANGIA PREMITRECCIA / GLAND PLATE

	Acciaierie Valbruna S.p.A. 36100 VICENZA (Italia) - Viale della scienza, 25 z.i. Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4	**CERTIFICATO** Certificate - Zeugnis - Certificat **N° UT24003464**	**Pag 6 di 7**
		CONTROLLO CON ULTRASUONI *Ultrasonic testing - Ultraschallprüfung - Controle par ultrasons*	

mod. UT02

MEST076309 / 2024 /

Cliente : INDRA S.R.L. *Customer*				**Lotto nr : 314706260** *Mill order*	
MARCA *Grade*	**DIMENSIONI - mm** *Size*	**COLATA** *Heat*	**BARRE** *Bars*	**PESO** *Weight*	**LUNGHEZZA - mm** *Length*
MVAPML	Tondo 130,000	294158	N. 2	KG : 1280,0	5990 / 6132

T. TERMICO *Heat Treatement*	**ESECUZIONE** *Condition*	**RUGOSITA'** *Roughness*	**TOLLERANZA** *Tolerance*
Solubilizzato	Pelato	µm	k12

Istruzione : PROC CND 040 *Work Instruction*		**Criteri Accettabilità : A388/API 6A PSL3-EN 10308 cl.3-ASME B16.34/IV** Acceptance Criteria

ELETTRONICA : Olympus Quickscan LT *Equipment*	
ACCOPPIANTE : ACQUA + 0253 SA *Couplant*	**VEL.CONTROLLO : 207 mm/sec** *Testing Speed*

TRASDUTTORI *Probes*	**TIPO ONDA** *Type of wave*	**FREQUENZA (MHZ)** *Frequency*	**DIMENSIONI (MM)** *Dimension*	**ANGOLO** *Angle*	**TARATURA** *Calibration*
64EL. 2.25MHZ	LONG.	2,25	128X25	0°	DAC

CONTROLLO AUTOMATICO [X] *Automatic inspection*	**CONTROLLO MANUALE** *Manual inspection*

NOTE :
Notes

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CONFORME [X] *Compliant*	**CONFORME IN DEROGA [ ]** *See Deviation*	**NON CONFORME [ ]** *Not Compliant*

ISPEZIONATO DA Inspected by	**VERIFICATO DA** Verified by	**APPROVATO DA** Approved by **G.Parlato** ISO 9712 LEV. 2 IND2401253	**COLLAUDATORE** Inspector - Abnahmesachsverst - Inspecteur
FIRMA	**FIRMA**	**FIRMA**	

Date - Date **05/06/2024**

Operatori, strumenti e documenti di riferimento, utilizzati per il collaudo del materiale, sono identificati, controllati e/o calibrati in accordo alle norme EN, ISO e ASTM, richiamate nelle pratiche operative e istruzioni di pertinenza / *Operators, Equipment and reference documents, used for material inspection, are identified, checked and/or calibrated in accordance with EN/ISO or ASTM standards, reported in relevant documents.*

Acciaierie Valbruna S.p.A.
36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4

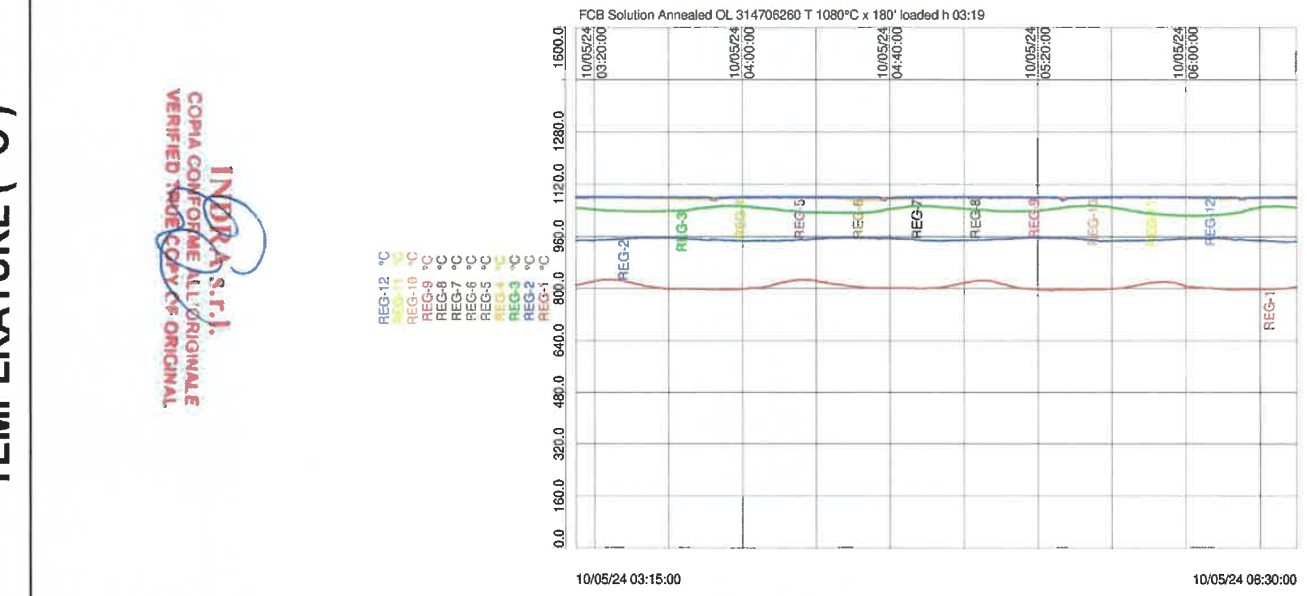
CERTIFICATO Certificate - Zeugnis - Certificat **N° GT24001144** **Pag 7 di 7**

Diagrammi di trattamento termico **MEST076309 / 2024 /**

Heat Treatment charts - Waermebehandlungs diagramm - Diagramme de traitement thermique

N° LOTTO : 314706260 Lot Number	**Note Dettaglio :** Detail Notes	**Note:** Notes

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Approved by:

VITE FLANGIA PREMITRECCIA / GLAND PLATE BOLT

COMVITEA s.r.l.
Via Isonzo 32/C - 20078 Turate (CO) Tel 02.9697121 - Fax 02 96754113

CERTIFICATO DI COLLAUDO EN 10204
INSPECTION CERTIFICATE EN 10204

Azienda CERTIFICATA - UNI EN ISO 9001:2015
3.1 AD 2000 MERKBLATT W0 - PED Directive 2014/68/EU

Certificato/Certificate N°	**1369552**	Pag. **1 / 1**	Cliente/Customer	**INDRA SRL**	
Data cert /Date cert.	**18/07/2024**		Vs. ordine/Order.	**AF24 01968**	
d.d.t./Delivery note n.	**4664**	**18/07/2024**	Ns.rif./Int. ref.	**3902**	**27/06/2024**

Descrizione Materiale / Material Description

Item	Qty	Articolo / Article	Materiale / Material	Pos-Rifer / Your pos-ref.
1	40	Tirante tutto filetto ASTM/ASME A/SA 193 B8M cl.2 M10x40	ASTM/ASME A/SA 193 B8M cl.2	101.99.0375SS
2	60	Tirante tutto filetto ASTM/ASME A/SA 193 B8M cl.2 M20x70	ASTM/ASME A/SA 193 B8M cl.2	101.99.1098SS
3	215	Tirante tutto filetto ASTM/ASME A/SA 193 B8M cl.2 5/8"-11UNCx75	ASTM/ASME A/SA 193 B8M cl.2	101.99.1160SS
4	260	Vite ASTM/ASME A/SA 193 B8M cl.2 UNI 5931 / DIN 912 M8x20	ASTM/ASME A/SA 193 B8M cl.2	96.50.0014SS
→ 5	45	Vite ASTM/ASME A/SA 193 B8M cl.2 UNI 5931 / DIN 912 M10x80	ASTM/ASME A/SA 193 B8M cl.2	101.99.1161SS
6	45	Vite ASTM/ASME A/SA 193 B8M cl.2 UNI 5931 / DIN 912 TF M10x60	ASTM/ASME A/SA 193 B8M cl.2	101.99.0911SS

COLATA-ANALISI CHIMICA come da certificato di acciaieria / HEAT-CHEMICAL ANALYSIS according to mill certificate

Item	Colata/Heat	C	Cr	Mn	Mo	Ni	P	S	Si
1	172522	0,0240	16,6200	1,8100	2,0100	10,1700	0,0310	0,0280	0,3800
2	291913	0,0160	16,6400	1,4200	2,0300	10,0500	0,0320	0,0010	0,3800
3	Z5XR	0,0160	16,6850	1,3520	2,0270	10,2850	0,0300	0,0260	0,3750
4	304113	0,0210	16,6500	1,5800	2,0200	10,1500	0,0320	0,0290	0,3900
→ 5	847049	0,0630	16,5820	1,3120	2,0320	10,0850	0,0297	0,0227	0,4130
6	847049	0,0630	16,5820	1,3120	2,0320	10,0850	0,0297	0,0227	0,4130

NORME/STANDARDS

ASME II Part A ed. 2021
ASME II Part A ed. 2021
ASME II Part A ed. 2021
ASME II Part A ed. 2021
ASME II Part A ed. 2021
ASME II Part A ed. 2021

PROPRIETA' MECCANICHE / MECHANICAL PROPERTIES

	OTTENUTE / OBTAINED							RICHIESTE / REQUIRED							
	Rm	Re	A	Z	Dur/hard.		Resilienza/Impact test	Rm (N/mm²)		Re (N/mm²)		A %	Z %	Dur/hard. HB	Resilienza/Impact test
Item	N/mm²	N/mm²	%	%	HB		KV - Joule °C	min	max	min	max	min	min	min max	KV - Joule °C
1	960	900	22,60	67,40	281	288	20							321	20
2	854	748	24,00	61,00	273	277	20							321	20
3	898	724	26,00	71,00	255	260	20							321	20
4	868	730	24,00	62,00	280	285	20							321	20
→ 5	851	699	27,00	64,00	240	243	20							321	20
6	851	699	27,00	64,00	240	243	20							321	20

Item	Trattamento Termico Tempering - °C	Dur./Hard. HB dadi/nuts h	°C	>=	HB	Prova allarg. per dadi Cone stripping on nuts	ESAME VISIVO-VIS.EXAM
1	Carbide solution treated and strain hardened 1060°						Positivo / Positive
2	Carbide solution treated and strain hardened 1060°						Positivo / Positive
3	Carbide solution treated and strain hardened 1060°						Positivo / Positive
4	Carbide solution treated and strain hardened 1060°						Positivo / Positive
→ 5	Carbide solution treated and strain hardened 1060°						Positivo / Positive
6	Carbide solution treated and strain hardened 1060°						Positivo / Positive

Note:

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Certifichiamo che i materiali sono stati fabbricati, campionati, testati e ispezionati in conformità alle specifiche e conformi alle prescrizioni degli ordini.
We certify that the fasteners were manufactured, sampled, tested and inspected in accordance with the specification and are consistent with order prescriptions.

Oscar Uboldi - Quality Assurance

PIASTRA SUPPORTO SFERA / BALL SUPPORT FLANGE

CERTIFICAT DE RECEPTION 3.1 / EN 10204:2004 Inspection Certificate 3.1 / EN 10204:2004 Prüfbescheinigung 3.1 / EN 10204:2004	Numéro de document Rev 00 Document number Bescheinigungnummer 2024-107037	Page 001 Sheet / Seite 012	40244 ArcelorMittal

Client - Purchaser - Besteller	Centro Servizi Metalli S.P.A.
Référence client - Purchase order - Kaufauftrag	OF1012400019
Projet - Project - Projekt	

Industeel Belgium
Site : Rue de Châtelet 266 6030 Marchienne-au-Pont

ISO 9001 (Cert C602171, Valid 02/06/2026) + MAQ REV 01 du 25/04/2022
ISO 9001 (Cert C602171, Valid 02/06/2026) + QAM REV 01 of 25/04/2022

Produit - Product - Erzeugnis	Standardized product
Commande / Poste - Internal order - Werksbestellung	200009337 / 000060
Bordereau de livraison - Delivery note - Lieferungsdokument	80440409

#010 - PRODUITS LIVRES - DELIVERED PRODUCTS - GELIEFERTEN GEGENSTÄNDE

Nuance - Grade - Werkstoff	Selon norme - According to - Entsprechend
X5CrNiMo17-12-2 (1.4401)	EN 10088-2:2014
X2CrNiMo17-12-2 (1.4404)	EN 10088-2:2014
UNS S31600 (316)	ASTM A 240/M ED.2023a
UNS S31603 (316L)	ASTM A 240/M ED.2023a
UNS S31600 (316)	ASME IIA ED.2023 SA 240/M
UNS S31603 (316L)	ASME IIA ED.2023 SA 240/M
X5CrNiMo17-12-2 (1.4401)	EN 10028-7:2016+AD2000W2+ADW10
X2CrNiMo17-12-2 (1.4404)	EN 10028-7:2016+AD2000W2+ADW10
X5CrNiMo17-12-2 (1.4401)	EN 10088-4:2009
X2CrNiMo17-12-2 (1.4404)	EN 10088-4:2009

UK CA
0086
23
0086-CPR-795365
EN 10088-4:2009
Hot rolled structural steel plates
Intended use : Building constructions or civil engineering
X5CrNiMo17-12-2 (1.4401)
X2CrNiMo17-12-2 (1.4404)
https://industeel.arcelormittal.com/downloads/certifications-quality/
DOPIB008_1.4401_UK
DOPIB009_1.4404_UK

CE
1148
06
1148-CPR-20060925
EN 10088-4:2009
Hot rolled structural steel plates
Intended use : Building constructions or civil engineering
X5CrNiMo17-12-2 (1.4401)
X2CrNiMo17-12-2 (1.4404)
https://industeel.arcelormittal.com/downloads/certifications-quality/
DOPIB008_1.4401
DOPIB009_1.4404

Epaisseur - Thickness - Dicke	25.00 mm	Largeur - Width - Breite	2,500 mm	Longueur - Length - Länge	6,000 mm

Spécification - Specification - Spezifikation

https://eservices.industeel.be

Etat thermique de livraison - Heat treatment state of delivery - Wärmebehandlung Lieferzustand

Hypertrempe à l'air (1050 °C - 1 min/mm) - Solution annealed and air quenched - Luft vergütet

Procédé d'élaboration - Melting process - Erschmelzungsart

Electric-arc furnace - VOD - Finish n°1 - 1D - HRAP

Nbre Nbr Stz	N° produit Product Erzeugnis	N° de coulée Ladle nr. Schmelze nr.	N° de lot de contrôle Inspection lot nr. Prüflos nr.	Nbre Nbr Stz	N° produit Product Erzeugnis	N° de coulée Ladle nr. Schmelze nr.	N° de lot de contrôle Inspection lot nr. Prüflos nr.
01	626045001	43421	626045.1001 / 626045.2004 / 626045.4001 / 626045.5001	01	626045002	43421	626045.1001 / 626045.2004 / 626045.4001 / 626045.5001

Total - Total - Gesamtzahl 002

This supply complies with the main requirements of PED 2014/68/EU relating to the basis materials regardless of the specific terms of service.
Cette fourniture est conforme aux exigences de la PED 2014/68/UE relatives aux matériaux de base indépendamment des conditions de services spécifiques.
Radioactivity in conformity with 2013/59/EUROATOM
Hot rolled, annealed and pickled
According to ASTM A480/A480M and ASME SA480/SA480M
Norsok M-650/M-630 MDS S01
Food contract:(CE) N°1935/2004 - FR Arreté du 13/01/1976 - IT Decreto 11/11/2013 N°140

Nous certifions que les produits ci-dessus sont conformes aux prescriptions de la commande.
We hereby certify that the above mentioned products are complying with the order requirements.
Wir bestätigen hiermit, dass die obengenannten Erzeugnisse den Bestellungvorschriften entsprechen.

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LEONARDA ALLEGRO
19/03/2024
Gestionnaire Commande
Mill inspector
Werksbeauftragte

PIASTRA SUPPORTO SFERA / BALL SUPPORT FLANGE

CERTIFICAT DE RECEPTION 3.1 / EN 10204:2004 Inspection Certificate 3.1 / EN 10204:2004 Prüfbescheinigung 3.1 / EN 10204:2004	Numéro de document Rev 00 Document number Bescheinigungnummer 2024-107037	Page 002 / 012 Sheet Seite	ArcelorMittal
Client - Purchaser - Besteller	Centro Servizi Metalli S.P.A.		
Référence client - Purchase order - Kaufauftrag	OF1012400019		
Projet - Project - Projekt			
Industeel Belgium Site : Rue de Châtelet 266 6030 Marchienne-au-Pont		ISO 9001 (Cert C602171, Valid 02/06/2026) + MAQ REV 01 du 25/04/2022 ISO 9001 (Cert C602171, Valid 02/06/2026) + QAM REV 01 of 25/04/2022	
Produit - Product - Erzeugnis		Standardized product	
Commande / Poste - Internal order - Werksbestellung		200009337 / 000060	
Bordereau de livraison - Delivery note - Lieferungsdokument		80440409	

#020 - ANALYSE CHIMIQUE DE COULEE - HEAT CHEMICAL COMPOSITION - SCHMELZE CHEMISCHE ZUSAMMENSETZUNG

	C	Mn	P	S	Si	Cu	Ni	Cr	Mo
	%	%	%	%	%	%	%	%	%
Min.							10.000	16.500	2.000
43421	0.023	1.879	0.0349	0.0021	0.298	0.378	10.000	16.578	2.000
Max.	0.030	2.000	0.0450	0.0150	0.750	0.750	13.000	18.000	2.500
	Nb	Ti	N	Co	Al	B			
	%	%	%	%	%	%			
Min.									
43421	0.008	0.002	0.0305	0.182	0.005	0.0015			
Max.	0.100	0.100	0.1000						

#041 - PMI - POSITIVE MATERIAL IDENTIFICATION - VERWECHSLUNGSPRÜFUNG

Non confusion de matière - Positive material identification - PMI Conform

Résultat du contrôle - Examination result - Prüfergebnis

Conforme aux spécifications précitées - Conforming to above specifications - Entspricht der vorgenannten vorschriften

Nous certifions que les produits ci-dessus sont conformes aux prescriptions de la commande.
We hereby certify that the above mentioned products are complying with the order requirements.
Wir bestätigen hiermit, dass die obengenannten Erzeugnisse den Bestellungvorschriften entsprechen.

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LEONARDA ALLEGRO
19/03/2024
Gestionnaire Commande
Mill Inspector
Werksbeauftragte

PIASTRA SUPPORTO SFERA / BALL SUPPORT FLANGE

CERTIFICAT DE RECEPTION 3.1 / EN 10204:2004 Inspection Certificate 3.1 / EN 10204:2004 Prüfbescheinigung 3.1 / EN 10204:2004	Numéro de document Rev 00 Document number Bescheinigungnummer 2024-107037	Page 003 Sheet / Seite 012	ArcelorMittal
Client - Purchaser - Besteller	Centro Servizi Metalli S.P.A.		
Référence client - Purchase order - Kaufauftrag	OF1012400019		
Projet - Project - Projekt			
Industeel Belgium Site : Rue de Châtelet 266 6030 Marchienne-au-Pont		ISO 9001 (Cert C602171, Valid 02/06/2026) + MAQ REV 01 du 25/04/2022 ISO 9001 (Cert C602171, Valid 02/06/2026) + QAM REV 01 of 25/04/2022	
Produit - Product - Erzeugnis		Standardized product	
Commande / Poste - Internal order - Werksbestellung		200009337 / 000060	
Bordereau de livraison - Delivery note - Lieferungsdokument		80440409	

#072 ESSAIS MECANIQUES - MECHANICAL TESTS - MECHANISCHE PRÜFUNGEN

DURETE SUR COUPON - HARDNESS ON SAMPLE - HÄRTE AUF COUPON

Brinell HB Brinell HB - Brinell HB								HB10 Ind	HB10 Ind	HB10 Ind	HB10 Aver
N° lot QM	Etat	Loc	Epr.	T°	Uni	Mac	Uni	HB	HB	HB	HB
							Min				
							Max	217	217	217	217
626045.1001	000	T3/4	PSS	20	°C			171	172	172	172

DURETE SUR COUPON - HARDNESS ON SAMPLE - HÄRTE AUF COUPON

NACE MR0175 / ISO 15156-3 NACE MR0175 / ISO 15156-3 - NACE MR0175 / ISO 15156-3						
N° lot QM	Etat	Loc	Epr.	T°	Uni	Mac
626045.5001	000	T3/4	PSS	20	°C	

Test result HRC < 22

DURETE SUR COUPON - HARDNESS ON SAMPLE - HÄRTE AUF COUPON

NACE MR0103 / ISO 17945 NACE MR0103 / ISO 17945 - NACE MR0103 / ISO 17945						
N° lot QM	Etat	Loc	Epr.	T°	Uni	Mac
626045.5001	000	T3/4	PSS	20	°C	

Test result HRC < 22

TRACTION A L' AMBIANTE - ROOM TEMPERATURE TENSILE TEST - ZUGVERSUCH BEI RT

Traction Tensile test - Zugversuch								Rp 0,2%	Rp1%	Rm	A Lo=50mm	A Lo=5,65V So
N° lot QM	Etat	Loc	Epr.	T°	Uni	Mac	Uni	MPa	MPa	MPa	%	%
							Min	220	260	520	40	45
							Max			670		
626045.1001	000	T3/4	PST	20	°C			271	304	589	56	49

Nous certifions que les produits ci-dessus sont conformes aux prescriptions de la commande.
We hereby certify that the above mentioned products are complying with the order requirements.
Wir bestätigen hiermit, dass die obengenannten Erzeugnisse den Bestellungvorschriften entsprechen.

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19/03/2024
Gestionnaire Commande
Mill Inspector
Werksbeauftragte

PIASTRA SUPPORTO SFERA / BALL SUPPORT FLANGE

CERTIFICAT DE RECEPTION 3.1 / EN 10204:2004 Inspection Certificate 3.1 / EN 10204:2004 Prüfbescheinigung 3.1 / EN 10204:2004	Numéro de document Rev 00 Document number Bescheinigungnummer 2024-107037	Page 004 Sheet / Seite 012	ArcelorMittal
Client - Purchaser - Besteller	Centro Servizi Metalli S.P.A.		
Référence client - Purchase order - Kaufauftrag	OF1012400019		
Projet - Project - Projekt			
Industeel Belgium Site : Rue de Châtelet 266 6030 Marchienne-au-Pont		ISO 9001 (Cert C602171, Valid 02/06/2026) + MAQ REV 01 du 25/04/2022 ISO 9001 (Cert C602171, Valid 02/06/2026) + QAM REV 01 of 25/04/2022	
Produit - Product - Erzeugnis		Standardized product	
Commande / Poste - Internal order - Werksbestellung		200009337 / 000060	
Bordereau de livraison - Delivery note - Lieferungsdokument		80440409	

TRACTION A L' AMBIANTE - ROOM TEMPERATURE TENSILE TEST - ZUGVERSUCH BEI RT

Traction Tensile test - Zugversuch								Rp 0,2%	Rp1%	Rm	A Lo=5,65V So								
N° lot QM	Etat	Loc	Epr.	T°	Uni	Mac	Uni	MPa	MPa	MPa	%								
							Min	220	260	520	45								
							Max			670									
626045.2004	000	P1/4	PST	20	°C			270	311	587	46								

RESILIENCE - TOUGHNESS - KERBSCHLAGZÄHIGKEIT

KCV EN 10X10mm KCV EN 10X10mm - KCV EN 10X10mm								Energ Ind	Energ Ind	Energ Ind	Energ Ave								
N° lot QM	Etat	Loc	Epr.	T°	Uni	Mac	Uni	J	J	J	J								
							Min	42	42	42	60								
							Max												
626045.1001	000	T3/4	PST	20	°C			302	292	315	303								

RESILIENCE - TOUGHNESS - KERBSCHLAGZÄHIGKEIT

KCV EN 10X10mm KCV EN 10X10mm - KCV EN 10X10mm								Energ Ind	Energ Ind	Energ Ind	Energ Ave								
N° lot QM	Etat	Loc	Epr.	T°	Uni	Mac	Uni	J	J	J	J								
							Min	42	42	42	60								
							Max												
626045.2004	000	P1/4	PST	20	°C			298	298	277	291								

Loc	1/4	Quart - 1/4 Width - 1/4 Breite
Loc	3/4	Trois-Quart - 3/4 Width - 3/4 Breite
Loc	P	Pied - Bottom - Fuß
Loc	T	Tête - Top - Kopf
Epr. Epaisseur	P	Peau - Rolled Surface - Walzfläche
Epr. Face	S	Supérieure - Upper face - obere
Epr. Sens	S	Standard - Standard - Standard
Epr. Sens	T	Travers - Transverse - Quer
Etat	000	Etat thermique de livraison - Heat treatment state of delivery - Wärmebehandlung Lieferustand
Epr.Ep./Face/Sens	PSS	Peau - Rolled Surface - Walzfläche / Supérieure - Upper face - obere / Standard - Standard - Standard
Epr.Ep./Face/Sens	PST	Peau - Rolled Surface - Walzfläche / Supérieure - Upper face - obere / Travers - Transverse - Quer
T°	RT	Température ambiante - Room Temperature - Raumtemperatur

Nous certifions que les produits ci-dessus sont conformes aux prescriptions de la commande.
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Client - Purchaser - Besteller	Centro Servizi Metalli S.P.A.		
Référence client - Purchase order - Kaufauftrag	OF1012400019		
Projet - Project - Projekt			
Industeel Belgium Site : Rue de Châtelet 266 6030 Marchienne-au-Pont	ISO 9001 (Cert C602171, Valid 02/06/2026) + MAQ REV 01 du 25/04/2022 ISO 9001 (Cert C602171, Valid 02/06/2026) + QAM REV 01 of 25/04/2022		
Produit - Product - Erzeugnis	Standardized product		
Commande / Poste - Internal order - Werksbestellung	200009337 / 000060		
Bordereau de livraison - Delivery note - Lieferungsdokument	80440409		

#082 ESSAIS TECHNOLOGIQUES - TECHNOLOGICAL TESTS - TECHNOLOGISCHE PRÜFUNGEN

FERRITE SUR COUPON - FERRITE ON SAMPLE - FERRIT AUF COUPON

Ferrite De Long Ferrite De Long - Ferrite De Long								% Ferrite
N° lot QM	Etat	Loc	Epr.	T°	Uni	Mac	Uni	%
							Min	
							Max	
626045.4001	000	T3/4	SSS	20	°C			4.20

Test result: Satisfactory as per specification

FERRITE SUR COUPON - FERRITE ON SAMPLE - FERRIT AUF COUPON

ASTM E562 ASTM E562 - ASTM E562						
N° lot QM	Etat	Loc	Epr.	T°	Uni	Mac
626045.4001	000	T3/4	SSS	20	°C	

Standard	ASTM E562/E1245
Number of Fields	5
Etchant	N°96 (ASTM E407)
Magnification	500X
Test result	Satisfactory as per specification

N°	Location - Localisation - Lage	Picture - Image - Bild
01	Top Surface	AN_0200009337_000080_626044003_001_0001
02	1/4 thickness	AN_0200009337_000080_626044003_001_0002
03	1/2 thickness	AN_0200009337_000080_626044003_001_0003
04	3/4 thickness	AN_0200009337_000080_626044003_001_0004
05	Bottom Surface	AN_0200009337_000080_626044003_001_0005

Results - Résultats - Ergebnisse

		Ferrite (%)		
N°	Location Localisation - Stelle	Measurements Mesures - Messungen	Requirement Requis - Bedarf Min	Max
01	Up	0.99	0.00	0.00
02	1/4 thickness up	0.77	0.00	0.00
03	1/2 thickness	0.97	0.00	0.00
04	1/4 thickness bottom	0.71	0.00	0.00
05	Bottom	0.64	0.00	0.00
Average - Moyenne - Mittel		0.82	0.00	0.00
Std Deviation		0.16		
95% CI		0.20		
% RA		23.90		

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Client - Purchaser - Besteller	Centro Servizi Metalli S.P.A.		
Référence client - Purchase order - Kaufauftrag	OF1012400019		
Projet - Project - Projekt			
Industeel Belgium Site : Rue de Châtelet 266 6030 Marchienne-au-Pont	ISO 9001 (Cert C602171, Valid 02/06/2026) + MAQ REV 01 du 25/04/2022 ISO 9001 (Cert C602171, Valid 02/06/2026) + QAM REV 01 of 25/04/2022		
Produit - Product - Erzeugnis	Standardized product		
Commande / Poste - Internal order - Werksbestellung	200009337 / 000060		
Bordereau de livraison - Delivery note - Lieferungsdokument	80440409		

CORROSION - CORROSION - KORROSION — Sensibilisé - Sensitized -Sensibilisiert

EN ISO 3651-2 A
Test description - Prüfbeschreibung

N° lot QM	Etat	Loc	Epr.	T°	Uni	Mac
626045.5001	001	T3/4	SSS	20	°C	

Test result: Satisfactory as per specification

CORROSION - CORROSION - KORROSION — Sensibilisé - Sensitized -Sensibilisiert

ASTM A262 E
ASTM A262 E - ASTM A262 E

N° lot QM	Etat	Loc	Epr.	T°	Uni	Mac
626045.5001	002	T3/4	SSS	20	°C	

Test result: Satisfactory as per specification

Loc	3/4	Trois-Quart - 3/4 Width - 3/4 Breite
Loc	T	Tête - Top - Kopf
Epr. Epaisseur	S	Standard - Standard - Standard
Epr. Face	S	Supérieure - Upper face - obere
Epr. Sens	S	Standard - Standard - Standard
Etat	000	Etat thermique de livraison - Heat treatment state of delivery - Wärmebehandlung Lieferustand
Etat	001	SENSI - Sensitization (From 350 °C at 220 °C/h to 700 °C (-10/+10) (min: 30 min) - Down to 350 °C at 220 °C/h - 1 Cycle) - SENSI
Etat	002	SENSI - Sensitization (From 350 °C at 220 °C/h to 675 °C (-25/+0) (min: 60 min) - Down to 350 °C at 220 °C/h - 1 Cycle) - SENSI
Epr.Ep./Face/Sens	SSS	Standard - Standard - Standard / Supérieure - Upper face - obere / Standard - Standard - Standard
T°	RT	Température ambiante - Room Temperature - Raumtemperatur

Nous certifions que les produits ci-dessus sont conformes aux prescriptions de la commande.
We hereby certify that the above mentioned products are complying with the order requirements.
Wir bestätigen hiermit, dass die obengenannten Erzeugnisse den Bestellungvorschriften entsprechen.

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Client - Purchaser - Besteller	Centro Servizi Metalli S.P.A.		
Référence client - Purchase order - Kaufauftrag	OF1012400019		
Projet - Project - Projekt			
Industeel Belgium Site : Rue de Châtelet 266 6030 Marchienne-au-Pont		ISO 9001 (Cert C602171, Valid 02/06/2026) + MAQ REV 01 du 25/04/2022 ISO 9001 (Cert C602171, Valid 02/06/2026) + QAM REV 01 of 25/04/2022	
Produit - Product - Erzeugnis		Standardized product	
Commande / Poste - Internal order - Werksbestellung		200009337 / 000060	
Bordereau de livraison - Delivery note - Lieferungsdokument		80440409	

#101 - DIMENSIONNEL - DIMENSIONAL CHECK - MASSKONTROLLE

Cahier des charges Longueur - Specification Length -	ISO 18286 CLASSE A
Cahier des charges Largeur - Specification Width -	ISO 18286 CLASSE A
Cahier des charges Epaisseur - Specification Thickness -	ISO 18286

Résultat du contrôle - Examination result - Prüfergebnis

Conforme aux spécifications précitées - Conforming to above specifications - Entspricht der vorgenannten vorschriften

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Référence client - Purchase order - Kaufauftrag	OF1012400019		
Projet - Project - Projekt			
Industeel Belgium Site : Rue de Châtelet 266 6030 Marchienne-au-Pont	ISO 9001 (Cert C602171, Valid 02/06/2026) + MAQ REV 01 du 25/04/2022 ISO 9001 (Cert C602171, Valid 02/06/2026) + QAM REV 01 of 25/04/2022		
Produit - Product - Erzeugnis	Standardized product		
Commande / Poste - Internal order - Werksbestellung	200009337 / 000060		
Bordereau de livraison - Delivery note - Lieferungsdokument	80440409		

#111 - VISUEL-ETAT DE SURFACE - VISUAL EXAMINATION-SURFACE CONDITION - SICHTPRÜFUNG-OBERFLÄCHENZUSTAND	
Norme applicable 1 - Applicable standard 1 -	EN 10163 CL.B S-CL.3
Résultat du contrôle - Examination result - Prüfergebnis	
Conforme aux spécifications précitées - Conforming to above specifications - Entspricht der vorgenannten vorschriften	

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PIASTRA SUPPORTO SFERA / BALL SUPPORT FLANGE

CERTIFICAT DE RECEPTION 3.1 / EN 10204:2004 Inspection Certificate 3.1 / EN 10204:2004 Prüfbescheinigung 3.1 / EN 10204:2004	Numéro de document Rev 00 Document number Bescheinigungnummer 2024-107037	Page 009 / 012 Sheet Seite	ArcelorMittal
Client - Purchaser - Besteller	Centro Servizi Metalli S.P.A.		
Référence client - Purchase order - Kaufauftrag	OF1012400019		
Projet - Project - Projekt			
Industeel Belgium Site : Rue de Châtelet 266 6030 Marchienne-au-Pont		ISO 9001 (Cert C602171, Valid 02/06/2026) + MAQ REV 01 du 25/04/2022 ISO 9001 (Cert C602171, Valid 02/06/2026) + QAM REV 01 of 25/04/2022	
Produit - Product - Erzeugnis		Standardized product	
Commande / Poste - Internal order - Werksbestellung		200009337 / 000060	
Bordereau de livraison - Delivery note - Lieferungsdokument		80440409	

#171 - PLANEITE - FLATNESS - EBENHEIT	
Cahier des Charges Planéité - Flatness standard - Ebenheit norm	ISO 18286 CLASSE N - TYPE A
Résultat du contrôle - Examination result - Prüfergebnis	
Conforme aux spécifications précitées - Conforming to above specifications - Entspricht der vorgenannten vorschriften	

Nous certifions que les produits ci-dessus sont conformes aux prescriptions de la commande.
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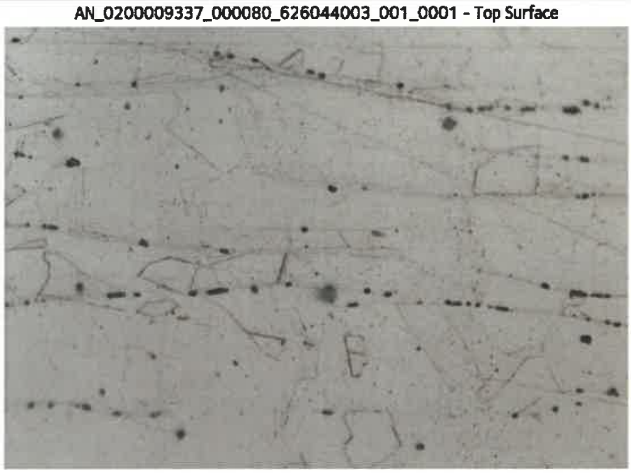
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Mill Inspector
Werksbeauftragte

PIASTRA SUPPORTO SFERA / BALL SUPPORT FLANGE

CERTIFICAT DE RECEPTION 3.1 / EN 10204:2004 Inspection Certificate 3.1 / EN 10204:2004 Prüfbescheinigung 3.1 / EN 10204:2004	Numéro de document Rev 00 Document number Bescheinigungnummer 2024-107037	Page 010 Sheet / Seite 012	ArcelorMittal
Client - Purchaser - Besteller	Centro Servizi Metalli S.P.A.		
Référence client - Purchase order - Kaufauftrag	OF1012400019		
Projet - Project - Projekt			

ANNEXES - APPENDIX - ANLAGEN	626045001	AN_0200009337_000080_626044003_001_0001 AN_0200009337_000080_626044003_001_0002

AN_0200009337_000080_626044003_001_0001 - Top Surface



AN_0200009337_000080_626044003_001_0002 - 1/4 thickness



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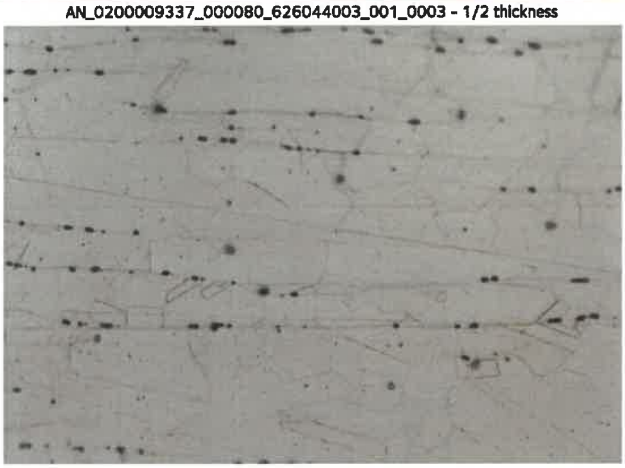
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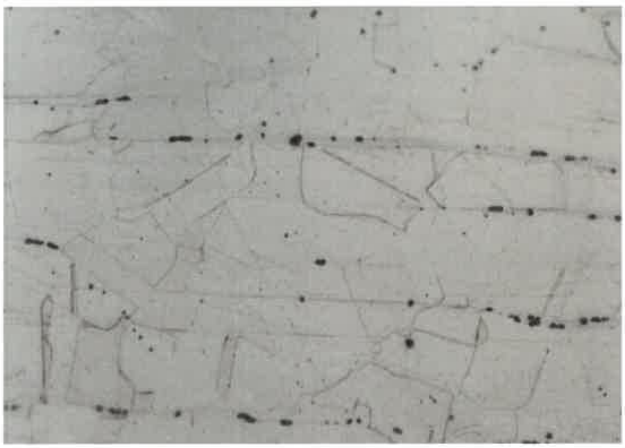
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Référence client - Purchase order - Kaufauftrag	OF1012400019		
Projet - Project - Projekt			

ANNEXES - APPENDIX - ANLAGEN	626045001	AN_0200009337_000080_626044003_001_0003 AN_0200009337_000080_626044003_001_0004

AN_0200009337_000080_626044003_001_0003 - 1/2 thickness



AN_0200009337_000080_626044003_001_0004 - 3/4 thickness



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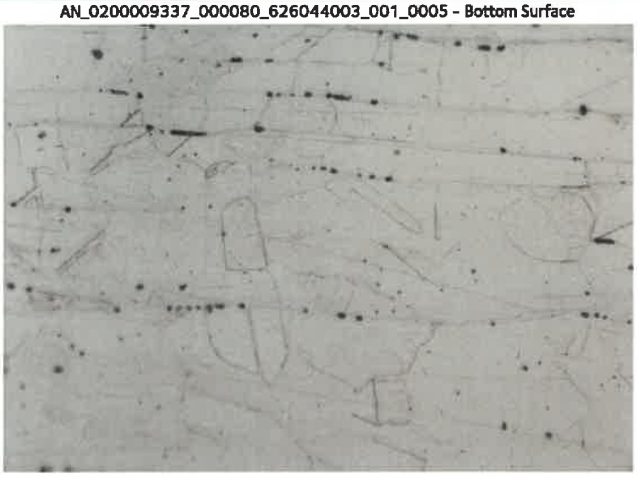
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Projet - Project - Projekt			

ANNEXES - APPENDIX - ANLAGEN	626045001	AN_0200009337_000080_626044003_001_0005

AN_0200009337_000080_626044003_001_0005 - Bottom Surface



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STELO SFERA / BALL STEM

ROLDAN, S.A. - Stainless Steels

FACTORY

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HEAD OFFICE

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28035 MADRID (ESPAÑA)
TEL.: +34 913 98 52 57
FAX: +34 913 98 51 93
E-MAIL: roldan@acerinox.com

INSPECTION CERTIFICATE

EN 10204 3.1

Z01 Declaration: the Product is in compliance with the order

MADE IN SPAIN - EUROPEAN UNION

Sistema de Gestión ISO 9001:2015 ISO 14001:2015 ISO 50001:2018
www.tuv.com ID 0091003143

0432
11
0432-CPR-00190-01

CERTIFICATE N° 2023/014186	DATE 13/11/2023	SHEET 1	DELIVERY NOTE N° 2023/004023
GRADE ROLDAMAX-339	EN10088:3 (1.4404.)		
DIMENSIONS 70,00 mm.	Surface finish according EN10088-3 Table 7:1X		
LENGTH 6.100 mm.	TOLERANCE ISO k12		
PRODUCT [30] Round bar, annealed, smooth turned			
REQUIREMENTS EN10088:3	CUSTOMER ORDER OA23-0003676		
TENSILE TEST EN ISO 6892-1			
ACCORDING TO EN 10272	EDITION AD2000 W0, W2 & W10		
INTERGRANULAR CORROSION EN ISO 3651-2 method A: SATISFACTORY	WITHOUT OBJETIONS		
SURFACE AND DIMENSIONS CONTROL WITHOUT OBJECTIONS	Spektrometrical Identity Test: O.K.		
IMPACT TEST, SAMPLE DIMENSIONS EN ISO 148-1	MATERIAL FREE FROM RADIOACTIVITY		EN 10.088:5

ORDER N°	WORKS N°	MARKS / BOX	HEAT NUMBER	SAMPLE	WEIGHT
SE04839 5		20031 / RK45665	2VCV	2VCV	569
		23264 / RK42228	2VCV		757
		23280 / RK42527	2VCV		573

PRODUCTION PROCESS

EAF + AOD +CC

TRADE MARK

RDN

MARKING

HEAT NUMBER

GRADE (ACX-339)

INSPECTOR STAMP

R3

QUALITY INSPECTOR

JUAN JOSE ALVAREZ RODRIGUEZ

QUALITY CONTROL REPRESENTATIVE

MECHANICAL PROPERTIES

CAST	SAMPLE	SAMPLE DIMENSIONS mm.	Observ. T°.	Rm MPa	Rp 0,2% MPa	Rp 1% MPa	Z %	A % L=5d	A % L=4d	Agt %	IMPACT STRENGHT ISO-V (J) 20°C	IMPACT STRENGHT ISO-V (J) -196°C		HARDNESS HB	FATIGUE TEST	BEND TEST	CROSS SECTIONAL AREA mm²	Kg / m
2VCV	2VCV	20,00	20°C	600	251	329	71	57	59		257			156				
REQUIREMENTS		EN ISO 377		500 700	200	235		40			100			215				

CHEMICAL COMPOSITION %

CAST	C	P	S	Si	Mn	Cr	Ni	Mo	Ti	N	Cu	Co
2VCV	0,0210	0,0270	0,0250	0,3450	1,4780	16,7300	10,3350	2,0870	0,0050	0,0410	0,4040	0,3250
REQUIREMENTS	0,0300	0,0450	0,0300	1,0000	2,0000	16,5000 18,5000	10,0000 13,0000	2,0000 3,0000		0,1000		

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OBSERVATIONS

ASTM A-182. ASTM A-193 Class 1 Grade B8M. ASTM A-276 Condition A. ASTM A-320 Class 1 Grade B8M.
ASTM A-479 Condition A. ASME SA-182. ASME SA-193 Class 1 Grade B8M. ASME SA-320 Class 1 Grade B8M.
ASME SA-479 Condition A. AMS 5648. AMS 5653. AMS QQ-S-763. AISI 316/316L. UNS S31600/S31603.
NACE MR0175 & MR0103.
MADE IN SPAIN.

CER_IN4

OTHER TEST RESULTS		REQUIREMENTS	AD2000 W0,W2,W10 | 2014/68/EU(PED) | UKCA PER 2016/1105
HEAT TREATMENT	1.050 °C AND WATERCOOLED	Crack tested acc. to EN10277 table 3 class 2 (Eddy current)	

COGNE ACCIAI SPECIALI S.p.a.

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CAP. SOC. 405.563.167,00 EUR INT. VERS.
C.F. 02187360967
VAT: IT00571320076 - R.E.A. n. AO-50474

Company with Management Systems certified according to ISO 9001, ITAF 16949, EN 9100, ISO 14001 and ISO 45001.

INSPECTION CERTIFICATE 3.1 (EN 10204:2004)
DOCUMENT NUMBER 2024003430

SEGGIO / SEAT

CUSTOMER'S ORDER:	52		
MANUFACTURER'S WORKS:	AOSTA, VIA PARAVERA 16 - ITALY		
PRODUCER OF THE DOC:	QUALITY DEPARTMENT		
MANUFACTURER'S WORKS ORDER NO:	0001138795 / 000010		
MARK OF THE MANUFACTURER:	**COGNE**		
DISPATCH NOTE:	0081591335 / 000010 WEIGHT: 267 KG / 589 LB		
INTERNAL SPEC:	STOCKBARREW2	TECHNICAL RULE:	AD2000
PRODUCT:	SPE ROUGHPEELED ROUND BARS	TOLERANCE:	+ 2,000 - 0,0000 (+ 0,0788 - 0 in)
SURFACE FINISH:	1X Hot Finished		
PRODUCT DELIVERY CONDITION:	RS SOLUTION ANNEALED		
PRODUCT DIMENSIONS (mm):	210,000 (8,268 in)	LENGTH (mm)	03000 06000 (00118 00236 in)
GRADE:	316L-S31600/31603-1.4404/4401	INTERNAL GRADE:	F316L5 IMCO
IDENTIFICATION HEAT NO:	301859	IDENTIFICATION LOT NO:	992630
MARKING OF THE PRODUCT:	1.4404	TEST PIECE N:	263

REFERENCE NORMS: EN 10088-3 (14), EN 10272 (16), ASTM A276-r17/ASME SA276-21, ASTM A479-r21/ASME SA479-21, ASTM A193-23 B8M CLASSE 1D, ISO15156-3/NACE MR0175 (15), NACE MR0103/ISO 17945 (15).
REFERENCE NORMS FOR CHEMICAL COMPOSITION AND MECHANICAL PROPERTIES: ASTM A182-23/ ASME SA182-21.
REFERENCE NORMS FOR CHEMICAL COMPOSITION ONLY: EN 10222-5 (17), ASTM A484-22, ASTM A403-22b, ASTM A314-23.
AISI 316/316L - UNS S31600/S31603 - 1.4404/1.4401
STEELMAKING EAF + AOD
REFERENCE FOR APPLICABLE ASME STANDARD: SECTION II PART A ED. 2015-2017-2019-2021
HOT FORGED
REDUCTION RATIO 7,0

CHEMICAL LADLE ANALYSIS ACCORDING TO ASTM A751 - EN ISO 14284
Control lot No. - Weight :020000986683 - 82.494 KG - 181.865 LB

ELEMENTS	C	Si	Mn	P	S	N	Cr	Mo	Ni	Cu
MEASUREMENT UNIT	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w
OBTAINED	0,025	0,38	1,34	0,030	0,027	0,091	16,58	2,08	10,30	0,40

ELEMENTS	Co
MEASUREMENT UNIT	% w/w
OBTAINED	0,17

HARDNESS TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000986941 - 5.841 KG - 12.877 LB
SPECIFICATION ENISO6506 HARDNESS TEST HB TESTING METHOD: 10/3000
OBTAINED 154

IMPACT TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000986941 - 5.841 KG - 12.877 LB
SPECIFICATION EN ISO 148-1-KV2 DIRECTION OF THE TEST PIECE: T
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 20
MEASUREMENT UNIT J

OBTAINED										
	442	432	425	439	442	431	441	441	442	431
	433	441								

DATE 25.01.2024 MORABITO ROSA CF(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne

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SEGGIO / SEAT

TENSILE TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000986941 - 5.841 KG - 12.877 LB
SPECIFICATION EN-ISO6892-1 DIRECTION OF THE TEST PIECE: T

	RM	RP02	A5	Z	RP1
MEASUREMENT UNIT	MPA	MPA	% 5.0 D	%	MPA
OBTAINED	573	265	52,8	65,3	299
	573	263	50,9	65,4	299
	572	254	53,0	64,1	290
	575	255	51,7	61,2	301

GRAIN SIZE
Control lot No. - Weight :020000986941 - 5.841 KG - 12.877 LB
SPECIFICATION ASTME112 --
OBTAINED 4

IMPACT TEST
Control lot No. - Weight :020000986941 - 5.841 KG - 12.877 LB
SPECIFICATION EN ISO 148-1 DIRECTION OF THE TEST PIECE: T
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 196-
MEASUREMENT UNIT J
OBTAINED 112 91 112 100 92 96 109 93 96 96
108 92

TENSILE TEST
Control lot No. - Weight :020000986941 - 5.841 KG - 12.877 LB
SPECIFICATION ASTMA370-E8-0.5"SPEC DIRECTION OF THE TEST PIECE: T

	RMB	RP02B	RA	EL4
MEASUREMENT UNIT	KSI	KSI	%	% 4,0 D
OBTAINED	83	36	61,8	54,2
	83	35	62,2	57,0
	83	35	62,4	54,1
	82	35	64,9	61,3

TENSILE TEST
Control lot No. - Weight :020000986941 - 5.841 KG - 12.877 LB
SPECIFICATION ASTMA370-E8-0.5"SPEC DIRECTION OF THE TEST PIECE: L

	Rm_C	Rp02_C	A	Z_C
MEASUREMENT UNIT	MPA	MPA	% 5.0 D	%
OBTAINED	565	248	57,5	69,3

DATE 25.01.2024 MORABITO ROSA CF(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne

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SEGGIO / SEAT

COUNTRY OF MELTING AND ORIGIN: ITALY, THE MATERIAL COMPLIES WITH FAR DFARS 252.225-7009 ALT 1.
DOCUMENT ISSUED IN AGREEMENT WITH TUEV BAYERN(11.1972) WAVING OF COUNTERSIGNING (SEE TUEV BAYERN LETTER DATED 17.01.80).
MARKING: SYMBOL OF THE MANUF. WORK, MATERIAL N. , CAST N., LOT N., RECEIVING AGENT STAMP
CORROSION TEST ACCORDING TO ASTM A262/02A Practice.E EN ISO 3651-2 A: SATISFACTORY.
VISUAL INSPECTION OF SURFACE AND DIMENSIONAL CONTROL ACCORDING TO EN 10221 CLASS C AND EN 10060: SATISFACTORY.
ULTRASONIC TEST ACCORDING TO EN 10308 Class 3, equivalent to ASTM A388 FBH 5 (DIAM. 100-250) and FBH 8 (DIAM. 250-400) or to EN10228-4 Class 3: SATISFACTORY.
ANTIMIX TEST WITH PORTABLE SPECTROMETER: SATISFACTORY.
NO WELDING REPAIR ON THE MATERIAL.
FREE FROM RADIOACTIVE CONTAMINATION.
ULTRASONIC TEST ACCORDING TO EN 10308 Class.3, EN 10228 Class.3, ASTM A388 FBH 5 (diam. 102-250), FBH 8 (diam. 250,01-400).
RADIOACTIVITY CONTROL PERFORMED WITH A GAMMA SPECTROMETER: ASTM E181.
GAMMA ACTIVITY ON THE PRODUCTS BELOW 0.1 BQ/G ACCORDING TO EU RESOLUTION 2013/59/EURATOM , IAEA RS-G-1.7 AND IAEA SSG-17.
MATERIAL IN COMPLIANCE WITH THE NORSOK M-630 MDS S01
REFERENCE NORMS: EN 10088-3 (14), EN 10272 (16), ASTM A276-r17/ASME SA276-21, ASTM A479/A479M-r21, ASTM A193-23 B8MCLASSE 1D, ASME SA276/SA276M-21,ASME SA479/SA479M-21, AMS 5653J, AMS 5648N, ISO15156-3/NACE MR0175 (15), NACE MR0103/ISO 17945 (15), NORSOK M630 MDSS01 REV5.
REFERENCE NORMS FOR CHEMICAL COMPOSITION AND MECHANICAL PROPERTIES: ASTM A182-23/ ASME SA182-21.
REFERENCE NORMS ONLY FOR CHEMICAL COMPOSITION: EN 10222-5 (17),ASTM A403-22b, ASTM A484-22, ASTM A314-23, AMS-QQ-S-763D.
ASME SECT.II PART A EDITION 2015-2017-2019-2021.
QUALITY SYSTEM CERTIFIED BY KIWA CERMET ACCORDING TO UNI EN ISO 9001:2015 -IATF 16949:2016 (THE LAST ONE ONLY FOR WIRE ROD AND HOT ROLLED-PEELED-GROUND STAINLESS STEEL BARS).
INSPECTOR'S STAMP LF
MATERIAL CONFORM TO: 2015/863/UE (RoHS3) - 2011/65/UE (RoHS2) - 2000/53/UE - 2002/95/UE (RoHS) - 2003/11/UE - 2005/618/UE - PED 2014/68/UE e PE(S)R 2016/1105
THE MATERIAL IS FREE OF ANY MERCURY, MERCURY COMPOUNDS AND OR RADIUM CONTAMINATION AT TIME OF SHIPMENT AND WAS PRODUCED WITHOUT USING OZONE DEPLETING SUBSTANCES OF CLASS I AND II.
THE PRODUCT IS CONFORMING TO THE CONTRACT AGREEMENT AND TO THE RULE AD2000-MERKBLATT W0/W2.
WHERE NOT SPECIFIED ALL THE NORMS MENTIONED ARE INTENDED IN THEIR LAST REVISION AT THE DATE OF ISSUE OF THIS DOCUMENT.
ASTM A484 DOES NOT APPLY FOR SIZE AND LENGTH TOLERANCES.

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DATE 25.01.2024

MORABITO ROSA CF(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE

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INSPECTION CERTIFICATE 3.1 (EN 10204:2004)
DOCUMENT NUMBER 2021055970

SFERA / BALL

CUSTOMER'S ORDER:	66
MANUFACTURER'S WORKS:	AOSTA, VIA PARAVERA 16 - ITALY
PRODUCER OF THE DOC:	QUALITY DEPARTMENT
MANUFACTURER'S WORKS ORDER NO:	0001135990 / 000010
MARK OF THE MANUFACTURER:	COGNE
DISPATCH NOTE:	81559993 / 000010 WEIGHT: 74 KG / 163 LB
INTERNAL SPEC:	AMSQQS763
PRODUCT:	SPE ROUGHPEELED ROUND BARS TOLERANCE: + 2,000 - 0,0000 (+ 0,0788 - 0 in)
SURFACE FINISH:	1X Hot Finished
PRODUCT DELIVERY CONDITION:	RS SOLUTION ANNEALED
PRODUCT DIMENSIONS (mm):	250,000 (9,843 in) LENGTH (mm) 04000 06000 (00157 00236 in)
GRADE:	AISI 316/316L - UNS31600/31603 INTERNAL GRADE: F316L IMCO
IDENTIFICATION HEAT NO:	101823 IDENTIFICATION LOT NO: 916620
MARKING OF THE PRODUCT:	316L TEST PIECE N: 662

REFERENCE NORMS: ASTM A276/276M(17), ASTM A479/A479M(18), ASTM A484/A484M(18a), ASTM A193/A193M(17) B8MCL1, ASME SA276(17), ASME SA479(17), ASME SA484(17), ASME SA193(17) B8MCL1, AMS5653J, AMS5648M, AMS-QQS-763D2015, NACE MR0175/ISO15156-3(15), NACE MR0103/ISO 17945, NORSOK M630 MDS S01 Rev5, EN 10272(16).
REFERENCE NORMS FOR CHEMICAL COMPOSITION AND MECHANICAL PROPERTIES: ASTM A182/A182M(18)/ASME SA182(17), ASTM A314/A314M(19)/ASME SA314(17), ASTM A320/A320M(18)/ASME SA320 (15)B8MCL1, EN 10222-5(2017).
AISI 316/316L UNS S31600/S31603, EN 1.4401/1.4404.
SOLUTION TREATED AT 1050°C / 1 min x mm / WATER.
STEELMAKING EAF + AOD
MACROSTRUCTURE CONFORMING TO THE SPEC. ASTM E340.
QTC ON PROLONGATION OF BARS TESTS AT MID RADIUS (CENTER POS. FOR SIZES <2 INCHES).
HOT FORGED
REDUCTION RATIO 6,8

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CHEMICAL LADLE ANALYSIS ACCORDING TO ASTM A751 - EN ISO 14284
Control lot No. - Weight :020000891643 - 80.978 KG - 178.523 LB

ELEMENTS	C	Si	Mn	P	S	N	Cr	Mo	Ni	Cu
MEASUREMENT UNIT	%	%	%	%	%	%	%	%	%	%
OBTAINED	0,018	0,41	1,83	0,027	0,024	0,078	16,80	2,09	10,34	0,33

ELEMENTS	Co
MEASUREMENT UNIT	%
OBTAINED	0,14

HARDNESS TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000891742 - 4.744 KG - 10.459 LB
SPECIFICATION ASTMA370-E10 HARDNESS TEST HB TESTING METHOD: 10/3000
OBTAINED 162

DATE 02.12.2021 BARBARA VIETTI MV(QUALITY CERTIFICATOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne
REVIEW DATE 02.12.2022 N. REVIEW 3

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Company with Management Systems certified according to ISO 9001, ITAF 16949, EN 9100, ISO 14001 and ISO 45001.

SFERA / BALL

IMPACT TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000891742 - 4.744 KG - 10.459 LB
SPECIFICATION EN ISO 148-1-KV2 DIRECTION OF THE TEST PIECE: T
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 196-
MEASUREMENT UNIT J
OBTAINED 115 106 106

TENSILE TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000891742 - 4.744 KG - 10.459 LB
SPECIFICATION EN-ISO6892-1 DIRECTION OF THE TEST PIECE: L

	Rm	Rp02%	A	Z	Rp1%
MEASUREMENT UNIT	MPA	MPA	% 5.0 D	%	MPA
OBTAINED	567	293	50,0	58,7	330

GRAIN SIZE
Control lot No. - Weight :020000891742 - 4.744 KG - 10.459 LB
SPECIFICATION ASTME112 --
OBTAINED 2

HEAT TREATMENT PERFORMED IN CALIBRATED FURNACES ACCORDING TO INTERNAL PROCEDURE PR-GDQ.ITT COMPLYING WITH API6A Annex M.
CORROSION TEST ACCORDING TO ASTM A262 Practice E EN ISO 3651-2 (NO SIGNS OF FISSURES OR CRACKS AT 20X MAGNIFICATION): SATISFACTORY.
SURFACE CONTROL BY VISUAL INSPECTION: CONFORMING.
DIMENSIONAL CONTROL ACCORDING TO ASTM A484: CONFORMING.
ULTRASONIC TEST ACCORDING TO EN 10308 Class.3, equivalent to
ASTM A388 FBH5 (for sizez <=250 mm) and FBH8 (sizes >250 mm): SATISFACTORY.
ANTIMIX TEST: SATISFACTORY.
TENSILE TEST
Control lot No. - Weight :020000891742 - 4.744 KG - 10.459 LB
SPECIFICATION ASTMA370-E8-0.5"SPEC DIRECTION OF THE TEST PIECE: T

	UTS	YS	RA	EL
MEASUREMENT UNIT	KSI	KSI	%	% 4,0 D
OBTAINED	82	42	60,9	56,7

NO WELDING REPAIR ON THE MATERIAL.
MARKING: PRODUCER LOGO, MATERIAL NO, HEAT NO, LOT NR.
THE PRODUCT SATISFIES THE DIRECTIVES: 2015/863/EU (ROHS3) - 2011/65/EU (ROHS2) - 2000/53/EU - 2002/95/EU(RoHS) - 2003/11/EU-2005/618/EU AND PED 2014/68/EU.
THE MATERIAL IS FREE OF ANY MERCURY, MERCURY COMPOUNDS AND OR RADIUM CONTAMINATION AT TIME OF SHIPMENT AND WAS PRODUCED WITHOUT USING OZONE DEPLETING SUBSTANCES OF CLASS I AND II.
THE ABOVE ARE TRUE AND CORRECT RESULTS OF TESTS ON SAMPLES OF THE MATERIAL. RESULTS ARE CONFORM TO THE SPECIFICATION(S) APPLICABLE AND ARE RECORDED.
THE RECORDING OF FALSE, FICTIOUS OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHABLE AS A FELONY UNDER U.S. FEDERAL STATUTES.

DATE 02.12.2021 BARBARA VIETTI MV(QUALITY CERTIFICATOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne
REVIEW DATE 02.12.2022 N. REVIEW 3

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Company with Management Systems certified according to ISO 9001, ITAF 16949, EN 9100, ISO 14001 and ISO 45001.

SFERA / BALL

ALL THE NORMS MENTIONED ARE INTENDED IN THEIR LAST REVISION AT THE DATE OF ISSUE OF THIS DOCUMENT.
COUNTRY OF MELTING AND ORIGIN: ITALY, THE MATERIAL COMPLIES WITH FAR DFARS 252.225-7009 ALT 1.
HEAT TREATMENT PERFORMED IN FURNACE CALIBRATED ACC. TO API 6A, 6D, 6DSS LAST ED
SOLUTION ANNEALED 1050°C/WATER COOLING

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REVIEW DATE 02.12.2022 N. REVIEW 3

ROSETTI MARINO ITEM 280

COD. VLBMNN00013Q0H

TAG:

BLPH-MV-013, BLPH-MV-014,

BLPH-MV-091, BLPH-MV-092

BLPH-MV-096, BLPH-MV-097,

BLPH-MV-204, BLPH-MV-205

BLPH-MV-282, BLPH-MV-283,

BLPH-MV-421, BLPH-MV-422

BLPH-MV-438, BLPH-MV-439

INDRA ITEM 280

COD. 00.MNF.0604/V

indra VALVES - ITALY	***Certificazione dei materiali*** ***EN 10204 3.1 come da allegati*** ***Material certification*** ***EN 10204 3.1 as per attachments***	**MD-02-04-IT-UK/VSP/MNF** **Rev. 16** **Data: 08-Nov-2018** **CM/IT/UK**

Nr. *No.* **24-1838** — **Data** / *Date* : **23-Sep-24**

Cliente / *Customer* **ROSETTI MARINO SPA**

Vs. ordine Nr. / *Your order Nr.* **1724000798 REV.2** — **Data / Date :** **26-Jun-24**

Ns. commessa Nr. / *Our job Nr.* **24 01216** — **Data / Date :** **3-Jul-24**

Ns. D.D.T. Nr. / *Our advise note Nr.* — Data / Date :

Ordine di produzione / Production order number : 24 01216/280 - 437749

Lotto / Material batch number : 437749

Pos. Cliente Customer Item	*Pos. Indra Indra Item*	*Codice / Code*		*Q.tà / Q.ty*	*Nr. di serie Serial Number*	*Descrizione /Description*
		Ns./ Our	*Vs. / Your*			
280	280	00.MNF.0604/V	VLBMNN00013Q0H	14	From 106049 to 106062	INDRA MONOFLANGE DBB-737-HR-E300RF3-D-D-DLF-DL-N-K-G-HFT-Y123-L123-V2-TG-TGW-TV-DP-DP2-PMI2-PD2-GT-FE2-FS-FE

Elenco / List

Componente / *Component*	Colata / Heat	Materiale *Material*	Numero del certificato *Certificate number*
Corpo Valvola / Valve Body	437749	AISI 316/316L NACE	MEST100670/2024/ - UT24004803
Corpo bonnet/ Bonnet body	372648	AISI 316/316L NACE	2023029311
Stelo spillo / Stem needle	290765	AISI 316/316L NACE	MEST056657/2023/1
Otturatore / Tip	30948	STELLITE	OR24 - 30948
Vite bonnet / Bonnet bolting	304113	ASTM A193 B8M Cl.2	1369552

*NOTE / **REMARKS** :* TAG: BLPH-MV-013, BLPH-MV-014, BLPH-MV-091, BLPH-MV-092, BLPH-MV-096, BLPH-MV-097, BLPH-MV-204, BLPH-MV-205, BLPH-MV-282, BLPH-MV-283, BLPH-MV-421, BLPH-MV-422, BLPH-MV-438, BLPH-MV-439

PREPARATO DA: **ELEONORA RANZANI**
PREPARED BY: **DOCUMENTION MANAGER**

APPROVATO DA: **LUCIA NOSOTTI**
APPROVED BY: **QUALITY ASSURANCE MANAGER**

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E-mail: indra@indra.it - http://www.indra.it

x CROSSWIND

CORPO VALVOLA / VALVE BODY

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i. Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37 Telefono 0471.924111 - Fax 0471.924497
https://www.valbruna-stainless-steel.com/

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION - CERTIFICADO DE INSPECCIÓN

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon/De conformidad con

Certificato nr. MEST100670 / 2024 /
Prüfung/Test/Essai/Num. de certificado

Cliente / Besteller/Purchaser/Client/Cliente
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF2402534
Bestell
Your order
Commande
Num. de pedido

Conferma ordine nr: MI24006192
Werks/Our Order/Ref nr.
Num. de confirmación de pedido

Avviso di Spedizione: A-MI24004622
Lieferanzeige/Packing list/B.L.
Aviso de embarque

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand
Delivery state
Etat de livraison
Estado de la entrega

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration
Método de fusión

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance
Calidad

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance / Marca

Produttore :
Hersteller/Item/Usine productrice/Productor

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Liefernwerkes
Trade marks
Sigles de l'usine productrice
Marcas de fábrica

Punzone del Collaudatore: MR
Stempel des Werksachverständigen
Inspector's stamp/Poinçon de l'assayeur
Sello del Comprobador

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage / Sello

SPECIFICHE : Anforderungen / Requirements / Exigences / Especificaciones	Note: Aufzeichnungen / Notes / Notes / Notas
AV 316L VALVES A/1 1.4401/1.4404 A	
IS107 01 316 A	
MDS S01 5 316 A (0)	(0)Norsok-standard M-630 Edition 6, October 2013
MDS S17 1 316 A (1)	(1)Norsok-standard M-630: 2020 (2020-09-30)
AD 2000-M. W 2 2022 1.4401 A (2)	(2)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
AD 2000-M. W 2 2022 1.4404 A (3)	(3)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
API 6A 21 ANNEX M (4)	(4)Errata 1 (04/2019), Errata 2 (06/2020), Errata 3 (09/2020). Addendum 1 (July 2020) and Addendum 2 (June 2021).
API 6D 25 ANNEX H (5)	(5)Revision November 2021
ASME SA182 2023 S31600/03 A (6)	(6)Section II Part A 2023 EDITION For products machined directly from bar refer to ASME SA479.
ASME SA276 2023 S31600/03 A (7)	(7)Section II Part A 2023 EDITION
ASME SA479 2023 S31600/03 A (8)	(8)Section II Part A 2023 EDITION
ASTM A182 2024 S31600/03 A (9)	(9)For products machined directly from bar refer also to ASTM A479.
ASTM A262 PR. E 2015 316/316L (A)	(A)Reapproved 2021
ASTM A276 2024A S31600/03 A	
ASTM A370 2024 .	
ASTM A479 2024 S31600/03 A	
ASTM E381 2022 .	
ASTM E562 2019 . (B)	(B)19E01
EN 10088 PART 3 2014 1.4401 A	
EN 10088 PART 3 2014 1.4404 A	
EN 10222 PART 5 2017 1.4401 A	
EN 10222 PART 5 2017 1.4404 A	
EN 10272 2016. 1.4401 A	
EN 10272 2016. 1.4404 A	
ISO 148-1 2016 .	
ISO 6892-1 2019 .	
NACE MR0103 2015 S31600/03 A (C)	(C)ANSI/NACE MR0103/ISO 17945 November 23, 2015
NACE MR0175 4 S31600/03 A (D)	(D)ANSI/NACE MR0175/ISO 15156-3:2020 Fourth edition, approved 21 Sep 2022.

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		Tolleranza: k12 Toleranz/Allowance/Tolerance/Tolerancia					
Pos. nr. Pos. nr. / Item nr. Nr. de poste Número de artículo	Oggetto Gegenstand / Product description Descrip. du produit Descripción del producto	Dimensioni - mm Abmessungen Dimension Dimension / Dimensiones	Lunghezza - mm Länge Length Longueur / Longitud	Colata Schmelze Heat Coulée / Colada	Pezzi Stückzahl Pieces Pieces / Piezas	Peso - KG Gewicht Weight Poids / Peso	Lotto nr. Losnr Lot nr. Lot nr. / Lote nro.
0020	Tondo	120,000	5711/ 5715	437749	2	1031,0	324910730

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 26/07/2024 VCQ008 - MEST100670	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité/Gerente de calidad R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit/Gerente de producto P.MESSORI	Pagina 1 di 7

CORPO VALVOLA / VALVE BODY

Acciaierie Valbruna S.p.A.
36100 VICENZA (Italia) - Viale della scienza, 25 z.i. Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37 Telefono 0471.924111 - Fax 0471.924497
https://www.valbruna-stainless-steel.com/

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION - CERTIFICADO DE INSPECCIÓN

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon/De conformidad con

Certificato nr. MEST100670 / 2024 /
Prüfung/Test/Essai/Num. de certificado

Cliente / Besteller/Purchaser/Client/Cliente
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF2402534
Bestell / Your order / Commande / Num. de pedido

Conferma ordine nr: MI24006192
Werks/Our Order/Ref nr. / Num. de confirmación de pedido

Avviso di Spedizione: A-MI24004622
Lieferanzeige/Packing list/B.L. / Aviso de embarque

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand / Delivery state / Etat de livraison / Estado de la entrega

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration / Método de fusión

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance / Calidad

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance / Marca

Produttore :
Hersteller/Item/Usine productrice/Producto

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice / Marcas de fábrica

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur / Sello del Comprobador

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung / Marking / Marquage / Sello

TEST ALLO STATO DI FORNITURA
Test on delivery condition Prüefung auf lieferbereitem produkt test a l'etat de fourniture Prueba sobre el material así come entregado

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm / Probeta	°C	Posiz. Saggio Probenlage Location Emplacement Ubicación 1)	Snervamento Streckgrenze/Yield Stress Limite élastique Limite elástico Rp 0,2% N/mm2	Snervamento Streckgrenze/Yield Stress Limite élastique Limite elástico Rp 1% N/mm2	Resistenza Zugfestigkeit/Tensile strength Resistance à traction Resistencia a la tracción Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement / Elongación A5 %		Strizione Einschnürung Reduction of area Striction / Reducción de área Z %		Resilienza Kerbschlagerbeit Impact Value/ Resilience Prueba de impacto			Durezza Haerte Hardness Durete / Dureza HB		
Valori richiesti / Anforderungen/Required values / Valeurs démandées / Valores requeridos		min / max		205	240	510 / 690	45	-	-	-	-			- / 215		
A	10	20	L	273	306	566	56		75					159		
I	10	20	L	269	310	561	54		73					160		

TEST ALLO STATO DI FORNITURA
Test on delivery condition / Prüefung auf lieferbereitem produkt / Test a l'etat de fourniture / Prueba sobre el material así come entregado

TEST		min	max	
A	Dimensioni grano x ASTM E112			4
A	Ferrite delta %			1,1 %

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm / Probeta	°C	Posiz. Saggio Probenlage Location Emplacement Ubicación 1)	Resilienza Kerbschlagerbeit Impact Value Resilience / Prueba de impacto KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti / Anforderungen/Required values / Valeurs démandées / Valores requeridos		min / max		60	60	60	-	-	-	-	-	-
B	10X10	-196	L	260	241	222	1,956	1,922	1,978	70	70	70

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm / Probeta	°C	Posiz. Saggio Probenlage Location Emplacement Ubicación 1)	Snervamento Streckgrenze/Yield Stress Limite élastique Limite elástico Rp 0,2% N/mm2	Snervamento Streckgrenze/Yield Stress Limite élastique Limite elástico	Resistenza Zugfestigkeit/Tensile strength Resistance à traction Resistencia a la tracción Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement / Elongación E 4d %		Strizione Einschnürung Reduction of area Striction / Reducción de área RA %		Resilienza Kerbschlagerbeit Impact Value/ Resilience Prueba de impacto			Durezza Haerte Hardness Durete / Dureza		
Valori richiesti / Anforderungen/Required values / Valeurs démandées / Valores requeridos		min / max		205	-	515	-	40	-	50	-			-		
C	12,5	20	L	278		570		56		74						

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In conformità a / Nach/According to/Selon/De conformidad con: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai/Num. de certificado: MEST100670 / 2024 /

Cliente / Besteller/Purchaser/Client/Cliente:
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF2402534
Besteil / Your order / Commande / Num. de pedido

Conferma ordine nr: MI24006192
Werks/Our Order/Ref nr. / Num. de confirmación de pedido

Avviso di Spedizione: A-MI24004622
Lieferanzeige/Packing list/B.L. / Aviso de embarque

Stato di fornitura: Fucinato Solubilizzato - Pelato
Lieferzustand / Delivery state / Etat de livraison / Estado de la entrega

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration / Método de fusión

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance / Calidad

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance / Marca

Produttore:
Hersteller/Item/Usine productrice/Productor
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Liefernwerkes / Trade marks / Sigles de l'usine productrice / Marcas de fábrica

Punzone del Collaudatore: MR
Stempel des Werksesachverständigen / Inspector's stamp/Poinçon de l'assayeur / Sello del Comprobador

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung / Marking / Marquage / Sello

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm / Probeta	°C	Posiz. Saggio Probenlage Location Emplacement Ubicación 1)	Snervamento Streckgrenze/Yield Stress Limite elastique Limite elástico Rp 0,2% N/mm2	Snervamento Streckgrenze/Yield Stress Limite elastique Limite elástico	Resistenza Zugfestigkeit/Tensile strength Resistance à traction Resistencia a la tracción Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement / Elongación E 4d %		Strizione Einschnürung Reduction of area Striction / Reducción de área RA %		Resilienza Kerbschlagarbeit Impact Value/ Resilience Prueba de impacto			Durezza Heerte Hardness Dureza / Dureza HB		
Valori richiesti Anforderungen/Required values Valeurs démandées / Valores requeridos		min max		205	-	515	-	40	-	50	-			-		
J	4.25	20	T	236		531		53		61				157		

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm / Probeta	°C	Posiz. Saggio Probenlage Location Emplacement Ubicación 1)	Resilienza Kerbschlagarbeit Impact Value Resilience / Prueba de impacto KV2 J			Espansione laterale Lateral Expension Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs démandées / Valores requeridos		min max		60	60	60	-	-	-	-	-	-
D	10X10	-196	T	61	78	70	0,586	0,574	0,603	30	30	30

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm / Probeta	°C	Posiz. Saggio Probenlage Location Emplacement Ubicación 1)	Resilienza Kerbschlagarbeit Impact Value Resilience / Prueba de impacto KV2 J			Espansione laterale Lateral Expension			Shear Shear		
Valori richiesti Anforderungen/Required values Valeurs démandées / Valores requeridos		min max		100	100	100	-	-	-	-	-	-
H	10X10	20	L	343	340	339						
K	10X10	20	L	335	341	337						

Tensile testing according to ISO 6892-1
Impact testing according to ISO 148-1
Mechanical properties according to ASTM A370.
Ferrite content tested according to ASTM E562.

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In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1 — Certificato nr. MEST100670 / 2024 /

Cliente / Besteller/Purchaser/Client/Cliente
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF2402534
Conferma ordine nr: MI24006192
Avviso di Spedizione: A-MI24004622

Stato di fornitura : Fucinato Solubilizzato - Pelato
Tipo di Elaborazione: E+AOD
Qualità: 1.4401/1.4404/316/316L
Marca: MVAPML (MAXIVAL)

Produttore :
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Punzone del Collaudatore: MR
Punzonatura: 1.4401/1.4404/316/316L

Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique/Análisis químico

Colata/Heat/Coulée / Schmelze/Colada		C %	Si %	Mn %	Cr %	Mo %	Ni %	Co %	P %	S %	N %
	min	-	-	-	16,50	2,00	10,00	-	-	-	-
	max	0,030	1,00	2,00	18,00	2,50	13,00	-	0,045	0,030	0,100
437749	PRE 24,7	0,015	0,50	1,70	16,69	2,08	10,30	0,086	0,027	0,026	0,073

Colata/Heat/Coulée / Schmelze/Colada		Ni+(2*Mo)
	min	14,0
	max	20,0
437749		14,5

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

Furnace calibrated according to API 6A REV 21th ED ANNEX M.
Furnace calibrated according to API 6D REV 25th ED ANNEX H.
Macroetch test per ASTM E381: acceptable.
Reduction ratio = 21,5 : 1
Solution annealed 1080°C for 170'(total time)/water cooled.
Treatment made on date 12/02/24 in continuous furnace
FCB calibration expiry date 24/04/24.
SURFACE QUALITY GUARANTEE BY ET INSPECTION (max defect depth 1% DIAMETER)
UT ACC.TO A388/API 6A PSL3-EN 10308cl.3-ASME B16.34/IV :
PASS
"Issued in agreement with TÜV SÜD Industrie Service GMBH
(07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by
Notified Body 0036"

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Certificato nr. MEST100670 / 2024 /
Prüfung/Test/Essai/Num. de certificado

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VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF2402534
Bestell
Your order
Commande
Num. de pedido

Conferma ordine nr: MI24006192
Werks/Our Order/Ref nr.
Num. de confirmación de pedido

Avviso di Spedizione: A-MI24004622
Lieferanzeige/Packing list/B.L.
Aviso de embarque

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand
Delivery state
Etat de livraison
Estado de la entrega

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration
Método de fusión

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance
Calidad

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance / Marca

Produttore :
Hersteller/Item/Usine productrice/Producto

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice
Marcas de fábrica

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur
Sello del Comprobador

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage / Sello

"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

Allegati / Anlagen / Enclosure / Attachments :
UT24004803 GT24001476

Sono state soddisfatte tutte le condizioni richieste	Controllo antimescolanza con tecnica XRF/OES portatile : OK	Controllo visivo e dimensionale: soddisfa le esigenze
Die gestellen Anforderungen sind it. Anlage erfüllt The material has been furnished in accordance with the requirements Le materiel à été trouvé conforme aux edgences El material cumple de acuerdo a los requisitos	Verwechslungprüfung: durch XRF/OES Gerät geführt : OK Antimixing testing performed with XRF/OES portable : OK Contrôle antimélange svt technique XRF/OES portable : OK Prueba de anti mezcla con técnica XRF/OES portátil: OK	Besichtigung und Ausmessung: ohne Beanstandung Visual inspection and dimensional checks:satisfactory Contrôle visuel et dimensions: satisfaisant Inspección visual y dimensional: cumple los requisitos

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD`S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

W9F5CDB4462EB8631EA751EB862FC8841EB

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	Acciaierie Valbruna S.p.A. 36100 VICENZA (Italia) - Viale della scienza, 25 z.i. Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4	**CERTIFICATO** Certificate - Zeugnis - Certificat **N° UT24004803**	Pag 6 di 7
		CONTROLLO CON ULTRASUONI *Ultrasonic testing - Ultraschallprüfung - Controle par ultrasons*	

mod. UT02

MEST100670 / 2024 /

Cliente : INDRA S.R.L. *Customer*				**Lotto nr : 324910730** *Mill order*	
MARCA *Grade*	**DIMENSIONI - mm** *Size*	**COLATA** *Heat*	**BARRE** *Bars*	**PESO** *Weight*	**LUNGHEZZA - mm** *Length*
MVAPML	Tondo 120,000	437749	N. 2	KG : 1031,0	5711 / 5715

T. TERMICO *Heat Treatement*	**ESECUZIONE** *Condition*	**RUGOSITA'** *Roughness*	**TOLLERANZA** *Tolerance*
Solubilizzato	Pelato	µm	k12

Istruzione : PROC CND 040 *Work Instruction*		**Criteri Accettabilità : A388 FBH=5MM** Acceptance Criteria

ELETTRONICA : Olympus Quickscan LT
Equipment

ACCOPPIANTE : ACQUA + 0253 SA
Couplant

VEL.CONTROLLO : 252 mm/sec
Testing Speed

TRASDUTTORI *Probes*	**TIPO ONDA** *Type of wave*	**FREQUENZA (MHZ)** *Frequency*	**DIMENSIONI (MM)** *Dimension*	**ANGOLO** *Angle*	**TARATURA** *Calibration*
64EL. 2.25MHZ	LONG.	2,25	128X25	0°	DAC

CONTROLLO AUTOMATICO [X] *Automatic inspection*	**CONTROLLO MANUALE** *Manual inspection*

NOTE :
Notes

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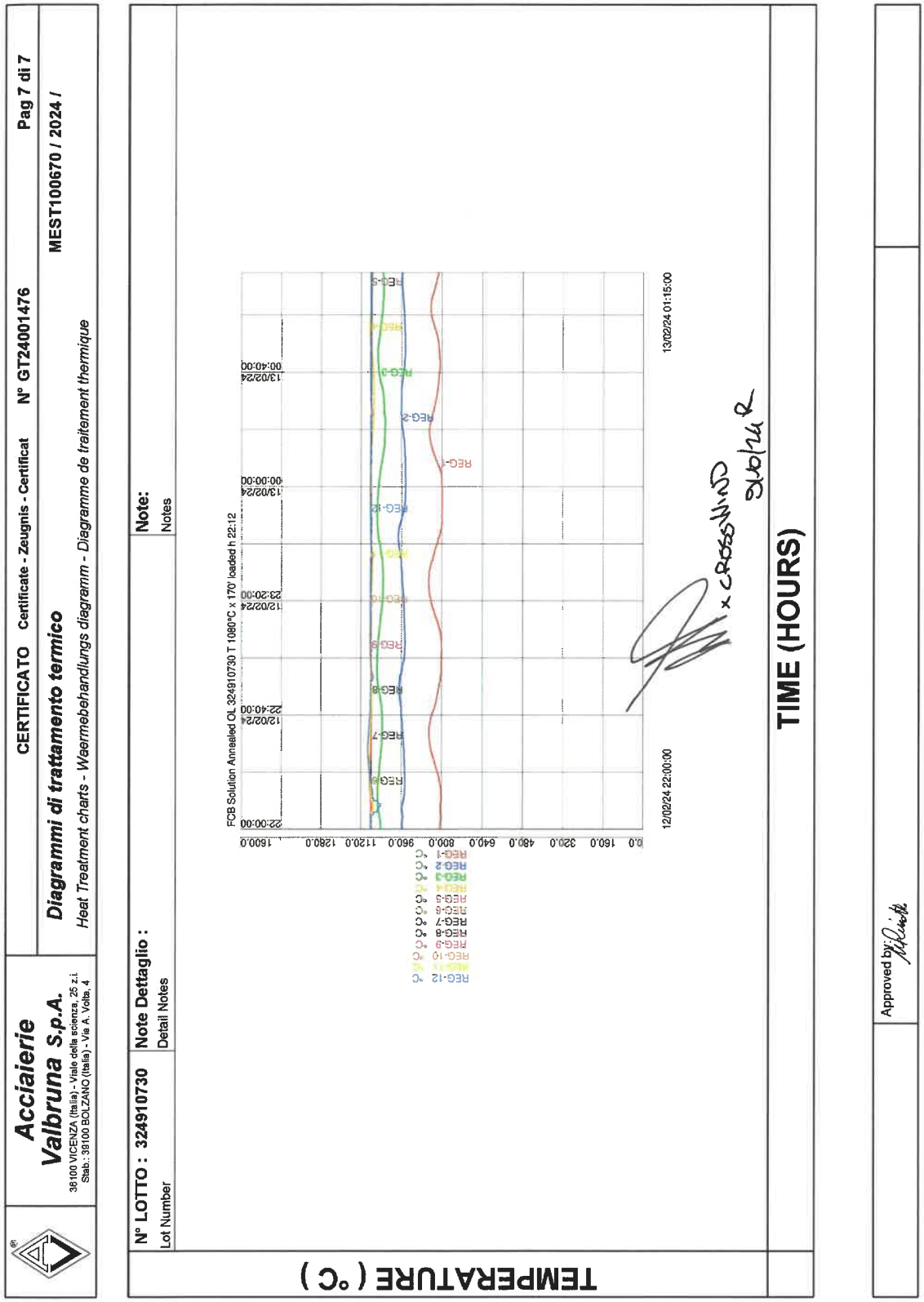
CONFORME [X] *Compliant*	**CONFORME IN DEROGA [ ]** *See Deviation*	**NON CONFORME [ ]** *Not Compliant*

ISPEZIONATO DA Inspected by	**VERIFICATO DA** Verified by	**APPROVATO DA** Approved by **P.Belloli** ISO 9712 LEV. 3 IND2401090	**COLLAUDATORE** Inspector - Abnahmesachsverst - Inspecteur
FIRMA	**FIRMA**	**FIRMA** P.Belloli	

Date - Date **26/07/2024**

Operatori, strumenti e documenti di riferimento, utilizzati per il collaudo del materiale, sono identificati, controllati e/o calibrati in accordo alle norme EN, ISO e ASTM, richiamate nelle pratiche operative e istruzioni di pertinenza / *Operators, Equipment and reference documents, used for material inspection, are identified, checked and/or calibrated in accordance with EN/ISO or ASTM standards, reported in relevant documents.*

CORPO VALVOLA / VALVE BODY



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CAP. SOC. 250.000.000 EUR INT. VERS.
C.F. 02187360967
VAT: IT00571320078 - R.E.A. n. AO-50474

Company with Management Systems certified according to ISO 9001, ITAF 16949, EN 9100, ISO 14001 and ISO 45001.

INSPECTION CERTIFICATE 3.1 (EN 10204:2004)

DOCUMENT NUMBER 2023029311

CORPO BONNET / BONNET BODY

CUSTOMER'S ORDER:	Ordine Mail		
MANUFACTURER'S WORKS:	AOSTA, VIA PARAVERA 16 - ITALY		
PRODUCER OF THE DOC:	OUALITY DEPARTMENT		
MANUFACTURER'S WORKS ORDER NO:	0001138181 / 000010		
MARK OF THE MANUFACTURER:	**COGNE**		
DISPATCH NOTE:	0081586400 / 000010 WEIGHT: 116 KG / 256 LB		
INTERNAL SPEC:	STOCKBARREW2	TECHNICAL RULE:	AD2000
PRODUCT:	PEL PEELED ROUND BARS TOLERANCE: ISOK11		
SURFACE FINISH:	2B Cold Finished		
PRODUCT DELIVERY CONDITION:	RS SOLUTION ANNEALED		
PRODUCT DIMENSIONS (mm):	55,000 (2,165 in)	LENGTH (mm)	06000 06200 (00236 00244 in)
GRADE:	316L-S31600/31603-1.4404/4401	INTERNAL GRADE:	F316L IMCO
IDENTIFICATION HEAT NO:	372648	IDENTIFICATION LOT NO:	024680
MARKING OF THE PRODUCT:	1.4404	TEST PIECE N:	468

REFERENCE NORMS: EN 10088-3 (14), EN 10272 (16), ASTM A276-r17/ASME SA276-21, ASTM A479/A479M-r21, ASTM A193-23 B8MCLASSE 1D, ASME SA276/SA276M-21,ASME SA479/SA479M-21, AMS 5653J, AMS 5648N, ISO15156-3/NACE MR0175 (15), NACE MR0103/ISO 17945 (15), NORSOK M630 MDSS01 REV5.
REFERENCE NORMS FOR CHEMICAL COMPOSITION AND MECHANICAL PROPERTIES: ASTM A182-23/ ASME SA182-21.
REFERENCE NORMS ONLY FOR CHEMICAL COMPOSITION: EN 10222-5 (17),ASTM A403-22b, ASTM A484-22, ASTM A314-23, AMS-QQ-S-763D.
ASME SECT.II PART A EDITION 2015-2017-2019-2021.
AISI 316/316L - UNS S31600/S31603 - 1.4404/1.4401
THE PRODUCT IS CONFORMING TO THE CONTRACT AGREEMENT AND TO THE RULE AD2000-MERKBLATT W0/W2.
STEELMAKING EAF + AOD + CONTINUOUS CASTING
ASTM A484 DOES NOT APPLY FOR SIZE AND LENGTH TOLERANCES.
STEELMAKING EAF + AOD + CONTINUOUS CASTING
REFERENCE FOR APPLICABLE ASME STANDARD: SECTION II PART A ED. 2015-2017-2019-2021
HOT ROLLED
REDUCTION RATIO 9,9

CHEMICAL LADLE ANALYSIS ACCORDING TO ASTM A751 - EN ISO 14284
Control lot No. - Weight :020000963269 - 80.230 KG - 176.874 LB

ELEMENTS	C	Si	Mn	P	S	N	Cr	Mo	Ni	Cu
MEASUREMENT UNIT	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w
OBTAINED	0,021	0,35	1,78	0,032	0,027	0,076	16,75	2,11	10,17	0,49

ELEMENTS	Co
MEASUREMENT UNIT	% w/w
OBTAINED	0,21

HARDNESS TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000964456 - 5.060 KG - 11.155 LB
SPECIFICATION ENISO6506 HARDNESS TEST HB TESTING METHOD: 10/3000
OBTAINED 154

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DATE 12.06.2023

BARBARA VIETTI MV(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne

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CORPO BONNET / BONNET BODY

IMPACT TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000964456 - 5.060 KG - 11.155 LB
SPECIFICATION EN ISO 148-1-KV2 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 20
MEASUREMENT UNIT J

OBTAINED	427	439	435	428	434	425	426	432	443	438
	435	435								

TENSILE TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000964456 - 5.060 KG - 11.155 LB
SPECIFICATION EN-ISO6892-1 DIRECTION OF THE TEST PIECE: L

	RM	RP02	A5	Z	RP1
MEASUREMENT UNIT	MPA	MPA	%	%	NMM
			5.0 D		
OBTAINED	581	277	53,2	74,2	330
	586	288	52,9	73,5	317
	573	289	56,5	73,0	317
	558	273	61,4	77,6	315

GRAIN SIZE
Control lot No. - Weight :020000964456 - 5.060 KG - 11.155 LB
SPECIFICATION ASTME112 --
OBTAINED 6

MATERIAL IN COMPLIANCE WITH THE NORSOK M-630 MDS S01
IMPACT TEST
Control lot No. - Weight :020000964456 - 5.060 KG - 11.155 LB
SPECIFICATION EN ISO 148-1 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 196-
MEASUREMENT UNIT J

OBTAINED	186	193	179	179	176	179	187	186	174	197
	183	180								

TENSILE TEST
Control lot No. - Weight :020000964456 - 5.060 KG - 11.155 LB
SPECIFICATION ASTMA370-E8-0.5"SPEC DIRECTION OF THE TEST PIECE: L

	RMB	RP02B	ZB	AL2B
MEASUREMENT UNIT	KSI	KSI	%	%
				4,0 D
OBTAINED	85	40	71,9	57,9
	82	39	74,3	62,1
	82	40	74,3	63,2
	84	39	80,0	59,1

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DATE 12.06.2023 BARBARA VIETTI MV(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne

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Company with Management Systems certified according to ISO 9001, ITAF 16949, EN 9100, ISO 14001 and ISO 45001.

CORPO BONNET / BONNET BODY

COUNTRY OF MELTING AND ORIGIN: ITALY, THE MATERIAL COMPLIES WITH FAR DFARS 252.225-7009 ALT 1.
The products delivered are conforming to EN10088-5 and bear the CE marking on the basis of the test results here reported and the continuous surveillance, assessment and approval by MPA NRW (certificate no. 0432-CPR-00166-01)
Material produced according to the system #Regulation 305/2011/EU of the European Parliament and of the Council of 9 March 2011#
DOCUMENT ISSUED IN AGREEMENT WITH TUEV BAYERN(11.1972) WAVING OF COUNTERSIGNING (SEE TUEV BAYERN LETTER DATED 17.01.80).
MARKING: SYMBOL OF THE MANUF. WORK, MATERIAL N. , CAST N., LOT N., RECEIVING AGENT STAMP
CORROSION TEST ACCORDING TO ASTM A262 PRACTICE E EN ISO 3651-2 PRACTICE A: SATISFACTORY.
ANTIMIXING TEST BY PORTABLE SPECTROMETRE: CONFORMING
EDDY CURRENT INSPECTION OF SURFACE ACCORDING TO EN 10277 CLASS 4.
DIMENSIONAL CONTROL ACCORDING TO EN 10278: SATISFACTORY.
NO WELDING REPAIR ON THE MATERIAL.
ULTRASONIC TEST ACCORDING TO EN 10308 Class.3: SATISFACTORY
QUALITY SYSTEM CERTIFIED BY KIWA CERMET ACCORDING TO UNI EN ISO 9001:2015 -IATF 16949:2016 (THE LAST ONE ONLY FOR WIRE ROD AND HOT ROLLED-PEELED-GROUND STAINLESS STEEL BARS).
INSPECTOR'S STAMP LF
MATERIAL CONFORM TO: 2015/863/UE (RoHS3) - 2011/65/UE (RoHS2) - 2000/53/UE - 2002/95/UE (RoHS) - 2003/11/UE - 2005/618/UE - PED 2014/68/UE e PE(S)R 2016/1105
THE MATERIAL IS FREE OF ANY MERCURY, MERCURY COMPOUNDS AND OR RADIUM CONTAMINATION AT TIME OF SHIPMENT AND WAS PRODUCED WITHOUT USING OZONE DEPLETING SUBSTANCES OF CLASS I AND II.
RADIOACTIVITY CONTROL PERFORMED WITH A GAMMA SPECTROMETER: ASTM E181.
GAMMA ACTIVITY ON THE PRODUCTS BELOW 0.1 BQ/G ACCORDING TO EU RESOLUTION 2013/59/EURATOM , IAEA RS-G-1.7 AND IAEA SSG-17.

CE 0432 UK CA 0038

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xCROSSWIND
BLOTZER

DATE 12.06.2023

BARBARA VIETTI MV(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE

-Cogne

STELO / STEM

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST056657 / 2023 / 1
Prüfung/Test/Essai

Ordine nr: 2300258
Bestell
Your order
Commande

Conferma ordine nr: MI23003306
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23002720
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Hot rolled - Annealed COLD PROCESSED
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore:
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung
Marking
Marquage

SPECIFICHE :	Note:
Anforderungen / Requirements / Exigences	Aufzeichnungen / Notes / Notes
VAL STOCK W2 A/1 1.4404/316L A,CF	
AD 2000-M. W 2 01/20 1.4401 A,CF (0)	(0)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
AD 2000-M. W 2 01/20 1.4404 A,CF (1)	(1)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
AISI . 316/316L	
AMS-QQ-S-763 D 316/316L A,CF	
ASME SA182 2021 S31600/03 A (2)	(2)Section II Part A 2021 EDITION For products machined directly from bar refer to ASME SA479.
ASME SA276 2021 S31600/03 A,CF (3)	(3)Section II Part A 2021 EDITION
ASME SA479 2021 S31600/03 A (4)	(4)Section II Part A 2021 EDITION
ASTM A182 2022A S31600/03 A (5)	(5)For products machined directly from bar refer also to ASTM A479.
ASTM A262 PR. E 2015 316/316L (6)	(6)Reapproved 2021
ASTM A276 2017 S31600/03 A,CF	
ASTM A370 2022 .	
ASTM A479 2021 S31600/03 A	
ASTM E10 2018 .	
ASTM E8 2022 .	
EN 10088 PART 3 2014 1.4401 A,CF	
EN 10088 PART 3 2014 1.4404 A,CF	
EN 10272 2016. 1.4401 A,CF	
EN 10272 2016. 1.4404 A,CF	
ISO 148-1 2016 .	
ISO 3651-2 98 METHOD A T1	
ISO 6506-1 2014 .	
ISO 6892-1 2019 .	
NACE MR0103 2015 S31600/03 A (7)	(7)ANSI/NACE MR0103/ISO 17845 November 23, 2015
NACE MR0175 2015 S31600/03 A (8)	(8)ANSI/NACE MR0175/ISO 15156-3, third edition November 23,2015
QQ-S-763 F 316/316L A,CF	
ACH CO . .	
KV L -196C . ISO 148-1	
MDS S01 5 316 A (9)	(9)Norsok-standard M-630 Edition 6, October 2013
ASTM A479 2021 S31600 A	

		Tolleranza: h9 - DIN671/EN10278 Toleranz/Allowance/Tolerance					
Pos. nr. Pos. nr. Item nr. Nr. de poste	Oggetto Gegenstand Product description Descrip. du produit	Dimensioni - mm Abmessungen Dimension Dimension	Lunghezza - mm Länge Length Longueur	Colata Schmelze Heat Coulée	Pezzi Stückzahl Pieces Pièces	Peso - KG Gewicht Weight Poids	Lotto nr. Losnr Lot nr Lot nr
0060	Round	25,000	3000/ 3040	290765		164,0	209804470

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9/10/24

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 29/05/2023
VCQ052 - MEST071270

Direzione Qualità
Qualitätsmanagement/Quality Management/Gestion Qualité
R.BERTELLI

Direzione Prodotto
Produktmanagement/Product Management/Direction Produit
P.MESSORI

STELO / STEM

Acciaierie Valbruna S.p.A.

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Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST056657 / 2023 / 1
Prüfung/Test/Essai

Ordine nr: 2300258
Bestell
Your order
Commande

Conferma ordine nr: MI23003306
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23002720
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Hot rolled - Annealed COLD PROCESSED
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung
Marking
Marquage

TEST ALLO STATO DI FORNITURA
Test on delivery condition Prüefung auf lieferbereitem produkt test a l'etat de fourniture Prueba sobre el material así come entregado

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam epais mm	°C	Posiz. Saggio Probentage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement A5 %		Strizione Einschnürung Reduction of area Striction Z %		Resilienza Kerbschlagerbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs demandées		min		200	235	500	20	-	-	-	-			-		
		max				900									315	
A	10	20	L	512	567	679	40		65					230		
H	10	20	L	504	571	682	38		62					232		

TEST ALLO STATO DI FORNITURA
Test on delivery condition / Prüefung auf lieferbereitem produkt / Test a l'etat de fourniture / Prueba sobre el material así come entregado

TEST		min	max	
A	Grain size for ASTM E112			4

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam epais mm	°C	Posiz. Saggio Probentage Location Emplacement 1)	Resilienza Kerbschlagerbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs demandées		min		-	-	-	-	-	-	-	-	-
		max										
F	10X10	-196	L	185	180	178	1,502	1,456	1,474	60	60	60

Test on delivery condition per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam epais mm	°C	Posiz. Saggio Probentage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagerbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs demandées		min		210	-	517	-	35	-	50	-			-		
		max													235	
D	12,5	20	L	527		685		40		69				226		

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 29/05/2023	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité	Direzione Prodotto Produktmanagement/Product Management/Direction Produit	Pagina
VCQ052 - MEST071270	R.BERTELLI	P.MESSORI	2 di 4

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Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST056657 / 2023 / 1

Ordine nr: 2300258
Bestell / Your order / Commande

Conferma ordine nr: MI23003306
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23002720
Lieferanzeige/Packing list/B.L.

Stato di fornitura: Hot rolled - Annealed COLD PROCESSED
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore: Hersteller/Item/Usine productrice
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice
AV

Punzone del Collaudatore: Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur
MR

Punzonatura: 1.4401/1.4404
Kennzeichnung / Marking / Marquage

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Prelevatge Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale - Lateral Expansion -			Shear - Shear -		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		100	100	100	-	-	-	-	-	-
E	10X10	20	L	231	228	235						
G	10X10	20	L	227	220	221						

Tensile testing according to ISO 6892-1
Impact testing according to ISO 148-1
Mechanical properties according to ASTM A370.
Brinnell hardness according to ASTM E10
Tensile testing according to ASTM E8
Brinnell hardness according to ISO 6506-1

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9/10/2023

Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata / Heat Schmelze/Coulée		C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	Co %	P %	S %	N %				
	min -	-	-	-	16,50	2,00	-	10,00	-	-	-	-	-	-	-	-
	max 0,030	1,00	2,00	18,00	2,50	1,00	13,00	-	0,045	0,030	0,100	-	-	-	-	
290765		0,017	0,51	1,58	16,95	2,04	0,55	10,00	0,133	0,028	0,027	0,067				

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 29/05/2023
VCQ052 - MEST071270

Direzione Qualità
Qualitätsmanagement/Quality Management/Gestion Qualité
R.BERTELLI

Direzione Prodotto
Produktmanagement/Product Management/Direction Produit
P.MESSORI

STELO / STEM

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST056657 / 2023 / 1
Prüfung/Test/Essai

Ordine nr: 2300258
Bestell
Your order
Commande

Conferma ordine nr: MI23003306
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23002720
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Hot rolled - Annealed COLD PROCESSED
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung
Marking
Marquage

Reduction ratio = 61,1 : 1
Solution annealed 1040°C for 135'(total time)/water cooled.
SURFACE QUALITY COMPLIANT TO EN 10088-3 TAB.1 COND. 2H
"Issued in agreement with TÜV SÜD Industrie Service GMBH
(07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by
Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

Sono state soddisfatte tutte le condizioni richieste Die gestellen Anforderungen sind it. Anlage erfüllt The material has been furnished in accordance with the requirements Le materiel à été trouvé conforme aux exigences	Controllo antimescolanza con tecnica XRF/OES portatile : OK Verwechslungprüfung: durch XRF/QES Gerät geführt : OK Antimixing testing performed with XRF/OES portable : OK Contrôle antimélange svt technique XRF/QES portable : OK	Controllo visivo e dimensionale: soddisfa le esigenze Besichtigufg und Ausmessung: ohne Beanstandung Visual inspection and dimensional checks:satisfactory Contrôle visuel et dimensions: satisfaisant

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD`S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 29/05/2023 VCQ052 - MEST071270	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 4 di 4

OTTURATORE / TIP

DC0202 – Certificato di prodotto	Rev. 2

CERTIFICATO : OR24 – 30948
CERTIFICATE
EN 10204 3.1

Cliente : INDRA S.R.L. Customer	**Consegna** : DDT 240552 of 03.09.2024 Delivery
Vs Ordine : AF24 02661 of 31.07.2024 Your order pos. 10 ÷ 60	**Ns Ordine** : 240331 of 01.08.2024 Our order
Descrizione materiale : TRIM STELLORIC 386 Material description UNS R30006 CoCrW AMS 5387	

Grado : 386 Grade	**Disegno** : 97.04.0002S-I rev 11 Drawing	**Colata** : 30948 Heat (BTL ϕ 15 mm)	**Quantità** : Nr. 100 pcs. Quantity

ANALISI DI COLATA / HEAT ANALYSIS

C	Si	Mn	S	P	Cr	Ni	Mo	W	Fe	Co
0.90÷1.40	Max. 1.50	Max 1.00	Max 0.04	Max 0.04	27.00÷31.00	Max 3.00	Max 1.50	3.50÷5.50	Max 3.00	Balance
Ottenuto / Obtained										
1.15	.641	.031	.008	.003	27.950	.007	.0208	5.060	.354	BAL.

PROVE MECCANICHE / MECHANICAL TESTS

Prove longitudinali eseguite +20°C alle condizioni di fornitura
Longitudinal testing at +20°C in delivery condition

Snervamento Rp 0,2% : N.A. Yield strength	**Rottura Rm** : N.A. Tensile strength
Allungamento A4 % : N.A. Elongation	**Strizione Z%** : N.A. Striction
Resilienza KV : N.A. Impact value	**Durezze** (>37 HRC) : 38/40 HRC Hardness
Controllo spettrografico : N.D. Spectrographic examination	**Ultrasuoni** : N.D. Ultrasonic test
Controllo visivo e dimensionale : conforme Visual and dimensional examination	**Ferrite** : N.D. Ferrite
Responsabile Qualita' : *Ing. Mauro Molinelli* Quality control	**Data** : 03.09.2024 Date

ORIC ITALIANA S.r.l. *Via dell' Industria, 4 Zona Ind.le 29015 Castel San Giovanni - PC - Italy*
tel. +39 0523 882 498 fax +39 0523 882 111
www.oric.it e-mail info@oric.it

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VITE BONNET / BONNET BOLTING

COMVITEA s.r.l.
Via Isonzo 32/C - 20078 Turate (CO) Tel 02.9697121 - Fax 02 96754113

CERTIFICATO DI COLLAUDO EN 10204
INSPECTION CERTIFICATE EN 10204

3.1 Azienda CERTIFICATA - UNI EN ISO 9001:2015
AD 2000 MERKBLATT W0 - PED Directive 2014/68/EU

Certificato/Certificate N°	**1369552**	Pag. **1 / 1**	Cliente/Customer	**INDRA SRL**	
Data cert /Date cert.	**18/07/2024**		Vs. ordine/Order.	**AF24 01968**	
d.d.t./Delivery note n.	**4664**	**18/07/2024**	Ns.rif./Int. ref.	**3902**	**27/06/2024**

Descrizione Materiale / Material Description

Item	Qty	Articolo / Article	Materiale / Material	Pos-Rifer / Your pos-ref.
1	40	Tirante tutto filetto ASTM/ASME A/SA 193 B8M cl.2 M10x40	ASTM/ASME A/SA 193 B8M cl.2	101.99.0375SS
2	60	Tirante tutto filetto ASTM/ASME A/SA 193 B8M cl.2 M20x70	ASTM/ASME A/SA 193 B8M cl.2	101.99.1098SS
3	215	Tirante tutto filetto ASTM/ASME A/SA 193 B8M cl.2 5/8"-11UNCx75	ASTM/ASME A/SA 193 B8M cl.2	101.99.1160SS
→ 4	260	Vite ASTM/ASME A/SA 193 B8M cl.2 UNI 5931 / DIN 912 M8x20	ASTM/ASME A/SA 193 B8M cl.2	96.50.0014SS
5	45	Vite ASTM/ASME A/SA 193 B8M cl.2 UNI 5931 / DIN 912 M10x80	ASTM/ASME A/SA 193 B8M cl.2	101.99.1161SS
6	45	Vite ASTM/ASME A/SA 193 B8M cl.2 UNI 5931 / DIN 912 TF M10x60	ASTM/ASME A/SA 193 B8M cl.2	

COLATA-ANALISI CHIMICA come da certificato di acciaieria / HEAT-CHEMICAL ANALYSIS according to mill certificate

Item	Colata/Heat	C	Cr	Mn	Mo	Ni	P	S	Si	NORME/STANDARDS
1	172522	0,0240	16,6200	1,8100	2,0100	10,1700	0,0310	0,0280	0,3800	ASME II Part A ed. 2021
2	291913	0,0160	16,6400	1,4200	2,0300	10,0500	0,0320	0,0010	0,3800	ASME II Part A ed. 2021
3	Z5XR	0,0160	16,6850	1,3520	2,0270	10,2850	0,0300	0,0260	0,3750	ASME II Part A ed. 2021
→ 4	304113	0,0210	16,6500	1,5800	2,0200	10,1500	0,0320	0,0290	0,3900	ASME II Part A ed. 2021
5	847049	0,0630	16,5820	1,3120	2,0320	10,0850	0,0297	0,0227	0,4130	ASME II Part A ed. 2021
6	847049	0,0630	16,5820	1,3120	2,0320	10,0850	0,0297	0,0227	0,4130	ASME II Part A ed. 2021

PROPRIETA' MECCANICHE / MECHANICAL PROPERTIES

	OTTENUTE / OBTAINED								RICHIESTE / REQUIRED								
	Rm	Re	A	Z	Dur/hard.		Resilienza/Impact test		Rm (N/mm²)		Re (N/mm²)		A %	Z %	Dur/hard.		Resilienza/Impact test	
Item	N/mm²	N/mm²	%	%	HB		KV - Joule	°C	min	max	min	max	min	min	min HB	max	KV - Joule	°C
1	960	900	22,60	67,40	281	288		20								321		20
2	854	748	24,00	61,00	273	277		20								321		20
3	898	724	26,00	71,00	255	260		20								321		20
→ 4	868	730	24,00	62,00	280	285		20								321		20
5	851	699	27,00	64,00	240	243		20								321		20
6	851	699	27,00	64,00	240	243		20								321		20

Item	Trattamento Termico Tempering - °C	Dur./Hard. HB dadi/nuts h	°C	>=	HB	Prova allarg. per dadi Cone stripping on nuts	ESAME VISIVO-VIS.EXAM
1	Carbide solution treated and strain hardened 1060°						Positivo / Positive
2	Carbide solution treated and strain hardened 1060°						Positivo / Positive
3	Carbide solution treated and strain hardened 1060°						Positivo / Positive
→ 4	Carbide solution treated and strain hardened 1060°						Positivo / Positive
5	Carbide solution treated and strain hardened 1060°						Positivo / Positive
6	Carbide solution treated and strain hardened 1060°						Positivo / Positive

Note:

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Certifichiamo che i materiali sono stati fabbricati, campionati, testati e ispezionati in conformità alle specifiche e conformi alle prescrizioni degli ordini.
We certify that the fasteners were manufactured, sampled, tested and inspected in accordance with the specification and are consistent with order prescriptions.

Oscar Uboldi - Quality Assurance

ROSETTI MARINO ITEM 290

COD. VLBNNN00023Q0H

TAG:

BLPH-MV-025, BLPH-MV-038,

BLPH-MV-213, BLPH-MV-407

INDRA ITEM 290

COD. 00.MNF.0608/V

indra VALVES - ITALY

Certificazione dei materiali
EN 10204 3.1 come da allegati

Material certification
EN 10204 3.1 as per attachments

MD-02-04-IT-UK/VSP/MNF
Rev. 16
Data: 08-Nov-2018
CM/IT/UK

Nr. / *No.* 24-1839 — **Data** / *Date :* 23-Sep-24

Cliente / *Customer* ROSETTI MARINO SPA

Vs. ordine Nr. / *Your order Nr.* 1724000798 REV.2 — **Data / Date :** 26-Jun-24

Ns. commessa Nr. / *Our job Nr.* 24 01216 — **Data / Date :** 3-Jul-24

Ns. D.D.T. Nr. / *Our advise note Nr.* — Data / Date :

Ordine di produzione / Production order number : 24 01216/290 - 437405

Lotto / Material batch number : 437405

Pos. Cliente Customer Item	*Pos. Indra Indra Item*	*Codice / Code*		*Q.tà / Q.ty*	*Nr. di serie Serial Number*	*Descrizione /Description*
		Ns./ Our	*Vs. / Your*			
290	290	00.MNF.0608/V	VLBNNN00023Q0H	4	From 106063 to 106066	INDRA MONOFLANGE SBB-727-HR-E150RF3-D-D-DLF-DL-N-K-G-HFT-Y13-L13-V2-TG-TGW-TV-DP-DP2-PMI2-PD2-GT-FE2-FS-FE-SPC1

Elenco / List

Componente / *Component*	Colata / Heat	Materiale *Material*	Numero del certificato *Certificate number*
Corpo Valvola / Valve Body	437405	AISI 316/316L NACE	MEST053965/2024/ - UT24002497
Corpo bonnet/ Bonnet body	372648	AISI 316/316L NACE	2023029311
Stelo spillo / Stem needle	290765	AISI 316/316L NACE	MEST056657/2023/1
Otturatore / Tip	30948	STELLITE	OR24 - 30948
Vite bonnet / Bonnet bolting	304113	ASTM A193 B8M Cl.2	1369552

NOTE / REMARKS : TAG: BLPH-MV-025, BLPH-MV-038, BLPH-MV-213, BLPH-MV-407

PREPARATO DA: **ELEONORA RANZANI**
PREPARED BY: **DOCUMENTION MANAGER**

APPROVATO DA: **LUCIA NOSOTTI**
APPROVED BY: **QUALITY ASSURANCE MANAGER**

20013 Magenta (MI) Italy - Via Novara, 10/B-C
Tel. +39 02 97298663 r.a. - Fax +39 02 97291855
E-mail: indra@indra.it - http://www.indra.it

CORPO VALVOLA / VALVE BODY

Acciaierie Valbruna S.p.A.

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CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST053965 / 2024 /

Cliente / Besteller/Purchaser/Client:
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr. / Bestell / Your order / Commande: N. AF2401382

Conferma ordine nr. / Werks/Our Order/Ref nr.: MI24003281

Avviso di Spedizione / Lieferanzeige/Packing list/B.L.: A-MI24002843

Stato di fornitura / Lieferzustand / Delivery state / Etat de livraison: Fucinato Solubilizzato - Pelato

Tipo di Elaborazione / Erschmelzungsart / Melting process / Mode d'elaboration: E+AOD

Qualità / Werkstoff/Grade/Nuance: 1.4401/1.4404/316/316L

Marca / Markenbezeichnung / Brand / Nuance: MVAPML (MAXIVAL)

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice: AV

Punzone del Collaudatore / Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur: MR

Punzonatura / Kennzeichnung / Marking / Marquage: 1.4401/1.4404/316/316L

SPECIFICHE : / Anforderungen / Requirements / Exigences	Note: / Aufzeichnungen / Notes / Notes
AV 316L VALVES A/1 1.4401/1.4404 A	
IS107 01 316 A	
MDS S01 5 316 A (0)	(0)Norsok-standard M-630 Edition 6, October 2013
MDS S17 1 316 A (1)	(1)Norsok-standard M-630: 2020 (2020-09-30)
AD 2000-M. W 2 2022 1.4401 A (2)	(2)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
AD 2000-M. W 2 2022 1.4404 A (3)	(3)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
API 6A 21 ANNEX M (4)	(4)Errata 1 (04/2019), Errata 2 (06/2020), Errata 3 (09/2020). Addendum 1 (July 2020) and Addendum 2 (June 2021).
API 6D 25 ANNEX H (5)	(5)Revision November 2021
ASME SA182 2023 S31600/03 A (6)	(6)Section II Part A 2023 EDITION For products machined directly from bar refer to ASME SA479.
ASME SA276 2023 S31600/03 A (7)	(7)Section II Part A 2023 EDITION
ASME SA479 2023 S31600/03 A (8)	(8)Section II Part A 2023 EDITION
ASTM A182 2024 S31600/03 A (9)	(9)For products machined directly from bar refer also to ASTM A479.
ASTM A262 PR. E 2015 316/316L (A)	(A)Reapproved 2021
ASTM A276 2024A S31600/03 A	
ASTM A370 2022 .	
ASTM A479 2023A S31600/03 A	
ASTM E381 2022 .	
ASTM E562 2019 . (B)	(B)19E01
EN 10088 PART 3 2014 1.4401 A	
EN 10088 PART 3 2014 1.4404 A	
EN 10222 PART 5 2017 1.4401 A	
EN 10222 PART 5 2017 1.4404 A	
EN 10272 2016. 1.4401 A	
EN 10272 2016. 1.4404 A	
ISO 148-1 2016 .	
ISO 6892-1 2019 .	
NACE MR0103 2015 S31600/03 A (C)	(C)ANSI/NACE MR0103/ISO 17945 November 23, 2015
NACE MR0175 4 S31600/03 A (D)	(D)ANSI/NACE MR0175/ISO 15156-3:2020 Fourth edition, approved 21 Sep 2022.

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		Tolleranza: k12 Toleranz/Allowance/Tolerance					
Pos. nr. Pos. nr. Item nr. Nr. de poste	Oggetto Gegenstand Product description Descrip. du produit	Dimensioni - mm Abmessungen Dimension Dimension	Lunghezza - mm Länge Length Longueur	Colata Schmelze Heat Coulée	Pezzi Stückzahl Pieces Pieces	Peso - KG Gewicht Weight Poids	Lotto nr. Losnr. Lot nr. Lot nr.
0050	Tondo	110,000	5630/ 5864	437405	2	870,0	320709401

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 07/05/2024 VCQ012 - MEST053965	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 1 di 7

CORPO VALVOLA / VALVE BODY

Acciaierie Valbruna S.p.A.

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CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST053965 / 2024 /

Cliente / Besteller/Purchaser/Client:
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr. / Bestell / Your order / Commande: N. AF2401382

Conferma ordine nr. / Werks/Our Order/Ref nr.: MI24003281

Avviso di Spedizione / Lieferanzeige/Packing list/B.L.: A-MI24002843

Stato di fornitura / Lieferzustand / Delivery state / Etat de livraison: Fucinato Solubilizzato - Pelato

Tipo di Elaborazione / Erschmelzungsart / Melting process / Mode d'elaboration: E+AOD

Qualità / Werkstoff/Grade/Nuance: 1.4401/1.4404/316/316L

Marca / Markenbezeichnung / Brand / Nuance: MVAPML (MAXIVAL)

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice: AV

Punzone del Collaudatore / Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur: MR

Punzonatura / Kennzeichnung / Marking / Marquage: 1.4401/1.4404/316/316L

TEST ALLO STATO DI FORNITURA
Test on delivery condition Prüefung auf lieferbereitem produkt test a l'etat de fourniture Prueba sobre el material asi come entregado

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probelage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement A5 %		Strizione Einschnürung Reduction of area Striction Z %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti / Anforderungen/Required values / Valeurs demandées		min		205	240	510	45	-	-	-	-			-		
		max				690								215		
A	10	20	L	283	318	578	54		69					149		
I	10	20	L	285	319	581	53		68					150		

TEST ALLO STATO DI FORNITURA
Test on delivery condition / Prüefung auf lieferbereitem produkt / Test a l'etat de fourniture / Prueba sobre el material asi come entregado

TEST		min	max	
I	Dimensioni grano x ASTM E112			4
I	Ferrite delta %			0,9 %

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probelage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti / Anforderungen/Required values / Valeurs demandées		min		60	60	60	-	-	-	-	-	-
		max										
B	10X10	-196	L	281	276	274	2,469	2,452	2,422	75	75	75

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probelage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti / Anforderungen/Required values / Valeurs demandées		min		205	-	515	-	40	-	50	-			-		
		max												215		
C	12,5	20	L	275		576		56		72				152		

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 07/05/2024	Direzione Qualità / Qualitätsmanagement/Quality Management/Gestion Qualité	Direzione Prodotto / Produktmanagement/Product Management/Direction Produit	Pagina
VCQ012 - MEST053965	R.BERTELLI	P.MESSORI	2 di 7

CORPO VALVOLA / VALVE BODY

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST053965 / 2024 /
Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: N. AF2401382
Bestell Your order Commande

Conferma ordine nr: MI24003281
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24002843
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand Delivery state Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart Melting process Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes Trade marks Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung Marking Marquage

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam Thickness Larg. diam epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		205	-	515	-	40	-	50	-			-	215	
V	4,25	20	T	256		572		54		67				156		

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam Thickness Larg. diam epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		60	60	60	-	-	-	-	-	-
D	10X10	-196	T	62	62	61	0,628	0,636	0,611	30	30	30

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam Thickness Larg. diam epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2			Espansione laterale Lateral Expansion -			Shear Shear -		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		100	100	100	-	-	-	-	-	-
H	10X10	20	L	300	296	295						
L	10X10	20	L	312	295	310						

Tensile testing according to ISO 6892-1
Impact testing according to ISO 148-1
Mechanical properties according to ASTM A370.
Ferrite content tested according to ASTM E562.

9/10/24

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Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat Schmelze/Coulée		C %	Si %	Mn %	Cr %	Mo %	Ni %	Co %	P %	S %	N %				
	min 23,0	-	-	-	16,50	2,00	10,00	-	-	-	-	-	-	-	-
	max 28,0	0,030	1,00	2,00	18,00	2,50	13,00	-	0,045	0,030	0,100	-	-	-	-
	PRE	C %	Si %	Mn %	Cr %	Mo %	Ni %	Co %	P %	S %	N %				
437405	25,0	0,019	0,44	1,73	16,99	2,05	10,08	0,108	0,028	0,026	0,077				

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 07/05/2024
VCQ012 - MEST053965

Direzione Qualità
Qualitätsmanagement/Quality Management/Gestion Qualité
R.BERTELLI

Direzione Prodotto
Produktmanagement/Product Management/Direction Produit
P.MESSORI

CORPO VALVOLA / VALVE BODY

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Stato di fornitura: Fucinato Solubilizzato - Pelato
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werksesachverständigen / Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung / Marking / Marquage

Colata /Heat / Schmelze/Coulée								
	min 14,0	-	-	-	-	-	-	-
	max 20,0	-	-	-	-	-	-	-
	Ni+(2*Mo)							
437405	14,2							

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

Furnace calibrated according to API 6A REV 21th ED ANNEX M.
Furnace calibrated according to API 6D REV 25th ED ANNEX H.
Macroetch test per ASTM E381: acceptable.
Reduction ratio = 28,8 : 1
SURFACE QUALITY GUARANTEE BY ET INSPECTION (max defect depth 1% DIAMETER)
UT ACC. TO:A388/API 6A PSL3-EN 10308cl.3-ASME B16.34/IV
Treatment made on date 10/11/2023 in continuous
furnace FCB calibration expiry date 18/01/2024.
Solution annealed 1080°C for 160'(total time)/water cooled.
"Issued in agreement with TÜV SÜD Industrie Service GMBH
(07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by
Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

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Allegati / Anlagen / Enclosure / Attachments :
UT24002497 GT24000807

xCROSSWIND 9/10/24 R

Sono state soddisfatte tutte le condizioni richieste	Controllo antimiscolanza con tecnica XRF/OES portatile : OK	Controllo visivo e dimensionale: soddisfa le esigenze
Die gestellen Anforderungen sind it. Anlage erfüllt	Verwechslungprüfung: durch XRF/QES Gerät geführt : OK	Besichtigung und Ausmessung: ohne Beanstandung
The material has been furnished in accordance with the requirements	Antimixing testing performed with XRF/OES portable : OK	Visual inspection and dimensional checks:satisfactory
Le materiel à été trouvé conforme aux exigences	Contrôle antimélange svt technique XRF/QES portable : OK	Contrôle visuel et dimensions: satisfaisant

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 07/05/2024 VCQ012 - MEST053965	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité **R.BERTELLI**	Direzione Prodotto Produktmanagement/Product Management/Direction Produit **P.MESSORI**	Pagina 4 di 7

CORPO VALVOLA / VALVE BODY

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INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr. / Bestell / Your order / Commande: N. AF2401382

Conferma ordine nr. / Werks/Our Order/Ref nr.: MI24003281

Avviso di Spedizione / Lieferanzeige/Packing list/B.L.: A-MI24002843

Stato di fornitura / Lieferzustand / Delivery state / Etat de livraison: Fucinato Solubilizzato - Pelato

Tipo di Elaborazione / Erschmelzungsart / Melting process / Mode d'elaboration: E+AOD

Qualità / Werkstoff/Grade/Nuance: 1.4401/1.4404/316/316L

Marca / Markenbezeichnung / Brand / Nuance: MVAPML (MAXIVAL)

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Liefernwerkes / Trade marks / Sigles de l'usine productrice: AV

Punzone del Collaudatore / Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur: MR

Punzonatura / Kennzeichnung / Marking / Marquage: 1.4401/1.4404/316/316L

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD`S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

WSP378305C951EB4147B7408643D9C983FC

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 07/05/2024 VCQ012 - MEST053965	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 5 di 7

CORPO VALVOLA / VALVE BODY

	Acciaierie Valbruna S.p.A. 36100 VICENZA (Italia) - Viale della scienza, 25 z.i. Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4	**CERTIFICATO** Certificate - Zeugnis - Certificat **N° UT24002497**	Pag 6 di 7
		CONTROLLO CON ULTRASUONI *Ultrasonic testing - Ultraschallprüfung - Controle par ultrasons*	

mod. UT02 MEST053965 / 2024 /

Cliente : INDRA S.R.L. *Customer*				**Lotto nr : 320709401** *Mill order*		
MARCA *Grade*	**DIMENSIONI - mm** *Size*	**COLATA** *Heat*	**BARRE** *Bars*	**PESO** *Weight*	**LUNGHEZZA - mm** *Length*	
MVAPML	Tondo 110,000	437405	N. 2	KG : 870,0	5630	5864

T. TERMICO *Heat Treatement*	**ESECUZIONE** *Condition*	**RUGOSITA'** *Roughness*	**TOLLERANZA** *Tolerance*
Solubilizzato	Pelato	µm	k12

Istruzione : PROC CND 040 *Work Instruction*		**Criteri Accettabilità : ASTM A388** Acceptance Criteria

ELETTRONICA : Olympus Quickscan LT
Equipment

ACCOPPIANTE : ACQUA + 0253 SA
Couplant

VEL.CONTROLLO : 339 m/min
Testing Speed

TRASDUTTORI *Probes*	**TIPO ONDA** *Type of wave*	**FREQUENZA (MHZ)** *Frequency*	**DIMENSIONI (MM)** *Dimension*	**ANGOLO** *Angle*	**TARATURA** *Calibration*
64EL. 2.25MHZ	LONG.	2,25	128X25	0°	DAC

CONTROLLO AUTOMATICO [X] *Automatic inspection*	**CONTROLLO MANUALE** *Manual inspection*

NOTE :
Notes

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x CROSSWIND
31/01/2024

CONFORME [X] *Compliant*	**CONFORME IN DEROGA [ ]** *See Deviation*	**NON CONFORME [ ]** *Not Compliant*

ISPEZIONATO DA Inspected by **FIRMA**	**VERIFICATO DA** Verified by **FIRMA**	**APPROVATO DA** Approved by **G.Parlato** ISO 9712 LEV. 2 IND2401253 **FIRMA**	**COLLAUDATORE** Inspector - Abnahmesachsverst - Inspecteur

Date - Date **29/01/2024**

Operatori, strumenti e documenti di riferimento, utilizzati per il collaudo del materiale, sono identificati, controllati e/o calibrati in accordo alle norme EN, ISO e ASTM, richiamate nelle pratiche operative e istruzioni di pertinenza / *Operators, Equipment and reference documents, used for material inspection, are identified, checked and/or calibrated in accordance with EN/ISO or ASTM standards, reported in relevant documents.*

CORPO VALVOLA / VALVE BODY

Acciaierie Valbruna S.p.A.
36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4

CERTIFICATO Certificate - Zeugnis - Certificat N° GT24000807 Pag 7 di 7

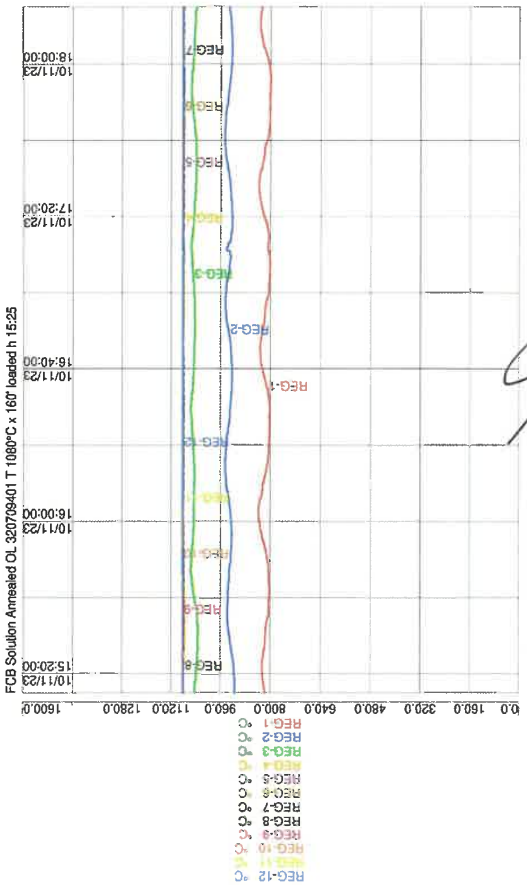
Diagrammi di trattamento termico MEST053965 / 2024 /

Heat Treatment charts - Waermebehandlungs diagramm - Diagramme de traitement thermique

N° LOTTO : 320709401 Lot Number

Note Dettaglio : Detail Notes

Note: Notes



TEMPERATURE (°C)

TIME (HOURS)

Approved by:

INDRA s.r.l.
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COGNE ACCIAI SPECIALI S.p.a.
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Company with Management Systems certified according to ISO 9001, ITAF 16949, EN 9100, ISO 14001 and ISO 45001.

INSPECTION CERTIFICATE 3.1 (EN 10204:2004)

DOCUMENT NUMBER 2023029311

CORPO BONNET / BONNET BODY

CUSTOMER'S ORDER:	Ordine Mail		
MANUFACTURER'S WORKS:	AOSTA, VIA PARAVERA 16 - ITALY		
PRODUCER OF THE DOC:	OUALITY DEPARTMENT		
MANUFACTURER'S WORKS ORDER NO:	0001138181 / 000010		
MARK OF THE MANUFACTURER:	**COGNE**		
DISPATCH NOTE:	0081586400 / 000010 WEIGHT: 116 KG / 256 LB		
INTERNAL SPEC:	STOCKBARREW2	TECHNICAL RULE:	AD2000
PRODUCT:	PEL PEELED ROUND BARS TOLERANCE: ISOK11		
SURFACE FINISH:	2B Cold Finished		
PRODUCT DELIVERY CONDITION:	RS SOLUTION ANNEALED		
PRODUCT DIMENSIONS (mm):	55,000 (2,165 in)	LENGTH (mm)	06000 06200 (00236 00244 in)
GRADE:	316L-S31600/31603-1.4404/4401	INTERNAL GRADE:	F316L IMCO
IDENTIFICATION HEAT NO:	372648	IDENTIFICATION LOT NO:	024680
MARKING OF THE PRODUCT:	1.4404	TEST PIECE N:	468

REFERENCE NORMS: EN 10088-3 (14), EN 10272 (16), ASTM A276-r17/ASME SA276-21, ASTM A479/A479M-r21, ASTM A193-23 B8MCLASSE 1D, ASME SA276/SA276M-21,ASME SA479/SA479M-21, AMS 5653J, AMS 5648N, ISO15156-3/NACE MR0175 (15), NACE MR0103/ISO 17945 (15), NORSOK M630 MDSS01 REV5.
REFERENCE NORMS FOR CHEMICAL COMPOSITION AND MECHANICAL PROPERTIES: ASTM A182-23/ ASME SA182-21.
REFERENCE NORMS ONLY FOR CHEMICAL COMPOSITION: EN 10222-5 (17),ASTM A403-22b, ASTM A484-22, ASTM A314-23, AMS-QQ-S-763D.
ASME SECT.II PART A EDITION 2015-2017-2019-2021.
AISI 316/316L - UNS S31600/S31603 - 1.4404/1.4401
THE PRODUCT IS CONFORMING TO THE CONTRACT AGREEMENT AND TO THE RULE AD2000-MERKBLATT W0/W2.
STEELMAKING EAF + AOD + CONTINUOUS CASTING
ASTM A484 DOES NOT APPLY FOR SIZE AND LENGTH TOLERANCES.
STEELMAKING EAF + AOD + CONTINUOUS CASTING
REFERENCE FOR APPLICABLE ASME STANDARD: SECTION II PART A ED. 2015-2017-2019-2021
HOT ROLLED
REDUCTION RATIO 9,9

CHEMICAL LADLE ANALYSIS ACCORDING TO ASTM A751 - EN ISO 14284
Control lot No. - Weight :020000963269 - 80.230 KG - 176.874 LB

ELEMENTS	C	Si	Mn	P	S	N	Cr	Mo	Ni	Cu
MEASUREMENT UNIT	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w
OBTAINED	0,021	0,35	1,78	0,032	0,027	0,076	16,75	2,11	10,17	0,49

ELEMENTS	Co
MEASUREMENT UNIT	% w/w
OBTAINED	0,21

HARDNESS TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000964456 - 5.060 KG - 11.155 LB
SPECIFICATION ENISO6506 HARDNESS TEST HB TESTING METHOD: 10/3000
OBTAINED 154

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DATE 12.06.2023

BARBARA VIETTI MV(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE

-Cogne

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CORPO BONNET / BONNET BODY

IMPACT TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000964456 - 5.060 KG - 11.155 LB
SPECIFICATION EN ISO 148-1-KV2 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 20
MEASUREMENT UNIT J

OBTAINED	427	439	435	428	434	425	426	432	443	438
	435	435								

TENSILE TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000964456 - 5.060 KG - 11.155 LB
SPECIFICATION EN-ISO6892-1 DIRECTION OF THE TEST PIECE: L

	RM	RP02	A5	Z	RP1
MEASUREMENT UNIT	MPA	MPA	%	%	NMM
			5.0 D		
OBTAINED	581	277	53,2	74,2	330
	586	288	52,9	73,5	317
	573	289	56,5	73,0	317
	558	273	61,4	77,6	315

GRAIN SIZE
Control lot No. - Weight :020000964456 - 5.060 KG - 11.155 LB
SPECIFICATION ASTME112 --
OBTAINED 6

MATERIAL IN COMPLIANCE WITH THE NORSOK M-630 MDS S01
IMPACT TEST
Control lot No. - Weight :020000964456 - 5.060 KG - 11.155 LB
SPECIFICATION EN ISO 148-1 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 196-
MEASUREMENT UNIT J

OBTAINED	186	193	179	179	176	179	187	186	174	197
	183	180								

TENSILE TEST
Control lot No. - Weight :020000964456 - 5.060 KG - 11.155 LB
SPECIFICATION ASTMA370-E8-0.5"SPEC DIRECTION OF THE TEST PIECE: L

	RMB	RP02B	ZB	AL2B
MEASUREMENT UNIT	KSI	KSI	%	%
				4,0 D
OBTAINED	85	40	71,9	57,9
	82	39	74,3	62,1
	82	40	74,3	63,2
	84	39	80,0	59,1

DATE 12.06.2023 BARBARA VIETTI MV(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne

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Company with Management Systems certified according to ISO 9001, ITAF 16949, EN 9100, ISO 14001 and ISO 45001.

CORPO BONNET / BONNET BODY

COUNTRY OF MELTING AND ORIGIN: ITALY, THE MATERIAL COMPLIES WITH FAR DFARS 252.225-7009 ALT 1.
The products delivered are conforming to EN10088-5 and bear the CE marking on the basis of the test results here reported and the continuous surveillance, assessment and approval by MPA NRW (certificate no. 0432-CPR-00166-01)
Material produced according to the system #Regulation 305/2011/EU of the European Parliament and of the Council of 9 March 2011#
DOCUMENT ISSUED IN AGREEMENT WITH TUEV BAYERN(11.1972) WAVING OF COUNTERSIGNING (SEE TUEV BAYERN LETTER DATED 17.01.80).
MARKING: SYMBOL OF THE MANUF. WORK, MATERIAL N. , CAST N., LOT N., RECEIVING AGENT STAMP
CORROSION TEST ACCORDING TO ASTM A262 PRACTICE E EN ISO 3651-2 PRACTICE A: SATISFACTORY.
ANTIMIXING TEST BY PORTABLE SPECTROMETRE: CONFORMING
EDDY CURRENT INSPECTION OF SURFACE ACCORDING TO EN 10277 CLASS 4.
DIMENSIONAL CONTROL ACCORDING TO EN 10278: SATISFACTORY.
NO WELDING REPAIR ON THE MATERIAL.
ULTRASONIC TEST ACCORDING TO EN 10308 Class.3: SATISFACTORY
QUALITY SYSTEM CERTIFIED BY KIWA CERMET ACCORDING TO UNI EN ISO 9001:2015 -IATF 16949:2016 (THE LAST ONE ONLY FOR WIRE ROD AND HOT ROLLED-PEELED-GROUND STAINLESS STEEL BARS).
INSPECTOR'S STAMP LF
MATERIAL CONFORM TO: 2015/863/UE (RoHS3) - 2011/65/UE (RoHS2) - 2000/53/UE - 2002/95/UE (RoHS) - 2003/11/UE - 2005/618/UE - PED 2014/68/UE e PE(S)R 2016/1105
THE MATERIAL IS FREE OF ANY MERCURY, MERCURY COMPOUNDS AND OR RADIUM CONTAMINATION AT TIME OF SHIPMENT AND WAS PRODUCED WITHOUT USING OZONE DEPLETING SUBSTANCES OF CLASS I AND II.
RADIOACTIVITY CONTROL PERFORMED WITH A GAMMA SPECTROMETER: ASTM E181.
GAMMA ACTIVITY ON THE PRODUCTS BELOW 0.1 BQ/G ACCORDING TO EU RESOLUTION 2013/59/EURATOM , IAEA RS-G-1.7 AND IAEA SSG-17.

CE 0432 UK CA 0038

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DATE 12.06.2023

BARBARA VIETTI MV(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE

-Cogne

STELO / STEM

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST056657 / 2023 / 1
Prüfung/Test/Essai

Ordine nr: 2300258
Bestell
Your order
Commande

Conferma ordine nr: MI23003306
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23002720
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Hot rolled - Annealed COLD PROCESSED
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung
Marking
Marquage

SPECIFICHE :
Anforderungen / Requirements / Exigences

Note:
Aufzeichnungen / Notes / Notes

VAL STOCK W2 A/1 1.4404/316L A,CF
AD 2000-M. W 2 01/20 1.4401 A,CF (0)
AD 2000-M. W 2 01/20 1.4404 A,CF (1)
AISI . 316/316L
AMS-QQ-S-763 D 316/316L A,CF
ASME SA182 2021 S31600/03 A (2)
ASME SA276 2021 S31600/03 A,CF (3)
ASME SA479 2021 S31600/03 A (4)
ASTM A182 2022A S31600/03 A (5)
ASTM A262 PR. E 2015 316/316L (6)
ASTM A276 2017 S31600/03 A,CF
ASTM A370 2022 .
ASTM A479 2021 S31600/03 A
ASTM E10 2018 .
ASTM E8 2022 .
EN 10088 PART 3 2014 1.4401 A,CF
EN 10088 PART 3 2014 1.4404 A,CF
EN 10272 2016. 1.4401 A,CF
EN 10272 2016. 1.4404 A,CF
ISO 148-1 2016 .
ISO 3651-2 98 METHOD A T1
ISO 6506-1 2014 .
ISO 6892-1 2019 .
NACE MR0103 2015 S31600/03 A (7)
NACE MR0175 2015 S31600/03 A (8)
QQ-S-763 F 316/316L A,CF
ACH CO . .
KV L -196C . ISO 148-1
MDS S01 5 316 A (9)
ASTM A479 2021 S31600 A

(0)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
(1)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
(2)Section II Part A 2021 EDITION For products machined directly from bar refer to ASME SA479.
(3)Section II Part A 2021 EDITION
(4)Section II Part A 2021 EDITION
(5)For products machined directly from bar refer also to ASTM A479.
(6)Reapproved 2021
(7)ANSI/NACE MR0103/ISO 17945 November 23, 2015
(8)ANSI/NACE MR0175/ISO 15156-3, third edition November 23,2015
(9)Norsok-standard M-630 Edition 6, October 2013

		Tolleranza: h9 - DIN671/EN10278 Toleranz/Allowance/Tolerance					
Pos. nr. Pos. nr. Item nr. Nr. de poste	Oggetto Gegenstand Product description Descrip. du produit	Dimensioni - mm Abmessungen Dimension Dimension	Lunghezza - mm Länge Length Longueur	Colata Schmelze Heat Coulée	Pezzi Stückzahl Pieces Pieces	Peso - KG Gewicht Weight Poids	Lotto nr. Losnr Lot nr Lot nr.
0060	Round	25,000	3000/ 3040	290765		164,0	209804470

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x CROSSWIND
31/10/24 R

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 29/05/2023 VCQ052 - MEST071270	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 1 di 4

STELO / STEM

Acciaierie Valbruna S.p.A.

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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST056657 / 2023 / 1
Prüfung/Test/Essai

Ordine nr: 2300258
Bestell / Your order / Commande

Conferma ordine nr: MI23003306
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23002720
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Hot rolled - Annealed COLD PROCESSED
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung / Marking / Marquage

TEST ALLO STATO DI FORNITURA
Test on delivery condition Prüefung auf lieferbereitem produkt test a l'etat de fourniture Prueba sobre el material así come entregado

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam epais. mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement A5 %		Strizione Einschnürung Reduction of area Striction Z %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		200	235	500 900	20	-	-	-	-			-		
A	10	20	L	512	567	679	40		65					230		
H	10	20	L	504	571	682	38		62					232		

TEST ALLO STATO DI FORNITURA
Test on delivery condition / Prüefung auf lieferbereitem produkt / Test a l'etat de fourniture / Prueba sobre el material así come entregado

TEST		min	max	
A	Grain size for ASTM E112			4

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam epais. mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		-	-	-	-	-	-	-	-	-
F	10X10	-196	L	185	180	178	1,502	1,456	1,474	60	60	60

Test on delivery condition per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam epais. mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		210	-	517	-	35	-	50	-			-		
D	12,5	20	L	527		685		40		69				226		

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 29/05/2023 VCQ052 - MEST071270	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 2 di 4

STELO / STEM

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST056657 / 2023 / 1

Ordine nr: 2300258 (Bestell / Your order / Commande)

Conferma ordine nr: MI23003306 (Werks/Our Order/Ref nr.)

Avviso di Spedizione: A-MI23002720 (Lieferanzeige/Packing list/B.L.)

Stato di fornitura: Hot rolled - Annealed COLD PROCESSED (Lieferzustand / Delivery state / Etat de livraison)

Tipo di Elaborazione: E+AOD (Erschmelzungsart / Melting process / Mode d'elaboration)

Qualità: 1.4401/1.4404/316/316L (Werkstoff/Grade/Nuance)

Marca: MVAPML (MAXIVAL) (Markenbezeichnung / Brand / Nuance)

Produttore: (Hersteller/Item/Usine productrice)

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: (Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice) AV

Punzone del Collaudatore: (Stempel des Werksachverständigen / Inspector's stamp/Poinçon de l'assayeur) MR

Punzonatura: 1.4401/1.4404 (Kennzeichnung / Marking / Marquage)

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale - Lateral Expansion -			Shear Shear		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		100	100	100	-	-	-	-	-	-
E	10X10	20	L	231	228	235						
G	10X10	20	L	227	220	221						

Tensile testing according to ISO 6892-1
Impact testing according to ISO 148-1
Mechanical properties according to ASTM A370.
Brinnell hardness according to ASTM E10
Tensile testing according to ASTM E8
Brinnell hardness according to ISO 6506-1

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Analisi chimica
Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat Schmelze/Coulée		C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	Co %	P %	S %	N %				
	min	-	-	-	16,50	2,00	-	10,00	-	-	-	-	-	-	-	-
	max	0,030	1,00	2,00	18,00	2,50	1,00	13,00	-	0,045	0,030	0,100	-	-	-	-
290765		0,017	0,51	1,58	16,95	2,04	0,55	10,00	0,133	0,028	0,027	0,067				

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 29/05/2023
VCQ052 - MEST071270

Direzione Qualità (Qualitätsmanagement/Quality Management/Gestion Qualité): **R.BERTELLI**

Direzione Prodotto (Produktmanagement/Product Management/Direction Produit): **P.MESSORI**

STELO / STEM

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST056657 / 2023 / 1
Prüfung/Test/Essai

Ordine nr: 2300258
Bestell
Your order
Commande

Conferma ordine nr: MI23003306
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23002720
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Hot rolled - Annealed COLD PROCESSED
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stampel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung
Marking
Marquage

Reduction ratio = 61,1 : 1
Solution annealed 1040°C for 135'(total time)/water cooled.
SURFACE QUALITY COMPLIANT TO EN 10088-3 TAB.1 COND. 2H
"Issued in agreement with TÜV SÜD Industrie Service GMBH
(07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by
Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

Sono state soddisfatte tutte le condizioni richieste Die gestellen Anforderungen sind lt. Anlage erfüllt The material has been furnished in accordance with the requirements Le materiel à été trouvé conforme aux edgences	Controllo antimescolanza con tecnica XRF/OES portatile : OK Verwechslungprüfung: durch XRF/QES Gerät geführt : OK Antimixing testing performed with XRF/OES portable : OK Contrôle antimélange svt technique XRF/QES portable : OK	Controllo visivo e dimensionale: soddisfa le esigenze Besichtigung und Ausmessung: ohne Beanstandung Visual inspection and dimensional checks:satisfactory Contrôle visuel et dimensions: satisfaisant

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD`S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 29/05/2023 VCQ052 - MEST071270	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 4 di 4

OTTURATORE / TIP

DC0202 – Certificato di prodotto	Rev. 2

CERTIFICATO : OR24 – 30948
CERTIFICATE
EN 10204 3.1

Cliente : INDRA S.R.L. Customer	**Consegna** : DDT 240552 of 03.09.2024 Delivery
Vs Ordine : AF24 02661 of 31.07.2024 Your order pos. 10 ÷ 60	**Ns Ordine** : 240331 of 01.08.2024 Our order
Descrizione materiale : TRIM STELLORIC 386 Material description UNS R30006 CoCrW AMS 5387	

Grado : 386 Grade	**Disegno** : 97.04.0002S-I rev 11 Drawing	**Colata** : 30948 Heat (BTL ϕ 15 mm)	**Quantità** : Nr. 100 pcs. Quantity

ANALISI DI COLATA / HEAT ANALYSIS

C	Si	Mn	S	P	Cr	Ni	Mo	W	Fe	Co
0.90÷1.40	Max. 1.50	Max 1.00	Max 0.04	Max 0.04	27.00÷31.00	Max 3.00	Max 1.50	3.50÷5.50	Max 3.00	Balance
Ottenuto / Obtained										
1.15	.641	.031	.008	.003	27.950	.007	.0208	5.060	.354	BAL.

PROVE MECCANICHE / MECHANICAL TESTS

Prove longitudinali eseguite +20°C alle condizioni di fornitura
Longitudinal testing at +20°C in delivery condition

Snervamento Rp 0,2% : N.A. Yield strength	**Rottura Rm :** N.A. Tensile strength
Allungamento A4 % : N.A. Elongation	**Strizione Z% :** N.A. Striction
Resilienza KV : N.A. Impact value	**Durezze** (>37 HRC) : 38/40 HRC Hardness
Controllo spettrografico : N.D. Spectrographic examination	**Ultrasuoni :** N.D. Ultrasonic test
Controllo visivo e dimensionale : conforme Visual and dimensional examination	**Ferrite** : N.D. Ferrite
Responsabile Qualita' : Ing. Mauro Melinelli Quality control	**Data** : 03.09.2024 Date

ORIC ITALIANA S.r.l. *Via dell' Industria, 4 Zona Ind.le 29015 Castel San Giovanni - PC - Italy*
tel. +39 0523 882 498 fax +39 0523 882 111
www.oric.it e-mail info@oric.it

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VITE BONNET / BONNET BOLTING

COMVITEA s.r.l.
Via Isonzo 32/C - 20078 Turate (CO) Tel 02.9697121 - Fax 02 96754113

CERTIFICATO DI COLLAUDO EN 10204
INSPECTION CERTIFICATE EN 10204

3.1 Azienda CERTIFICATA - UNI EN ISO 9001:2015
AD 2000 MERKBLATT W0 - PED Directive 2014/68/EU

Certificato/Certificate N°	1369552	Pag. 1 / 1	Cliente/Customer	INDRA SRL	
Data cert /Date cert.	18/07/2024		Vs. ordine/Order.	AF24 01968	
d.d.t./Delivery note n.	4664	18/07/2024	Ns.rif./Int. ref.	3902	27/06/2024

Descrizione Materiale / Material Description

Item	Qty	Articolo / Article	Materiale / Material	Pos-Rifer / Your pos-ref.
1	40	Tirante tutto filetto ASTM/ASME A/SA 193 B8M cl.2 M10x40	ASTM/ASME A/SA 193 B8M cl.2	101.99.0375SS
2	60	Tirante tutto filetto ASTM/ASME A/SA 193 B8M cl.2 M20x70	ASTM/ASME A/SA 193 B8M cl.2	101.99.1098SS
3	215	Tirante tutto filetto ASTM/ASME A/SA 193 B8M cl.2 5/8"-11UNCx75	ASTM/ASME A/SA 193 B8M cl.2	101.99.1160SS
→ 4	260	Vite ASTM/ASME A/SA 193 B8M cl.2 UNI 5931 / DIN 912 M8x20	ASTM/ASME A/SA 193 B8M cl.2	96.50.0014SS
5	45	Vite ASTM/ASME A/SA 193 B8M cl.2 UNI 5931 / DIN 912 M10x80	ASTM/ASME A/SA 193 B8M cl.2	101.99.1161SS
6	45	Vite ASTM/ASME A/SA 193 B8M cl.2 UNI 5931 / DIN 912 TF M10x60	ASTM/ASME A/SA 193 B8M cl.2	

COLATA-ANALISI CHIMICA come da certificato di acciaieria / HEAT-CHEMICAL ANALYSIS according to mill certificate

Item	Colata/Heat	C	Cr	Mn	Mo	Ni	P	S	Si	NORME/STANDARDS
1	172522	0,0240	16,6200	1,8100	2,0100	10,1700	0,0310	0,0280	0,3800	ASME II Part A ed. 2021
2	291913	0,0160	16,6400	1,4200	2,0300	10,0500	0,0320	0,0010	0,3800	ASME II Part A ed. 2021
3	Z5XR	0,0160	16,6850	1,3520	2,0270	10,2850	0,0300	0,0260	0,3750	ASME II Part A ed. 2021
→ 4	304113	0,0210	16,6500	1,5800	2,0200	10,1500	0,0320	0,0290	0,3900	ASME II Part A ed. 2021
5	847049	0,0630	16,5820	1,3120	2,0320	10,0850	0,0297	0,0227	0,4130	ASME II Part A ed. 2021
6	847049	0,0630	16,5820	1,3120	2,0320	10,0850	0,0297	0,0227	0,4130	ASME II Part A ed. 2021

PROPRIETA' MECCANICHE / MECHANICAL PROPERTIES

	OTTENUTE / OBTAINED							RICHIESTE / REQUIRED							
	Rm	Re	A	Z	Dur/hard.		Resilienza/Impact test	Rm (N/mm²)		Re (N/mm²)		A %	Z %	Dur/hard. HB	Resilienza/Impact test	
Item	N/mm²	N/mm²	%	%	HB		KV - Joule °C	min	max	min	max	min	min	min max	KV - Joule	°C
1	960	900	22,60	67,40	281	288	20							321		20
2	854	748	24,00	61,00	273	277	20							321		20
3	898	724	26,00	71,00	255	260	20							321		20
→ 4	868	730	24,00	62,00	280	285	20							321		20
5	851	699	27,00	64,00	240	243	20							321		20
6	851	699	27,00	64,00	240	243	20							321		20

Item	Trattamento Termico Tempering - °C	Dur./Hard. HB dadi/nuts h	°C	>=	HB	Prova allarg. per dadi Cone stripping on nuts	ESAME VISIVO-VIS.EXAM
1	Carbide solution treated and strain hardened 1060°						Positivo / Positive
2	Carbide solution treated and strain hardened 1060°						Positivo / Positive
3	Carbide solution treated and strain hardened 1060°						Positivo / Positive
→ 4	Carbide solution treated and strain hardened 1060°						Positivo / Positive
5	Carbide solution treated and strain hardened 1060°						Positivo / Positive
6	Carbide solution treated and strain hardened 1060°						Positivo / Positive

Note: CROSSWIND 9140/2aR

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Certifichiamo che i materiali sono stati fabbricati, campionati, testati e ispezionati in conformità alle specifiche e conformi alle prescrizioni degli ordini.
We certify that the fasteners were manufactured, sampled, tested and inspected in accordance with the specification and are consistent with order prescriptions.

Oscar Uboldi - Quality Assurance

ROSETTI MARINO ITEM 300

COD. VLBNNN00033Q0H

TAG:

BLPH-MV-150, BLPH-MV-151

INDRA ITEM 300

COD. 00.MNF.0605/V

indra VALVES - ITALY

Certificazione dei materiali
EN 10204 3.1 come da allegati

Material certification
EN 10204 3.1 as per attachments

MD-02-04-IT-UK/VSP/MNF
Rev. 16
Data: 08-Nov-2018
CM/IT/UK

Nr. / *No.* 24-1840 — **Data** / *Date :* 23-Sep-24

Cliente / *Customer* ROSETTI MARINO SPA

Vs. ordine Nr. / *Your order Nr.* 1724000798 REV.2 — **Data / Date :** 26-Jun-24

Ns. commessa Nr. / *Our job Nr.* 24 01216 — **Data / Date :** 3-Jul-24

Ns. D.D.T. Nr. / *Our advise note Nr.* — Data / Date :

Ordine di produzione / Production order number : 24 01216/300 - 437405

Lotto / Material batch number : 437405

Pos. Cliente Customer Item	Pos. Indra Indra Item	Codice / Code		Q.tà / Q.ty	Nr. di serie Serial Number	Descrizione /Description
		Ns./ Our	Vs. / Your			
300	300	00.MNF.0605/V	VLBNNN00033Q0H	2	106067,106068	INDRA MONOFLANGE SBB-727-E150RF3-D-D-DLF-DL-N-K-G-HFT-Y13-L13-V2-TG-TGW-TV-PMI2-PD2-FS-SPC1

Elenco / List

Componente / *Component*	Colata / Heat	Materiale *Material*	Numero del certificato *Certificate number*
Corpo Valvola / Valve Body	437405	AISI 316/316L NACE	MEST053965/2024/ - UT24002497
Corpo bonnet/ Bonnet body	372648	AISI 316/316L NACE	2023029311
Stelo spillo / Stem needle	290765	AISI 316/316L NACE	MEST056657/2023/1
Otturatore / Tip	30948	STELLITE	OR24 - 30948
Vite bonnet / Bonnet bolting	304113	ASTM A193 B8M Cl.2	1369552

*NOTE / **REMARKS** :* TAG: BLPH-MV-150, BLPH-MV-151

PREPARATO DA: **ELEONORA RANZANI**
PREPARED BY: **DOCUMENTION MANAGER**

APPROVATO DA: **LUCIA NOSOTTI**
APPROVED BY: **QUALITY ASSURANCE MANAGER**

20013 Magenta (MI) Italy - Via Novara, 10/B-C
Tel. +39 02 97298663 r.a. - Fax +39 02 97291855
E-mail: indra@indra.it - http://www.indra.it

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9/10/24R

CORPO VALVOLA / VALVE BODY

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST053965 / 2024 /

Cliente / Besteller/Purchaser/Client:
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: N. AF2401382
Bestell / Your order / Commande

Conferma ordine nr: MI24003281
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24002843
Lieferanzeige/Packing list/B.L

Stato di fornitura: Fucinato Solubilizzato - Pelato
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung / Marking / Marquage

SPECIFICHE :
Anforderungen / Requirements / Exigences

Note:
Aufzeichnungen / Notes / Notes

AV 316L VALVES A/1 1.4401/1.4404 A	
IS107 01 316 A	
MDS S01 5 316 A (0)	(0)Norsok-standard M-630 Edition 6, October 2013
MDS S17 1 316 A (1)	(1)Norsok-standard M-630: 2020 (2020-09-30)
AD 2000-M. W 2 2022 1.4401 A (2)	(2)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
AD 2000-M. W 2 2022 1.4404 A (3)	(3)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
API 6A 21 ANNEX M (4)	(4)Errata 1 (04/2019), Errata 2 (08/2020), Errata 3 (09/2020). Addendum 1 (July 2020) and Addendum 2 (June 2021).
API 6D 25 ANNEX H (5)	(5)Revision November 2021
ASME SA182 2023 S31600/03 A (6)	(6)Section II Part A 2023 EDITION For products machined directly from bar refer to ASME SA479.
ASME SA276 2023 S31600/03 A (7)	(7)Section II Part A 2023 EDITION
ASME SA479 2023 S31600/03 A (8)	(8)Section II Part A 2023 EDITION
ASTM A182 2024 S31600/03 A (9)	(9)For products machined directly from bar refer also to ASTM A479.
ASTM A262 PR. E 2015 316/316L (A)	(A)Reapproved 2021
ASTM A276 2024A S31600/03 A	
ASTM A370 2022 .	
ASTM A479 2023A S31600/03 A	
ASTM E381 2022 .	
ASTM E562 2019 . (B)	(B)19E01
EN 10088 PART 3 2014 1.4401 A	
EN 10088 PART 3 2014 1.4404 A	
EN 10222 PART 5 2017 1.4401 A	
EN 10222 PART 5 2017 1.4404 A	
EN 10272 2016. 1.4401 A	
EN 10272 2016. 1.4404 A	
ISO 148-1 2016 .	
ISO 6892-1 2019 .	
NACE MR0103 2015 S31600/03 A (C)	(C)ANSI/NACE MR0103/ISO 17945 November 23, 2015
NACE MR0175 4 S31600/03 A (D)	(D)ANSI/NACE MR0175/ISO 15156-3:2020 Fourth edition, approved 21 Sep 2022.

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Tolleranza: k12
Toleranz/Allowance/Tolerance

Pos. nr.	Oggetto	Dimensioni - mm	Lunghezza - mm	Colata	Pezzi	Peso - KG	Lotto nr.
Pos. nr. / Item nr. / Nr. de poste	Gegenstand / Product description / Descrip. du produit	Abmessungen / Dimension / Dimension	Länge / Length / Longueur	Schmelze / Heat / Coulée	Stückzahl / Pieces / Pieces	Gewicht / Weight / Poids	Losnr. / Lot nr. / Lot nr.
0050	Tondo	110.000	5630/ 5864	437405	2	870,0	320709401

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 07/05/2024 VCQ012 - MEST053965	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 1 di 7

CORPO VALVOLA / VALVE BODY

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST053965 / 2024 /

Cliente / Besteller/Purchaser/Client:
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: N. AF2401382
Bestell / Your order / Commande

Conferma ordine nr: MI24003281
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24002843
Lieferanzeige/Packing list/B.L.

Stato di fornitura / Lieferzustand / Delivery state / Etat de livraison: Fucinato Solubilizzato - Pelato

Tipo di Elaborazione / Erschmelzungsart / Melting process / Mode d'elaboration: E+AOD

Qualità / Werkstoff/Grade/Nuance: 1.4401/1.4404/316/316L

Marca / Markenbezeichnung / Brand / Nuance: MVAPML (MAXIVAL)

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice: AV

Punzone del Collaudatore / Stempel des Werksachverständigen / Inspector's stamp/Poinçon de l'assayeur: MR

Punzonatura / Kennzeichnung / Marking / Marquage: 1.4401/1.4404/316/316L

TEST ALLO STATO DI FORNITURA
Test on delivery condition / Prüefung auf lieferbereitem produkt / test a l'etat de fourniture / Prueba sobre el material así come entregado

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement A5 %		Strizione Einschnürung Reduction of area Striction Z %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Harte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs démandées		min		205	240	510	45	-	-	-	-			-		
		max				690								215		
A	10	20	L	283	318	578	54		69					149		
I	10	20	L	285	319	581	53		68					150		

TEST ALLO STATO DI FORNITURA
Test on delivery condition / Prüefung auf lieferbereitem produkt / Test a l'etat de fourniture / Prueba sobre el material así come entregado

TEST		min	max	
I	Dimensioni grano x ASTM E112			4
I	Ferrite delta %			0,9 %

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs démandées		min		60	60	60	-	-	-	-	-	-
		max										
B	10X10	-196	L	281	276	274	2,469	2,452	2,422	75	75	75

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Harte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs démandées		min		205	-	515	-	40	-	50	-			-		
		max												215		
C	12,5	20	L	275		576		56		72				152		

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 07/05/2024	Direzione Qualità / Qualitätsmanagement/Quality Management/Gestion Qualité	Direzione Prodotto / Produktmanagement/Product Management/Direction Produit	Pagina
VCQ012 - MEST053965	R.BERTELLI	P.MESSORI	2 di 7

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Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST053965 / 2024 /
Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: N. AF2401382
Bestell
Your order
Commande

Conferma ordine nr: MI24003281
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24002843
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore:
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'essayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Braite Diam. Dicke Width Diam Thickness Larg. diam. epais mm	°C		Posiz. Saggio Probestage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Hearte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs démandées		min max			205	-	515	-	40	-	50	-			- 215		
V	4,25	20	T		256		572		54		67				156		

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Braite Diam. Dicke Width Diam Thickness Larg. diam. epais mm	°C		Posiz. Saggio Probestage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs démandées		min max			60	60	60	-	-	-	-	-	-
D	10X10	-196	T		62	62	61	0,628	0,636	0,611	30	30	30

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Braite Diam. Dicke Width Diam Thickness Larg. diam. epais mm	°C		Posiz. Saggio Probestage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion			Shear Shear		
Valori richiesti Anforderungen/Required values Valeurs démandées		min max			100	100	100	-	-	-	-	-	-
H	10X10	20	L		300	296	295						
L	10X10	20	L		312	295	310						

Tensile testing according to ISO 6892-1
Impact testing according to ISO 148-1
Mechanical properties according to ASTM A370.
Ferrite content tested according to ASTM E562.

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Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat Schmelze/Coulée																	
	min	23,0	-	-	-	16,50	2,00	10,00	-	-	-	-	-	-	-	-	-
	max	28,0	0,030	1,00	2,00	18,00	2,50	13,00	-	0,045	0,030	0,100	-	-	-	-	
	PRE	C %	Si %	Mn %	Cr %	Mo %	Ni %	Co %	P %	S %	N %						
437405	25,0	0,019	0,44	1,73	16,99	2,05	10,08	0,108	0,028	0,026	0,077						

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 07/05/2024
VCQ012 - MEST053965

Direzione Qualità
Qualitätsmanagement/Quality Management/Gestion Qualité
R.BERTELLI

Direzione Prodotto
Produktmanagement/Product Management/Direction Produit
P.MESSORI

CORPO VALVOLA / VALVE BODY

Acciaierie Valbruna S.p.A.

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Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST053965 / 2024 /
Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: N. AF2401382
Bestell
Your order
Commande

Conferma ordine nr: MI24003281
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24002843
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werksachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage

Colata /Heat / Schmelze/Coulée								
	min 14,0	-	-	-	-	-	-	-
	max 20,0	-	-	-	-	-	-	-
	Ni+(2*Mo)							
437405	14,2							

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

Furnace calibrated according to API 6A REV 21th ED ANNEX M.
Furnace calibrated according to API 6D REV 25th ED ANNEX H.
Macroetch test per ASTM E381: acceptable.
Reduction ratio = 28,8 : 1
SURFACE QUALITY GUARANTEE BY ET INSPECTION (max defect depth 1% DIAMETER)
UT ACC. TO:A388/API 6A PSL3-EN 10308cl.3-ASME B16.34/IV
Treatment made on date 10/11/2023 in continuous
furnace FCB calibration expiry date 18/01/2024.
Solution annealed 1080°C for 160'(total time)/water cooled.
"Issued in agreement with TÜV SÜD Industrie Service GMBH (07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

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Allegati / Anlagen / Enclosure / Attachments :
UT24002497 GT24000807

Sono state soddisfatte tutte le condizioni richieste Die gestellen Anforderungen sind it. Anlage erfüllt The material has been furnished in accordance with the requirements Le materiel à été trouvé conforme aux exigences	Controllo antimescolanza con tecnica XRF/OES portatile : OK Verwechslungprüfung: durch XRF/QES Gerät geführt : OK Antimbing testing performed with XRF/OES portable : OK Contrôle antimélange svt technique XRF/QES portable : OK	Controllo visivo e dimensionale: soddisfa le esigenze Besichtigufg und Ausmessung: ohne Beanstandung Visual inspection and dimensional checks:satisfactory Contrôle visuel et dimensions: satisfaisant

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 07/05/2024 VCQ012 - MEST053965	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité **R.BERTELLI**	Direzione Prodotto Produktmanagement/Product Management/Direction Produit **P.MESSORI**	Pagina 4 di 7

CORPO VALVOLA / VALVE BODY

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST053965 / 2024 /
Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: N. AF2401382
Bestell
Your order
Commande

Conferma ordine nr: MI24003281
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24002843
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore:
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD`S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

WBP37B3DEC051E9841EB740864329C982F0

x CROSSWIND
8/10/24

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CORPO VALVOLA / VALVE BODY

	Acciaierie Valbruna S.p.A. 36100 VICENZA (Italia) - Viale della scienza, 25 z.i. Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4	**CERTIFICATO** Certificate - Zeugnis - Certificat **N° UT24002497**	**Pag 6 di 7**
		CONTROLLO CON ULTRASUONI *Ultrasonic testing - Ultraschallprüfung - Controle par ultrasons*	

mod. UT02 MEST053965 / 2024 /

Cliente : INDRA S.R.L. *Customer*				**Lotto nr : 320709401** *Mill order*		
MARCA *Grade*	**DIMENSIONI - mm** *Size*	**COLATA** *Heat*	**BARRE** *Bars*	**PESO** *Weight*	**LUNGHEZZA - mm** *Length*	
MVAPML	Tondo 110,000	437405	N. 2	KG : 870,0	5630	5864

T. TERMICO *Heat Treatement*	**ESECUZIONE** *Condition*	**RUGOSITA'** *Roughness*	**TOLLERANZA** *Tolerance*
Solubilizzato	Pelato	µm	k12

Istruzione : PROC CND 040 *Work Instruction*		**Criteri Accettabilità : ASTM A388** Acceptance Criteria

ELETTRONICA : Olympus Quickscan LT
Equipment

ACCOPPIANTE : ACQUA + 0253 SA
Couplant

VEL.CONTROLLO : 339 m/min
Testing Speed

TRASDUTTORI *Probes*	**TIPO ONDA** *Type of wave*	**FREQUENZA (MHZ)** *Frequency*	**DIMENSIONI (MM)** *Dimension*	**ANGOLO** *Angle*	**TARATURA** *Calibration*
64EL. 2.25MHZ	LONG.	2,25	128X25	0°	DAC

CONTROLLO AUTOMATICO [X] *Automatic inspection*	**CONTROLLO MANUALE** *Manual inspection*

NOTE :
Notes

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9/10/24 R

CONFORME [X] *Compliant*	**CONFORME IN DEROGA [ ]** *See Deviation*	**NON CONFORME [ ]** *Not Compliant*

ISPEZIONATO DA Inspected by **FIRMA**	**VERIFICATO DA** Verified by **FIRMA**	**APPROVATO DA** Approved by **G.Parlato** ISO 9712 LEV. 2 IND2401253 **FIRMA**	**COLLAUDATORE** Inspector - Abnahmesachsverst - Inspecteur

Date - Date **29/01/2024**

Operatori, strumenti e documenti di riferimento, utilizzati per il collaudo del materiale, sono identificati, controllati e/o calibrati in accordo alle norme EN, ISO e ASTM, richiamate nelle pratiche operative e istruzioni di pertinenza / *Operators, Equipment and reference documents, used for material inspection, are identified, checked and/or calibrated in accordance with EN/ISO or ASTM standards, reported in relevant documents.*

Acciaierie Valbruna S.p.A.
36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4

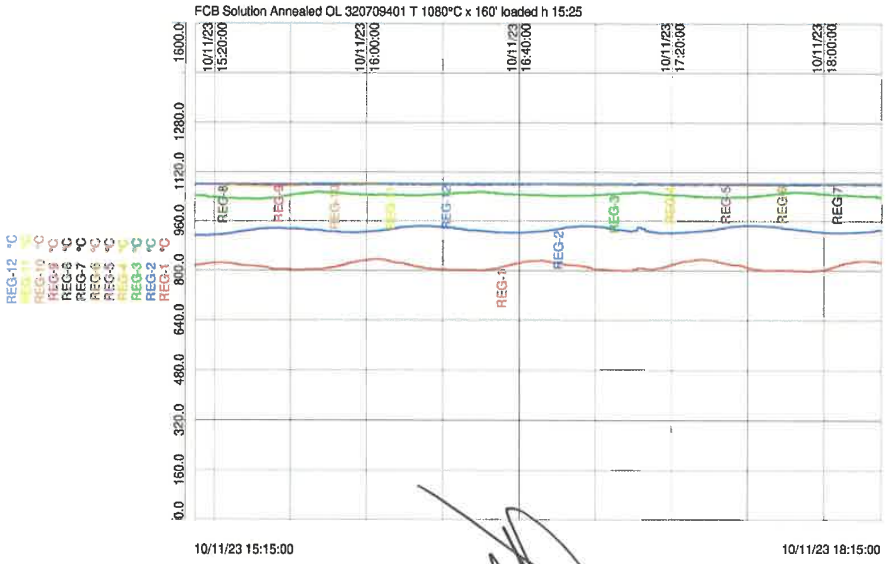
CERTIFICATO Certificate - Zeugnis - Certificat **N° GT24000807** **Pag 7 di 7**

Diagrammi di trattamento termico **MEST053965 / 2024 /**

Heat Treatment charts - Waermebehandlungs diagramm - Diagramme de traitement thermique

N° LOTTO : 320709401 Lot Number	Note Dettaglio : Detail Notes	Note: Notes

TEMPERATURE (°C)



TIME (HOURS)

Approved by:

INOXA S.r.l.
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COGNE ACCIAI SPECIALI S.p.a.
ITALY - 11100 AOSTA - VIA PARAVERA, 16
TEL +39.0165.3021 - FAX +39.0165.302296
CAP. SOC. 250.000.000 EUR INT. VERS.
C.F. 02187360967
VAT: IT00571320078 - R.E.A. n. AO-50474

Company with Management Systems certified according to ISO 9001, ITAF 16949, EN 9100, ISO 14001 and ISO 45001.

INSPECTION CERTIFICATE 3.1 (EN 10204:2004)

DOCUMENT NUMBER 2023029311

CORPO BONNET / BONNET BODY

CUSTOMER'S ORDER:	Ordine Mail		
MANUFACTURER'S WORKS:	AOSTA, VIA PARAVERA 16 - ITALY		
PRODUCER OF THE DOC:	QUALITY DEPARTMENT		
MANUFACTURER'S WORKS ORDER NO:	0001138181 / 000010		
MARK OF THE MANUFACTURER:	**COGNE**		
DISPATCH NOTE:	0081586400 / 000010 WEIGHT: 116 KG / 256 LB		
INTERNAL SPEC:	STOCKBARREW2	TECHNICAL RULE:	AD2000
PRODUCT:	PEL PEELED ROUND BARS TOLERANCE: ISOK11		
SURFACE FINISH:	2B Cold Finished		
PRODUCT DELIVERY CONDITION:	RS SOLUTION ANNEALED		
PRODUCT DIMENSIONS (mm):	55,000 (2,165 in)	LENGTH (mm)	06000 06200 (00236 00244 in)
GRADE:	316L-S31600/31603-1.4404/4401	INTERNAL GRADE:	F316L IMCO
IDENTIFICATION HEAT NO:	372648	IDENTIFICATION LOT NO:	024680
MARKING OF THE PRODUCT:	1.4404	TEST PIECE N:	468

REFERENCE NORMS: EN 10088-3 (14), EN 10272 (16), ASTM A276-r17/ASME SA276-21, ASTM A479/A479M-r21, ASTM A193-23 B8MCLASSE 1D, ASME SA276/SA276M-21,ASME SA479/SA479M-21, AMS 5653J, AMS 5648N, ISO15156-3/NACE MR0175 (15), NACE MR0103/ISO 17945 (15), NORSOK M630 MDSS01 REV5.
REFERENCE NORMS FOR CHEMICAL COMPOSITION AND MECHANICAL PROPERTIES: ASTM A182-23/ ASME SA182-21.
REFERENCE NORMS ONLY FOR CHEMICAL COMPOSITION: EN 10222-5 (17),ASTM A403-22b, ASTM A484-22, ASTM A314-23, AMS-QQ-S-763D.
ASME SECT.II PART A EDITION 2015-2017-2019-2021.
AISI 316/316L - UNS S31600/S31603 - 1.4404/1.4401
THE PRODUCT IS CONFORMING TO THE CONTRACT AGREEMENT AND TO THE RULE AD2000-MERKBLATT W0/W2.
STEELMAKING EAF + AOD + CONTINUOUS CASTING
ASTM A484 DOES NOT APPLY FOR SIZE AND LENGTH TOLERANCES.
STEELMAKING EAF + AOD + CONTINUOUS CASTING
REFERENCE FOR APPLICABLE ASME STANDARD: SECTION II PART A ED. 2015-2017-2019-2021
HOT ROLLED
REDUCTION RATIO 9,9

CHEMICAL LADLE ANALYSIS ACCORDING TO ASTM A751 - EN ISO 14284
Control lot No. - Weight :020000963269 - 80.230 KG - 176.874 LB

ELEMENTS	C	Si	Mn	P	S	N	Cr	Mo	Ni	Cu
MEASUREMENT UNIT	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w
OBTAINED	0,021	0,35	1,78	0,032	0,027	0,076	16,75	2,11	10,17	0,49

ELEMENTS	Co
MEASUREMENT UNIT	% w/w
OBTAINED	0,21

HARDNESS TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000964456 - 5.060 KG - 11.155 LB
SPECIFICATION ENISO6506 HARDNESS TEST HB TESTING METHOD: 10/3000
OBTAINED 154

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DATE 12.06.2023

BARBARA VIETTI MV(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne

COGNE ACCIAI SPECIALI S.p.a.
ITALY - 11100 AOSTA - VIA PARAVERA, 16
TEL +39.0165.3021 - FAX +39.0165.302296
CAP. SOC. 250.000.000 EUR INT. VERS.
C.F. 02197360967
VAT: IT00571320076 - R.E.A. n. AO-50474

Company with Management Systems certified according to ISO 9001, ITAF 16949, EN 9100, ISO 14001 and ISO 45001.

CORPO BONNET / BONNET BODY

IMPACT TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000964456 - 5.060 KG - 11.155 LB
SPECIFICATION EN ISO 148-1-KV2 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 20
MEASUREMENT UNIT J

OBTAINED	427	439	435	428	434	425	426	432	443	438
	435	435								

TENSILE TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000964456 - 5.060 KG - 11.155 LB
SPECIFICATION EN-ISO6892-1 DIRECTION OF THE TEST PIECE: L

	RM	RP02	A5	Z	RP1
MEASUREMENT UNIT	MPA	MPA	%	%	NMM
			5.0 D		
OBTAINED	581	277	53,2	74,2	330
	586	288	52,9	73,5	317
	573	289	56,5	73,0	317
	558	273	61,4	77,6	315

GRAIN SIZE
Control lot No. - Weight :020000964456 - 5.060 KG - 11.155 LB
SPECIFICATION ASTME112 --
OBTAINED 6

MATERIAL IN COMPLIANCE WITH THE NORSOK M-630 MDS S01
IMPACT TEST
Control lot No. - Weight :020000964456 - 5.060 KG - 11.155 LB
SPECIFICATION EN ISO 148-1 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 196-
MEASUREMENT UNIT J

OBTAINED	186	193	179	179	176	179	187	186	174	197
	183	180								

TENSILE TEST
Control lot No. - Weight :020000964456 - 5.060 KG - 11.155 LB
SPECIFICATION ASTMA370-E8-0.5"SPEC DIRECTION OF THE TEST PIECE: L

	RMB	RP02B	ZB	AL2B
MEASUREMENT UNIT	KSI	KSI	%	%
				4,0 D
OBTAINED	85	40	71,9	57,9
	82	39	74,3	62,1
	82	40	74,3	63,2
	84	39	80,0	59,1

DATE 12.06.2023 BARBARA VIETTI MV(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne

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CAP. SOC. 250.000.000 EUR INT. VERS.
C.F. 02187360967
VAT: IT00571320076 - R.E.A. n. AO-50474

Company with Management Systems certified according to ISO 9001, ITAF 16949, EN 9100, ISO 14001 and ISO 45001.

CORPO BONNET / BONNET BODY

COUNTRY OF MELTING AND ORIGIN: ITALY, THE MATERIAL COMPLIES WITH FAR DFARS 252.225-7009 ALT 1.
The products delivered are conforming to EN10088-5 and bear the CE marking on the basis of the test results here reported and the continuous surveillance, assessment and approval by MPA NRW (certificate no. 0432-CPR-00166-01)
Material produced according to the system #Regulation 305/2011/EU of the European Parliament and of the Council of 9 March 2011#
DOCUMENT ISSUED IN AGREEMENT WITH TUEV BAYERN(11.1972) WAVING OF COUNTERSIGNING (SEE TUEV BAYERN LETTER DATED 17.01.80).
MARKING: SYMBOL OF THE MANUF. WORK, MATERIAL N. , CAST N., LOT N., RECEIVING AGENT STAMP
CORROSION TEST ACCORDING TO ASTM A262 PRACTICE E EN ISO 3651-2 PRACTICE A: SATISFACTORY.
ANTIMIXING TEST BY PORTABLE SPECTROMETRE: CONFORMING
EDDY CURRENT INSPECTION OF SURFACE ACCORDING TO EN 10277 CLASS 4.
DIMENSIONAL CONTROL ACCORDING TO EN 10278: SATISFACTORY.
NO WELDING REPAIR ON THE MATERIAL.
ULTRASONIC TEST ACCORDING TO EN 10308 Class.3: SATISFACTORY
QUALITY SYSTEM CERTIFIED BY KIWA CERMET ACCORDING TO UNI EN ISO 9001:2015 -IATF 16949:2016 (THE LAST ONE ONLY FOR WIRE ROD AND HOT ROLLED-PEELED-GROUND STAINLESS STEEL BARS).
INSPECTOR'S STAMP LF
MATERIAL CONFORM TO: 2015/863/UE (RoHS3) - 2011/65/UE (RoHS2) - 2000/53/UE - 2002/95/UE (RoHS) - 2003/11/UE - 2005/618/UE - PED 2014/68/UE e PE(S)R 2016/1105
THE MATERIAL IS FREE OF ANY MERCURY, MERCURY COMPOUNDS AND OR RADIUM CONTAMINATION AT TIME OF SHIPMENT AND WAS PRODUCED WITHOUT USING OZONE DEPLETING SUBSTANCES OF CLASS I AND II.
RADIOACTIVITY CONTROL PERFORMED WITH A GAMMA SPECTROMETER: ASTM E181.
GAMMA ACTIVITY ON THE PRODUCTS BELOW 0.1 BQ/G ACCORDING TO EU RESOLUTION 2013/59/EURATOM , IAEA RS-G-1.7 AND IAEA SSG-17.

CE 0432 UKCA 0038

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DATE 12.06.2023

BARBARA VIETTI MV(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE

-Cogne

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST056657 / 2023 / 1
Prüfung/Test/Essai

Ordine nr: 2300258
Bestell
Your order
Commande

Conferma ordine nr: MI23003306
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23002720
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Hot rolled - Annealed COLD PROCESSED
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung
Marking
Marquage

SPECIFICHE :
Anforderungen / Requirements / Exigences

Note:
Aufzeichnungen / Notes / Notes

VAL STOCK W2 A/1 1.4404/316L A,CF	
AD 2000-M. W 2 01/20 1.4401 A,CF (0)	(0)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
AD 2000-M. W 2 01/20 1.4404 A,CF (1)	(1)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
AISI . 316/316L	
AMS-QQ-S-763 D 316/316L A,CF	
ASME SA182 2021 S31600/03 A (2)	(2)Section II Part A 2021 EDITION For products machined directly from bar refer to ASME SA479.
ASME SA276 2021 S31600/03 A,CF (3)	(3)Section II Part A 2021 EDITION
ASME SA479 2021 S31600/03 A (4)	(4)Section II Part A 2021 EDITION
ASTM A182 2022A S31600/03 A (5)	(5)For products machined directly from bar refer also to ASTM A479.
ASTM A262 PR. E 2015 316/316L (6)	(6)Reapproved 2021
ASTM A276 2017 S31600/03 A,CF	
ASTM A370 2022 .	
ASTM A479 2021 S31600/03 A	
ASTM E10 2018 .	
ASTM E8 2022 .	
EN 10088 PART 3 2014 1.4401 A,CF	
EN 10088 PART 3 2014 1.4404 A,CF	
EN 10272 2016. 1.4401 A,CF	
EN 10272 2016. 1.4404 A,CF	
ISO 148-1 2016 .	
ISO 3651-2 98 METHOD A T1	
ISO 6506-1 2014 .	
ISO 6892-1 2019 .	
NACE MR0103 2015 S31600/03 A (7)	(7)ANSI/NACE MR0103/ISO 17945 November 23, 2015
NACE MR0175 2015 S31600/03 A (8)	(8)ANSI/NACE MR0175/ISO 15156-3, third edition November 23,2015
QQ-S-763 F 316/316L A,CF	
ACH CO . .	
KV L -196C . ISO 148-1	
MDS S01 5 316 A (9)	(9)Norsok-standard M-630 Edition 6, October 2013
ASTM A479 2021 S31600 A	

		Tolleranza: h9 - DIN671/EN10278 Toleranz/Allowance/Tolerance					
Pos. nr. Pos. nr. Item nr. Nr. de poste	Oggetto Gegenstand Product description Descrip. du produit	Dimensioni - mm Abmessungen Dimension Dimension	Lunghezza - mm Länge Length Longueur	Colata Schmelze Heat Coulée	Pezzi Stückzahl Pieces Pieces	Peso - KG Gewicht Weight Poids	Lotto nr. Losnr Lot nr Lot nr.
0060	Round	25,000	3000/ 3040	290765		164,0	209804470

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 29/05/2023 VCQ052 - MEST071270	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 1 di 4

STELO / STEM

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
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Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST056657 / 2023 / 1
Prüfung/Test/Essai

Ordine nr: 2300258
Bestell / Your order / Commande

Conferma ordine nr: MI23003306
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23002720
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Hot rolled - Annealed COLD PROCESSED
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung / Marking / Marquage

TEST ALLO STATO DI FORNITURA
Test on delivery condition Prüfung auf lieferbereitem produkt test a l'etat de fourniture Prueba sobre el material así come entregado

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Brass Diam. Dicke Width Diam Thickness Larg. diam epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement A5 %		Strizione Einschnürung Reduction of area Striction Z %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs demandées		min / max		200	235	500 / 900	20	-	-	-	-			- / 315		
A	10	20	L	512	567	679	40		65					230		
H	10	20	L	504	571	682	38		62					232		

TEST ALLO STATO DI FORNITURA
Test on delivery condition / Prüefung auf lieferbereitem produkt / Test a l'etat de fourniture / Prueba sobre el material así come entregado

TEST		min	max	
A	Grain size for ASTM E112			4

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Brass Diam. Dicke Width Diam Thickness Larg. diam epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs demandées		min / max		-	-	-	-	-	-	-	-	-
F	10X10	-196	L	185	180	178	1,502	1,456	1,474	60	60	60

Test on delivery condition per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Brass Diam. Dicke Width Diam Thickness Larg. diam epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs demandées		min / max		210	-	517	-	35	-	50	-			- / 235		
D	12,5	20	L	527		685		40		69				226		

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STELO / STEM

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST056657 / 2023 / 1

Ordine nr: 2300258 (Bestell / Your order / Commande)

Conferma ordine nr: MI23003306 (Werks/Our Order/Ref nr.)

Avviso di Spedizione: A-MI23002720 (Lieferanzeige/Packing list/B.L.)

Stato di fornitura: Hot rolled - Annealed COLD PROCESSED (Lieferzustand / Delivery state / Etat de livraison)

Tipo di Elaborazione: E+AOD (Erschmelzungsart / Melting process / Mode d'elaboration)

Qualità: 1.4401/1.4404/316/316L (Werkstoff/Grade/Nuance)

Marca: MVAPML (MAXIVAL) (Markenbezeichnung / Brand / Nuance)

Produttore: ACCIAIERIE VALBRUNA S.P.A. (Hersteller/Item/Usine productrice)

Marchi di Fabbrica: AV (Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice)

Punzone del Collaudatore: MR (Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur)

Punzonatura: 1.4401/1.4404 (Kennzeichnung / Marking / Marquage)

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diem Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion			Shear Shear		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		100	100	100	-	-	-	-	-	-
E	10X10	20	L	231	228	235						
G	10X10	20	L	227	220	221						

Tensile testing according to ISO 6892-1
Impact testing according to ISO 148-1
Mechanical properties according to ASTM A370.
Brinnell hardness according to ASTM E10
Tensile testing according to ASTM E8
Brinnell hardness according to ISO 6506-1

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Analisi chimica
Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat Schmelze/Coulée		C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	Co %	P %	S %	N %				
	min -	-	-	-	16,50	2,00	-	10,00	-	-	-	-	-	-	-	-
	max 0,030	1,00	2,00	18,00	2,50	1,00	13,00	-	0,045	0,030	0,100	-	-	-	-
290765		0,017	0,51	1,58	16,95	2,04	0,55	10,00	0,133	0,028	0,027	0,067				

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 29/05/2023	Direzione Qualità / Qualitätsmanagement/Quality Management/Gestion Qualité	Direzione Prodotto / Produktmanagement/Product Management/Direction Produit	Pagina 3 di 4
VCQ052 - MEST071270	R.BERTELLI	P.MESSORI	

STELO / STEM

Acciaierie Valbruna S.p.A.

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Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST056657 / 2023 / 1
Prüfung/Test/Essai

Ordine nr: 2300258
Bestell
Your order
Commande

Conferma ordine nr: MI23003306
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23002720
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Hot rolled - Annealed COLD PROCESSED
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung
Marking
Marquage

Reduction ratio = 61,1 : 1
Solution annealed 1040°C for 135'(total time)/water cooled.
SURFACE QUALITY COMPLIANT TO EN 10088-3 TAB.1 COND. 2H
"Issued in agreement with TÜV SÜD Industrie Service GMBH
(07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by
Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

Sono state soddisfatte tutte le condizioni richieste
Die gestellen Anforderungen sind lt. Anlage erfüllt
The material has been furnished in accordance with the requirements
Le materiel à été trouvé conforme aux exigences

Controllo antimescolanza con tecnica XRF/OES portatile : OK
Verwechslungprüfung: durch XRF/QES Gerät geführt : OK
Antimixing testing performed with XRF/OES portable : OK
Contrôle antimélange avt technique XRF/QES portable : OK

Controllo visivo e dimensionale: soddisfa le esigenze
Besichtigung und Ausmessung: ohne Beanstandung
Visual inspection and dimensional checks:satisfactory
Contrôle visuel et dimensions: satisfaisant

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD`S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 29/05/2023 VCQ052 - MEST071270	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 4 di 4

OTTURATORE / TIP

DC0202 – Certificato di prodotto	Rev. 2

CERTIFICATO : OR24 – 30948
CERTIFICATE
EN 10204 3.1

Cliente : INDRA S.R.L. Customer	**Consegna** : DDT 240552 of 03.09.2024 Delivery
Vs Ordine : AF24 02661 of 31.07.2024 Your order pos. 10 ÷ 60	**Ns Ordine** : 240331 of 01.08.2024 Our order
Descrizione materiale : TRIM STELLORIC 386 Material description UNS R30006 CoCrW AMS 5387	

Grado : 386 Grade	**Disegno** : 97.04.0002S-I rev 11 Drawing	**Colata** : 30948 Heat (BTL ϕ 15 mm)	**Quantità** : Nr. 100 pcs. Quantity

ANALISI DI COLATA / HEAT ANALYSIS

C	Si	Mn	S	P	Cr	Ni	Mo	W	Fe	Co
0.90÷1.40	Max. 1.50	Max 1.00	Max 0.04	Max 0.04	27.00÷31.00	Max 3.00	Max 1.50	3.50÷5.50	Max 3.00	Balance
Ottenuto / Obtained										
1.15	.641	.031	.008	.003	27.950	.007	.0208	5.060	.354	BAL.

PROVE MECCANICHE / MECHANICAL TESTS

Prove longitudinali eseguite +20°C alle condizioni di fornitura
Longitudinal testing at +20°C in delivery condition

Snervamento Rp 0,2% : N.A. Yield strength	**Rottura Rm** : N.A. Tensile strength
Allungamento A4 % : N.A. Elongation	**Strizione Z%** : N.A. Striction
Resilienza KV : N.A. Impact value	**Durezze** (>37 HRC) : 38/40 HRC Hardness
Controllo spettrografico : N.D. Spectrographic examination	**Ultrasuoni** : N.D. Ultrasonic test
Controllo visivo e dimensionale : conforme Visual and dimensional examination	**Ferrite** : N.D. Ferrite
Responsabile Qualita' : Ing. Mauro Molinelli Quality control	**Data** : 03.09.2024 Date

ORIC ITALIANA S.r.l. *Via dell' Industria, 4 Zona Ind.le 29015 Castel San Giovanni - PC - Italy*
tel. +39 0523 882 498 fax +39 0523 882 111
www.oric.it e-mail info@oric.it

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VITE BONNET / BONNET BOLTING

COMVITEA S.r.l.
Via Isonzo 32/C - 20078 Turate (CO) Tel 02 9697121 - Fax 02 96754113

CERTIFICATO DI COLLAUDO EN 10204
INSPECTION CERTIFICATE EN 10204

3.1 Azienda CERTIFICATA - UNI EN ISO 9001:2015
AD 2000 MERKBLATT W0 - PED Directive 2014/68/EU

Certificato/Certificate N°	**1369552**	Pag. **1 / 1**	Cliente/Customer	**INDRA SRL**	
Data cert /Date cert.	**18/07/2024**		Vs. ordine/Order.	**AF24 01968**	
d.d.t./Delivery note n.	**4664**	**18/07/2024**	Ns.rif./Int. ref.	**3902**	**27/06/2024**

Descrizione Materiale / Material Description

Item	Qty	Articolo / Article	Materiale / Material	Pos-Rifer / Your pos-ref.
1	40	Tirante tutto filetto ASTM/ASME A/SA 193 B8M cl.2 M10x40	ASTM/ASME A/SA 193 B8M cl.2	101.99.0375SS
2	60	Tirante tutto filetto ASTM/ASME A/SA 193 B8M cl.2 M20x70	ASTM/ASME A/SA 193 B8M cl.2	101.99.1098SS
3	215	Tirante tutto filetto ASTM/ASME A/SA 193 B8M cl.2 5/8"-11UNCx75	ASTM/ASME A/SA 193 B8M cl.2	101.99.1160SS
→ 4	260	Vite ASTM/ASME A/SA 193 B8M cl.2 UNI 5931 / DIN 912 M8x20	ASTM/ASME A/SA 193 B8M cl.2	96.50.0014SS
5	45	Vite ASTM/ASME A/SA 193 B8M cl.2 UNI 5931 / DIN 912 M10x80	ASTM/ASME A/SA 193 B8M cl.2	101.99.1161SS
6	45	Vite ASTM/ASME A/SA 193 B8M cl.2 UNI 5931 / DIN 912 TF M10x60	ASTM/ASME A/SA 193 B8M cl.2	

COLATA-ANALISI CHIMICA come da certificato di acciaieria / HEAT-CHEMICAL ANALYSIS according to mill certificate

Item	Colata/Heat	C	Cr	Mn	Mo	Ni	P	S	Si	NORME/STANDARDS
1	172522	0,0240	16,6200	1,8100	2,0100	10,1700	0,0310	0,0280	0,3800	ASME II Part A ed. 2021
2	291913	0,0160	16,6400	1,4200	2,0300	10,0500	0,0320	0,0010	0,3800	ASME II Part A ed. 2021
3	Z5XR	0,0160	16,6850	1,3520	2,0270	10,2850	0,0300	0,0260	0,3750	ASME II Part A ed. 2021
→ 4	304113	0,0210	16,6500	1,5800	2,0200	10,1500	0,0320	0,0290	0,3900	ASME II Part A ed. 2021
5	847049	0,0630	16,5820	1,3120	2,0320	10,0850	0,0297	0,0227	0,4130	ASME II Part A ed. 2021
6	847049	0,0630	16,5820	1,3120	2,0320	10,0850	0,0297	0,0227	0,4130	ASME II Part A ed. 2021

PROPRIETA' MECCANICHE / MECHANICAL PROPERTIES

	OTTENUTE / OBTAINED							RICHIESTE / REQUIRED							
	Rm	Re	A	Z	Dur/hard.		Resilienza/Impact test	Rm (N/mm²)		Re (N/mm²)		A %	Z %	Dur/hard.	Resilienza/Impact test
Item	N/mm²	N/mm²	%	%	HB		KV - Joule °C	min	max	min	max	min	min	min HB max	KV - Joule °C
1	960	900	22,60	67,40	281	288	20							321	20
2	854	748	24,00	61,00	273	277	20							321	20
3	898	724	26,00	71,00	255	260	20							321	20
→ 4	868	730	24,00	62,00	280	285	20							321	20
5	851	699	27,00	64,00	240	243	20							321	20
6	851	699	27,00	64,00	240	243	20							321	20

Item	Trattamento Termico Tempering - °C	Dur./Hard. HB dadi/nuts h	°C	>=	HB	Prova allarg. per dadi Cone stripping on nuts	ESAME VISIVO-VIS.EXAM
1	Carbide solution treated and strain hardened 1060°						Positivo / Positive
2	Carbide solution treated and strain hardened 1060°						Positivo / Positive
3	Carbide solution treated and strain hardened 1060°						Positivo / Positive
→ 4	Carbide solution treated and strain hardened 1060°						Positivo / Positive
5	Carbide solution treated and strain hardened 1060°						Positivo / Positive
6	Carbide solution treated and strain hardened 1060°						Positivo / Positive

Note:

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Certifichiamo che i materiali sono stati fabbricati, campionati, testati e ispezionati in conformità alle specifiche e conformi alle prescrizioni degli ordini.
We certify that the fasteners were manufactured, sampled, tested and inspected in accordance with the specification and are consistent with order prescriptions.

Oscar Uboldi - Quality Assurance

ROSETTI MARINO ITEM 310

COD. VLBNNN00063Q0H

TAG:

BLPH-MV-166, BLPH-MV-167,

BLPH-MV-386

INDRA ITEM 310

COD. 00.MNF.0612/V

indra VALVES - ITALY

Certificazione dei materiali
EN 10204 3.1 come da allegati

Material certification
EN 10204 3.1 as per attachments

MD-02-04-IT-UK/VSP/MNF
Rev. 16
Data: 08-Nov-2018
CM/IT/UK

Nr. 24-1841 — **Data** / *Date :* 23-Sep-24
No.

Cliente / ROSETTI MARINO SPA
Customer

Vs. ordine Nr. / 1724000798 REV.2 — **Data / Date :** 26-Jun-24
Your order Nr.

Ns. commessa Nr. / 24 01216 — **Data / Date :** 3-Jul-24
Our job Nr.

Ns. D.D.T. Nr. / — Data / Date :
Our advise note Nr.

Ordine di produzione / Production order number : 24 01216/310 - 36804

Lotto / Material batch number : 36804

Pos. Cliente Customer Item	*Pos. Indra Indra Item*	*Codice / Code*		*Q.tà / Q.ty*	*Nr. di serie Serial Number*	*Descrizione /Description*
		Ns./ Our	*Vs. / Your*			
310	310	00.MNF.0612/V	VLBNNN00063Q0H	3	106069,106070 106071	INDRA MONOFLANGE SBB-727-E150RF3-D-D-LF2-DL-CA3-N-G-HFT-Y13-L13-V2-TG-TGW-TV PMI2-PD2-FS-SPC1

Elenco / List

Componente / *Component*	Colata / Heat	Materiale *Material*	Numero del certificato *Certificate number*
Corpo Valvola / Valve Body	36804	ASTM A350 LF2 NACE	111 - 2150 - UT 3
Corpo bonnet/ Bonnet body	P0RI1500042203	ASTM A350 LF2 NACE	7497 - 741
Stelo spillo / Stem needle	290765	AISI 316/316L NACE	MEST056657/2023/1
Otturatore / Tip	30948	STELLITE	OR24 - 30948
Vite bonnet / Bonnet bolting	AJ6427	ASTM A320 L7M (zinc plated)	1364198

*NOTE / **REMARKS** :* TAG: BLPH-MV-166, BLPH-MV-167, BLPH-MV-386

PREPARATO DA: **ELEONORA RANZANI**
PREPARED BY: **DOCUMENTION MANAGER**

APPROVATO DA: **LUCIA NOSOTTI**
APPROVED BY: **QUALITY ASSURANCE MANAGER**

20013 Magenta (MI) Italy - Via Novara, 10/B-C
Tel. +39 02 97298663 r.a. - Fax +39 02 97291855
E-mail: indra@indra.it - http://www.indra.it

x CROSSWIND

9/10/24

STEEL S.P.A.
AZIENDA CERTIFICATA UNI EN ISO 9001:2015
VIA C. COLOMBO 21
29010 SARMATO (PIACENZA)
TEL. 0523/886111 - FAX 0523/886298
E-MAIL: info@steelacciai.it

ATTESTATO DI CONTROLLO

TEST REPORT – RELEVE' DE CONTROLE – WERKSZEUGNIS N° 111 DATA 12.01.2024

CLIENTE / Customer / Client / Besteller: INDRA SRL

ORDINE / Order / Commande / Bestelung: 3454 DATA 18.12.2023 CONFERMA / Confirmation / Confirmation de commande / Auftragsheslaligung
DDT 46 DATA 12.01.2024

ACCIAIO / Steel / Acier / Stahl: A105/ A350 LF2 ASTM

PROFILO / Shape / Section / Profil: T. 125 KG=590

COLATA / Reel / Coulée / Sclinetze: 36804

STATO DI FORNITURA / Delivery state / Elait de livraison / Lieferzusland: HOT ROLLED NORMALIZED

	COMPOSIZIONE CHIMICA % - CHEMICAL ANALYSIS % - COMPOSITION CHIMIQUE % - CHEMISCHE ZUSAMMENSETZUNG %															
	C	SI	MN	P	S	CR	NI	MO	AL	CU	V	NB	SN	TI	H/ppm	CEQ
DI COLATA / On heat Sur coulée / Vonder Schmelze	.165	.190	.950	.011	.004	.160	.060	.010	.030	.180	.003	.001	.017	.006	2.3	.37
SUL PRODOTTO / On product Sur prod. / Am Erzeugnis																

	CARATTERISTICHE MECCANICHE – MECHANICAL PROPERTIES – CARACTERISTIQUES MECANIQUES – MECHANISCHE EIGENSCHAFTEN												
	TRATTAMENTO TERMICO Heat treatment / Traitement thermique Warmebehandlung	Diameter Nominal mm	Weight Tollerance /m	Diameter Actual mm	Re Y. Strenght N/mm²	Rm T. Strenght N/mm²	A Elongation %	Z Reduction %	Rm/Re	KV -46°CJ	HB Brinell h. on product		
DI COLATA / On heat Sur coulée / Vonder Schmelze	NORMALIZED				373	533	41	72		54 57 55	160		
SUL PRODOTTO / On product Sur prod. / Am Erzeugnis													

ALTRE PROVE / Other test / Autres essais / Sonstige Prufungen: CERTIFICATO TTP N° 2150 DATA 17.11.2023
CONTROL UT 100% IN ACC. TO ASTM A388

COMMENTI / Remarks / Remarques / Andere Bemerkungen: Si attesta che i prodotti sopra descritti sono conformi ai requisiti contrattuali. NORME UNI EN 10204 3.1 - NACE MR 01-75 -NACE MR0103
We certify hereby that the above mentioned product are in accordance with the order prescriptions

Controllo Qualità / Quality control4 / Controle de qualité / Quelstraisablellung: STEEL s.p.a.

mod. 214 – REV. 01

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a CROSSWIND
9/10/24

Trattamenti Termici Piacentini

T.T.P. s.r.l.
AZIENDA CERTIFICATA UNI EN ISO 9001:2015
Via C. Colombo snc 29010 Sarmato (PC)
Tel 0523.888115 (r.a.) Fax 0523-848002
P.Iva e C.F. 01456790334

ATTESTATO DI CONTROLLO

TEST REPORT – RELEVE' DE CONTROLE – WERKSZEUGNIS N° 2150 DATA 17.11.2023

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CLIENTE / Customer / Client / Besteller: STEEL S.P.A.

ORDINE / Order / Commande / Bestelung:

CONFERMA / Confirmation / Confirmation de commande / Auftragsheslaligung:

ACCIAIO / Steel / Acier / Stahl: A105 /A350 LF2 ASTM

PROFILO / Shape / Section / Profil: D. 125 mm

COLATA / Reel / Coulée / Sclinetze: 36804

STATO DI FORNITURA / Delivery state / Elait de livraison / Lieferzusland: LAMINATO NORMALIZZATO

	CARATTERISTICHE MECCANICHE – MECHANICAL PROPERTIES – CARACTERISTIQUES MECANIQUES – MECHANISCHE EIGENSCHAFTEN												
	TRATTAMENTO TERMICO Heat treatment / Traitement thermique / Warmebehandlung	Diameter Nominal mm	Weight Tollerance /m	Diameter Actual mm	Re Y. Strenght N/mm²	Rm T. Strenght N/mm²	A Elongation %	Z Reduction %	Rm/Re	KV -46°CJ	HB Brinell h. on product		
DI COLATA / On heat Sur coulée / Vonder Schmelze	NORMALIZZAZIONE				373	533	41	72		54 57 55	160		
SUL PRODOTTO / On product Sur prod. / Am Erzeugnis													

ALTRE PROVE / Other test / Autres essais / Sonstige Prufungen: POSIZIONE PRELIEVO / TEST POSITION ¼ L
ASTM A370
API 6D ANNEX H

COMMENTI / Remarks / Remarques / Andere Bemerkungen: Si attesta che i prodotti sopra descritti sono conformi ai requisiti contrattuali.
Come da NORME UNI EN 10204 3.1

Controllo Qualità / Quality control / Controle de qualité / Quelstralsablellung: TTP srl

mod. 214 – REV. 01

Trattamenti Termici Piacentini	UT QUALIFICATION RECORD	N° 3 DATE: 12.01.2024
CUSTOMER: INDRA SRL		ODP N° 3454/AF23 del 18/12/2023
ACTIVITY\PHASE: QUALIFICATION RECORD		
UT.Q.R. SPECIFICATION\ACCEPTANCE CRITERIA: IN ACC. TO ASTM A388 UT 100%		
MATERIAL GRADE: A350 LF2 / A105 Ø 125 mm		
EQUIPMENT: INSTRUMENT MANUFACTURER: KRAUTKRAMER TYPE: USM 36 MAT. N°: 37462 SERIAL-No: 18107591 PROBE MANUFACTURER: KRAUTKRAMER TYPE: B2S MAT.N°: 17816 PROBE MHz: 2 0° SIZE mm: 24.0 CABLE: LEMO 1 L=2m BLOCK TYPE: V1 COUPLANT: GEL		
SCANNING DGS SENSIVITY: sui blocchi campione ECOGLOBAL DGS1 42 Db		
SCANNING SENSIVITY ON MATERIAL: 51 Db		
SET RANGE: (AVG) 3 mm		
SURFACE CONDITIONS : HOT ROLLED +N		
TEMPERATURE: °C 8		
REMARKS:		
LEVEL II EN ISO 9712:2012 OPERATOR: Marco Braghieri TTP srl		

x CROSSWIND
9/10/24

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Trattamenti Termici Piacentini	UT INSPECTION REPORT	N°: 3 DATE: 12.01.2024
CUSTOMER: INDRA SRL	ODP N° 3454/AF23 del 18/12/2023	HEAT: 36804
ACTIVITY: CONTROLLO UT IN ACC. TO ASTM A388 UT 100%		
UT.QR N° 3		
MATERIAL: A350 LF2 / A105	Ø 125 mm	

MATERIAL IDENTIFICATION	LOCATION OF INDICATIONS TO THE END POS.	W.T.POS. mm	DIM mm	RESULTS
HEAT: 36804 L=6100				Conforme
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				

NOTE:

LEVEL II EN ISO 9712:2012
OPERATOR: Marco Braghieri
TTP srl

INDRA s.r.l.
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STEEL S.P.A.
AZIENDA CERTIFICATA UNI EN ISO 9001:2008

VIA C. COLOMBO 21
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TEL. 0523/886111 - FAX 0523/886298
E-MAIL: info@steelacciai.it
Societa' soggetta a direzione e coordinamento
della STEEL HOLDING S.A.P.A di Stefano e Marco Gatti

ATTESTATO DI CONTROLLO

TEST REPORT – RELEVE' DE CONTROLE – WERKSZEUGNIS N° 7497 DATA 18.07.2017

CLIENTE / Customer / Client / Besteller: INDRA S.R.L.

ORDINE / Order / Commande / Bestelung: F17-02430 del 11.07.2017 DDT 2333 del 18.07.2017

CONFERMA / Confirmation / Confirmation de commande / Auftragsheslaligung

ACCIAIO / Steel / Acier / Stahl: ASTM A350 LF2 CL.1

PROFILO / Shape / Section / Profil: T.65

COLATA / Reel / Coulée / Sclinetze: P0RI1500042203

STATO DI FORNITURA / Delivery state / Elait de livraison / Lieferzusland: HOT ROLLED NORMALIZED

	COMPOSIZIONE CHIMICA % - CHEMICAL ANALYSIS % - COMPOSITION CHIMIQUE % - CHEMISCHE ZUSAMMENSETZUNG %															
	C	SI	MN	P	S	CR	NI	MO	AL	CU	V	NB	CEQ			
DI COLATA / On heat Sur coulée / Vonder Schmelze	.20	.23	.98	.010	.007	.11	.06	.010	.022	.10	.003	.002	.3986			
SUL PRODOTTO / On product Sur prod. / Am Erzeugnis																

	CARATTERISTICHE MECCANICHE – MECHANICAL PROPERTIES – CARACTERISTIQUES MECANIQUES – MECHANISCHE EIGENSCHAFTEN												
	TRATTAMENTO TERMICO Heat treatment / Traitement thermique Warmebehandlung	Diameter Nominal mm	Weight Tolerance /m	Diameter Actual mm	Re Y. Strenght N/mm²	Rm T. Strenght N/mm²	A Elongation %	Z Reduction %	Rm/Re	KV-46°CJ	HB Brinell h. on product		
DI COLATA / On heat Sur coulée / Vonder Schmelze	NORMALIZED				349	507	22.8	49.8		79 74 74	152		
SUL PRODOTTO / On product Sur prod. / Am Erzeugnis													

ALTRE PROVE / Other test / Autres essais / Sonstige Prufungen: CERTIFICATO TTP N° 741 del 04.11.2016

COMMENTI / Remarks / Remarques / Andere Bemerkungen: Si attesta che i prodotti sopra descritti sono conformi ai requisiti contrattuali. NORME UNI EN 10204.3.1 – NACE MR 01-75 / MR 01-03
We certify hereby that the above mentioned product are in accordance with the order prescriptions

Controllo Qualità / Quality control / Controle de qualité / Quelstralsablellung

STEEL s.p.a.

mod. 214 – REV. 01

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Trattamenti Termici Piacentini
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Tel 0523.888115 (r.a.) Fax 0523-848002
P.Iva e C.F. 01456790334
Societa' soggetta a direzione e coordinamento
della STEEL HOLDING S.A.P.A di Stefano e Marco Gatti

CERTIFICATO DI CONTROLLO

TEST REPORT – RELEVE' DE CONTROLE – WERKSZEUGNIS N° 741 DATA 04.11.2016

CLIENTE Customer / Client / Besteller: STEEL ACCIAI S.P.A.
ORDINE Order / Commande / Bestelung
CONFERMA Confirmation / Confirmation de commande / Auftragsbestaligung
ACCIAIO Steel / Acier / Stahl: ASTM A350 LF2 CL.1
PROFILO Shape / Section / Profil: T. 65
COLATA Reel / Coulée / Schmetze: P0RI1500042203
STATO DI FORNITURA Delivery state / Etait de livraison / Lieferzusland: HOT ROLLED NORMALIZED

	CARATTERISTICHE MECCANICHE – MECHANICAL PROPERTIES – CARACTERISTIQUES MECANIQUES – MECHANISCHE EIGENSCHAFTEN												
	TRATTAMENTO TERMICO Heat treatment / Traitement thermique Warmebehandlung	Diameter Nominal mm	Weight Tollerance /m	Diameter Actual mm	Re Y. Strenght N/mm²	Rm T. Strenght N/mm²	A Elongation %	Z Reduction %	Rm/Re	KV-46°CJ		HB Brinell h. on product	
DI COLATA / On heat Sur coulée / Vonder Schmelze	NORMALIZED				349	507	22.8	49.8		79 74 74		152	
SUL PRODOTTO / On product Sur prod. / Am Erzeugnis													

ALTRE PROVE Other test / Autres essais / Sonstige Prufungen: POSIZIONE PRELIEVO / TEST POSITION ¼ L
ASTM A370

COMMENTI Remarks / Remarques / Andere Bemerkungen

Si attesta che i prodotti sopra descritti sono conformi ai requisiti contrattuali.
Come da NORME UNI EN 10204.3.1

Controllo Qualità Quality control / Controle de qualité / Quelstralsabteilung

TTP srl

mod. 214 – REV. 01

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STELO / STEM

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST056657 / 2023 / 1
Prüfung/Test/Essai

Ordine nr: 2300258
Bestell
Your order
Commande

Conferma ordine nr: MI23003306
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23002720
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Hot rolled - Annealed COLD PROCESSED
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung
Marking
Marquage

SPECIFICHE : Anforderungen / Requirements / Exigences	Note: Aufzeichnungen / Notes / Notes
VAL STOCK W2 A/1 1.4404/316L A,CF	
AD 2000-M. W 2 01/20 1.4401 A,CF (0)	(0)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
AD 2000-M. W 2 01/20 1.4404 A,CF (1)	(1)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
AISI . 316/316L	
AMS-QQ-S-763 D 316/316L A,CF	
ASME SA182 2021 S31600/03 A (2)	(2)Section II Part A 2021 EDITION For products machined directly from bar refer to ASME SA479.
ASME SA276 2021 S31600/03 A,CF (3)	(3)Section II Part A 2021 EDITION
ASME SA479 2021 S31600/03 A (4)	(4)Section II Part A 2021 EDITION
ASTM A182 2022A S31600/03 A (5)	(5)For products machined directly from bar refer also to ASTM A479.
ASTM A262 PR. E 2015 316/316L (6)	(6)Reapproved 2021
ASTM A276 2017 S31600/03 A,CF	
ASTM A370 2022 .	
ASTM A479 2021 S31600/03 A	
ASTM E10 2018 .	
ASTM E8 2022 .	
EN 10088 PART 3 2014 1.4401 A,CF	
EN 10088 PART 3 2014 1.4404 A,CF	
EN 10272 2016. 1.4401 A,CF	
EN 10272 2016. 1.4404 A,CF	
ISO 148-1 2016 .	
ISO 3651-2 98 METHOD A T1	
ISO 6506-1 2014 .	
ISO 6892-1 2019 .	
NACE MR0103 2015 S31600/03 A (7)	(7)ANSI/NACE MR0103/ISO 17945 November 23, 2015
NACE MR0175 2015 S31600/03 A (8)	(8)ANSI/NACE MR0175/ISO 15156-3, third edition November 23,2015
QQ-S-763 F 316/316L A,CF	
ACH CO . .	
KV L -196C . ISO 148-1	
MDS S01 5 316 A (9)	(9)Norsok-standard M-630 Edition 6, October 2013
ASTM A479 2021 S31600 A	

		Tolleranza: h9 - DIN671/EN10278 Toleranz/Allowance/Tolerance					
Pos. nr. Pos. nr. Item nr. Nr. de poste	Oggetto Gegenstand Product description Descrip. du produit	Dimensioni - mm Abmessungen Dimension Dimension	Lunghezza - mm Länge Length Longueur	Colata Schmelze Heat Coulée	Pezzi Stückzahl Pieces Pièces	Peso - KG Gewicht Weight Poids	Lotto nr. Losnr Lot nr Lot nr
0060	Round	25,000	3000/ 3040	290765		164,0	209804470

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 29/05/2023
VCQ052 - MEST071270

Direzione Qualità
Qualitätsmanagement/Quality Management/Gestion Qualité
R.BERTELLI

Direzione Prodotto
Produktmanagement/Product Management/Direction Produit
P.MESSORI

STELO / STEM

Acciaierie Valbruna S.p.A.

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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST056657 / 2023 / 1

Ordine nr: 2300258 (Bestell / Your order / Commande)

Conferma ordine nr: MI23003306 (Werks/Our Order/Ref nr.)

Avviso di Spedizione: A-MI23002720 (Lieferanzeige/Packing list/B.L.)

Stato di fornitura: Hot rolled - Annealed COLD PROCESSED (Lieferzustand / Delivery state / Etat de livraison)

Tipo di Elaborazione: E+AOD (Erschmelzungsart / Melting process / Mode d'elaboration)

Qualità: 1.4401/1.4404/316/316L (Werkstoff/Grade/Nuance)

Marca: MVAPML (MAXIVAL) (Markenbezeichnung / Brand / Nuance)

Produttore: (Hersteller/Item/Usine productrice)

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: (Zeichen des Liefernwerkes / Trade marks / Sigles de l'usine productrice) AV

Punzone del Collaudatore: (Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur) MR

Punzonatura: 1.4401/1.4404 (Kennzeichnung / Marking / Marquage)

TEST ALLO STATO DI FORNITURA
Test on delivery condition — Prüfung auf lieferbereitem produkt — test a l'etat de fourniture — Prueba sobre el material asi come entregado

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess / Brass Diam. Dicke / Width Diam. Thickness / Larg. diem epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement A5 %		Strizione Einschnürung Reduction of area Striction Z %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti (Anforderungen/Required values / Valeurs demendées)		min		200	235	500	20	-	-	-	-			-		
		max				900									315	
A	10	20	L	512	567	679	40		65					230		
H	10	20	L	504	571	682	38		62					232		

TEST ALLO STATO DI FORNITURA
Test on delivery condition / Prüfung auf lieferbereitem produkt / Test a l'etat de fourniture / Prueba sobre el material asi come entregado

TEST		min	max	
A	Grain size for ASTM E112			4

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess / Brass Diam. Dicke / Width Diam. Thickness / Larg. diem epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti (Anforderungen/Required values / Valeurs demendées)		min		-	-	-	-	-	-	-	-	-
		max										
F	10X10	-196	L	185	180	178	1,502	1,456	1,474	60	60	60

Test on delivery condition per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess / Brass Diam. Dicke / Width Diam. Thickness / Larg. diem epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti (Anforderungen/Required values / Valeurs demendées)		min		210	-	517	-	35	-	50	-			-		
		max													235	
D	12,5	20	L	527		685		40		69				226		

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 29/05/2023 VCQ052 - MEST071270	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 2 di 4

STELO / STEM

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST056657 / 2023 / 1

Ordine nr: 2300258
Bestell / Your order / Commande

Conferma ordine nr: MI23003306
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23002720
Lieferanzeige/Packing list/B.L.

Stato di fornitura: Hot rolled - Annealed COLD PROCESSED
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice: AV

Punzone del Collaudatore / Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur: MR

Punzonatura / Kennzeichnung / Marking / Marquage: 1.4401/1.4404

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab / Specimen/Eprouvette Larg.diam Spess. / Breite Diam. Dicke / Width Diam Thickness / Larg diam epais mm	°C	Posiz. Saggio / Probenlage / Location / Emplacement 1)	Resilienza / Kerbschlagarbeit / Impact Value / Résilience KV2 J			Espansione laterale / Lateral Expansion			Shear / Shear		
Valori richiesti / Anforderungen/Required values / Valeurs demandées		min max		100	100	100	-	-	-	-	-	-
E	10X10	20	L	231	228	235						
G	10X10	20	L	227	220	221						

Tensile testing according to ISO 6892-1
Impact testing according to ISO 148-1
Mechanical properties according to ASTM A370.
Brinnell hardness according to ASTM E10
Tensile testing according to ASTM E8
Brinnell hardness according to ISO 6506-1

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Analisi chimica
Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat / Schmelze/Coulée	C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	Co %	P %	S %	N %				
min -	-	-	-	16,50	2,00	-	10,00	-	-	-	-	-	-	-	-
max 0,030	1,00	2,00	18,00	2,50	1,00	13,00	-	0,045	0,030	0,100	-	-	-	-	
290765	0,017	0,51	1,58	16,95	2,04	0,55	10,00	0,133	0,028	0,027	0,067				

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 29/05/2023
VCQ052 - MEST071270

Direzione Qualità / Qualitätsmanagement/Quality Management/Gestion Qualité
R.BERTELLI

Direzione Prodotto / Produktmanagement/Product Management/Direction Produit
P.MESSORI

STELO / STEM

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST056657 / 2023 / 1
Prüfung/Test/Essai

Ordine nr: 2300258
Bestell / Your order / Commande

Conferma ordine nr: MI23003306
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23002720
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Hot rolled - Annealed COLD PROCESSED
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice

Punzone del Collaudatore:
Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung / Marking / Marquage

Reduction ratio = 61,1 : 1
Solution annealed 1040°C for 135'(total time)/water cooled.
SURFACE QUALITY COMPLIANT TO EN 10088-3 TAB.1 COND. 2H
"Issued in agreement with TÜV SÜD Industrie Service GMBH
(07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by
Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

Sono state soddisfatte tutte le condizioni richieste Die gestellen Anforderungen sind lt. Anlage erfüllt The material has been furnished in accordance with the requirements Le materiel à été trouvé conforme aux exigences	Controllo antimescolanza con tecnica XRF/OES portatile : OK Verwechslungprüfung: durch XRF/OES Gerät geführt : OK Antimixing testing performed with XRF/OES portable : OK Contrôle antimélange svi technique XRF/OES portable : OK	Controllo visivo e dimensionale: soddisfa le esigenze Besichtigung und Ausmessung: ohne Beanstandung Visual inspection and dimensional checks:satisfactory Contrôle visuel et dimensions: satisfaisant

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD`S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

INDRA s.r.l.
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CROSSWIND

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 29/05/2023 VCQ052 - MEST071270	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 4 di 4

OTTURATORE / TIP

DC0202 – Certificato di prodotto	Rev. 2

CERTIFICATO : OR24 – 30948
CERTIFICATE
EN 10204 3.1

Cliente : INDRA S.R.L. Customer	**Consegna** : DDT 240552 of 03.09.2024 Delivery
Vs Ordine : AF24 02661 of 31.07.2024 Your order pos. 10 ÷ 60	**Ns Ordine** : 240331 of 01.08.2024 Our order
Descrizione materiale : TRIM STELLORIC 386 Material description UNS R30006 CoCrW AMS 5387	

Grado : 386 Grade	**Disegno** : 97.04.0002S-I rev 11 Drawing	**Colata** : 30948 Heat (BTL ϕ 15 mm)	**Quantità** : Nr. 100 pcs. Quantity

ANALISI DI COLATA / HEAT ANALYSIS

C	Si	Mn	S	P	Cr	Ni	Mo	W	Fe	Co
0.90÷1.40	Max. 1.50	Max 1.00	Max 0.04	Max 0.04	27.00÷31.00	Max 3.00	Max 1.50	3.50÷5.50	Max 3.00	Balance
Ottenuto / Obtained										
1.15	.641	.031	.008	.003	27.950	.007	.0208	5.060	.354	BAL.

PROVE MECCANICHE / MECHANICAL TESTS

Prove longitudinali eseguite +20°C alle condizioni di fornitura
Longitudinal testing at +20°C in delivery condition

Snervamento Rp 0,2% : N.A. Yield strength	**Rottura Rm** : N.A. Tensile strength
Allungamento A4 % : N.A. Elongation	**Strizione Z%** : N.A. Striction
Resilienza KV : N.A. Impact value	**Durezze** (>37 HRC) : 38/40 HRC Hardness
Controllo spettrografico : N.D. Spectrographic examination	**Ultrasuoni** : N.D. Ultrasonic test
Controllo visivo e dimensionale : conforme Visual and dimensional examination	**Ferrite** : N.D. Ferrite
Responsabile Qualita' : Ing. Mauro Molinelli Quality control	**Data** : 03.09.2024 Date

ORIC ITALIANA S.r.l. *Via dell' Industria, 4 Zona Ind.le 29015 Castel San Giovanni - PC - Italy*
tel. +39 0523 882 498 fax +39 0523 882 111
www.oric.it e-mail info@oric.it

INDRA s.r.l.
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VITE BONNET / BONNET BOLTING

COMVITEA s.r.l.
Via Isonzo 32/C - 20078 Turate (CO) Tel 02.9697121 - Fax 02 96754113

CERTIFICATO DI COLLAUDO EN 10204
INSPECTION CERTIFICATE EN 10204

3.1 Azienda CERTIFICATA - UNI EN ISO 9001:2015
AD 2000 MERKBLATT W0 - PED Directive 2014/68/EU

Certificato/Certificate N°	**1364198**	Pag. **1 / 1**	Cliente/Customer	**INDRA SRL**	
Data cert /Date cert.	**19/07/2023**		Vs. ordine/Order.	**AF23 01320**	
d.d.t./Delivery note n.	**4591**	**19/07/2023**	Ns.rif./Int. ref.	**3259**	**18/05/2023**

Descrizione Materiale / Material Description

Item	Qty	Articolo / Article	Materiale / Material	Pos-Rifer / Your pos-ref.
1	5000	Vite ASTM/ASME A/SA 320 L7M UNI 5931 / DIN 912 M8x20 ZNB deidr. 5-8µ	ASTM/ASME A/SA 320 L7M	96.50.0006

COLATA-ANALISI CHIMICA come da certificato di acciaieria / HEAT-CHEMICAL ANALYSIS according to mill certificate

Item	Colata/Heat	C	Cr	Mn	Mo	P	S	Si
1	AJ6427	0,4300	1,0600	0,8000	0,1600	0,0060	0,0200	0,2100

NORME/STANDARDS

ASME II Part A ed. 2021

PROPRIETA' MECCANICHE / MECHANICAL PROPERTIES

	OTTENUTE / OBTAINED							RICHIESTE / REQUIRED							
	Rm	Re	A	Z	Dur/hard.		Resilienza/Impact test	Rm (N/mm²)		Re (N/mm²)		A %	Z %	Dur/hard. HB		Resilienza/Impact test	
Item	N/mm²	N/mm²	%	%	HB		KV - Joule °C	min	max	min	max	min	min	min	max	KV - Joule	°C
1	763	630	25,10	56,80	225	228	-73	690		550		18	50		235	27	-73

Item	Trattamento Termico Tempering - °C	Dur./Hard. HB dadi/nuts h	°C	>=	HB	Prova allarg. per dadi Cone stripping on nuts
1	Quenched and tempered macro etch examination: positive 620°					

ESAME VISIVO-VIS.EXAM

Positivo / Positive

Note: MATERIALE DI ORIGINE EUROPEA

INDRA s.r.l.
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Certifichiamo che i materiali sono stati fabbricati, campionati, testati e ispezionati in conformità alle specifiche e conformi alle prescrizioni degli ordini.
We certify that the fasteners were manufactured, sampled, tested and inspected in accordance with the specification and are consistent with order prescriptions.

Oscar Uboldi - Quality Assurance

ROSETTI MARINO ITEM 320

COD. VLBNNN00063Q0H

TAG:

BLPH-MV-411

INDRA ITEM 320

COD. 00.MNF.0606/V

indra VALVES - ITALY

Certificazione dei materiali
EN 10204 3.1 come da allegati

Material certification
EN 10204 3.1 as per attachments

MD-02-04-IT-UK/VSP/MNF
Rev. 16
Data: 08-Nov-2018
CM/IT/UK

Nr. / *No.* 24-1842 — **Data** / *Date :* 23-Sep-24

Cliente / *Customer* ROSETTI MARINO SPA

Vs. ordine Nr. / *Your order Nr.* 1724000798 REV.2 — **Data / Date :** 26-Jun-24

Ns. commessa Nr. / *Our job Nr.* 24 01216 — **Data / Date :** 3-Jul-24

Ns. D.D.T. Nr. / *Our advise note Nr.* — Data / Date :

Ordine di produzione / Production order number : 24 01216/320 - 36804

Lotto / Material batch number : 36804

Pos. Cliente / Customer Item	Pos. Indra / Indra Item	Codice / Code		Q.tà / Q.ty	Nr. di serie / Serial Number	Descrizione / Description
		Ns./ Our	Vs. / Your			
320	320	00.MNF.0606/V	VLBNNN00063Q0H	1	106072	INDRA MONOFLANGE SBB-727-E150RF3-D-D-LF2-DL-CA3-N-G-HFT-EXS100-EXY13-L13-V2-TG-TGW-TV-PMI2-PD2-FS-SPC1

Elenco / List

Componente / *Component*	Colata / Heat	Materiale / *Material*	Numero del certificato / *Certificate number*
Corpo Valvola / Valve Body	36804	ASTM A350 LF2 NACE	111 - 2150 - UT 3
Corpo bonnet/ Bonnet body	P0RI1500042203	ASTM A350 LF2 NACE	7497 - 741
Stelo spillo / Stem needle	283925	AISI 316/316L NACE	MEST690625/2021/
Otturatore / Tip	30948	STELLITE	OR24 - 30948
Vite bonnet / Bonnet bolting	AJ6427	ASTM A320 L7M (zinc plated)	1364198

NOTE / REMARKS : TAG: BLPH-MV-411

PREPARATO DA: ELEONORA RANZANI
PREPARED BY: DOCUMENTION MANAGER

APPROVATO DA: LUCIA NOSOTTI
APPROVED BY: QUALITY ASSURANCE MANAGER

20013 Magenta (MI) Italy - Via Novara, 10/B-C
Tel. +39 02 97298663 r.a. - Fax +39 02 97291855
E-mail: indra@indra.it - http://www.indra.it

x CROSSWIND

STEEL S.P.A.
AZIENDA CERTIFICATA UNI EN ISO 9001:2015

VIA C. COLOMBO 21
29010 SARMATO (PIACENZA)
TEL. 0523/886111 - FAX 0523/886298
E-MAIL: info@steelacciai.it

ATTESTATO DI CONTROLLO

TEST REPORT – RELEVE' DE CONTROLE – WERKSZEUGNIS N° 111 DATA 12.01.2024

CLIENTE Customer / Client / Besteller: INDRA SRL

ORDINE Order / Commande / Bestelung: 3454 DATA 18.12.2023 CONFERMA
DDT 46 DATA 12.01.2024
Confirmation / Confirmation de commande / Auftragsheslaligung

ACCIAIO Steel / Acier / Stahl: A105/ A350 LF2 ASTM

PROFILO Shape / Section / Profil: T. 125 KG=590

COLATA Reel / Coulée / Sclinetze: 36804

STATO DI FORNITURA Delivery state / Elait de livraison / Lieferzusland: HOT ROLLED NORMALIZED

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	COMPOSIZIONE CHIMICA % - CHEMICAL ANALYSIS % - COMPOSITION CHIMIQUE % - CHEMISCHE ZUSAMMENSETZUNG %															
	C	SI	MN	P	S	CR	NI	MO	AL	CU	V	NB	SN	TI	H/ppm	CEQ
DI COLATA / On heat Sur coulée / Vonder Schmelze	.165	.190	.950	.011	.004	.160	.060	.010	.030	.180	.003	.001	.017	.006	2.3	.37
SUL PRODOTTO / On product Sur prod. / Am Erzeugnis																

	CARATTERISTICHE MECCANICHE – MECHANICAL PROPERTIES – CARACTERISTIQUES MECANIQUES – MECHANISCHE EIGENSCHAFTEN												
	TRATTAMENTO TERMICO Heat treatment / Traitement thermique Warmebehandlung	Diameter Nominal mm	Weight Tollerance /m	Diameter Actual mm	Re Y. Strenght N/mm²	Rm T. Strenght N/mm²	A Elongation %	Z Reduction %	Rm/Re	KV -46°CJ	HB Brinell h. on product		
DI COLATA / On heat Sur coulée / Vonder Schmelze	NORMALIZED				373	533	41	72		54 57 55	160		
SUL PRODOTTO / On product Sur prod. / Am Erzeugnis													

ALTRE PROVE
Other test / Autres essais / Sonstige Prufungen
CERTIFICATO TTP N° 2150 DATA 17.11.2023
CONTROL UT 100% IN ACC. TO ASTM A388

COMMENTI
Remarks / Remarques / Andere Bemerkungen
Si attesta che i prodotti sopra descritti sono conformi ai requisiti contrattuali. NORME UNI EN 10204 3.1 - NACE MR 01-75 -NACE MR0103
We certify hereby that the above mentioned product are in accordance with the order prescriptions

Controllo Qualità
Quality control4
Controle de qualité
Quelstralsablellung

STEEL s.p.a.

mod. 214 – REV. 01

Trattamenti Termici Piacentini

T.T.P. s.r.l.
AZIENDA CERTIFICATA UNI EN ISO 9001:2015
Via C. Colombo snc 29010 Sarmato (PC)
Tel 0523.888115 (r.a.) Fax 0523-848002
P.Iva e C.F. **01456790334**

ATTESTATO DI CONTROLLO

TEST REPORT – RELEVE' DE CONTROLE – WERKSZEUGNIS N° 2150 DATA 17.11.2023

INDRA S.r.l.
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CLIENTE Customer Client Besteller	STEEL S.P.A.			ORDINE Order Commande Bestelung		CONFERMA Confirmation Confirmation de commande Auftragsheslaligung	
ACCIAIO Steel Acier Stahl	A105 /A350 LF2 ASTM	PROFILO Shape Section Profil	D. 125 mm	COLATA Reel Coulée Sclinetze	36804	STATO DI FORNITURA Delivery state Elait de livraison Lieferzusland	LAMINATO NORMALIZZATO

	CARATTERISTICHE MECCANICHE – MECHANICAL PROPERTIES – CARACTERISTIQUES MECANIQUES – MECHANISCHE EIGENSCHAFTEN											
	TRATTAMENTO TERMICO Heat treatment / Traitement thermique Warmebehandlung	Diameter Nominal mm	Weight Tollerance /m	Diameter Actual mm	Re Y. Strenght N/mm²	Rm T. Strenght N/mm²	A Elongation %	Z Reduction %	Rm/Re	KV -46°CJ	HB Brinell h. on product	
DI COLATA / On heat Sur coulée / Vonder Schmelze	NORMALIZZAZIONE				373	533	41	72		54 57 55	160	
SUL PRODOTTO / On product Sur prod. / Am Erzeugnis												

ALTRE PROVE Other test Autres essais Sonstige Prufungen	POSIZIONE PRELIEVO / TEST POSITION ¼ L ASTM A370 API 6D ANNEX H

COMMENTI Remarks Remarques Andere Bemerkungen	Si attesta che i prodotti sopra descritti sono conformi ai requisiti contrattuali. Come da NORME UNI EN 10204 3.1

Controllo Qualità TTP Srl
Quality control
Controle de qualité
Quelstralsablellung

mod. 214 – REV. 01

Trattamenti Termici Piacentini	UT QUALIFICATION RECORD	N° 3 DATE: 12.01.2024
CUSTOMER: INDRA SRL		ODP N° 3454/AF23 del 18/12/2023
ACTIVITY\PHASE: QUALIFICATION RECORD		
UT.Q.R. SPECIFICATION\ACCEPTANCE CRITERIA: IN ACC. TO ASTM A388 UT 100%		
MATERIAL GRADE: A350 LF2 / A105 Ø 125 mm		
EQUIPMENT: INSTRUMENT MANUFACTURER: KRAUTKRAMER TYPE: USM 36 MAT. N°: 37462 SERIAL-No: 18107591 PROBE MANUFACTURER: KRAUTKRAMER TYPE: B2S MAT.N°: 17816 PROBE MHz: 2 0° SIZE mm: 24.0 CABLE: LEMO 1 L=2m BLOCK TYPE: V1 COUPLANT: GEL		
SCANNING DGS SENSIVITY: sui blocchi campione ECOGLOBAL DGS1 42 Db		
SCANNING SENSIVITY ON MATERIAL: 51 Db		
SET RANGE: (AVG) 3 mm		
SURFACE CONDITIONS : HOT ROLLED +N		
TEMPERATURE: °C 8		
REMARKS:		
LEVEL II EN ISO 9712:2012 OPERATOR: Marco Braghieri TTP srl		

x CROSSWIND
9/10/24

INDRA s.r.l.
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Trattamenti Termici Piacentini	UT INSPECTION REPORT	N°: 3 DATE: 12.01.2024
CUSTOMER: INDRA SRL	ODP N° 3454/AF23 del 18/12/2023	HEAT: 36804
ACTIVITY: CONTROLLO UT IN ACC. TO ASTM A388 UT 100%		
UT.QR N° 3		
MATERIAL: A350 LF2 / A105	Ø 125 mm	

MATERIAL IDENTIFICATION	LOCATION OF INDICATIONS TO THE END POS.	W.T.POS. mm	DIM mm	RESULTS
HEAT: 36804 L=6100				Conforme
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				
HEAT: L=				

NOTE: xCROSSWIND 8/10/24 R

LEVEL II EN ISO 9712:2012
OPERATOR: Marco Braghieri
TTP srl

INDRA s.r.l.
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STEEL S.P.A.
AZIENDA CERTIFICATA UNI EN ISO 9001:2008

VIA C. COLOMBO 21
29010 SARMATO (PIACENZA)
TEL. 0523/886111 - FAX 0523/886298
E-MAIL: info@steelacciai.it
Societa' soggetta a direzione e coordinamento
della STEEL HOLDING S.A.P.A di Stefano e Marco Gatti

ATTESTATO DI CONTROLLO

TEST REPORT – RELEVE' DE CONTROLE – WERKSZEUGNIS N° 7497 DATA 18.07.2017

CLIENTE (Customer / Client / Besteller) INDRA S.R.L.

ORDINE (Order / Commande / Bestelung) F17-02430 del 11.07.2017 DDT 2333 del 18.07.2017

CONFERMA (Confirmation / Confirmation de commande / Auftragsheslaligung)

ACCIAIO (Steel / Acier / Stahl) ASTM A350 LF2 CL.1

PROFILO (Shape / Section / Profil) T.65

COLATA (Reel / Coulée / Sclinetze) P0RI1500042203

STATO DI FORNITURA (Delivery state / Elait de livraison / Lieferzusland) HOT ROLLED NORMALIZED

	COMPOSIZIONE CHIMICA % - CHEMICAL ANALYSIS % - COMPOSITION CHIMIQUE % - CHEMISCHE ZUSAMMENSETZUNG %															
	C	SI	MN	P	S	CR	NI	MO	AL	CU	V	NB	CEQ			
DI COLATA / On heat Sur coulée / Vonder Schmelze	.20	.23	.98	.010	.007	.11	.06	.010	.022	.10	.003	.002	.3986			
SUL PRODOTTO / On product Sur prod. / Am Erzeugnis																

	CARATTERISTICHE MECCANICHE – MECHANICAL PROPERTIES – CARACTERISTIQUES MECANIQUES – MECHANISCHE EIGENSCHAFTEN												
	TRATTAMENTO TERMICO Heat treatment / Traitement thermique Warmebehandlung	Diameter Nominal mm	Weight Tolerance /m	Diameter Actual mm	Re Y. Strenght N/mm²	Rm T. Strenght N/mm²	A Elongation %	Z Reduction %	Rm/Re	KV-46°CJ	HB Brinell h. on product		
DI COLATA / On heat Sur coulée / Vonder Schmelze	NORMALIZED				349	507	22.8	49.8		79 74 74	152		
SUL PRODOTTO / On product Sur prod. / Am Erzeugnis													

ALTRE PROVE (Other test / Autres essais / Sonstige Prufungen) CERTIFICATO TTP N° 741 del 04.11.2016

COMMENTI (Remarks / Remarques / Andere Bemerkungen) Si attesta che i prodotti sopra descritti sono conformi ai requisiti contrattuali. NORME UNI EN 10204.3.1 – NACE MR 01-75 / MR 01-03
We certify hereby that the above mentioned product are in accordance with the order prescriptions

Controllo Qualità (Quality control / Controle de qualité / Quelstralsablellung) STEEL s.p.a.

mod. 214 – REV. 01

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Trattamenti Termici Piacentini
T.T.P. s.r.l.
AZIENDA CERTIFICATA UNI EN ISO 9001:2008
Via C. Colombo snc 29010 Sarmato (PC)
Tel 0523.888115 (r.a.) Fax 0523-848002
P.Iva e C.F. 01456790334
Societa' soggetta a direzione e coordinamento
della STEEL HOLDING S.A.P.A di Stefano e Marco Gatti

CERTIFICATO DI CONTROLLO

TEST REPORT – RELEVE' DE CONTROLE – WERKSZEUGNIS N° 741 DATA 04.11.2016

INDRA s.r.l.
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CLIENTE Customer Client Besteller	STEEL ACCIAI S.P.A.			ORDINE Order Commande Bestelung		CONFERMA Confirmation Confirmation de commande Auftragsheslaligung	
ACCIAIO Steel Acier Stahl	ASTM A350 LF2 CL.1	PROFILO Shape Section Profil	T. 65	COLATA Reel Coulée Sclinetze	P0RI1500042203	STATO DI FORNITURA Delivery state Etait de livraison Lieferzusland	HOT ROLLED NORMALIZED

	CARATTERISTICHE MECCANICHE – MECHANICAL PROPERTIES – CARACTERISTIQUES MECANIQUES – MECHANISCHE EIGENSCHAFTEN												
	TRATTAMENTO TERMICO Heat treatment / Traitement thermique Warmebehandlung	Diameter Nominal mm	Weight Tollerance /m	Diameter Actual mm	Re Y. Strenght N/mm²	Rm T. Strenght N/mm²	A Elongation %	Z Reduction %	Rm/Re	KV-46°CJ	HB Brinell h. on product		
DI COLATA / On heat Sur coulée / Vonder Schmelze	NORMALIZED				349	507	22.8	49.8		79 74 74	152		
SUL PRODOTTO / On product Sur prod. / Am Erzeugnis													

ALTRE PROVE Other test Autres essais Sonstige Prufungen	POSIZIONE PRELIEVO / TEST POSITION ¼ L ASTM A370
COMMENTI Remarks Remarques Andere Bemerkungen	Si attesta che i prodotti sopra descritti sono conformi ai requisiti contrattuali. Come da NORME UNI EN 10204.3.1

Controllo Qualità TTP s.r.l.
Quality control
Controle de qualité
Quelstralsablellung

mod. 214 – REV. 01

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST690625 / 2021 /
Prüfung/Test/Essai

Ordine nr: ORD.N.2100110
Bestell
Your order
Commande

Conferma ordine nr: MI21001763
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI21001420
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Hot rolled - Annealed COLD PROCESSED
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/4/316/L
Kennzeichnung
Marking
Marquage

SPECIFICHE : Anforderungen / Requirements / Exigences	Note: Aufzeichnungen / Notes / Notes
VAL STOCK 2020 1.4404/316L A,CF	
AISI 316	
AISI 316L	
AMS 5648 M S31600 A	
AMS 5653 H S31603 A,CF	
ASME SA182 2019 S31600 A (0)	(0)Section II Part A 2019 EDITION For products machined directly from bar refer to ASME SA479.
ASME SA182 2019 S31603 A (1)	(1)Section II Part A 2019EDITION For products machined directly from bar refer to ASME SA479.
ASME SA276 2019 S31600 A,CF (2)	(2)Section II Part A 2019 EDITION
ASME SA276 2019 S31603 A,CF (3)	(3)Section II Part A 2019 EDITION
ASME SA479 2019 S31600 A (4)	(4)Section II Part A 2019 EDITION
ASME SA479 2019 S31603 A (5)	(5)Section II Part A 2019 EDITION
ASTM A182 2020 S31600 A (6)	(6)For products machined directly from bar refer also to ASTM A479.
ASTM A182 2020 S31603 (7)	(7)For products machined directly from bar refer also to ASTM A479.
ASTM A262 2015 PRACTICE E	
ASTM A276 2017 S31600 A,CF	
ASTM A276 2017 S31603 A,CF	
ASTM A314 2019 S31600	
ASTM A314 2019 S31603	
ASTM A370 2020 . (8)	(8)2019E1
ASTM A479 2020 S31600 A	
ASTM A479 2020 S31603 A	
ASTM E10 2018 .	
ASTM E8 2016A .	
EN 10088-3 2014 1.4401 A,CF	
EN 10088-3 2014 1.4404 A,CF	
EN 10272 2007 1.4401 A,CF	
EN 10272 2007 1.4404 A,CF	
ISO 148-1 2016 .	
ISO 6506-1 2014 .	
ISO 6892-1 2019 .	
NACE MR0103 2015 S31600 A (9)	(9)ANSI/NACE MR0103/ISO 17945 November 23, 2015
NACE MR0103 2015 S31603 A (A)	(A)ANSI/NACE MR0103/ISO 17945 November 23, 2015
NACE MR0175 2015 S31600 A (B)	(B)ANSI/NACE MR0175/ISO 15156-3, third edition November 23,2015
NACE MR0175 2015 S31603 A (C)	(C)ANSI/NACE MR0175/ISO 15156-3, third edition November 23,2015
QQ-S-763 F 316 A,CF	
QQ-S-763 F 316L A,CF	

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xcrosswind

Tolleranza: h9 - DIN671/EN10278
Toleranza/Allowance/Tolerance

Pos. nr. Pos. nr. Item nr. Nr. de posre	Oggetto Gegenstand Product description Descrip. du produit	Dimensioni - mm Abmessungen Dimension Dimension	Lunghezza - mm Länge Length Longueur	Colata Schmelze Heat Coulée	Pezzi Stückzahl Pieces Pieces	Peso - KG Gewicht Weight Poids	Lotto nr. Losnr. Lot nr. Lot nr.
0090	Round	20,000	3020/ 3040	283925		150,0	123101680

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 25/02/2021
VCQ052 - MEST690625

Direzione Qualità
Qualitätsmanagement/Quality Management/Gestion Qualité
R.BERTELLI

Direzione Prodotto
Produktmanagement/Product Management/Direction Produit
P.MESSORI

STELO / STEM

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1 (Nach/According to/Selon)

Certificato nr. MEST690625 / 2021 / (Prüfung/Test/Essai)

Stato di fornitura : Hot rolled - Annealed COLD PROCESSED (Lieferzustand / Delivery state / Etat de livraison)

Produttore : (Hersteller/Item/Usine productrice)
ACCIAIERIE VALBRUNA S.P.A.

Tipo di Elaborazione: E+AOD (Erschmelzungsart / Melting process / Mode d'elaboration)

Marchi di Fabbrica: (Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice)

Ordine nr: ORD.N.2100110 (Bestell / Your order / Commande)

Qualità: 1.4401/1.4404/316/316L (Werkstoff/Grade/Nuance)

Punzone del Collaudatore: MR (Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur)

Conferma ordine nr: MI21001763 (Werks/Our Order/Ref nr.)

Marca: MVAPML (MAXIVAL) (Markenbezeichnung / Brand / Nuance)

Punzonatura: 1.4401/4/316/L (Kennzeichnung / Marking / Marquage)

Avviso di Spedizione: A-MI21001420 (Lieferanzeige/Packing list/B.L.)

TEST ALLO STATO DI FORNITURA
Test on delivery condition Prüefung auf lieferbereitem produkt test a l'etat de fourniture Prueba sobre el material asi come entregado

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess Breite Diam. Dicke Width Diam. Thickness Larg diam epais mm	°C	Posiz. Saggio Probentage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement A5 %	Allungamento E 4d %	Strizione Einschnürung Reduction of area Striction Z %	Strizione RA %	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Durezza Haerte Hardness Durete HB		
Valori richiesti (Anforderungen/Required values / Valeurs demandées)		min		207	235	517	20	30	-	50	100			140		
		max				900								235		
A	10	20	L	598	686	742	37	39	71	71	258	261	255	234		
B	10	20	L	601	684	744	39	41	66	66	256	255	251	233		

TEST ALLO STATO DI FORNITURA
Test on delivery condition / Prüefung auf lieferbereitem produkt / Test a l'etat de fourniture / Prueba sobre el material asi come entregado

TEST		min	max	
B	Grain size for ASTM E112			6

Mechanical properties according to ASTM A370.
Brinnell hardness according to ASTM E10
Tensile testing according to ASTM E8
Impact testing according to ISO 148-1
Brinnell hardness according to ISO 6506-1
Tensile testing according to ISO 6892-1

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Analisi chimica
Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat Schmelze/Coulée	C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	P %	S %	N %
min -	-	-	1,25	16,50	2,00	-	10,00	-	-	-
max	0,030	1,00	2,00	18,00	2,50	1,00	13,00	0,040	0,030	0,100
283925	0,013	0,46	1,50	16,60	2,11	0,45	10,06	0,030	0,030	0,061

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 25/02/2021 VCQ052 - MEST690625	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité **R.BERTELLI**	Direzione Prodotto Produktmanagement/Product Management/Direction Produit **P.MESSORI**	Pagina 2 di 3

STELO / STEM

Acciaierie Valbruna S.p.A.

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CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST690625 / 2021 /
Prüfung/Test/Essai

Ordine nr: ORD.N.2100110
Bestell / Your order / Commande

Conferma ordine nr: MI21001763
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI21001420
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Hot rolled - Annealed COLD PROCESSED
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werksachverständigen / Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/4/316/L
Kennzeichnung / Marking / Marquage

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Reduction ratio = 93,6 : 1
Material solution annealed 1040°C for 2.5h/water cooled.

Sono state soddisfatte tutte le condizioni richieste
Die gestellen Anforderungen sind it. Anlage erfüllt
The material has been furnished in accordance with the requirements
Le materiel à été trouvé conforme aux exigences

Controllo antimescolanza con tecnica XRF/OES portatile : OK
Verwechslungprüfung: durch XRF/OES Gerät geführt.
Antimixing testing performed with XRF/OES portable : OK
Contrôle antimélange svt technique XRF/OES portable : OK

Controllo visivo e dimensionale: soddisfa le esigenze
Besichtigung und Ausmessung: ohne Beanstandung
Visual inspection and dimensional checks:satisfactory
Contrôle visuel et dimensions: satisfaisant

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD`S
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 25/02/2021 VCQ052 - MEST690625	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 3 di 3

OTTURATORE / TIP

DC0202 – Certificato di prodotto	Rev. 2

CERTIFICATO : OR24 – 30948
CERTIFICATE
EN 10204 3.1

Cliente : INDRA S.R.L. Customer	**Consegna** : DDT 240552 of 03.09.2024 Delivery

Vs Ordine : AF24 02661 of 31.07.2024 Your order pos. 10 ÷ 60	**Ns Ordine** : 240331 of 01.08.2024 Our order

Descrizione materiale : TRIM STELLORIC 386 Material description UNS R30006 CoCrW AMS 5387

Grado : 386 Grade	**Disegno** : 97.04.0002S-I rev 11 Drawing	**Colata** : 30948 Heat (BTL ϕ 15 mm)	**Quantità** : Nr. 100 pcs. Quantity

ANALISI DI COLATA / HEAT ANALYSIS

C	Si	Mn	S	P	Cr	Ni	Mo	W	Fe	Co
0.90÷1.40	Max. 1.50	Max 1.00	Max 0.04	Max 0.04	27.00÷31.00	Max 3.00	Max 1.50	3.50÷5.50	Max 3.00	Balance
Ottenuto / Obtained										
1.15	.641	.031	.008	.003	27.950	.007	.0208	5.060	.354	BAL.

PROVE MECCANICHE / MECHANICAL TESTS

Prove longitudinali eseguite +20°C alle condizioni di fornitura
Longitudinal testing at +20°C in delivery condition

Snervamento Rp 0,2% : N.A. Yield strength	**Rottura Rm** : N.A. Tensile strength
Allungamento A4 % : N.A. Elongation	**Strizione Z%** : N.A. Striction
Resilienza KV : N.A. Impact value	**Durezze** (>37 HRC) : 38/40 HRC Hardness
Controllo spettrografico : N.D. Spectrographic examination	**Ultrasuoni** : N.D. Ultrasonic test
Controllo visivo e dimensionale : conforme Visual and dimensional examination	**Ferrite** : N.D. Ferrite
Responsabile Qualita' : Ing. Mauro Malinetti Quality control	**Data** : 03.09.2024 Date

ORIC ITALIANA S.r.l. *Via dell' Industria, 4 Zona Ind.le 29015 Castel San Giovanni - PC - Italy*
tel. +39 0523 882 498 fax +39 0523 882 111
www.oric.it e-mail info@oric.it

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VITE BONNET / BONNET BOLTING

COMVITEA s.r.l.
Via Isonzo 32/C - 20078 Turate (CO) Tel 02.9697121 - Fax 02 96754113

CERTIFICATO DI COLLAUDO EN 10204
INSPECTION CERTIFICATE EN 10204

3.1 Azienda CERTIFICATA - UNI EN ISO 9001:2015
AD 2000 MERKBLATT W0 - PED Directive 2014/68/EU

Certificato/Certificate N°	**1364198**	Pag. **1 / 1**	Cliente/Customer	**INDRA SRL**	
Data cert /Date cert.	**19/07/2023**		Vs. ordine/Order.	**AF23 01320**	
d.d.t./Delivery note n.	**4591**	**19/07/2023**	Ns.rif./Int. ref.	**3259**	**18/05/2023**

Descrizione Materiale / Material Description

Item	Qty	Articolo / Article	Materiale / Material	Pos-Rifer / Your pos-ref.
1	5000	Vite ASTM/ASME A/SA 320 L7M UNI 5931 / DIN 912 M8x20 ZNB deidr. 5-8µ	ASTM/ASME A/SA 320 L7M	96.50.0006

COLATA-ANALISI CHIMICA come da certificato di acciaieria / HEAT-CHEMICAL ANALYSIS according to mill certificate

Item	Colata/Heat	C	Cr	Mn	Mo	P	S	Si
1	AJ6427	0,4300	1,0600	0,8000	0,1600	0,0060	0,0200	0,2100

NORME/STANDARDS

ASME II Part A ed. 2021

PROPRIETA' MECCANICHE / MECHANICAL PROPERTIES

	OTTENUTE / OBTAINED							RICHIESTE / REQUIRED							
	Rm	Re	A	Z	Dur/hard.		Resilienza/Impact test	Rm (N/mm²)		Re (N/mm²)		A %	Z %	Dur/hard.	Resilienza/Impact test	
Item	N/mm²	N/mm²	%	%	HB		KV - Joule °C	min	max	min	max	min	min	HB min max	KV - Joule	°C
1	763	630	25,10	56,80	225	228	-73	690		550		18	50	235	27	-73

Item	Trattamento Termico Tempering - °C	Dur./Hard. HB dadi/nuts h	°C	>=	HB	Prova allarg. per dadi Cone stripping on nuts	ESAME VISIVO-VIS.EXAM
1	Quenched and tempered macro etch examination: positive 620°						Positivo / Positive

Note: MATERIALE DI ORIGINE EUROPEA

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Certifichiamo che i materiali sono stati fabbricati, campionati, testati e ispezionati in conformità alle specifiche e conformi alle prescrizioni degli ordini.
We certify that the fasteners were manufactured, sampled, tested and inspected in accordance with the specification and are consistent with order prescriptions.

Oscar Uboldi - Quality Assurance

ROSETTI MARINO ITEM 390

COD. VBD0NN16610300

TAG:

BLPH-MV-467

INDRA ITEM 321

COD. 00.VSF.2716/V

indra VALVES - ITALY

Certificazione dei materiali
EN 10204 3.1 come da allegati

Material certification
EN 10204 3.1 as per attachments

MD-02-04-IT-UK / VSF
Rev. 16
Data: 08-Nov-2018
CM/IT/UK

Nr. / *No.* **24-2009** — **Data** / *Date :* **16-Oct-2024**

Cliente / *Customer* **ROSETTI MARINO SPA**

Vs. ordine Nr. / *Your order Nr.* **1724000798 REV.2** — **Data** / *Date :* **26-Jun-2024**

Ns. commessa Nr. / *Our job Nr.* **24 01216** — **Data** / *Date :* **3-Jul-2024**

Ns. D.D.T. Nr. / *Our advise note Nr.* — **Data** / *Date :*

Ordine di produzione / Production order number : 24 01216/321 - 15441

Lotto / Material batch number : 15441

Pos. Cliente Customer Item	*Pos. Indra Indra Item*	*Codice / Code*		*Q.tà / Q.ty*	*Nr. di serie Serial Number*	*Descrizione /Description*
		Ns./ Our	*Vs. / Your*			
390	321	00.VSF.2716/V	VBD0NN16610300	1	106898	INDRA BALL VALVE SB-598-50-L150RF3-L-LF2-DL-CA3-N-RG-EXS100-L1-TG-TGW-TV-PMI2-PD2-BI-CR-TA-FS-SPC1

Elenco / List

Componente / *Component*	Colata / Heat	Materiale *Material*	Numero del certificato Certificate number
Corpo Valvola / Valve Body	15441	ASTM A350 LF2 NACE	A19-2912
Closure L150RF3	271694	ASTM A350 LF2 NACE	A21-0979 - UT A21-0979
Tirante / Stud bolt	283509	ASTM A193 B7M + HDG	2402707
Dado / Nut	79325	ASTM A194 Gr.2HM + HDG	2402812
Stelo antiespulsione sfera / Ball stem	291905	AISI 316/316L NACE	MEST084078/2023/
Sfera / Ball	272823	AISI 316/316L NACE	2022021445

NOTE / **REMARKS :** TAG: BLPH-MV-467

PREPARATO DA: **ELEONORA RANZANI** — PREPARED BY: **DOCUMENTION MANAGER**

APPROVATO DA: **LUCIA NOSOTTI** — APPROVED BY: **QUALITY ASSURANCE MANAGER**

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Tel. +39 02 97298663 r.a. - Fax +39 02 97291855
E-mail: indra@indra.it - http://www.indra.it

Pobbn x CROSSWIND
30/1-/24 R

CORPO VALVOLA / VALVE BODY

FORGIATURA MODERNA ARESE

CERTIFICATO DI COLLAUDO

Inspection certificate / Certificat de recette

EN10204/3.1

Nº **A19-2912**
Del **11/12/19**
Foglio 1 di 1

CLIENTE Purchaser/Client	Cod. A1162	ORDINE Order/Commande	MATERIALE Material/Matiere
INDRA S.R.L.		F19-03973	ASTM A105N/A350 LF2 Cl.1

SPECIFICHE RICHIESTE
Specification request/Specifications technique

ASTM + NACE MR 01.75 / ISO15156 - A000B

DESCRIZIONE MATERIALE Material description	DISEGNO/DIMEN. Drawing/Dimension	COLATA Heat/Coulee	PROVA Test N°	COMM. Prod order	POS.
→ N°1 FORGED BAR, NORMALIZED AT 900°C	Ø 200 MT 6	15441	3134	2052/1	10
N°1 FORGED BAR, NORMALIZED AT 900°C	Ø 210 MT 6,5	15441	3134	2052/2	20

CARATTERISTICHE MECCANICHE
Mechanical requirements/Caracteristiques mecaniques

					Rp - Yp N/mm2	Rm - Ts N/mm2	A - E %	Z - Ra %	KV -46°C Joule			HB
PROVA N° Specimen n°	DIREZ. Direction	Ø mm	Lo mm	Min Max	**250**	**485**	**22**	**30**	**20/16**			**187**
3134	Long	12,5	50		321	533	28,5	58,9	62-52-68			152-150-151

CARATTERISTICHE CHIMICHE
Chemical requirements/Caracteristiques chimiques

	C	Mn	Si	P	S	Cr	Ni	Mo	Al	Cu	V	Nb	N	Ti	Ceq.
COLATA Min.		**0,60**	**0,10**												
Heat/Coulee Max.	**0,35**	**1,05**	**0,35**	**0,035**	**0,040**	**0,30**	**0,40**	**0,12**		**0,40**	**0,08**	**0,02**			
15441	0,188	0,96	0,22	0,005	0,002	0,17	0,16	0,07	0,025	0,15	0,003	0,001	0,0082	0,001	0,4173

VISUAL AND DIMENSIONAL INSPECTION CONFORMS TO CONTRACTUAL REQUIREMENTS - THE PRODUCTS ARE IN COMPLIANCE WITH THE REQUIREMENTS OF THE ORDER

Forgiatura Moderna Arese S.p.A.
Servizio Controllo Qualità
Quality Department

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FORGIATURA MODERNA ARESE

CERTIFICATO DI COLLAUDO

Inspection certificate / Certificat de recette

EN10204/3.1

Nº A21-0979
Del 26/04/21
Foglio 1 di 1

CLIENTE Purchaser/Client	Cod. A1162	ORDINE Order/Commande	MATERIALE Material/Matiere
INDRA S.R.L.		AF21 01048	ASTM A350 LF2 Cl.1 / A105N

SPECIFICHE RICHIESTE
Specification request/Specifications technique

ASTM+NACE MR 0175/MR 0103/ISO15156+MDSI AB-0025B Rev.0

DESCRIZIONE MATERIALE Material description	DISEGNO/DIMEN. Drawing/Dimension	COLATA Heat/Coulee	PROVA Test N°	COMM. Prod. order
Nº1 FORGED BAR, NORMALIZED AT 900°C	Ø 115 MT 5	271694	1084	633/1
→ Nº1 FORGED BAR, NORMALIZED AT 900°C	Ø 210 MT 2	271694	1084	633/2
Nº1 FORGED BAR, NORMALIZED AT 900°C	Ø 230 MT 3	271694	1084	633/3

CARATTERISTICHE MECCANICHE
Mechanical requirements/Caracteristiques mecaniques

PROVA Nº Specimen n°	DIREZ. Direction	Ø mm	Lo mm		Rp - Yp N/mm2	Rm - Ts N/mm2	A - E %	Z - Ra %	KV -46°C Joule	HB
				Min	250	485	22	30	40/30	197
				Max		655				
1084	Long.	12,50	50,00		338	524	31,6	62,8	71-82-71	152-155-155

CARATTERISTICHE CHIMICHE
Chemical requirements/Caracteristiques chimiques

		C	Mn	Si	P	S	Cr	Ni	Mo	Al	Cu	V	Nb	N	Ti	Cr+Mo	*	Ceq.
COLATA	Min.		0,60	0,15														
Heat/Coulee	Max.	0,20	1,35	0,30	0,020	0,015	0,30	0,40	0,12		0,40	0,020	0,020			0,32	1,00	0,43
271694		0,169	1,124	0,22	0,011	0,008	0,134	0,074	0,024	0,026	0,105	0,006	0,001	0,009	0,001	0,158	0,337	0,4011

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*Cr+Mo+Ni+Cu
GRAIN SIZE > 6 = 8

VISUAL AND DIMENSIONAL INSPECTION CONFORMS TO CONTRACTUAL REQUIREMENTS - THE PRODUCTS ARE IN COMPLIANCE WITH THE REQUIREMENTS OF THE ORDER

Forgiatura Moderna Arese S.p.A.
Servizio Controllo Qualità
Quality Department

FORGIATURA MODERNA ARESE

CERTIFICATO DI CONTROLLO ULTRASONORO

Ultrasonic control certificate

Nº **UT A21-0979**

Del **26/04/21**

1 di 1

CLIENTE Customer/Client	ORDINE Order/Commande	MATERIALE Material/Matiere
INDRA S.R.L.	AF21 01048	ASTM A350 LF2 Cl 1 / A105N

COMM. Prod O	DESCRIZIONE Material description	COLATA Heat/Coulee	PROVA Nº Test N°/Essais
633/1	N. 1 FORGED BAR, Ø 115 MT 5	271694	1084
→ 633/2	N. 1 FORGED BAR, Ø 210 MT 2	271694	1084
633/3	N. 1 FORGED BAR, Ø 230 MT 3	271694	1084

SPECIFICA Specification	ESTENSIONE DELL'ESAME Test Area / Extension de l'examen
ASTM A388	100% ALL SURFACES

TECNICA DELL'ESAME Inspection technique/Technique de l'examen	TARATURA Settings/Etalonnage	AMPLIFICAZIONE Amplification
BY REFLECTION	ACC. TO SPECIFICATION	+6dB
CONDIZIONI SUPERFICIALI Test surfaces status/Etat de surface	**MEZZO DI ACCOPPIAMENTO** Means of coupling/Moyen d'accouplement	**TIPO DI APPARECCHIATURA** Type of apparatus/Type d'appareil
NOT-MACHINED	CELLULOSA	GE USMGO

SONDA Probe/Palpeurs	FREQUENZA Frequency/Frequence	ANGOLO DI EMISSIONE Emission Angle/Angle de emission	DIMENSIONI Dimension
GE B2S	2 Mhz	0°	Ø 24 mm.

RILEVAMENTO SCHEMATICO
Sketch

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RISULTATI Results/Resultats	CONTROLLO ESEGUITO DA TECNICO QUALIFICATO II LIVELLO SNT-TC-1A & ISO 9712 Test personeel qualified to level II according to SNT-TC-1A & ISO 9712
CONFORMS TO SPECIFICATION	

NOTE:
Notes

WARRANTY

Forgiatura Moderna Arese
Luca Di Noi
II LEVEL
SNT-TC-1A/UNI EN ISO 9712

TIRANTE / STUD BOLT

IPL S.r.l.
BULLONERIA - TIRANTERIA
SPECIALE E STANDARD

Via Papa Giovanni Paolo I, 306
21040 UBOLDO (VA)

Customer: INDRA SRL
C.SO XXII MARZO, 8
20135 MILANO (MI)

Date, 30-09-24 **Our Ref.** DDT 3479 / OC 1700 **of** 30-09-24 **Your Ref.** AF24 02342 AGG. 1 31-07-24

CERTIFICATE UNI EN 10204 - 3.1 N.2402707

ITEM		QUANTITY	HEAT TREATMENT	PROTECTION	LOT nr.	HEAT nr.
TIR.7M010040NF	STUDBOLT UNI6610/DIN976B - A/SA193 B7M M 10 x 40 HDG 101.99.0187CS-PED46	5,00	quenched tempered	HOT DIP GALVANIZED ASTM A153 Cl. "C" / F2329	835021	283509*
TIR.7M012040NF	STUDBOLT UNI6610/DIN976B - A193 B7M M 12 x 40 H.D.G. → 101.99.0664CS-PED46	5,00	quenched tempered	HOT DIP GALVANIZED ASTM A153 Cl. "C" / F2329	835022	283509*

MECHANICAL PROPERTIES

values	R (MPa)	Rs 0,2 (MPa)	A4 (%)	Z (%)	HB	I.T. KV - 73°C (J)
required	690 min.	550 min.	18 min.	50 min.	235 max	20 min. 27 av.
actual	700	570	28,0	66,0	220-215-220	143 - 147 - 117

CHEMICAL COMPOSITION

values	C (%)	Mn (%)	Si (%)	P (%)	S (%)	Cr (%)	Mo (%)	Al (%)
required	0,38 - 0,48	0,75 - 1,00	0,15 - 0,35	0,035 max	0,040 max	0,80 - 1,10	0,15 - 0,25	
actual	0,415	0,771	0,219	0,009	0,0300	1,035	0,159	0,022

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remarks: Chemical values, at delivery condition, are quoted by the relevant steel work certificate. Mechanical values see IRCM cert. 1438/24.
According to: ASME II part. A ed. 2021. Macroetch test according to ASTM E381 result: S1 R1 C1. VISUAL AND DIMENSIONAL TEST SATISFACTORY

If not mentioned the above test are performed at room temperature.
We certify that the fasteners were manufactured, sampled, tested and inspected in accordance with the specification and are consistent with order prescriptions.
Quality assurance system in accordance to European Directive 2014/68/EU annex I par. 4.3 (PED) and AD 2000 Merkblatt W0.
Certificates 0045/202/WZ1921/23 and TN/AD2000-W0/1921/23 TÜV NORD Systems GmbH & Co. KG.

IPL S.R.L.
RSQ A. Grisetti

DADO / NUT

IPL S.r.l.
BULLONERIA - TIRANTERIA
SPECIALE E STANDARD

Via Papa Giovanni Paolo I, 306
21040 UBOLDO (VA)

Customer: **INDRA SRL**
C.SO XXII MARZO, 8
20135 MILANO (MI)

Date, 08-10-24 **Our Ref.** DDT 3605 / OC 1700 **of** 08-10-24 **Your Ref.** AF24 02342 AGG. 1 31-07-24

CERTIFICATE UNI EN 10204 - 3.1 N.2402812

ITEM		QUANTITY	HEAT TREATMENT	PROTECTION	LOT nr.	HEAT nr.
55882M012H10-8F	HEX NUT UNI 5588/DIN934 MODIFIED H=10,8 - A/SA194 2HM M 12 HDG *101.99.1067CS-PED46*	5,00	quenched tempered @ 560°c	HOT DIP GALVANIZED ASTM A153 Cl. "C" / F2329	835023	79325 *

MECHANICAL PROPERTIES

values	HB (min-max)	HB after 24 hrs (min)	PROOF LOAD	I.T. ISO-V -46°C (J)
required	159 - 235	159		
actual	211 - 215	188	POSITIVE	28 - 30 - 28

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CHEMICAL COMPOSITION

values	C (%)	Mn (%)	Si (%)	P (%)	S (%)
required	0,400 min	1,000 max	0,400 max	0,040 max	0,050 max
actual	0,450	0,770	0,280	0,015	0,020

remarks: chemical values, at delivery condition, are quoted by the relevant steel work certificate. VISUAL AND DIMENSIONAL TEST SATISFACTORY
Nuts hardness test after 24 HRS tempering at 540°C.

If not mentioned the above test are performed at room temperature.
We certify that the fasteners were manufactured, sampled, tested and inspected in accordance with the specification and are consistent with order prescriptions.
Quality assurance system in accordance to European Directive 2014/68/EU annex I par. 4.3 (PED) and AD 2000 Merkblatt W0.
Certificates 0045/202/WZ1921/23 and TN/AD2000-W0/1921/23 TÜV NORD Systems GmbH & Co. KG.

IPL S.R.L.
RSQ A. Grisetti

STELO SFERA / BALL STEM

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST084078 / 2023 /
Prüfung/Test/Essai

Stato di fornitura : Hot rolled - Annealed COLD PROCESSED
Lieferzustand / Delivery state / Etat de livraison

Produttore :
Hersteller/Item/Usine productrice
ACCIAIERIE VALBRUNA S.P.A.

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Marchi di Fabbrica:
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice
AV

Ordine nr: ORD.N.2300396
Bestell / Your order / Commande

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Punzone del Collaudatore:
Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur
MR

Conferma ordine nr: MI23004818
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23003903
Lieferanzeige/Packing list/B.L.

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Punzonatura: 1.4401/1.4404
Kennzeichnung / Marking / Marquage

SPECIFICHE :
Anforderungen / Requirements / Exigences

Note:
Aufzeichnungen / Notes / Notes

VAL STOCK W2 A/1 1.4404/316L A,CF
AD 2000-M. W 2 01/20 1.4401 A,CF (0)
AD 2000-M. W 2 01/20 1.4404 A,CF (1)
AISI . 316/316L
AMS-QQ-S-763 D 316/316L A,CF
ASME SA182 2021 S31600/03 A (2)
ASME SA276 2021 S31600/03 A,CF (3)
ASME SA479 2021 S31600/03 A (4)
ASTM A182 2022A S31600/03 A (5)
ASTM A262 PR. E 2015 316/316L (6)
ASTM A276 2017 S31600/03 A,CF
ASTM A370 2022 .
ASTM A479 2021 S31600/03 A
ASTM E10 2018 .
ASTM E8 2022 .
EN 10088 PART 3 2014 1.4401 A,CF
EN 10088 PART 3 2014 1.4404 A,CF
EN 10272 2016. 1.4401 A,CF
EN 10272 2016. 1.4404 A,CF
ISO 148-1 2016 .
ISO 3651-2 98 METHOD A T1
ISO 6506-1 2014 .
ISO 6892-1 2019 .
NACE MR0103 2015 S31600/03 A (7)
NACE MR0175 2015 S31600/03 A (8)
QQ-S-763 F 316/316L A,CF
ACH CO . .
KV L -196C . ISO 148-1

(0)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
(1)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
(2)Section II Part A 2021 EDITION For products machined directly from bar refer to ASME SA479.
(3)Section II Part A 2021 EDITION
(4)Section II Part A 2021 EDITION
(5)For products machined directly from bar refer also to ASTM A479.
(6)Reapproved 2021

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(7)ANSI/NACE MR0103/ISO 17945 November 23, 2015
(8)ANSI/NACE MR0175/ISO 15156-3, third edition November 23,2015

		Tolleranza: h9 - DIN671/EN10278 Toleranz/Allowance/Tolerance					
Pos. nr. Pos. nr. Item nr. Nr. de poste	Oggetto Gegenstand Product description Descrip. du produit	Dimensioni - mm Abmessungen Dimension Dimension	Lunghezza - mm Länge Length Longueur	Colata Schmelze Heat Coulée	Pezzi Stückzahl Pieces Pièces	Peso - KG Gewicht Weight Poids	Lotto nr. Losnr. Lot nr. Lot nr.
0010	Round	25,000	3000/ 3040	291905		58,0	304610390

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 26/06/2023 VCQ052 - MEST084078	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 1 di 4

STELO SFERA / BALL STEM

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST084078 / 2023 /

Ordine nr: ORD.N.2300396 (Bestell / Your order / Commande)

Conferma ordine nr: MI23004818 (Werks/Our Order/Ref nr.)

Avviso di Spedizione: A-MI23003903 (Lieferanzeige/Packing list/B.L.)

Stato di fornitura: Hot rolled - Annealed COLD PROCESSED (Lieferzustand / Delivery state / Etat de livraison)

Tipo di Elaborazione: E+AOD (Erschmelzungsart / Melting process / Mode d'elaboration)

Qualità: 1.4401/1.4404/316/316L (Werkstoff/Grade/Nuance)

Marca: MVAPML (MAXIVAL) (Markenbezeichnung / Brand / Nuance)

Produttore: (Hersteller/Item/Usine productrice)

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: (Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice) AV

Punzone del Collaudatore: (Stempel des Werksachverständigen / Inspector's stamp/Poinçon de l'assayeur) MR

Punzonatura: 1.4401/1.4404 (Kennzeichnung / Marking / Marquage)

TEST ALLO STATO DI FORNITURA

Test on delivery condition — Prüefung auf lieferbereitem produkt — test a l'etat de fourniture — Prueba sobre el material así come entregado

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. / Breite Diam. Dicke / Width Diam. Thickness / Larg. diam. epais. mm	°C	Posiz. Saggio / Probenlage / Location / Emplacement 1)	Snervamento / Streckgrenze / Yield Stress / Limite elastique Rp 0,2% N/mm2	Snervamento / Streckgrenze / Yield Stress / Limite elastique Rp 1% N/mm2	Resistenza / Zugfestigkeit / Tensile strength / Resistance à traction Rm N/mm2	Allungamento / Bruchdehnung / Elongation / Allongement A5 %		Strizione / Einschnürung / Reduction of area / Striction Z %		Resilienza / Kerbschlagarbeit / Impact Value / Resilience			Durezza / Haerte / Hardness / Durete HB		
Valori richiesti / Anforderungen/Required values / Valeurs demandées		min		200	235	500	20	-	-	-	-			-		
		max				900									315	
A	10	20	L	480	568	694	43		65					231		
G	10	20	L	485	571	699	42		64					234		

TEST ALLO STATO DI FORNITURA

Test on delivery condition / Prüefung auf lieferbereitem produkt / Test a l'etat de fourniture / Prueba sobre el material así come entregado

TEST		min	max	
A	Grain size for ASTM E112			5

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. / Breite Diam. Dicke / Width Diam. Thickness / Larg. diam. epais. mm	°C	Posiz. Saggio / Probenlage / Location / Emplacement 1)	Resilienza / Kerbschlagarbeit / Impact Value / Resilience KV2 J			Espansione laterale / Lateral Expansion / Lateral ex mm			Shear / Shear % Shear %		
Valori richiesti / Anforderungen/Required values / Valeurs demandées		min		-	-	-	-	-	-	-	-	-
		max										
B	10X10	-196	L	168	170	162	1,758	1,485	1,328	65	60	59

Test on delivery condition per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. / Breite Diam. Dicke / Width Diam. Thickness / Larg. diam. epais. mm	°C	Posiz. Saggio / Probenlage / Location / Emplacement 1)	Snervamento / Streckgrenze / Yield Stress / Limite elastique Rp 0,2% N/mm2	Snervamento / Streckgrenze / Yield Stress / Limite elastique	Resistenza / Zugfestigkeit / Tensile strength / Resistance à traction Rm N/mm2	Allungamento / Bruchdehnung / Elongation / Allongement E 4d %		Strizione / Einschnürung / Reduction of area / Striction RA %		Resilienza / Kerbschlagarbeit / Impact Value / Resilience			Durezza / Haerte / Hardness / Durete HB		
Valori richiesti / Anforderungen/Required values / Valeurs demandées		min		210	-	517	-	30	-	50	-			-		
		max													235	
C	12,5	20	L	502		697		43		69				233		

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 26/06/2023 VCQ052 - MEST084078	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 2 di 4

STELO SFERA / BALL STEM

Acciaierie Valbruna S.p.A.

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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST084078 / 2023 /

Ordine nr: ORD.N.2300396 (Bestell / Your order / Commande)

Conferma ordine nr: MI23004818 (Werks/Our Order/Ref nr.)

Avviso di Spedizione: A-MI23003903 (Lieferanzeige/Packing list/B.L.)

Stato di fornitura: Hot rolled - Annealed COLD PROCESSED (Lieferzustand / Delivery state / Etat de livraison)

Tipo di Elaborazione: E+AOD (Erschmelzungsart / Melting process / Mode d'elaboration)

Qualità: 1.4401/1.4404/316/316L (Werkstoff/Grade/Nuance)

Marca: MVAPML (MAXIVAL) (Markenbezeichnung / Brand / Nuance)

Produttore: (Hersteller/Item/Usine productrice)

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: (Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice)

Punzone del Collaudatore: (Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur) MR

Punzonatura: 1.4401/1.4404 (Kennzeichnung / Marking / Marquage)

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.dem.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. épais. mm	°C	Posiz. Saggio Probenlage Location Emplacement	Resilienza Kerbschlagarbeit Impact Value Resilience KV_2 J			Espansione laterale Lateral Expansion			Shear Shear		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		100	100	100	-	-	-	-	-	-
F	10X10	20	L	201	198	200						
H	10X10	20	L	209	191	194						

Tensile testing according to ISO 6892-1
Impact testing according to ISO 148-1
Mechanical properties according to ASTM A370.
Brinnell hardness according to ASTM E10
Tensile testing according to ASTM E8
Brinnell hardness according to ISO 6506-1

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Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat Schmelze/Coulée	C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	Co %	P %	S %	N %				
min -	-	-	-	16,50	2,00	-	10,00	-	-	-	-	-	-	-	-
max 0,030	1,00	2,00	18,00	2,50	1,00	13,00	-	0,045	0,030	0,100	-	-	-	-	
291905	0,015	0,54	1,50	16,86	2,01	0,42	10,13	0,168	0,031	0,029	0,058				

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 26/06/2023
VCQ052 - MEST084078

Direzione Qualità (Qualitätsmanagement/Quality Management/Gestion Qualité)
R.BERTELLI

Direzione Prodotto (Produktmanagement/Product Management/Direction Produit)
P.MESSORI

STELO SFERA / BALL STEM

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST084078 / 2023 /

Ordine nr: ORD.N.2300396
Bestell / Your order / Commande

Conferma ordine nr: MI23004818
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23003903
Lieferanzeige/Packing list/B.L.

Stato di fornitura / Lieferzustand / Delivery state / Etat de livraison: Hot rolled - Annealed COLD PROCESSED

Tipo di Elaborazione / Erschmelzungsart / Melting process / Mode d'elaboration: E+AOD

Qualità / Werkstoff/Grade/Nuance: 1.4401/1.4404/316/316L

Marca / Markenbezeichnung / Brand / Nuance: MVAPML (MAXIVAL)

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice: AV

Punzone del Collaudatore / Stempel des Werksachverständigen / Inspector's stamp/Poinçon de l'assayeur: MR

Punzonatura / Kennzeichnung / Marking / Marquage: 1.4401/1.4404

Reduction ratio = 61,1 : 1
Solution annealed 1040°C for 135'(total time)/water cooled.
SURFACE QUALITY COMPLIANT TO EN 10088-3 TAB.1 COND. 2H
"Issued in agreement with TÜV SÜD Industrie Service GMBH
(07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by
Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

Sono state soddisfatte tutte le condizioni richieste Die gestellen Anforderungen sind lt. Anlage erfüllt The material has been furnished in accordance with the requirements Le materiel à été trouvé conforme aux exigences	Controllo antimescolanza con tecnica XRF/OES portatile : OK Verwechslungprüfung: durch XRF/QES Gerät geführt : OK Antimixing testing performed with XRF/OES portable : OK Contrôle antimélange svt technique XRF/QES portable : OK	Controllo visivo e dimensionale: soddisfa le esigenze Besichtigung und Ausmessung: ohne Beanstandung Visual inspection and dimensional checks:satisfactory Contrôle visuel et dimensions: satisfaisant

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD`S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

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COGNE ACCIAI SPECIALI S.p.a.

ITALY - 11100 AOSTA - VIA PARAVERA, 16
TEL +39.0165.3021 - FAX +39.0165.302299
CAP. SOC. 250.000.000 EUR INT. VERS.
C.F. 02187360967
VAT: IT00571320076 - R.E.A. n. AO-50474

Company with Management Systems
certified according to ISO 9001, IATF 16949,
EN 9100 and ISO 14001.

INSPECTION CERTIFICATE 3.1 (EN 10204:2004)
DOCUMENT NUMBER 2022021445

SFERA / BALL

CUSTOMER:	SWISS STEEL ITALIA S.R.L.		
CUSTOMER'S ORDER:	2058038281		
MANUFACTURER'S WORKS:	AOSTA, VIA PARAVERA 16 - ITALY		
PRODUCER OF THE DOC:	QUALITY DEPARTMENT		
MANUFACTURER'S WORKS ORDER NO:	0025290568 / 000120		
MARK OF THE MANUFACTURER:	**COGNE**		
DISPATCH NOTE:	81480988 / 000010 WEIGHT: 1840 KG / 4057 LB		
THE CERTIFIED PRODUCTS ARE COMPLYING TO THE PURCHASE ORDER, EXCEPT FOR EXEMPTIONS AGREED WITH THE CUSTOMER, IF ANY.			
INTERNAL SPEC:	AD2000MERKBLATTW10	TECHNICAL RULE:	AD2000
PRODUCT:	PEL PEELED ROUND BARS TOLERANCE: ISOK11		
SURFACE FINISH:	2B Cold Finished		
PRODUCT DELIVERY CONDITION:	RS SOLUTION ANNEALED		
PRODUCT DIMENSIONS (mm):	95,000 (3,740 in)	LENGTH (mm)	04000 06200 (00157 00244 in)
GRADE:	316L-S31600/31603-1.4404/1.4401	INTERNAL GRADE:	F316L IMCO
IDENTIFICATION HEAT NO:	272823	IDENTIFICATION LOT NO:	135920
MARKING OF THE PRODUCT:	1.4404	TEST PIECE N:	592

AISI 316/316L - UNS S31600/S31603 - 1.4404/1.4401
THE MATERIAL IS PRODUCED ACCORDING TO SPECIFICATION AD2000-MERKBLATT W2/W10
DOCUMENT ISSUED IN AGREEMENT WITH TUEV BAYERN(11.1972) WAVING OF COUNTERSIGNING (SEE TUEV BAYERN LETTER DATED 17.01.80).
REFERENCE NORMS: EN 10088-3 2014, EN 10272 2016, ASTM A276/A276M, ASTM A479/A479M, ASTM A193 B8MCLASSE 1D, ASME SA276/SA276M, ASME SA479/SA479M, AMS 5653J, AMS 5648M, ISO15156-3/NACE MR0175 2015, NACE MR0103/ISO 17945, NORSOK M630 MDSS01 REV5.
REFERENCE NORMS FOR CHEMICAL COMPOSITION AND MECHANICAL PROPERTIES: ASTM A182, ASME SA182.
REFERENCE NORMS ONLY FOR CHEMICAL COMPOSITION: EN 10222-5 2017,ASTM A403-07a, ASTM A484-18a,ASTM A314-08, AMS-QQ-S-763D.
ASME SECT.II PART A EDITION 2015-2017-2019-2021
MATERIAL ACCORDING TO NACE MR0103/ISO 17945
HOT ROLLED
REDUCTION RATIO 3,3

CHEMICAL LADLE ANALYSIS ACCORDING TO ASTM A751 - EN ISO 14284
Control lot No. - Weight :020000918793 - 85.286 KG - 188.020 LB

ELEMENTS	C	Si	Mn	P	S	N	Cr	Mo	Ni	Cu
OBTAINED	0,017	0,34	1,81	0,028	0,026	0,076	16,89	2,09	10,16	0,47

ELEMENTS	Co
OBTAINED	0,21

HARDNESS TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000919124 - 15.314 KG - 33.761 LB
SPECIFICATION ENISO6506 HARDNESS TEST HB TESTING METHOD: 10/3000
OBTAINED 172

IMPACT TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000919124 - 15.314 KG - 33.761 LB
SPECIFICATION EN ISO 148-1-KV2 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 20
MEASUREMENT UNIT J

OBTAINED	427	433	427	443	433	428	427	438	430	428
	432	431								

DATE 28.04.2022 MORABITO ROSA CF(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne

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Company with Management Systems certified according to ISO 9001, IATF 16949, EN 9100 and ISO 14001.

SFERA / BALL

TENSILE TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000919124 - 15.314 KG - 33.761 LB
SPECIFICATION EN-ISO6892-1 DIRECTION OF THE TEST PIECE: L

	RM	RP02	A5	Z	RP1
MEASUREMENT UNIT	MPA	MPA	% 5.0 D	%	NMM
OBTAINED	580	241	57,8	77,4	286
	582	241	55,0	77,3	285
	590	256	53,8	72,3	290
	578	244	55,0	78,2	286

GRAIN SIZE
Control lot No. - Weight :020000919124 - 15.314 KG - 33.761 LB
SPECIFICATION ASTME112 --
OBTAINED 5

CORROSION TEST ACCORDING TO ASTM A262 PRACTICE E EN ISO 3651-2 PRACTICE A: SATISFACTORY.
MATERIAL ACCORDING TO ASME SEC. II Ed. 2015
IMPACT TEST
Control lot No. - Weight :020000919124 - 15.314 KG - 33.761 LB
SPECIFICATION EN ISO 148-1 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 196-
MEASUREMENT UNIT J

OBTAINED	190	182	176	196	174	171	186	170	197	200
	175	188								

TENSILE TEST
Control lot No. - Weight :020000919124 - 15.314 KG - 33.761 LB
SPECIFICATION ASTMA370-E8-0.5"SPEC DIRECTION OF THE TEST PIECE: L

	RMB	RP02B	ZB	AL2B
MEASUREMENT UNIT	KSI	KSI	%	% 4,0 D
OBTAINED	85	35	78,7	54,2
	84	34	79,5	59,4
	84	35	74,8	62,9
	84	34	78,6	60,4

The products delivered are conforming to EN10088-5 and bear the CE marking on the basis of the test results here reported and the continuous surveillance, assessment and approval by MPA NRW
(certificate no. 0432-CPR-00166-01)
Material produced according to the system #Regulation 305/2011/EU of the European Parliament and of the Council of 9 March 2011#
ULTRASONIC TEST ACCORDING TO EN 10308 Class.3: SATISFACTORY
EDDY CURRENT INSPECTION OF SURFACE ACCORDING TO EN 10277 CLASS 4.
DIMENSIONAL CONTROL ACCORDING TO EN 10278: SATISFACTORY.
NO WELDING REPAIR ON THE MATERIAL.

DATE 28.04.2022 MORABITO ROSA CF(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne

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C.F. 02187360967
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Company with Management Systems certified according to ISO 9001, IATF 16949, EN 9100 and ISO 14001.

SFERA / BALL

ANTIMIXING TEST BY PORTABLE SPECTROMETRE: CONFORMING
MARKING: SYMBOL OF THE MANUF. WORK, MATERIAL N. , CAST N., LOT N., RECEIVING AGENT STAMP
COUNTRY OF MELTING AND ORIGIN: ITALY, THE MATERIAL COMPLIES WITH FAR DFARS
252.225-7009 ALT 1.
THE PRODUCT SATISFIES THE DIRECTIVES: 2015/863/EU (ROHS3) - 2011/65/EU (ROHS2) - 2000/53/EU - 2002/95/EU(RoHS) - 2003/11/EU-2005/618/EU AND PED 2014/68/EU.
ALL THE NORMS MENTIONED ARE INTENDED IN THEIR LAST REVISION AT THE DATE OF ISSUE OF THIS DOCUMENT.
MATERIAL ACCORDING TO NACE MR0103/ISO 17945
INSPECTOR'S STAMP LF
QUALITY SYSTEM CERTIFIED BY KIWA CERMET ACCORDING TO UNI EN ISO 9001:2015 -IATF 16949:2016 (THE LAST ONE ONLY FOR WIRE ROD AND HOT ROLLED-PEELED-GROUND STAINLESS STEEL BARS).
THE MATERIAL IS FREE OF ANY MERCURY, MERCURY COMPOUNDS AND OR RADIUM CONTAMINATION AT TIME OF SHIPMENT AND WAS PRODUCED WITHOUT USING OZONE DEPLETING SUBSTANCES OF CLASS I AND II.
RADIOACTIVITY CONTROL PERFORMED WITH A GAMMA SPECTROMETER: ASTM E181.
GAMMA ACTIVITY ON THE PRODUCTS BELOW 0.1 BQ/G ACCORDING TO EU RESOLUTION 2013/59/EURATOM , IAEA RS-G-1.7 AND IAEA SSG-17.

CE 0432

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DATE 28.04.2022

MORABITO ROSA CF(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE

-Cogne

ROSETTI MARINO ITEM 400

COD. VLBBNN07190100

TAG:

BLPH-MV-466

INDRA ITEM 322

COD. 00.VSF.2680/V

indra VALVES - ITALY

Certificazione dei materiali
EN 10204 3.1 come da allegati

Material certification
EN 10204 3.1 as per attachments

MD-02-04-IT-UK / VSF
Rev. 16
Data: 08-Nov-2018
CM/IT/UK

Nr. / *No.* 24-1880 — **Data** / *Date :* 30-Sep-2024

Cliente / *Customer* ROSETTI MARINO SPA

Vs. ordine Nr. / *Your order Nr.* 1724000798 REV.2 — **Data** / *Date :* 26-Jun-2024

Ns. commessa Nr. / *Our job Nr.* 24 01216 — **Data** / *Date :* 3-Jul-2024

Ns. D.D.T. Nr. / *Our advise note Nr.* — **Data** / *Date :*

Ordine di produzione / Production order number : 24 01216/322 - 435799

Lotto / Material batch number : 435799

Pos. Cliente Customer Item	Pos. Indra Indra Item	Codice / Code Ns./ Our	Codice / Code Vs. / Your	Q.tà / Q.ty	Nr. di serie Serial Number	Descrizione /Description
400	322	00.VSF.2680/V	VLBBNN07190100	1	106899	INDRA BALL VALVE DBB-898-HR-25-F300RF3-F-D-DLF-DL-N-PG-L123-TG-TGW-TV-DP-PMI2-PD2-BI-GT-CR-TA-FE2-FS-FE-SPC1

Elenco / List

Componente / Component	Colata / Heat	Materiale Material	Numero del certificato Certificate number
Corpo Valvola / Valve Body	435799	AISI 316/316L NACE	MEST080040/2024/ - UT24003628
Closure F300RF3	294158	AISI 316/316L NACE	MEST095530/2024/ - UT24004432
Tirante / Stud bolt	572929	ASTM A193 B8M Cl.2	2400088
Dado / Nut	160903S05	ASTM A194 Gr.8M	5112
Stelo antiespulsione sfera / Ball stem	E30822	AISI 316/316L NACE	173501
Sfera / Ball	072244	AISI 316/316L NACE	2020018438
Corpo bonnet/ Bonnet body	291366	AISI 316/316L NACE	MEST136234/2023/1
Stelo spillo / Stem needle	172303	AISI 316/316L NACE	174495
Otturatore / Tip	290962	AISI 316/316L NACE	MEST140440/2023/

NOTE / **REMARKS :** TAG: BLPH-MV-466

PREPARATO DA: **ELEONORA RANZANI**
PREPARED BY: **DOCUMENTION MANAGER**

APPROVATO DA: **LUCIA NOSOTTI**
APPROVED BY: **QUALITY ASSURANCE MANAGER**

20013 Magenta (MI) Italy - Via Novara, 10/B-C
Tel. +39 02 97298663 r.a. - Fax +39 02 97291855
E-mail: indra@indra.it - http://www.indra.it

x CROSSWIND
16/10/24

CORPO VALVOLA / VALVE BODY

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST080040 / 2024 /
Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 01954
Bestell
Your order
Commande

Conferma ordine nr: MI24004883
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24003675
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werksachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage

SPECIFICHE :
Anforderungen / Requirements / Exigences

Note:
Aufzeichnungen / Notes / Notes

AV 316L VALVES A/1 1.4401/1.4404 A
IS107 01 316 A
MDS S01 5 316 A (0) — (0)Norsok-standard M-630 Edition 6, October 2013
MDS S17 1 316 A (1) — (1)Norsok-standard M-630: 2020 (2020-09-30)
AD 2000-M. W 2 2022 1.4401 A (2) — (2)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
AD 2000-M. W 2 2022 1.4404 A (3) — (3)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
API 6A 21 ANNEX M (4) — (4)Errata 1 (04/2019), Errata 2 (08/2020), Errata 3 (09/2020). Addendum 1 (July 2020) and Addendum 2 (June 2021).
API 6D 25 ANNEX H (5) — (5)Revision November 2021
ASME SA182 2023 S31600/03 A (6) — (6)Section II Part A 2023 EDITION For products machined directly from bar refer to ASME SA479.
ASME SA276 2023 S31600/03 A (7) — (7)Section II Part A 2023 EDITION
ASME SA479 2023 S31600/03 A (8) — (8)Section II Part A 2023 EDITION
ASTM A182 2024 S31600/03 A (9) — (9)For products machined directly from bar refer also to ASTM A479.
ASTM A262 PR. E 2015 316/316L (A) — (A)Reapproved 2021
ASTM A276 2024A S31600/03 A
ASTM A370 2024 .
ASTM A479 2023A S31600/03 A
ASTM E381 2022 .
ASTM E562 2019 . (B) — (B)19E01
EN 10088 PART 3 2014 1.4401 A
EN 10088 PART 3 2014 1.4404 A
EN 10222 PART 5 2017 1.4401 A
EN 10222 PART 5 2017 1.4404 A
EN 10272 2016. 1.4401 A
EN 10272 2016. 1.4404 A
ISO 148-1 2016 .
ISO 6892-1 2019 .
NACE MR0103 2015 S31600/03 A (C) — (C)ANSI/NACE MR0103/ISO 17945 November 23, 2015
NACE MR0175 4 S31600/03 A (D) — (D)ANSI/NACE MR0175/ISO 15156-3:2020 Fourth edition, approved 21 Sep 2022.

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		Tolleranza: k12 Toleranz/Allowance/Tolerance					
Pos. nr. Pos. nr. Item nr. Nr. de poste	Oggetto Gegenstand Product description Descrip. du produit	Dimensioni - mm Abmessungen Dimension Dimension	Lunghezza - mm Länge Length Longueur	Colata Schmelze Heat Coulée	Pezzi Stückzahl Pieces Pièces	Peso - KG Gewicht Weight Poids	Lotto nr. Losnr. Lot nr. Lot nr
0010	Tondo	110,000	5320/ 5563	435799	2	824,0	207704610

xCROSSMIND 16/6/24 R

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 13/06/2024 VCQ012 - MEST080040	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 1 di 7

CORPO VALVOLA / VALVE BODY

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST080040 / 2024 /

Cliente / Besteller/Purchaser/Client:
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 01954
Bestell/Your order/Commande

Conferma ordine nr: MI24004883
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24003675
Lieferanzeige/Packing list/B.L.

Stato di fornitura: Fucinato Solubilizzato - Pelato
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werksachverständigen / Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung / Marking / Marquage

TEST ALLO STATO DI FORNITURA
Test on delivery condition — Prüefung auf lieferbereitem produkt — test a l'etat de fourniture — Prueba sobre el material así come entregado

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C		Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement A5 %		Strizione Einschnürung Reduction of area Striction Z %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs démandées		min max			205	240	510 690	45	-	-	-	-			- 215		
A	10	20	L		276	308	568	54		73					149		
I	10	20	L		279	313	573	54		73					153		

TEST ALLO STATO DI FORNITURA
Test on delivery condition / Prüefung auf lieferbereitem produkt / Test a l'etat de fourniture / Prueba sobre el material así come entregado

TEST		min	max	
A	Dimensioni grano x ASTM E112			4
A	Ferrite delta %			1,4 %

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C		Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs démandées		min max			60	60	60	-	-	-	-	-	-
E	10X10	-196	L		236	233	230	1,990	2,015	2,023	70	70	70

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C		Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete		
Valori richiesti Anforderungen/Required values Valeurs démandées		min max			205	-	515	-	40	-	50	-			-		
C	12,5	20	L		272		566		57		75						

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 13/06/2024	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité	Direzione Prodotto Produktmanagement/Product Management/Direction Produit	Pagina 2 di 7
VCQ012 - MEST080040	R.BERTELLI	P.MESSORI	

CORPO VALVOLA / VALVE BODY

Acciaierie Valbruna S.p.A.

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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST080040 / 2024 /

Cliente / Besteller/Purchaser/Client:
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr. / Bestell Your order Commande: AF24 01954

Conferma ordine nr. / Werks/Our Order/Ref nr.: MI24004883

Avviso di Spedizione / Lieferanzeige/Packing list/B.L.: A-MI24003675

Stato di fornitura / Lieferzustand Delivery state Etat de livraison: Fucinato Solubilizzato - Pelato

Tipo di Elaborazione / Erschmelzungsart Melting process Mode d'elaboration: E+AOD

Qualità / Werkstoff/Grade/Nuance: 1.4401/1.4404/316/316L

Marca / Markenbezeichnung Brand / Nuance: MVAPML (MAXIVAL)

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Lieferwerkes Trade marks Sigles de l'usine productrice: AV

Punzone del Collaudatore / Stempel des Werkssachverständigen Inspector's stamp/Poinçon de l'assayeur: MR

Punzonatura / Kennzeichnung Marking Marquage: 1.4401/1.4404/316/316L

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais. mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expension Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs demandées		min		60	60	60	-	-	-	-	-	-
		max										
F	10X10	-196	T	97	84	92	0,946	0,931	1,010	40	40	40

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais. mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expension			Shear Shear		
Valori richiesti Anforderungen/Required values Valeurs demandées		min		100	100	100	-	-	-	-	-	-
		max										
D	10X10	20	L	265	260	261						
L	10X10	20	L	269	264	253						

Tensile testing according to ISO 6892-1

Impact testing according to ISO 148-1

Mechanical properties according to ASTM A370.

Ferrite content tested according to ASTM E562.

Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat Schmelze/Coulée		PRE	C %	Si %	Mn %	Cr %	Mo %	Ni %	Co %	P %	S %	N %
	min		-	-	-	16,50	2,00	10,00	-	-	-	-
	max		0,030	1,00	2,00	18,00	2,50	13,00	-	0,045	0,030	0,100
435799		24,8	0,018	0,65	1,76	16,81	2,07	10,34	0,117	0,029	0,028	0,073

Colata /Heat Schmelze/Coulée		Ni+(2*Mo)
	min	14,0
	max	20,0
435799		14,5

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 13/06/2024	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité	Direzione Prodotto Produktmanagement/Product Management/Direction Produit	Pagina
VCQ012 - MEST080040	R.BERTELLI	P.MESSORI	3 di 7

CORPO VALVOLA / VALVE BODY

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST080040 / 2024 /
Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 01954
Bestell
Your order
Commande

Conferma ordine nr: MI24004883
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24003675
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

Furnace calibrated according to API 6A REV 21th ED ANNEX M.
Furnace calibrated according to API 6D REV 24th ED ANNEX F.
Macroetch test per ASTM E381: acceptable.
Reduction ratio = 28,8 : 1
ET ACC. TO EN 10088-3 TAB.1
UT ACC. TO A388/API 6A PSL3-EN 10308cl.3-ASME B16.34/IV
Treatment made on date 02/09/2022 in continuous furnace
FCB calibration expiry date 29/09/2022.
Solution annealed 1080°C for 160'(total time)/water cooled.
"Issued in agreement with TÜV SÜD Industrie Service GMBH (07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

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Allegati / Anlagen / Enclosure / Attachments :
UT24003628 GT24001195

Sono state soddisfatte tutte le condizioni richieste
Die gestellen Anforderungen sind lt. Anlage erfüllt
The material has been furnished in accordance with the requirements
Le materiel à été trouvé conforme aux exigences

Controllo antimescolanza con tecnica XRF/OES portatile : OK
Verwechslungprüfung: durch XRF/OES Gerät geführt : OK
Antimixing testing performed with XRF/OES portable : OK
Contrôle antimélange svt technique XRF/QES portable : OK

Controllo visivo e dimensionale: soddisfa le esigenze
Besichtigung und Ausmessung: ohne Beanstandung
Visual inspection and dimensional checks:satisfactory
Contrôle visuel et dimensions: satisfaisant

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 13/06/2024 VCQD12 - MEST080040	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité **R.BERTELLI**	Direzione Prodotto Produktmanagement/Product Management/Direction Produit **P.MESSORI**	Pagina 4 di 7

CORPO VALVOLA / VALVE BODY

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST080040 / 2024 /

Cliente / Besteller/Purchaser/Client:
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 01954
Bestell / Your order / Commande

Conferma ordine nr: MI24004883
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24003675
Lieferanzeige/Packing list/B.L.

Stato di fornitura / Lieferzustand / Delivery state / Etat de livraison: Fucinato Solubilizzato - Pelato

Tipo di Elaborazione / Erschmelzungsart / Melting process / Mode d'elaboration: E+AOD

Qualità / Werkstoff/Grade/Nuance: 1.4401/1.4404/316/316L

Marca / Markenbezeichnung / Brand / Nuance: MVAPML (MAXIVAL)

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice: AV

Punzone del Collaudatore / Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur: MR

Punzonatura / Kennzeichnung / Marking / Marquage: 1.4401/1.4404/316/316L

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD`S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

WBPSCABA836DA7EDFCB51EBDA73F87A1D8

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x CROSSWIND
16/10/24

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 13/06/2024 VCQ012 - MEST080040	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 5 di 7

CORPO VALVOLA / VALVE BODY

	Acciaierie Valbruna S.p.A. 36100 VICENZA (Italia) - Viale della scienza, 25 z.i. Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4	**CERTIFICATO** Certificate - Zeugnis - Certificat **N° UT24003628**	**Pag 6 di 7**
		CONTROLLO CON ULTRASUONI *Ultrasonic testing - Ultraschallprüfung - Controle par ultrasons*	

mod. UT02

MEST080040 / 2024 /

Cliente : INDRA S.R.L. *Customer*				**Lotto nr : 207704610** *Mill order*		
MARCA *Grade*	**DIMENSIONI - mm** *Size*	**COLATA** *Heat*	**BARRE** *Bars*	**PESO** *Weight*	**LUNGHEZZA - mm** *Length*	
MVAPML	Tondo 110,000	435799	N. 2	KG : 824,0	5320	5563

T. TERMICO *Heat Treatement*	**ESECUZIONE** *Condition*	**RUGOSITA'** *Roughness*	**TOLLERANZA** *Tolerance*
Solubilizzato	Pelato	µm	k12

Istruzione : PROC CND 040 *Work Instruction*		**Criteri Accettabilità : ASTM A388** Acceptance Criteria

ELETTRONICA : Olympus Quickscan LT *Equipment*					
ACCOPPIANTE : ACQUA + 0253 SA *Couplant*				**VEL.CONTROLLO : 303 mm/sec** *Testing Speed*	
TRASDUTTORI *Probes*	**TIPO ONDA** *Type of wave*	**FREQUENZA (MHZ)** *Frequency*	**DIMENSIONI (MM)** *Dimension*	**ANGOLO** *Angle*	**TARATURA** *Calibration*
64EL. 2.25MHZ	LONG.	2,25	128X25	0°	DAC

CONTROLLO AUTOMATICO [X] *Automatic inspection*	**CONTROLLO MANUALE** *Manual inspection*

NOTE :
Notes

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16/10/24

CONFORME [X] *Compliant*	**CONFORME IN DEROGA [ ]** *See Deviation*	**NON CONFORME [ ]** *Not Compliant*

ISPEZIONATO DA Inspected by	**VERIFICATO DA** Verified by	**APPROVATO DA** Approved by **G.Parlato** ISO 9712 LEV. 2 IND2401253	**COLLAUDATORE** Inspector - Abnahmesachsverst - Inspecteur
FIRMA	**FIRMA**	**FIRMA**	

Date - Date **22/03/2023**

Operatori, strumenti e documenti di riferimento, utilizzati per il collaudo del materiale, sono identificati, controllati e/o calibrati in accordo alle norme EN, ISO e ASTM, richiamate nelle pratiche operative e istruzioni di pertinenza / *Operators, Equipment and reference documents, used for material inspection, are identified, checked and/or calibrated in accordance with EN/ISO or ASTM standards, reported in relevant documents.*

Acciaierie Valbruna S.p.A.
36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
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CERTIFICATO Certificate - Zeugnis - Certificat **N° GT24001195** **Pag 7 di 7**

Diagrammi di trattamento termico **MEST080040 / 2024 /**

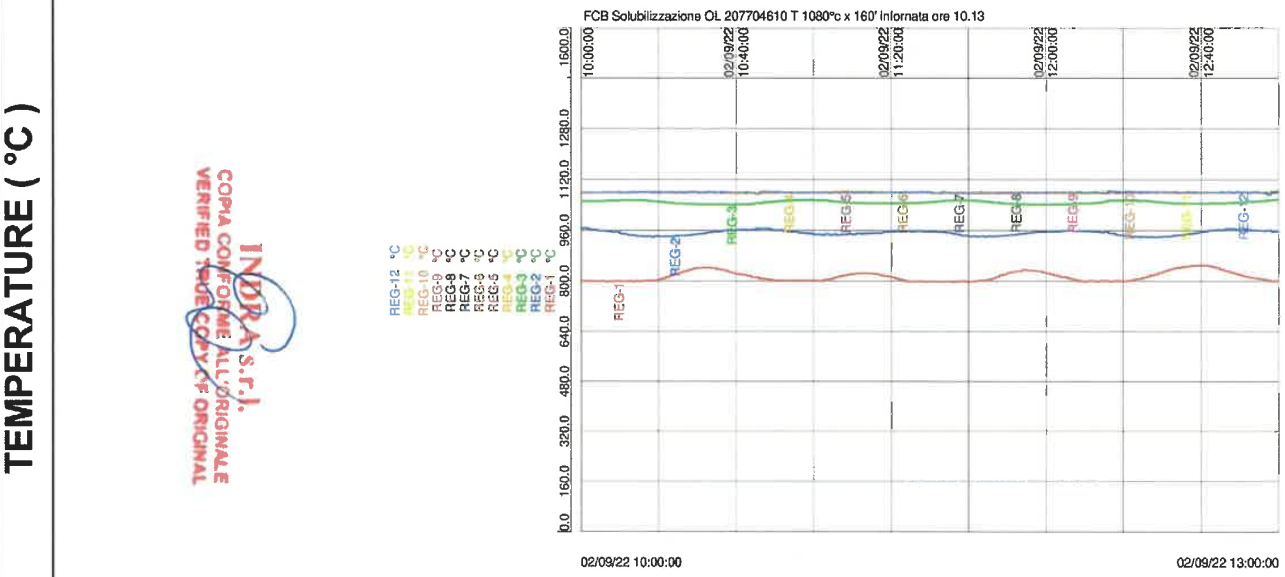
Heat Treatment charts - Waermebehandlungs diagramm - Diagramme de traitement thermique

N° LOTTO : 207704610
Lot Number

Note Dettaglio :
Detail Notes

Note:
Notes

TEMPERATURE (°C)



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TIME (HOURS)

Approved by:

CLOSURE F300RF3

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i. Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37 Telefono 0471.924111 - Fax 0471.924497
https://www.valbruna-stainless-steel.com/

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION - CERTIFICADO DE INSPECCIÓN

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon/De conformidad con

Certificato nr. MEST095530 / 2024 /
Prüfung/Test/Essai/Num. de certificado

Cliente / Besteller/Purchaser/Client/Cliente
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: N. AF24 02410
Bestell
Your order
Commande
Num. de pedido

Conferma ordine nr: MI24005928
Werks/Our Order/Ref nr.
Num. de confirmación de pedido

Avviso di Spedizione: A-MI24004445
Lieferanzeige/Packing list/B.L.
Aviso de embarque

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand
Delivery state
Etat de livraison
Estado de la entrega

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration
Método de fusión

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance
Calidad

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance / Marca

Produttore :
Hersteller/Item/Usine productrice/Productor

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice
Marcas de fábrica

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur
Sello del Comprobador

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage / Sello

SPECIFICHE :
Anforderungen / Requirements / Exigences / Especificaciones

Note:
Aufzeichnungen / Notes / Notes / Notas

AV 316L VALVES A/1 1.4401/1.4404 A
IS107 01 316 A
MDS S01 5 316 A (0) — (0)Norsok-standard M-630 Edition 6, October 2013
MDS S17 1 316 A (1) — (1)Norsok-standard M-630: 2020 (2020-09-30)
AD 2000-M. W 2 2022 1.4401 A (2) — (2)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
AD 2000-M. W 2 2022 1.4404 A (3) — (3)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
API 6A 21 ANNEX M (4) — (4)Errata 1 (04/2019), Errata 2 (08/2020), Errata 3 (09/2020). Addendum 1 (July 2020) and Addendum 2 (June 2021).
API 6D 25 ANNEX H (5) — (5)Revision November 2021
ASME SA182 2023 S31600/03 A (6) — (6)Section II Part A 2023 EDITION For products machined directly from bar refer to ASME SA479.
ASME SA276 2023 S31600/03 A (7) — (7)Section II Part A 2023 EDITION
ASME SA479 2023 S31600/03 A (8) — (8)Section II Part A 2023 EDITION
ASTM A182 2024 S31600/03 A (9) — (9)For products machined directly from bar refer also to ASTM A479.
ASTM A262 PR. E 2015 316/316L (A) — (A)Reapproved 2021
ASTM A276 2024A S31600/03 A
ASTM A370 2024 .
ASTM A479 2023A S31600/03 A
ASTM E381 2022 .
ASTM E562 2019 . (B) — (B)19E01
EN 10088 PART 3 2014 1.4401 A
EN 10088 PART 3 2014 1.4404 A
EN 10222 PART 5 2017 1.4401 A
EN 10222 PART 5 2017 1.4404 A
EN 10272 2016. 1.4401 A
EN 10272 2016. 1.4404 A
ISO 148-1 2016 .
ISO 6892-1 2019 .
NACE MR0103 2015 S31600/03 A (C) — (C)ANSI/NACE MR0103/ISO 17945 November 23, 2015
NACE MR0175 4 S31600/03 A (D) — (D)ANSI/NACE MR0175/ISO 15156-3:2020 Fourth edition, approved 21 Sep 2022.

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		Tolleranza: k12 Toleranz/Allowance/Tolerance/Tolerancia					
Pos. nr. Pos. nr / Item nr. Nr. de poste Número de artículo	Oggetto Gegenstand / Product description Descrip. du produit Descripción del producto	Dimensioni - mm Abmessungen Dimension Dimension / Dimensiones	Lunghezza - mm Länge Length Longueur / Longitud	Colata Schmelze Heat Coulée / Colada	Pezzi Stückzahl Pieces Pieces / Piezas	Peso - KG Gewicht Weight Poids / Peso	Lotto nr. Losnr. Lot nr. Lot nr. / Lote nro
0050	Tondo	130,000	4145/ 4145	294158	1	438,0	314706260

16/10/24

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 19/07/2024 VCQ012 - MEST095530	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité/Gerente de calidad R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit/Gerente de producto P.MESSORI	Pagina 1 di 7

CLOSURE F300RF3

Acciaierie Valbruna S.p.A.

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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37 Telefono 0471.924111 - Fax 0471.924497
https://www.valbruna-stainless-steel.com/

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION - CERTIFICADO DE INSPECCIÓN

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon/De conformidad con

Certificato nr. MEST095530 / 2024 /
Prüfung/Test/Essai/Num. de certificado

Cliente / Besteller/Purchaser/Client/Cliente
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: N. AF24 02410
Bestell
Your order
Commande
Num. de pedido

Conferma ordine nr: MI24005928
Werks/Our Order/Ref nr.
Num. de confirmación de pedido

Avviso di Spedizione: A-MI24004445
Lieferanzeige/Packing list/B.L.
Aviso de embarque

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand
Delivery state
Etat de livraison
Estado de la entrega

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration
Método de fusión

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance
Calidad

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance / Marca

Produttore :
Hersteller/Item/Usine productrice/Productor

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice
Marcas de fábrica

Punzone del Collaudatore: MR
Stempel des Werksachverständigen
Inspector's stamp/Poinçon de l'assayeur
Sello del Comprobador

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage / Sello

TEST ALLO STATO DI FORNITURA

Test on delivery condition Prüefung auf lieferbereitem produkt test a l'etat de fourniture Prueba sobre el material asi come entregado

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam epais mm / Probeta	°C	Posiz. Saggio Probenlage Location Emplacement Ubicación 1)	Snervamento Streckgrenze/Yield Stress Limite elastique Limite elástico Rp 0,2% N/mm2	Snervamento Streckgrenze/Yield Stress Limite elastique Limite elástico Rp 1% N/mm2	Resistenza Zugfestigkeit/Tensile strength Resistance à traction Resistencia a la tracción Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement / Elongación A5 %		Strizione Einschnürung Reduction of area Striction / Reducción de área Z %		Resilienza Kerbschlagarbeit Impact Value/ Resilience Prueba de impacto			Durezza Haerte Hardness Durete / Dureza HB		
Valori richiesti Anforderungen/Required values Valeurs démandées / Valores requeridos		min max		205	240	510 690	45	-	-	-	-			-	215	
A	10	20	L	298	331	582	47		69					159		
I	10	20	L	299	330	586	45		67					162		

TEST ALLO STATO DI FORNITURA

Test on delivery condition / Prüefung auf lieferbereitem produkt / Test a l'etat de fourniture / Prueba sobre el material asi come entregado

TEST		min	max	
I	Dimensioni grano x ASTM E112			2
I	Ferrite delta %			1,4 %

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Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam epais mm / Probeta	°C	Posiz. Saggio Probenlage Location Emplacement Ubicación 1)	Resilienza Kerbschlagarbeit Impact Value Resilience / Prueba de impacto KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs démandées / Valores requeridos		min max		60	60	60	-	-	-	-	-	-
B	10X10	-196	L	313	310	305	2,722	2,743	2,758	70	70	70

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam epais mm / Probeta	°C	Posiz. Saggio Probenlage Location Emplacement Ubicación 1)	Snervamento Streckgrenze/Yield Stress Limite elastique Limite elástico Rp 0,2% N/mm2	Snervamento Streckgrenze/Yield Stress Limite elastique Limite elástico	Resistenza Zugfestigkeit/Tensile strength Resistance à traction Resistencia a la tracción Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement / Elongación E 4d %		Strizione Einschnürung Reduction of area Striction / Reducción de área RA %		Resilienza Kerbschlagarbeit Impact Value/ Resilience Prueba de impacto			Durezza Haerte Hardness Durete / Dureza HB		
Valori richiesti Anforderungen/Required values Valeurs démandées / Valores requeridos		min max		205	-	515	-	40	-	50	-			-	215	
C	12,5	20	L	293		577		49		78				164		

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 19/07/2024 VCQ012 - MEST095530	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité/Gerente de calidad R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit/Gerente de producto P.MESSORI	Pagina 2 di 7

CLOSURE F300RF3

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i. Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37 Telefono 0471.924111 - Fax 0471.924497
https://www.valbruna-stainless-steel.com/

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION - CERTIFICADO DE INSPECCIÓN

In conformità a / Nach/According to/Selon/De conformidad con: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai/Num. de certificado: MEST095530 / 2024 /

Cliente / Besteller/Purchaser/Client/Cliente:
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr. / Bestell/Your order/Commande/Num. de pedido: N. AF24 02410

Conferma ordine nr. / Werks/Our Order/Ref nr./Num. de confirmación de pedido: MI24005928

Avviso di Spedizione / Lieferanzeige/Packing list/B.L./Aviso de embarque: A-MI24004445

Stato di fornitura / Lieferzustand/Delivery state/Etat de livraison/Estado de la entrega: Fucinato Solubilizzato - Pelato

Tipo di Elaborazione / Erschmelzungsart/Melting process/Mode d'elaboration/Método de fusión: E+AOD

Qualità / Werkstoff/Grade/Nuance/Calidad: 1.4401/1.4404/316/316L

Marca / Markenbezeichnung/Brand / Nuance / Marca: MVAPML (MAXIVAL)

Produttore / Hersteller/Item/Usine productrice/Productor:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Lieferwerkes/Trade marks/Sigles de l'usine productrice/Marcas de fábrica: AV

Punzone del Collaudatore / Stempel des Werksachverständigen/Inspector's stamp/Poinçon de l'assayeur/Sello del Comprobador: MR

Punzonatura / Kennzeichnung/Marking/Marquage / Sello: 1.4401/1.4404/316/316L

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm / Probeta	°C	Posiz. Saggio Probenlage Location Emplacement Ubicación 1)	Snervamento Streckgrenze/Yield Stress Limite elastique Límite elástico Rp 0,2% N/mm2	Snervamento Streckgrenze/Yield Stress Limite elastique Límite elástico	Resistenza Zugfestigkeit/Tensile strength Resistance à traction Resistencia a la tracción Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement / Elongación E 4d %		Strizione Einschnürung Reduction of area Striction / Reducción de área RA %		Resilienza Kerbschlagarbeit Impact Value/ Resilience Prueba de impacto			Durezza Hearte Hardness Durete / Dureza HB		
Valori richiesti Anforderungen/Required values Valeurs démandées / Valoras requeridos		min max		205	-	515	-	40	-	50	-			-		
J	6.25	20	T	298		582		46		76				163		

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm / Probeta	°C	Posiz. Saggio Probenlage Location Emplacement Ubicación 1)	Resilienza Kerbschlagarbeit Impact Value Resilience / Prueba de impacto KV2 J			Espansione laterale Lateral Expension Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs démandées / Valores requeridos		min max		60	60	60	-	-	-	-	-	-
D	10X10	-196	T	80	75	75	0,722	0,734	0,708	30	30	30

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm / Probeta	°C	Posiz. Saggio Probenlage Location Emplacement Ubicación 1)	Resilienza Kerbschlagarbeit Impact Value Resilience / Prueba de impacto KV2 J			Espansione laterale Lateral Expension			Shear Shear		
Valori richiesti Anforderungen/Required values Valeurs démandées / Valores requeridos		min max		100	100	100	-	-	-	-	-	-
H	10X10	20	L	325	322	319						
K	10X10	20	L	331	329	310						

Tensile testing according to ISO 6892-1
Impact testing according to ISO 148-1
Mechanical properties according to ASTM A370.
Ferrite content tested according to ASTM E562.

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xcrosswind
16/10/24

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 19/07/2024 VCQ012 - MEST095530	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité/Gerente de calidad **R.BERTELLI**	Direzione Prodotto Produktmanagement/Product Management/Direction Produit/Gerente de producto **P.MESSORI**	Pagina 3 di 7

CLOSURE F300RF3

Acciaierie Valbruna S.p.A.

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In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon/De conformidad con

Certificato nr. MEST095530 / 2024 /
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Cliente / Besteller/Purchaser/Client/Cliente
INDRA S.R.L.
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20013 - MAGENTA - MI

Ordine nr: N. AF24 02410
Bestell / Your order / Commande / Num. de pedido

Conferma ordine nr: MI24005928
Werks/Our Order/Ref nr. / Num. de confirmación de pedido

Avviso di Spedizione: A-MI24004445
Lieferanzeige/Packing list/B.L. / Aviso de embarque

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand / Delivery state / Etat de livraison / Estado de la entrega

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration / Método de fusión

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance / Calidad

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance / Marca

Produttore :
Hersteller/Item/Usine productrice/Productor
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice / Marcas de fábrica

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur / Sello del Comprobador

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung / Marking / Marquage / Sello

Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique/Análisis químico

Colata/Heat/Coulée	min	23,0	-	-	-	16,50	2,00	10,00	-	-	-	-	-	-	-
Schmelze/Colada	max	28,0	0,030	1,00	2,00	18,00	2,50	13,00	-	0,045	0,030	0,100	-	-	-	-
	PRE	C %	Si %	Mn %	Cr %	Mo %	Ni %	Co %	P %	S %	N %				
294158	25,0	0,018	0,45	1,78	16,76	2,09	10,11	0,212	0,033	0,020	0,084				

Colata/Heat/Coulée	min	14,0	-	-	-	-	-	-
Schmelze/Colada	max	20,0	-	-	-	-	-	-
	Ni+(2*Mo)							
294158	14,3							

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

Furnace calibrated according to API 6A REV 21th ED ANNEX M.
Furnace calibrated according to API 6D REV 25th ED ANNEX H.
Macroetch test per ASTM E381: acceptable.
Reduction ratio = 20,2 : 1
Solution annealed 1080°C for 180'(total time)/water cooled.
Treatment made on date 10/05/24 in continuous furnace
FCB calibration expiry date 08/06/24.
SURFACE QUALITY GUARANTEE BY ET INSPECTION (max defect depth 1% DIAMETER)
UT ACC. TO A388/API 6A PSL3-EN 10308cl.3-ASME B16.34/IV
PASS
"Issued in agreement with TÜV SÜD Industrie Service GMBH (07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by Notified Body 0036"

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16/10/24

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 19/07/2024 VCQ012 - MEST095530	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité/Gerente de calidad **R.BERTELLI**	Direzione Prodotto Produktmanagement/Product Management/Direction Produit/Gerente de producto **P.MESSORI**	Pagina 4 di 7

Acciaierie Valbruna S.p.A.

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Cliente / Besteller/Purchaser/Client/Cliente
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Ordine nr: N. AF24 02410
Bestell
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Conferma ordine nr: MI24005928
Werks/Our Order/Ref nr.
Num. de confirmación de pedido

Avviso di Spedizione: A-MI24004445
Lieferanzeige/Packing list/B.L.
Aviso de embarque

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand
Delivery state
Etat de livraison
Estado de la entrega

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration
Método de fusión

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance
Calidad

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance / Marca

Produttore :
Hersteller/Item/Usine productrice/Productor

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice
Marcas de fábrica

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur
Sello del Comprobador

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage / Sello

"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

Allegati / Anlagen / Enclosure / Attachments :
UT24004432 GT24001425

Sono state soddisfatte tutte le condizioni richieste	Controllo antimescolanza con tecnica XRF/OES portatile : OK	Controllo visivo e dimensionale: soddisfa le esigenze
Die gestellen Anforderungen sind lt. Anlage erfüllt The material has been furnished in accordance with the requirements Le materiel à été trouvé conforme aux exigences El material cumple de acuerdo a los requisitos	Verwechslungprüfung: durch XRF/OES Gerät geführt : OK Antimixing testing performed with XRF/OES portable : OK Contrôle antimélange svt technique XRF/OES portable : OK Prueba de anti mezcla con técnica XRF/OES portátil: OK	Besichtigung und Ausmessung: ohne Beanstandung Visual inspection and dimensional checks:satisfactory Contrôle visuel et dimensions: satisfaisant Inspección visual y dimensional: cumple los requisitos

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD`S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

WSP3AB1E0B61ODA86E8B52FC8E38EA1A8E

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x CROSSMIND
16/10/24

CLOSURE F300RF3

	Acciaierie Valbruna S.p.A. 36100 VICENZA (Italia) - Viale della scienza, 25 z.i. Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4	**CERTIFICATO** Certificate - Zeugnis - Certificat **N° UT24004432**	**Pag 6 di 7**
		CONTROLLO CON ULTRASUONI *Ultrasonic testing - Ultraschallprüfung - Controle par ultrasons*	

mod. UT02 MEST095530 / 2024 /

Cliente : INDRA S.R.L. *Customer*				**Lotto nr : 314706260** *Mill order*	
MARCA *Grade*	**DIMENSIONI - mm** *Size*	**COLATA** *Heat*	**BARRE** *Bars*	**PESO** *Weight*	**LUNGHEZZA - mm** *Length*
MVAPML	Tondo 130,000	294158	N. 1	KG : 438,0	4145 4145

T. TERMICO *Heat Treatement*	**ESECUZIONE** *Condition*	**RUGOSITA'** *Roughness*	**TOLLERANZA** *Tolerance*
Solubilizzato	Pelato	µm	k12

Istruzione : PROC CND 040 *Work Instruction*		**Criteri Accettabilità : A388/API 6A PSL3-EN 10308 cl.3-ASME B16.34/IV** Acceptance Criteria

ELETTRONICA : Olympus Quickscan LT
Equipment

ACCOPPIANTE : ACQUA + 0253 SA
Couplant

VEL.CONTROLLO : 207 mm/sec
Testing Speed

TRASDUTTORI *Probes*	**TIPO ONDA** *Type of wave*	**FREQUENZA (MHZ)** *Frequency*	**DIMENSIONI (MM)** *Dimension*	**ANGOLO** *Angle*	**TARATURA** *Calibration*
64EL. 2.25MHZ	LONG.	2,25	128X25	0°	DAC

CONTROLLO AUTOMATICO [X] *Automatic inspection*	**CONTROLLO MANUALE** *Manual inspection*

NOTE :
Notes

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CONFORME [X] *Compliant*	**CONFORME IN DEROGA [ ]** *See Deviation*	**NON CONFORME [ ]** *Not Compliant*

ISPEZIONATO DA Inspected by	**VERIFICATO DA** Verified by	**APPROVATO DA** Approved by	**COLLAUDATORE** Inspector - Abnahmesachsverst - Inspecteur
FIRMA	**FIRMA**	**G.Parlato** ISO 9712 LEV. 2 IND2401253 **FIRMA**	CROSS W.ND 11/10/24

Date - Date **05/06/2024**

Operatori, strumenti e documenti di riferimento, utilizzati per il collaudo del materiale, sono identificati, controllati e/o calibrati in accordo alle norme EN, ISO e ASTM, richiamate nelle pratiche operative e istruzioni di pertinenza / *Operators, Equipment and reference documents, used for material inspection, are identified, checked and/or calibrated in accordance with EN/ISO or ASTM standards, reported in relevant documents.*

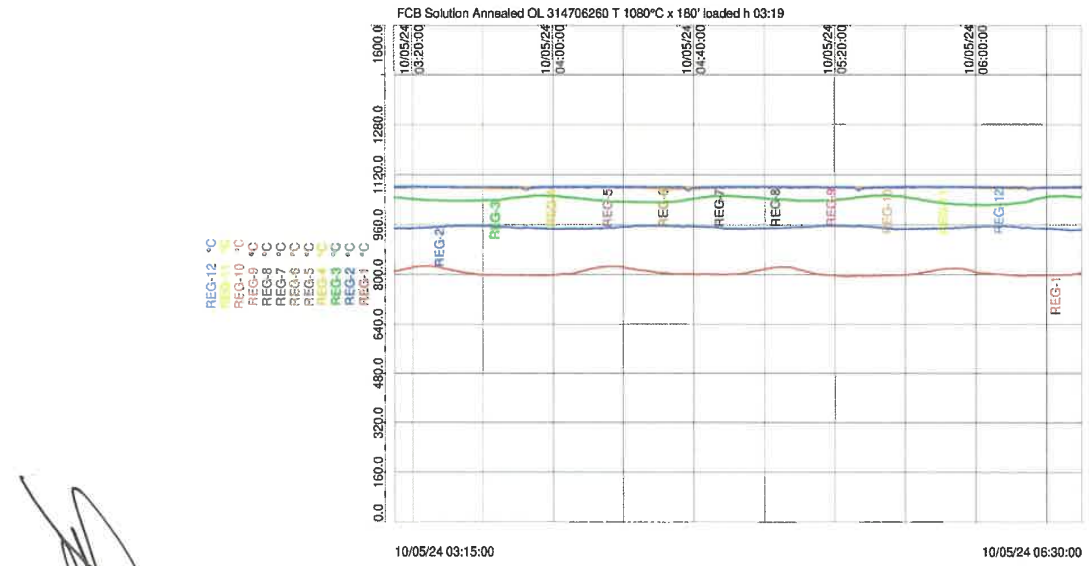
Acciaierie Valbruna S.p.A.
36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4

CERTIFICATO Certificate - Zeugnis - Certificat **N° GT24001425**

Diagrammi di trattamento termico **MEST095530 / 2024 /**

Heat Treatment charts - Waermebehandlungs diagramm - Diagramme de traitement thermique

N° LOTTO : 314706260 Lot Number	**Note Dettaglio :** Detail Notes	**Note:** Notes



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Approved by:

TIRANTE / STUD BOLT

IPL S.r.l.
BULLONERIA - TIRANTERIA
SPECIALE E STANDARD

Via Papa Giovanni Paolo I, 306
21040 UBOLDO (VA)

Customer: **INDRA SRL**
C.SO XXII MARZO, 8
20135 MILANO (MI)

Date, 19-01-24 **Our Ref.** DDT 148 / OC 2518 **of** 19-01-24 **Your Ref.** AF23 03403 13-12-23

CERTIFICATE UNI EN 10204 - 3.1 N.2400088

ITEM		QUANTITY	HEAT TREATMENT	PROTECTION	LOT nr.	HEAT nr.
TIR.82010045	STUDBOLT UNI6610/DIN976B - A/SA193-320 B8M CL.2 M 10 x 45 *1610*	10,00	carb. sol. tr. + strain hard.		820163	572929
TIR.82010045	STUDBOLT UNI6610/DIN976B - A/SA193-320 B8M CL.2 M 10 x 45 *290*	20,00	carb. sol. tr. + strain hard.		820163	572929
TIR.82010045	STUDBOLT UNI6610/DIN976B - A/SA193-320 B8M CL.2 M 10 x 45 *300*	32,00	carb. sol. tr. + strain hard.		820163	572929
TIR.82010045	STUDBOLT UNI6610/DIN976B - A/SA193-320 B8M CL.2 M 10 x 45 *310*	32,00	carb. sol. tr. + strain hard.		820163	572929
TIR.82010030	STUDBOLT UNI6610/DIN976B - A/SA193-320 B8M CL.2 M 10 x 30 *1680*	13,00	carb. sol. tr. + strain hard.		820202	572929
TIR.82010030	STUDBOLT UNI6610/DIN976B - A/SA193-320 B8M CL.2 M 10 x 30 *500*	20,00	carb. sol. tr. + strain hard.		820202	572929
TIR.82010030	STUDBOLT UNI6610/DIN976B - A/SA193-320 B8M CL.2 M 10 x 30 *510*	→ 4,00	carb. sol. tr. + strain hard.		820202	572929
TIR.82010030	STUDBOLT UNI6610/DIN976B - A/SA193-320 B8M CL.2 M 10 x 30 *520*	→ 4,00	carb. sol. tr. + strain hard.		820202	572929
TIR.82010030	STUDBOLT UNI6610/DIN976B - A/SA193-320 B8M CL.2 M 10 x 30 *530*	4,00	carb. sol. tr. + strain hard.		820202	572929
TIR.82010030	STUDBOLT UNI6610/DIN976B - A/SA193-320 B8M CL.2 M 10 x 30 *540*	4,00	carb. sol. tr. + strain hard.		820202	572929

xCROSSWIND 16/10/24

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If not mentioned the above test are performed at room temperature.
We certify that the fasteners were manufactured, sampled, tested and inspected in accordance with the specification and are consistent with order prescriptions.
Quality assurance system in accordance to European Directive 2014/68/EU annex I par. 4.3 (PED) and AD 2000 Merkblatt W0.
Certificates 0045/202/WZ1921/23 and TN/AD2000-W0/1921/23 TÜV NORD Systems GmbH & Co. KG.

IPL S.R.L.
RSQ A. Grisetti

TIRANTE / STUD BOLT

IPL S.r.l.
BULLONERIA - TIRANTERIA
SPECIALE E STANDARD

Via Papa Giovanni Paolo I, 306
21040 UBOLDO (VA)

Customer: **INDRA SRL**
C.SO XXII MARZO, 8
20135 MILANO (MI)

Date, 19-01-24 **Our Ref.** DDT 148 / OC 2518 **of** 19-01-24 **Your Ref.** AF23 03403 13-12-23

CERTIFICATE UNI EN 10204 - 3.1 N.2400088

ITEM		QUANTITY	HEAT TREATMENT	PROTECTION	LOT nr.	HEAT nr.
TIR.82010030	STUDBOLT UNI6610/DIN976B - A/SA193-320 B8M CL.2 M 10 x 30 *1030*	16,00	carb. sol. tr. + strain hard.		820202	572929
TIR.82010030	STUDBOLT UNI6610/DIN976B - A/SA193-320 B8M CL.2 M 10 x 30 *1040*	16,00	carb. sol. tr. + strain hard.		820202	572929
TIR.82010030	STUDBOLT UNI6610/DIN976B - A/SA193-320 B8M CL.2 M 10 x 30 *1050*	16,00	carb. sol. tr. + strain hard.		820202	572929
TIR.82010030	STUDBOLT UNI6610/DIN976B - A/SA193-320 B8M CL.2 M 10 x 30 *1060*	16,00	carb. sol. tr. + strain hard.		820202	572929
TIR.82010030	STUDBOLT UNI6610/DIN976B - A/SA193-320 B8M CL.2 M 10 x 30 *1070*	8,00	carb. sol. tr. + strain hard.		820202	572929
TIR.82010030	STUDBOLT UNI6610/DIN976B - A/SA193-320 B8M CL.2 M 10 x 30 *1080*	8,00	carb. sol. tr. + strain hard.		820202	572929
TIR.82010030	STUDBOLT UNI6610/DIN976B - A/SA193-320 B8M CL.2 M 10 x 30 *1090*	16,00	carb. sol. tr. + strain hard.		820202	572929
TIR.82010030	STUDBOLT UNI6610/DIN976B - A/SA193-320 B8M CL.2 M 10 x 30 *1100*	16,00	carb. sol. tr. + strain hard.		820202	572929
TIR.82010030	STUDBOLT UNI6610/DIN976B - A/SA193-320 B8M CL.2 M 10 x 30 *1110*	16,00	carb. sol. tr. + strain hard.		820202	572929
TIR.82010030	STUDBOLT UNI6610/DIN976B - A/SA193-320 B8M CL.2 M 10 x 30 *1120*	32,00	carb. sol. tr. + strain hard.		820202	572929

x CROSSWIND 16/10/24

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If not mentioned the above test are performed at room temperature.
We certify that the fasteners were manufactured, sampled, tested and inspected in accordance with the specification and are consistent with order prescriptions.
Quality assurance system in accordance to European Directive 2014/68/EU annex I par. 4.3 (PED) and AD 2000 Merkblatt W0.
Certificates 0045/202/WZ1921/23 and TN/AD2000-W0/1921/23 TÜV NORD Systems GmbH & Co. KG.

IPL S.R.L.
RSQ A. Grisetti

TIRANTE / STUD BOLT

IPL S.r.l.
BULLONERIA - TIRANTERIA
SPECIALE E STANDARD

Via Papa Giovanni Paolo I, 306
21040 UBOLDO (VA)

Customer: INDRA SRL
C.SO XXII MARZO, 8
20135 MILANO (MI)

Date, 19-01-24 **Our Ref.** DDT 148 / OC 2518 **of** 19-01-24 **Your Ref.** AF23 03403 13-12-23

CERTIFICATE UNI EN 10204 - 3.1 N.2400088

ITEM		QUANTITY	HEAT TREATMENT	PROTECTION	LOT nr.	HEAT nr.
TIR.82010030	STUDBOLT UNI6610/DIN976B - A/SA193-320 B8M CL.2 M 10 x 30 *1130*	16,00	carb. sol. tr. + strain hard.		820202	572929
TIR.82010030	STUDBOLT UNI6610/DIN976B - A/SA193-320 B8M CL.2 M 10 x 30 *1140*	32,00	carb. sol. tr. + strain hard.		820202	572929
TIR.82010030	STUDBOLT UNI6610/DIN976B - A/SA193-320 B8M CL.2 M 10 x 30 *1150*	16,00	carb. sol. tr. + strain hard.		820202	572929
TIR.82010030	STUDBOLT UNI6610/DIN976B - A/SA193-320 B8M CL.2 M 10 x 30 *1160*	16,00	carb. sol. tr. + strain hard.		820202	572929
TIR.82010030	STUDBOLT UNI6610/DIN976B - A/SA193-320 B8M CL.2 M 10 x 30 *1170*	8,00	carb. sol. tr. + strain hard.		820202	572929
TIR.82010030	STUDBOLT UNI6610/DIN976B - A/SA193-320 B8M CL.2 M 10 x 30 *1180*	8,00	carb. sol. tr. + strain hard.		820202	572929
TIR.82010030	STUDBOLT UNI6610/DIN976B - A/SA193-320 B8M CL.2 M 10 x 30 *1190*	16,00	carb. sol. tr. + strain hard.		820202	572929
TIR.82010030	STUDBOLT UNI6610/DIN976B - A/SA193-320 B8M CL.2 M 10 x 30 *1200*	16,00	carb. sol. tr. + strain hard.		820202	572929
TIR.82010045	STUDBOLT UNI6610/DIN976B - A/SA193-320 B8M CL.2 M 10 x 45 *1530*	36,00	carb. sol. tr. + strain hard.		820163	572929
TIR.82010030	STUDBOLT UNI6610/DIN976B - A/SA193-320 B8M CL.2 M 10 x 30 *1550*	8,00	carb. sol. tr. + strain hard.		820202	572929

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16/10/24

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Certificates 0045/202/WZ1921/23 and TN/AD2000-W0/1921/23 TÜV NORD Systems GmbH & Co. KG.

IPL S.R.L.
RSQ A. Grisetti

TIRANTE / STUD BOLT

IPL S.r.l.
BULLONERIA - TIRANTERIA
SPECIALE E STANDARD

Via Papa Giovanni Paolo I, 306
21040 UBOLDO (VA)

Customer: **INDRA SRL**
C.SO XXII MARZO, 8
20135 MILANO (MI)

Date, 19-01-24 **Our Ref.** DDT 148 / OC 2518 **of** 19-01-24 **Your Ref.** AF23 03403 13-12-23

CERTIFICATE UNI EN 10204 - 3.1 N.2400088

ITEM	QUANTITY	HEAT TREATMENT	PROTECTION	LOT nr.	HEAT nr.

MECHANICAL PROPERTIES

values	R (MPa)	Rs 0,2 (MPa)	A4 (%)	Z (%)	HB (min-max)
required	760 min	655 min	15 min.	45 min.	321 max
actual	785	684	28,0	69,0	240

CHEMICAL COMPOSITION

values	C (%)	Mn (%)	Si (%)	P (%)	S (%)	Ni (%)	Cr (%)	Mo (%)
required	0,08 max	2,00 max	1,00 max	0,045 max	0,030 max	10,00 - 14,00	16,00 - 18,00	2,00 - 3,00
actual	0,014	1,830	0,370	0,027	0,027	10,13	17,03	2,080

remarks: chemical and mechanical values, at delivery condition, are quoted by the relevant steel work certificate. VISUAL AND DIMENSIONAL TEST SATISFACTORY
According to: ASME II part. A ed. 2021

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Certificates 0045/202/WZ1921/23 and TN/AD2000-W0/1921/23 TÜV NORD Systems GmbH & Co. KG.

IPL S.R.L.
RSQ A. Grisetti

DADO / NUT

t·e·c·n·o BOLT

CERTIFICATE

Nr. 5112	02-09-24

Page 1/4

INDRA SRL
VIA NOVARA 10/B-C
20013 MAGENTA MI
ITALIA

EN ISO 10204 3.1
CERTIFIED MATERIAL TEST REPORT

Your order: AF24 02212 02-07-24 Delivery note: 2151 02-09-24

Item	Materials	Description	Sizes	Batch	Heat		Quantity
1	ASTM A 194 Gr.8M 980.99.0002	Dado UNI 5588/DIN 934 ASTM A 194 Gr.8M M Esagonale	10	65558	160903S05	N.	170

Pos. 10-20-30-40-50-60-70-80-90-100-110-120-130-140-150-160-170-180-190-200-210

CKD/CTRL/REV. 1/08/06/2016/PV

VOCE DOGANALE 73181900

MERCE DI ORIGINE ITALIANA

CHEMICAL ANALYSIS

1		%C %	%Mn %	%P %	%S %	%Si %	%Cr %	%Ni %	%Mo %
	REQ. MIN.						16	10	2
	REQ. MAX.	0,08	2	0,045	0,030	1	18	14	3
	ACT.VAL.	0.033	0.950	0.033	0.002	0.340	16.400	10.050	2.020

MECHANICAL PROPERTIES

1		H HB	P.L. KN
	REQ. MIN.	126	
	REQ. MAX.	300	
	ACT. VAL.	147-156	29.9

INDRA s.r.l.
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We state that the material or fasteners, or both, were manufactered, sampled, tested and inspected in accordance with the specification and any supplementary requirements designated in the purchase/sales order and it was found to meet those requirements

tecnoBOLT s.r.l. - 20822 Seveso (MB) ITALY - way vignone n.7 - info@tecnobolt.com - www.tecnobolt.com

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CERTIFICATE

Nr. 5112 **02-09-24**

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INDRA SRL
VIA NOVARA 10/B-C
20013 MAGENTA MI
ITALIA

EN ISO 10204 3.1
CERTIFIED MATERIAL TEST REPORT

Your order: AF24 02212 02-07-24 Delivery note: 2151 02-09-24

Item	Materials	Description	Sizes	Batch	Heat	Quantity



CHEMICAL ANALYSIS

2		%C %	%Mn %	%P %	%S %	%Si %	%Cr %	%Ni %	%Mo %
	REQ. MIN.						16	10	2
	REQ. MAX.	0,08	2	0,045	0,030	1	18	14	3
	ACT.VAL.	0.033	0.950	0.033	0.002	0.340	16.400	10.050	2.020

MECHANICAL PROPERTIES

2		H HB	P.L. KN
	REQ. MIN.	126	
	REQ. MAX.	300	
	ACT. VAL.	147-156	29.9

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CERTIFICATE	
Nr. 5112	02-09-24
Page 3/4	

INDRA SRL
VIA NOVARA 10/B-C
20013 MAGENTA MI
ITALIA

EN ISO 10204 3.1
CERTIFIED MATERIAL TEST REPORT

Your order: AF24 02212 02-07-24 Delivery note: 2151 02-09-24

Item	Materials	Description	Sizes	Batch	Heat		Quantity
2	ASTM A 194 Gr.8M 980.99.0002	Dado UNI 5588/DIN 934 ASTM A 194 Gr.8M M Esagonale	10	66150	160903S05	N.	830

Pos. 10-20-30-40-50-60-70-80-90-100-110-120-130-140-150-160-170-180-190-200-210

CKD/CTRL/REV. 1/08/06/2016/PV

VOCE DOGANALE 73181900

MERCE DI ORIGINE ITALIANA

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CERTIFICATE	
Nr. 5112	02-09-24

Page 4/4

INDRA SRL
VIA NOVARA 10/B-C
20013 MAGENTA MI
ITALIA

EN ISO 10204 3.1
CERTIFIED MATERIAL TEST REPORT

Your order: AF24 02212 02-07-24 Delivery note: 2151 02-09-24

Item	Materials	Description	Sizes	Batch	Heat	Quantity



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STELO SFERA / BALL STEM

Rodacciai

23842 Bosisio Parini (LC) – Via Giuseppe Roda 1 – Italia
Tel. +39 031878111 – Fax +39 031878312
www.rodacciai.com – info@rodacciai.com

Azienda con sistema di gestione certificato da IGQ secondo UNI EN ISO 9001:2015

The Company's Quality Management System is certified by IGQ according to UNI EN ISO 9001:2015

CERTIFICATO DI CONTROLLO Inspection Certif N. 173501 Date 13/11/2023

Secondo According to . . . . . EN 10204:2004 3.1

ORDINE - Order N. 23/3822 Date 10/11/2023

D.d.T. - Delivery note N. 11634/04 Date 13/11/2023

Weight KG 128,00 **Odp. Nr.** 2022/A/13380

Tolerance ISO286-2 h9 + 0,000 - 0,043 mm **Bars Length** 3.000 - 3.050 mm

QUALITA' - Grade

STANDARD	EN 10088-3:2014	X2CrNiMo17-12-2	1.4404 / 316L
STANDARD	EN 10088-3:2023	X5CrNiMo17-12-2	1.4401 / 316

Mark RODACCIAI . . . . . 316 PLUS
PROFILO - Shape . . . . . ROUND
DIMENSIONE - Size . . . . . mm 18,00
ESECUZIONE - Form of delivery . . . . . ROUGH GROU.

COLATA - Heat E30822

ANALISI CHIMICA DI COLATA - Cast analysis % by mass

C	Mn	Si	S	P	Cr	Ni	Mo	Cu	Co	N
0,020	1,540	0,554	0,0290	0,031	16,620	10,020	2,030	0,441	0,280	0,0520

CARATTERISTICHE MECCANICHE ALLO STATO DI FORNITURA
Mechanical properties of the delivered material

		Tested
Tensile Strength	Rm (MPa)	695,3
Proof Stress	Rp (1) (MPa)	648,0
Proof Stress	Rp (0,2) (MPa)	580,7
Elongation	A 4 (%)	44,3
Elongation	A 5 (%)	41,1
Hardness	HBW	211,0
Reduction of area	Z (%)	68,0

NOTE - Notes

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Processo di Fusione: E + A. O. D.
Prova di Corrosione Intergranularena: ASTM A262-15 "E"
Trattamento termico: Temperatura di Solubilizzazione 1060°C
Tempo Mantenimento: 4 Ore, Raffreddamento in Acqua
Materiale conforme a: ASTM A276-16a / A479-16a / A182-24
ASME: SA479; SA276; SA182 - UNS 31600 - 31630 AISI 316-316L

Pag. 1 / Segue

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Azienda con sistema di gestione certificato da IGQ secondo UNI EN ISO 9001:2015

The Company's Quality Management System is certified by IGQ according to UNI EN ISO 9001:2015

Segue certificato di controllo N. 173501 Date 13/11/2023
Inspection Certificate's continuance

NOTE - Notes

Materiale Conforme a NACE MR-0175/ISO 15156-3:2015
NACE MR-103/ISO 17495-1:2016
Corrosione Intercristallina EN ISO 3651-2:98 Met.A

Melting Process: E + A. O. D
Intergranular corrosion tested to ASTM A262-15 "E"
Heat treatment: annealed temperature 1060°C
Soaking time: 4 Hours, Cooling in water
Material Compliant to: ASTM A276-16a / A479-16a / A182-24
ASME: SA479; SA276; SA182 - UNS 31600 - 31630 AISI 316-316L
According to: NACE MR-0175 / ISO 15156-3:2015
NACE MR-103/ISO 17495-1:2016
Intergranular Corrosion according to EN ISO 3651-2:98 Met.A

Surface quality condition 2H conforming also to EN 10277 class 3

We certify hereby, that the above mentioned products are consistent with the order prescriptions.
This certificate was generated by data system acc. to EN 10204, it is not necessary to be signed for validity.

Materiale conforme alle seguenti direttive/regolamenti europee:
- Regolamento REACH 2006/1907/CE e tutti successivi aggiornamenti, compresa la modifica M80 Direttiva Delegata 2022/1632, e SVHC Candidate List aggiornata al 17/01/2023.
- Direttiva ROHS 2011/65/UE e tutti i successivi aggiornamenti, compresa la modifica M80 attraverso la Direttiva Delegata 2022/1632, e Decreto Legislativo 27 del 04/03/2014.
- Direttiva RAEE 2012/19/UE e tutti successivi aggiornamenti, compresa la modifica M1 attraverso la Direttiva 2018/849.
- Direttiva ELV (End-of-Life Vehicles) 2000/53/CE e tutti i successivi aggiornamenti, compresa la modifica M15 attraverso la Direttiva 2020/363
- Contaminazione Radioattiva, Direttiva 2013/59/EURATOM e Decreto Legislativo N.101 del 31 Luglio 2020.
- Canadian List 168 aggiornata al 16/03/2022.
- Minerali di Conflitto, Regolamento (UE) 2017/821 e tutti i successivi aggiornamenti, compresa la modifica M1 attraverso il Regolamento Delegato 2020/1588, e Dodd-Frank Wall Street Reform and Consumer Protection Act Section 1502.

Material conforming to the following European directives/regulation:
- REACH regulation 2006/1907/EC and all subsequent updates, including modification M80 Delegate Directive, and SVHC Candidate List updated to 01/17/2023.
- ROHS Directive 2011/65/EU and all subsequent updates, including the M80 amendment through the Delegated Directive 2022/1632, and Italian Legislative Decree 27 of 03/04/2014.
- WEEE Directive 2012/19/EU and all subsequent updates, including the M1 amendment through Directive 2018/849.
- ELV (End-of-Life Vehicles) Directive 2000/53/EC and all subsequent updates, including the modification M15 through Directive 2020/363
- Radioactive Contamination, Directive 2013/59/EURATOM and Italian Legislative Decree No. 101 of 31 July 2020.
- Canadian List 168 updated 03/16/2022.
- Conflict Minerals, Regulation (EU) 2017/821 and all subsequent updates, including amendment M1 through Delegated Regulation 2020/1588, and Dodd-Frank Wall Street Reform and Consumer Protection Act Section 1502.

x CROSSWIND
16/10/24

Pag. 2 / 2 RODACCIAI: The Work Inspector
Alessia Porta

INDRA S.r.l.
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COGNE ACCIAI SPECIALI S.p.a.
ITALY - 11100 AOSTA - VIA PARAVERA, 16
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CAP. SOC. 200.000.000 EUR INT. VERS.
C.F. 02187360967
VAT: IT00571320076 - R.E.A. n. AO-50474

Company with Management Systems certified according to ISO 9001, IATF 16949, EN 9100 and ISO 14001.

INSPECTION CERTIFICATE 3.1 (EN 10204:2004)

SFERA / BALL

CUSTOMER'S ORDER:	254		
MANUFACTURER'S WORKS:	AOSTA, VIA PARAVERA 16 - ITALY		
PRODUCER OF THE DOC:	QUALITY DEPARTMENT		
MANUFACTURER'S WORKS ORDER NO:	0001118068 / 000010		
MARK OF THE MANUFACTURER:	**COGNE**		
DISPATCH NOTE:	81346050 / 000010 WEIGHT: 232 KG / 512 LB		
THE CERTIFIED PRODUCTS ARE COMPLYING TO THE PURCHASE ORDER, EXCEPT FOR EXEMPTIONS AGREED WITH THE CUSTOMER, IF ANY.			
INTERNAL SPEC:	STOCKBARREW2	TECHNICAL RULE:	AD2000
PRODUCT:	PEL PEELED ROUND BARS TOLERANCE: ISOK11		
SURFACE FINISH:	2B Cold Finished		
PRODUCT DELIVERY CONDITION:	RS SOLUTION ANNEALED		
PRODUCT DIMENSIONS (mm):	45,000 (1,772 in)	LENGTH (mm)	06000 06200 (00236 00244 in)
GRADE:	AISI 316/316L EN1.4401/4404	INTERNAL GRADE:	F316L IMCO
IDENTIFICATION HEAT NO:	072244	IDENTIFICATION LOT NO:	201970
MARKING OF THE PRODUCT:	1.4404	TEST PIECE N:	197

REFERENCE NORMS: EN 10088-3 2014, EN 10272 2016, ASTM A276/A276M, ASTM A479/A479M, ASTM A193 B8MCLASSE 1D, ASME SA276/SA276M, ASME SA479/SA479M, AMS 5653J, AMS 5648M, ISO15156-3/NACE MR0175 2015, NACE MR0103/ISO 17945, NORSOK M630 MDSS01 REV5.
REFERENCE NORMS FOR CHEMICAL COMPOSITION AND MECHANICAL PROPERTIES: ASTM A182, ASME SA182.
REFERENCE NORMS ONLY FOR CHEMICAL COMPOSITION: EN 10222-5 2017,ASTM A403-07a, ASTM A484-18a,ASTM A314-08, AMS-QQ-S-763D.
ASME SECT.II PART A EDITION 2015-2017-2019
THE PRODUCT IS CONFORMING TO THE CONTRACT AGREEMENT AND TO THE RULE AD2000-MERKBLATT W0/W2.
ASTM A484 DOES NOT APPLY FOR SIZE AND LENGTH TOLERANCES.
STEELMAKING EAF + AOD + CONTINUOUS CASTING
REFERENCE NORM ASME BPVC.II.A-2015.
HOT ROLLED
REDUCTION RATIO 14,8

CHEMICAL LADLE ANALYSIS ACCORDING TO ASTM A751 - EN ISO 14284
Control lot No. - Weight :020000828767 - 83.288 KG - 183.616 LB

ELEMENTS	C	Si	Mn	P	S	N	Cr	Mo	Ni	Cu
OBTAINED	0,015	0,34	1,74	0,027	0,024	0,080	16,78	2,05	10,21	0,41
ELEMENTS	Co									
OBTAINED	0,16									

HARDNESS TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000828961 - 2.300 KG - 5.071 LB
SPECIFICATION ENISO6506 HARDNESS TEST HB TESTING METHOD: 10/3000
OBTAINED 171

IMPACT TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000828961 - 2.300 KG - 5.071 LB
SPECIFICATION EN ISO 148-1-KV2 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 20
MEASUREMENT UNIT J

OBTAINED	430	432	440	430	439	434	434	440	438	433
	431	439								

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16/10/24 R

DATE 18.05.2020 BARBARA VIETTI MV(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne
REVIEW DATE 01.12.2021 N. REVIEW 1

INDRA s.r.l.
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COGNE ACCIAI SPECIALI S.p.a.

ITALY - 11100 AOSTA - VIA PARAVERA, 16
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C.F. 02187380967
VAT: IT00571320076 - R.E.A. n. AO-50474

Company with Management Systems certified according to ISO 9001, IATF 16949, EN 9100 and ISO 14001.

SFERA / BALL

TENSILE TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000828961 - 2.300 KG - 5.071 LB
SPECIFICATION EN-ISO6892-1 DIRECTION OF THE TEST PIECE: L

	RM	RP02	A5	Z	RP1
MEASUREMENT UNIT	MPA	MPA	% 5.0 D	%	NMM
OBTAINED	578	286	56,1	80,5	321
	592	287	55,6	80,1	321
	582	274	54,2	79,4	306
	585	274	55,6	81,2	312

GRAIN SIZE
Control lot No. - Weight :020000828961 - 2.300 KG - 5.071 LB
SPECIFICATION ASTME112 --
OBTAINED 5 7

MATERIAL IN COMPLIANCE WITH THE NORSOK M-630 MDS S01
IMPACT TEST
Control lot No. - Weight :020000828961 - 2.300 KG - 5.071 LB
SPECIFICATION EN ISO 148-1 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 196-
MEASUREMENT UNIT J
OBTAINED 181 183 188 177 175 200 188 174 194 183
197 173

TENSILE TEST
Control lot No. - Weight :020000828961 - 2.300 KG - 5.071 LB
SPECIFICATION ASTMA370-E8-0.5"SPEC DIRECTION OF THE TEST PIECE: L

	RMB	RP02B	ZB	AL2B
MEASUREMENT UNIT	KSI	KSI	%	% 4,0 D
OBTAINED	85	40	80,7	59,7
	85	42	81,2	60,3
	86	42	81,3	60,1
	85	41	81,0	58,6

COUNTRY OF MELTING AND ORIGIN: ITALY, THE MATERIAL COMPLIES WITH FAR DFARS 252.225-7009 ALT 1.
The products delivered are conforming to EN10088-5 and bear the CE marking on the basis of the test results here reported and the continuous surveillance, assessment and approval by MPA NRW (certificate no. 0432-CPR-00166-01)
Material produced according to the system #Regulation 305/2011/EU of the European Parliament and of the Council of 9 March 2011#
DOCUMENT ISSUED IN AGREEMENT WITH TUEV BAYERN(11.1972) WAVING OF COUNTERSIGNING (SEE TUEV BAYERN LETTER DATED 17.01.80).
MARKING: SYMBOL OF THE MANUF. WORK, MATERIAL N. , CAST N., LOT N., RECEIVING AGENT STAMP
CORROSION TEST ACCORDING TO ASTM A262 PRACTICE E EN ISO 3651-2 PRACTICE A: SATISFACTORY.

DATE 18.05.2020 BARBARA VIETTI MV(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne
REVIEW DATE 01.12.2021 N. REVIEW 1

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COGNE ACCIAI SPECIALI S.p.a.

ITALY - 11100 AOSTA - VIA PARAVERA, 18
TEL +39.0165.3021 - FAX +39.0165.302296
CAP. SOC. 200.000.000 EUR INT. VERS.
C.F. 02187360967
VAT: IT00571320076 - R.E.A. n. AO-50474

Company with Management Systems certified according to ISO 9001, IATF 16949, EN 9100 and ISO 14001.

SFERA / BALL

ANTIMIXING TEST BY PORTABLE SPECTROMETRE: CONFORMING
EDDY CURRENT INSPECTION OF SURFACE ACCORDING TO EN 10277 CLASS 4.
DIMENSIONAL CONTROL ACCORDING TO EN 10278: SATISFACTORY.
NO WELDING REPAIR ON THE MATERIAL.
ULTRASONIC TEST ACCORDING TO EN 10308 Class.3: SATISFACTORY
QUALITY SYSTEM CERTIFIED TO UNI EN ISO 9001:2015 -IATF 16949:2016 (THE LAST ONE ONLY FOR WIRE ROD AND HOT ROLLED-PEELED-GROUND STAINLESS STEEL BARS).
MATERIAL ACCORDING TO NORSOK M630 EDITION 6.
INSPECTOR'S STAMP LF
THE PRODUCT SATISFIES THE DIRECTIVES: 2015/863/EU (ROHS3) - 2011/65/EU (ROHS2) - 2000/53/EU - 2002/95/EU(RoHS) - 2003/11/EU-2005/618/EU AND PED 2014/68/EU.
THE MATERIAL IS FREE OF ANY MERCURY, MERCURY COMPOUNDS AND OR RADIUM CONTAMINATION AT TIME OF SHIPMENT AND WAS PRODUCED WITHOUT USING OZONE DEPLETING SUBSTANCES OF CLASS I AND II.
RADIOACTIVITY CONTROL PERFORMED WITH A GAMMA SPECTROMETER: ASTM E181.
GAMMA ACTIVITY ON THE PRODUCTS BELOW 0.1 BQ/G ACCORDING TO EU RESOLUTION 2013/59/EURATOM , IAEA RS-G-1.7 AND IAEA SSG-17.

CE 0432

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DATE 18.05.2020 BARBARA VIETTI MV(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne
REVIEW DATE 01.12.2021 N. REVIEW 1

CORPO BONNET / BONNET BODY

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST136234 / 2023 / 1

Ordine nr. / Bestell / Your order / Commande: VS ORDINE 25

Conferma ordine nr. / Werks/Our Order/Ref nr.: BS23002709

Avviso di Spedizione / Lieferanzeige/Packing list/B.L.: A-BS23001767

Stato di fornitura / Lieferzustand / Delivery state / Etat de livraison: Laminato - Solubilizzato FINITO A FREDDO

Tipo di Elaborazione / Erschmelzungsart / Melting process / Mode d'elaboration: E+AOD

Qualità / Werkstoff/Grade/Nuance: 1.4401/1.4404/316/316L

Marca / Markenbezeichnung / Brand / Nuance: MVAPML (MAXIVAL)

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice: AV

Punzone del Collaudatore / Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assesseur: MR

Punzonatura / Kennzeichnung / Marking / Marquage: 1.4401/1.4404

SPECIFICHE / Anforderungen / Requirements / Exigences	Note / Aufzeichnungen / Notes / Notes
VAL STOCK W2 A/1 1.4404/316L A,CF	
AD 2000-M. W 2 01/20 1.4401 A.CF (0)	(0)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
AD 2000-M. W 2 01/20 1.4404 A.CF (1)	(1)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
AISI . 316/316L	
AMS-QQ-S-763 D 316/316L A,CF	
ASME SA182 2021 S31600/03 A (2)	(2)Section II Part A 2021 EDITION For products machined directly from bar refer to ASME SA479.
ASME SA276 2021 S31600/03 A,CF (3)	(3)Section II Part A 2021 EDITION
ASME SA479 2021 S31600/03 A (4)	(4)Section II Part A 2021 EDITION
ASTM A182 2022A S31600/03 A (5)	(5)For products machined directly from bar refer also to ASTM A479.
ASTM A262 PR. E 2015 316/316L (6)	(6)Reapproved 2021
ASTM A276 2017 S31600/03 A,CF	
ASTM A370 2022 .	
ASTM A479 2021 S31600/03 A	
ASTM E10 2018 .	
ASTM E8 2022 .	
EN 10088 PART 3 2014 1.4401 A,CF	
EN 10088 PART 3 2014 1.4404 A,CF	
EN 10272 2016. 1.4401 A,CF	
EN 10272 2016. 1.4404 A,CF	
ISO 148-1 2016 .	
ISO 3651-2 98 METHOD A T1	
ISO 6506-1 2014 .	
ISO 6892-1 2019 .	
NACE MR0103 2015 S31600/03 A (7)	(7)ANSI/NACE MR0103/ISO 17945 November 23, 2015
NACE MR0175 2015 S31600/03 A (8)	(8)ANSI/NACE MR0175/ISO 15156-3, third edition November 23,2015
QQ-S-763 F 316/316L A,CF	
ACH CO . .	
KV L -196C . ISO 148-1	
MDS S01 5 316 A,CF (9)	(9)Norsok-standard M-630 Edition 6, October 2013
ASTM A479 2023A S31600 A	

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		Tolleranza: h11 - DIN668/EN10278 (Toleranz/Allowance/Tolerance)					
Pos. nr. (Pos. nr, Item nr, Nr. de poste)	Oggetto (Gegenstand, Product description, Descrip. du produit)	Dimensioni - mm (Abmessungen, Dimension, Dimension)	Lunghezza - mm (Länge, Length, Longueur)	Colata (Schmelze, Heat, Coulée)	Pezzi (Stückzahl, Pieces, Pieces)	Peso - KG (Gewicht, Weight, Poids)	Lotto nr. (Losnr, Lot nr, Lot nr.)
0010	Esagono	22,000	3000/ 3030	291366		2191,0	221203290

x CROSSWIND 16/10/24 R

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 07/11/2023 VCQ008 - MEST136589	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité **R.BERTELLI**	Direzione Prodotto Produktmanagement/Product Management/Direction Produit **P.MESSORI**	Pagina 1 di 4

CORPO BONNET / BONNET BODY

Acciaierie Valbruna S.p.A.

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Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1 — Certificato nr. MEST136234 / 2023 / 1

Stato di fornitura: Laminato - Solubilizzato FINITO A FREDDO

Produttore: ACCIAIERIE VALBRUNA S.P.A.

Tipo di Elaborazione: E+AOD

Marchi di Fabbrica: AV

Ordine nr: VS ORDINE 25

Qualità: 1.4401/1.4404/316/316L

Punzone del Collaudatore: MR

Conferma ordine nr: BS23002709

Avviso di Spedizione: A-BS23001767

Marca: MVAPML (MAXIVAL)

Punzonatura: 1.4401/1.4404

TEST ALLO STATO DI FORNITURA

Test on delivery condition Prüefung auf lieferbereitem produkt test a l'etat de fourniture Prueba sobre el material asi come entregado

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Prelievo	°C	Posiz. Saggio	Snervamento Rp 0,2% N/mm2	Snervamento Rp 1% N/mm2	Resistenza Rm N/mm2	Allungamento A5 %		Strizione Z %		Resilienza			Durezza HB		
Valori richiesti		min		200	235	500	20	-	-	-	-			-		
		max				900								315		
A	10	20	L	458	548	658	43		67					225		
I	10	20	L	457	538	659	45		66					227		

TEST ALLO STATO DI FORNITURA

Test on delivery condition / Prüefung auf lieferbereitem produkt / Test a l'etat de fourniture / Prueba sobre el material asi come entregado

TEST		min	max	
I	Dimensioni grano x ASTM E112			5

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Prelievo	°C	Posiz. Saggio	Resilienza KV2 J			Espansione laterale Lateral ex mm			Shear % Shear %		
Valori richiesti		min		-	-	-	-	-	-	-	-	-
		max										
D	10X10	-196	L	128	130	125	1,858	1,910	1,289	58	60	57

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Prelievo	°C	Posiz. Saggio	Snervamento Rp 0,2% N/mm2	Snervamento Yield Stress	Resistenza Rm N/mm2	Allungamento E 4d %		Strizione RA %		Resilienza			Durezza HB		
Valori richiesti		min		210	-	517	-	35	-	50	-			-		
		max												235		
E	12,5	20	L	595		725		35		69				233		

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CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST136234 / 2023 / 1

Ordine nr. / Bestell / Your order / Commande: VS ORDINE 25

Conferma ordine nr. / Werks/Our Order/Ref nr.: BS23002709

Avviso di Spedizione / Lieferanzeige/Packing list/B.L.: A-BS23001767

Stato di fornitura / Lieferzustand / Delivery state / Etat de livraison: Laminato - Solubilizzato FINITO A FREDDO

Tipo di Elaborazione / Erschmelzungsart / Melting process / Mode d'elaboration: E+AOD

Qualità / Werkstoff/Grade/Nuance: 1.4401/1.4404/316/316L

Marca / Markenbezeichnung / Brand / Nuance: MVAPML (MAXIVAL)

Produttore / Hersteller/Item/Usine productrice: ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice: AV

Punzone del Collaudatore / Stempel des Werksachverständigen / Inspector's stamp/Poinçon de l'essayeur: MR

Punzonatura / Kennzeichnung / Marking / Marquage: 1.4401/1.4404

Charpy per ISO 148-1

1) L=longitudinale/Längs, T=trasversale/quer, O=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale - Lateral Expansion -			Shear - Shear -		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		100	100	100	-	-	-	-	-	-
H	10X10	20	L	185	179	184						
J	10X10	20	L	197	193	191						

Tensile testing according to ISO 6892-1
Impact testing according to ISO 148-1
Mechanical properties according to ASTM A370.
Brinnell hardness according to ASTM E10
Tensile testing according to ASTM E8
Brinnell hardness according to ISO 6506-1

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16/10/24

Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata / Heat Schmelze/Coulée																
	min -	-	-	-	16,50	2,00	-	10,00	-	-	-	-	-	-	-	-
	max 0,030	1,00	2,00	18,00	2,50	1,00	13,00	-	0,045	0,030	0,100	-	-	-	-	
	C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	Co %	P %	S %	N %					
291366	0,019	0,50	1,48	16,78	2,06	0,56	10,05	0,134	0,031	0,027	0,064					

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 07/11/2023 VCQ008 - MEST136589	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité **R.BERTELLI**	Direzione Prodotto Produktmanagement/Product Management/Direction Produit **P.MESSORI**	Pagina 3 di 4

CORPO BONNET / BONNET BODY

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CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST136234 / 2023 / 1
Prüfung/Test/Essai

Ordine nr: VS ORDINE 25
Bestell Your order Commande

Conferma ordine nr: BS23002709
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-BS23001767
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Laminato - Solubilizzato FINITO A FREDDO
Lieferzustand Delivery state Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart Melting process Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes Trade marks Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werksachverständigen Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung Marking Marquage

Reduction ratio = 78,0 : 1
Solution annealed 1060°C for 180'(total time)/water cooled.
SURFACE QUALITY COMPLIANT TO EN 10088-3 TAB.1 COND. 2H
"Issued in agreement with TÜV SÜD Industrie Service GMBH
(07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by
Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

Sono state soddisfatte tutte le condizioni richieste Die gestellen Anforderungen sind it. Anlage erfüllt The material has been furnished in accordance with the requirements Le materiel à été trouvé conforme aux exigences	Controllo antimescolanza con tecnica XRF/OES portatile : OK Verwechslungsprüfung: durch XRF/OES Gerät geführt : OK Antimixing testing performed with XRF/OES portable : OK Contrôle antimélange svt technique XRF/OES portable : OK	Controllo visivo e dimensionale: soddisfa le esigenze Besichtigung und Ausmessung: ohne Beanstandung Visual inspection and dimensional checks:satisfactory Contrôle visuel et dimensions: satisfaisant

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD'S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 07/11/2023 VCO008 - MEST136589	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 4 di 4

STELO / STEM

Rodacciai

23842 Bosisio Parini (LC) – Via Giuseppe Roda 1 – Italia
Tel. +39 031878111 – Fax +39 031878312
www.rodacciai.com – info@rodacciai.com

Azienda con sistema di gestione certificato da IGQ secondo UNI EN ISO 9001:2015

The Company's Quality Management System is certified by IGQ according to UNI EN ISO 9001:2015

CERTIFICATO DI CONTROLLO Inspection Certif N. 174495 Date 14/11/2023

Secondo According to . . . . . EN 10204:2004 3.1

ORDINE - Order N. 372 Date 10/11/2023

D.d.T. - Delivery note N. 11714/04 Date 14/11/2023

Weight KG 411,00 **Odp. Nr.** 2022/A/58282
Tolerance ISO286-2 h9 + 0,000 - 0,036 mm **Bars Length** 3.000 - 3.050 mm

QUALITA' - Grade

STANDARD	EN 10088-3:2014	X2CrNiMo17-12-2	1.4404 / 316L
STANDARD	EN 10088-3:2023	X5CrNiMo17-12-2	1.4401 / 316

Mark RODACCIAI . . . . . 316 PLUS
PROFILO - Shape . . . . . ROUND
DIMENSIONE - Size . . . . . mm 10,00
ESECUZIONE - Form of delivery . . . . . ROUGH GROU.

COLATA - Heat 172303

ANALISI CHIMICA DI COLATA - Cast analysis % by mass

C	Mn	Si	S	P	Cr	Ni	Mo	Cu	Co	N
0,021	1,820	0,360	0,0220	0,025	16,640	10,100	2,100	0,360	0,150	0,0760

CARATTERISTICHE MECCANICHE ALLO STATO DI FORNITURA
Mechanical properties of the delivered material

		Tested
Tensile Strength	Rm (MPa)	746,0
Proof Stress	Rp (1) (MPa)	692,0
Proof Stress	Rp (0,2) (MPa)	612,0
Elongation	A 5 (%)	32,0
Hardness	HBW	226,0
Reduction of area	Z (%)	51,0

NOTE - Notes

Processo di Fusione: E + A. O. D.
Trattamento termico: Temperatura di Solubilizzazione 1060°C
Tempo Mantenimento: 4 Ore, Raffreddamento in Acqua
Prova di Corrosione Intergranularena: ASTM A262-15 "E"
Materiale Conforme a NACE MR-0175/ISO 15156-3:2015
NACE MR-103/ISO 17495-1:2016

Pag. 1 / Segue

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Azienda con sistema di gestione certificato da IGQ secondo UNI EN ISO 9001:2015

The Company's Quality Management System is certified by IGQ according to UNI EN ISO 9001:2015

Segue certificato di controllo N. 174495 Date 14/11/2023
Inspection Certificate's continuance

NOTE - Notes

Materiale conforme a: ASTM A276-24a / A479-23a/ A182-24
ASME SA: 479-21 276-21 182; UNS 31600 - 31630 AISI 316-316L
Corrosione Intercristallina EN ISO 3651-2:98 Met.A

Melting Process: E + A. O. D
Heat treatment: annealed temperature 1060°C
Soaking time: 4 Hours, Cooling in water
Intergranular corrosion tested to ASTM A262-15 "E"
According to: NACE MR-0175 / ISO 15156-3:2015
NACE MR-103/ISO 17495-1:2016
Material Compliant to: ASTM A276-24a / A479-23a/ A182-24
ASME SA: 479-21 276-21 182; UNS 31600 - 31630 AISI 316-316L
Intergranular Corrosion according to EN ISO 3651-2:98 Met.A

Surface quality condition 2H conforming also to EN 10277 class 3

We certify hereby, that the above mentioned products are consistent with the order prescriptions.
This certificate was generated by data system acc. to EN 10204, it is not necessary to be signed for validity.

Materiale conforme alle seguenti direttive/regolamenti europee:
. Regolamento REACH 2006/1907/CE e tutti successivi aggiornamenti, compresa la modifica M80 Direttiva Delegata 2022/1632, e SVHC Candidate List aggiornata al 17/01/2023.
. Direttiva ROHS 2011/65/UE e tutti i successivi aggiornamenti, compresa la modifica M80 attraverso la Direttiva Delegata 2022/1632, e Decreto Legislativo 27 del 04/03/2014.
. Direttiva RAEE 2012/19/UE e tutti successivi aggiornamenti, compresa la modifica M1 attraverso la Direttiva 2018/849.
. Direttiva ELV (End-of-Life Vehicles) 2000/53/CE e tutti i successivi aggiornamenti, compresa la modifica M15 attraverso la Direttiva 2020/363
. Contaminazione Radioattiva, Direttiva 2013/59/EURATOM e Decreto Legislativo N.101 del 31 Luglio 2020.
. Canadian List 168 aggiornata al 16/03/2022.
. Minerali di Conflitto, Regolamento (UE) 2017/821 e tutti i successivi aggiornamenti, compresa la modifica M1 attraverso il Regolamento Delegato 2020/1588, e Dodd-Frank Wall Street Reform and Consumer Protection Act Section 1502.

Material conforming to the following European directives/regulation:
. REACH regulation 2006/1907/EC and all subsequent updates, including modification M80 Delegate Directive, and SVHC Candidate List updated to 01/17/2023.
. ROHS Directive 2011/65/EU and all subsequent updates, including the M80 amendment through the Delegated Directive 2022/1632, and Italian Legislative Decree 27 of 03/04/2014.
. WEEE Directive 2012/19/EU and all subsequent updates, including the M1 amendment through Directive 2018/849.
. ELV (End-of-Life Vehicles) Directive 2000/53/EC and all subsequent updates, including the modification M15 through Directive 2020/363
. Radioactive Contamination, Directive 2013/59/EURATOM and Italian Legislative Decree No. 101 of 31 July 2020.
. Canadian List 168 updated 03/16/2022.
. Conflict Minerals, Regulation (EU) 2017/821 and all subsequent updates, including amendment M1 through Delegated Regulation 2020/1588, and Dodd-Frank Wall Street Reform and Consumer Protection Act Section 1502.

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Pag. 2 / 2 RODACCIAI: The Work Inspector
Alessia Porta

OTTURATORE / TIP

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST140440 / 2023 /
Prüfung/Test/Essai

Ordine nr: VS ORD MAIL
Bestell Your order Commande

Conferma ordine nr: AN23001468
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-AN23000875
Lieferanzeige/Packing list/B.L.

Stato di fornitura: Laminato - Solubilizzato FINITO A FREDDO
Lieferzustand Delivery state Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart Melting process Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes Trade marks Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werksachverständigen Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung Marking Marquage

SPECIFICHE : Anforderungen / Requirements / Exigences	Note: Aufzeichnungen / Notes / Notes
VAL STOCK W2 A/1 1.4404/316L A,CF	
AD 2000-M. W 2 2022 1.4401 A,CF (0)	(0)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
AD 2000-M. W 2 2022 1.4404 A,CF (1)	(1)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
AISI . 316/316L	
ASME SA182 2021 S31600/03 A (2)	(2)Section II Part A 2021 EDITION For products machined directly from bar refer to ASME SA479.
ASME SA276 2021 S31600/03 A,CF (3)	(3)Section II Part A 2021 EDITION
ASME SA479 2021 S31600/03 A (4)	(4)Section II Part A 2021 EDITION
ASTM A182 2023 S31600/03 A (5)	(5)For products machined directly from bar refer also to ASTM A479.
ASTM A262 PR. E 2015 316/316L (6)	(6)Reapproved 2021
ASTM A276 2023 S31600/03 A,CF	
ASTM A370 2022 .	
ASTM A479 2023A S31600/03 A	
ASTM E10 2023 .	
ASTM E8 2022 .	
EN 10088 PART 3 2014 1.4401 A,CF	
EN 10088 PART 3 2014 1.4404 A,CF	
EN 10272 2016. 1.4401 A,CF	
EN 10272 2016. 1.4404 A,CF	
ISO 3651-2 98 METHOD A T1	
ISO 6506-1 2014 .	
ISO 6892-1 2019 .	
ACH CO . .	
PME HB L . .	
NACE MR0175 4 S31600/03 A (7)	(7)ANSI/NACE MR0175/ISO 15156-3:2020 Fourth edition, approved 21 Sep 2022.
NACE MR0103 2015 S31600/03 A (8)	(8)ANSI/NACE MR0103/ISO 17945 November 23, 2015

		Tolleranza: h9 - DIN671/EN10278 Toleranz/Allowance/Tolerance					
Pos. nr. Pos. nr Item nr Nr. de poste	Oggetto Gegenstand Product description Descrip. du produit	Dimensioni - mm Abmessungen Dimension Dimension	Lunghezza - mm Länge Length Longueur	Colata Schmelze Heat Coulée	Pezzi Stückzahl Pieces Pieces	Peso - KG Gewicht Weight Poids	Lotto nr. Losnr Lot nr Lot nr
0010	Tondo	9,000	3000/ 3050	290962		162,0	210502620

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OTTURATORE / TIP

Acciaierie Valbruna S.p.A.

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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1 — Certificato nr. MEST140440 / 2023 /

Nach/According to/Selon — Prüfung/Test/Essai

Ordine nr: VS ORD MAIL (Bestell / Your order / Commande)

Conferma ordine nr: AN23001468 (Werks/Our Order/Ref nr.)

Avviso di Spedizione: A-AN23000875 (Lieferanzeige/Packing list/B.L.)

Stato di fornitura: Laminato - Solubilizzato FINITO A FREDDO (Lieferzustand / Delivery state / Etat de livraison)

Tipo di Elaborazione: E+AOD (Erschmelzungsart / Melting process / Mode d'elaboration)

Qualità: 1.4401/1.4404/316/316L (Werkstoff/Grade/Nuance)

Marca: MVAPML (MAXIVAL) (Markenbezeichnung / Brand / Nuance)

Produttore: ACCIAIERIE VALBRUNA S.P.A. (Hersteller/Item/Usine productrice)

Marchi di Fabbrica: AV (Zeichen des Liefermerkes / Trade marks / Sigles de l'usine productrice)

Punzone del Collaudatore: MR (Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur)

Punzonatura: 1.4401/1.4404 (Kennzeichnung / Marking / Marquage)

TEST ALLO STATO DI FORNITURA
Test on delivery condition — Prüefung auf lieferbereitem produkt — test a l'etat de fourniture — Prueba sobre el material así come entregado

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais. mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement A5 %		Strizione Einschnürung Reduction of area Striction Z %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti / Anforderungen/Required values / Valeurs demandées		min		200	235	500	20	-	-	-	-			-		
		max				900								315		
A	9	20	L	637	686	720	31		73					234		
E	9	20	L	639	690	726	30		71					235		

TEST ALLO STATO DI FORNITURA
Test on delivery condition / Prüefung auf lieferbereitem produkt / Test a l'etat de fourniture / Prueba sobre el material así come entregado

TEST		min	max	
A	Dimensioni grano x ASTM E112			5

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais. mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti / Anforderungen/Required values / Valeurs demandées		min		310	-	620	-	30	-	50	-			-		
		max												235		
D	6	20	L	640		723		33		74				230		

Tensile testing according to ISO 6892-1
Mechanical properties according to ASTM A370.
Brinnell hardness according to ASTM E10
Tensile testing according to ASTM E8
Brinnell hardness according to ISO 6506-1

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Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat Schmelze/Coulée	C %	Si %	Mn %	Cr %	Mo %	Ni %	Co %	P %	S %	N %
	min -	-	-	16,50	2,00	10,00	-	-	-	-
	max 0,030	1,00	2,00	18,00	2,50	13,00	-	0,045	0,030	0,100
290962	0,015	0,46	1,48	16,68	2,03	10,23	0,127	0,030	0,023	0,048

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 15/11/2023	Direzione Qualità	Direzione Prodotto	Pagina
VCQ012 - MEST140440	Qualitätsmanagement/Quality Management/Gestion Qualité	Produktmanagement/Product Management/Direction Produit	2 di 3
	R.BERTELLI	P.MESSORI	

Acciaierie Valbruna S.p.A.

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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST140440 / 2023 /
Prüfung/Test/Essai

Ordine nr: VS ORD MAIL
Bestell/Your order/Commande

Conferma ordine nr: AN23001468
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-AN23000875
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Laminato - Solubilizzato FINITO A FREDDO
Lieferzustand/Delivery state/Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart/Melting process/Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung/Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes/Trade marks/Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen/Inspector's stamp/Poinçon de l'essayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung/Marking/Marquage

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

Reduction ratio = 457,3 : 1
Material annealed 1040°C for 135'(total time)/water cooled.
SURFACE QUALITY COMPLIANT TO EN 10088-3 TAB.1 COND. 2H
"Issued in agreement with TÜV SÜD Industrie Service GMBH
(07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by
Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

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Sono state soddisfatte tutte le condizioni richieste
Die gestellten Anforderungen sind it. Anlage erfüllt
The material has been furnished in accordance with the requirements
Le materiel à été trouvé conforme aux exigences

Controllo antimescolanza con tecnica XRF/OES portatile : OK
Verwechslungprüfung: durch XRF/OES Gerät geführt : OK
Antimixing testing performed with XRF/OES portable : OK
Contrôle antimélange svt technique XRF/OES portable : OK

Controllo visivo e dimensionale: soddisfa le esigenze
Besichtigung und Ausmessung: ohne Beanstandung
Visual inspection and dimensional checks: satisfactory
Contrôle visuel et dimensions: satisfaisant

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD'S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 15/11/2023 VCQ012 - MEST140440	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité **R.BERTELLI**	Direzione Prodotto Produktmanagement/Product Management/Direction Produit **P.MESSORI**	Pagina 3 di 3

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ROSETTI MARINO ITEM 410

COD. VLBBNN07201H00

TAG:

BLPH-MV-468

INDRA ITEM 323

COD. 00.VSF.2681/V

indra VALVES - ITALY

Certificazione dei materiali
EN 10204 3.1 come da allegati

Material certification
EN 10204 3.1 as per attachments

MD-02-04-IT-UK / VSF
Rev. 16
Data: 08-Nov-2018
CM/IT/UK

Nr. *No.* **24-1969** **Data /** *Date :* **8-Oct-2024**

Cliente / *Customer* **ROSETTI MARINO SPA**

Vs. ordine Nr. / *Your order Nr.* **1724000798 REV.2** **Data /** *Date :* **26-Jun-2024**

Ns. commessa Nr. / *Our job Nr.* **24 01216** **Data /** *Date :* **3-Jul-2024**

Ns. D.D.T. Nr. / *Our advise note Nr.* **Data /** *Date :*

Ordine di produzione / Production order number : 24 01216/323 - 294062

Lotto / Material batch number : 294062

Pos. Cliente Customer Item	*Pos. Indra Indra Item*	*Codice / Code*		*Q.tà / Q.ty*	*Nr. di serie Serial Number*	*Descrizione /Description*
		Ns./ Our	*Vs. / Your*			
410	323	00.VSF.2681/V	VLBBNN07201H00	1	106016	INDRA BALL VALVE DBB-898-HR-40-H300RF3-H-D-DLF-DL-N-PG-L123-TG-TGW-TV-DP-PMI2-PD2-BI-GT-CR-TA-FE2-FS-FE-SPC1

Elenco / List

Componente / *Component*	Colata / Heat	Materiale *Material*	Numero del certificato Certificate number
Corpo Valvola / Valve Body	294062	AISI 316/316L NACE	MEST083699/2024/
Closure H300RF3	292410	AISI 316/316L NACE	MEST053963/2024/ - UT24002496
Tirante / Stud bolt	277129	ASTM A193 B8M Cl.2	5166
Dado / Nut	160903S05	ASTM A194 Gr.8M	5112
Stelo antiespulsione sfera / Ball stem	291905	AISI 316/316L NACE	MEST084078/2023/
Sfera / Ball	372447	AISI 316/316L NACE	2023013898
Corpo bonnet/ Bonnet body	291366	AISI 316/316L NACE	MEST136234/2023/1
Stelo spillo / Stem needle	172303	AISI 316/316L NACE	174495
Otturatore / Tip	290962	AISI 316/316L NACE	MEST140440/2023/

NOTE / **REMARKS :** TAG: BLPH-MV-468

PREPARATO DA: **ELEONORA RANZANI**
PREPARED BY: **DOCUMENTION MANAGER**

APPROVATO DA: **LUCIA NOSOTTI**
APPROVED BY: **QUALITY ASSURANCE MANAGER**

20013 Magenta (MI) Italy - Via Novara, 10/B-C
Tel. +39 02 97298663 r.a. - Fax +39 02 97291855
E-mail: indra@indra.it - http://www.indra.it

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23/10/24

CORPO VALVOLA / VALVE BODY

Acciaierie Valbruna S.p.A.

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Telefono 0471.924111 - Fax 0471.924497
https://www.valbruna-stainless-steel.com/

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION - CERTIFICADO DE INSPECCIÓN

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon/De conformidad con

Certificato nr. MEST083699 / 2024 /
Prüfung/Test/Essai/Num. de certificado

Cliente / Besteller/Purchaser/Client/Cliente
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 02072
Bestell / Your order / Commande / Num. de pedido

Conferma ordine nr: MI24005187
Werks/Our Order/Ref nr. / Num. de confirmación de pedido

Avviso di Spedizione: A-MI24003826
Lieferanzeige/Packing list/B.L. / Aviso de embarque

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand / Delivery state / Etat de livraison / Estado de la entrega

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration / Método de fusión

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance / Calidad

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance / Marca

Produttore :
Hersteller/Item/Usine productrice/Productor

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice / Marcas de fábrica

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur / Sello del Comprobador

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung / Marking / Marquage / Sello

SPECIFICHE :	Note:
Anforderungen / Requirements / Exigences / Especificaciones	Aufzeichnungen / Notes / Notes / Notas
AV 316L VALVES A/1 1.4401/1.4404 A	
IS107 01 316 A	
MDS S01 5 316 A (0)	(0)Norsok-standard M-630 Edition 6, October 2013
MDS S17 1 316 A (1)	(1)Norsok-standard M-630: 2020 (2020-09-30)
AD 2000-M. W 2 2022 1.4401 A (2)	(2)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
AD 2000-M. W 2 2022 1.4404 A (3)	(3)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 06.2022
API 6A 21 ANNEX M (4)	(4)Errata 1 (04/2019), Errata 2 (06/2020), Errata 3 (09/2020). Addendum 1 (July 2020) and Addendum 2 (June 2021).
API 6D 25 ANNEX H (5)	(5)Revision November 2021
ASME SA182 2023 S31600/03 A (6)	(6)Section II Part A 2023 EDITION For products machined directly from bar refer to ASME SA479.
ASME SA276 2023 S31600/03 A (7)	(7)Section II Part A 2023 EDITION
ASME SA479 2023 S31600/03 A (8)	(8)Section II Part A 2023 EDITION
ASTM A182 2024 S31600/03 A (9)	(9)For products machined directly from bar refer also to ASTM A479.
ASTM A262 PR. E 2015 316/316L (A)	(A)Reapproved 2021
ASTM A276 2024A S31600/03 A	
ASTM A370 2022 .	
ASTM A479 2023A S31600/03 A	
ASTM E381 2022 .	
ASTM E562 2019 . (B)	(B)19E01
EN 10088 PART 3 2014 1.4401 A (C)	(C)Chemical and mechanical properties only.
EN 10088 PART 3 2014 1.4404 A (D)	(D)Chemical and mechanical properties only.
EN 10222 PART 5 2017 1.4401 A	
EN 10222 PART 5 2017 1.4404 A	
EN 10272 2016. 1.4401 A	
EN 10272 2016. 1.4404 A	
ISO 148-1 2016 .	
ISO 6892-1 2019 .	
NACE MR0103 2015 S31600/03 A (E)	(E)ANSI/NACE MR0103/ISO 17945 November 23, 2015
NACE MR0175 4 S31600/03 A (F)	(F)ANSI/NACE MR0175/ISO 15156-3:2020 Fourth edition, approved 21 Sep 2022.

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		Tolleranza: k12 Toleranz/Allowance/Tolerance/Tolerancia					
Pos. nr. Pos. nr. / Item nr. / Nr. de poste / Número de artículo	Oggetto Gegenstand / Product description / Descrip. du produit / Descripción del producto	Dimensioni - mm Abmessungen / Dimension / Dimension / Dimensiones	Lunghezza - mm Länge / Length / Longueur / Longitud	Colata Schmelze / Heat / Coulée / Colada	Pezzi Stückzahl / Pieces / Pieces / Piezas	Peso - KG Gewicht / Weight / Poids / Peso	Lotto nr. Losnr. / Lot nr. / Lot nr. / Lote nro.
0030	Tondo	170,000	5095/ 5517	294062	2	1916,0	319310880

CROSSWIND 23/10/24

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 20/06/2024 VCQ052 - MEST083699	**Direzione Qualità** Qualitätsmanagement/Quality Management/Gestion Qualité/Gerente de calidad **R.BERTELLI**	**Direzione Prodotto** Produktmanagement/Product Management/Direction Produit/Gerente de producto **P.MESSORI**	Pagina 1 di 6

CORPO VALVOLA / VALVE BODY

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497
https://www.valbruna-stainless-steel.com/

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION - CERTIFICADO DE INSPECCIÓN

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon/De conformidad con

Certificato nr. MEST083699 / 2024 /
Prüfung/Test/Essai/Num. de certificado

Cliente / Besteller/Purchaser/Client/Cliente
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 02072
Bestell
Your order
Commande
Num. de pedido

Conferma ordine nr: MI24005187
Werks/Our Order/Ref nr.
Num. de confirmación de pedido

Avviso di Spedizione: A-MI24003826
Lieferanzeige/Packing list/B.L.
Aviso de embarque

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand
Delivery state
Etat de livraison
Estado de la entrega

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration
Método de fusión

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance
Calidad

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance / Marca

Produttore :
Hersteller/Item/Usine productrice/Productor

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice
Marcas de fábrica

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur
Sello del Comprobador

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage / Sello

TEST ALLO STATO DI FORNITURA

TEST		min	max	
A	Dimensioni grano x ASTM E112			1
A	Ferrite delta %			1,2 %

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diem Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diem. epais mm / Probeta	°C	Posiz. Saggio Probenlage Location Emplacement Ubicación 1)	Resilienza Kerbschlagarbeit Impact Value Resilience / Prueba de impacto KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs démandées / Valores requeridos		min		60	60	60	-	-	-	-	-	-
		max										
B	10X10	-196	L	250	258	255	2,188	2,156	2,144	70	70	70

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diem Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diem. epais mm / Probeta	°C	Posiz. Saggio Probenlage Location Emplacement Ubicación 1)	Snervamento Streckgrenze/Yield Stress Limite elastique Limite elástico Rp 0,2% N/mm2	Snervamento Streckgrenze/Yield Stress Limite elastique Limite elástico	Resistenza Zugfestigkeit/Tensile strength Resistance à traction Resistencia a la tracción Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement / Elongación E 4d %		Strizione Einschnürung Reduction of area Striction / Reducción de área RA %		Resilienza Kerbschlagarbeit Impact Value/ Resilience Prueba de impacto			Durezza Heerte Hardness Dureté / Dureza HB		
Valori richiesti Anforderungen/Required values Valeurs démandées / Valores requeridos		min		205	-	515	-	40	-	50	-			-		
		max												235		
C	12,5	20	L	266		551		59		69				159		

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diem Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diem. epais mm / Probeta	°C	Posiz. Saggio Probenlage Location Emplacement Ubicación 1)	Snervamento Streckgrenze/Yield Stress Limite elastique Limite elástico Rp 0,2% N/mm2	Snervamento Streckgrenze/Yield Stress Limite elastique Limite elástico	Resistenza Zugfestigkeit/Tensile strength Resistance à traction Resistencia a la tracción Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement / Elongación E 4d %		Strizione Einschnürung Reduction of area Striction / Reducción de área RA %		Resilienza Kerbschlagarbeit Impact Value/ Resilience Prueba de impacto			Durezza Heerte Hardness Dureté / Dureza		
Valori richiesti Anforderungen/Required values Valeurs démandées / Valores requeridos		min		205	-	515	-	40	-	50	-			-		
		max														
D	12.5	20	T	262		547		52		63						

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 20/06/2024 VCQ052 - MEST083699	**Direzione Qualità** Qualitätsmanagement/Quality Management/Gestion Qualité/Gerente de calidad **R.BERTELLI**	**Direzione Prodotto** Produktmanagement/Product Management/Direction Produit/Gerente de producto **P.MESSORI**	Pagina 2 di 6

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CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION - CERTIFICADO DE INSPECCIÓN

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Certificato nr. MEST083699 / 2024 /
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VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 02072
Bestell
Your order
Commande
Num. de pedido

Conferma ordine nr: MI24005187
Werks/Our Order/Ref nr.
Num. de confirmación de pedido

Avviso di Spedizione: A-MI24003826
Lieferanzeige/Packing list/B.L.
Aviso de embarque

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand
Delivery state
Etat de livraison
Estado de la entrega

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration
Método de fusión

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance
Calidad

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance / Marca

Produttore :
Hersteller/Item/Usine productrice/Productor

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice
Marcas de fábrica

Punzone del Collaudatore:
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur
Sello del Comprobador

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage / Sello

Prova di trazione per ISO 6892-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm / Probeta	°C	Posiz. Saggio Probentage Location Emplacement Ubicación 1)	Snervamento Streckgrenze/Yield Stress Limite elastique Limite elástico Rp 0,2% N/mm2	Snervamento Streckgrenze/Yield Stress Limite elastique Limite elástico Rp 1% N/mm2	Resistenza Zugfestigkeit/Tensile strength Resistance à traction Resistencia a la tracción Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement / Elongación A5 %		Strizione Einschnürung Reduction of area Striction / Reducción de área Z %		Resilienza Kerbschlagarbeit Impact Value/ Resilience Prueba de impacto			Durezza Haerte Hardness Durete / Dureza HB		
Valori richiesti Anforderungen/Required values Valeurs démandées / Valores requeridos		min max		205	240	510 690	35	-	-	-	-			-	215	
E	10	20	T	270	301	548	49		61					158		
L	10	20	T	267	304	550	48		60					159		

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm / Probeta	°C	Posiz. Saggio Probentage Location Emplacement Ubicación 1)	Resilienza Kerbschlagarbeit Impact Value Resilience / Prueba de impacto KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs démandées / Valores requeridos		min max		-	-	-	-	-	-	-	-	-
F	10X10	-196	T	78	76	76	0,708	0,715	0,721	30	30	30

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm / Probeta	°C	Posiz. Saggio Probentage Location Emplacement Ubicación 1)	Resilienza Kerbschlagarbeit Impact Value Resilience / Prueba de impacto KV2 J			Espansione laterale Lateral Expansion			Shear Shear		
Valori richiesti Anforderungen/Required values Valeurs démandées / Valores requeridos		min max		60	60	60	-	-	-	-	-	-
J	10X10	20	T	80	85	82						
K	10X10	20	T	81	78	80						

Tensile testing according to ISO 6892-1
Impact testing according to ISO 148-1
Mechanical properties according to ASTM A370.
Ferrite content tested according to ASTM E562.

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23/10/24

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CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION - CERTIFICADO DE INSPECCIÓN

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20013 - MAGENTA - MI

Ordine nr: AF24 02072
Bestell
Your order
Commande
Num. de pedido

Conferma ordine nr: MI24005187
Werks/Our Order/Ref nr.
Num. de confirmación de pedido

Avviso di Spedizione: A-MI24003826
Lieferanzeige/Packing list/B.L
Aviso de embarque

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand
Delivery state
Etat de livraison
Estado de la entrega

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration
Método de fusión

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance
Calidad

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance / Marca

Produttore :
Hersteller/Item/Usine productrice/Producto

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice
Marcas de fábrica

Punzone del Collaudatore: MR
Stempel des Werksachverständigen
Inspector's stamp/Poinçon de l'assayeur
Sello del Comprobador

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung
Marking
Marquage / Sello

Analisi chimica
Chemische Zusammensetzung/Chemical Analysis/Analyse chimique/Análisis químico

Colata/Heat/Coulée / Schmelze/Colada		C %	Si %	Mn %	Cr %	Mo %	Ni %	Co %	P %	S %	N %
	min	-	-	-	16,50	2,00	10,00	-	-	-	-
	max	0,030	1,00	2,00	18,00	2,50	13,00	-	0,045	0,030	0,100
	PRE										
294062	24,8	0,024	0,39	1,62	16,87	2,02	10,11	0,155	0,033	0,020	0,082

Colata/Heat/Coulée / Schmelze/Colada		Ni+(2*Mo)
	min	14,0
	max	20,0
294062		14,2

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Furnace calibrated according to API 6A REV 21th ED ANNEX M.
Furnace calibrated according to API 6D REV 25th ED ANNEX H.
Macroetch test per ASTM E381: acceptable.
Reduction ratio = 12,6 : 1
Solution annealed 1080°C for 3.5h/water cooled.
Treatment made on date 18/04/2024 in batch
furnace M3B calibration expiry date 13/07/2024.
SURFACE QUALITY GUARANTEE BY ET INSPECTION (max defect depth 1% DIAMETER)
UT ACC. TO A388/API 6A PSL3-EN 10308cl.3-ASME B16.34/IV
"Issued in agreement with TÜV SÜD Industrie Service GMBH (07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

x CROSS WIND

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 20/06/2024 VCQ052 - MEST083699	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité/Gerente de calidad **R.BERTELLI**	Direzione Prodotto Produktmanagement/Product Management/Direction Produit/Gerente de producto **P.MESSORI**	Pagina 4 di 6

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CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION - CERTIFICADO DE INSPECCIÓN

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
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INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: AF24 02072
Bestell Your order Commande Num. de pedido

Conferma ordine nr: MI24005187
Werks/Our Order/Ref nr. Num. de confirmación de pedido

Avviso di Spedizione: A-MI24003826
Lieferanzeige/Packing list/B.L. Aviso de embarque

Stato di fornitura : Fucinato Solubilizzato - Pelato
Lieferzustand Delivery state Etat de livraison Estado de la entrega

Tipo di Elaborazione: E+AOD
Erschmelzungsart Melting process Mode d'elaboration Método de fusión

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance Calidad

Marca: MVAPML (MAXIVAL)
Markenbezeichnung Brand / Nuance / Marca

Produttore :
Hersteller/Item/Usine productrice/Productor

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes Trade marks Sigles de l'usine productrice Marcas de fábrica

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen Inspector's stamp/Poinçon de l'assayeur Sello del Comprobador

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung Marking Marquage / Sello

Allegati / Anlagen / Enclosure / Attachments :
GT24001056

Sono state soddisfatte tutte le condizioni richieste	Controllo antimescolanza con tecnica XRF/OES portatile : OK	Controllo visivo e dimensionale: soddisfa le esigenze
Die gestellen Anforderungen sind lt. Anlage erfüllt The material has been furnished in accordance with the requirements Le materiel à été trouvé conforme aux exigences El material cumple de acuerdo a los requisitos	Verwechslungprüfung: durch XRF/OES Gerät geführt : OK Antimixing testing performed with XRF/OES portable : OK Contrôle antimélange svt technique XRF/OES portable : OK Prueba de anti mezcla con técnica XRF/OES portátil: OK	Besichtigung und Ausmessung: ohne Beanstandung Visual inspection and dimensional checks:satisfactory Contrôle visuel et dimensions: satisfaisant Inspección visual y dimensional: cumple los requisitos

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD`S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

W9PED37BF3FAE25BD17AD7AC38E057BA5A

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 20/06/2024 VCQ052 - MEST083699	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité/Gerente de calidad R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit/Gerente de producto P.MESSORI	Pagina 5 di 6

Acciaierie Valbruna S.p.A.
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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4

CERTIFICATO Certificate - Zeugnis - Certificat **N° GT24001056** **Pag 6 di 6**

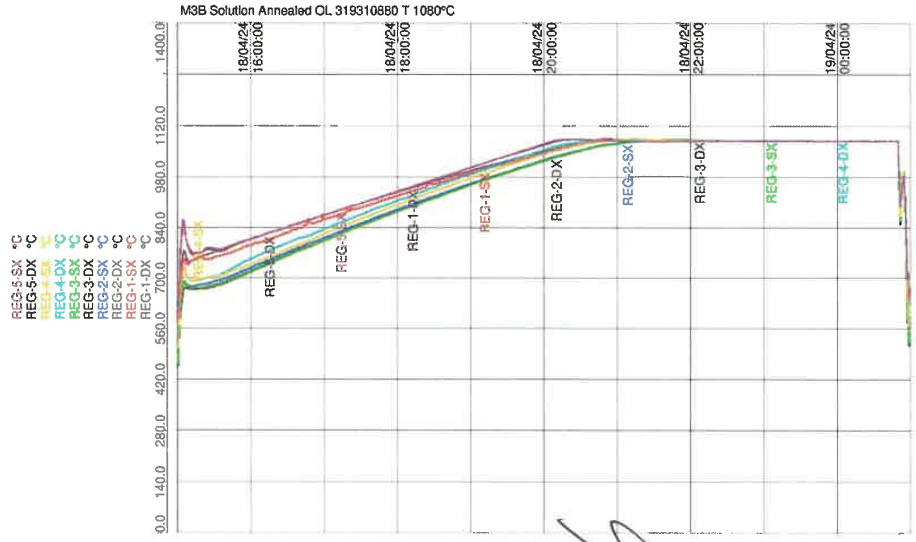
Diagrammi di trattamento termico

MEST083699 / 2024 /

Heat Treatment charts - Waermebehandlungs diagramm - Diagramme de traitement thermique

N° LOTTO : 319310880	Note Dettaglio :	Note:
Lot Number	Detail Notes	Notes

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Approved by:

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CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST053963 / 2024 /

Cliente / Besteller/Purchaser/Client:
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: N. AF2401382
Bestell / Your order / Commande

Conferma ordine nr: MI24003281
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24002843
Lieferanzeige/Packing list/B.L.

Stato di fornitura / Lieferzustand / Delivery state / Etat de livraison: Fucinato Solubilizzato - Pelato

Tipo di Elaborazione / Erschmelzungsart / Melting process / Mode d'elaboration: E+AOD

Qualità / Werkstoff/Grade/Nuance: 1.4401/1.4404/316/316L

Marca / Markenbezeichnung / Brand / Nuance: MVAPML (MAXIVAL)

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice: AV

Punzone del Collaudatore / Stempel des Werksachverständigen / Inspector's stamp/Poinçon de l'assayeur: MR

Punzonatura / Kennzeichnung / Marking / Marquage: 1.4401/1.4404/316/316L

SPECIFICHE : (Anforderungen / Requirements / Exigences)	Note: (Aufzeichnungen / Notes / Notes)
AV 316L VALVES A/1 1.4401/1.4404 A	
IS107 01 316 A	
MDS S01 5 316 A (0)	(0)Norsok-standard M-630 Edition 6, October 2013
MDS S17 1 316 A (1)	(1)Norsok-standard M-630: 2020 (2020-09-30)
AD 2000-M. W 2 2022 1.4401 A (2)	(2)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 08.2022
AD 2000-M. W 2 2022 1.4404 A (3)	(3)AD 2000-MERKBLATT W 2 edition 03.2022 AD 2000-MERKBLATT W 10 edition 08.2022
API 6A 21 ANNEX M (4)	(4)Errata 1 (04/2019), Errata 2 (08/2020), Errata 3 (09/2020). Addendum 1 (July 2020) and Addendum 2 (June 2021).
API 6D 25 ANNEX H (5)	(5)Revision November 2021
ASME SA182 2023 S31600/03 A (6)	(6)Section II Part A 2023 EDITION For products machined directly from bar refer to ASME SA479.
ASME SA276 2023 S31600/03 A (7)	(7)Section II Part A 2023 EDITION
ASME SA479 2023 S31600/03 A (8)	(8)Section II Part A 2023 EDITION
ASTM A182 2024 S31600/03 A (9)	(9)For products machined directly from bar refer also to ASTM A479.
ASTM A262 PR. E 2015 316/316L (A)	(A)Reapproved 2021
ASTM A276 2024A S31600/03 A	
ASTM A370 2022 .	
ASTM A479 2023A S31600/03 A	
ASTM E381 2022 .	
ASTM E562 2019 . (B)	(B)19E01
EN 10088 PART 3 2014 1.4401 A	
EN 10088 PART 3 2014 1.4404 A	
EN 10222 PART 5 2017 1.4401 A	
EN 10222 PART 5 2017 1.4404 A	
EN 10272 2016. 1.4401 A	
EN 10272 2016. 1.4404 A	
ISO 148-1 2016 .	
ISO 6892-1 2019 .	
NACE MR0103 2015 S31600/03 A (C)	(C)ANSI/NACE MR0103/ISO 17945 November 23, 2015
NACE MR0175 4 S31600/03 A (D)	(D)ANSI/NACE MR0175/ISO 15156-3:2020 Fourth edition, approved 21 Sep 2022.

CROSWIND 23/10/24

		Tolleranza: k12 (Toleranz/Allowance/Tolerance)					
Pos. nr. (Pos. nr / Item nr / Nr. de poste)	Oggetto (Gegenstand / Product description / Descrip. du produit)	Dimensioni - mm (Abmessungen / Dimension / Dimension)	Lunghezza - mm (Länge / Length / Longueur)	Colata (Schmelze / Heat / Coulée)	Pezzi (Stückzahl / Pieces / Pièces)	Peso - KG (Gewicht / Weight / Poids)	Lotto nr. (Losnr. / Lot nr. / Lot nr.)
0010	Tondo	160,000	5916/ 5916	292410	1	945,0	319310830

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 07/05/2024 VCQ012 - MEST053963	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 1 di 7

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST053963 / 2024 /

Cliente / Besteller/Purchaser/Client:
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr: N. AF2401382
Bestell / Your order / Commande

Conferma ordine nr: MI24003281
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI24002843
Lieferanzeige/Packing list/B.L.

Stato di fornitura: Fucinato Solubilizzato - Pelato
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404/316/316L
Kennzeichnung / Marking / Marquage

TEST ALLO STATO DI FORNITURA
Test on delivery condition / Prüefung auf lieferbereitem produkt / test a l'etat de fourniture / Prueba sobre el material asi come entregado

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Broite Diam. Dicke Width Diam. Thickness Larg. diam epais mm	°C	Posiz. Saggio Probenlage Location Emplacement D	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement A5 %		Strizione Einschnürung Reduction of area Striction Z %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Härte Hardness Durete HB		
Valori richiesti / Anforderungen/Required values / Valeurs demandées		min / max		205	240	510 / 690	45	-	-	-	-			- / 215		
A	10	20	L	278	307	558	56		70					159		
I	10	20	L	281	309	563	55		68					163		

TEST ALLO STATO DI FORNITURA
Test on delivery condition / Prüefung auf lieferbereitem produkt / Test a l'etat de fourniture / Prueba sobre el material asi come entregado

TEST		min	max	
I	Dimensioni grano x ASTM E112			2
I	Ferrite delta %			0.9 %

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Broite Diam. Dicke Width Diam. Thickness Larg. diam epais mm	°C	Posiz. Saggio Probenlage Location Emplacement D	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti / Anforderungen/Required values / Valeurs demandées		min / max		60	60	60	-	-	-	-	-	-
B	10X10	-196	L	225	222	221	1,856	1,822	1,834	70	70	70

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess. Broite Diam. Dicke Width Diam. Thickness Larg. diam epais mm	°C	Posiz. Saggio Probenlage Location Emplacement D	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Härte Hardness Durete HB		
Valori richiesti / Anforderungen/Required values / Valeurs demandées		min / max		205	-	515	-	40	-	50	-			- / 215		
C	12,5	20	L	263		557		64		70				160		

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 07/05/2024 VCQ012 - MEST053963	**Direzione Qualità** Qualitätsmanagement/Quality Management/Gestion Qualité **R.BERTELLI**	**Direzione Prodotto** Produktmanagement/Product Management/Direction Produit **P.MESSORI**	Pagina 2 di 7

Acciaierie Valbruna S.p.A.

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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST053963 / 2024 /

Cliente / Besteller/Purchaser/Client:
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr. / Bestell Your order Commande: N. AF2401382

Conferma ordine nr. / Werks/Our Order/Ref nr.: MI24003281

Avviso di Spedizione / Lieferanzeige/Packing list/B.L.: A-MI24002843

Stato di fornitura / Lieferzustand Delivery state Etat de livraison: Fucinato Solubilizzato - Pelato

Tipo di Elaborazione / Erschmelzungsart Melting process Mode d'elaboration: E+AOD

Qualità / Werkstoff/Grade/Nuance: 1.4401/1.4404/316/316L

Marca / Markenbezeichnung Brand / Nuance: MVAPML (MAXIVAL)

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Herstellwerkes Trade marks Sigles de l'usine productrice: AV

Punzone del Collaudatore / Stempel des Werksachverständigen Inspector's stamp/Poinçon de l'assayeur: MR

Punzonatura / Kennzeichnung Marking Marquage: 1.4401/1.4404/316/316L

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C		Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Härte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max			205	-	515	-	40	-	50	-			- 215		
L	12,5	20	T		256		554		53		62				162		

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C		Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max			60	60	60	-	-	-	-	-	-
D	10X10	-196	T		84	77	79	0,722	0,734	0,755	30	30	30

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C		Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion			Shear Shear		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max			100	100	100	-	-	-	-	-	-
H	10X10	20	L		289	290	284						
J	10X10	20	L		281	293	280						

Tensile testing according to ISO 6892-1
Impact testing according to ISO 148-1
Mechanical properties according to ASTM A370.
Ferrite content tested according to ASTM E562.

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23/10/24

Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat Schmelze/Coulée																
	min	23,0	-	-	-	16,50	2,00	10,00	-	-	-	-	-	-	-	-
	max	28,0	0,030	1,00	2,00	18,00	2,50	13,00	-	0,045	0,030	0,100	-	-	-	-
	PRE		C %	Si %	Mn %	Cr %	Mo %	Ni %	Co %	P %	S %	N %				
292410	24,8		0,015	0,49	1,73	16,77	2,04	10,19	0,178	0,032	0,027	0,078				

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 07/05/2024	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité	Direzione Prodotto Produktmanagement/Product Management/Direction Produit	Pagina 3 di 7
VCQ012 - MEST053963	R.BERTELLI	P.MESSORI	

Acciaierie Valbruna S.p.A.

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CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST053963 / 2024 /

Cliente / Besteller/Purchaser/Client:
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr. / Bestell / Your order / Commande: N. AF2401382

Conferma ordine nr. / Werks/Our Order/Ref nr.: MI24003281

Avviso di Spedizione / Lieferanzeige/Packing list/B.L.: A-MI24002843

Stato di fornitura / Lieferzustand / Delivery state / Etat de livraison: Fucinato Solubilizzato - Pelato

Tipo di Elaborazione / Erschmelzungsart / Melting process / Mode d'elaboration: E+AOD

Qualità / Werkstoff/Grade/Nuance: 1.4401/1.4404/316/316L

Marca / Markenbezeichnung / Brand / Nuance: MVAPML (MAXIVAL)

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Liefermerkes / Trade marks / Sigles de l'usine productrice: AV

Punzone del Collaudatore / Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur: MR

Punzonatura / Kennzeichnung / Marking / Marquage: 1.4401/1.4404/316/316L

Colata / Heat / Schmelze/Coulée							
	min 14,0 / max 20,0	-	-	-	-	-	-
292410	Ni+(2*Mo) 14,3						

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

Furnace calibrated according to API 6A REV 21th ED ANNEX M.
Furnace calibrated according to API 6D REV 25th ED ANNEX H.
Macroetch test per ASTM E381: acceptable.
Reduction ratio = 11,5 : 1
Treatment made on date 27/01/2024 in batch furnace
M4B calibration expiry date 01/04/2024.
Solution annealed 1080°C for 4 h / water cooled.
SURFACE QUALITY GUARANTEE BY ET INSPECTION (max defect depth 1% DIAMETER)
UT ACC. TO:A388/API 6A PSL3-EN 10308cl.3-ASME B16.34/IV
"Issued in agreement with TÜV SÜD Industrie Service GMBH (07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

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Allegati / Anlagen / Enclosure / Attachments :
UT24002496 GT24000805

Sono state soddisfatte tutte le condizioni richieste	Controllo antimescolanza con tecnica XRF/OES portatile : OK	Controllo visivo e dimensionale: soddisfa le esigenze
Die gestellen Anforderungen sind it. Anlage erfüllt The material has been furnished in accordance with the requirements Le materiel à été trouvé conforme aux exigences	Verwechslungprüfung: durch XRF/OES Gerät geführt : OK Antimbing testing performed with XRF/OES portable : OK Contrôle antimélange svt technique XRF/OES portable : OK	Besichtigufg und Ausmessung: ohne Beanstandung Visual inspection and dimensional checks:satisfactory Contrôle visuel et dimensions: satisfaisant

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 07/05/2024 VCQ012 - MEST053963	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 4 di 7

Acciaierie Valbruna S.p.A.

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Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST053963 / 2024 /

Cliente / Besteller/Purchaser/Client:
INDRA S.R.L.
VIA NOVARA, 10/B-C
20013 - MAGENTA - MI

Ordine nr / Bestell / Your order / Commande: N. AF2401382

Conferma ordine nr / Werks/Our Order/Ref nr.: MI24003281

Avviso di Spedizione / Lieferanzeige/Packing list/B.L.: A-MI24002843

Stato di fornitura / Lieferzustand / Delivery state / Etat de livraison: Fucinato Solubilizzato - Pelato

Tipo di Elaborazione / Erschmelzungsart / Melting process / Mode d'elaboration: E+AOD

Qualità / Werkstoff/Grade/Nuance: 1.4401/1.4404/316/316L

Marca / Markenbezeichnung / Brand / Nuance: MVAPML (MAXIVAL)

Produttore / Hersteller/Item/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice: AV

Punzone del Collaudatore / Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur: MR

Punzonatura / Kennzeichnung / Marking / Marquage: 1.4401/1.4404/316/316L

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD`S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 07/05/2024 VCQ012 - MEST053963	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 5 di 7

CLOSURE H300RF3

Acciaierie Valbruna S.p.A. 36100 VICENZA (Italia) - Viale della scienza, 25 z.i. Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4	**CERTIFICATO** Certificate - Zeugnis - Certificat **N° UT24002496**	**Pag 6 di 7**
	CONTROLLO CON ULTRASUONI *Ultrasonic testing - Ultraschallprüfung - Controle par ultrasons*	

mod. UT02

MEST053963 / 2024 /

Cliente : INDRA S.R.L. *Customer*				**Lotto nr : 319310830** *Mill order*	
MARCA *Grade*	**DIMENSIONI - mm** *Size*	**COLATA** *Heat*	**BARRE** *Bars*	**PESO** *Weight*	**LUNGHEZZA - mm** *Length*
MVAPML	Tondo 160,000	292410	N. 1	KG : 945,0	5916 / 5916

T. TERMICO *Heat Treatement*	**ESECUZIONE** *Condition*	**RUGOSITA'** *Roughness*	**TOLLERANZA** *Tolerance*
Solubilizzato	Pelato	µm	k12

Istruzione : PROC CND 040 *Work Instruction*		**Criteri Accettabilità : ASTM A388** Acceptance Criteria

ELETTRONICA : Olympus Quickscan LT
Equipment

ACCOPPIANTE : ACQUA + 0253 SA
Couplant

VEL.CONTROLLO : 339 mm/sec
Testing Speed

TRASDUTTORI *Probes*	**TIPO ONDA** *Type of wave*	**FREQUENZA (MHZ)** *Frequency*	**DIMENSIONI (MM)** *Dimension*	**ANGOLO** *Angle*	**TARATURA** *Calibration*
64EL. 2.25MHZ	LONG.	2,25	128X25	0°	DAC

CONTROLLO AUTOMATICO [X] *Automatic inspection*	**CONTROLLO MANUALE** *Manual inspection*

NOTE :
Notes

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CONFORME [X] *Compliant*	**CONFORME IN DEROGA [ ]** *See Deviation*	**NON CONFORME[ ]** *Not Compliant*

ISPEZIONATO DA Inspected by	**VERIFICATO DA** Verified by	**APPROVATO DA** Approved by	**COLLAUDATORE** Inspector - Abnahmesachsverst - Inspecteur
FIRMA	**FIRMA**	**G.Parlato** ISO 9712 LEV. 2 IND2401253 **FIRMA**	

Date - Date **14/03/2024**

Operatori, strumenti e documenti di riferimento, utilizzati per il collaudo del materiale, sono identificati, controllati e/o calibrati in accordo alle norme EN, ISO e ASTM, richiamate nelle pratiche operative e istruzioni di pertinenza / *Operators, Equipment and reference documents, used for material inspection, are identified, checked and/or calibrated in accordance with EN/ISO or ASTM standards, reported in relevant documents.*

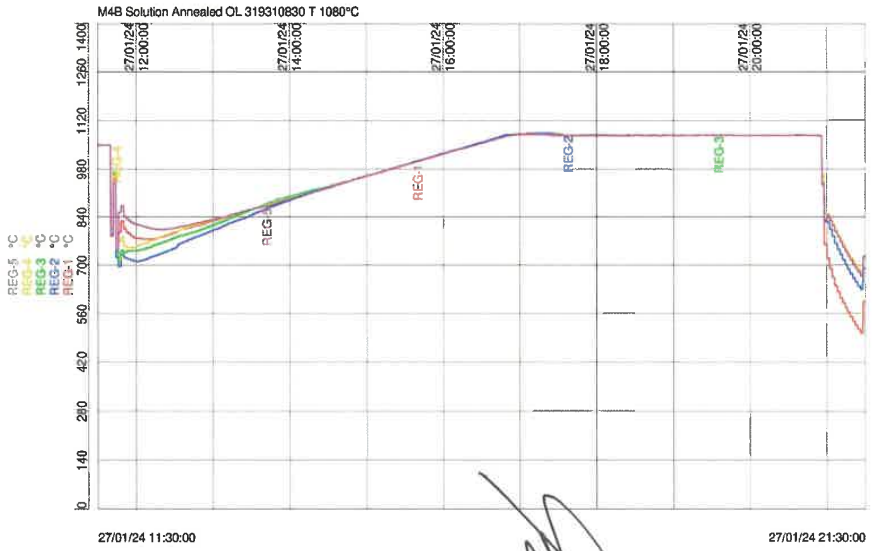
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36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4

CERTIFICATO Certificate - Zeugnis - Certificat **N° GT24000805** **Pag 7 di 7**

Diagrammi di trattamento termico **MEST053963 / 2024 /**

Heat Treatment charts - Waermebehandlungs diagramm - Diagramme de traitement thermique

N° LOTTO : 319310830 Lot Number	Note Dettaglio : Detail Notes	Note: Notes



x CROSSWIND 22/01/24

Approved by:

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TIRANTE / STUD BOLT t.e.c.n.o BOLT

CERTIFICATE

Nr. 5166	18-09-24

Page 1/1

INDRA SRL
VIA NOVARA 10/B-C
20013 MAGENTA MI
ITALIA

EN ISO 10204 3.1
CERTIFIED MATERIAL TEST REPORT

Your order: AF24 02329 REV.02 16-07-24 Delivery note: 2307 18-09-24

Item	Materials	Description	Sizes	Batch	Heat		Quantity
4	ASTM A 193 B8M cl.2 101.99.0375SS Pos.20, 30, 260 CKD/DR/28/02/18	Tirante DIN 976/UNI 6610 ASTM A 193 B8M cl.2 M	10X40	8576	277129	N.	105

CHEMICAL ANALYSIS

4		%C %	%Mn %	%P %	%S %	%Si %	%Cr %	%Ni %	%Mo %	%H.T. CST+SH
	REQ. MIN.						16	10	2	
	REQ. MAX.	0,080	2	0,045	0,030	1	18	14	3	
	ACT.VAL.	0,017	1,540	0,027	0,020	0,490	16,650	10	2,060	CST+SH

MECHANICAL PROPERTIES

4		UTS MPa	YS0,2 MPa	E %	R.A. %	H HB
	REQ. MIN.	760	655	15	45	
	REQ. MAX.					321
	ACT. VAL.	839	724	20,2	56	238

x CROSSWIND
23/10/24

We state that the material or fasteners, or both, were manufactered, sampled, tested and inspected in accordance with the specification and any supplementary requirements designated in the purchase/sales order and it was found to meet those requirements

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CERTIFICATE

Nr. 5112	02-09-24

Page 1/4

INDRA SRL
VIA NOVARA 10/B-C
20013 MAGENTA MI
ITALIA

EN ISO 10204 3.1
CERTIFIED MATERIAL TEST REPORT

Your order: AF24 02212 02-07-24 Delivery note: 2151 02-09-24

Item	Materials	Description	Sizes	Batch	Heat		Quantity
1	ASTM A 194 Gr.8M 980.99.0002	Dado UNI 5588/DIN 934 ASTM A 194 Gr.8M M Esagonale	10	65558	160903S05	N.	170

Pos. 10-20-30-40-50-60-70-80-90-100-110-120-130-140-150-160-170-180-190-200-210

CKD/CTRL/REV. 1/08/06/2016/PV

VOCE DOGANALE 73181900

MERCE DI ORIGINE ITALIANA

CHEMICAL ANALYSIS

1		%C %	%Mn %	%P %	%S %	%Si %	%Cr %	%Ni %	%Mo %
	REQ. MIN.						16	10	2
	REQ. MAX.	0,08	2	0,045	0,030	1	18	14	3
	ACT.VAL.	0.033	0.950	0.033	0.002	0.340	16.400	10.050	2.020

MECHANICAL PROPERTIES

1		H HB	P.L. KN
	REQ. MIN.	126	
	REQ. MAX.	300	
	ACT. VAL.	147-156	29.9

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x CROSSWIND

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We state that the material or fasteners, or both, were manufactered, sampled, tested and inspected in accordance with the specification and any supplementary requirements designated in the purchase/sales order and it was found to meet those requirements

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Nr. 5112	02-09-24

Page 2/4

INDRA SRL
VIA NOVARA 10/B-C
20013 MAGENTA MI
ITALIA

EN ISO 10204 3.1
CERTIFIED MATERIAL TEST REPORT

Your order: AF24 02212 02-07-24 Delivery note: 2151 02-09-24

Item	Materials	Description	Sizes	Batch	Heat	Quantity



CHEMICAL ANALYSIS

2		%C %	%Mn %	%P %	%S %	%Si %	%Cr %	%Ni %	%Mo %
	REQ. MIN.						16	10	2
	REQ. MAX.	0,08	2	0,045	0,030	1	18	14	3
	ACT.VAL.	0.033	0.950	0.033	0.002	0.340	16.400	10.050	2.020

MECHANICAL PROPERTIES

2		H HB	P.L. KN
	REQ. MIN.	126	
	REQ. MAX.	300	
	ACT. VAL.	147-156	29.9

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CERTIFICATE	
Nr. 5112	02-09-24

Page 3/4

INDRA SRL
VIA NOVARA 10/B-C
20013 MAGENTA MI
ITALIA

EN ISO 10204 3.1
CERTIFIED MATERIAL TEST REPORT

Your order: AF24 02212 02-07-24 Delivery note: 2151 02-09-24

Item	Materials	Description	Sizes	Batch	Heat		Quantity
2	ASTM A 194 Gr.8M 980.99.0002	Dado UNI 5588/DIN 934 ASTM A 194 Gr.8M M Esagonale	10	66150	160903S05	N.	830

Pos. 10-20-30-40-50-60-70-80-90-100-110-120-130-140-150-160-170-180-190-200-210

CKD/CTRL/REV. 1/08/06/2016/PV

VOCE DOGANALE 73181900

MERCE DI ORIGINE ITALIANA

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DADO / NUT

t·e·c·n·o BOLT

CERTIFICATE	
Nr. 5112	02-09-24

Page 4/4

INDRA SRL
VIA NOVARA 10/B-C
20013 MAGENTA MI
ITALIA

EN ISO 10204 3.1
CERTIFIED MATERIAL TEST REPORT

Your order: AF24 02212 02-07-24 Delivery note: 2151 02-09-24

Item	Materials	Description	Sizes	Batch	Heat	Quantity



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23/10/24

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STELO SFERA / BALL STEM

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST084078 / 2023 /
Prüfung/Test/Essai

Ordine nr: ORD.N.2300396
Bestell / Your order / Commande

Conferma ordine nr: MI23004818
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23003903
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Hot rolled - Annealed COLD PROCESSED
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung / Marking / Marquage

SPECIFICHE :
Anforderungen / Requirements / Exigences

VAL STOCK W2 A/1 1.4404/316L A,CF
AD 2000-M. W 2 01/20 1.4401 A,CF (0)
AD 2000-M. W 2 01/20 1.4404 A,CF (1)
AISI . 316/316L
AMS-QQ-S-763 D 316/316L A,CF
ASME SA182 2021 S31600/03 A (2)
ASME SA276 2021 S31600/03 A,CF (3)
ASME SA479 2021 S31600/03 A (4)
ASTM A182 2022A S31600/03 A (5)
ASTM A262 PR. E 2015 316/316L (6)
ASTM A276 2017 S31600/03 A,CF
ASTM A370 2022 .
ASTM A479 2021 S31600/03 A
ASTM E10 2018 .
ASTM E8 2022 .
EN 10088 PART 3 2014 1.4401 A,CF
EN 10088 PART 3 2014 1.4404 A,CF
EN 10272 2016. 1.4401 A,CF
EN 10272 2016. 1.4404 A,CF
ISO 148-1 2016 .
ISO 3651-2 98 METHOD A T1
ISO 6506-1 2014 .
ISO 6892-1 2019 .
NACE MR0103 2015 S31600/03 A (7)
NACE MR0175 2015 S31600/03 A (8)
QQ-S-763 F 316/316L A,CF
ACH CO . .
KV L -196C . ISO 148-1

Note:
Anmerkungen / Notes / Notes

(0)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
(1)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
(2)Section II Part A 2021 EDITION For products machined directly from bar refer to ASME SA479.
(3)Section II Part A 2021 EDITION
(4)Section II Part A 2021 EDITION
(5)For products machined directly from bar refer also to ASTM A479.
(6)Reapproved 2021
(7)ANSI/NACE MR0103/ISO 17945 November 23, 2015
(8)ANSI/NACE MR0175/ISO 15156-3, third edition November 23,2015

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		Tolleranza: h9 - DIN671/EN10278 Toleranz/Allowance/Tolerance					
Pos. nr. Pos. nr. Item nr. Nr. de poste	Oggetto Gegenstand Product description Descrip. du produit	Dimensioni - mm Abmessungen Dimension Dimension	Lunghezza - mm Länge Length Longueur	Colata Schmelze Heat Coulée	Pezzi Stückzahl Pieces Pièces	Peso - KG Gewicht Weight Poids	Lotto nr. Lotnr. Lot nr. Lot nr.
0010	Round	25,000	3000/ 3040	291905		58,0	304610390

23/10/24

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 26/06/2023 VCQ052 - MEST084078	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité **R.BERTELLI**	Direzione Prodotto Produktmanagement/Product Management/Direction Produit **P.MESSORI**	Pagina 1 di 4

STELO SFERA / BALL STEM

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST084078 / 2023 /
Prüfung/Test/Essai

Ordine nr: ORD.N.2300396
Bestell
Your order
Commande

Conferma ordine nr: MI23004818
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23003903
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Hot rolled - Annealed COLD PROCESSED
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV
Zeichen des Herstellerwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werksachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung
Marking
Marquage

TEST ALLO STATO DI FORNITURA
Test on delivery condition Prüefung auf lieferbereitem produkt test a l'etat de fourniture Prueba sobre el material así come entregado

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement A5 %		Strizione Einschnürung Reduction of area Striction Z %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		200	235	500 900	20	-	-	-	-			- 315		
A	10	20	L	480	568	694	43		65					231		
G	10	20	L	485	571	699	42		64					234		

TEST ALLO STATO DI FORNITURA
Test on delivery condition / Prüefung auf lieferbereitem produkt / Test a l'etat de fourniture / Prueba sobre el material así come entregado

TEST		min	max	
A	Grain size for ASTM E112			5

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion Lateral ex mm			Shear Shear % Shear %		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		-	-	-	-	-	-	-	-	-
B	10X10	-196	L	168	170	162	1,758	1,485	1,328	65	60	59

Test on delivery condition per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam.Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement E 4d %		Strizione Einschnürung Reduction of area Striction RA %		Resilienza Kerbschlagarbeit Impact Value Resilience			Durezza Haerte Hardness Durete HB		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		210	-	517	-	30	-	50	-			- 235		
C	12,5	20	L	502		697		43		69				233		

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QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 26/06/2023 VCQ052 - MEST084078	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité **R.BERTELLI**	Direzione Prodotto Produktmanagement/Product Management/Direction Produit **P.MESSORI**	Pagina 2 di 4

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Acciaierie Valbruna S.p.A.

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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
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CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST084078 / 2023 /
Prüfung/Test/Essai

Stato di fornitura : Hot rolled - Annealed COLD PROCESSED
Lieferzustand / Delivery state / Etat de livraison

Produttore :
Hersteller/Item/Usine productrice
ACCIAIERIE VALBRUNA S.P.A.

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Marchi di Fabbrica:
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice

Ordine nr: ORD.N.2300396
Bestell / Your order / Commande

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Punzone del Collaudatore:
Stempel des Werksachverständigen / Inspector's stamp/Poinçon de l'assayeur

Conferma ordine nr: MI23004818
Werks/Our Order/Ref nr.

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Punzonatura: 1.4401/1.4404
Kennzeichnung / Marking / Marquage

Avviso di Spedizione: A-MI23003903
Lieferanzeige/Packing list/B.L.

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, O=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg diam Spess / Breite Diam. Dicke / Width Diam. Thickness / Larg diam epais mm	°C	Posiz. Saggio Probelage / Location / Emplacement	Resilienza Kerbschlagarbeit / Impact Value / Resilience KV2 J			Espansione laterale Lateral Expansion			Shear Shear		
Valori richiesti Anforderungen/Required values / Valeurs démandées		min max		100	100	100	-	-	-	-	-	-
F	10X10	20	L	201	198	200						
H	10X10	20	L	209	191	194						

Tensile testing according to ISO 6892-1
Impact testing according to ISO 148-1
Mechanical properties according to ASTM A370.
Brinnell hardness according to ASTM E10
Tensile testing according to ASTM E8
Brinnell hardness according to ISO 6506-1

x CROSS WIND
23/10/2023

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Analisi chimica
Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat / Schmelze/Coulée	C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	Co %	P %	S %	N %				
min - max	0,030	1,00	2,00	16,50 - 18,00	2,00 - 2,50	1,00	10,00 - 13,00		0,045	0,030	0,100				
291905	0,015	0,54	1,50	16,86	2,01	0,42	10,13	0,168	0,031	0,029	0,058				

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 26/06/2023	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité	Direzione Prodotto Produktmanagement/Product Management/Direction Produit	Pagina 3 di 4
VCQ052 - MEST084078	**R.BERTELLI**	**P.MESSORI**	

STELO SFERA / BALL STEM

Acciaierie Valbruna S.p.A.

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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST084078 / 2023 /
Prüfung/Test/Essai

Ordine nr: ORD.N.2300396
Bestell
Your order
Commande

Conferma ordine nr: MI23004818
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-MI23003903
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Hot rolled - Annealed COLD PROCESSED
Lieferzustand
Delivery state
Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart
Melting process
Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung
Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes
Trade marks
Sigles de l'usine productrice

Punzone del Collaudatore:
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung
Marking
Marquage

Reduction ratio = 61,1 : 1
Solution annealed 1040°C for 135'(total time)/water cooled.
SURFACE QUALITY COMPLIANT TO EN 10088-3 TAB.1 COND. 2H
"Issued in agreement with TÜV SÜD Industrie Service GMBH
(07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by
Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

Sono state soddisfatte tutte le condizioni richieste	Controllo antimescolanza con tecnica XRF/OES portatile : OK	Controllo visivo e dimensionale: soddisfa le esigenze
Die gestellen Anforderungen sind it. Anlage erfüllt	Verwechslungprüfung: durch XRF/QES Gerät geführt : OK	Besichtigufg und Ausmessung: ohne Beanstandung
The material has been furnished in accordance with the requirements	Antimixing testing performed with XRF/OES portable : OK	Visual inspection and dimensional checks:satisfactory
Le materiel à été trouvé conforme aux exigences	Contrôle antimélange svt technique XRF/QES portable : OK	Contrôle visuel et dimensions: satisfaisant

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD`S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

W3F10F01ECFFC851CD30DA70111DFC953F0

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CROSSWIND
23/10/2023

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 26/06/2023	Direzione Qualità	Direzione Prodotto	Pagina
VCQ052 - MEST084078	Qualitätsmanagement/Quality Management/Gestion Qualité	Produktmanagement/Product Management/Direction Produit	4 di 4
	R.BERTELLI	P.MESSORI	

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C.F. 02187360967
VAT: IT00571320076 - R.E.A. n. AO-50474

Company with Management Systems certified according to ISO 9001, ITAF 16949, EN 9100, ISO 14001 and ISO 45001.

INSPECTION CERTIFICATE 3.1 (EN 10204:2004)

DOCUMENT NUMBER 2023013898

SFERA / BALL

CUSTOMER'S ORDER:	mail
MANUFACTURER'S WORKS:	AOSTA, VIA PARAVERA 16 - ITALY
PRODUCER OF THE DOC:	QUALITY DEPARTMENT
MANUFACTURER'S WORKS ORDER NO:	0001135656 / 000010
MARK OF THE MANUFACTURER:	**COGNE**
DISPATCH NOTE:	81560368 / 000010 WEIGHT: 424 KG / 935 LB

INTERNAL SPEC:	STOCKBARREW2	TECHNICAL RULE:	AD2000
PRODUCT:	PEL PEELED ROUND BARS TOLERANCE: ISOK11		
SURFACE FINISH:	2B Cold Finished		
PRODUCT DELIVERY CONDITION:	RS SOLUTION ANNEALED		
PRODUCT DIMENSIONS (mm):	75,000 (2,953 in)	LENGTH (mm)	04000 06200 (00157 00244 in)
GRADE:	316L-S31600/31603-1.4404/1.4401	INTERNAL GRADE:	F316L IMCO
IDENTIFICATION HEAT NO:	372447	IDENTIFICATION LOT NO:	725530
MARKING OF THE PRODUCT:	1.4404	TEST PIECE N:	553

REFERENCE NORMS: EN 10088-3 2014, EN 10272 2016, ASTM A276/A276M, ASTM A479/A479M, ASTM A193 B8MCLASSE 1D, ASME SA276/SA276M, ASME SA479/SA479M, AMS 5653J, AMS 5648N, ISO15156-3/NACE MR0175 2015, NACE MR0103/ISO 17945, NORSOK M630 MDSS01 REV5.
REFERENCE NORMS FOR CHEMICAL COMPOSITION AND MECHANICAL PROPERTIES: ASTM A182, ASME SA182.
REFERENCE NORMS ONLY FOR CHEMICAL COMPOSITION: EN 10222-5 2017,ASTM A403-07a, ASTM A484-18a,ASTM A314-08, AMS-QQ-S-763D.
ASME SECT.II PART A EDITION 2015-2017-2019-2021
AISI 316/316L - UNS S31600/S31603 - 1.4404/1.4401
THE PRODUCT IS CONFORMING TO THE CONTRACT AGREEMENT AND TO THE RULE AD2000-MERKBLATT W0/W2.
STEELMAKING EAF + AOD + CONTINUOUS CASTING
ASTM A484 DOES NOT APPLY FOR SIZE AND LENGTH TOLERANCES.
STEELMAKING EAF + AOD + CONTINUOUS CASTING
REFERENCE FOR APPLICABLE ASME STANDARD: SECTION II PART A ED. 2015-2017-2019-2021
HOT ROLLED
REDUCTION RATIO 5,2

CHEMICAL LADLE ANALYSIS ACCORDING TO ASTM A751 - EN ISO 14284
Control lot No. - Weight :020000959784 - 79.906 KG - 176.160 LB

ELEMENTS	C	Si	Mn	P	S	N	Cr	Mo	Ni	Cu
MEASUREMENT UNIT	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w
OBTAINED	0,015	0,35	1,80	0,030	0,029	0,076	16,88	2,11	10,33	0,39

ELEMENTS	Co
MEASUREMENT UNIT	% w/w
OBTAINED	0,17

HARDNESS TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000960596 - 7.776 KG - 17.143 LB
SPECIFICATION ENISO6506 HARDNESS TEST HB TESTING METHOD: 10/3000
OBTAINED 154

DATE 20.03.2023

BARBARA VIETTI MV(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne

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IMPACT TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000960596 - 7.776 KG - 17.143 LB
SPECIFICATION EN ISO 148-1-KV2 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 20
MEASUREMENT UNIT J

OBTAINED	431	434	425	427	430	434	428	425	431	441
	427	435								

TENSILE TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000960596 - 7.776 KG - 17.143 LB
SPECIFICATION EN-ISO6892-1 DIRECTION OF THE TEST PIECE: L

	RM	RP02	A5	Z	RP1
MEASUREMENT UNIT	MPA	MPA	%	%	NMM
			5.0 D		
OBTAINED	596	271	54,1	75,6	316
	594	267	54,7	78,2	315
	608	290	50,4	74,9	318
	604	268	53,3	79,3	315

GRAIN SIZE
Control lot No. - Weight :020000960596 - 7.776 KG - 17.143 LB
SPECIFICATION ASTME112 --
OBTAINED 6

MATERIAL IN COMPLIANCE WITH THE NORSOK M-630 MDS S01
IMPACT TEST
Control lot No. - Weight :020000960596 - 7.776 KG - 17.143 LB
SPECIFICATION EN ISO 148-1 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 196-
MEASUREMENT UNIT J

OBTAINED	196	190	187	185	187	171	171	198	199	171
	173	199								

TENSILE TEST
Control lot No. - Weight :020000960596 - 7.776 KG - 17.143 LB
SPECIFICATION ASTMA370-E8-0.5"SPEC DIRECTION OF THE TEST PIECE: L

	RMB	RP02B	ZB	AL2B
MEASUREMENT UNIT	KSI	KSI	%	%
				4,0 D
OBTAINED	88	39	77,4	51,8
	88	39	79,0	59,1
	88	39	74,8	59,3
	89	39	75,2	52,9

x CROSSWIND
23/10/24

DATE 20.03.2023 BARBARA VIETTI MV(WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne

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SFERA / BALL

COUNTRY OF MELTING AND ORIGIN: ITALY, THE MATERIAL COMPLIES WITH FAR DFARS 252.225-7009 ALT 1.
The products delivered are conforming to EN10088-5 and bear the CE marking on the basis of the test results here reported and the continuous surveillance, assessment and approval by MPA NRW (certificate no. 0432-CPR-00166-01)
Material produced according to the system #Regulation 305/2011/EU of the European Parliament and of the Council of 9 March 2011#
DOCUMENT ISSUED IN AGREEMENT WITH TUEV BAYERN(11.1972) WAVING OF COUNTERSIGNING (SEE TUEV BAYERN LETTER DATED 17.01.80).
MARKING: SYMBOL OF THE MANUF. WORK, MATERIAL N. , CAST N., LOT N., RECEIVING AGENT STAMP
CORROSION TEST ACCORDING TO ASTM A262 PRACTICE E EN ISO 3651-2 PRACTICE A: SATISFACTORY.
ANTIMIXING TEST BY PORTABLE SPECTROMETRE: CONFORMING
EDDY CURRENT INSPECTION OF SURFACE ACCORDING TO EN 10277 CLASS 4.
DIMENSIONAL CONTROL ACCORDING TO EN 10278: SATISFACTORY.
NO WELDING REPAIR ON THE MATERIAL.
ULTRASONIC TEST ACCORDING TO EN 10308 Class.3: SATISFACTORY
QUALITY SYSTEM CERTIFIED BY KIWA CERMET ACCORDING TO UNI EN ISO 9001:2015 -IATF 16949:2016 (THE LAST ONE ONLY FOR WIRE ROD AND HOT ROLLED-PEELED-GROUND STAINLESS STEEL BARS).
INSPECTOR'S STAMP LF
MATERIAL CONFORM TO: 2015/863/UE (RoHS3) - 2011/65/UE (RoHS2) - 2000/53/UE - 2002/95/UE (RoHS) - 2003/11/UE - 2005/618/UE - PED 2014/68/UE e PE(S)R 2016/1105
THE MATERIAL IS FREE OF ANY MERCURY, MERCURY COMPOUNDS AND OR RADIUM CONTAMINATION AT TIME OF SHIPMENT AND WAS PRODUCED WITHOUT USING OZONE DEPLETING SUBSTANCES OF CLASS I AND II.
RADIOACTIVITY CONTROL PERFORMED WITH A GAMMA SPECTROMETER: ASTM E181.
GAMMA ACTIVITY ON THE PRODUCTS BELOW 0.1 BQ/G ACCORDING TO EU RESOLUTION 2013/59/EURATOM , IAEA RS-G-1.7 AND IAEA SSG-17.

CE 0432

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DATE 20.03.2023

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Acciaierie Valbruna S.p.A.

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Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1 — Certificato nr. MEST136234 / 2023 / 1

Nach/According to/Selon — Prüfung/Test/Essai

Ordine nr: VS ORDINE 25 (Bestell / Your order / Commande)

Conferma ordine nr: BS23002709 (Werks/Our Order/Ref nr.)

Avviso di Spedizione: A-BS23001767 (Lieferanzeige/Packing list/B.L.)

Stato di fornitura (Lieferzustand / Delivery state / Etat de livraison): Laminato - Solubilizzato FINITO A FREDDO

Tipo di Elaborazione (Erschmelzungsart / Melting process / Mode d'elaboration): E+AOD

Qualità (Werkstoff/Grade/Nuance): 1.4401/1.4404/316/316L

Marca (Markenbezeichnung / Brand / Nuance): MVAPML (MAXIVAL)

Produttore (Hersteller/Item/Usine productrice): ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica (Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice): AV

Punzone del Collaudatore (Stempel des Werksachverständigen / Inspector's stamp/Poinçon de l'essayeur): MR

Punzonatura (Kennzeichnung / Marking / Marquage): 1.4401/1.4404

SPECIFICHE : (Anforderungen / Requirements / Exigences)

Note: (Aufzeichnungen / Notes / Notes)

VAL STOCK W2 A/1 1.4404/316L A,CF
AD 2000-M. W 2 01/20 1.4401 A.CF (0)
AD 2000-M. W 2 01/20 1.4404 A.CF (1)

(0)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
(1)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020

AISI . 316/316L
AMS-QQ-S-763 D 316/316L A,CF
ASME SA182 2021 S31600/03 A (2)

(2)Section II Part A 2021 EDITION For products machined directly from bar refer to ASME SA479.

ASME SA276 2021 S31600/03 A,CF (3)
ASME SA479 2021 S31600/03 A (4)
ASTM A182 2022A S31600/03 A (5)

(3)Section II Part A 2021 EDITION
(4)Section II Part A 2021 EDITION
(5)For products machined directly from bar refer also to ASTM A479.

ASTM A262 PR. E 2015 316/316L (6)
ASTM A276 2017 S31600/03 A,CF
ASTM A370 2022 .
ASTM A479 2021 S31600/03 A
ASTM E10 2018 .
ASTM E8 2022 .
EN 10088 PART 3 2014 1.4401 A,CF
EN 10088 PART 3 2014 1.4404 A,CF
EN 10272 2016. 1.4401 A.CF
EN 10272 2016. 1.4404 A,CF
ISO 148-1 2016 .
ISO 3651-2 98 METHOD A T1
ISO 6506-1 2014 .
ISO 6892-1 2019 .

(6)Reapproved 2021

NACE MR0103 2015 S31600/03 A (7)

(7)ANSI/NACE MR0103/ISO 17945 November 23, 2015

NACE MR0175 2015 S31600/03 A (8)

(8)ANSI/NACE MR0175/ISO 15156-3, third edition November 23,2015

QQ-S-763 F 316/316L A,CF
ACH CO . .
KV L -196C . ISO 148-1
MDS S01 5 316 A,CF (9)
ASTM A479 2023A S31600 A

(9)Norsok-standard M-630 Edition 6, October 2013

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Tolleranza: h11 - DIN668/EN10278 (Toleranz/Allowance/Tolerance)

Pos. nr. (Pos. nr. / Item nr. / Nr. de poste)	Oggetto (Gegenstand / Product description / Descrip. du produit)	Dimensioni - mm (Abmessungen / Dimension / Dimension)	Lunghezza - mm (Länge / Length / Longueur)	Colata (Schmelze / Heat / Coulée)	Pezzi (Stückzahl / Pieces / Pieces)	Peso - KG (Gewicht / Weight / Poids)	Lotto nr. (Loser, Lot nr. / Lot nr.)
0010	Esagono	22,000	3000/ 3030	291366		2191,0	221203290

CROSSWIND 23/10/2023

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 07/11/2023
VCQ008 - MEST136589

Direzione Qualità (Qualitätsmanagement/Quality Management/Gestion Qualité): R.BERTELLI

Direzione Prodotto (Produktmanagement/Product Management/Direction Produit): P.MESSORI

CORPO BONNET / BONNET BODY

Acciaierie Valbruna S.p.A.

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Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST136234 / 2023 / 1

Ordine nr / Bestell / Your order / Commande: VS ORDINE 25

Conferma ordine nr / Werks/Our Order/Ref nr.: BS23002709

Avviso di Spedizione / Lieferanzeige/Packing list/B.L.: A-BS23001767

Stato di fornitura / Lieferzustand / Delivery state / Etat de livraison: Laminato - Solubilizzato FINITO A FREDDO

Tipo di Elaborazione / Erschmelzungsart / Melting process / Mode d'elaboration: E+AOD

Qualità / Werkstoff/Grade/Nuance: 1.4401/1.4404/316/316L

Marca / Markenbezeichnung / Brand / Nuance: MVAPML (MAXIVAL)

Produttore / Hersteller/Item/Usine productrice:

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice: AV

Punzone del Collaudatore / Stempel des Werksachverständigen / Inspector's stamp/Poinçon de l'essayeur: MR

Punzonatura / Kennzeichnung / Marking / Marquage: 1.4401/1.4404

TEST ALLO STATO DI FORNITURA

Test on delivery condition / Prüefung auf lieferbereitem produkt / test a l'etat de fourniture / Prueba sobre el material asi come entregado

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta / Probestab / Specimen/Eprouvette Larg.diam.Spess. Stella Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio / Probenlage / Location / Emplacement	Snervamento / Streckgrenze / Yield Stress / Limite elastique Rp 0,2% N/mm2	Snervamento / Streckgrenze / Yield Stress / Limite elastique Rp 1% N/mm2	Resistenza / Zugfestigkeit / Tensile strength / Resistance à traction Rm N/mm2	Allungamento / Bruchdehnung / Elongation / Allongement A5 %		Strizione / Einschnürung / Reduction of area / Striction Z %		Resilienza / Kerbschlagarbeit / Impact Value / Resilience			Durezza / Haerte / Hardness / Durete HB		
Valori richiesti / Anforderungen/Required values / Valeurs demandées		min / max		200	235	500 / 900	20	-	-	-	-			- / 315		
A	10	20	L	458	548	658	43		67					225		
I	10	20	L	457	538	659	45		66					227		

TEST ALLO STATO DI FORNITURA

Test on delivery condition / Prüefung auf lieferbereitem produkt / Test a l'etat de fourniture / Prueba sobre el material así come entregado

TEST		min	max	
I	Dimensioni grano x ASTM E112			5

Charpy per ISO 148-1

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta / Probestab / Specimen/Eprouvette Larg.diam.Spess. Stella Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio / Probenlage / Location / Emplacement	Resilienza / Kerbschlagarbeit / Impact Value / Resilience KV2 J			Espansione laterale / Lateral Expansion / Lateral ex mm			Shear / % Shear %		
Valori richiesti / Anforderungen/Required values / Valeurs demandées		min / max		-	-	-	-	-	-	-	-	-
D	10X10	-196	L	128	130	125	1,858	1,910	1,289	58	60	57

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta / Probestab / Specimen/Eprouvette Larg.diam.Spess. Stella Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio / Probenlage / Location / Emplacement	Snervamento / Streckgrenze / Yield Stress / Limite elastique Rp 0,2% N/mm2	Snervamento / Streckgrenze / Yield Stress / Limite elastique	Resistenza / Zugfestigkeit / Tensile strength / Resistance à traction Rm N/mm2	Allungamento / Bruchdehnung / Elongation / Allongement E 4d %		Strizione / Einschnürung / Reduction of area / Striction RA %		Resilienza / Kerbschlagarbeit / Impact Value / Resilience			Durezza / Haerte / Hardness / Durete HB		
Valori richiesti / Anforderungen/Required values / Valeurs demandées		min / max		210	-	517	-	35	-	50	-			- / 235		
E	12,5	20	L	595		725		35		69				233		

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23/10/24 R

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 07/11/2023	Direzione Qualità / Qualitätsmanagement/Quality Management/Gestion Qualité	Direzione Prodotto / Produktmanagement/Product Management/Direction Produit	Pagina
VCQ008 - MEST136589	R.BERTELLI	P.MESSORI	2 di 4

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Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST136234 / 2023 / 1

Ordine nr. / Bestell / Your order / Commande: VS ORDINE 25

Conferma ordine nr. / Werks/Our Order/Ref nr.: BS23002709

Avviso di Spedizione / Lieferanzeige/Packing list/B.L.: A-BS23001767

Stato di fornitura / Lieferzustand / Delivery state / Etat de livraison: Laminato - Solubilizzato FINITO A FREDDO

Tipo di Elaborazione / Erschmelzungsart / Melting process / Mode d'elaboration: E+AOD

Qualità / Werkstoff/Grade/Nuance: 1.4401/1.4404/316/316L

Marca / Markenbezeichnung / Brand / Nuance: MVAPML (MAXIVAL)

Produttore / Hersteller/Item/Usine productrice: ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice: AV

Punzone del Collaudatore / Stempel des Werksachverständigen / Inspector's stamp/Poinçon de l'essayeur: MR

Punzonatura / Kennzeichnung / Marking / Marquage: 1.4401/1.4404

Charpy per ISO 148-1

1) L=longitudinale/Längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg./Kern Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais. mm	°C		Posiz. Saggio Probenlage Location Emplacement 1)	Resilienza Kerbschlagarbeit Impact Value Resilience KV2 J			Espansione laterale Lateral Expansion			Shear Shear		
Valori richiesti Anforderungen/Required values Valeurs demandées		min max			100	100	100	-	-	-	-	-	-
H	10X10	20	L		185	179	184						
J	10X10	20	L		197	193	191						

Tensile testing according to ISO 6892-1
Impact testing according to ISO 148-1
Mechanical properties according to ASTM A370.
Brinnell hardness according to ASTM E10
Tensile testing according to ASTM E8
Brinnell hardness according to ISO 6506-1

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23/10/24

Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata / Heat Schmelze/Coulée		C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	Co %	P %	S %	N %				
	min -	-	-	-	16,50	2,00	-	10,00	-	-	-	-	-	-	-	-
	max	0,030	1,00	2,00	18,00	2,50	1,00	13,00	-	0,045	0,030	0,100	-	-	-	-
291366		0,019	0,50	1,48	16,78	2,06	0,56	10,05	0,134	0,031	0,027	0,064				

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 07/11/2023	Direzione Qualità / Qualitätsmanagement/Quality Management/Gestion Qualité	Direzione Prodotto / Produktmanagement/Product Management/Direction Produit	Pagina
VCQ008 - MEST136589	R.BERTELLI	P.MESSORI	3 di 4

CORPO BONNET / BONNET BODY

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST136234 / 2023 / 1
Prüfung/Test/Essai

Ordine nr: VS ORDINE 25
Bestell / Your order / Commande

Conferma ordine nr: BS23002709
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-BS23001767
Lieferanzeige/Packing list/B.L.

Stato di fornitura : Laminato - Solubilizzato FINITO A FREDDO
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice

Punzone del Collaudatore:
Stempel des Werksachverständigen / Inspector's stamp/Poinçon de l'essayeur

MR

Punzonatura: 1.4401/1.4404
Kennzeichnung / Marking / Marquage

Reduction ratio = 78,0 : 1
Solution annealed 1060°C for 180'(total time)/water cooled.
SURFACE QUALITY COMPLIANT TO EN 10088-3 TAB.1 COND. 2H
"Issued in agreement with TÜV SÜD Industrie Service GMBH
(07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by
Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

Sono state soddisfatte tutte le condizioni richieste Die gestellten Anforderungen sind lt. Anlage erfüllt The material has been furnished in accordance with the requirements Le materiel à été trouvé conforme aux exigences	Controllo antimescolanza con tecnica XRF/OES portatile : OK Verwechslungprüfung durch XRF/QES Gerät geführt : OK Antimixing testing performed with XRF/OES portable : OK Contrôle antimélange avt technique XRF/QES portable : OK	Controllo visivo e dimensionale: soddisfa le esigenze Besichtigung und Ausmessung: ohne Beanstandung Visual inspection and dimensional checks:satisfactory Contrôle visuel et dimensions: satisfaisant

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD'S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

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23/10/2023

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 07/11/2023 VCQ008 - MEST136589	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 4 di 4

STELO / STEM

Rodacciai

23842 Bosisio Parini (LC) – Via Giuseppe Roda 1 – Italia
Tel. +39 031878111 – Fax +39 031878312
www.rodacciai.com – info@rodacciai.com

Azienda con sistema di gestione certificato da IGQ secondo UNI EN ISO 9001:2015

The Company's Quality Management System is certified by IGQ according to UNI EN ISO 9001:2015

CERTIFICATO DI CONTROLLO Inspection Certif N. 174495 Date 14/11/2023

Secondo According to . . . . . EN 10204:2004 3.1

ORDINE - Order N. 372 Date 10/11/2023

D.d.T. - Delivery note N. 11714/04 Date 14/11/2023

Weight KG 411,00 **Odp. Nr.** 2022/A/58282
Tolerance ISO286-2 h9 + 0,000 - 0,036 mm **Bars Length** 3.000 - 3.050 mm

QUALITA' - Grade

STANDARD	EN 10088-3:2014	X2CrNiMo17-12-2	1.4404 / 316L
STANDARD	EN 10088-3:2023	X5CrNiMo17-12-2	1.4401 / 316

Mark RODACCIAI . . . . . 316 PLUS
PROFILO - Shape . . . . . ROUND
DIMENSIONE - Size . . . . . mm 10,00
ESECUZIONE - Form of delivery . . . . . ROUGH GROU.

COLATA - Heat 172303

ANALISI CHIMICA DI COLATA - Cast analysis % by mass

C	Mn	Si	S	P	Cr	Ni	Mo	Cu	Co	N
0,021	1,820	0,360	0,0220	0,025	16,640	10,100	2,100	0,360	0,150	0,0760

CARATTERISTICHE MECCANICHE ALLO STATO DI FORNITURA
Mechanical properties of the delivered material

		Tested
Tensile Strength	Rm (MPa)	746,0
Proof Stress	Rp (1) (MPa)	692,0
Proof Stress	Rp (0,2) (MPa)	612,0
Elongation	A 5 (%)	32,0
Hardness	HBW	226,0
Reduction of area	Z (%)	51,0

CROSSWIND 23/10/24

NOTE - Notes

Processo di Fusione: E + A. O. D.
Trattamento termico: Temperatura di Solubilizzazione 1060°C
Tempo Mantenimento: 4 Ore, Raffreddamento in Acqua
Prova di Corrosione Intergranularena: ASTM A262-15 "E"
Materiale Conforme a NACE MR-0175/ISO 15156-3:2015
NACE MR-103/ISO 17495-1:2016

Pag. 1 / Segue

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Azienda con sistema di gestione certificato da IGQ secondo UNI EN ISO 9001:2015

The Company's Quality Management System is certified by IGQ according to UNI EN ISO 9001:2015

Segue certificato di controllo N. 174495 Date 14/11/2023
Inspection Certificate's continuance

NOTE - Notes

Materiale conforme a: ASTM A276-24a / A479-23a/ A182-24
ASME SA: 479-21 276-21 182; UNS 31600 - 31630 AISI 316-316L
Corrosione Intercristallina EN ISO 3651-2:98 Met.A

Melting Process: E + A. O. D
Heat treatment: annealed temperature 1060°C
Soaking time: 4 Hours, Cooling in water
Intergranular corrosion tested to ASTM A262-15 "E"
According to: NACE MR-0175 / ISO 15156-3:2015
NACE MR-103/ISO 17495-1:2016
Material Compliant to: ASTM A276-24a / A479-23a/ A182-24
ASME SA: 479-21 276-21 182; UNS 31600 - 31630 AISI 316-316L
Intergranular Corrosion according to EN ISO 3651-2:98 Met.A

Surface quality condition 2H conforming also to EN 10277 class 3

We certify hereby, that the above mentioned products are consistent with the order prescriptions.
This certificate was generated by data system acc. to EN 10204, it is not necessary to be signed for validity.

Materiale conforme alle seguenti direttive/regolamenti europee:
. Regolamento REACH 2006/1907/CE e tutti successivi aggiornamenti, compresa la modifica M80 Direttiva Delegata 2022/1632, e SVHC Candidate List aggiornata al 17/01/2023.
. Direttiva ROHS 2011/65/UE e tutti i successivi aggiornamenti, compresa la modifica M80 attraverso la Direttiva Delegata 2022/1632, e Decreto Legislativo 27 del 04/03/2014.
. Direttiva RAEE 2012/19/UE e tutti successivi aggiornamenti, compresa la modifica M1 attraverso la Direttiva 2018/849.
. Direttiva ELV (End-of-Life Vehicles) 2000/53/CE e tutti i successivi aggiornamenti, compresa la modifica M15 attraverso la Direttiva 2020/363
. Contaminazione Radioattiva, Direttiva 2013/59/EURATOM e Decreto Legislativo N.101 del 31 Luglio 2020.
. Canadian List 168 aggiornata al 16/03/2022.
. Minerali di Conflitto, Regolamento (UE) 2017/821 e tutti i successivi aggiornamenti, compresa la modifica M1 attraverso il Regolamento Delegato 2020/1588, e Dodd-Frank Wall Street Reform and Consumer Protection Act Section 1502.

Material conforming to the following European directives/regulation:
. REACH regulation 2006/1907/EC and all subsequent updates, including modification M80 Delegate Directive, and SVHC Candidate List updated to 01/17/2023.
. ROHS Directive 2011/65/EU and all subsequent updates, including the M80 amendment through the Delegated Directive 2022/1632, and Italian Legislative Decree 27 of 03/04/2014.
. WEEE Directive 2012/19/EU and all subsequent updates, including the M1 amendment through Directive 2018/849.
. ELV (end-of-Life Vehicles) Directive 2000/53/EC and all subsequent updates, including the modification M15 through Directive 2020/363
. Radioactive Contamination, Directive 2013/59/EURATOM and Italian Legislative Decree No. 101 of 31 July 2020.
. Canadian List 168 updated 03/16/2022.
. Conflict Minerals, Regulation (EU) 2017/821 and all subsequent updates, including amendment M1 through Delegated Regulation 2020/1588, and Dodd-Frank Wall Street Reform and Consumer Protection Act Section 1502.

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23/10/24

Pag. 2 / 2 RODACCIAI: The Work Inspector
Alessia Porta

OTTURATORE / TIP

Acciaierie Valbruna S.p.A.

36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1
Nach/According to/Selon

Certificato nr. MEST140440 / 2023 /
Prüfung/Test/Essai

Ordine nr: VS ORD MAIL
Bestell / Your order / Commande

Conferma ordine nr: AN23001468
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-AN23000875
Lieferanzaige/Packing list/B.L.

Stato di fornitura : Laminato - Solubilizzato FINITO A FREDDO
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore :
Hersteller/Item/Usine productrice

ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica:
Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice

Punzone del Collaudatore: MR
Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur

Punzonatura: 1.4401/1.4404
Kennzeichnung / Marking / Marquage

SPECIFICHE :
Anforderungen / Requirements / Exigences

VAL STOCK W2 A/1 1.4404/316L A,CF
AD 2000-M. W 2 2022 1.4401 A,CF (0)
AD 2000-M. W 2 2022 1.4404 A,CF (1)
AISI . 316/316L
ASME SA182 2021 S31600/03 A (2)
ASME SA276 2021 S31600/03 A,CF (3)
ASME SA479 2021 S31600/03 A (4)
ASTM A182 2023 S31600/03 A (5)
ASTM A262 PR. E 2015 316/316L (6)
ASTM A276 2023 S31600/03 A,CF
ASTM A370 2022 .
ASTM A479 2023A S31600/03 A
ASTM E10 2023 .
ASTM E8 2022 .
EN 10088 PART 3 2014 1.4401 A,CF
EN 10088 PART 3 2014 1.4404 A,CF
EN 10272 2016. 1.4401 A,CF
EN 10272 2016. 1.4404 A,CF
ISO 3651-2 98 METHOD A T1
ISO 6506-1 2014 .
ISO 6892-1 2019 .
ACH CO . .
PME HB L . .
NACE MR0175 4 S31600/03 A (7)
NACE MR0103 2015 S31600/03 A (8)

Note:
Aufzeichnungen / Notes / Notes

(0)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
(1)AD 2000-MERKBLATT W 2 edition 01.2020 AD 2000-MERKBLATT W 10 edition 01.2020
(2)Section II Part A 2021 EDITION For products machined directly from bar refer to ASME SA479.
(3)Section II Part A 2021 EDITION
(4)Section II Part A 2021 EDITION
(5)For products machined directly from bar refer also to ASTM A479.
(6)Reapproved 2021
(7)ANSI/NACE MR0175/ISO 15156-3:2020 Fourth edition, approved 21 Sep 2022.
(8)ANSI/NACE MR0103/ISO 17945 November 23, 2015

		Tolleranza: h9 - DIN671/EN10278 Toleranz/Allowance/Tolerance					
Pos. nr. Pos. nr / Item nr. / Nr. de poste	Oggetto Gegenstand / Product description / Descrip. du produit	Dimensioni - mm Abmessungen / Dimension / Dimension	Lunghezza - mm Länge / Length / Longueur	Colata Schmelze / Heat / Coulée	Pezzi Stückzahl / Pieces / Pieces	Peso - KG Gewicht / Weight / Poids	Lotto nr. Los nr / Lot nr / Lot nr
0010	Tondo	9,000	3000/ 3050	290962		162,0	210502620

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23/10/24

OTTURATORE / TIP

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Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1 — Certificato nr. MEST140440 / 2023 /

Stato di fornitura : Laminato - Solubilizzato FINITO A FREDDO

Tipo di Elaborazione: E+AOD

Qualità: 1.4401/1.4404/316/316L

Marca: MVAPML (MAXIVAL)

Produttore : ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica: AV

Punzone del Collaudatore: MR

Punzonatura: 1.4401/1.4404

Ordine nr: VS ORD MAIL

Conferma ordine nr: AN23001468

Avviso di Spedizione: A-AN23000875

TEST ALLO STATO DI FORNITURA

Test on delivery condition — Prüefung auf lieferbereitem produkt — test a l'etat de fourniture — Prueba sobre el material asi come entregado

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab			Posiz. Saggio	Snervamento	Snervamento	Resistenza	Allungamento		Strizione		Resilienza			Durezza		
		°C			Rp 0,2%	Rp 1%	Rm	A5		Z					HB		
					N/mm2	N/mm2	N/mm2	%		%							
Valori richiesti		min			200	235	500	20	-	-	-	-			-		
		max					900								315		
A	9	20	L		637	686	720	31		73					234		
E	9	20	L		639	690	726	30		71					235		

TEST ALLO STATO DI FORNITURA

Test on delivery condition / Prüefung auf lieferbereitem produkt / Test a l'etat de fourniture / Prueba sobre el material asi come entregado

TEST		min	max	
A	Dimensioni grano x ASTM E112			5

Test allo stato di fornitura per ASTM A370

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab			Posiz. Saggio	Snervamento	Snervamento	Resistenza	Allungamento		Strizione		Resilienza			Durezza		
		°C			Rp 0,2%		Rm	E 4d		RA					HB		
					N/mm2		N/mm2		%		%						
Valori richiesti		min			310	-	620	-	30	-	50	-			-		
		max													235		
D	6	20	L		640		723		33		74				230		

Tensile testing according to ISO 6892-1
Mechanical properties according to ASTM A370.
Brinnell hardness according to ASTM E10
Tensile testing according to ASTM E8
Brinnell hardness according to ISO 6506-1

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Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat / Schmelze/Coulée		C %	Si %	Mn %	Cr %	Mo %	Ni %	Co %	P %	S %	N %
	min -	-	-	-	16,50	2,00	10,00	-	-	-	-
	max	0,030	1,00	2,00	18,00	2,50	13,00	-	0,045	0,030	0,100
290962		0,015	0,46	1,48	16,68	2,03	10,23	0,127	0,030	0,023	0,048

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 15/11/2023	Direzione Qualità	Direzione Prodotto	Pagina
VCQ012 - MEST140440	Qualitätsmanagement/Quality Management/Gestion Qualité	Produktmanagement/Product Management/Direction Produit	2 di 3
	R.BERTELLI	P.MESSORI	

OTTURATORE / TIP

Acciaierie Valbruna S.p.A.

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Telefono 0444.968211 - Fax 0444.963836
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4/37
Telefono 0471.924111 - Fax 0471.924497

CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a / Nach/According to/Selon: EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1

Certificato nr. / Prüfung/Test/Essai: MEST140440 / 2023 /

Ordine nr: VS ORD MAIL
Bestell / Your order / Commande

Conferma ordine nr: AN23001468
Werks/Our Order/Ref nr.

Avviso di Spedizione: A-AN23000875
Lieferanzeige/Packing list/B.L.

Stato di fornitura: Laminato - Solubilizzato FINITO A FREDDO
Lieferzustand / Delivery state / Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart / Melting process / Mode d'elaboration

Qualità: 1.4401/1.4404/316/316L
Werkstoff/Grade/Nuance

Marca: MVAPML (MAXIVAL)
Markenbezeichnung / Brand / Nuance

Produttore / Hersteller/Itern/Usine productrice:
ACCIAIERIE VALBRUNA S.P.A.

Marchi di Fabbrica / Zeichen des Lieferwerkes / Trade marks / Sigles de l'usine productrice: AV

Punzone del Collaudatore / Stempel des Werkssachverständigen / Inspector's stamp/Poinçon de l'assayeur: MR

Punzonatura: 1.4401/1.4404
Kennzeichnung / Marking / Marquage

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	**SATISFACTORY**

Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	**SATISFACTORY**

Reduction ratio = 457,3 : 1
Material annealed 1040°C for 135'(total time)/water cooled.
SURFACE QUALITY COMPLIANT TO EN 10088-3 TAB.1 COND. 2H
"Issued in agreement with TÜV SÜD Industrie Service GMBH
(07/1972)"
"Qs approved according to PED, Annex I, Para. 4.3 by
Notified Body 0036"
"(Certification no. DGR-0036-QS-W 23/2002/MUC)"

x CROSSWIND 23/10/24 R

Sono state soddisfatte tutte le condizioni richieste Die gestellen Anforderungen sind rt. Anlage erfüllt The material has been furnished in accordance with the requirements Le materiel á été trouvé conforme aux exigences	Controllo antimescolanza con tecnica XRF/OES portatile : OK Verwechslungprüfung: durch XRF/OES Gerät geführt : OK Antimixing testing performed with XRF/OES portable : OK Contrôle antimélange svt technique XRF/OES portable : OK	Controllo visivo e dimensionale: soddisfa le esigenze Besichtigung und Ausmessung: ohne Beanstandung Visual inspection and dimensional checks:satisfactory Contrôle visuel et dimensions: satisfaisant

Melted, poured and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination by the portal system when it leaves the production plant.

The Quality Management System is also Certified according to Pressure Equipment Directive 2014/68/EU Annex 1,chapt.4.3 by TÜV and LLOYD`S
The Quality Management System is also Certified according to PER 2016/1105, Schedule 2, Part 4, Para 31 (8) by Competent Body TÜV SUD BABT Unlimited.
Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.
Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.
The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

Vicenza, 15/11/2023 VCQ012 - MEST140440	Direzione Qualità Qualitätsmanagement/Quality Management/Gestion Qualité R.BERTELLI	Direzione Prodotto Produktmanagement/Product Management/Direction Produit P.MESSORI	Pagina 3 di 3

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ROSETTI MARINO ITEM 430

COD. VLBLNN01370100

TAG:

BLPH-MV-469, BLPH-MV-470,

BLPH-MV-471

INDRA ITEM 324

COD. 00.VSF.2784(T)

indra VALVES - ITALY

Certificazione dei materiali
EN 10204 3.1 come da allegati

Material certification
EN 10204 3.1 as per attachments

MD-02-04-IT-UK / VSF
Rev. 16
Data: 08-Nov-2018
CM/IT/UK

Nr. *No.* **24-2010** **Data** / *Date :* **16-Oct-2024**

Cliente / *Customer* **ROSETTI MARINO SPA**

Vs. ordine Nr. / *Your order Nr.* **1724000798 REV.2** **Data** / *Date :* **26-Jun-2024**

Ns. commessa Nr. / *Our job Nr.* **24 01216** **Data** / *Date :* **3-Jul-2024**

Ns. D.D.T. Nr. / *Our advise note Nr.* **Data** / *Date :*

Ordine di produzione / Production order number : 24 01216/324 - 400186

Lotto / Material batch number : 400186

Pos. Cliente Customer Item	*Pos. Indra Indra Item*	*Codice / Code*		*Q.tà / Q.ty*	*Nr. di serie Serial Number*	*Descrizione /Description*
		Ns./ Our	*Vs. / Your*			
430	324	00.VSF.2784(T)	VLBLNN01370100	3	106900,106901 106902	INDRA BALL VALVE SBB-79B-25-F150RF3-F-D-F55F-F55-N-PG-EXS100-EXY3-L13-TG-TGW-IT2-PMI2-PD2-CR-TA-FS-SPC1-SPC2

Elenco / List

Componente / *Component*	Colata / Heat	Materiale *Material*	Numero del certificato Certificate number
Corpo Valvola / Valve Body	400186	F55 NACE	FA0300091081 00 / V0 - 480652
Closure F150RF3	400186	F55 NACE	FA0300091081 00 / V0 - 480652
Tirante / Stud bolt	BE1859	ASTM A193 B7M + HDG	5218
Dado / Nut	BD4437	ASTM A194 Gr.2HM + HDG	5166
Stelo antiespulsione sfera / Ball stem	400520	F55 NACE	FA0300090721 00 / V0 - 480854
Sfera / Ball	070136	F55 NACE	2021003757 - N.US.122/2021
Corpo bonnet/ Bonnet body	178391	F55 NACE	2201656 - UT 2201656
Stelo spillo / Stem needle	400520	F55 NACE	FA0300090721 00 / V0 - 480854
Otturatore / Tip	870052	F55 NACE	2018036042 - N.US.1217/18
Vite bonnet / Bonnet bolting	BB7389	ASTM A193 B7M + HDG	2402533

NOTE / **REMARKS :** TAG: BLPH-MV-469, BLPH-MV-470, BLPH-MV-471

PREPARATO DA: **ELEONORA RANZANI**
PREPARED BY: **DOCUMENTION MANAGER**

APPROVATO DA: **LUCIA NOSOTTI**
APPROVED BY: **QUALITY ASSURANCE MANAGER**

20013 Magenta (MI) Italy - Via Novara, 10/B-C
Tel. +39 02 97298663 r.a. - Fax +39 02 97291855
E-mail: indra@indra.it - http://www.indra.it

Rotton x CROSSWIND
30/10/24

BGH

BGH Edelstahl Freital GmbH

BGH Edelstahl Freital GmbH - Am Stahlwerk 1 - 01705 Freital

I.W.S. International Welding Supplier SAS
Via Kennedy 42
20078 San Colombano al Lambro (MI)
Italien

Ansprechpartner	Contact	
Telefon	Phone	
E-Mail	E-Mail	
Datum	Date	25.11.2019

Bescheinigung zur Materialidentität
Certificate Of Material Identity

Bescheinigungs-Nr.
certificate number

FA0300091081 00 / V0

Bestell-Nr. / order no.	Auftragsnummer / purchase order no.	Prüfbescheinigung (Anlage) / test certificate no. (attachment)
50/19	AB03522097 / 1	480652

Werkstoff / material		
UNS S32760, X2CrNiMoCuWN25-7-4	Die Lieferung entspricht den vereinbarten Lieferbedingungen.	The delivery corresponds to the agreed terms of delivery.

Erzeugnis	product
Stab rund, gewalzt, geschält	Round bars, rolled, peeled
Anforderungen	requirements
NORSOK MDS - D 57 Rev. 5 10/13, DIN EN 10088 -3 12/14	

Schmelze / heat	Anzahl / quantity	Gewicht (kg) / weight (kg)	Abmessung / dimension
400186	7	2888	114,30 RD (4780 - 5270mm)

Wir bestätigen, dass die gelieferten Teile aus der oben genannten Nummer der Prüfbescheinigung entnommen wurden.	We herewith confirm that the delivered parts were part of the certification stated above.
Ausgewiesen durch: DIN EN 10204-01/05 3.1	Certified by: DIN EN 10204-01/05 3.1

Stempelung / stamping	Wert / value

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Betriebsbeauftragter / authorized representative

Homm

BGH Q18

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Seite / Page 1/1

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BGH Edelstahl Freital GmbH

BGH Edelstahl Freital GmbH Am Stahlwerk 1 01705 Freital

BGH Edelstahl Freital GmbH
Handelslager

Hüttenstraße

01705 Freital
Deutschland

Zeugnis-Nr. Certificate no. No. de certificat **480652**

Bescheinigung über Werkstoffprüfung nach DIN EN 10204
Certificate of material tests according to DIN EN 10204 **3.1**
Certificat des essais des matérieux selon DIN EN 10204

Die Lieferung entspricht den vereinbarten Lieferbedingungen.
Delivery in accordance with the agreed terms of delivery.
La livraison correspond aux conditions de livraison convenues.

Zeichen des Lieferwerkes / Trade mark / Signe du fournisseur

Stempel des Werkssachverständigen / Inspector's stamp / Poincon de l'inspecteur

BGH Q408

Kunden-Bestell-Nr. Customer order no. Cde. no. du client **246087006**

BGH-Auftrags-Nr. BGH works no. BGH référence **07220101/246087**

Erzeugnisform / Product	Stab, rund, geschält round bars,peeled
Werkstoff / Quality	UNS S32760
Anforderungen / Requirements	UNS S32760 ASTM A 276 /A276M -17 UNS S32760 ASTM A 479 /A479M -18 UNS S32760 ASME BPVC II. A SA- 479 /SA-479M 2017 UNS S32760 ASME BPVC II. A SA- 276 2017 1.4501 X2CrNiMoCuWN25-7-4 DIN EN 10088 -3 12/14 1.4501 X 2 CrNiMoCuWN 25-7-4 DIN EN 10272 10/16 UNS S32760 NORSOK M 630 Edition 6 10/13 UNS S32760 NORSOK MDS - D 57 Rev. 5 10/13 UNS S32760 ANSI/NACE MR 0175/ISO15156-3 2015 UNS S32760 ANSI/NACE MR 0103 /ISO17945: 2015 1.4501 X2CrNiMoCuWN25-7-4 TL 119 / BR 4501 4/Rev. 3 10.2010 F55 (UNS S32760) ASTM A182/A182M - aktuelle Ausgabe (nur Chemische Zusammensetzung und mechanische Eigenschaften) F55 (UNS S32760) ASME BPVC.II.A SA 182 /182M - aktuelle Ausgabe (nur Chemische Zusammensetzung und mechanische Eigenschaften) Gefertigt nach QTR_F_B_32760 nach Norsok M-650 Edition 4 F55 (UNS S32760) ASTM A182/A182M - Lat. Rev. (Chemical Composition and mechanical properties only) F55 (UNS S32760) ASME BPVC.II.A SA 182 /182M - Lat. Rev. (Chemical Composition and mechanical properties only) Manufactured acc. to QTR_F_B_32760 acc. to Norsok M-650 Edition 4

Besichtigung und Maßnachprüfung Inspection and dimensional control Inspection et contrôle de dimension	Erschmelzung/Nachbehandlung Meltingprocess/secondary refining Mode d'élaboration/traitement ultérieur	Verwechslungsprüfung (spectroanalytisch) Identification test (spectral-analysis) examination d' identification(analyse spectrale)
ohne Beanstandung without objection	E- VOD	ohne Beanstandung without objection

Pos. Item Poste	Anzahl Quantity Quantité	Abmessung Dimension Dimensions	Gewicht Weight Poids	Schmelz-Nr. Heat-No. No. de coulée
1	12	114,30 RD	4678 kg	400186

Schmelze Heat	C	Si	Mn	P	S	Cr	Mo	Ni	Cu	N	W	PRE
400186	0,020	0,24	0,54	0,022	0,0003	25,80	3,47	7,55	0,60	0,2470	0,530	41,203

Wärmebehandlungszustand / Condition of heat treat: lösungsgeglüht / solution annealed

Probe-Nr. Test-No.	Lage loc.	Temp. °C	Rp0,2 N/mm²		Rm N/mm²	A5/A4 %	Z %	Kerbschlagarbeit Impact value J	Probenform Shape of test piece Charpy-V °C	Härte Hardness HRC /HBW
Soll/Req.+	L	RT	>=530		>=730	>=25		>=100	RT	
+	L	RT			<=930				-50	<=32 /<=290
*	L	RT	>=550		>=750	>=25	>=45	>=45	-46	
*	L	RT			<=895					
*	T	RT	>=550		>=750	>=25		>=45	-46	

Anlagen Encl. Annexe	Freital,den Place and date Lieu et date	Abnahmebeauftragter Inspector representative Inspecteur de réception
US-Protokoll/UT report Glühbesch./Heat treatment cer. Gefügeaufnahme/micrograph	05.11.2019	Pfennig

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BGH Edelstahl Freital GmbH

BGH Edelstahl Freital GmbH Am Stahlwerk 1 01705 Freital

BGH Edelstahl Freital GmbH
Handelslager

Hüttenstraße

01705 Freital
Deutschland

Zeugnis-Nr. Certificate no. No. de certificat **480652**

Bescheinigung über Werkstoffprüfung nach DIN EN 10204
Certificate of material tests according to DIN EN 10204 **3.1**
Certificat des essais des matériaux selon DIN EN 10204

Die Lieferung entspricht den vereinbarten Lieferbedingungen.
Delivery in accordance with the agreed terms of delivery.
La livraison correspond aux conditions de livraison convenues.

Zeichen des Lieferwerkes Trade mark Signe du fournisseur

Stempel des Werkssachverständigen Inspector's stamp Poincon de l'inspecteur

BGH Q408

Kunden-Bestell-Nr. Customer order no. Cde. no. du client **246087006**

BGH-Auftrags-Nr. BGH works no. BGH référence **07220101/246087**

020KM1	+	L	RT	591		812	38/-	78	312	332	334	RT	22/242
020KM1	+	L							326	322	309	-50	
020KM1	*	L	RT	580		797	-/43	79	296	320	326	-46	
020KM1	*	T	RT	604		826	-/29	67	198	127	161	-46	
020KM2	+	L	RT	597		817	38/-	77	338	324	327	RT	
020KM2	+	L							330	323	328	-50	

\+ Erprobung nach/testing acc. to DIN EN ISO 6892-1 / DIN EN ISO 148-1
Prüfort/test location: 12,5 mm
* Erprobung nach/testing acc. to ASTM/ASME A 370
Prüfort/test location: D/4 - mid radius

Umformgrad/reduction ratio: 13:1

Korros.-Test ASTM G48 Meth.A: 50°C/24h: kein Lochfraß/no pitting is observed
corrosion test Meth.A: Gewichtsverlust/weight loss: 0,029 g/m²
Proben gebeizt/Samples pickles (20% HNO3 + 5% HF, 60 °C, 5 Minuten/minutes)

Deltaferrit/ferrite delta ASTM E562: Ätzmittel/Etchant:: V2A + 30 % NaOH
Rand - near surface: 48% ; relative Genauigkeit/relative accuracy: 7%
D/4 - mid radius: 48% ; relative Genauigkeit/relative accuracy: 8%
Prüfung/testing: 30 Felder/16 Punkt (30 fields of 16 points)

IK-Beständigkeit/intercrystalline corrosion DIN EN ISO 3651-2 Prüfv./Meth. C:
ohne Beanstandung/without objection.
Sensibilisierungbehandlung/Sensibilisation treatment: 700°C 30min Wasser/water
Prüfdauer/time of testing: 20h

Material wurde nicht reparaturgeschweißt.
Material frei von Sigma- und anderen schädlichen Phasen.
Gefüge frei von Korngrenzenkarbiden,
-nitriden und anderen intermetallischen/schädlichen Phasen
Das Material ist frei von Quecksilber.
Stahlhersteller des Ausgangsmaterials: BGH Edelstahl Freital GmbH.

Material no weld repaired.
Material free from sigma and other harmful phases.
Microstructure free from grain boundary carbides
nitrides or any intermetallic or other detrimental phases.
Material is free from mercury.

Anlagen Encl. Annexe: US-Protokoll/UT report; Glühbesch./Heat treatment cer.; Gefügeaufnahme/micrograph

Freital,den Place and date Lieu et date: 05.11.2019

Abnahmebeauftragter Inspector representative Inspecteur de réception: **Pfennig**

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Wärmebehandlungsbescheinigung
Heat treatment certificate
Attestation de traitement thermique

BGH

BGH Edelstahl Freital GmbH

Kunden-Bestell-Nr. / Customer order no. / Cde. no. du client	BGH-Auftrags-Nr. / BGH works no. / BGH référence	Zeugnis-Nr. / Certificate no. / No. de certificat
246087006	**07220101**	**480652**

Wärmebehandlungszustand: / Condition of heat treatment: / État de traitement thermique:	**lösungsgeglüht / solution annealed / recuit de mise en solution**
Datum: / Date: / Date:	**09.10.2019**
Ofen-Nr.: / Furnace no.: / No. du four:	**722**
Aufheizzeit: / Heating up time: / Temps de montée en température:	**3 h**
Haltetemperatur: / Holding temperature: / Température de maintien:	**1110 °C**
Haltezeit: / Holding time: / Temps de maintien	**3 h**
Abkühlmedium: / Quenching medium: / Moyen de refroidissement:	**Wasser / water / eau**
Datum: / Date: / Date:	
Ofen-Nr.: / Furnace no.: / No. du four:	
Haltezeit: / Holding time: / Temps de maintien:	
Abkühlmedium: / Quenching medium: / Moyen de refroidissement:	
Wärmebehandlungs-Nr.: / Heat treatment lot no.: / No. du lot de traitement thermique:	**722/6691 (020KM)**

Diagramm: / Diagram: / Diagramme:	Datum: / Date: / Date:	Abnahmebeauftragter / Inspector representative / Inspecteur de réception
X	06.11.2019	KUNZ BGH Q413

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Ultraschallprüfung
Ultrasonic testing

DIN EN 10204-01/05 3.1

BGH

BGH Edelstahl Freital GmbH

Kunden-Bestell-Nr. Customer order no. Cde. no. du client: **246087006**
BGH-Auftrags-Nr. BGH works no. BGH référence: **072201-01**
Zeugnis-Nr. Certificate no. No. de certificat: **480652**

Erzeugnisform : Stab, rund, geschält
Product : round bars,peeled

Werkstoff/Quality : UNS S32760 Schmelze: 400186
Abmessung/Dimension: 114,30 RD
Anzahl/Quantity : 12 Gewicht /Weight : 4678 kg
Wärmebehandlungszustand : lösungsgeglüht
Condition of heat treat : solution annealed

Prüfrichtlinie
Specification

A388/A 388 M (latest Revision)
DIN EN 10308 03/02
Tab.1-Typ1a(vollst.)Tab.3-Qual.-kl.3

Bearbeitungszustand : geschält
Machining condition peeled

Prüfgerät : Deutsch-RPTS-Echograph 1155
Test equipment

Prüfkopf : 24x STS10WB4C
Probe

Kopplungsmittel : Wasser
Coupling medium water

Prüfumfang : vollständig
Extent of examination completely

Einschallrichtung : senkrecht und in Winkeleinschallung 40°
Direction of incidence perpendicular and angle beam 40°

Registriergrenze : Prüfung und Justierung erfolgten gemäß obiger Spezifikation.
Registration level Test and adjustment according to above mentioned specification.

Befund : keine registrierpflichtigen Anzeigen
Result no reportable indications

Prüfdatum : 03.11.2019
Examination date

Freital,den Place and date Lieu et date 06.11.19	Prüfer Testing operator Opérateur	Abnahmebeauftragter Inspector representative Inspecteur de réception Kunz Stufe 2 ISO 9712 BGH Q413	Überwacher Supervisor Surveilleur

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BGH Edelstahl Freital GmbH

BGH Edelstahl Freital GmbH Am Stahlwerk 1 01705 Freital

BGH Edelstahl Freital GmbH
Handelslager

Hüttenstraße

01705 Freital
Deutschland

Zeugnis-Nr. **480652**
Certificate no.
No. de certificat

Bescheinigung über Werkstoffprüfung nach DIN EN 10204
Certificate of material tests according to DIN EN 10204 **3.1**
Certificat des essais des matériaux selon DIN EN 10204

Die Lieferung entspricht den vereinbarten Lieferbedingungen.
Delivery in accordance with the agreed terms of delivery.
La livraison correspond aux conditions de livraison convenues.

Zeichen des Lieferwerkes
Trade mark
Signe du fournisseur

Stempel des Werkssachverständigen
Inspector's stamp
Poinçon de l'inspecteur

BGH Q408

Kunden-Bestell-Nr. **246087006**
Customer order no.
Cde. no. du client

BGH-Auftrags-Nr. **07220101/246087**
BGH works no.
BGH référence

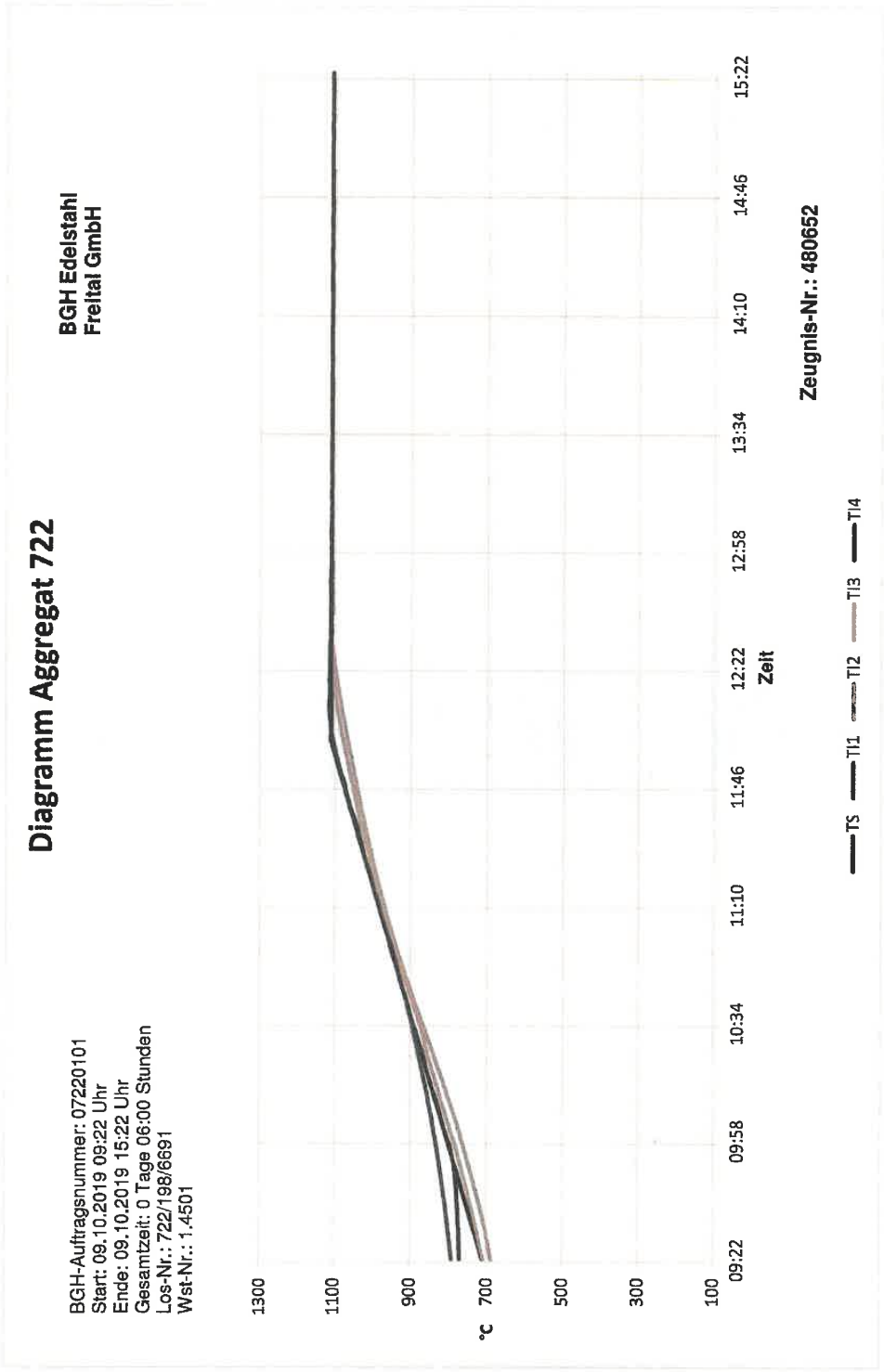
Steel manufacturer of starting material: BGH Edelstahl Freital GmbH.

Fertigung nach QM-System ISO 9001: 2015/ QM system in effect is ISO 9001: 2015
Zertifiziert nach / certificated AD2000 W0.
Kontrolle auf Radioaktivität ohne Befund, der Messwert liegt unter der Nachweisgrenze von 0,1 Bq/g.
Radioactivity inspection without objection, the measured value is below the detection limit of 0.1 Bq/g.

Anlagen / Encl. / Annexe: US-Protokoll/UT report Glühbesch./Heat treatment cer. Gefügeaufnahme/micrograph	Freital,den Place and date Lieu et date 05.11.2019	Abnahmebeauftragter Inspector representative Inspecteur de réception **Pfennig**

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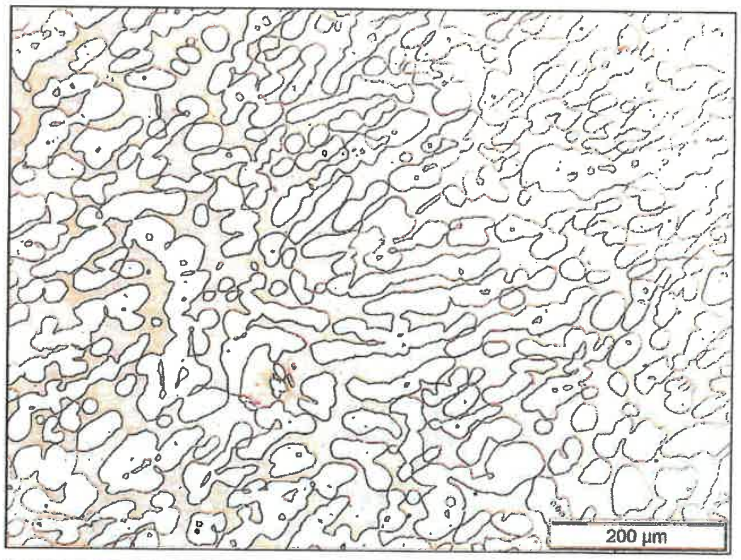


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Gefügeaufnahmen zum Zertificat Nr. / Microstructure to certificate No.: 480652

Besteller/Purchaser:	BGH Edelstahl Freital GmbH
Bestell-nr./Order-No.:	246087006
Werkstoff/Quality:	UNS S32760
Chargen-nr./Cast-No.:	400186
Erzeugnisform/Product:	Stab, rund, geschält / round bars,peeled
Abmessung/Dimension:	114,30 RD
Komm.-nr./Work-No.:	07220101

Proben-nr./Test-No.: 020KM1 mid radius



100:1



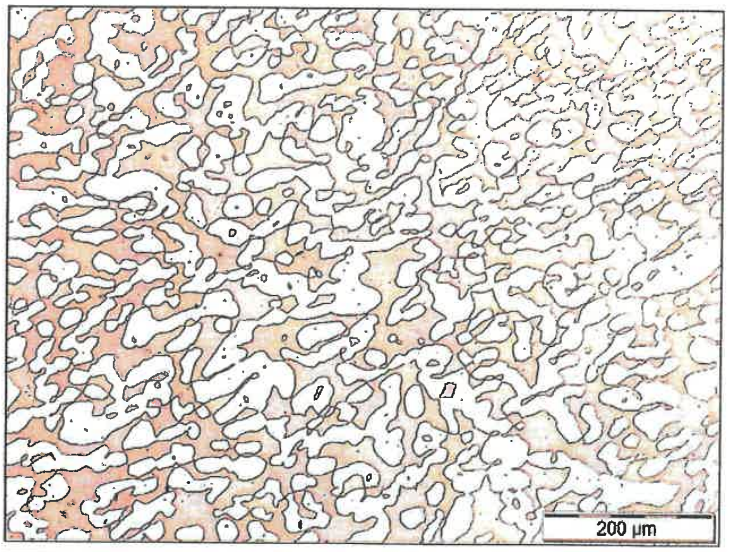
500:1

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Gefügeaufnahmen zum Zertificat Nr. / Microstructure to certificate No.: 480652

Besteller/Purchaser:	BGH Edelstahl Freital GmbH
Bestell-nr./Order-No.:	246087006
Werkstoff/Quality:	UNS S32760
Chargen-nr./Cast-No.:	400186
Erzeugnisform/Product:	Stab, rund, geschält / round bars,peeled
Abmessung/Dimension:	114,30 RD
Komm.-nr./Work-No.:	07220101

Proben-nr./Test-No.: 020KM1 near surface



100:1



500:1

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TIRANTE / STUD BOLT t.e.c.n.o BOLT

CERTIFICATE

Nr. 5218	02-10-24

Page 1/1

INDRA SRL
VIA NOVARA 10/B-C
20013 MAGENTA MI
ITALIA

EN ISO 10204 3.1
CERTIFIED MATERIAL TEST REPORT

Your order: AF24 02329 REV.02 16-07-24 Delivery note: 2454 02-10-24

Item	Materials	Description	Sizes	Batch	Heat	Quantity
6	ASTM A 193 B7M 980.99.0260CS Pos.285 CKD/SM/18/03/2022	Tirante DIN 976/UNI 6610 ASTM A 193 B7M M HDG	10X30	8582	BE1859 N.	40

CHEMICAL ANALYSIS

6		%C %	%Mn %	%P %	%S %	%Si %	%Cr %	%Mo %	%H.T. Q+T
	REQ. MIN.	0,37	0,65			0,15	0,75	0,15	T=1100 F
	REQ. MAX.	0,49	1,10	0,035	0,040	0,35	1,20	0,25	
	ACT.VAL.	0,420	0,830	0,010	0,026	0,230	1,040	0,180	Q+T

MECHANICAL PROPERTIES

6		UTS MPa	YS0,2 MPa	E %	R.A. %	H HB	I.T. °C Kv J-22 C
	REQ. MIN.	860	720	16	50		
	REQ. MAX.					321	
	ACT. VAL.	1000	804	22,6	61	298	N.A.

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We state that the material or fasteners, or both, were manufactered, sampled, tested and inspected in accordance with the specification and any supplementary requirements designated in the purchase/sales order and it was found to meet those requirements

tecnoBOLT s.r.l. - 20822 Seveso (MB) ITALY - way vignone n.7 - info@tecnobolt.com - www.tecnobolt.com

DADO / NUT

t·e·c·n·o BOLT

CERTIFICATE

Nr. 5166	18-09-24

Page 1/1

INDRA SRL
VIA NOVARA 10/B-C
20013 MAGENTA MI
ITALIA

EN ISO 10204 3.1
CERTIFIED MATERIAL TEST REPORT

Your order: AF24 02329 REV.02 16-07-24 Delivery note: 2307 18-09-24

Item	Materials	Description	Sizes	Batch	Heat	Quantity
3	ASTM A 194 Gr.2HM 980.99.0188 Pos.170, 180, 190, 330 CKD/DR/30/05/16	Dado UNI 5588/DIN 934 ASTM A 194 Gr.2HM M Esagonale HDG	10	8581	BD4437 N.	70

VOCE DOGANALE 73181900

MERCE DI ORIGINE ITALIANA

CHEMICAL ANALYSIS

3		%C %	%Mn %	%P %	%S %	%Si %	%H.T. Q+T	%Ni %	%Cr %	%Mo %
	REQ. MIN.	0,40					T=850 F			
	REQ. MAX.		1	0,040	0,050	0,40				
	ACT.VAL.	0,435	0,790	0,007	0,029	0,230	Q+T	0,070	0,190	0,020

MECHANICAL PROPERTIES

3		H HRC	P.L. N/mm
	REQ. MIN.		1205
	REQ. MAX.		
	ACT. VAL.	32-34	1205

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We state that the material or fasteners, or both, were manufactered, sampled, tested and inspected in accordance with the specification and any supplementary requirements designated in the purchase/sales order and it was found to meet those requirements

BGH Edelstahl Freital GmbH

BGH Edelstahl Freital GmbH - Am Stahlwerk 1 - 01705 Freital

I.W.S. International Welding Supplier SAS
Via Kennedy 42
20078 San Colombano al Lambro (MI)
Italien

Ansprechpartner	Contact	
Telefon	Phone	
E-Mail	E-Mail	
Datum	Date	13.11.2019

Bescheinigung zur Materialidentität

Certificate Of Material Identity

Bescheinigungs-Nr.
certificate number

FA0300090721 00 / V0

Bestell-Nr. / order no.	Auftragsnummer / purchase order no.	Prüfbescheinigung (Anlage) / test certificate no. (attachment)
19/19	AB03519288 / 2	480854

Werkstoff / material	Die Lieferung entspricht den vereinbarten Lieferbedingungen. / The delivery corresponds to the agreed terms of delivery.
UNS S32760, X2CrNiMoCuWN25-7-4, UNS S32760 , X 2 CrNiMoCuWN 25-7-4, UNS S32760 - F55	

Erzeugnis	product
Stab rund, gewalzt, geschält	Round bars, rolled, peeled

Anforderungen / requirements

NACE MR 0103 2012, 1.4501-Stab-Lager, NORSOK MDS - D 57 Rev. 5 10/13, NORSOK M 630 Edition 6 10/13, DIN EN 10088 -3 12/14, ASME BPVC.II.A SA-276 2015, ASME BPVC.II.A SA-479/SA-479M 2015, ANSI/NACE MR 0175/ISO15156-3 2015,
ASTM A 276 /A276M 2016a, ASTM A 479 /A479M 2016a, DIN EN 10272 10/16, ASTM A 182-18a (chemistry and mechanicals only),

Schmelze / heat	Anzahl / quantity	Gewicht (kg) / weight (kg)	Abmessung / dimension
400520	0	666	22,22 RD (5750 - 6020mm)

Wir bestätigen, dass die gelieferten Teile aus der oben genannten Nummer der Prüfbescheinigung entnommen wurden.	We herewith confirm that the delivered parts were part of the certification stated above.
Ausgewiesen durch: DIN EN 10204-01/05 3.1	Certified by: DIN EN 10204-01/05 3.1

Stempelung / stamping	Wert / value
Sachnummer:19/19 identification number:19/19	

Betriebsbeauftragter / authorized representative

Homm

BGH Q18

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BGH Edelstahl Freital GmbH
Handelslager

Hüttenstraße

01705 Freital
Deutschland

Zeugnis-Nr. **480854**
Certificate no.
No. de certificat

Bescheinigung über Werkstoffprüfung nach DIN EN 10204
Certificate of material tests according to DIN EN 10204 **3.1**
Certificat des essais des matériaux selon DIN EN 10204

Die Lieferung entspricht den vereinbarten Lieferbedingungen.
Delivery in accordance with the agreed terms of delivery.
La livraison correspond aux conditions de livraison convenues.

Zeichen des Lieferwerkes / Trade mark / Signe du fournisseur
Stempel des Werkssachverständigen / Inspector's stamp / Poinçon de l'inspecteur

BGH Q406

Kunden-Bestell-Nr. **242986001**
Customer order no.
Cde. no. du client

BGH-Auftrags-Nr. **39036701/242986**
BGH works no.
BGH référence

Erzeugnisform / Product	Stab, rund, geschält round bars,peeled
Werkstoff / Quality	UNS S32760
Anforderungen / Requirements	UNS S32760 ASTM A 479 /A479M -18 UNS S32760 ASTM A 276 /A276M -17 UNS S32760 ASME BPVC II. A SA- 276 2017 UNS S32760 ASME BPVC II. A SA- 479 /SA-479M 2017 1.4501 X2CrNiMoCuWN25-7-4 DIN EN 10088 -3 12/14 1.4501 X 2 CrNiMoCuWN 25-7-4 DIN EN 10272 10/16 UNS S32760 NORSOK M 630 Edition 6 10/13 UNS S32760 NORSOK MDS - D 57 Rev. 5 10/13 UNS S32760 ANSI/NACE MR 0103 /ISO17945: 2015 UNS S32760 ANSI/NACE MR 0175/ISO15156-3 2015 1.4501 X2CrNiMoCuWN25-7-4 TL 119 / BR 4501 4/Rev. 3 10.2010 F55 (UNS S32760) ASTM A182/A182M - aktuelle Ausgabe (nur Chemische Zusammensetzung und mechanische Eigenschaften) Gefertigt nach QTR_F_E_32760 nach Norsok M-650 Edition 4 F55 (UNS S32760) ASTM A182/A182M - Lat. Rev. (Chemical Composition and mechanical properties only) Manufactured acc. to QTR_F_E_32760 acc. to Norsok M-650 Edition 4

Besichtigung und Maßnachprüfung Inspection and dimensional control Inspection et contrôle de dimension	Erschmelzung/Nachbehandlung Meltingprocess/secondary refining Mode d'élaboration/traitement ultérieur	Verwechslungsprüfung (spectroanalytisch) identification test (spectral-analysis) examination d' identification(analyse spectrale)
ohne Beanstandung without objection	E- VOD	ohne Beanstandung without objection

Pos. Item Poste	Anzahl Quantity Quantité	Abmessung Dimension Dimensions	Gewicht Weight Poids	Schmelz-Nr. Heat-No. No. de coulée
1	1 Bd	22,22 RD	666 kg	400520

Schmelze Heat %	C	Si	Mn	P	S	Cr	Mo	Ni	Cu	N	W	PRE
400520	0,025	0,25	0,53	0,024	0,0006	25,60	3,46	7,49	0,58	0,2720	0,520	41,37

Wärmebehandlungszustand / Condition of heat treat: lösungsgeglüht / solution annealed

Probe-Nr. Test-No.	Lage loc.	Temp. °C	Rp0,2 N/mm²		Rm N/mm²	A5/A4 %	Z %	Kerbschlagarbeit Impact value J	Probenform Shape of test piece Charpy-V °C	Härte Hardness HRC /HBW
Soll/Req.+	L	RT	>=530		>=730	>=25		>=100	RT	
+	L	RT			<=930				-50	<=32 /<=290
*	L	RT	>=550		>=750	>=25	>=45	>=45	-46	
*	L	RT			<=895					
040KV1 +	L	RT	637		871	36/-	80	305 316 306	RT	26
040KV1 +	L							284 304 293	-50	
040KV1 *	L	RT	618		866	--/40	78	299 308 318	-46	262

Anlagen / Encl. / Annexe: US-Protokoll/UT report; Glühbesch./Heat treatment cer.; Gefügeaufnahme/micrograph

Freital,den / Place and date / Lieu et date: 11.11.2019

Abnahmebeauftragter / Inspector representative / Inspecteur de réception: **Müller**

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BGH Edelstahl Freital GmbH
Handelslager

Hüttenstraße

01705 Freital
Deutschland

Zeugnis-Nr. 480854
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Bescheinigung über Werkstoffprüfung nach DIN EN 10204
Certificate of material tests according to DIN EN 10204 3.1
Certificat des essais des matériaux selon DIN EN 10204

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Stempel des Werkssachverständigen / Inspector's stamp / Poincon de l'inspecteur

BGH Q406

Kunden-Bestell-Nr. 242986001
Customer order no.
Cde. no. du client

BGH-Auftrags-Nr. 39036701/242986
BGH works no.
BGH référence

+) Erprobung nach/Examination acc. to DIN EN ISO 6892-1 / DIN EN ISO 148-1
*) Erprobung nach/Examination acc. to ASTM/ASME A 370

Prüfort/test location: D/2 - mid thickness

Deltaferrit/ferrite delta ASTM E 562: Rand-near surface: 47%
relat.Genauigkeit/relative accuracy: 11%
Deltaferrit/ferrite delta ASTM E 562: D/2-mid thickness: 50%
relat.Genauigkeit/relative accuracy: 9%
Prüfung/testing: 30 Felder/16 Punkt (30 fields of 16 points)
Ätzmittel/Etchant: V2A + 30 % NaOH

Korros.-Test ASTM G48 Meth.A: 50°C/24h: kein Lochfraß/no pitting is observed
corrosion test Meth.A: Gewichtsverlust/weight loss: 0,030 g/m²
Proben gebeizt/Samples pickles (20% HNO3 + 5% HF, 60 °C, 5 Minuten/minutes)

IK-Beständigkeit/intercrystalline corrosion DIN EN ISO 3651-2, Verfahren C:
ohne Befund/without objection
Probenvorbereitung/preparation of test specimen: 700°C 30' Wasser/water
Prüfdauer/time of testing: 20h

Material frei von Sigma- und anderen schädlichen Phasen.
Material free from sigma and other harmful phases.

Material wurde nicht reparaturgeschweißt./Material no weld repaired.

Das Material ist frei von Quecksilber./Material is free from mercury.

Umformgrad/reduction ratio: 24:1

Gefüge frei von Korngrenzenkarbiden, -nitriden und anderen intermetallischen schädlichen Phasen./
Microstructure free from grain boundary carbides nitrides or any intermetallic or other detrimental phases.

Stahlhersteller des Ausgangsmaterials: BGH Edelstahl Freital GmbH (Deutschland)
Steel manufacturer of starting material: BGH Edelstahl Freital GmbH (Germany)

Fertigung nach QM-System ISO 9001: 2015/ QM system in effect is ISO 9001: 2015
Zertifiziert nach / certificated AD2000 W0.

Anlagen / Encl. / Annexe	Freital,den / Place and date / Lieu et date	Abnahmebeauftragter / Inspector representative / Inspecteur de réception
US-Protokoll/UT report Glühbesch./Heat treatment cer. Gefügeaufnahme/micrograph	11.11.2019	Müller

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Zeugnis-Nr. **480854**
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Zeichen des Lieferwerkes
Trade mark
Signe du fournisseur

Stempel des Werkssachverständigen
Inspector's stamp
Poincon de l'inspecteur

BGH Q406

Kunden-Bestell-Nr. **242986001**
Customer order no.
Cde. no. du client

BGH-Auftrags-Nr. **39036701/242986**
BGH works no.
BGH référence

Kontrolle auf Radioaktivität ohne Befund, der Messwert liegt unter der Nachweisgrenze von 0,1 Bq/g.
Radioactivity inspection without objection, the measured value is below the detection limit of 0.1 Bq/g.

Anlagen / Encl. / Annexe: US-Protokoll/UT report Glühbesch./Heat treatment cer. Gefügeaufnahme/micrograph	Freital,den Place and date Lieu et date 11.11.2019	Abnahmebeauftragter Inspector representative Inspecteur de réception **Müller**

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Ultraschallprüfung
Ultrasonic testing

DIN EN 10204-01/05 3.1

BGH

BGH Edelstahl Freital GmbH

Kunden-Bestell-Nr. / Customer order no. / Cde. no. du client: **242986001**
BGH-Auftrags-Nr. / BGH works no. / BGH référence: **390367-01**
Zeugnis-Nr. / Certificate no. / No. de certificat: **480854**

Erzeugnisform : Stab, rund, geschält
Product : round bars,peeled

Werkstoff/Quality : UNS S32760 Schmelze: 400520
Abmessung/Dimension: 22,22 RD
Anzahl/Quantity : 1 Bd Gewicht /Weight : 666 kg
Wärmebehandlungszustand : lösungsgeglüht
Condition of heat treat : solution annealed

Prüfrichtlinie
Specification
A388/A 388 M (latest Revision)
DIN EN 10308 03/02
Tab.1-Typ1a(vollst.)Tab.3-Qual.-kl.3

Bearbeitungszustand Machining condition	: geschält peeled
Prüfgerät Test equipment	: GE ROWA B4
Prüfkopf Probe	: 4 Arrays á 90° - Radius: 35 mm 20 Elemente - 10 MHz
Kopplungsmittel Coupling medium	: Wasser water
Prüfumfang Extent of examination	: vollständig completely
Einschallrichtung Direction of incidence	: senkrecht und in Winkeleinschallung 40° perpendicular and angle beam 40°
Registriergrenze Registration level	: Prüfung und Justierung erfolgten gemäß obiger Spezifikation. Test and adjustment according to above mentioned specification.
Befund Result	: keine registrierpflichtigen Anzeigen no reportable indications
Prüfdatum Examination date	: 29.10.2019

Freital,den Place and date Lieu et date	Prüfer Testing operator Opérateur	Abnahmebeauftragter Inspector representative Inspecteur de réception	Überwacher Supervisor Surveilleur
11.11.19	Becker Stufe 2 ISO 9712	Kunz Stufe 2 ISO 9712	BGH Q413

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Wärmebehandlungsbescheinigung
Heat treatment certificate
Attestation de traitement thermique

BGH

BGH Edelstahl Freital GmbH

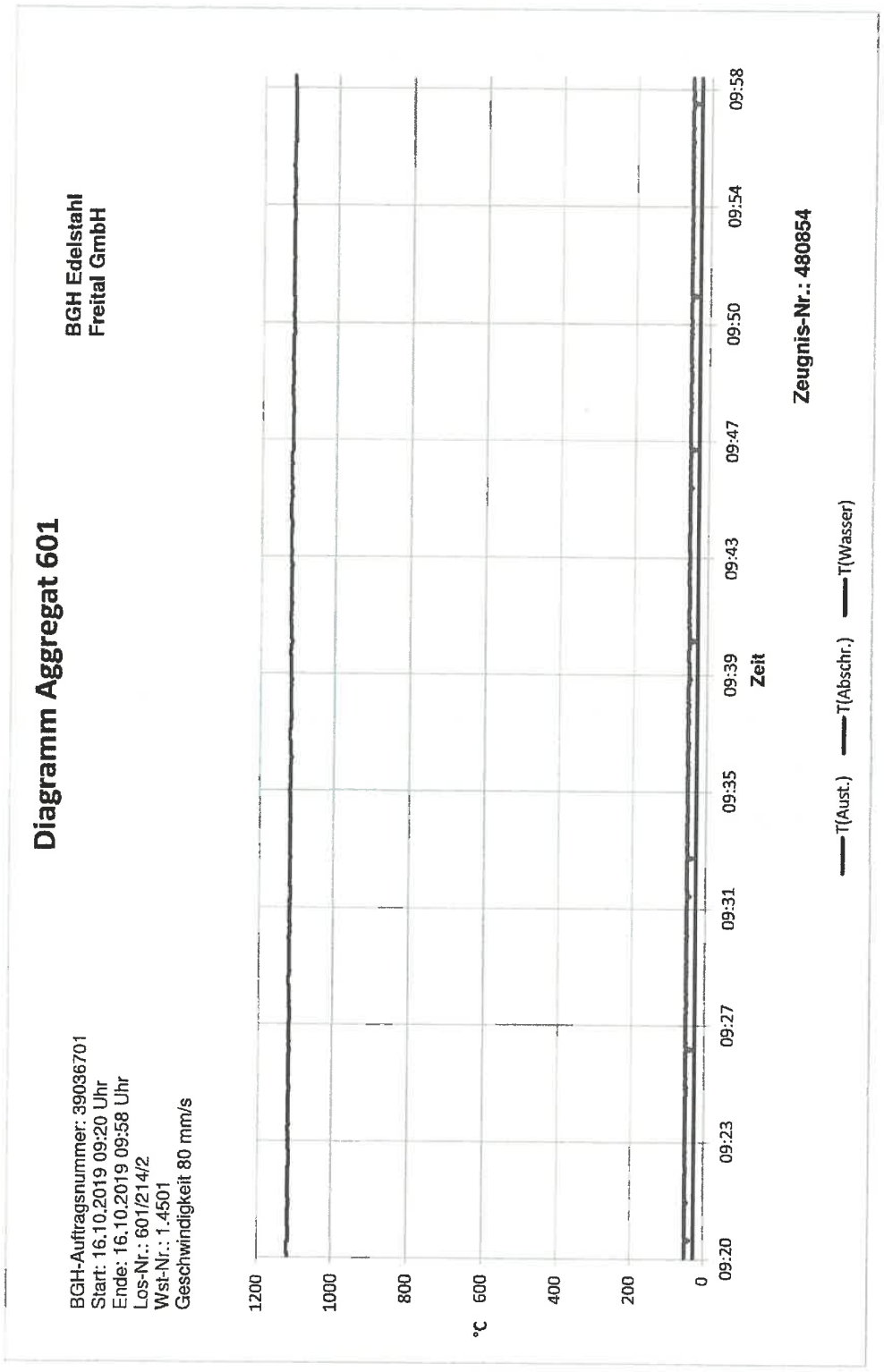
Kunden-Bestell-Nr. / Customer order no. / Cde. no. du client: **242986001**
BGH-Auftrags-Nr. / BGH works no. / BGH référence: **39036701**
Zeugnis-Nr. / Certificate no. / No. de certificat: **480854**

Wärmebehandlungszustand: / Condition of heat treatment: / État de traitement thermique:	**lösungsgeglüht / solution annealed / recuit de mise en solution**
	Heat treated at induction line
Datum: / Date: / Date:	**16.10.2019**
Ofen-Nr.: / Furnace no.: / No. du four:	**601**
Aufheizzeit: / Heating up time: / Temps de montée en température:	
Haltetemperatur: / Holding temperature: / Température de maintien:	**1115 °C**
Haltezeit: / Holding time: / Temps de maintien	**108 s**
Abkühlmedium: / Quenching medium: / Moyen de refroidissement:	**Wasser / water / eau**
Datum: / Date: / Date:	
Ofen-Nr.: / Furnace no.: / No. du four:	
Haltezeit: / Holding time: / Temps de maintien:	
Abkühlmedium: / Quenching medium: / Moyen de refroidissement:	
Wärmebehandlungs-Nr.: / Heat treatment lot no.: / No. du lot de traitement thermique:	**601/2 (040KV)**

Diagramm: / Diagram: / Diagramme: X	Datum: / Date: / Date: 11.11.2019	Abnahmebeauftragter / Inspector representative / Inspecteur de réception: **KUNZ** BGH Q413

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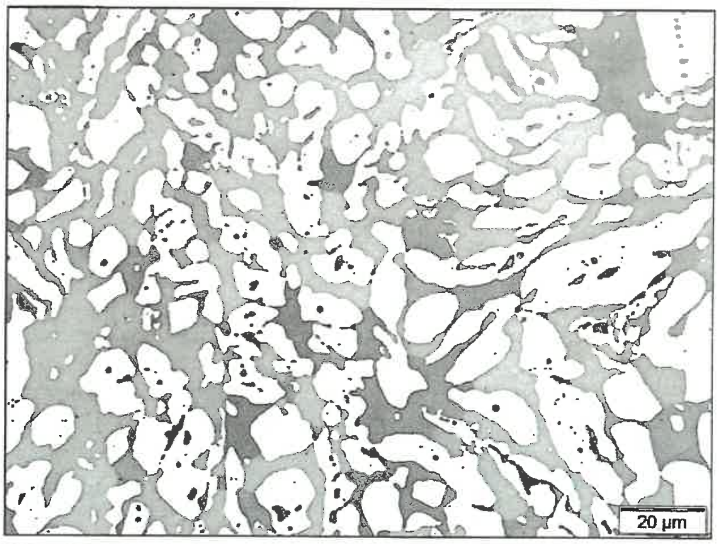


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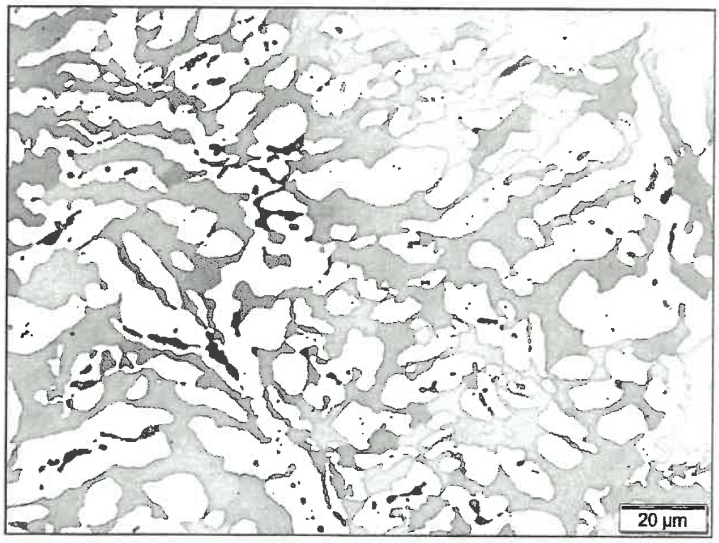
Gefügeaufnahmen zum Zertificat Nr. / Microstructure to certificate No.: **480854**

Besteller/Purchaser:	**BGH Edelstahl Freital GmbH**
Bestell-nr./Order-No.:	**242986001**
Werkstoff/Quality:	**UNS S32760**
Chargen-nr./Cast-No.:	**400520**
Erzeugnisform/Product:	**Stab, rund, geschält / round bars,peeled**
Abmessung/Dimension:	**22,22 RD**
Komm.-nr./Work-No.:	**39036701**

Proben-nr./Test-No.: **040KV1**



500:1 near surface



500:1 mid thickness

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C.F. 02187380967
VAT: IT00571320076 - R.E.A. n. AO-50474

Company with Management Systems certified according to ISO 9001, IATF 16949, EN 9100 and ISO 14001.

INSPECTION CERTIFICATE 3.1 (EN 10204:2004)
DOCUMENT NUMBER 2021003757

SFERA / BALL

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CUSTOMER:	C.S.C. SPA		
CUSTOMER'S ORDER:	A2020525SSS		
MANUFACTURER'S WORKS:	AOSTA, VIA PARAVERA 16 - ITALY		
PRODUCER OF THE DOC:	QUALITY DEPARTMENT		
MANUFACTURER'S WORKS ORDER NO: 25268649 /10	MARK OF THE MANUFACTURER: **COGNE**		
DISPATCH NOTE:	81385676 /10 WEIGHT: 1896 KG		
THE CERTIFIED PRODUCTS ARE COMPLYING TO THE PURCHASE ORDER, EXCEPT FOR EXEMPTIONS AGREED WITH THE CUSTOMER, IF ANY.			
INTERNAL SPEC:	NORSOKREV5		
PRODUCT:	61404 PEL PEELED ROUND BARS TOLERANCE: ISOK11		
SURFACE FINISH:	2B Cold Finished		
PRODUCT DELIVERY CONDITION:	RS SOLUTION ANNEALED		
PRODUCT DIMENSIONS (mm):	45,000	LENGTH (mm)	06000 /06200
GRADE:	F55 UNSS32760 1.4501	INTERNAL GRADE:	329S
IDENTIFICATION HEAT NO:	070136	IDENTIFICATION LOT NO:	365710
MARKING OF THE PRODUCT:	1.4501	TEST PIECE N:	571

REFERENCE NORMS:EN 10088-3, EN 10272, ASTM A276/ASME SA276, ASTM A479/ASME SA479, ISO15156-3/NACE MR0175, NACE MR0103, API 6A-PSL3, NORSOK M-650 REV.4/M-630, MDS D57 REV.5.
REFERENCE NORMS ONLY FOR CHEMICAL COMPOSITION:
EN 10222-5, ASTM A182/ASME SA182, ASTM A484.
HEAT TREATMENT: SOLUBILIZATION 1100 ° C 1.5 min / mm COOLING WATER TEMPERATURE BELOW 260 °C (FURNACE THERMOCOUPLES)
ASTM G48 A/ASTM A923 C TESTING CONDITIONS: Sample surface 120 GRIT, Solution 100g FeCl3.6H2O+900ml H20, T 50°C, 24h, no pitting at 20X.
STEELMAKING EAF + AOD + CONTINUOUS CASTING
HOT ROLLED
REDUCTION RATIO 30,3

CHEMICAL LADLE ANALYSIS ACCORDING TO ASTM A751 - EN ISO 14284
Control lot No. - Weight :020000851112 - 86.811 KG

ELEMENTS	C	Si	Mn	P	S	N	Cr	Mo	Ni	Cu
OBTAINED	0,020	0,38	0,62	0,020	0,0005	0,24	25,02	3,69	6,91	0,57

ELEMENTS	W	CV_F8
OBTAINED	0,56	41

CV_F8 = CR+(3.3*MO)+(16*N2)

HARDNESS TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000859523 - 2.704 KG
SPECIFICATION ENISO6506 HARDNESS TEST HB TESTING METHOD: 10/3000
OBTAINED 240

IMPACT TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000859523 - 2.704 KG
SPECIFICATION EN ISO 148-1-KV2 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 20
MEASUREMENT UNIT J

OBTAINED	433	435	427

DATE 29.01.2021

MORABITO ROSA CF(QUALITY CERTIFICATOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne

COGNE ACCIAI SPECIALI S.p.a.
ITALY - 11100 AOSTA - VIA PARAVERA, 16
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C.F. 02187360967
VAT: IT00571320076 - R.E.A. n. AO-50474

Company with Management Systems certified according to ISO 9001, IATF 16949, EN 9100 and ISO 14001.

INSPECTION CERTIFICATE 3.1 (EN 10204:2004)
DOCUMENT NUMBER 2021003757

TENSILE TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000859523 - 2.704 KG
SPECIFICATION ASTMA370-E8-0.5"SPEC DIRECTION OF THE TEST PIECE: L

	Rm	Rp02%	Z	A12
MEASUREMENT UNIT	MPA	MPA	%	%
				4,0 D
OBTAINED	804	554	83,0	42,6

CORROSION
Control lot No. - Weight :020000859523 - 2.704 KG
SPECIFICATION ASTM G48 A
OBTAINED 0,1262

FERRITE %
Control lot No. - Weight :020000859523 - 2.704 KG
SPECIFICATION ASTME562 --
OBTAINED 47

MICROSTRUCTURE
Control lot No. - Weight :020000859523 - 2.704 KG
SPECIFICATION -- --
SATISFACTORY
OBTAINED -

LATERAL EXPANSION
Control lot No. - Weight :020000859523 - 2.704 KG
SPECIFICATION ASTMA370 --
OBTAINED 2,6 2,6 2,6

SHEAR %
Control lot No. - Weight :020000859523 - 2.704 KG
SPECIFICATION ASTMA370 --
OBTAINED 100 100 100

HARDNESS TEST
Control lot No. - Weight :020000859523 - 2.704 KG
SPECIFICATION ASTMA370-E18 HARDNESS TEST HRC TESTING METHOD:
OBTAINED 23,1

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DATE 29.01.2021 MORABITO ROSA CF(QUALITY CERTIFICATOR) - ELECTRONICALLY GENERATED CERTIFICATE -Cogne

COGNE ACCIAI SPECIALI S.p.a.
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CAP. SOC. 140.000.000 EUR INT. VERS.
C.F. 02187360967
VAT: IT00571320076 - R.E.A. n. AO-50474

Company with Management Systems certified according to ISO 9001, IATF 16949, EN 9100 and ISO 14001.

INSPECTION CERTIFICATE 3.1 (EN 10204:2004)
DOCUMENT NUMBER 2021003757

IMPACT TEST
Control lot No. - Weight :020000859523 - 2.704 KG
SPECIFICATION ASTM A370-E23 TYPE A DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 50-
MEASUREMENT UNIT J
OBTAINED 345 359 318

TENSILE TEST
Control lot No. - Weight :020000859523 - 2.704 KG
SPECIFICATION EN-ISO6892-1 DIRECTION OF THE TEST PIECE: L

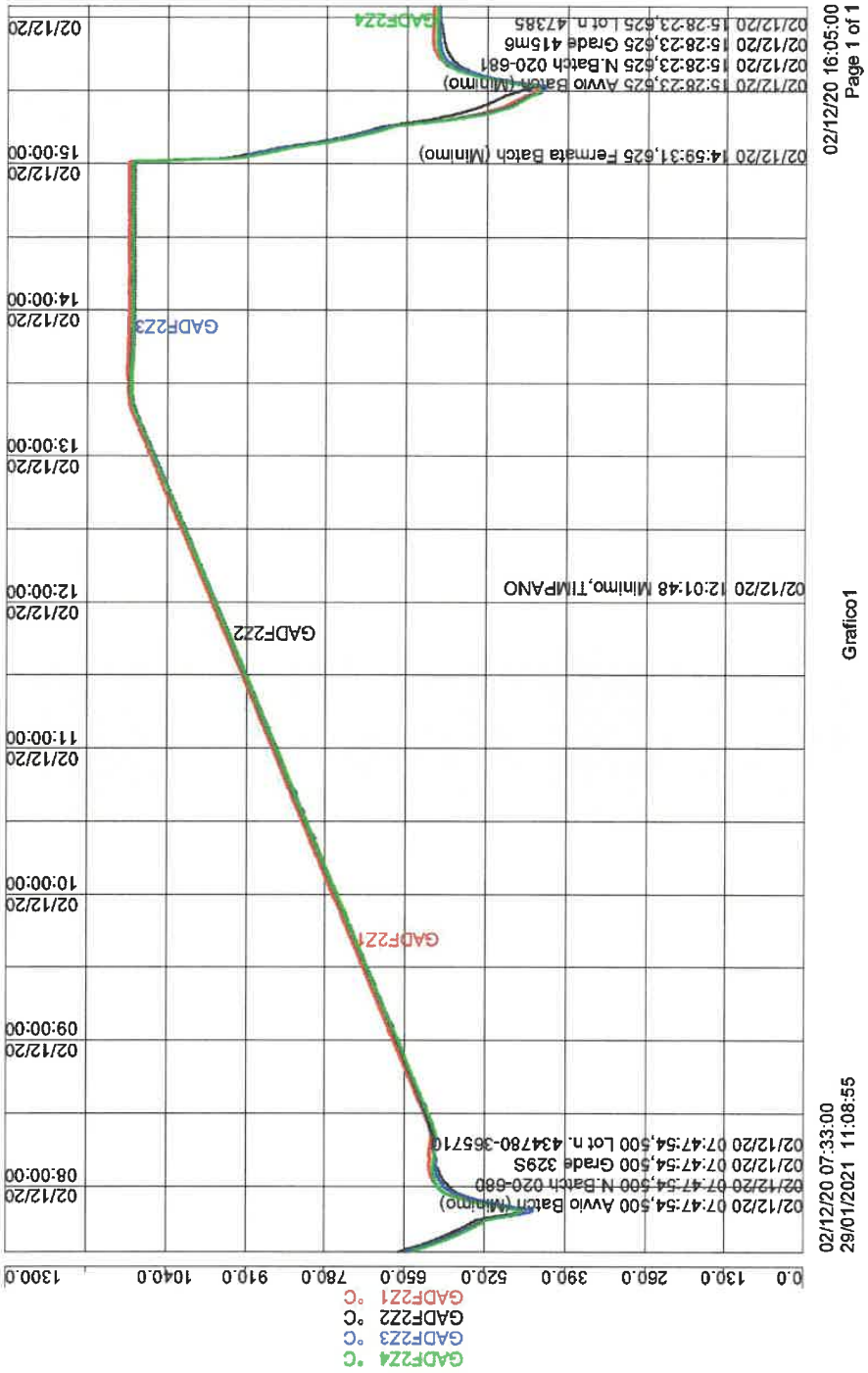
	Rm_C	Rp02_C	A	Z_C
MEASUREMENT UNIT	MPA	MPA	%	%
			5.0 D	
OBTAINED	801	553	40,1	81,0

STEELMAKING EAF + AOD + CONTINUOUS CASTING
HOT ROLLED
METALLOGRAPHIC INSPECTION ACCORDING TO ASTM A923 METHOD A: SATISFACTORY.
IMPACT TEST VALUES AT -46°C ARE NOT LESS THAN THOSE AT -50°C HERE STATED.
QTC ON PROLONGATION OF BARS TESTS AT MID RADIUS (CENTER POS. FOR SIZES <2 INCHES).
ASTM A484 DOES NOT APPLY FOR SIZE AND LENGTH TOLERANCES.
MARKING: PRODUCER LOGO, MATERIAL NO, HEAT NO, LOT NR.
ALL THE NORMS MENTIONED ARE INTENDED IN THEIR LAST REVISION AT THE DATE OF ISSUE OF THIS DOCUMENT.
COUNTRY OF ORIGIN: ITALY, THE MATERIAL COMPLIES WITH FAR DFARS
252.225-7009 ALT 1.
THE PRODUCT SATISFIES CE DIRECTIVES EU: 2015/863 (ROHS3) - 2011/65 (ROHS2) - 2000/53 - 2002/95(RoHS) - 2003/11 - 2005/618 AND PED 2014/68.
THE MATERIAL IS FREE OF ANY MERCURY, MERCURY COMPOUNDS AND OR RADIUM CONTAMINATION AT TIME OF SHIPMENT AND WAS PRODUCED WITHOUT USING OZONE DEPLETING SUBSTANCES OF CLASS I AND II.
VISUAL SURFACE INSPECTION AND EDDY CURRENT WITH ROTATING HEAD ACCORDING TO EN 10277-1 Class 4 : SATISFACTORY . DIMENSIONAL TEST ACCORDING TO EN 10278 : SATISFACTORY . ULTRASONIC TEST IN ACCORDING TO EN 10308 , Class 3 : SATISFACTORY . ANTIMIX SPECTROMETER CONTROL WITH PORTABLE PRODUCT : SATISFACTORY . NOT BEEN MADE BY ANY REPAIR MATERIAL WELDING
CORROSION TEST ACCORDING TO ASTM A262 Method E EN ISO 3651-2: SATISFACTORY. NO CRACKS AT 20X MAGNIFICATION

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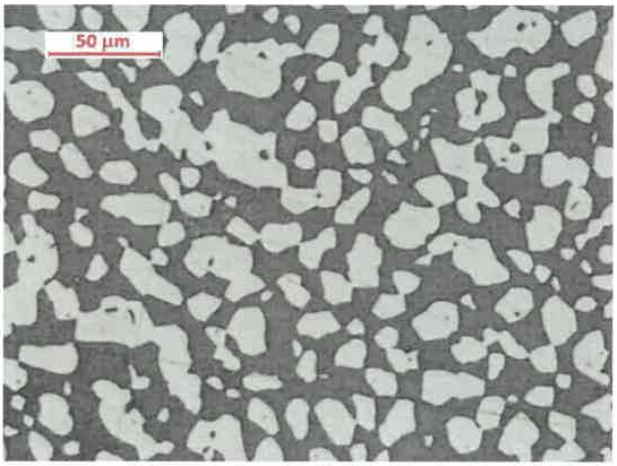
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Via Paravera, 16
I-11100 AOSTA

MICROPHOTO
МИКРОСЪЁМКА

All.N 1

MARCA *NUANCES* *WERKESTOFF* *GRADE* *МАРКА*	329S	*LOTTO DI CONTROLLO* *LOT DE CONTRÔLE* *LAUFKARTE* *CONTROL LOT* *ПАРТИЯ КОНТРОЛЯ*	020000854164
COLATA *COULEE* *SCHMELZE* *HEAT* *ПЛАВКА*	070136	*REAGENTE* *RÉACTIF* *REAGENS* *ETCHANT* *РЕАГЕНТ*	20 % NaOH electrolyte
TIPO DI APPARECCHIO *TIPE D'APPAREIL* *PRUEFGERAT TYP* *INSTRUMENT TYPE* *ТИП АППАРАТА*		**MICROSCOPE – LEICA** **MEF4M МИКРОСКОП**	
INGRANDIMENTO *AGRANDISSEMENT* *VERGRÖSSERUNG* *ENLARGEMENT* *УВЕЛИЧЕНИЕ*		**400 X**	
DIREZIONE D'ESAME *DIRECTION D'EXAMEN* *PRUEFRICHTUNG* SCANNING DIRECTION НАПРАВЛЕНИЕ ПРИ ИССЛЕДОВАНИИ	☐ **LONGITUDINALE - LONGITUDINAL - ПРОДОЛЬНОЕ** ☒ **TRASVERSALE – TRANSVERSAL – KREUZEND-ПОПЕРЕЧНОЕ**		

PHOTO (ELECTRONIC IMAGE) – ФОТОСНИМКИ (ЭЛЕКТРОННОЕ ИЗОБРАЖЕНИЕ)



	FIRMA / UNTERSCHRIFT / SIGNATURE / ПОДПИСЬ	DATA / DATUM / DATE / ДАТА
NOTE: ПРИМЕЧАНИЯ: "Free from Intermetallic Phases"	Badiluzzo / Frison	14/12/20

Mod.Micro Rev.4

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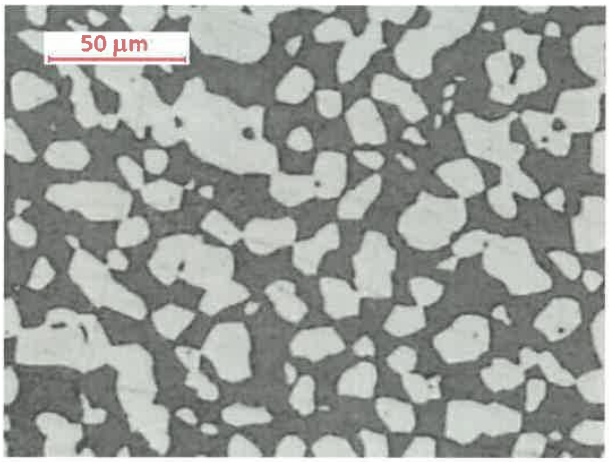
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Via Paravera, 16
I-11100 AOSTA

MICROPHOTO
МИКРОСЪЁМКА

All.N 2

MARCA *NUANCES* *WERKESTOFF* *GRADE* *МАРКА*	329S	*LOTTO DI CONTROLLO* *LOT DE CONTRÔLE* *LAUFKARTE* *CONTROL LOT* *ПАРТИЯ КОНТРОЛЯ*	020000854164
COLATA *COULEE* *SCHMELZE* *HEAT* *ПЛАВКА*	070136	*REAGENTE* *RÉACTIF* *REAGENS* *ETCHANT* *РЕАГЕНТ*	20 % NaOH electrolyte
TIPO DI APPARECCHIO *TIPE D'APPAREIL* *PRUEFGERAT TYP* *INSTRUMENT TYPE* *ТИП АППАРАТА*		**MICROSCOPE – LEICA** **MEF4M МИКРОСКОП**	
INGRANDIMENTO *AGRANDISSEMENT* *VERGRÖSSERUNG* *ENLARGEMENT* *УВЕЛИЧЕНИЕ*		**500 X**	
DIREZIONE D'ESAME *DIRECTION D'EXAMEN* *PRUEFRICHTUNG* SCANNING DIRECTION НАПРАВЛЕНИЕ ПРИ ИССЛЕДОВАНИИ	☐ **LONGITUDINALE - LONGITUDINAL - ПРОДОЛЬНОЕ** ☒ **TRASVERSALE – TRANSVERSAL – KREUZEND-ПОПЕРЕЧНОЕ**		

PHOTO (ELECTRONIC IMAGE) – ФОТОСНИМКИ (ЭЛЕКТРОННОЕ ИЗОБРАЖЕНИЕ)



	FIRMA / UNTERSCHRIFT SIGNATURE / SIGNATURE ПОДПИСЬ	DATA / DATUM DATE / DATE ДАТА
NOTE: ПРИМЕЧАНИЯ: "Free from Intermetallic Phases"	Badiluzzo / Frison	14/12/20

Mod.Micro Rev.4

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CERTIFICATO DI COLLAUDO ULTRASUONI
CERTIFICAT DE CONTROLE PAR ULTRASONS
ULTRASCHALL PRUEFZEUGNIS
REPORT OF ULTRASONIC INSPECTION
ОТЧЕТ ОБ УЛЬТРАЗВУКОВОМ КОНТРОЛЕ

N. US.
122/2021

CLIENTE *CLIENTSGG* *BESTELLER* *CUSTOMER* ЗАКАЗЧИК		*CONFERMA* *CONFIRMATION* *AUFTRAGSBESTRAKTIGUNG* *CONFIRMATION* ПОДТВЕРЖД. ЗАКАЗА	
MARCA *NUANCES* *WERKESTOFF* *GRADE* МАРКА	329S W.No 1.4501	*ORDINE* *COMMANDE* *AUFTRAG* *ORDER* ЗАКАЗ	
SPECIFICA *SPECIFICATION* *PRUKEVORSCHRIFT* *SPECIFICATION* ТЕХ. ТРЕБОВАНИЯ	EN10308 prospetto3 cl3	*COLATA* *COULEE* *SCHMELZE* *HEAT* ПЛАВКА	70136
		SCHEDA *LOT* *LAUFKARTE* *LOT* ПАРТИЯ	365710
PRODOTTO *PRODUIT* *ERZEUGNISFORM* *PRODUCT* ИЗДЕЛИЕ	ROUND BARS 45 mm	*STATO DI LAVORAZIONE* *STADE DU PRODUIT* *LIEFERZUSTAND* *WORKING STEP* ОБРАБОТКА	PEELED
TIPO DI APPARECCHIO *TIPE D'APPAREILPARUS* *PRUEFGERAT TYP* *INSTRUMENT TYPE* ТИП АППАРАТА	USM36 18107589	*COSTRUTTORE* *CONSTRUCTEUR* *BAUART* *MAKE* ИЗГОТОВИТЕЛЬ	KRAUTKRAMER
TIPO DI SONDA *TIPE DE PALPEUR* *PRUFKOPT* *PROBETYPE* ТИП ЗОНДА	MSEB4S-E	*FREQUENZA* *FREQUENCE* *FREQUENZ* *FREQUENCY* ЧАСТОТА	4 MHz S/N 67259-50223

DIREZIONE D'ESAME
DIRECTION D'EXAMEN
PRUEFRICHTUNG
SCANNING DIRECTION
НАПРАВЛЕНИЕ ПРИ

- [X] *RADIALE - RADIAL*
- [ ] *ASSIALE - AXIAL*
- [ ] *SONDE ANGOLATE - ANGLE BEAMS*

- [ ] *MATRICOLA BLOCCO CAMPIONE*
  DENTIFICATION BLOC DE REFERENCE MUSTER BLOCK
  MUSTER BLOCK
  TEST BLOCK NR
  № ОБРАЗЦА ДЛЯ ИСПЫТАНИЯ

- [ ] *AVG SCALE* *ECRANS ABAQUES AVG* *AVG SKALEN* *AVG SCALE* ШКАЛА *AVG*
- [X] *AVG DIAGRAMMI* *DIAGRAMMES AVG* *AVG DIAGRAMM* *AVG DIAGRAM* ДИАГРАММЫ *AVG*
- [ ] V1
- [ ] V2

RISULTATODELL'ESAME
RESULTAT DE L' ESSAI
PRUEFERGERBNISSE
RESULT OF THE TEST
РЕЗУЛЬТАТ

EXAM DATA : 27/01/2021
INSPECTED N. BARS 25

THE MATERIAL IS IN ACCORDANCE TO THE FOLLOWING SPECIFICATIONS:
EN10308 prospetto3 cl3

L'ISPETTORE CND ZUSTANDER CND L'INSPECTEUR CND CND INSPECTOR ИНСПЕКТОР НРК	**III LIV.CND** III УРОВЕНЬ НРК		**DATA** DATUM DATE DATE ДАТА
NADALIN SIMONE Liv.II - ISO 9712 N° Cert.32040/PND/C	BAISOTTI MARCO Liv.III - ISO 9712 N° Cert.34194/PND/C		29/01/2021

(Mod. Certus Rev. 6)

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FORGIATURA MODERNA ARESE

CERTIFICATO DI COLLAUDO

Inspection certificate / Certificat de recette

EN10204/3.1

MD 752011.000

N° 2201656

Del 09/11/22

Foglio 1 di 1

CLIENTE - Cod. A1162 Purchaser/Client	ORDINE Order/Commande	MATERIALE Material/Matiere
INDRA S.R.L.	AF22 02440	ASTM A479 USN32760 (F55) - API 6A 60K

SPECIFICHE RICHIESTE
Specification request/Specifications technique

ASTM + NACE MR0175/ISO15156/MR0103 + API 6A 60K PSL4 + SPEC. G0064BT REV.0

DESCRIZIONE MATERIALE Material description	DISEGNO/DIMEN. Drawing/Dimension	COLATA Heat/Coulee	PROVA Test N°	COMM. Prod. Ord.	POS
N°1 ROUND BAR, SOLUTIONED AT 1100°C	Ø 55 X MT.21	178391	221852	1280/4	40

CARATTERISTICHE MECCANICHE
Mechanical requirements/Caracteristiques mecaniques

					Rp - Yp N/mm2	Rm - Ts N/mm2	A - E %	Z - Ra %	KV -46°C Joule			HB
PROVA Specimen	DIREZ. Direction	Ø mm	Lo mm	Min Max	**550**	**760**	**25**	**35**	**27/20**			**174** **310**
221852	Lg. Tr.	12,50	50,00 10x10		562	794	43,1	79,2	338-353-349 105-98-129			237-235-235

CARATTERISTICHE CHIMICHE
Chemical requirements/Caracteristiques chimiques

		C	Mn	Si	P	S	Cr	Ni	Mo	N	Cu	W	PRE
Colata	Min						**24,00**	**6,00**	**3,00**	**0,20**	**0,50**	**0,50**	**40**
Heat	Max	**0,030**	**1,00**	**1,00**	**0,015**	**0,010**	**26,00**	**8,00**	**4,00**	**0,30**	**1,00**	**1,00**	
178391		0,021	0,61	0,36	0,015	0,0005	25,05	7,01	3,67	0,23	0,54	0,53	41

STEEL MAKING PRACTICE: EAF + AOD

VISUAL AND DIMENSIONAL INSPECTION CONFORMS TO CONTRACTUAL REQUIREMENTS - THE PRODUCTS ARE IN COMPLIANCE WITH THE REQUIREMENTS OF THE ORDER

Forgiatura Moderna Arese S.p.A.
Filippelli Serafino
Servizio Controllo Qualità
Quality Department

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FORGIATURA MODERNA ARESE

CERTIFICATO DI CONTROLLO ULTRASONORO

Ultrasonic control certificate

MD 752005.000

N°UT 2201656
Del 9-Nov-2022
Foglio 1 di 1

CLIENTE Customer/Client	ORDINE Order/Commande	MATERIALE Material/Matiere
INDRA S.R.L.	AF22 02440	ASTM A479 USN32760 (F55) - API 6A 60K

DESCRIZIONE MATERIALE Material description	DISEGNO/DIMEN. Drawing/Dimension	COLATA Heat/Coulee	PROVA Test N°	COMM. Prod. Ord.	POS
N°1 ROUND BAR, SOLUTIONED AT 1100°C	Ø 55 X MT.21	178391	221852	1280/4	40

SPECIFICA Specification	ESTENSIONE DELL'ESAME Test area / Extension de l'examen
ASTM A388 + MDSI REV.0	100% ALL SURFACES

TECNICE DELL'ESAME Inspection technique / Tecnique de l'examen	TARATURA Settings/Etalonnage	AMPLIFICAZIONE Amplification
BY REFLECTION	ACC. TO SPECIFICATION	+6dB
CONDIZIONI SUPERFICIALI Test surfaces status / Etat de surface	**MEZZO DI ACCOPPIAMENTO** Means of coupling / Moyen d'accouplement	**TIPO DI APPARECCHIATURA** Type of apparatus / Type d'appareil
NOT-MACHINED	CELLULOSA	GE USMGO

SONDA Probe / Palpeur	FREQUENZA Frequency / Frequence	ANGOLO DI EMISSIONE Emission Angle / Angle de emission	DIMENSIONI Dimension
GE B2S	2 Mhz	0°	Ø 24 mm.

RILEVAMENTO SCHEMATICO
Sketch of anomalies found / Croquis des anomalies trouves

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RISULTATI Results / Resultats	CONTROLLO ESEGUITO DA TECNICO QUALIFICATO II LIVELLO SNT-TC-1A & ISO 9712 Test personnel qualified to level II according to SNT-TC-1A & ISO 9712
CONFORMS TO SPECIFICATION	

NOTE:
Notes
ONLY WARRANTY

Forgiatura Moderna Arese
Luca Di Noi
II LEVEL
SNT-TC-1A/UNI EN ISO 9712

COGNE ACCIAI SPECIALI S.p.a.

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C.F. 02187360967
VAT: IT00571320076 - R.E.A. n. AO-50474

Company with management systems IGQ approved and certified according to ISO 9001, ISO/TS 16949 e ISO 14001.

INSPECTION CERTIFICATE 3.1 (EN 10204:2004)
DOCUMENT NUMBER 2018036042

CUSTOMER'S ORDER:	635		
MANUFACTURER'S WORKS:	AOSTA, VIA PARAVERA 16 - ITALY		
PRODUCER OF THE DOC:	QUALITY DEPARTMENT		
MANUFACTURER'S WORKS ORDER NO: 1105304 /10	MARK OF THE MANUFACTURER:	**COGNE**	
DISPATCH NOTE:	81219530 /10	WEIGHT: 14 KG	
THE CERTIFIED PRODUCTS ARE COMPLYING TO THE PURCHASE ORDER			
INTERNAL SPEC:	NORSOKREV5	TECHNICAL RULE:	
PRODUCT:	60362 PEL PEELED	ROUND BARS TOLERANCE:	ISOK11
SURFACE FINISH:	2B Cold Finished		
PRODUCT DELIVERY CONDITION:	RS SOLUTION ANNEALED		
PRODUCT DIMENSIONS (mm):	30,000	LENGTH (mm)	04000 /06200
GRADE:	F55 UNSS32760 1.4501	INTERNAL GRADE:	329S
IDENTIFICATION HEAT NO:	870052	IDENTIFICATION LOT NO:	673930
MARKING OF THE PRODUCT:	1.4501	TEST PIECE N:	393

REFERENCE NORMS:EN 10088-3, EN 10272, ASTM A276/ASME SA276, ASTM A479/ASME SA479, ISO15156-3/NACE MR0175, NACE MR0103, API 6A-PSL3, NORSOK M-650 REV.4/M-630 MDS D57 REV.5 QTR04 (up to 101.6mm), QTR05 (101.61-250mm). REFERENCE NORMS ONLY FOR CHEMICAL COMPOSITION: EN 10222-5, ASTM A182/ASME SA182, ASTM A484
HEAT TREATMENT: SOLUBILIZATION 1100 ° C 1.5 min / mm COOLING WATER TEMPERATURE BELOW 260 °C (FURNACE THERMOCOUPLES)
ASTM G48 A/ASTM A923 C TESTING CONDITIONS: Sample surface 120 GRIT, Solution 100g FeCl3.6H2O+900ml H20, T 50°C, 24h, no pitting at 20X.
STEELMAKING EAF + AOD + CONTINUOUS CASTING
HOT ROLLED
REDUCTION RATIO 76,3

CHEM. COMP. (%W/W) - LADLE ANALYSIS ACCORDING TO ASTME1019-A751-E1086-E415-A580
Control lot No. - Weight :020000736050 - 80.312 KG

ELEMENTS	C	Si	Mn	P	S	N	Cr	Mo	Ni	Cu
OBTAINED	0,019	0,38	0,56	0,021	0,0005	0,25	24,87	3,68	6,88	0,54

ELEMENTS	W	CV_F8
OBTAINED	0,54	41

CV_F8 = CR+(3.3*MO)+(16*N2)

HARDNESS TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000739366 - 1.784 KG
SPECIFICATION ENISO6506 HARDNESS TEST HB TESTING METHOD: 10/3000
OBTAINED 240

IMPACT TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000739366 - 1.784 KG
SPECIFICATION EN ISO 148-1-KV2 DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 20
MEASUREMENT UNIT J

OBTAINED	298	297	297

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INSPECTION CERTIFICATE 3.1 (EN 10204:2004)
DOCUMENT NUMBER 2018036042

TENSILE TEST IN AS DELIVERY CONDITION
Control lot No. - Weight :020000739366 - 1.784 KG
SPECIFICATION ASTMA370-E8-0.5"SPEC DIRECTION OF THE TEST PIECE: L

MEASUREMENT UNIT	Rm MPA	Rp02% MPA	Z %	Al2 % 4,0 D
OBTAINED	798	552	79,9	48,9

CORROSION
Control lot No. - Weight :020000739366 - 1.784 KG
SPECIFICATION ASTM G48 A
OBTAINED 0,1046

FERRITE %
Control lot No. - Weight :020000739366 - 1.784 KG
SPECIFICATION ASTME562 --
OBTAINED 53,75

MICROSTRUCTURE
Control lot No. - Weight :020000739366 - 1.784 KG
SPECIFICATION -- --
OBTAINED SATISFACTORY -

LATERAL EXPANSION
Control lot No. - Weight :020000739366 - 1.784 KG
SPECIFICATION ASTMA370 --
OBTAINED 2,5 2,6 2,7

SHEAR %
Control lot No. - Weight :020000739366 - 1.784 KG
SPECIFICATION ASTMA370 --
OBTAINED 100 100 100

HARDNESS TEST
Control lot No. - Weight :020000739366 - 1.784 KG
SPECIFICATION ASTMA370-E18 HARDNESS TEST HRC TESTING METHOD:
OBTAINED 25

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Company with management systems IQNet approved and certified according to ISO 9001, ISO/TS 16949 e ISO 14001.

INSPECTION CERTIFICATE 3.1 (EN 10204:2004)
DOCUMENT NUMBER 2018036042

IMPACT TEST
Control lot No. - Weight :020000739366 - 1.784 KG
SPECIFICATION ASTM A370-E23 TYPE A DIRECTION OF THE TEST PIECE: L
TYPE OF TEST PIECE KV
TEST TEMPERATURE °C 50-
MEASUREMENT UNIT J
OBTAINED 296 297 296

TENSILE TEST
Control lot No. - Weight :020000739366 - 1.784 KG
SPECIFICATION EN-ISO6892-1 DIRECTION OF THE TEST PIECE: L

	Rm C	Rp02 C	A	Z C
MEASUREMENT UNIT	MPA	MPA	% 5.0 D	%
OBTAINED	806	552	38,5	79,4

STEELMAKING EAF + AOD + CONTINUOUS CASTING
HOT ROLLED
METALLOGRAPHIC INSPECTION ACCORDING TO ASTM A923 METHOD A: SATISFACTORY.
IMPACT TEST VALUES AT -46°C ARE NOT LESS THAN THOSE AT -50°C HERE STATED.
QTC ON PROLONGATION OF BARS TESTS AT MID RADIUS (CENTER POS. FOR SIZES <2 INCHES).
ASTM A484 DOES NOT APPLY FOR SIZE AND LENGTH TOLERANCES.
MARKING: PRODUCER LOGO, MATERIAL NO, HEAT NO, LOT NR.
ALL THE NORMS MENTIONED ARE INTENDED IN THEIR LAST REVISION AT THE DATE OF ISSUE OF THIS DOCUMENT.
COUNTRY OF ORIGIN: ITALY, THE MATERIAL COMPLIES WITH FAR DFARS
252.225-7009 ALT 1.
THE PRODUCT SATISFIES CE DIRECTIVES: 2011/65 (ROHS2) - 2000/53 - 2002/95(RoHS) - 2003/11 - 2005/618 AND PED 2014/68/EU.
THE MATERIAL IS FREE OF ANY MERCURY, MERCURY COMPOUNDS AND OR RADIUM CONTAMINATION AT TIME OF SHIPMENT AND WAS PRODUCED WITHOUT USING OZONE DEPLETING SUBSTANCES OF CLASS I AND II.
VISUAL SURFACE INSPECTION AND EDDY CURRENT WITH ROTATING HEAD ACCORDING TO EN 10277-1 Class 4 : SATISFACTORY . DIMENSIONAL TEST ACCORDING TO EN 10278 : SATISFACTORY . ULTRASONIC TEST IN ACCORDING TO EN 10308 , Class 3 : SATISFACTORY . ANTIMIX SPECTROMETER CONTROL WITH PORTABLE PRODUCT : SATISFACTORY . NOT BEEN MADE BY ANY REPAIR MATERIAL WELDING
CORROSION TEST ACCORDING TO ASTM A262 Method E EN ISO 3651-2: SATISFACTORY. NO CRACKS AT 20X MAGNIFICATION

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DATE 28.06.2018

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Via Paravera, 16
I-11100 AOSTA

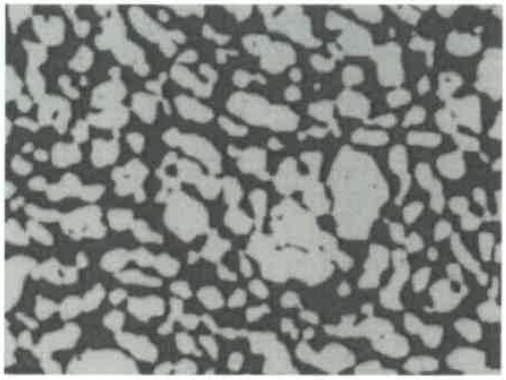
MICROPHOTO **All.N 1**
МИКРОСЪЁМКА

MARCA *NUANCES* *WERKESTOFF* *GRADE* *МАРКА*	329S	*LOTTO DI CONTROLLO* *LOT DE CONTRÔLE* *LAUFKARTE* *CONTROL LOT* *ПАРТИЯ КОНТРОЛЯ*	020000739366
COLATA *COULEE* *SCHMELZE* *HEAT* *ПЛАВКА*	870052	*REAGENTE* *RÉACTIF* *REAGENS* *ETCHANT* *РЕАГЕНТ*	20 % NaOH electrolyte
TIPO DI APPARECCHIO *TIPE D'APPAREIL* *PRUEFGERAT TYP* *INSTRUMENT TYPE* *ТИП АППАРАТА*		**MICROSCOPE – LEICA** **МЕF4М МИКРОСКОП**	
INGRANDIMENTO *AGRANDISSEMENT* *VERGROSSERUNG* *ENLARGEMENT* *УВЕЛИЧЕНИЕ*		**400 X**	

DIREZIONE D'ESAME
DIRECTION D'EXAMEN
PRUEFRICHTUNG
SCANNING DIRECTION
НАПРАВЛЕНИЕ
ПРИ ИССЛЕДОВАНИИ

☐ **LONGITUDINALE - LONGITUDINAL - ПРОДОЛЬНОЕ**
☒ **TRASVERSALE – TRANSVERSAL – KREUZEND-ПОПЕРЕЧНОЕ**

PHOTO (ELECTRONIC IMAGE) – ФОТОСНИМКИ (ЭЛЕКТРОННОЕ ИЗОБРАЖЕНИЕ)



NOTE:
ПРИМЕЧАНИЯ:
"Free from Intermetallic Phases"

FIRMA / UNTERSCHRIFT / SIGNATURE / ПОДПИСЬ	DATA / DATUM / DATE / ДАТА
Christian Del Guerra	20/06/18

Mod.Micro Rev.4

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COGNE ACCIAI SPECIALI S.p.a.
Via Paravera, 16
I-11100 AOSTA

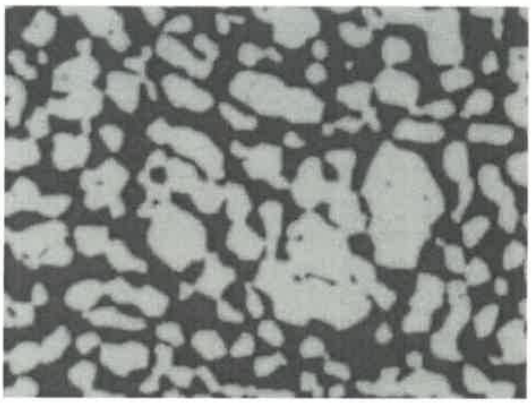
MICROPHOTO
МИКРОСЪЁМКА
All.N 2

MARCA NUANCES WERKESTOFF GRADE МАРКА	329S	LOTTO DI CONTROLLO LOT DE CONTRÔLE LAUFKARTE CONTROL LOT ПАРТИЯ КОНТРОЛЯ	020000739366
COLATA COULEE SCHMELZE HEAT ПЛАВКА	870052	REAGENTE RÉACTIF REAGENS ETCHANT РЕАГЕНТ	20 % NaOH electrolyte
TIPO DI APPARECCHIO TYPE D'APPAREIL PRUEFGERAT TYP INSTRUMENT TYPE ТИП АППАРАТА		MICROSCOPE – LEICA МЕF4М МИКРОСКОП	
INGRANDIMENTO AGRANDISSEMENT VERGRÖSSERUNG ENLARGEMENT УВЕЛИЧЕНИЕ		500 X	

DIREZIONE D'ESAME
DIRECTION D'EXAMEN
PRUEFRICHTUNG
SCANNING DIRECTION
НАПРАВЛЕНИЕ
ПРИ ИССЛЕДОВАНИИ

☐ LONGITUDINALE - LONGITUDINAL - ПРОДОЛЬНОЕ
☒ TRASVERSALE – TRANSVERSAL – KREUZEND-ПОПЕРЕЧНОЕ

PHOTO (ELECTRONIC IMAGE) – ФОТОСНИМКИ (ЭЛЕКТРОННОЕ ИЗОБРАЖЕНИЕ)

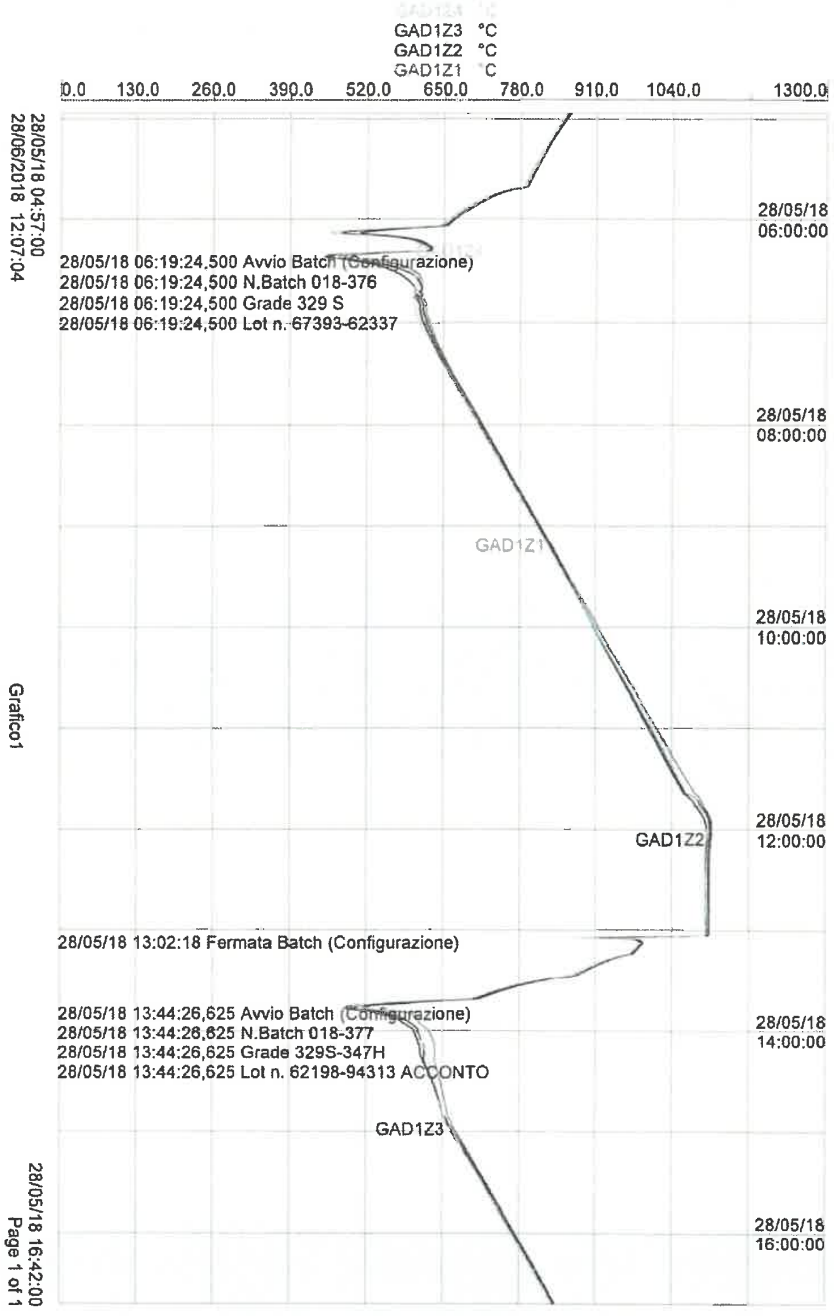


NOTE:
ПРИМЕЧАНИЯ:
"Free from Intermetallic Phases"

FIRMA UNTERSCHRIFT SIGNATURE SIGNATURE ПОДПИСЬ	DATA DATUM DATE DATE ДАТА
Christian Del Guerra	20/06/18

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COGNE ACCIAI SPECIALI S.P.A.

CERTIFICATO DI COLLAUDO ULTRASUONI
CERTIFICAT DE CONTROLE PAR ULTRASONS
ULTRASCHALL PRUEFZEUGNIS
REPORT OF ULTRASONIC INSPECTION
ОТЧЕТ ОБ УЛЬТРАЗВУКОВОМ КОНТРОЛЕ

N. US. 1217/18

CLIENTE / *CLIENTSGG* / *BESTELLER* / *CUSTOMER* / ЗАКАЗЧИК		*CONFERMA* / *CONFIRMATION* / *AUFTRAGSBESTRAKTIGUNG* / *CONFIRMATION* / ПОДТВЕРЖД. ЗАКАЗА	
MARCA / *NUANCES* / *WERKESTOFF* / *GRADE* / МАРКА	329S W.No 1.4501	*ORDINE* / *COMMANDE* / *AUFTRAG* / *ORDER* / ЗАКАЗ	
SPECIFICA / *SPECIFICATION* / *PRUEFVORSCHRIFT* / *SPECIFICATION* / ТЕХ. ТРЕБОВАНИЯ	EN10308 prospetto3 cl3	*COLATA* / *COULEE* / *SCHMELZE* / *HEAT* / ПЛАВКА	870052
		SCHEDA / *LOT* / *LAUFKARTE* / *LOT* / ПАРТИЯ	673930
PRODOTTO / *PRODUIT* / *ERZEUGNISFORM* / *PRODUCT* / ИЗДЕЛИЕ	ROUND BARS 30 mm	*STATO DI LAVORAZIONE* / *STADE DU PRODUIT* / *LIEFERZUSTAND* / *WORKING STEP* / ОБРАБОТКА	PEELED
TIPO DI APPARECCHIO / *TYPE D'APPAREIL/APPAR.* / *PRUEFGERAT TYP* / *INSTRUMENT TYPE* / ТИП АППАРАТА	USN60 L SW 16L021RC	*COSTRUTTORE* / *CONSTRUCTEUR* / *BAUART* / *MAKE* / ИЗГОТОВИТЕЛЬ	KRAUTKRAMER
TIPO DI SONDA / *TYPE DE PALPEUR* / *PRUFKOPF* / *PROBETYPE* / ТИП ЗОНДА	MSEB4S-E	*FREQUENZA* / *FREQUENCE* / *FREQUENZ* / *FREQUENCY* / ЧАСТОТА	4 MHz
DIREZIONE D'ESAME / *DIRECTION D'EXAMEN* / *PRUEFRICHTUNG* / *SCANNING DIRECTION* / НАПРАВЛЕНИЕ ПРИ	[X] *RADIALE - RADIAL* [ ] *ASSIALE - AXIAL* [ ] *SONDE ANGOLATE - ANGLE BEAMS*		
[ ] *MATRICOLA BLOCCO CAMPIONE* / *DENTIFICATION BLOC DE REFERENCE MUSTER BLOCK* / *MUSTER BLOCK* / *TEST BLOCK NR* / № ОБРАЗЦА ДЛЯ ИСПЫТАНИЯ			
[ ] *AVG SCALE* / *ECRANS ABAQUES AVG* / *AVG SKALEN* / *AVG SCALE* / ШКАЛА *AVG*	[X] *AVG DIAGRAMMI* / *DIAGRAMMES AVG* / *AVG DIAGRAMM* / *AVG DIAGRAM* / ДИАГРАММЫ *AVG*	[ ] V1	[ ] V2

RISULTATODELL'ESAME / RESULTAT DE L' ESSAI / PRUEFERGERBNISSE / RESULT OF THE TEST / РЕЗУЛЬТАТ

EXAM DATA : 26/06/2018
INSPECTED N. BARS 39

THE MATERIAL IS IN ACCORDANCE TO THE FOLLOWING SPECIFICATIONS:

EN10308 prospetto3 cl3

L'ISPETTORE CND ZUSTANDER CND / L'INSPECTEUR CND CND INSPECTOR / ИНСПЕКТОР НРК	**III LIV.CND** / **III УРОВЕНЬ НРК**		**DATA DATUM** / **DATE DATE** / **ДАТА**
BAISOTTI MARCO Liv.II - EN473 N° Cert.2074 I/PND/C	OLIVERO DIMITRI Liv.III - EN473 N° Cert.2334/PND/C		28/06/2018

(Mod. Certus Rev. 6)

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VITE BONNET / BONNET BOLTING

IPL S.r.l.
BULLONERIA - TIRANTERIA
SPECIALE E STANDARD

Via Papa Giovanni Paolo I, 306
21040 UBOLDO (VA)

Customer: **INDRA SRL**
C.SO XXII MARZO, 8
20135 MILANO (MI)

Date, 16-09-24 **Our Ref.** DDT 3254 / OC 1696 **of** 16-09-24 **Your Ref.** AF24 02662 01-08-24

CERTIFICATE UNI EN 10204 - 3.1 N.2402533

ITEM		QUANTITY	HEAT TREATMENT	PROTECTION	LOT nr.	HEAT nr.
59317M008020NF	HEX SOCKET HEAD CAP SCREW UNI 5931/ISO4762/DIN912 - A/SA/SA193 B7M M 8 x 20 HDG	30,00	quenched tempered	HOT DIP GALVANIZED ASTM A153 Cl. "C" / F2329	834977	BB7389*

101.99.0986CS

MECHANICAL PROPERTIES

values	R (MPa)	Rp 0,2 (MPa)	A4 (%)	Z (%)	HB (min. - max)
required	690 min	550 min	18 min.	50 min.	200 - 235
actual	697	570	32,0	64,1	206

CHEMICAL COMPOSITION

values	C (%)	Mn (%)	Si (%)	P (%)	S (%)	Cr (%)	Mo (%)
required	0,380 - 0,480	0,750 - 1,000	0,150 - 0,350	0,035 max	0,040 max	0,800 - 1,100	0,150 - 0,250
actual	0,435	0,770	0,190	0,011	0,0260	1,070	0,160

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remarks: chemical and mechanical values, at delivery condition, are quoted by the relevant steel work certificate. VISUAL AND DIMENSIONAL TEST SATISFACTORY
According to: ASME II part. A ed. 2021. Macroetch test according to ASTM E381 result: S1; R1; C1.

If not mentioned the above test are performed at room temperature.
We certify that the fasteners were manufactured, sampled, tested and inspected in accordance with the specification and are consistent with order prescriptions.
Quality assurance system in accordance to European Directive 2014/68/EU annex I par. 4.3 (PED) and AD 2000 Merkblatt W0.
Certificates 0045/202/WZ1921/23 and TN/AD2000-W0/1921/23 TÜV NORD Systems GmbH & Co. KG.

IPL S.R.L.
RSQ A. Grisetti

PART 2 – CERTIFICATION DOSSIER

CHAPTER 2

SECTION 6

INSPECTION AND TEST PLAN

Base Load Power Hub (BLPH)

INSPECTION AND TEST PLAN – BALL, DBB & SBB, MONOFLANGE

ber: 1724000798-QC-ITP-00002

ocument Class: 2

ROSETTI MARINO

1	NO COMMENTS - APPROVED - WORK MAY PROCEED
2	MINOR COMMENTS - REVISE AND RESUBMIT - WORK MAY PROCEED
3	MAJOR COMMENTS – REJECTED – DO NOT PROCEED
4	APPROVAL NOT REQUIRED

NOTE: Approval doesn't relieve the supplier from mandatory compliance with contractual documents and specifications. Comments made do not imply acceptance of any cost or delivery impact.

Sign	Date
ROSETTI MARINO SpA Stefano Linari Quality Control Dept.	07/03/2025

Rev.	Date	Description	Prepared	Reviewed	Approved
05	21/02/2025	Accepted for Construction (AFC)	F.CRIMELLA	G.GRANATA	A.DE CARLI
04	19/11/2024	Accepted for Construction (AFC)	F.CRIMELLA	G.GRANATA	A.DE CARLI
03	07/08/2024	Accepted for Construction (AFC)	F.CRIMELLA	G.GRANATA	A.DE CARLI
02	29/07/2024	Accepted for Construction (AFC)	F.CRIMELLA	G.GRANATA	A.DE CARLI
01	19/07/2024	Issue for Review (IFR)	F.CRIMELLA	G.GRANATA	A.DE CARLI
00	21/05/2024	Issue for Review (IFR)	F.CRIMELLA	G.GRANATA	A.DE CARLI

indra VALVES - ITALY

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File: 1724000798-QC-ITP-00002_5.*docx*

Revision / Change Log

Rev.	Description
00	Issue for Review (IFR)
01	Issue for Review (IFR)
02	Accepted for Construction (AFC)
03	Accepted for Construction (AFC)
04	Accepted for Construction (AFC)
05	Accepted for Construction (AFC)

HOLDS LIST

No.	Description
1	GAS TEST has been added but it has to be considered as option . This has been agreed during the KOM and i twill be unlocked within 04/06
2	
3	

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3.16 TESTING 12

3.17 PAINTING 12

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1 INTRODUCTION

1.1 PROJECT OVERVIEW

Crosswind, a Shell and Eneco joint venture, was awarded the tender to develop the offshore Hollandse Kust Noord (HKN) wind farm, located 18.5km off the coast of Netherlands near the town of Egmond aan Zee. The consortium plans to have HKN operational in 2023 with an installed capacity of 759MW generating at least 3.3TWh per year. This is sufficient renewable power to supply more than 1 million Dutch households with green electricity.

Offshore wind farms produce intermittent electricity and balancing these dips and peaks and integrating this electricity into the national energy system requires new technologies. For this reason, the offshore wind farm will include several new technologies that could be implemented at full-scale in the future. The new technologies being explored include a floating solar park, a short-duration battery storage as well as long-term storage via green hydrogen produced by water electrolysis and subsequently consumed in a fuel cell. The combination of these individual measures, herein referred to as the Base Load Power Hub (BLPH) will ensure a continuous power supply regardless of the wind situation.

1.1.1 Project Location

The Hollandse Kust Noord (HKN) wind farm is located 18.5km off the coast of the Netherlands near the town of Egmond aan Zee.

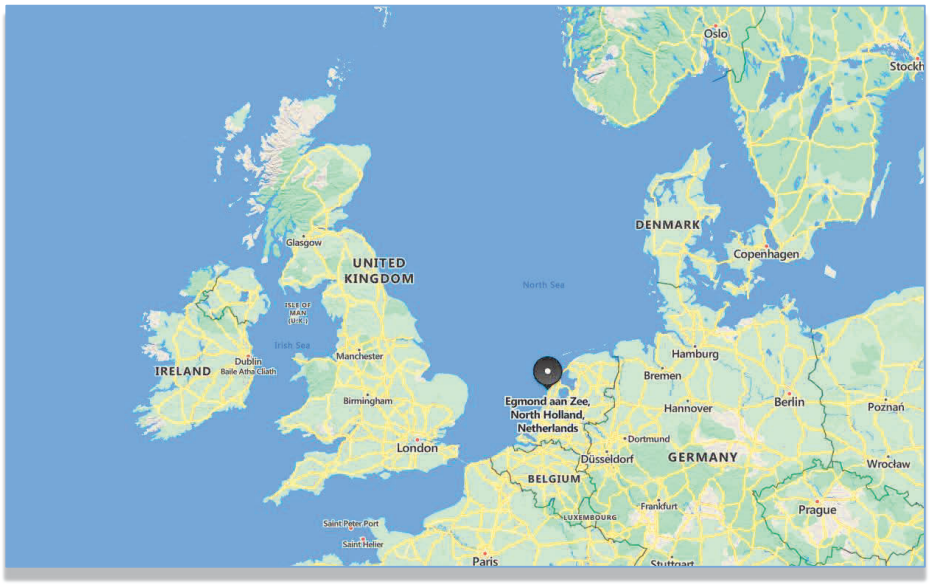


Figure 1 HOLLANDSE KUST NOORD WIND PARK Location Map



Figure 2 - Wind Park Details

The wind farm will consist of No. 69 x 11.5MW wind turbine generators each to be installed on a dedicated monopile structure. A 70th monopile located on coordinates E 590719.1, N 5841602.3 is reserved for installing the platform accommodating the BLPH. The monopile structure was designed and installed by Van Oord Offshore Wind (VooW) and therefore not part of the BLPH scope.

1.1.2 Project Concept

All components included in the BLPH will be integrated onshore on a topsides and installed in an offshore location within the boundaries of the HKN wind farm. At its simplest, the BLPH will store energy during periods of high electricity generation from renewable sources (a wind turbine generator and the floating solar PV farm) and release it during periods of low generation. In practice. It is expected that the energy stored will supplement generation from renewable sources to ensure that at least 1.0MW of power is exported to the electrical grid regardless of wind/solar availability.

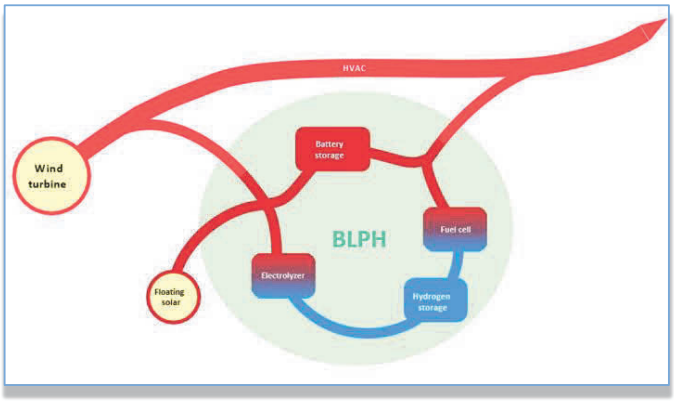


Figure 3 – BLPH Concept

Electricity in the BLPH will be stored in the form of electrons in a battery energy storage system (BESS) as well as converted into green hydrogen via water electrolysis. When the power output from the connecting wind turbine drops to below 1 MWe, the BLPH will return its stored energy to supplement the remaining power output. This will be by discharging the BESS, while stored hydrogen will be converted back into electricity using a fuel cell to extend the discharge duration.

The purpose of the BLPH s to function as a testbed for the integration of energy storage technologies with renewable generation. It is expected that equipment installed on the BLPH will operate as Normally Unmanned Installation for at least two (2) years with no or minimal maintenance and it will have its own independent control room with the ability to communicate with Crosswind's control room.

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2 DOCUMENT SCOPE

2.1 DEFINITIONS AND ABBREVIATIONS

COMPANY or Client (CPY):	Crosswind
CONTRACTOR (CTR):	ROSETTI MARINO S.p.A.
PROJECT:	HOLLANDSE KUST NOORD WIND PARK Project

Table 2 - Definitions and Abbreviations

	Inspection and Test Plan	Indra Document Nr.
		ITP - 24 01216
		P.O. Nr.
		1724000798

Reference		Scope of Supply
Client	ROSETTI MARINO SPA	INDRA SB/SBB/DBB BALL VALVES
P.O. Nr.	1724000798	AS PER P.O.
Indra Ref.	24 01216	
Project Data	HOLLANDSE KUST NOORD WIND PARK Project	

Notes:
ITP phases subordinate to technical alignment and GA Drawing approval.

Inspection Autorities		
IV	Indra s.r.l.	Manufacturer
A	ROSETTI MARINO SPA	Client/EPC
B	CROSSWIND	END USER
C	NACE Inspection Level II	TPI

Intervention Codes		
H	HOLD POINT	Work can not proceed without Inspection Autorities attendance.
M	MONITORING	Q.C. Surveliillance. Activity including Review of Documentation.
R	REVIEW	Review of Quality Documentation by the Inspection Autorities.
W	WITNESS	Ispection Request to be issued to the Inspection Autorities. If they do not attend work can proceed.

Revision Index					
Rev.	Date	Description	Prepared by	Verified by	Approved by
3	17/02/2025	Revised as per client comments			
2	07/08/2024	Revised as per client comments	C.Poni	G.Granata	A.DeCarli
1	19/07/2024	Revised as per client comments			
0	21/05/2024	First Issue for Indra job ITP - 24 01216			

	Inspection and Test Plan	Indra Document Nr.
		ITP - 24 01216
		P.O. Nr.
		1724000798

Pos. Nr.	Activity Description	Applicable Documents	Acceptance Criteria	Resp. Party	Intervention Code Inspection Autoritoes Signatures				Verifying Reporting Documents	Notes
					IV	A	B	C		
1 P.I.M	**Pre-Inspection Meeting**	-	-	Quality Control	N/A	N/A	N/A	N/A	-	
2 Material	**Body / Closure / Bonnet Body** Inward Inspection Including: - Heat number check for traceability - Visual and dimensional check - Review of material test certificate for mechanical, hardness test and chemical results.	ASTM A350 LF2 CL.1 ASTM A182 F316/316L ASTM A182 F55 ASTM B564 HASTELLOY	Applicable ASTM NACE MR 0175	Quality Control	H	R	R	N/A	Endorsment sub-supplier EN 10204 Type 3.1 Certificate	
3 Material	**Wetted parts** Inward Inspection Including: - Heat number check for traceability - Visual and dimensional check - Review of material test certificate for mechanical, hardness test and chemical results.	ASTM A479 TP.316/316L ASTM A479 F55 ASTM B574 HASTELLOY	Applicable ASTM NACE MR 0175	Quality Control	H	R	R	N/A	Endorsment sub-supplier EN 10204 Type 3.1 Certificate	
4 Material	**Boltings** Inward Inspection Including: - Heat number check for traceability - Visual and dimensional check - Review of material test certificate for mechanical, hardness test and chemical results.	ASTM A193 B7M / A194 GR.2HM + HDG ASTM A193 B8M CL.2 / A194 GR.8M	Applicable ASTM NACE MR 0175	Quality Control	H	R	R	N/A	Endorsment sub-supplier EN 10204 Type 3.1 Certificate	
5 Material	**Impact Test on Raw Material** ASTM A182 F55 (00.VSF.2685/00.VSF.2688/00.VSF.2692) Impact Test @-50°C 100% Body / Closure	Applicable ASTM	Applicable ASTM Acceptance Criteria Min.27 J	Quality Control	H	R	R	N/A	Impact Test Result on EN 10204 Type 3.1 Certificates	
6 Visual and Dimension	**Visual and Dimensional** 100% on any inward component	Indra Drawing 24 01216/GAD	Indra Drawing	Quality Control	H	R	R	N/A		

Notes:

	Inspection and Test Plan	Indra Document Nr.
		ITP - 24 01216
		P.O. Nr.
		1724000798

Pos. Nr.	Activity Description	Applicable Document	Acceptance Criteria	Resp. Party	Intervention Code / Inspection Autorities Signatures				Verifying Reporting Documents	Notes
					IV	A	B	C		
7 Manufacturing	**Manufacturing**	Indra Procedure: APD CP/VSF latest ed.	ASME	MNF dpt Quality Control	H	R	R	N/A		
8 NDE	**Dye Penetrant Test** where applicable Personnel Qualification UNI EN ISO 9712 Material: A182 F316/316L — Body/Closure/Bonnet Body: 100%	Indra Procedure: PT-DP-01 Rev.04 24 01216/NDE PROC Spec.123A90-DDL-PP-SP-70030 Rev.02	Indra Procedure: PT-DP-01 Rev.04	MNF dpt Quality Control	H	R	R	N/A	NDE Report	
9 NDE	**Hardness Test** Material / Body/Closure / Wetted Parts: A182 F316/316L - A479 316/316L: 100% / 100% A182 F55 / A479 F55: 100% / 100% A350 LF2 CL.1: 100% B564 - B574 HASTELLOY: 100% / 100%	Indra Procedure: PT-HT Rev.1 24 01216/NDE PROC	Indra Procedure: PT-HT Rev.1	MNF dpt Quality Control	H	R	R	N/A	NDE Report	
10 PMI	**Positive Material Identification (PMI)** Material / Body/Closure / Wetted Parts: A182 F316/316L - A479 316/316L: 100% / 100% A182 F55 / A479 F55: 100% / 100% B564 - B574 HASTELLOY: 100% / 100%	Indra Procedure: PT-PMI Rev.14 24 01216/NDE PROC	Indra Procedure: PT-PMI Rev.14	MNF dpt Quality Control	H	R	R	N/A	PMI Report	
11 Assembling	**Assembling**	Indra Procedure: APD CP/VSF latest ed.	-	Production dpt Quality Control	H	R	R	N/A		

Notes:

	Inspection and Test Plan	Indra Document Nr.
		ITP - 24 01216
		P.O. Nr.
		1724000798

Pos. Nr.	Activity Description	Applicable Document	Acceptance Criteria	Resp. Party	Intervention Code Inspection Autorities Signatures				Verifying Reporting Documents	Notes
					IV	A	B	C		
12 Visual and Dimensional	**Visual and Dimensional Final Check after Valve Assembling**	Indra Drawing 24 01216/GAD	Indra Drawing	Quality Control	H	R	R	N/A		
13 Testing	**Hydrostatic Shell Test** **Hydrostatic Seat Test** **Low Pressure Pneumatic Seat Test (Air)** **Cavity Relief Test**	Indra Procedure: PT-VSP-VSF-ITA-ENG last rev. 26 01216/HYDRO TEST PROC	Indra Procedure: PT-VSP-VSF-ITA-ENG last rev.	Testing dpt Quality Control	H	W 10%	W 10%	N/A	Test Report	
14 Testing	**Antistatic Test**	Indra Procedure: ATP-00 Rev.2	Indra Procedure: ATP-00 Rev.2	Testing dpt Quality Control	H	R	R	N/A	Test Report	
15 Testing	**Gas Test** (where applicable) 1 pc. x position	Indra Procedure: PGT-VSP-VSF-ITA-ENG (24-01216) Rev.0 24 01216/HELIUM TEST PROC	Indra Procedure: PGT-VSP-VSF-ITA-ENG (24-01216) Rev.0	Testing dpt Quality Control	H	R	R	N/A	Test Report	
16 Testing	**Fugitive Emission Production Test** **EN ISO 15848-2** (where applicable) 1 pc. x position	Indra Procedure: PFET (24-01216) Rev.0 25 01216/FUGIT TEST PROC	Indra Procedure: PFET (24-01216) Rev.0	Testing dpt Quality Control	H	W	W	N/A	Test Report	
17 Painting	**Painting of Valve as applicable**	Sub-supplier Procedure 24 01216/PAINT PROC Spec.123A90-DDL-MAT-SP-60006_02 Painting Systems: Cycle SYS-6A Final Colour TBA Cycle SYS-6C Final Colour TBA Cycle SYS-1 Final Colour TBA	Sub-supplier Procedure	Quality Control	H	R	R	W	Painting Report included Adhesion Test (Pull Off) Required Inspection NACE Level II/FROSIO	Activity performed at Sub-supplier (externally to Indra workshop) **NOTE 1**

Note 1: Visual Check of Painting at Indra Facility

			Indra Document Nr.
indra VALVES - ITALY		0	ITP - 24 01216
			P.O. Nr.
			1724000798

Pos. Nr.	Activity Description	Applicable Document	Acceptance Criteria	Resp. Party	Intervention Code / Inspection Autorities Signatures IV	A	B	C	Verifying Reporting Documents	Notes
18 Marking	**Marking and Tagging**	As per P.O. Indra Procedure: CP/VSP-VSF last ed. MSS- SP-25	As per P.O. MSS- SP-25	Warehouse Quality Control	H	R	R	N/A		
19 Packing and Shipping	**Preservation, Packing and Shipping**	Indra Procedure: CP/VSP-VSF last ed. 24 01216/PACK PROC	Indra Procedure: CP/VSP-VSF last ed.	Warehouse Quality Control	H	R	R	N/A	Packing List	
20 IRN	**Issue of Inspection Release Note (IRN)**	As per P.O.	As per P.O.	-	R	H	R	N/A	Inspection Release Note	
21 Final Check & Document	**Final Visual Check of Painting with DFT checking, Marking & & Tagging, Packing & Final Documentation** **Check of Spare Parts**	As per P.O. CP/VSP-VSF last ed. Test Report 24 01216/MRB	As per P.O.	Warehouse Quality Control	H	W	W	N/A	Final documentation	

Notes:

	INDRA	CROSSWIND				
ITEM NR	MODEL	DWG CODE	SAP CODE	DATA SHEET 123A90-DDL-PP-DS-70003 REV.02	TAG VALVE	NOTES
10	SB-598-20-E150RF3_E	00.VSF.2684/V	VBC0NN06943Q00	BS01C01RF	**BLPH-MV-111**	-
20	SB-598-25-F150RF3_F	00.VSF.2687/V	VBC0NN06950100	BS01C01RF	**BLPH-MV-210**	-
20	SB-598-25-F150RF3_F	00.VSF.2687/V	VBC0NN06950100	BS01C01RF	**BLPH-MV-242**	-
20	SB-598-25-F150RF3_F	00.VSF.2687/V	VBC0NN06950100	BS01C01RF	**BLPH-MV-447**	-
20	SB-598-25-F150RF3_F	00.VSF.2687/V	VBC0NN06950100	BS01C01RF	**BLPH-MV-448**	-
20	SB-598-25-F150RF3_F	00.VSF.2687/V	VBC0NN06950100	BS01C01RF	**BLPH-MV-449**	-
20	SB-598-25-F150RF3_F	00.VSF.2687/V	VBC0NN06950100	BS01C01RF	**BLPH-MV-450**	-
20	SB-598-25-F150RF3_F	00.VSF.2687/V	VBC0NN06950100	BS01C01RF	**BLPH-MV-451**	-
20	SB-598-25-F150RF3_F	00.VSF.2687/V	VBC0NN06950100	BS01C01RF	**BLPH-MV-452**	-
20	SB-598-25-F150RF3_F	00.VSF.2687/V	VBC0NN06950100	BS01C01RF	**BLPH-MV-453**	-
20	SB-598-25-F150RF3_F	00.VSF.2687/V	VBC0NN06950100	BS01C01RF	**BLPH-MV-454**	-
20	SB-598-25-F150RF3_F	00.VSF.2687/V	VBC0NN06950100	BS01C01RF	**BLPH-MV-455**	-
20	SB-598-25-F150RF3_F	00.VSF.2687/V	VBC0NN06950100	BS01C01RF	**BLPH-MV-456**	-
20	SB-598-25-F150RF3_F	00.VSF.2687/V	VBC0NN06950100	BS01C01RF	**BLPH-MV-457**	-
20	SB-598-25-F150RF3_F	00.VSF.2687/V	VBC0NN06950100	BS01C01RF	**BLPH-MV-458**	-
20	SB-598-25-F150RF3_F	00.VSF.2687/V	VBC0NN06950100	BS01C01RF	**BLPH-MV-459**	-
30	SB-598-40-H150RF3_H	00.VSF.2690/V	VBC0NN06961H00	BS01C01RF	**BLPH-MV-149**	LO
30	SB-598-40-H150RF3_H	00.VSF.2690/V	VBC0NN06961H00	BS01C01RF	**BLPH-MV-270**	LO
40	SB-598-HR-20-E150RF3_E	00.VSF.2693/V	VBC0NN24343Q00	BS01C01RFH	**BLPH-MV-024**	-
40	SB-598-HR-20-E150RF3_E	00.VSF.2693/V	VBC0NN24343Q00	BS01C01RFH	**BLPH-MV-028**	-
50	SB-598-HR-25-F150RF3_F	00.VSF.2694/V	VBC0NN24350100	BS01C01RFH	**BLPH-MV-172**	LO
50	SB-598-HR-25-F150RF3_F	00.VSF.2694/V	VBC0NN24350100	BS01C01RFH	**BLPH-MV-404**	-
50	SB-598-HR-25-F150RF3_F	00.VSF.2694/V	VBC0NN24350100	BS01C01RFH	**BLPH-MV-405**	-
50	SB-598-HR-25-F150RF3_F	00.VSF.2694/V	VBC0NN24350100	BS01C01RFH	**BLPH-MV-462**	-
50	SB-598-HR-25-F150RF3_F	00.VSF.2694/V	VBC0NN24350100	BS01C01RFH	**BLPH-MV-463**	-
60	SB-598-20-E150RF3_E	00.VSF.2685	VBC0NN24433Q00	BS01F01RF	**BLPH-MV-044**	Stem Extension 100mm
60	SB-598-20-E150RF3_E	00.VSF.2685	VBC0NN24433Q00	BS01F01RF	**BLPH-MV-054**	Stem Extension 100mm
60	SB-598-20-E150RF3_E	00.VSF.2685	VBC0NN24433Q00	BS01F01RF	**BLPH-MV-241**	Stem Extension 100mm
70	SB-598-25-F150RF3_F	00.VSF.2688	VBC0NN24440100	BS01F01RF	**BLPH-MV-048**	Stem Extension 100mm
70	SB-598-25-F150RF3_F	00.VSF.2688	VBC0NN24440100	BS01F01RF	**BLPH-MV-051**	Stem Extension 100mm
80	SB-598-50-J150RF3_J	00.VSF.2692	VBC0NN24460200	BA01F01RF	**BLPH-MV-464**	Stem Extension 100mm
80	SB-598-50-J150RF3_J	00.VSF.2692	VBC0NN24460200	BA01F01RF	**BLPH-MV-465**	Stem Extension 100mm
90	SB-598-20-E150RF3_E	00.VSF.2686/V	VBC0NN24703Q00	BS01B01RF	**BLPH-MV-275**	-
100	SB-598-25-F150RF3_F	00.VSF.2770/V	VBC0NN24710100	BS01B01RF	**BLPH-MV-263**	-
100	SB-598-25-F150RF3_F	00.VSF.2770/V	VBC0NN24710100	BS01B01RF	**BLPH-MV-419**	LC
110	SB-598-25-F150RF3-F-LF2	00.VSF.2689/V	VBC0NN24710100	BS01B01RF	**BLPH-MV-417**	Stem Extension 100mm - LC
120	SB-598-40-H150RF3_H	00.VSF.2691/V	VBC0NN24721H00	BS01B01RF	**BLPH-MV-412**	Stem Extension 100mm - LO
130	SB-59X-PE80-20-E-E	00.VSF.2683	VBC0NN24893Q00	BA01P01KT	**BLPH-MV-214**	Stem Extension 100mm
130	SB-59X-PE80-20-E-E	00.VSF.2683	VBC0NN24893Q00	BA01P01KT	**BLPH-MV-400**	Stem Extension 100mm
140	SB-598-HR-50-L150RF3_L	00.VSF.2695/V	VBD0NN16460300	BC01C01RFH	**BLPH-MV-402**	-
150	DBB-898-HR-25-F300RF3_F_D	00.VSF.2680/V	VLBBNN07190100	DA03C01RFH	**BLPH-MV-003**	LO
150	DBB-898-HR-25-F300RF3_F_D	00.VSF.2680/V	VLBBNN07190100	DA03C01RFH	**BLPH-MV-010**	FB - LO
150	DBB-898-HR-25-F300RF3_F_D	00.VSF.2680/V	VLBBNN07190100	DA03C01RFH	**BLPH-MV-018**	FB - LO
150	DBB-898-HR-25-F300RF3_F_D	00.VSF.2680/V	VLBBNN07190100	DA03C01RFH	**BLPH-MV-029**	LO
150	DBB-898-HR-25-F300RF3_F_D	00.VSF.2680/V	VLBBNN07190100	DA03C01RFH	**BLPH-MV-086**	LO
150	DBB-898-HR-25-F300RF3_F_D	00.VSF.2680/V	VLBBNN07190100	DA03C01RFH	**BLPH-MV-087**	LO
150	DBB-898-HR-25-F300RF3_F_D	00.VSF.2680/V	VLBBNN07190100	DA03C01RFH	**BLPH-MV-088**	LO
150	DBB-898-HR-25-F300RF3_F_D	00.VSF.2680/V	VLBBNN07190100	DA03C01RFH	**BLPH-MV-093**	LO
150	DBB-898-HR-25-F300RF3_F_D	00.VSF.2680/V	VLBBNN07190100	DA03C01RFH	**BLPH-MV-094**	LO
150	DBB-898-HR-25-F300RF3_F_D	00.VSF.2680/V	VLBBNN07190100	DA03C01RFH	**BLPH-MV-098**	LO
150	DBB-898-HR-25-F300RF3_F_D	00.VSF.2680/V	VLBBNN07190100	DA03C01RFH	**BLPH-MV-192**	LO
150	DBB-898-HR-25-F300RF3_F_D	00.VSF.2680/V	VLBBNN07190100	DA03C01RFH	**BLPH-MV-193**	LO
150	DBB-898-HR-25-F300RF3_F_D	00.VSF.2680/V	VLBBNN07190100	DA03C01RFH	**BLPH-MV-195**	LO
150	DBB-898-HR-25-F300RF3_F_D	00.VSF.2680/V	VLBBNN07190100	DA03C01RFH	**BLPH-MV-197**	LO
150	DBB-898-HR-25-F300RF3_F_D	00.VSF.2680/V	VLBBNN07190100	DA03C01RFH	**BLPH-MV-198**	LO
150	DBB-898-HR-25-F300RF3_F_D	00.VSF.2680/V	VLBBNN07190100	DA03C01RFH	**BLPH-MV-200**	LO
150	DBB-898-HR-25-F300RF3_F_D	00.VSF.2680/V	VLBBNN07190100	DA03C01RFH	**BLPH-MV-206**	LO
150	DBB-898-HR-25-F300RF3_F_D	00.VSF.2680/V	VLBBNN07190100	DA03C01RFH	**BLPH-MV-207**	LO

150	DBB-898-HR-25-F300RF3_F_D	00.VSF.2680/V	VLBBNN07190100	DA03C01RFH	**BLPH-MV-211**	LO
150	DBB-898-HR-25-F300RF3_F_D	00.VSF.2680/V	VLBBNN07190100	DA03C01RFH	**BLPH-MV-212**	FB - LO
150	DBB-898-HR-25-F300RF3_F_D	00.VSF.2680/V	VLBBNN07190100	DA03C01RFH	**BLPH-MV-384**	LO
150	DBB-898-HR-25-F300RF3_F_D	00.VSF.2680/V	VLBBNN07190100	DA03C01RFH	**BLPH-MV-385**	LO
150	DBB-898-HR-25-F300RF3_F_D	00.VSF.2680/V	VLBBNN07190100	DA03C01RFH	**BLPH-MV-390**	LO
150	DBB-898-HR-25-F300RF3_F_D	00.VSF.2680/V	VLBBNN07190100	DA03C01RFH	**BLPH-MV-391**	LO
150	DBB-898-HR-25-F300RF3_F_D	00.VSF.2680/V	VLBBNN07190100	DA03C01RFH	**BLPH-MV-426**	LO
150	DBB-898-HR-25-F300RF3_F_D	00.VSF.2680/V	VLBBNN07190100	DA03C01RFH	**BLPH-MV-428**	LO
150	DBB-898-HR-25-F300RF3_F_D	00.VSF.2680/V	VLBBNN07190100	DA03C01RFH	**BLPH-MV-434**	LO
150	DBB-898-HR-25-F300RF3_F_D	00.VSF.2680/V	VLBBNN07190100	DA03C01RFH	**BLPH-MV-435**	LO
322	DBB-898-HR-25-F300RF3_F_D	00.VSF.2680/V	VLBBNN07190100	DA03C01RFH	**BLPH-MV-466**	LO
160	DBB-898-HR-40-H300RF3_H_D	00.VSF.2681/V	VLBBNN07201H00	DA03C01RFH	**BLPH-MV-032**	FB - LO
160	DBB-898-HR-40-H300RF3_H_D	00.VSF.2681/V	VLBBNN07201H00	DA03C01RFH	**BLPH-MV-266**	FB - LO
160	DBB-898-HR-40-H300RF3_H_D	00.VSF.2681/V	VLBBNN07201H00	DA03C01RFH	**BLPH-MV-389**	FB - LO
160	DBB-898-HR-40-H300RF3_H_D	00.VSF.2681/V	VLBBNN07201H00	DA03C01RFH	**BLPH-MV-416**	FB - LO
160	DBB-898-HR-40-H300RF3_H_D	00.VSF.2681/V	VLBBNN07201H00	DA03C01RFH	**BLPH-MV-433**	FB - LO
160	DBB-898-HR-40-H300RF3_H_D	00.VSF.2681/V	VLBBNN07201H00	DA03C01RFH	**BLPH-MV-442**	FB - LO
323	DBB-898-HR-40-H300RF3_H_D	00.VSF.2681/V	VLBBNN07201H00	DA03C01RFH	**BLPH-MV-468**	FB - LO
170	DBB-898-HR-50-J300RF3_J_D	00.VSF.2682/V	VLBBNN07210200	DA03C01RFH	**BLPH-MV-019**	FB - LO
180	DBB-898-HR-100-N300RF3_N	00.VSF.2679/V	VLBBNN07230400	DA03C01RFH	**BLPH-MV-034**	FB - LO
180	DBB-898-HR-100-N300RF3_N	00.VSF.2679/V	VLBBNN07230400	DA03C01RFH	**BLPH-MV-222**	FB - LO
180	DBB-898-HR-100-N300RF3_N	00.VSF.2679/V	VLBBNN07230400	DA03C01RFH	**BLPH-MV-387**	FB - LO
180	DBB-898-HR-100-N300RF3_N	00.VSF.2679/V	VLBBNN07230400	DA03C01RFH	**BLPH-MV-423**	FB - LO
180	DBB-898-HR-100-N300RF3_N	00.VSF.2679/V	VLBBNN07230400	DA03C01RFH	**BLPH-MV-431**	FB - LO
180	DBB-898-HR-100-N300RF3_N	00.VSF.2679/V	VLBBNN07230400	DA03C01RFH	**BLPH-MV-440**	FB - LO
190	DBB-898-TRU-HR-150-Q300RF3_Q	00.VSFT.0223/V	VLBBNN07240600	DA03C01RFH	**BLPH-MV-035**	FB - LO
190	DBB-898-TRU-HR-150-Q300RF3_Q	00.VSFT.0223/V	VLBBNN07240600	DA03C01RFH	**BLPH-MV-264**	FB - LO
190	DBB-898-TRU-HR-150-Q300RF3_Q	00.VSFT.0223/V	VLBBNN07240600	DA03C01RFH	**BLPH-MV-388**	FB - LO
190	DBB-898-TRU-HR-150-Q300RF3_Q	00.VSFT.0223/V	VLBBNN07240600	DA03C01RFH	**BLPH-MV-424**	FB - LO
190	DBB-898-TRU-HR-150-Q300RF3_Q	00.VSFT.0223/V	VLBBNN07240600	DA03C01RFH	**BLPH-MV-432**	FB - LO
190	DBB-898-TRU-HR-150-Q300RF3_Q	00.VSFT.0223/V	VLBBNN07240600	DA03C01RFH	**BLPH-MV-441**	FB - LO
200	SBB-798-25-F150RF3_F_D	00.VSF.2697/V	VLBLNN01280100	BS01B01RFS	**BLPH-MV-269**	LO
200	SBB-798-25-F150RF3_F_D	00.VSF.2697/V	VLBLNN01280100	BS01B01RFS	**BLPH-MV-271**	LO
200	SBB-798-25-F150RF3_F_D	00.VSF.2697/V	VLBLNN01280100	BS01B01RFS	**BLPH-MV-409**	LC
210	SBB-798-40-F150RF3_H_D	00.VSF.2699/V	VLBLNN01291H00	BS01B01RFS	**BLPH-MV-278**	FB-LO
220	SBB-798-HR-25-F150RF3_F_D	00.VSF.2701/V	VLBLNN01320100	BS01C01RFHS	**BLPH-MV-007**	-
220	SBB-798-HR-25-F150RF3_F_D	00.VSF.2701/V	VLBLNN01320100	BS01C01RFHS	**BLPH-MV-009**	-
230	SBB-798-40-H150RF3_H_D	00.VSF.2698	VLBLNN01381H00	BS01F01RFS	**BLPH-MV-043**	Stem Extension 100mm
230	SBB-798-40-H150RF3_H_D	00.VSF.2698	VLBLNN01381H00	BS01F01RFS	**BLPH-MV-050**	Stem Extension 100mm
240	SBB-798-25-F150RF3_F_D	00.VSF.2696/V	VLBLNN01410100	BS01C01RFS	**BLPH-MV-001**	Stem Extension 100mm
250	SBB-798-HR-50-J150RF3-J-D	00.VSF.2702/V	VLBLNN01430200	BA01C01RFHS	**BLPH-MV-002**	FB - LO
250	SBB-798-HR-50-J150RF3-J-D	00.VSF.2702/V	VLBLNN01430200	BA01C01RFHS	**BLPH-MV-016**	LO
260	SBB-798-HR-100-N150RF3-N-D	00.VSF.2700/V	VLBLNN01450400	BA01C01RFHS	**BLPH-MV-006**	FB-LO
260	SBB-798-HR-100-N150RF3-N-D	00.VSF.2700/V	VLBLNN01450400	BA01C01RFHS	**BLPH-MV-033**	FB - LO
260	SBB-798-HR-100-N150RF3-N-D	00.VSF.2700/V	VLBLNN01450400	BA01C01RFHS	**BLPH-MV-191**	FB - LO
260	SBB-798-HR-100-N150RF3-N-D	00.VSF.2700/V	VLBLNN01450400	BA01C01RFHS	**BLPH-MV-194**	FB - LO
260	SBB-798-HR-100-N150RF3-N-D	00.VSF.2700/V	VLBLNN01450400	BA01C01RFHS	**BLPH-MV-196**	FB - LO
260	SBB-798-HR-100-N150RF3-N-D	00.VSF.2700/V	VLBLNN01450400	BA01C01RFHS	**BLPH-MV-199**	FB - LO
260	SBB-798-HR-100-N150RF3-N-D	00.VSF.2700/V	VLBLNN01450400	BA01C01RFHS	**BLPH-MV-201**	FB - LO
270	SB-598-TRU-HR-150-Q150RF3-Q	00.VSFT.0224/V	VLBLNN01460600	BA01C01RFHS	**BLPH-MV-005**	FB-LO
280	DBB-737-HR-E300RF3-D-D	00.MNF.0604/V	VLBMNN00013Q0H	MD03C02YH	**BLPH-MV-013**	-
280	DBB-737-HR-E300RF3-D-D	00.MNF.0604/V	VLBMNN00013Q0H	MD03C02YH	**BLPH-MV-014**	-
280	DBB-737-HR-E300RF3-D-D	00.MNF.0604/V	VLBMNN00013Q0H	MD03C02YH	**BLPH-MV-091**	-
280	DBB-737-HR-E300RF3-D-D	00.MNF.0604/V	VLBMNN00013Q0H	MD03C02YH	**BLPH-MV-092**	-
280	DBB-737-HR-E300RF3-D-D	00.MNF.0604/V	VLBMNN00013Q0H	MD03C02YH	**BLPH-MV-096**	-
280	DBB-737-HR-E300RF3-D-D	00.MNF.0604/V	VLBMNN00013Q0H	MD03C02YH	**BLPH-MV-097**	-
280	DBB-737-HR-E300RF3-D-D	00.MNF.0604/V	VLBMNN00013Q0H	MD03C02YH	**BLPH-MV-204**	-
280	DBB-737-HR-E300RF3-D-D	00.MNF.0604/V	VLBMNN00013Q0H	MD03C02YH	**BLPH-MV-205**	-
280	DBB-737-HR-E300RF3-D-D	00.MNF.0604/V	VLBMNN00013Q0H	MD03C02YH	**BLPH-MV-282**	-
280	DBB-737-HR-E300RF3-D-D	00.MNF.0604/V	VLBMNN00013Q0H	MD03C02YH	**BLPH-MV-283**	-
280	DBB-737-HR-E300RF3-D-D	00.MNF.0604/V	VLBMNN00013Q0H	MD03C02YH	**BLPH-MV-421**	-
280	DBB-737-HR-E300RF3-D-D	00.MNF.0604/V	VLBMNN00013Q0H	MD03C02YH	**BLPH-MV-422**	-
280	DBB-737-HR-E300RF3-D-D	00.MNF.0604/V	VLBMNN00013Q0H	MD03C02YH	**BLPH-MV-438**	-
280	DBB-737-HR-E300RF3-D-D	00.MNF.0604/V	VLBMNN00013Q0H	MD03C02YH	**BLPH-MV-439**	-
290	SBB-727-HR-E150RF3-D-D	00.MNF.0608/V	VLBNNN00023Q0H	MS01C02YH	**BLPH-MV-025**	-
290	SBB-727-HR-E150RF3-D-D	00.MNF.0608/V	VLBNNN00023Q0H	MS01C02YH	**BLPH-MV-038**	-
290	SBB-727-HR-E150RF3-D-D	00.MNF.0608/V	VLBNNN00023Q0H	MS01C02YH	**BLPH-MV-213**	-
290	SBB-727-HR-E150RF3-D-D	00.MNF.0608/V	VLBNNN00023Q0H	MS01C02YH	**BLPH-MV-407**	-
300	SBB-727-E150RF3-D-D	00.MNF.0605/V	VLBNNN00033Q0H	MS01C02Y	**BLPH-MV-150**	-
300	SBB-727-E150RF3-D-D	00.MNF.0605/V	VLBNNN00033Q0H	MS01C02Y	**BLPH-MV-151**	-
310	SBB-727-E150RF3-D-D	00.MNF.0612/V	VLBNNN00063Q0H	MS01B02Y	**BLPH-MV-166**	-
310	SBB-727-E150RF3-D-D	00.MNF.0612/V	VLBNNN00063Q0H	MS01B02Y	**BLPH-MV-167**	-
310	SBB-727-E150RF3-D-D	00.MNF.0612/V	VLBNNN00063Q0H	MS01B02Y	**BLPH-MV-386**	-
320	SBB-727-E150RF3-D-D	00.MNF.0606/V	VLBNNN00063Q0H	MS01B02Y	**BLPH-MV-411**	Stem Extension 100mm
321	SB-598-50-L150RF3-L-LF2	00.VSF.2716/V	VBD0NN16610300	BC01B01RF	**BLPH-MV-467**	Stem Extension 100mm
324	SBB-798-25-F150RF3-F-D-	00.VSF.2784(T)	VLBLNN01370100	BS01F01RFS	**BLPH-MV-469**	Stem Extension 100mm
324	SBB-798-25-F150RF3-F-D-	00.VSF.2784(T)	VLBLNN01370100	BS01F01RFS	**BLPH-MV-470**	Stem Extension 100mm
324	SBB-798-25-F150RF3-F-D-	00.VSF.2784(T)	VLBLNN01370100	BS01F01RFS	**BLPH-MV-471**	Stem Extension 100mm

PART 2 – CERTIFICATION DOSSIER

CHAPTER 2

SECTION 8

NON-DESTRUCTIVE TESTING CERTIFICATES/REPORTS

ROSETTI MARINO ITEM 10

COD.VBC0NN06943Q00

TAG: BLPH-MV-111

INDRA ITEM 10

COD. 00.VSF.2684/V

	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 516-2024_24-01216-p10 Data/*Date* : 16-Sep-2024	MD/PMI-VSF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	**COMMESSA INDRA** *Indra Job No.*	24 01216	**NR. D'ORDINE CLIENTE** *Customer Order No.*	1724000798 REV.2	**DEL** *Dated*	26-Jun-2024	**POSIZIONE D'ORDINE CLIENTE** *Customer Item*	10	**POSIZIONE D' ORDINE INDRA** *Indra Item*	10
Percentuale particolari da testare *Percentage of elements to be tested*		100%		**CODICE** *Code*	00.VSF.2684/V	**DESCRIZIONE** *Description*	SB-598-20-E150RF3-E-DLF-DL-CA3-N-RG-L1-TG-TGW-TV-PMI2-PD2-BI-CR-TA-FS-SPC1			**Q.tà da produrre (pz.)** *No. of pieces to be produced*	1

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 105942

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
1,1	981E.01.0013DLN(T)	Valve body	1	Heat : 434829 (Lot OE-00223)	MEST154678/2023/ - UT23006747	316/316L	16,55	10,00	2,05	1,88	OK
1,2	980E.02.0014DLN(T)	Closer	1	Heat : 436801 (Lot OE-05955)	MEST100392/2023/ - UT23004311	316/316L	16,71	10,20	2,10	1,91	OK
1,3	980F.04.0001DLN(T)	Stem of ball	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,47	10,34	2,18	1,77	OK
1,4	98E.07.0001DLN(T)	Ball	1	Heat : 372009 (Lot F23-3206)	2023008125	316/316L	16,63	10,26	2,14	1,93	OK

x CROSSWIND
16/10/24 R

NOTE / *Remarks* : PMI 100% on body, closer and wetted parts According to NDT PROCEDURE - PT/PMI Rev.14	Data prelievo componenti / *Date of components picking* : 16-Sep-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Testing instrument: X-Ray analyzer NITON XL2 980 GOLDD	Data verifica componenti / *Date of components verification* : 16-Sep-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Serial number: 85044 - expiry 15-November-2024	Data esecuzione PMI TEST / *Date of PMI TEST execution* : 16-Sep-2024	Firma /*Signature* THOMAS PETITTI PMI OPERATOR

indra VALVES - ITALY	**Project:** CROSSWIND 24 01216 / pos 10 - 00.VSF.2684/V PO 1724000798 REV.2 pos 10 - VBC0NN06943Q00
HARDNESS TEST REPORT **EN 10204 3.1 ed 2004**	**Client:** ROSETTI MARINO SPA **Report No.:** 016 **Date:** 16-Sep-2024 **Page 1 of 1**

Location/area: Indra S.r.l Magenta (MI)		**Material:** 316/316L

Testing instrument: Durometer 1600 HV
Serial Number: 32159000013 - expiry 17-April-2027
Hardness Test Procedure: PT-HT (24-01216) Rev. 0

Surface preparation:

Grinding	Machined X	Lapping	Filling	Other

Test position: see below table

Measuring unit:

Rockwell C(HRC)	**Brinell (HB) x**	**Shore**
Rockwell B(HRB)	**Vickers (HV)**	

Location	HARDNESS (average value)						
Valve body S.N 105942	185						
Closer S.N 105942	152						
Stem of ball S.N 105942	132						
Ball S.N 105942	209						

Sketch: 981E.01.0013DLN(T) - 980E.02.0014DLN(T) - 980F.04.0001DLN(T) - 98E.07.0001DLN(T)

Quality control	TPI Inspection	Client
Name: Petitti Thomas	Name:	Name:
Sign:	Sign:	Sign:
Date: 16-Sep-2024	Date:	Date:

x CROSSWIND R
16/10/24

ROSETTI MARINO ITEM 20

COD. VBC0NN06950100

TAG: BLPH-MV-210, BLPH-MV-242,

BLPH-MV-447, BLPH-MV-448, BLPH-MV-449, BLPH-MV-450, BLPH-MV-451, BLPH-MV-452, BLPH-MV-453, BLPH-MV-454, BLPH-MV-455, BLPH-MV-456, BLPH-MV-457, BLPH-MV-458 BLPH-MV-459

INDRA ITEM 20

COD. 00.VSF.2687/V

indra VALVES - ITALY	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 520-2024_24-01216-p20 Data/*Date* : 13-Sep-2024	MD/PMI-VSF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	**COMMESSA INDRA** *Indra Job No.*	24 01216	**NR. D'ORDINE CLIENTE** *Customer Order No.*	1724000798 REV.2	**DEL** *Dated*	26-Jun-2024	**POSIZIONE D'ORDINE CLIENTE** *Customer Item*	20	**POSIZIONE D' ORDINE INDRA** *Indra Item*	20
Percentuale particolari da testare *Percentage of elements to be tested*		100%		**CODICE** *Code*	00.VSF.2687/V			**DESCRIZIONE** *Description*	SB-S98-25-F150RF3-F-DLF-DL-CA3-N-RG-L1-TG-TGW-TV-PMI2-PD2-BI-CR-TA-FS-SPC1	**Q.tà da produrre (pz.)** *No. of pieces to be produced*	15

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 105943

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
1,1	981F.01.0003DLN(T)	Valve body	1	Heat : 434829 (Lot L23-1084)	MEST154678/2023/ - UT23006747	316/316L	16,70	10,19	2,26	1,86	OK
1,2	980F.02.0001DLN(T)	Closer	1	Heat : 434829 (Lot L23-1109)	MEST154678/2023/ - UT23006747	316/316L	16,63	10,12	2,16	1,92	OK
1,3	980F.04.0001DLN(T)	Stem of ball	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,40	10,33	2,21	2,00	OK
1,4	98F.07.0001DLN(T)	Ball	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,18	10,03	2,14	1,56	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 105944

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
2,1	981F.01.0003DLN(T)	Valve body	1	Heat : 434829 (Lot L23-1084)	MEST154678/2023/ - UT23006747	316/316L	16,74	10,24	2,25	1,97	OK
2,2	980F.02.0001DLN(T)	Closer	1	Heat : 434829 (Lot L23-1109)	MEST154678/2023/ - UT23006747	316/316L	16,57	10,16	2,16	1,98	OK
2,3	980F.04.0001DLN(T)	Stem of ball	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,31	10,20	2,27	1,87	OK
2,4	98F.07.0001DLN(T)	Ball	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,12	10,08	2,14	1,51	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 105945

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
3,1	981F.01.0003DLN(T)	Valve body	1	Heat : 434829 (Lot L23-1084)	MEST154678/2023/ - UT23006747	316/316L	16,63	10,18	2,26	1,91	OK
3,2	980F.02.0001DLN(T)	Closer	1	Heat : 434829 (Lot L23-1109)	MEST154678/2023/ - UT23006747	316/316L	16,64	10,19	2,14	1,94	OK
3,3	980F.04.0001DLN(T)	Stem of ball	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,50	10,18	2,29	1,87	OK
3,4	98F.07.0001DLN(T)	Ball	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,16	10,09	2,16	1,54	OK

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16/10/24 R

indra VALVES - ITALY	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 520-2024_24-01216-p20 Data/*Date* : 13-Sep-2024	MD/PMI-VSF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	**COMMESSA INDRA** *Indra Job No.*	24 01216	**NR. D'ORDINE CLIENTE** *Customer Order No.*	1724000798 REV.2	**DEL** *Dated*	26-Jun-2024	**POSIZIONE D'ORDINE CLIENTE** *Customer Item*	20	**POSIZIONE D' ORDINE INDRA** *Indra Item*	20
Percentuale particolari da testare *Percentage of elements to be tested*		100%		**CODICE** *Code*	00.VSF.2687/V	**DESCRIZIONE** *Description*	SB-598-25-F150RF3-F-DLF-DL-CA3-N-RG-L1-TG-TGW-TV-PMI2-PD2-BI-CR-TA-FS-SPC1	**Q.tà da produrre (pz.)** *No. of pieces to be produced*		15	

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 105946

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
4,1	981F.01.0003DLN(T)	Valve body	1	Heat : 434829 (Lot L23-1084)	MEST154678/2023/ - UT23006747	316/316L	16,67	10,21	2,28	1,88	OK
4,2	980F.02.0001DLN(T)	Closer	1	Heat : 434829 (Lot L23-1109)	MEST154678/2023/ - UT23006747	316/316L	16,55	10,15	2,15	1,91	OK
4,3	980F.04.0001DLN(T)	Stem of ball	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,30	10,17	2,26	1,97	OK
4,4	98F.07.0001DLN(T)	Ball	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,26	10,10	2,22	1,47	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 105947

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
5,1	981F.01.0003DLN(T)	Valve body	1	Heat : 434829 (Lot L23-1084)	MEST154678/2023/ - UT23006747	316/316L	16,66	10,23	2,16	1,88	OK
5,2	980F.02.0001DLN(T)	Closer	1	Heat : 434829 (Lot L23-1109)	MEST154678/2023/ - UT23006747	316/316L	16,73	10,19	2,20	1,89	OK
5,3	980F.04.0001DLN(T)	Stem of ball	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,44	10,24	2,22	1,94	OK
5,4	98F.07.0001DLN(T)	Ball	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,16	10,08	2,16	1,49	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 105948

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
6,1	981F.01.0003DLN(T)	Valve body	1	Heat : 434829 (Lot L23-1084)	MEST154678/2023/ - UT23006747	316/316L	16,62	10,25	2,16	1,98	OK
6,2	980F.02.0001DLN(T)	Closer	1	Heat : 434829 (Lot L23-1109)	MEST154678/2023/ - UT23006747	316/316L	16,64	10,12	2,10	1,86	OK
6,3	980F.04.0001DLN(T)	Stem of ball	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,37	10,17	2,20	1,88	OK
6,4	98F.07.0001DLN(T)	Ball	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,30	10,01	2,25	1,45	OK

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16/10/24 R

indra VALVES - ITALY	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 520-2024_24-01216-p20 Data/*Date* : 13-Sep-2024	MD/PMI-VSF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	**COMMESSA INDRA** *Indra Job No.*	24 01216	**NR. D'ORDINE CLIENTE** *Customer Order No.*	1724000798 REV.2	**DEL** *Dated*	26-Jun-2024	**POSIZIONE D'ORDINE CLIENTE** *Customer Item*	20	**POSIZIONE D' ORDINE INDRA** *Indra Item*	20
Percentuale particolari da testare *Percentage of elements to be tested*		100%		**CODICE** *Code*	00.VSF.2687/V			**DESCRIZIONE** *Description*	SB-598-25-F150RF3-F-DLF-DL-CA3-N-RG-L1-TG-TGW-TV-PMI2-PD2-BI-CR-TA-FS-SPC1	**Q.tà da produrre (pz.)** *No. of pieces to be produced*	15

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 105949

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
7,1	981F.01.0003DLN(T)	Valve body	1	Heat : 434829 (Lot L23-1084)	MEST154678/2023/ - UT23006747	316/316L	16,69	10,20	2,22	1,89	OK
7,2	980F.02.0001DLN(T)	Closer	1	Heat : 434829 (Lot L23-1109)	MEST154678/2023/ - UT23006747	316/316L	16,61	10,16	2,10	1,97	OK
7,3	980F.04.0001DLN(T)	Stem of ball	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,45	10,35	2,29	1,96	OK
7,1	98F.07.0001DLN(T)	Ball	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,24	10,09	2,18	1,55	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 105950

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
8,1	981F.01.0003DLN(T)	Valve body	1	Heat : 434829 (Lot L23-1084)	MEST154678/2023/ - UT23006747	316/316L	16,80	10,17	2,19	1,96	OK
8,2	980F.02.0001DLN(T)	Closer	1	Heat : 434829 (Lot L23-1109)	MEST154678/2023/ - UT23006747	316/316L	16,70	10,16	2,13	1,95	OK
8,3	980F.04.0001DLN(T)	Stem of ball	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,45	10,16	2,21	1,98	OK
8,4	98F.07.0001DLN(T)	Ball	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,12	10,10	2,16	1,58	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 105951

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
9,1	981F.01.0003DLN(T)	Valve body	1	Heat : 434829 (Lot L23-1084)	MEST154678/2023/ - UT23006747	316/316L	16,68	10,30	2,21	1,93	OK
9,2	980F.02.0001DLN(T)	Closer	1	Heat : 434829 (Lot L23-1109)	MEST154678/2023/ - UT23006747	316/316L	16,67	10,18	2,15	1,94	OK
9,3	980F.04.0001DLN(T)	Stem of ball	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,37	10,37	2,17	1,94	OK
9,4	98F.07.0001DLN(T)	Ball	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,20	10,07	2,21	1,45	OK

X CROSSWIND
16/10/24 R

	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 520-2024_24-01216-p20 Data/*Date* : 13-Sep-2024	MD/PMI-VSF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	**COMMESSA INDRA** *Indra Job No.*	24 01216	**NR. D'ORDINE CLIENTE** *Customer Order No.*	1724000798 REV.2	**DEL** *Dated*	26-Jun-2024	**POSIZIONE D'ORDINE CLIENTE** *Customer Item*	20	**POSIZIONE D' ORDINE INDRA** *Indra Item*	20
Percentuale particolari da testare *Percentage of elements to be tested*		100%		**CODICE** *Code*	00.VSF.2687/V			**DESCRIZIONE** *Description*	SB-598-25-F150RF3-F-DLF-DL-CA3-N-RG-L1-TG-TGW-TV-PMI2-PD2-BI-CR-TA-FS-SPC1	**Q.tà da produrre (pz.)** *No. of pieces to be produced*	15

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 105952

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
10,1	981F.01.0003DLN(T)	Valve body	1	Heat : 434829 (Lot L23-1084)	MEST154678/2023/ - UT23006747	316/316L	16,70	10,17	2,16	1,85	OK
10,2	980F.02.0001DLN(T)	Closer	1	Heat : 434829 (Lot L23-1109)	MEST154678/2023/ - UT23006747	316/316L	16,68	10,16	2,12	1,89	OK
10,3	980F.04.0001DLN(T)	Stem of ball	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,34	10,39	2,21	1,97	OK
10,4	98F.07.0001DLN(T)	Ball	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,19	10,10	2,18	1,49	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 105953

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
11,1	981F.01.0003DLN(T)	Valve body	1	Heat : 434829 (Lot L23-1084)	MEST154678/2023/ - UT23006747	316/316L	16,73	10,21	2,15	1,85	OK
11,2	980F.02.0001DLN(T)	Closer	1	Heat : 434829 (Lot L23-1109)	MEST154678/2023/ - UT23006747	316/316L	16,61	10,14	2,14	1,95	OK
11,3	980F.04.0001DLN(T)	Stem of ball	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,36	10,23	2,26	1,92	OK
11,4	98F.07.0001DLN(T)	Ball	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,17	10,01	2,10	1,59	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 105954

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
12,1	981F.01.0003DLN(T)	Valve body	1	Heat : 434829 (Lot L23-1084)	MEST154678/2023/ - UT23006747	316/316L	16,67	10,29	2,21	1,94	OK
12,2	980F.02.0001DLN(T)	Closer	1	Heat : 434829 (Lot L23-1109)	MEST154678/2023/ - UT23006747	316/316L	16,72	10,15	2,17	1,97	OK
12,3	980F.04.0001DLN(T)	Stem of ball	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,46	10,36	2,29	1,92	OK
12,4	98F.07.0001DLN(T)	Ball	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,14	10,02	2,13	1,45	OK

x CROSSWIND
16/10/24 R

indra VALVES - ITALY	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 520-2024_24-01216-p20 Data/*Date* : 13-Sep-2024	MD/PMI-VSF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	**COMMESSA INDRA** *Indra Job No.*	24 01216	**NR. D'ORDINE CLIENTE** *Customer Order No.*	1724000798 REV.2	**DEL** *Dated*	26-Jun-2024	**POSIZIONE D'ORDINE CLIENTE** *Customer Item*	20	**POSIZIONE D' ORDINE INDRA** *Indra Item*	20
Percentuale particolari da testare *Percentage of elements to be tested*		100%		**CODICE** *Code*	00.VSF.2687/V	**DESCRIZIONE** *Description*	SB-598-25-F150RF3-F-DLF-DL-CA3-N-RG-L1-TG-TGW-TV-PMI2-PD2-BI-CR-TA-FS-SPC1	**Q.tà da produrre (pz.)** *No. of pieces to be produced*		15	

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 105955

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
13,1	981F.01.0003DLN(T)	Valve body	1	Heat : 434829 (Lot L23-1084)	MEST154678/2023/ - UT23006747	316/316L	16,75	10,20	2,27	1,90	OK
13,2	980F.02.0001DLN(T)	Closer	1	Heat : 434829 (Lot L23-1109)	MEST154678/2023/ - UT23006747	316/316L	16,73	10,16	2,19	1,87	OK
13,3	980F.04.0001DLN(T)	Stem of ball	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,38	10,15	2,25	1,90	OK
13,4	98F.07.0001DLN(T)	Ball	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,22	10,03	2,20	1,57	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 105956

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
14,1	981F.01.0003DLN(T)	Valve body	1	Heat : 434829 (Lot L23-1084)	MEST154678/2023/ - UT23006747	316/316L	16,75	10,28	2,17	1,95	OK
14,2	980F.02.0001DLN(T)	Closer	1	Heat : 434829 (Lot L23-1109)	MEST154678/2023/ - UT23006747	316/316L	16,75	10,16	2,18	1,88	OK
14,3	980F.04.0001DLN(T)	Stem of ball	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,30	10,30	2,18	1,87	OK
14,4	98F.07.0001DLN(T)	Ball	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,22	10,08	2,21	1,52	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 105957

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
15,1	981F.01.0003DLN(T)	Valve body	1	Heat : 434829 (Lot L23-1084)	MEST154678/2023/ - UT23006747	316/316L	16,67	10,18	2,23	1,98	OK
15,2	980F.02.0001DLN(T)	Closer	1	Heat : 434829 (Lot L23-1109)	MEST154678/2023/ - UT23006747	316/316L	16,56	10,15	2,13	1,85	OK
15,3	980F.04.0001DLN(T)	Stem of ball	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,46	10,16	2,24	1,88	OK
15,4	98F.07.0001DLN(T)	Ball	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,30	10,03	2,25	1,59	OK

NOTE / *Remarks* : PMI 100% on body, closer and wetted parts According to NDT PROCEDURE - PT/PMI Rev.14	Data prelievo componenti / *Date of components picking* :	13-Sep-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Testing instrument: X-Ray analyzer NITON XL2 980 GOLDD	Data verifica componenti / *Date of components verification* :	13-Sep-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Serial number: 85044 - expiry 15-November-2024	Data esecuzione PMI TEST / *Date of PMI TEST execution* :	13-Sep-2024	Firma /*Signature* THOMAS PETITTI PMI OPERATOR

indra VALVES - ITALY	**Project:** CROSSWIND 24 01216 / pos 20 - 00.VSF.2687/V PO 1724000798 REV.2 pos 20 - VBC0NN06950100		
HARDNESS TEST REPORT **EN 10204 3.1 ed 2004**	**Client:** ROSETTI MARINO SPA	**Report No.:** 021 **Date:** 13-Sep-2024 **Page 1 of 3**	

Location/area: Indra S.r.l Magenta (MI)		**Material:** 316/316L

Testing instrument: Durometer 1600 HV
Serial Number: 32159000013 - expiry 17-April-2027
Hardness Test Procedure: PT-HT (24-01216) Rev. 0

Surface preparation:

Grinding	Machined X	Lapping	Filling	Other

Test position: see below table

Measuring unit:

Rockwell C(HRC)	**Brinell (HB) x**	**Shore**
Rockwell B(HRB)	**Vickers (HV)**	

Location	HARDNESS (average value)						
Valve body S.N 105943	154						
Closer S.N 105943	149						
Stem of ball S.N 105943	191						
Ball S.N 105943	206						
Valve body S.N 105944	160						
Closer S.N 105944	151						
Stem of ball S.N 105944	187						
Ball S.N 105944	203						
Valve body S.N 105945	159						
Closer S.N 105945	154						
Stem of ball S.N 105945	177						
Ball S.N 105945	201						
Valve body S.N 105946	162						
Closer S.N 105946	151						
Stem of ball S.N 105946	181						
Ball S.N 105946	212						
Valve body S.N 105947	163						
Closer S.N 105947	147						
Stem of ball S.N 105947	190						
Ball S.N 105947	205						

x CROSSWIND
16/10/24

ROSETTI MARINO ITEM 30

COD. VBC0NN06961H00

TAG: BLPH-MV-149, BLPH-MV-270

INDRA ITEM 30

COD. 00.VSF.2690/V

	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 491-2024_24-01216-p30 Data/*Date* : 11-Sep-2024	MD/PMI-VSF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	**COMMESSA INDRA** *Indra Job No.*	24 01216	**NR. D'ORDINE CLIENTE** *Customer Order No.*	1724000798 REV.2	**DEL** *Dated*	26-Jun-2024	**POSIZIONE D'ORDINE CLIENTE** *Customer Item*	30	**POSIZIONE D' ORDINE INDRA** *Indra Item*	30
Percentuale particolari da testare *Percentage of elements to be tested*		100%		**CODICE** *Code*	00.VSF.2690/V	**DESCRIZIONE** *Description*	SB-598-40-H150RF3-H-DLF-DL-CA3-N-RG-L1-TG-TGW-TV-PMI2-PD2-BI-CR-TA-FS-SPC1			**Q.tà da produrre (pz.)** *No. of pieces to be produced*	2

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 105958

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
1,1	981H.01.0009DLN(T)	Valve body	1	Heat : 287185 (Lot L23-0560)	MEST091410/2023/ - UT23003877	316/316L	16,61	10,47	2,18	1,95	OK
1,2	980H.02.0002DLN(T)	Closer	1	Heat : 437589 (Lot L24-0186)	MEST027755/2024/ - UT24001290	316/316L	16,78	10,12	2,10	1,75	OK
1,3	980F.04.0002DLN(T)	Stem of ball	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,54	10,80	2,12	1,92	OK
1,4	980H.07.0001DLN(T)	Ball	1	Heat : 870156 (Lot F24-1938)	2019003303 - N.US.155/19	316/316L	16,41	10,35	2,05	1,49	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 105959

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
2,1	981H.01.0009DLN(T)	Valve body	1	Heat : 433737 (Lot L24-0055)	MEST007061/2024/ - UT24000303	316/316L	16,56	10,36	2,15	1,92	OK
2,2	980H.02.0002DLN(T)	Closer	1	Heat : 437589 (Lot L24-0186)	MEST027755/2024/ - UT24001290	316/316L	16,73	10,15	2,11	1,67	OK
2,3	980F.04.0002DLN(T)	Stem of ball	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,60	10,68	2,09	1,88	OK
2,4	980H.07.0001DLN(T)	Ball	1	Heat : 870156 (Lot F24-1938)	2019003303 - N.US.155/19	316/316L	16,47	10,31	2,02	1,52	OK

x CROSSWIND
16/10/24

NOTE / *Remarks* : PMI 100% on body, closer and wetted parts According to NDT PROCEDURE - PT/PMI Rev.14	Data prelievo componenti / *Date of components picking* :	11-Sep-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Testing instrument: X-Ray analyzer NITON XL2 980 GOLDD	Data verifica componenti / *Date of components verification* :	11-Sep-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Serial number: 85044 - expiry 15-November-2024	Data esecuzione PMI TEST / *Date of PMI TEST execution* :	11-Sep-2024	Firma /*Signature* THOMAS PETITTI PMI OPERATOR

indra VALVES - ITALY	**Project:** CROSSWIND 24 01216 / pos 30 - 00.VSF.2690/V PO 1724000798 REV.2 pos 30 - VBC0NN06961H00	
HARDNESS TEST REPORT **EN 10204 3.1 ed 2004**	**Client:** ROSETTI MARINO SPA	**Report No.:** 018 **Date:** 12-Sep-2024 **Page 1 of 1**

Location/area: Indra S.r.l Magenta (MI)		**Material:** 316/316L

Testing instrument: Durometer 1600 HV
Serial Number: 32159000013 - expiry 17-April-2027
Hardness Test Procedure: PT-HT (24-01216) Rev. 0

Surface preparation:

Grinding	Machined **X**	Lapping	Filling	Other

Test position: see below table

Measuring unit:

Rockwell C(HRC)	**Brinell (HB) x**	**Shore**
Rockwell B(HRB)	**Vickers (HV)**	

Location	HARDNESS (average value)						
Valve body S.N 105958	157						
Closer S.N 105958	146						
Stem of ball S.N 105958	140						
Ball S.N 105958	221						
Valve body S.N 105959	162						
Closer S.N 105959	149						
Stem of ball S.N 105959	137						
Ball S.N 105959	207						

Sketch: 981H.01.0009DLN(T) - 980H.02.0002DLN(T) - 980F.04.0001DLN(T) - 980H.07.0001DLN(T)

Quality control	TPI Inspection	Client
Name: Petitti Thomas Sign: TP Date: 12-Sep-2024	Name: Sign: Date:	Name: Sign: Date:

x CROSSWIND 16/10/24 R

ROSETTI MARINO ITEM 40

COD. VBC0NN24343Q00

TAG: BLPH-MV-024, BLPH-MV-028

INDRA ITEM 40

COD. 00.VSF.2693/V

CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 40 NS.POS/OUR ITEM 40 VS.COD./YOUR CODE VBC0NN24343Q00 NS.COD./OUR CODE 00.VSF.2693/V (2 PCS)

indra VALVES - ITALY	**PENETRANT TEST REPORT (PT)**	**MD-02-29** rev.02 Date 28-11-2022

Certificato No.	PT-124-2024	Internal Indra Order No.:	OE 019802,019818 019834,019836	
Customer:	ROSETTI MARINO SPA	**Qty:**	2 + 2 + 1 + 1	Batch no.:
Code: →	981E.01.0013DLN(T)	Description:	BODY	OE-00223-434829
→	980E.02.0014DLN(T)		CLOSURE E150RF3	OE-05955-436801
	981J.01.0024DLN(T)		BODY	OE-19887-293334
	981J.02.0021DLN(T)		CLOSURE L150RF3	OE-19889-437746
Acceptance Standards:	Asme V art.6 Asme VIII Div.1 app.8			
Procedure:	*Indra Procedure PT-DP-01 (24-01216) Rev.0 dated 06-09-2024 EN 10204 3.1 ed 2004*			
Equipment:	*Luxmetro, white lamp, liquid penetrant*			

Test Conditions:

Test Surface:	EXTERNAL SIDE	INTERNAL SIDE	Surface Condition:	MACHINED
Penetrant Time: 20 min	Drying Time: 10 min	Development Time: 20 min	Cleaner:	SOLVENT-ALCOHOL
Natural Light: > 1100 Lux				
Type of Penetrant	08.122 K71B2	Batch no.	220127/BI	
Type of Developer	D112A	Batch no.	231106W150s	
Type of Removal	WATER			
Results:	ACCEPTABLE			

Note:
The inspection was conducted 100% of the surface

x CROSSWIND
16/10/24 R

Operator: Nicholas Sacchetti (LEVEL 2 acc. EN 9712:2012)	Signature:	Approved: Lucia Nosotti (RSQ)	Signature:
INDRA SRL VIA NOVARA 10/B-C / 20013 MAGENTA (MI)	Approval of Customer:		Date: 16 September 2024

	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 517-2024_24-01216-p40 Data/*Date* : 16-Sep-2024	MD/PMI-VSF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	**COMMESSA INDRA** *Indra Job No.*	24 01216	**NR. D'ORDINE CLIENTE** *Customer Order No.*	1724000798 REV.2	**DEL** *Dated*	26-Jun-2024	**POSIZIONE D'ORDINE CLIENTE** *Customer Item*	40	**POSIZIONE D' ORDINE INDRA** *Indra Item*	40
Percentuale particolari da testare *Percentage of elements to be tested*		100%		**CODICE** *Code*	00.VSF.2693/V			**DESCRIZIONE** *Description*	SB-598-HR-20-E150RF3-E-DLF-DL-CA3-N-RG-L1-TG-TGW-TV-DP-PMI2-PD2-BI-GT-CR-TA-FE2-FS-FE SPC1	**Q.tà da produrre (pz.)** *No. of pieces to be produced*	2

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 105960

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
1,1	981E.01.0013DLN(T)	Valve body	1	Heat : 434829 (Lot OE-00223)	MEST154678/2023/ - UT23006747	316/316L	16,52	10,03	2,02	1,92	OK
1,2	980E.02.0014DLN(T)	Closer	1	Heat : 436801 (Lot OE-05955)	MEST100392/2023/ - UT23004311	316/316L	16,68	10,18	2,12	1,88	OK
1,3	980F.04.0001DLN(T)	Stem of ball	1	Heat : E30822 (Lot F24-0277)	173501	316/316L	16,51	10,30	2,15	1,81	OK
1,4	98E.07.0001DLN(T)	Ball	1	Heat : 372009 (Lot F23-3206)	2023008125	316/316L	16,54	10,21	2,10	1,79	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 105961

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
1,1	981E.01.0013DLN(T)	Valve body	1	Heat : 434829 (Lot OE-00223)	MEST154678/2023/ - UT23006747	316/316L	16,59	10,06	2,02	1,81	OK
1,2	980E.02.0014DLN(T)	Closer	1	Heat : 436801 (Lot OE-05955)	MEST100392/2023/ - UT23004311	316/316L	16,74	10,18	2,15	1,88	OK
1,3	980F.04.0001DLN(T)	Stem of ball	1	Heat : E30822 (Lot F24-0277)	173501	316/316L	16,50	10,28	2,11	1,84	OK
1,4	98E.07.0001DLN(T)	Ball	1	Heat : 372009 (Lot F23-3206)	2023008125	316/316L	16,69	10,31	2,13	1,90	OK

x CROSSWIND
16/10/24

NOTE / *Remarks* : PMI 100% on body, closer and wetted parts According to NDT PROCEDURE - PT/PMI Rev.14	Data prelievo componenti / *Date of components picking* : 16-Sep-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Testing instrument: X-Ray analyzer NITON XL2 980 GOLDD	Data verifica componenti / *Date of components verification* : 16-Sep-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Serial number: 85044 - expiry 15-November-2024	Data esecuzione PMI TEST / *Date of PMI TEST execution* : 16-Sep-2024	Firma /*Signature* THOMAS PETITTI PMI OPERATOR

indra VALVES - ITALY	**Project:** CROSSWIND 24 01216 / pos 40 - 00.VSF.2693/V PO 1724000798 REV.2 pos 40 - VBC0NN24343Q00
HARDNESS TEST REPORT **EN 10204 3.1 ed 2004**	**Client:** ROSETTI MARINO SPA **Report No.:** 017 **Date:** 16-Sep-2024 **Page 1 of 1**

Location/area: Indra S.r.l Magenta (MI)		**Material:** 316/316L

Testing instrument: Durometer 1600 HV
Serial Number: 32159000013 - expiry 17-April-2027
Hardness Test Procedure: PT-HT (24-01216) Rev. 0

Surface preparation:

Grinding	Machined X	Lapping	Filling	Other

Test position: see below table

Measuring unit:

Rockwell C(HRC)	**Brinell (HB) x**	**Shore**
Rockwell B(HRB)	**Vickers (HV)**	

Location	HARDNESS (average value)						
Valve body S.N 105960	185						
Closer S.N 105960	148						
Stem of ball S.N 105960	160						
Ball S.N 105960	215						
Valve body S.N 105961	181						
Closer S.N 105961	157						
Stem of ball S.N 105961	144						
Ball S.N 105961	211						

Sketch: 981E.01.0013DLN(T) - 980E.02.0014DLN(T) - 980F.04.0001DLN(T) - 98E.07.0001DLN(T)

Quality control	TPI Inspection	Client
Name: Petitti Thomas Sign: Date: 16-Sep-2024	Name: Sign: Date:	Name: Sign: Date:

x CROSSWIND
16/10/24

ROSETTI MARINO ITEM 50

COD. VBC0NN24350100

TAG: BLPH-MV-172, BLPH-MV-404, BLPH-MV-405, BLPH-MV-462, BLPH-MV-463

INDRA ITEM 50

COD. 00.VSF.2694/V

CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 50 NS.POS/OUR ITEM 50 VS.COD./YOUR CODE VBC0NN24350100 NS.COD./OUR CODE 00.VSF.2694/V (5 PCS)

indra VALVES - ITALY	**PENETRANT TEST REPORT (PT)**	**MD-02-29** rev.02 Date 28-11-2022

Certificato No.	PT-121-2024	Internal Indra Order No.:	OE 015611,015616,015626, 015627,015619,015622, 015818,015820	
Customer:	ROSETTI MARINO SPA	**Qty:**	3+2+5+1+2+2+2+2+2	Batch no.:
Code: →	981F.01.0003DLN(T)	Description:	BODY	L23-0953-433747 (SN FROM 105962 TO 105964)
→	981F.01.0003DLN(T)		BODY	OE-06905-434671(SN FROM 105965 TO 105966)
→	980F.02.0001DLN(T)		CLOSURE F150RF3	L23-1109-434829
	981J.01.0010DLN(T)		BODY	L24-0444-293223
	981J.02.0006DLN(T)		CLOSURE J300RF3	L24-0235-293307
	981F.01.0104DLN(T)		BODY	L24-0617-437405
	981F.02.0038DLN(T)		CLOSURE F150RF3	L24-0638-435799
	981J.01.0062DLN(T)		BODY	L24-0695-294062
	981J.02.0045DLN(T)		CLOSURE J150RF3	L24-0640-294062
Acceptance Standards:	Asme V art.6 Asme VIII Div.1 app.8			
Procedure:	*Indra Procedure PT-DP-01 (24-01216) Rev.0 dated 06-09-2024 EN 10204 3.1 ed 2004*			
Equipment:	*Luxmetro,white lamp, liquid penetrant*			

Test Conditions:

Test Surface:	EXTERNAL SIDE	INTERNAL SIDE	Surface Condition:	MACHINED
Penetrant Time: 20 min	Drying Time: 10 min	Development Time: 20 min	Cleaner:	SOLVENT-ALCOHOL
Natural Light: > 1100 Lux				
Type of Penetrant	08.122 K71B2	Batch no.	220127/BI	
Type of Developer	D112A	Batch no.	231106W150s	
Type of Removal	WATER			
Results:	ACCEPTABLE			

Note:
The inspection was conducted 100% of the surface

x CROSSWIND
9/10/24

Operator: Nicholas Sacchetti (LEVEL 2 acc. EN 9712:2012)	Signature:	Approved: Lucia Nosotti (RSQ)	Signature:
INDRA SRL VIA NOVARA 10/B-C / 20013 MAGENTA (MI)	Approval of Customer:		Date: 12 September 2024

	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 492-2024_24-01216-p50 Data/*Date* : 11-Sep-2024	MD/PMI-VSF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	**COMMESSA INDRA** *Indra Job No.*	24 01216	**NR. D'ORDINE CLIENTE** *Customer Order No.*	1724000798 REV.2	**DEL** *Dated*	26-Jun-2024	**POSIZIONE D'ORDINE CLIENTE** *Customer Item*	50	**POSIZIONE D' ORDINE INDRA** *Indra Item*	50
Percentuale particolari da testare *Percentage of elements to be tested*		100%		**CODICE** *Code*	00.VSF.2694/V	**DESCRIZIONE** *Description*	SB-598-HR-25-F150RF3-F-DLF-DL-N-PG-L1-TG-TGW-TV-DP-PMI2-PD2-BI-GT-CR-TA-FE2-FS-FE-SPC1	**Q.tà da produrre (pz.)** *No. of pieces to be produced*		5	

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 105962

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
1,1	981F.01.0003DLN(T)	Valve body	1	Heat : 433747 (Lot L23-0953)	MEST136935/2023/ - UT23005931	316/316L	16,70	10,34	2,09	1,71	OK
1,2	980F.02.0001DLN(T)	Closer	1	Heat : 434829 (Lot L23-1109)	MEST154678/2023/ - UT23006747	316/316L	16,52	10,48	2,10	1,90	OK
1,3	980F.04.0001DLN(T)	Stem of ball	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,43	10,58	2,19	1,82	OK
1,4	98F.07.0001DLN(T)	Ball	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,43	10,06	2,15	1,65	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 105963

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
2,1	981F.01.0003DLN(T)	Valve body	1	Heat : 433747 (Lot L23-0953)	MEST136935/2023/ - UT23005931	316/316L	16,80	10,43	2,09	1,84	OK
2,2	980F.02.0001DLN(T)	Closer	1	Heat : 434829 (Lot L23-1109)	MEST154678/2023/ - UT23006747	316/316L	16,49	10,44	2,17	1,93	OK
2,3	980F.04.0001DLN(T)	Stem of ball	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,40	10,68	2,11	1,85	OK
2,4	98F.07.0001DLN(T)	Ball	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,38	10,09	2,19	1,58	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 105964

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
3,1	981F.01.0003DLN(T)	Valve body	1	Heat : 433747 (Lot L23-0953)	MEST136935/2023/ - UT23005931	316/316L	16,74	10,31	2,13	1,70	OK
3,2	980F.02.0001DLN(T)	Closer	1	Heat : 434829 (Lot L23-1109)	MEST154678/2023/ - UT23006747	316/316L	16,50	10,31	2,17	2,00	OK
3,3	980F.04.0001DLN(T)	Stem of ball	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,45	10,77	2,11	1,77	OK
3,4	98F.07.0001DLN(T)	Ball	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,30	10,06	2,19	1,59	OK

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	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 492-2024_24-01216-p50 Data/*Date* : 11-Sep-2024	MD/PMI-VSF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	**COMMESSA INDRA** *Indra Job No.*	24 01216	**NR. D'ORDINE CLIENTE** *Customer Order No.*	1724000798 REV.2	**DEL** *Dated*	26-Jun-2024	**POSIZIONE D'ORDINE CLIENTE** *Customer Item*	50	**POSIZIONE D' ORDINE INDRA** *Indra Item*	50
Percentuale particolari da testare *Percentage of elements to be tested*		100%		**CODICE** *Code*	00.VSF.2694/V	**DESCRIZIONE** *Description*	SB-598-HR-25-F150RF3-F-DLF-DL-N-PG-L1-TG-TGW-TV-DP-PMI2-PD2-BI-GT-CR-TA-FE2-FS-FE-SPC1	**Q.tà da produrre (pz.)** *No. of pieces to be produced*		5	

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 105965

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
4,1	981F.01.0003DLN(T)	Valve body	1	Heat : 434671 (Lot OE-06905)	MEST058702/2023/ - UT23002485	316/316L	16,71	10,28	2,12	1,75	OK
4,2	980F.02.0001DLN(T)	Closer	1	Heat : 434829 (Lot L23-1109)	MEST154678/2023/ - UT23006747	316/316L	16,46	10,41	2,13	1,90	OK
4,3	980F.04.0001DLN(T)	Stem of ball	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,41	10,68	2,10	1,77	OK
4,4	98F.07.0001DLN(T)	Ball	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,43	10,15	2,12	1,65	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 105966

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
5,1	981F.01.0003DLN(T)	Valve body	1	Heat : 434671 (Lot OE-06905)	MEST058702/2023/ - UT23002485	316/316L	16,72	10,38	2,14	1,80	OK
5,2	980F.02.0001DLN(T)	Closer	1	Heat : 434829 (Lot L23-1109)	MEST154678/2023/ - UT23006747	316/316L	16,45	10,35	2,13	1,95	OK
5,3	980F.04.0001DLN(T)	Stem of ball	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,47	10,71	2,18	1,72	OK
5,4	98F.07.0001DLN(T)	Ball	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,49	10,06	2,14	1,69	OK

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9/10/24

NOTE / *Remarks* : PMI 100% on body, closer and wetted parts According to NDT PROCEDURE - PT/PMI Rev.14	Data prelievo componenti / *Date of components picking* : 11-Sep-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Testing instrument: X-Ray analyzer NITON XL2 980 GOLDD	Data verifica componenti / *Date of components verification* : 11-Sep-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Serial number: 85044 - expiry 15-November-2024	Data esecuzione PMI TEST / *Date of PMI TEST execution* : 11-Sep-2024	Firma /*Signature* THOMAS PETITTI PMI OPERATOR

indra VALVES - ITALY	**Project:** CROSSWIND 24 01216 / pos 50 - 00.VSF.2694/V PO 1724000798 REV.2 pos 50 - VBC0NN24350100		
HARDNESS TEST REPORT **EN 10204 3.1 ed 2004**	**Client:** ROSETTI MARINO SPA	**Report No.:** 013 **Date:** 12-Sep-2024 **Page 1 of 2**	

Location/area: Indra S.r.l Magenta (MI)		**Material:** 316/316L

Testing instrument: Durometer 1600 HV
Serial Number: 32159000013 - expiry 17-April-2027
Hardness Test Procedure: PT-HT (24-01216) Rev. 0

Surface preparation:

Grinding	Machined X	Lapping	Filling	Other

Test position: see below table

Measuring unit:

Rockwell C(HRC)	**Brinell (HB) x**	**Shore**
Rockwell B(HRB)	**Vickers (HV)**	

Location	HARDNESS (average value)						
Valve body S.N 105962	167						
Closer S.N 105962	161						
Stem of ball S.N 105962	111						
Ball S.N 105962	214						
Valve body S.N 105963	162						
Closer S.N 105963	164						
Stem of ball S.N 105963	114						
Ball S.N 105963	211						
Valve body S.N 105964	163						
Closer S.N 105964	158						
Stem of ball S.N 105964	113						
Ball S.N 105964	206						
Valve body S.N 105965	169						
Closer S.N 105965	154						
Stem of ball S.N 105965	116						
Ball S.N 105965	220						
Valve body S.N 105966	161						
Closer S.N 105966	158						
Stem of ball S.N 105966	110						
Ball S.N 105966	209						

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indra VALVES - ITALY	**Project:** CROSSWIND 24 01216 / pos 50 - 00.VSF.2694/V PO 1724000798 REV.2 pos 50 - VBC0NN24350100
HARDNESS TEST REPORT **EN 10204 3.1 ed 2004**	**Client:** ROSETTI MARINO SPA **Report No.:** 013 **Date:** 12-Sep-2024 **Page 2 of 2**

x CROSSWIND
9/10/24

Sketch: 981F.01.0003DLN(T) - 980F.02.0001DLN(T) - 980F.04.0001DLN(T) - 98F.07.0001DLN(T)

Quality control	TPI Inspection	Client
Name: Petitti Thomas	Name:	Name:
Sign:	Sign:	Sign:
Date: 12-Sep-2024	Date:	Date:

ROSETTI MARINO ITEM 60

COD. VBC0NN24433Q00

TAG: BLPH-MV-044, BLPH-MV-054, BLPH-MV-241

INDRA ITEM 60

COD. 00.VSF.2685(T)

	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 545-2024_24-01216-p60 Data/*Date* : 09-Oct-2024	MD/PMI-VSF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	COMMESSA INDRA *Indra Job No.*	24 01216	NR. D'ORDINE CLIENTE *Customer Order No.*	1724000798 REV.2	DEL *Dated*	26-Jun-2024	POSIZIONE D'ORDINE CLIENTE *Customer Item*	60	POSIZIONE D' ORDINE INDRA *Indra Item*	60
Percentuale particolari da testare *Percentage of elements to be tested*		100%		CODICE *Code*	00.VSF.2685(T)			DESCRIZIONE *Description*	SB-598-20-E150RF3-E-F55F-F55-N-K-PG-ESX100-L1-TG-TGW-IT2-PMI2-PD2-BI-CR-TA-FS-SPC1-SPC2	Q.tà da produrre (pz.) *No. of pieces to be produced*	3

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 105967

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*						RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	W	Cu	
1,1	981E.01.0092F55N(T)	Valve body	1	Heat : 301850 (Lot L24-0739)	2024012940 - N.US.592/24	F55	24,34	7,14	3,74	0,42	0,55	0,63	OK
1,2	981E.02.0063F55N(T)	Closer	1	Heat : 400186 (Lot L24-0727)	FA0300091081 00 / V0 - 480652	F55	25,39	7,70	3,52	0,62	0,54	0,62	OK
1,3	980F.04.0001F55N(T)	Stem of ball	1	Heat : 408456 (Lot L24-0737)	534228 Rev.1 - FA0300149014 00 / V0	F55	24,84	7,81	3,57	0,67	0,52	0,55	OK
1,4	98E.07.0001F55N(T)	Ball	1	Heat : 276345 (Lot L22-0747)	2022031406 - N.US.1034/22	F55	24,32	6,97	3,70	0,67	0,52	0,59	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 105968

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*						RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	W	Cu	
2,1	981E.01.0092F55N(T)	Valve body	1	Heat : 301850 (Lot L24-0739)	2024012940 - N.US.592/24	F55	24,38	7,16	3,80	0,47	0,51	0,60	OK
2,2	981E.02.0063F55N(T)	Closer	1	Heat : 400186 (Lot L24-0727)	FA0300091081 00 / V0 - 480652	F55	25,42	7,71	3,49	0,65	0,55	0,64	OK
2,3	980F.04.0001F55N(T)	Stem of ball	1	Heat : 408456 (Lot L24-0737)	534228 Rev.1 - FA0300149014 00 / V0	F55	24,77	7,76	3,55	0,69	0,50	0,57	OK
2,4	98E.07.0001F55N(T)	Ball	1	Heat : 276345 (Lot L22-0747)	2022031406 - N.US.1034/22	F55	24,41	6,92	3,73	0,63	0,51	0,61	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 105969

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*						RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	W	Cu	
3,1	981E.01.0092F55N(T)	Valve body	1	Heat : 301850 (Lot L24-0739)	2024012940 - N.US.592/24	F55	24,31	7,10	3,68	0,44	0,51	0,60	OK
3,2	981E.02.0063F55N(T)	Closer	1	Heat : 400186 (Lot L24-0727)	FA0300091081 00 / V0 - 480652	F55	25,40	7,63	3,59	0,60	0,59	0,67	OK
3,3	980F.04.0001F55N(T)	Stem of ball	1	Heat : 408456 (Lot L24-0737)	534228 Rev.1 - FA0300149014 00 / V0	F55	24,79	7,79	3,55	0,59	0,55	0,59	OK
3,4	98E.07.0001F55N(T)	Ball	1	Heat : 276345 (Lot L22-0747)	2022031406 - N.US.1034/22	F55	24,35	7,03	3,68	0,61	0,50	0,51	OK

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NOTE / *Remarks* : PMI 100% on body, closer and wetted parts According to NDT PROCEDURE - PT/PMI Rev.14	Data prelievo componenti / *Date of components picking* : 09-Oct-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Testing instrument: X-Ray analyzer NITON XL2 980 GOLDD	Data verifica componenti / *Date of components verification* : 09-Oct-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Serial number: 85044 - expiry 15-November-2024	Data esecuzione PMI TEST / *Date of PMI TEST execution* : 09-Oct-2024	Firma /*Signature* THOMAS PETITTI PMI OPERATOR

indra VALVES - ITALY	**Project:** CROSSWIND 24 01216 / pos 60 - 00.VSF.2685(T) PO 1724000798 REV.2 pos 60 - VBC0NN24433Q00
HARDNESS TEST REPORT **EN 10204 3.1 ed 2004**	**Client:** ROSETTI MARINO SPA **Report No.:** 026 **Date:** 09-Oct-2024 **Page 1 of 1**

Location/area: Indra S.r.l Magenta (MI)		**Material:** Super Duplex F55

Testing instrument: Durometer 1600 HV
Serial Number: 32159000013 - expiry 17-April-2027
Hardness Test Procedure: PT-HT (24-01216) Rev. 0

Surface preparation:

Grinding	Machined X	Lapping	Filling	Other

Test position: see below table

Measuring unit:

Rockwell C(HRC)	**Brinell (HB) x**	**Shore**
Rockwell B(HRB)	**Vickers (HV)**	

Location	HARDNESS (average value)						
Valve body S.N 105967	287						
Closer S.N 105967	211						
Stem of ball S.N 105967	253						
Ball S.N 105967	270						
Valve body S.N 105968	283						
Closer S.N 105968	224						
Stem of ball S.N 105968	261						
Ball S.N 105968	278						
Valve body S.N 105969	286						
Closer S.N 105969	218						
Stem of ball S.N 105969	248						
Ball S.N 105969	277						

Sketch: 981E.01.0092F55N(T) - 981E.02.0063F55N(T) - 980F.04.0001F55N(T) - 98E.07.0001F55N(T)

Quality control	TPI Inspection	Client
Name: Petitti Thomas	Name:	Name:
Sign: TP	Sign:	Sign:
Date: 09-Oct-2024	Date:	Date:

CROSSWIND

ROSETTI MARINO ITEM 70

COD. VBC0NN24440100

TAG: BLPH-MV-048, BLPH-MV-051

INDRA ITEM 70

COD. 00.VSF.2688(T)

	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 546-2024_24-01216-p70 Data/*Date* : 09-Oct-2024	MD/PMI-VSF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	**COMMESSA INDRA** *Indra Job No.*	24 01216	**NR. D'ORDINE CLIENTE** *Customer Order No.*	1724000798 REV.2	**DEL** *Dated*	26-Jun-2024	**POSIZIONE D'ORDINE CLIENTE** *Customer Item*	70	**POSIZIONE D' ORDINE INDRA** *Indra Item*	70
Percentuale particolari da testare *Percentage of elements to be tested*		100%		**CODICE** *Code*	00.VSF.2688(T)	**DESCRIZIONE** *Description*	SB-598-25-F150RF3-F-F55F-F55-N-K-PG-ESX100-L1-TG-TGW-IT2-PMI2-PD2-BI-CR-TA-FS-SPC1-SPC2			**Q.tà da produrre (pz.)** *No. of pieces to be produced*	2

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 105970

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*						RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	W	Cu	
1,1	981F.01.0102F55N(T)	Valve body	1	Heat : 301850 (Lot L24-0739)	2024012940 - N.US.592/24	F55	24,02	7,02	3,89	0,80	0,51	0,63	OK
1,2	981F.02.0055F55N(T)	Closer	1	Heat : 301290 (Lot L24-0727)	2024011723 - N.US.338/24	F55	24,51	7,30	3,68	0,61	0,53	0,73	OK
1,3	980F.04.0001F55N(T)	Stem of ball	1	Heat : 408456 (Lot L24-0737)	534228 Rev.1 - FA0300149014 00 / V0	F55	25,34	7,99	3,51	0,69	0,52	0,50	OK
1,4	98F.07.0001F55N(T)	Ball	1	Heat : 070136 (Lot L24-0732)	2021003757 - N.US.122/2021	F55	24,45	7,10	3,59	0,61	0,55	0,57	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 105971

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*						RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	W	Cu	
2,1	981F.01.0102F55N(T)	Valve body	1	Heat : 301850 (Lot L24-0739)	2024012940 - N.US.592/24	F55	24,12	7,09	3,90	0,79	0,55	0,67	OK
2,2	981F.02.0055F55N(T)	Closer	1	Heat : 301290 (Lot L24-0727)	2024011723 - N.US.338/24	F55	24,49	7,21	3,55	0,62	0,51	0,70	OK
2,3	980F.04.0001F55N(T)	Stem of ball	1	Heat : 408456 (Lot L24-0737)	534228 Rev.1 - FA0300149014 00 / V0	F55	25,27	7,88	3,49	0,64	0,55	0,52	OK
2,4	98F.07.0001F55N(T)	Ball	1	Heat : 070136 (Lot L24-0732)	2021003757 - N.US.122/2021	F55	24,52	7,12	3,62	0,60	0,57	0,55	OK

NOTE / *Remarks* : PMI 100% on body, closer and wetted parts According to NDT PROCEDURE - PT/PMI Rev.14	Data prelievo componenti / *Date of components picking* : 09-Oct-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Testing instrument: X-Ray analyzer NITON XL2 980 GOLDD	Data verifica componenti / *Date of components verification* : 09-Oct-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Serial number: 85044 - expiry 15-November-2024	Data esecuzione PMI TEST / *Date of PMI TEST execution* : 09-Oct-2024	Firma /*Signature* THOMAS PETITTI PMI OPERATOR

indra VALVES - ITALY	**Project:** CROSSWIND 24 01216 / pos 70 - 00.VSF.2688(T) PO 1724000798 REV.2 pos 70 - VBC0NN24440100	
HARDNESS TEST REPORT **EN 10204 3.1 ed 2004**	**Client:** ROSETTI MARINO SPA	**Report No.:** 027 **Date:** 09-Oct-2024 **Page 1 of 1**

Location/area: Indra S.r.l Magenta (MI)		**Material:** Super Duplex F55

Testing instrument: Durometer 1600 HV
Serial Number: 32159000013 - expiry 17-April-2027
Hardness Test Procedure: PT-HT (24-01216) Rev. 0

Surface preparation:

Grinding	Machined X	Lapping	Filling	Other

Test position: see below table

Measuring unit:

Rockwell C(HRC)	**Brinell (HB) x**	**Shore**
Rockwell B(HRB)	**Vickers (HV)**	

Location	HARDNESS (average value)						
Valve body S.N 105970	287						
Closer S.N 105970	240						
Stem of ball S.N 105970	210						
Ball S.N 105970	256						
Valve body S.N 105971	292						
Closer S.N 105971	253						
Stem of ball S.N 105971	225						
Ball S.N 105971	248						

Sketch: 981F.01.0102F55N(T) - 981F.02.0055F55N(T) - 980F.04.0001F55N(T) - 98F.07.0001F55N(T)

Quality control	TPI Inspection	Client
Name: Petitti Thomas Sign: TP Date: 09-Oct-2024	Name: Sign: Date:	Name: Sign: Date:

x CROSSWIND

ROSETTI MARINO ITEM 80

COD. VBC0NN24460200

TAG: BLPH-MV-464, BLPH-MV-465

INDRA ITEM 80

COD. 00.VSF.2692(T)

	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 547-2024_24-01216-80 Data/*Date* : 11-Oct-2024	MD/PMI-VSF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	**COMMESSA INDRA** *Indra Job No.*	24 01216	**NR. D'ORDINE CLIENTE** *Customer Order No.*	1724000798 REV.2	**DEL** *Dated*	26-Jun-2024	**POSIZIONE D'ORDINE CLIENTE** *Customer Item*	80	**POSIZIONE D' ORDINE INDRA** *Indra Item*	80
Percentuale particolari da testare *Percentage of elements to be tested*		100%		**CODICE** *Code*	00.VSF.2692(T)	**DESCRIZIONE** *Description*	SB-598-50-J150RF3-J-F55F-F55-N-PG-ESX100-L1-TG-TGW-IT2-PMI2-PD2-BI-CR-TA-FS-SPC1-SPC2	**Q.tà da produrre (pz.)** *No. of pieces to be produced*	2		

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 105972

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*						RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	W	Cu	
1,1	981J.01.0056F55N(T)	Valve body	1	Heat : 59770 (Lot L24-0739)	742630	F55	25,21	7,99	3,43	0,71	0,57	0,52	OK
1,2	981J.02.0008F55N(T)	Closer	1	Heat : 59770 (Lot L24-0727)	742630	F55	25,18	7,07	3,64	0,78	0,55	0,66	OK
1,3	98J.04.0003F55N(T)	Stem of ball	1	Heat : 278285 (Lot L24-0737)	2023013924 - N.US.523/23	F55	24,81	7,18	3,60	0,59	0,50	0,56	OK
1,4	98J.07.0001F55N(T)	Ball	1	Heat : 370169 (Lot L24-0732)	2014054694 - N.US.1306/14	F55	24,73	6,98	3,75	0,64	0,55	0,63	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 105973

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*						RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	W	Cu	
2,1	981J.01.0056F55N(T)	Valve body	1	Heat : 59770 (Lot L24-0739)	742630	F55	25,14	7,87	3,45	0,74	0,60	0,53	OK
2,2	981J.02.0008F55N(T)	Closer	1	Heat : 59770 (Lot L24-0727)	742630	F55	25,24	7,10	3,62	0,71	0,54	0,62	OK
2,3	98J.04.0003F55N(T)	Stem of ball	1	Heat : 278285 (Lot L24-0737)	2023013924 - N.US.523/23	F55	24,77	7,15	3,67	0,55	0,52	0,51	OK
2,4	98J.07.0001F55N(T)	Ball	1	Heat : 370169 (Lot L24-0732)	2014054694 - N.US.1306/14	F55	24,68	7,03	3,70	0,62	0,57	0,60	OK

CROSSMIND

NOTE / *Remarks* : PMI 100% on body, closer and wetted parts According to NDT PROCEDURE - PT/PMI Rev.14	Data prelievo componenti / *Date of components picking* : 11-Oct-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Testing instrument: X-Ray analyzer NITON XL2 980 GOLDD	Data verifica componenti / *Date of components verification* : 11-Oct-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Serial number: 85044 - expiry 15-November-2024	Data esecuzione PMI TEST / *Date of PMI TEST execution* : 11-Oct-2024	Firma /*Signature* THOMAS PETITTI PMI OPERATOR

indra VALVES - ITALY	**Project:** CROSSWIND 24 01216 / pos 80 - 00.VSF.2692(T) PO 1724000798 REV.2 pos 80 - VBC0NN24460200
HARDNESS TEST REPORT **EN 10204 3.1 ed 2004**	**Client:** ROSETTI MARINO SPA **Report No.:** 028 **Date:** 11-Oct-2024 **Page 1 of 1**

Location/area: Indra S.r.l Magenta (MI)		**Material:** Super Duplex F55

Testing instrument: Durometer 1600 HV
Serial Number: 32159000013 - expiry 17-April-2027
Hardness Test Procedure: PT-HT (24-01216) Rev. 0

Surface preparation:

Grinding	Machined X	Lapping	Filling	Other

Test position: see below table

Measuring unit:

Rockwell C(HRC)	**Brinell (HB) x**	**Shore**
Rockwell B(HRB)	**Vickers (HV)**	

Location	HARDNESS (average value)						
Valve body S.N 105972	290						
Closer S.N 105972	263						
Stem of ball S.N 105972	271						
Ball S.N 105972	287						
Valve body S.N 105973	293						
Closer S.N 105973	270						
Stem of ball S.N 105973	283						
Ball S.N 105973	287						

Sketch: 981J.01.0056F55N(T) - 981J.02.0008F55N(T) - 98J.04.0003F55N(T) - 98J.07.0001F55N(T)

Quality control	TPI Inspection	Client
Name: Petitti Thomas	Name:	Name:
Sign: TP	Sign:	Sign:
Date: 11-Oct-2024	Date:	Date:

CROSSWIND

ROSETTI MARINO ITEM 90

COD. VBC0NN24703Q00

TAG: BLPH-MV-275

INDRA ITEM 90

COD. 00.VSF.2686/V

indra VALVES - ITALY	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 548-2024_24-01216-p90 Data/*Date* : 08-Oct-2024	MD/PMI-VSF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	**COMMESSA INDRA** *Indra Job No.*	24 01216	**NR. D'ORDINE CLIENTE** *Customer Order No.*	1724000798 REV.2	**DEL** *Dated*	26-Jun-2024	**POSIZIONE D'ORDINE CLIENTE** *Customer Item*	90	**POSIZIONE D' ORDINE INDRA** *Indra Item*	90
Percentuale particolari da testare *Percentage of elements to be tested*		100%		**CODICE** *Code*	00.VSF.2686/V	**DESCRIZIONE** *Description*	SB-598-20-E150RF3-E-LF2-DL-CA3-N-RG-L1-TG-TGW-TV-PMI2-PD2-BI-CR-TA-FS-SPC1			**Q.tà da produrre (pz.)** *No. of pieces to be produced*	1

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 105974

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
1,1	980F.04.0001DLN(T)	Stem of ball	1	Heat : E30822 (Lot F24-0277)	173501	316/316L	16,24	10,54	2,17	1,79	OK
1,2	98E.07.0001DLN(T)	Ball	1	Heat : 372009 (Lot F23-3206)	2023008125	316/316L	16,81	10,07	2,14	1,86	OK

NOTE / *Remarks* : PMI 100% on wetted parts (excluded carbon steel) According to NDT PROCEDURE - PT/PMI Rev.14	Data prelievo componenti / *Date of components picking* : 08-Oct-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Testing instrument: X-Ray analyzer NITON XL2 980 GOLDD	Data verifica componenti / *Date of components verification* : 08-Oct-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Serial number: 85044 - expiry 15-November-2024	Data esecuzione PMI TEST / *Date of PMI TEST execution* : 08-Oct-2024	Firma /*Signature* THOMAS PETITTI PMI OPERATOR

indra VALVES - ITALY	**Project:** CROSSWIND 24 01216 / pos 90 - 00.VSF.2686/V PO 1724000798 REV.2 pos 90 - VBC0NN24703Q00	
HARDNESS TEST REPORT **EN 10204 3.1 ed 2004**	**Client:** ROSETTI MARINO SPA	**Report No.:** 029 **Date:** 08-Oct-2024 **Page 1 of 1**

Location/area: Indra S.r.l Magenta (MI)		**Material:** ASTM A350 LF2 - 316/316L

Testing instrument: Durometer 1600 HV
Serial Number: 32159000013 - expiry 17-April-2027
Hardness Test Procedure: PT-HT (24-01216) Rev. 0

Surface preparation:

Grinding	Machined X	Lapping	Filling	Other

Test position: see below table

Measuring unit:

Rockwell C(HRC)	**Brinell (HB) x**	**Shore**
Rockwell B(HRB)	**Vickers (HV)**	

Location	HARDNESS (average value)						
Valve body S.N 105974	132						
Closer S.N 105974	114						
Stem of ball S.N 105974	127						
Ball S.N 105974	201						

Sketch: 981E.01.0013LF2N(T) - 980E.02.0014LF2N(T) - 980F.04.0001DLN(T) - 98E.07.0001DLN(T)

Quality control	TPI Inspection	Client
Name: Petitti Thomas	Name:	Name:
Sign: VP	Sign:	Sign:
Date: 08-Oct-2024	Date:	Date:

CROSS WIND

ROSETTI MARINO ITEM 100

COD. BC0NN24710100

TAG: BLPH-MV-263, BLPH-MV-419

INDRA ITEM 100

COD. 00.VSF.2770/V

	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 549-2024_24-01216-p100 Data/*Date* : 08-Oct-2024	MD/PMI-VSF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	**COMMESSA INDRA** *Indra Job No.*	24 01216	**NR. D'ORDINE CLIENTE** *Customer Order No.*	1724000798 REV.2	**DEL** *Dated*	26-Jun-2024	**POSIZIONE D'ORDINE CLIENTE** *Customer Item*	100	**POSIZIONE D' ORDINE INDRA** *Indra Item*	100
Percentuale particolari da testare *Percentage of elements to be tested*		100%		**CODICE** *Code*	00.VSF.2770/V	**DESCRIZIONE** *Description*	SB-598-25-F150RF3-F-LF2-DL-CA3-N-RG-L1-TG-TGW-TV-PMI2-PD2-BI-CR-TA-FS-SPC1	**Q.tà da produrre (pz.)** *No. of pieces to be produced*		2	

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 105975

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
1,1	980F.04.0001DLN(T)	Stem of ball	1	Heat : E30822 (Lot F24-0277)	173501	316/316L	16,37	10,40	2,21	1,87	OK
1,2	98F.07.0001DLN(T)	Ball	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,53	10,12	2,24	1,65	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 105976

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
2,1	980F.04.0001DLN(T)	Stem of ball	1	Heat : E30822 (Lot F24-0277)	173501	316/316L	16,40	10,35	2,18	1,84	OK
2,2	98F.07.0001DLN(T)	Ball	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,55	10,11	2,19	1,69	OK

NOTE / *Remarks* : PMI 100% on wetted parts (excluded carbon steel) According to NDT PROCEDURE - PT/PMI Rev.14	Data prelievo componenti / *Date of components picking* : 08-Oct-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Testing instrument: X-Ray analyzer NITON XL2 980 GOLDD	Data verifica componenti / *Date of components verification* : 08-Oct-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Serial number: 85044 - expiry 15-November-2024	Data esecuzione PMI TEST / *Date of PMI TEST execution* : 08-Oct-2024	Firma /*Signature* THOMAS PETITTI PMI OPERATOR

indra VALVES - ITALY	**Project:** CROSSWIND 24 01216 / pos 100 - 00.VSF.2770/V PO 1724000798 REV.2 pos 100 - VBC0NN24710100	
HARDNESS TEST REPORT **EN 10204 3.1 ed 2004**	**Client:** ROSETTI MARINO SPA	**Report No.:** 030 **Date:** 08-Oct-2024 **Page 1 of 1**

Location/area: Indra S.r.l Magenta (MI)		**Material:** ASTM A350 LF2 - 316/316L

Testing instrument: Durometer 1600 HV
Serial Number: 32159000013 - expiry 17-April-2027
Hardness Test Procedure: PT-HT (24-01216) Rev. 0

Surface preparation:

Grinding	Machined X	Lapping	Filling	Other

Test position: see below table

Measuring unit:

Rockwell C(HRC)	**Brinell (HB) x**	**Shore**
Rockwell B(HRB)	**Vickers (HV)**	

Location	HARDNESS (average value)						
Valve body S.N 105975	125						
Closer S.N 105975	123						
Stem of ball S.N 105975	119						
Ball S.N 105975	197						
Valve body S.N 105976	121						
Closer S.N 105976	129						
Stem of ball S.N 105976	126						
Ball S.N 105976	201						

Sketch: 981F.01.0003LF2N(T) - 980F.02.0001LF2N(T) - 980F.04.0001DLN(T) - 98F.07.0001DLN(T)

Quality control	TPI Inspection	Client
Name: Petitti Thomas Sign: TP Date: 08-Oct-2024	Name: Sign: Date:	Name: Sign: Date:

Indra x CROSS WIND

ROSETTI MARINO ITEM 110

COD. VBC0NN24710100

TAG: BLPH-MV-417

INDRA ITEM 110

COD. 00.VSF.2689/V

	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 550-2024_24-01216-p110 Data/*Date* : 10-Oct-2024	MD/PMI-VSF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	**COMMESSA INDRA** *Indra Job No.*	24 01216	**NR. D'ORDINE CLIENTE** *Customer Order No.*	1724000798 REV.2	**DEL** *Dated*	26-Jun-2024	**POSIZIONE D'ORDINE CLIENTE** *Customer Item*	110	**POSIZIONE D' ORDINE INDRA** *Indra Item*	110
Percentuale particolari da testare *Percentage of elements to be tested*		100%		**CODICE** *Code*	00.VSF.2689/V	**DESCRIZIONE** *Description*	SB-598-25-F150RF3-F-LF2-DL-CA3-N-RG-EXS100-L1-TG-TGW-TV-PMI2-PD2-BI-CR-TA-FS-SPC1	**Q.tà da produrre (pz.)** *No. of pieces to be produced*		1	

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 105977

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
1,1	980F.04.0001DLN(T)	Stem of ball	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,14	10,28	2,15	1,85	OK
1,2	98F.07.0001DLN(T)	Ball	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,26	10,03	2,14	1,50	OK

NOTE / *Remarks* : PMI 100% on wetted parts (excluded carbon steel) According to NDT PROCEDURE - PT/PMI Rev.14	Data prelievo componenti / *Date of components picking* : 10-Oct-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Testing instrument: X-Ray analyzer NITON XL2 980 GOLDD	Data verifica componenti / *Date of components verification* : 10-Oct-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Serial number: 85044 - expiry 15-November-2024	Data esecuzione PMI TEST / *Date of PMI TEST execution* : 10-Oct-2024	Firma /*Signature* THOMAS PETITTI PMI OPERATOR

indra VALVES - ITALY	**Project:** CROSSWIND 24 01216 / pos 110 - 00.VSF.2689/V PO 1724000798 REV.2 pos 110 - VBC0NN24710100	
HARDNESS TEST REPORT **EN 10204 3.1 ed 2004**	**Client:** ROSETTI MARINO SPA	**Report No.:** 031 **Date:** 10-Oct-2024 **Page 1 of 1**

Location/area: Indra S.r.l Magenta (MI)		**Material:** ASTM A350 LF2 - 316/316L

Testing instrument: Durometer 1600 HV
Serial Number: 32159000013 - expiry 17-April-2027
Hardness Test Procedure: PT-HT (24-01216) Rev. 0

Surface preparation:

Grinding	Machined X	Lapping	Filling	Other

Test position: see below table

Measuring unit:

Rockwell C(HRC)	**Brinell (HB) x**	**Shore**
Rockwell B(HRB)	**Vickers (HV)**	

Location	HARDNESS (average value)						
Valve body S.N 105977	155						
Closer S.N 105977	114						
Stem of ball S.N 105977	110						
Ball S.N 105977	206						

Sketch: 981F.01.0102LF2N(T) - 981F.02.0055LF2N(T) - 980F.04.0001DLN(T) - 98F.07.0001DLN(T)

Quality control	TPI Inspection	Client
Name: Petitti Thomas	Name:	Name:
Sign:	Sign:	Sign:
Date: 10-Oct-2024	Date:	Date:

shotblast CROSSWIND

ROSETTI MARINO ITEM 120

COD. VBC0NN24721H00

TAG: BLPH-MV-412

INDRA ITEM 120

COD. 00.VSF.2691/V

indra VALVES - ITALY	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 551-2024_24-01216-p120 Data/*Date* : 10-Oct-2024	MD/PMI-VSF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	**COMMESSA INDRA** *Indra Job No.*	24 01216	**NR. D'ORDINE CLIENTE** *Customer Order No.*	1724000798 REV.2	**DEL** *Dated*	26-Jun-2024	**POSIZIONE D'ORDINE CLIENTE** *Customer Item*	120	**POSIZIONE D' ORDINE INDRA** *Indra Item*	120
Percentuale particolari da testare *Percentage of elements to be tested*		100%			**CODICE** *Code*	00.VSF.2691/V		**DESCRIZIONE** *Description*	SB-598-40-H150RF3-H-LF2-DL-CA3-N-RG-ESX100-L1-TG-TGW-TV-PMI2-PD2-BI-CR-TA-FS-SPC1	**Q.tà da produrre (pz.)** *No. of pieces to be produced*	1

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 105978

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
1,1	980F.04.0001DLN(T)	Stem of ball	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,35	10,48	2,07	1,87	OK
1,2	980H.07.0001DLN(T)	Ball	1	Heat : 870156 (Lot F24-1938)	2019003303 - N.US.155/19	316/316L	16,33	10,54	2,14	1,78	OK

NOTE / *Remarks* : PMI 100% on wetted parts (excluded carbon steel) According to NDT PROCEDURE - PT/PMI Rev.14	Data prelievo componenti / *Date of components picking* : 10-Oct-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Testing instrument: X-Ray analyzer NITON XL2 980 GOLDD	Data verifica componenti / *Date of components verification* : 10-Oct-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Serial number: 85044 - expiry 15-November-2024	Data esecuzione PMI TEST / *Date of PMI TEST execution* : 10-Oct-2024	Firma /*Signature* THOMAS PETITTI PMI OPERATOR

indra VALVES - ITALY	**Project:** CROSSWIND 24 01216 / pos 120 - 00.VSF.2691/V PO 1724000798 REV.2 pos 120 - VBC0NN24721H00	
HARDNESS TEST REPORT **EN 10204 3.1 ed 2004**	**Client:** ROSETTI MARINO SPA	**Report No.:** 032 **Date:** 10-Oct-2024 **Page 1 of 1**

Location/area: Indra S.r.l Magenta (MI)		**Material:** ASTM A350 LF2 - 316/316L

Testing instrument: Durometer 1600 HV
Serial Number: 32159000013 - expiry 17-April-2027
Hardness Test Procedure: PT-HT (24-01216) Rev. 0

Surface preparation:

Grinding	Machined X	Lapping	Filling	Other

Test position: see below table

Measuring unit:

Rockwell C(HRC)	**Brinell (HB) x**	**Shore**
Rockwell B(HRB)	**Vickers (HV)**	

Location	HARDNESS (average value)						
Valve body S.N 105978	147						
Closer S.N 105978	130						
Stem of ball S.N 105978	191						
Ball S.N 105978	219						

Sketch: 981H.01.0045LF2N(T) - 980H.02.0002LF2N(T) - 980F.04.0001DLN(T) - 980H.07.0001DLN(T)

Quality control	TPI Inspection	Client
Name: Petitti Thomas Sign: Date: 10-Oct-2024	Name: Sign: Date:	Name: Sign: Date:

CROSSWIND

ROSETTI MARINO ITEM 130

COD. VBC0NN24893Q00

TAG: BLPH-MV-214,

BLPH-MV-400

INDRA ITEM 130

COD. 00.VSF.2683(T)

indra VALVES - ITALY	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 542-2024_24-01216-p130 Data/*Date* : 30-Sep-2024			MD/PMI-VSF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	**COMMESSA INDRA** *Indra Job No.*	24 01216	**NR. D'ORDINE CLIENTE** *Customer Order No.*	1724000798 REV.2	**DEL** *Dated*	26-Jun-2024	**POSIZIONE D'ORDINE CLIENTE** *Customer Item*	130	**POSIZIONE D' ORDINE INDRA** *Indra Item*	130
Percentuale particolari da testare *Percentage of elements to be tested*		100%		**CODICE** *Code*	00.VSF.2683(T)	**DESCRIZIONE** *Description*	SB-598-20-E150FF-E-C276F-C276-N-PG-EXS100-L1-TG-TGW-PMI2-PD2-BI-CR-TA-FS-SPC1-SPC2			**Q.tà da produrre (pz.)** *No. of pieces to be produced*	2

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 105979

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*							RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	W	Fe	Co	
1,1	981E.01.0096C276N(T)	Valve body	1	Heat : 307035 (Lot OE-19820)	MEST075939/2024/1 - UT24003423	C276	16,26	58,98	15,22	0,30	3,26	5,96	0,09	OK
1,2	981E.02.0066C276N(T)	Closer	1	Heat : 307035 (Lot OE-19821)	MEST075939/2024/1 - UT24003423	C276	15,79	59,17	15,26	0,26	3,28	5,86	0,13	OK
1,3	980F.04.0001C276N(T)	Stem of ball	1	Heat : 903981 (Lot L24-0824)	FA1600157470 00 / V0 - 494070	C276	15,65	58,64	16,17	0,25	3,11	6,16	0,10	OK
1,4	98E.07.0001C276N(T)	Ball	1	Heat : 901228 (Lot L24-0823)	MEST025211/2023/1 - UT23001136	C276	16,14	57,43	15,96	0,45	3,50	6,07	0,20	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 105980

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*							RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	W	Fe	Co	
2,1	981E.01.0096C276N(T)	Valve body	1	Heat : 307035 (Lot OE-19820)	MEST075939/2024/1 - UT24003423	C276	16,20	58,95	15,16	0,31	3,20	5,92	0,15	OK
2,2	981E.02.0066C276N(T)	Closer	1	Heat : 307035 (Lot OE-19821)	MEST075939/2024/1 - UT24003423	C276	15,83	59,08	15,31	0,22	3,32	5,80	0,10	OK
2,3	980F.04.0001C276N(T)	Stem of ball	1	Heat : 903981 (Lot L24-0824)	FA1600157470 00 / V0 - 494070	C276	15,70	58,62	16,10	0,20	3,16	6,15	0,20	OK
2,4	98E.07.0001C276N(T)	Ball	1	Heat : 901228 (Lot L24-0823)	MEST025211/2023/1 - UT23001136	C276	16,11	57,51	16,09	0,52	3,41	6,12	0,25	OK

CROSSWIND

NOTE / *Remarks* : PMI 100% on body, closer and wetted parts According to NDT PROCEDURE - PT/PMI Rev.14	Data prelievo componenti / *Date of components picking* : 30-Sep-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Testing instrument: X-Ray analyzer NITON XL2 980 GOLDD	Data verifica componenti / *Date of components verification* : 30-Sep-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Serial number: 85044 - expiry 15-November-2024	Data esecuzione PMI TEST / *Date of PMI TEST execution* : 30-Sep-2024	Firma /*Signature* THOMAS PETITTI PMI OPERATOR

indra VALVES - ITALY	**Project:** CROSSWIND 24 01216 / pos 130 - 00.VSF.2683(T) PO 1724000798 REV.2 pos 130 - VBC0NN24893Q00
HARDNESS TEST REPORT **EN 10204 3.1 ed 2004**	**Client:** ROSETTI MARINO SPA **Report No.:** 023 **Date:** 30-Sep-2024 **Page 1 of 1**

Location/area: Indra S.r.l Magenta (MI)		**Material:** Hastelloy C276

Testing instrument: Durometer 1600 HV
Serial Number: 32159000013 - expiry 17-April-2027
Hardness Test Procedure: PT-HT (24-01216) Rev. 0

Surface preparation:

Grinding	Machined X	Lapping	Filling	Other

Test position: see below table

Measuring unit:

Rockwell C(HRC)	**Brinell (HB) x**	**Shore**
Rockwell B(HRB)	**Vickers (HV)**	

Location	HARDNESS (average value)						
Valve body S.N 105979	162						
Closer S.N 105979	135						
Stem of ball S.N 105979	132						
Ball S.N 105979	213						
Valve body S.N 105980	165						
Closer S.N 105980	139						
Stem of ball S.N 105980	143						
Ball S.N 105980	208						

Sketch: 981E.01.0096C276N(T) - 981E.02.0066C276N(T) - 980F.04.0001C276N(T) - 98E.07.0001C276N(T)

Quality control	TPI Inspection	Client
Name: Petitti Thomas	Name:	Name:
Sign:	Sign:	Sign:
Date: 30-Sep-2024	Date:	Date:

xCROSSWIND
16/10/24

ROSETTI MARINO ITEM 140

COD. VBD0NN16460300

TAG: BLPH-MV-402

INDRA ITEM 140

COD. 00.VSF.2695/V

CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 140 NS.POS/OUR ITEM 140 VS.COD./YOUR CODE VBD0NN16460300 NS.COD./OUR CODE 00.VSF.2695/V (1 PC)

indra VALVES - ITALY	**PENETRANT TEST REPORT (PT)**	**MD-02-29** rev.02 Date 28-11-2022

Certificato No.	PT-124-2024	Internal Indra Order No..	OE 019802,019818 019834,019836	
Customer:	ROSETTI MARINO SPA	**Qty:**	2 + 2 + 1 + 1	Batch no.:
Code:	981E.01.0013DLN(T)	Description:	BODY	OE-00223-434829
	980E.02.0014DLN(T)		CLOSURE E150RF3	OE-05955-436801
→	981J.01.0024DLN(T)		BODY	OE-19887-293334
→	981J.02.0021DLN(T)		CLOSURE L150RF3	OE-19889-437746
Acceptance Standards:	Asme V art.6 Asme VIII Div.1 app.8			
Procedure:	*Indra Procedure PT-DP-01 (24-01216) Rev.0 dated 06-09-2024 EN 10204 3.1 ed 2004*			
Equipment:	*Luxmetro, white lamp, liquid penetrant*			

Test Conditions:

Test Surface:	EXTERNAL SIDE	INTERNAL SIDE	Surface Condition:	MACHINED
Penetrant Time: 20 min	Drying Time: 10 min	Development Time: 20 min	Cleaner:	SOLVENT-ALCOHOL
Natural Light: > 1100 Lux				
Type of Penetrant	08.122 K71B2	Batch no.	220127/BI	
Type of Developer	D112A	Batch no.	231106W150s	
Type of Removal	WATER			
Results:	ACCEPTABLE			

Note:
The inspection was conducted 100% of the surface

x CROSSWIND
16/10/24 R

Operator: Nicholas Sacchetti (LEVEL 2 acc. EN 9712:2012)	Signature:	Approved: Lucia Nosotti (RSQ)	Signature:
INDRA SRL VIA NOVARA 10/B-C / 20013 MAGENTA (MI)	Approval of Customer:		Date: 16 September 2024

indra VALVES - ITALY	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT			Cert. n° : 542-2024_24-01216-p130 Data/*Date* : 30-Sep-2024						MD/PMI-VSF Rev.4-Dec/2022	
CLIENTE *Customer*	ROSETTI MARINO SPA	**COMMESSA INDRA** *Indra Job No.*	24 01216	**NR. D'ORDINE CLIENTE** *Customer Order No.*	1724000798 REV.2	**DEL** *Dated*	26-Jun-2024	**POSIZIONE D'ORDINE CLIENTE** *Customer Item*	130	**POSIZIONE D' ORDINE INDRA** *Indra Item*	130
Percentuale particolari da testare *Percentage of elements to be tested*		100%		**CODICE** *Code*	00.VSF.2683(T)	**DESCRIZIONE** *Description*	SB-598-20-E150FF-E-C276F-C276-N-PG-EXS100-L1-TG-TGW-PMI2-PD2-BI-CR-TA-FS-SPC1-SPC2			**Q.tà da produrre (pz.)** *No. of pieces to be produced*	2

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 105979

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*							RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	W	Fe	Co	
1,1	981E.01.0096C276N(T)	Valve body	1	Heat : 307035 (Lot OE-19820)	MEST075939/2024/1 - UT24003423	C276	16,26	58,98	15,22	0,30	3,26	5,96	0,09	OK
1,2	981E.02.0066C276N(T)	Closer	1	Heat : 307035 (Lot OE-19821)	MEST075939/2024/1 - UT24003423	C276	15,79	59,17	15,26	0,26	3,28	5,86	0,13	OK
1,3	980F.04.0001C276N(T)	Stem of ball	1	Heat : 903981 (Lot L24-0824)	FA1600157470 00 / V0 - 494070	C276	15,65	58,64	16,17	0,25	3,11	6,16	0,10	OK
1,4	98E.07.0001C276N(T)	Ball	1	Heat : 901228 (Lot L24-0823)	MEST025211/2023/1 - UT23001136	C276	16,14	57,43	15,96	0,45	3,50	6,07	0,20	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 105980

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*							RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	W	Fe	Co	
2,1	981E.01.0096C276N(T)	Valve body	1	Heat : 307035 (Lot OE-19820)	MEST075939/2024/1 - UT24003423	C276	16,20	58,95	15,16	0,31	3,20	5,92	0,15	OK
2,2	981E.02.0066C276N(T)	Closer	1	Heat : 307035 (Lot OE-19821)	MEST075939/2024/1 - UT24003423	C276	15,83	59,08	15,31	0,22	3,32	5,80	0,10	OK
2,3	980F.04.0001C276N(T)	Stem of ball	1	Heat : 903981 (Lot L24-0824)	FA1600157470 00 / V0 - 494070	C276	15,70	58,62	16,10	0,20	3,16	6,15	0,20	OK
2,4	98E.07.0001C276N(T)	Ball	1	Heat : 901228 (Lot L24-0823)	MEST025211/2023/1 - UT23001136	C276	16,11	57,51	16,09	0,52	3,41	6,12	0,25	OK

CROSSWIND

NOTE / *Remarks* : PMI 100% on body, closer and wetted parts According to NDT PROCEDURE - PT/PMI Rev.14	Data prelievo componenti / *Date of components picking* : 30-Sep-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Testing instrument: X-Ray analyzer NITON XL2 980 GOLDD	Data verifica componenti / *Date of components verification* : 30-Sep-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Serial number: 85044 - expiry 15-November-2024	Data esecuzione PMI TEST / *Date of PMI TEST execution* : 30-Sep-2024	Firma /*Signature* THOMAS PETITTI PMI OPERATOR

	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 516-2024_24-01216-p10 Data/*Date* : 16-Sep-2024	MD/PMI-VSF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	**COMMESSA INDRA** *Indra Job No.*	24 01216	**NR. D'ORDINE CLIENTE** *Customer Order No.*	1724000798 REV.2	**DEL** *Dated*	26-Jun-2024	**POSIZIONE D'ORDINE CLIENTE** *Customer Item*	140	**POSIZIONE D' ORDINE INDRA** *Indra Item*	140
Percentuale particolari da testare *Percentage of elements to be tested*		100%		**CODICE** *Code*	00.VSF.2695/V			**DESCRIZIONE** *Description*	SB-598-HR-50-L1SORF3-L-DLF-DL-CA3-N-RG-L1-TG-TGW-TV-DP-PMI2-PD2-BI-GT-CR-TA-FE2-FS-FE SPC1	**Q.tà da produrre (pz.)** *No. of pieces to be produced*	1

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 105981

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
1,1	981J.01.0024DLN(T)	Valve body	1	Heat : 293334 (Lot OE-19887)	MEST007064/2024/ - UT24000304	316/316L	16,55	10,00	2,05	1,88	OK
1,2	981J.02.0021DLN(T)	Closer	1	Heat : 437746 (Lot OE-19889)	MEST043035/2024/ - UT24002046	316/316L	16,71	10,20	2,10	1,91	OK
1,3	98J.04.0003DLN(T)	Stem of ball	1	Heat : 291905 (Lot F23-3024)	MEST084078/2023/	316/316L	16,47	10,34	2,18	1,77	OK
1,4	98J.07.0001DLN(T)	Ball	1	Heat : 272823 (Lot F22-2706)	2022021445	316/316L	16,63	10,26	2,14	1,93	OK

xCROSSWIND
16/10/24 R

NOTE / *Remarks* : PMI 100% on body, closer and wetted parts According to NDT PROCEDURE - PT/PMI Rev.14	Data prelievo componenti / *Date of components picking* : 16-Sep-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Testing instrument: X-Ray analyzer NITON XL2 980 GOLDD	Data verifica componenti / *Date of components verification* : 16-Sep-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Serial number: 85044 - expiry 15-November-2024	Data esecuzione PMI TEST / *Date of PMI TEST execution* : 16-Sep-2024	Firma /*Signature* THOMAS PETITTI PMI OPERATOR

indra VALVES - ITALY	**Project:** CROSSWIND 24 01216 / pos 140 - 00.VSF.2695/V PO 1724000798 REV.2 pos 140 - VBD0NN16460300		
HARDNESS TEST REPORT **EN 10204 3.1 ed 2004**	**Client:** ROSETTI MARINO SPA	**Report No.:** 019 **Date:** 16-Sep-2024 **Page 1 of 1**	

Location/area: Indra S.r.l Magenta (MI)		**Material:** 316/316L

Testing instrument: Durometer 1600 HV
Serial Number: 32159000013 - expiry 17-April-2027
Hardness Test Procedure: PT-HT (24-01216) Rev. 0

Surface preparation:

Grinding	Machined X	Lapping	Filling	Other

Test position: see below table

Measuring unit:

Rockwell C(HRC)	**Brinell (HB) x**	**Shore**
Rockwell B(HRB)	**Vickers (HV)**	

Location	HARDNESS (average value)						
Valve body S.N 105981	158						
Closer S.N 105981	153						
Stem of ball S.N 105981	142						
Ball S.N 105981	165						

Sketch: 981J.01.0024DLN(T) - 981J.02.0021DLN(T) - 98J.04.0003DLN(T) - 98J.07.0001DLN(T)

Quality control	TPI Inspection	Client
Name: Petitti Thomas	Name:	Name:
Sign:	Sign:	Sign:
Date: 16-Sep-2024	Date:	Date:

x CROSSWIND
16/10/24

ROSETTI MARINO ITEM 150

COD. VLBBNN07190100

TAG:

BLPH-MV-003, BLPH-MV-010, BLPH-MV-018, BLPH-MV-029, BLPH-MV-086, BLPH-MV-087, BLPH-MV-088, BLPH-MV-093, BLPH-MV-094, BLPH-MV-098, BLPH-MV-192, BLPH-MV-193, BLPH-MV-195, BLPH-MV-197, BLPH-MV-198, BLPH-MV-200, BLPH-MV-206, BLPH-MV-207, BLPH-MV-211,BLPH-MV-212 BLPH-MV-384, BLPH-MV-385, BLPH-MV-390,BLPH-MV-391, BLPH-MV-426, BLPH-MV-428, BLPH-MV-434, BLPH-MV-435

INDRA ITEM 150

COD. 00.VSF.2680/V

CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 150 NS.POS/OUR ITEM 150 VS.COD./YOUR CODE VLBBNN07190100 NS.COD./OUR CODE 00.VSF.2680/V (28 PCS)

indra VALVES - ITALY	**PENETRANT TEST REPORT (PT)**	**MD-02-29** rev.02 Date 28-11-2022

Certificato No.	PT-123-2024	Internal Indra Order No.:	OE 015617,015620 017813, 017814	
Customer:	ROSETTI MARINO SPA	**Qty:**	27 + 1 + 56 + 1 + 2	Batch no.:
Code: →	981F.01.0022DLN(T)	Description:	BODY	OE-15670-435799 (SN FROM 105982 TO 106008)
→	981F.01.0022DLN(T)		BODY	L23-1136-437075 (SN 106009)
→	981F.02.0034DLN(T)		CLOSURE F300RF3	OE-15673-294158
	981F.01.0022DLN(T)		BODY	OE-17820-435799
	981F.02.0034DLN(T)		CLOSURE F300RF3	OE-17821-294158
Acceptance Standards:	Asme V art.6 Asme VIII Div.1 app.8			
Procedure:	*Indra Procedure PT-DP-01 (24-01216) Rev.0 dated 06-09-2024 EN 10204 3.1 ed 2004*			
Equipment:	*Luxmetro, white lamp, liquid penetrant*			

Test Conditions:

Test Surface:	EXTERNAL SIDE	INTERNAL SIDE	Surface Condition:	MACHINED
Penetrant Time: 20 min	Drying Time: 10 min	Development Time: 20 min	Cleaner:	SOLVENT-ALCOHOL
Natural Light: > 1100 Lux				
Type of Penetrant	08.122 K71B2	Batch no.	220127/BI	
Type of Developer	D112A	Batch no.	231106W150s	
Type of Removal	WATER			
Results:	ACCEPTABLE			

Note:
The inspection was conducted 100% of the surface

x CROSSWIND
16/10/24

Operator: Nicholas Sacchetti (LEVEL 2 acc. EN 9712:2012)	Signature:	Approved: Lucia Nosotti (RSQ)	Signature:
INDRA SRL VIA NOVARA 10/B-C / 20013 MAGENTA (MI)	Approval of Customer:		Date: 13 September 2024

indra VALVES - ITALY	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 520-2024_24-01216-p150 Data/*Date* : 12-Sep-2024	MD/PMI-VSF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	**COMMESSA INDRA** *Indra Job No.*	24 01216	**NR. D'ORDINE CLIENTE** *Customer Order No.*	1724000798 REV.2	**DEL** *Dated*	26-Jun-2024	**POSIZIONE D'ORDINE CLIENTE** *Customer Item*	150	**POSIZIONE D' ORDINE INDRA** *Indra Item*	150
Percentuale particolari da testare *Percentage of elements to be tested*		100%		**CODICE** *Code*	00.VSF.2680/V	**DESCRIZIONE** *Description*	DBB-89B-HR-25-F300RF3-F-D-DLF-DL-N-PG-L123-TG-TGW-TV-DP-PMI2-PD2-BI-GT-CR-TA-FE2-FS-FE-SPC1	**Q.tà da produrre (pz.)** *No. of pieces to be produced*	28		

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 105982

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
1,1	981F.01.0022DLN(T)	Valve body	1	Heat : 435799 (Lot OE-15670)	MEST080040/2024/ - UT24003628	316/316L	16,96	10,28	2,17	1,73	OK
1,2	981F.02.0034DLN(T)	Closer IN	1	Heat : 294158 (Lot OE-15673)	MEST098212/2024/ - UT24004631	316/316L	16,65	10,28	2,15	1,66	OK
1,2	981F.02.0034DLN(T)	Closer OUT	1	Heat : 294158 (Lot OE-15673)	MEST098212/2024/ - UT24004631	316/316L	16,70	10,33	2,15	1,68	OK
1,3	980F.04.0001DLN(T)	Stem of ball IN	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,30	11,13	2,14	1,78	OK
1,3	980F.04.0001DLN(T)	Stem of ball OUT	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,36	11,19	2,09	1,62	OK
1,4	98F.07.0001DLN(T)	Ball IN	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,45	10,04	2,11	1,40	OK
1,4	98F.07.0001DLN(T)	Ball OUT	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,55	10,05	2,11	1,40	OK
1,5	97.02.0001DLN(T)	Bonnet body	1	Heat : 291893 (Lot F24-0567)	MEST040838/2024/	316/316L	16,78	10,62	2,12	1,50	OK
1,6	97.03.0001DLN(T)	Stem	1	Heat : 172303 (Lot F23-2911)	174495	316/316L	16,30	10,49	2,45	1,65	OK
1,7	97.04.0001DLN(T)	Tip	1	Heat : 290962 (Lot F23-2912)	MEST140440/2023/	316/316L	16,18	10,17	2,38	1,69	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 105983

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
1,1	981F.01.0022DLN(T)	Valve body	1	Heat : 435799 (Lot OE-15670)	MEST080040/2024/ - UT24003628	316/316L	16,90	10,20	2,14	1,70	OK
1,2	981F.02.0034DLN(T)	Closer IN	1	Heat : 294158 (Lot OE-15673)	MEST098212/2024/ - UT24004631	316/316L	16,68	10,39	2,19	1,65	OK
1,2	981F.02.0034DLN(T)	Closer OUT	1	Heat : 294158 (Lot OE-15673)	MEST098212/2024/ - UT24004631	316/316L	16,67	10,27	2,12	1,60	OK
1,3	980F.04.0001DLN(T)	Stem of ball IN	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,36	10,89	2,06	1,68	OK
1,3	980F.04.0001DLN(T)	Stem of ball OUT	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,39	11,05	2,07	1,63	OK
1,4	98F.07.0001DLN(T)	Ball IN	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,54	10,09	2,15	1,32	OK
1,4	98F.07.0001DLN(T)	Ball OUT	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,46	10,01	2,08	1,46	OK
1,5	97.02.0001DLN(T)	Bonnet body	1	Heat : 291893 (Lot F24-0567)	MEST040838/2024/	316/316L	16,76	10,66	2,18	1,45	OK
1,6	97.03.0001DLN(T)	Stem	1	Heat : 172303 (Lot F23-2911)	174495	316/316L	16,28	10,50	2,43	1,79	OK
1,7	97.04.0001DLN(T)	Tip	1	Heat : 290962 (Lot F23-2912)	MEST140440/2023/	316/316L	16,25	10,33	2,45	1,76	OK

x CROSSWIND 16/10/24

	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 520-2024_24-01216-p150 Data/*Date* : 12-Sep-2024	MD/PMI-VSF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	**COMMESSA INDRA** *Indra Job No.*	24 01216	**NR. D'ORDINE CLIENTE** *Customer Order No.*	1724000798 REV.2	**DEL** *Dated*	26-Jun-2024	**POSIZIONE D'ORDINE CLIENTE** *Customer Item*	150	**POSIZIONE D' ORDINE INDRA** *Indra Item*	150
Percentuale particolari da testare *Percentage of elements to be tested*		100%		**CODICE** *Code*	00.VSF.2680/V			**DESCRIZIONE** *Description*	DBB-898-HR-25-F300RF3-F-D-DLF-DL-N-PG-L123-TG-TGW-TV-DP-PMI2-PD2-BI-GT-CR-TA-FE2-FS-FE-SPC1	**Q.tà da produrre (pz.)** *No. of pieces to be produced*	28

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 105984

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
1,1	981F.01.0022DLN(T)	Valve body	1	Heat : 435799 (Lot OE-15670)	MEST080040/2024/ - UT24003628	316/316L	16,94	10,23	2,20	1,70	OK
1,2	981F.02.0034DLN(T)	Closer IN	1	Heat : 294158 (Lot OE-15673)	MEST098212/2024/ - UT24004631	316/316L	16,62	10,25	2,13	1,69	OK
1,2	981F.02.0034DLN(T)	Closer OUT	1	Heat : 294158 (Lot OE-15673)	MEST098212/2024/ - UT24004631	316/316L	16,69	10,28	2,15	1,76	OK
1,3	980F.04.0001DLN(T)	Stem of ball IN	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,38	11,00	2,15	1,67	OK
1,3	980F.04.0001DLN(T)	Stem of ball OUT	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,20	10,85	2,05	1,72	OK
1,4	98F.07.0001DLN(T)	Ball IN	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,58	10,10	2,05	1,49	OK
1,4	98F.07.0001DLN(T)	Ball OUT	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,51	10,09	2,14	1,45	OK
1,5	97.02.0001DLN(T)	Bonnet body	1	Heat : 291893 (Lot F24-0567)	MEST040838/2024/	316/316L	16,69	10,52	2,12	1,40	OK
1,6	97.03.0001DLN(T)	Stem	1	Heat : 172303 (Lot F23-2911)	174495	316/316L	16,19	10,26	2,50	1,68	OK
1,7	97.04.0001DLN(T)	Tip	1	Heat : 290962 (Lot F23-2912)	MEST140440/2023/	316/316L	16,20	10,34	2,41	1,66	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 105985

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
1,1	981F.01.0022DLN(T)	Valve body	1	Heat : 435799 (Lot OE-15670)	MEST080040/2024/ - UT24003628	316/316L	16,96	10,18	2,10	1,71	OK
1,2	981F.02.0034DLN(T)	Closer IN	1	Heat : 294158 (Lot OE-15673)	MEST098212/2024/ - UT24004631	316/316L	16,61	10,38	2,20	1,68	OK
1,2	981F.02.0034DLN(T)	Closer OUT	1	Heat : 294158 (Lot OE-15673)	MEST098212/2024/ - UT24004631	316/316L	16,67	10,30	2,14	1,62	OK
1,3	980F.04.0001DLN(T)	Stem of ball IN	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,24	10,96	2,06	1,78	OK
1,3	980F.04.0001DLN(T)	Stem of ball OUT	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,34	10,99	2,10	1,77	OK
1,4	98F.07.0001DLN(T)	Ball IN	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,47	10,00	2,10	1,38	OK
1,4	98F.07.0001DLN(T)	Ball OUT	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,49	10,01	2,06	1,45	OK
1,5	97.02.0001DLN(T)	Bonnet body	1	Heat : 291893 (Lot F24-0567)	MEST040838/2024/	316/316L	16,77	10,69	2,13	1,45	OK
1,6	97.03.0001DLN(T)	Stem	1	Heat : 172303 (Lot F23-2911)	174495	316/316L	16,23	10,40	2,48	1,71	OK
1,7	97.04.0001DLN(T)	Tip	1	Heat : 290962 (Lot F23-2912)	MEST140440/2023/	316/316L	16,11	10,32	2,46	1,76	OK

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	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 520-2024_24-01216-p150 Data/*Date* : 12-Sep-2024	MD/PMI-VSF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	**COMMESSA INDRA** *Indra Job No.*	24 01216	**NR. D'ORDINE CLIENTE** *Customer Order No.*	1724000798 REV.2	**DEL** *Dated*	26-Jun-2024	**POSIZIONE D'ORDINE CLIENTE** *Customer Item*	150	**POSIZIONE D' ORDINE INDRA** *Indra Item*	150
Percentuale particolari da testare *Percentage of elements to be tested*		100%		**CODICE** *Code*	00.VSF.2680/V			**DESCRIZIONE** *Description*	DBB-898-HR-25-F300RF3-F-D-DLF-DL-N-PG-L123-TG-TGW-TV-DP-PMI2-PD2-BI-GT-CR-TA-FE2-FS-FE-SPC1	**Q.tà da produrre (pz.)** *No. of pieces to be produced*	28

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 105986

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
1,1	981F.01.0022DLN(T)	Valve body	1	Heat : 435799 (Lot OE-15670)	MEST080040/2024/ - UT24003628	316/316L	16,91	10,25	2,20	1,72	OK
1,2	981F.02.0034DLN(T)	Closer IN	1	Heat : 294158 (Lot OE-15673)	MEST098212/2024/ - UT24004631	316/316L	16,61	10,31	2,10	1,75	OK
1,2	981F.02.0034DLN(T)	Closer OUT	1	Heat : 294158 (Lot OE-15673)	MEST098212/2024/ - UT24004631	316/316L	16,56	10,27	2,20	1,78	OK
1,3	980F.04.0001DLN(T)	Stem of ball IN	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,30	10,89	2,07	1,72	OK
1,3	980F.04.0001DLN(T)	Stem of ball OUT	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,20	10,90	2,14	1,75	OK
1,4	98F.07.0001DLN(T)	Ball IN	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,59	10,07	2,13	1,41	OK
1,4	98F.07.0001DLN(T)	Ball OUT	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,48	10,01	2,11	1,31	OK
1,5	97.02.0001DLN(T)	Bonnet body	1	Heat : 291893 (Lot F24-0567)	MEST040838/2024/	316/316L	16,74	10,63	2,19	1,43	OK
1,6	97.03.0001DLN(T)	Stem	1	Heat : 172303 (Lot F23-2911)	174495	316/316L	16,30	10,38	2,38	1,80	OK
1,7	97.04.0001DLN(T)	Tip	1	Heat : 290962 (Lot F23-2912)	MEST140440/2023/	316/316L	16,15	10,16	2,49	1,78	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 105987

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
1,1	981F.01.0022DLN(T)	Valve body	1	Heat : 435799 (Lot OE-15670)	MEST080040/2024/ - UT24003628	316/316L	17,01	10,29	2,14	1,81	OK
1,2	981F.02.0034DLN(T)	Closer IN	1	Heat : 294158 (Lot OE-15673)	MEST098212/2024/ - UT24004631	316/316L	16,67	10,36	2,18	1,71	OK
1,2	981F.02.0034DLN(T)	Closer OUT	1	Heat : 294158 (Lot OE-15673)	MEST098212/2024/ - UT24004631	316/316L	16,60	10,35	2,19	1,61	OK
1,3	980F.04.0001DLN(T)	Stem of ball IN	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,35	11,15	2,05	1,60	OK
1,3	980F.04.0001DLN(T)	Stem of ball OUT	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,23	10,96	2,15	1,77	OK
1,4	98F.07.0001DLN(T)	Ball IN	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,45	10,04	2,07	1,33	OK
1,4	98F.07.0001DLN(T)	Ball OUT	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,51	10,06	2,11	1,30	OK
1,5	97.02.0001DLN(T)	Bonnet body	1	Heat : 291893 (Lot F24-0567)	MEST040838/2024/	316/316L	16,77	10,63	2,13	1,43	OK
1,6	97.03.0001DLN(T)	Stem	1	Heat : 172303 (Lot F23-2911)	174495	316/316L	16,14	10,26	2,35	1,65	OK
1,7	97.04.0001DLN(T)	Tip	1	Heat : 290962 (Lot F23-2912)	MEST140440/2023/	316/316L	16,26	10,15	2,50	1,62	OK

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indra VALVES - ITALY	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 520-2024_24-01216-p150 Data/*Date* : 12-Sep-2024	MD/PMI-VSF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	**COMMESSA INDRA** *Indra Job No.*	24 01216	**NR. D'ORDINE CLIENTE** *Customer Order No.*	1724000798 REV.2	**DEL** *Dated*	26-Jun-2024	**POSIZIONE D'ORDINE CLIENTE** *Customer Item*	150	**POSIZIONE D' ORDINE INDRA** *Indra Item*	150
Percentuale particolari da testare *Percentage of elements to be tested*		100%		**CODICE** *Code*	00.VSF.2680/V			**DESCRIZIONE** *Description*	DBB-898-HR-25-F300RF3-F-D-DLF-DL-N-PG-L123-TG-TGW-TV-DP-PMI2-PD2-BI-GT-CR-TA-FE2-FS-FE-SPC1	**Q.tà da produrre (pz.)** *No. of pieces to be produced*	28

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 105988

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
1,1	981F.01.0022DLN(T)	Valve body	1	Heat : 435799 (Lot OE-15670)	MEST080040/2024/ - UT24003628	316/316L	16,98	10,27	2,15	1,77	OK
1,2	981F.02.0034DLN(T)	Closer IN	1	Heat : 294158 (Lot OE-15673)	MEST098212/2024/ - UT24004631	316/316L	16,67	10,34	2,17	1,75	OK
1,2	981F.02.0034DLN(T)	Closer OUT	1	Heat : 294158 (Lot OE-15673)	MEST098212/2024/ - UT24004631	316/316L	16,64	10,35	2,11	1,75	OK
1,3	980F.04.0001DLN(T)	Stem of ball IN	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,29	11,11	2,12	1,71	OK
1,3	980F.04.0001DLN(T)	Stem of ball OUT	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,35	10,96	2,13	1,67	OK
1,4	98F.07.0001DLN(T)	Ball IN	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,54	10,00	2,10	1,46	OK
1,4	98F.07.0001DLN(T)	Ball OUT	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,48	10,08	2,05	1,44	OK
1,5	97.02.0001DLN(T)	Bonnet body	1	Heat : 291893 (Lot F24-0567)	MEST040838/2024/	316/316L	16,77	10,62	2,19	1,39	OK
1,6	97.03.0001DLN(T)	Stem	1	Heat : 172303 (Lot F23-2911)	174495	316/316L	16,20	10,10	2,37	1,60	OK
1,7	97.04.0001DLN(T)	Tip	1	Heat : 290962 (Lot F23-2912)	MEST140440/2023/	316/316L	16,13	10,46	2,50	1,65	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 105989

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
1,1	981F.01.0022DLN(T)	Valve body	1	Heat : 435799 (Lot OE-15670)	MEST080040/2024/ - UT24003628	316/316L	17,00	10,21	2,16	1,83	OK
1,2	981F.02.0034DLN(T)	Closer IN	1	Heat : 294158 (Lot OE-15673)	MEST098212/2024/ - UT24004631	316/316L	16,63	10,26	2,12	1,76	OK
1,2	981F.02.0034DLN(T)	Closer OUT	1	Heat : 294158 (Lot OE-15673)	MEST098212/2024/ - UT24004631	316/316L	16,65	10,38	2,17	1,62	OK
1,3	980F.04.0001DLN(T)	Stem of ball IN	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,35	10,99	2,14	1,76	OK
1,3	980F.04.0001DLN(T)	Stem of ball OUT	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,38	10,81	2,06	1,80	OK
1,4	98F.07.0001DLN(T)	Ball IN	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,50	10,08	2,13	1,36	OK
1,4	98F.07.0001DLN(T)	Ball OUT	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,50	10,01	2,15	1,45	OK
1,5	97.02.0001DLN(T)	Bonnet body	1	Heat : 291893 (Lot F24-0567)	MEST040838/2024/	316/316L	16,79	10,57	2,10	1,35	OK
1,6	97.03.0001DLN(T)	Stem	1	Heat : 172303 (Lot F23-2911)	174495	316/316L	16,19	10,34	2,41	1,65	OK
1,7	97.04.0001DLN(T)	Tip	1	Heat : 290962 (Lot F23-2912)	MEST140440/2023/	316/316L	16,13	10,12	2,42	1,79	OK

xCROSSMIND 16/10/24

	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 520-2024_24-01216-p150 Data/*Date* : 12-Sep-2024	MD/PMI-VSF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	**COMMESSA INDRA** *Indra Job No.*	24 01216	**NR. D'ORDINE CLIENTE** *Customer Order No.*	1724000798 REV.2	**DEL** *Dated*	26-Jun-2024	**POSIZIONE D'ORDINE CLIENTE** *Customer Item*	150	**POSIZIONE D' ORDINE INDRA** *Indra Item*	150
Percentuale particolari da testare *Percentage of elements to be tested*		100%		**CODICE** *Code*	00.VSF.2680/V	**DESCRIZIONE** *Description*	DBB-898-HR-25-F300RF3-F-D-DLF-DL-N-PG-L123-TG-TGW-TV-DP-PMI2-PD2-BI-GT-CR-TA-FE2-FS-FE-SPC1	**Q.tà da produrre (pz.)** *No. of pieces to be produced*	28		

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 105990

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
1,1	981F.01.0022DLN(T)	Valve body	1	Heat : 435799 (Lot OE-15670)	MEST080040/2024/ - UT24003628	316/316L	16,87	10,20	2,16	1,73	OK
1,2	981F.02.0034DLN(T)	Closer IN	1	Heat : 294158 (Lot OE-15673)	MEST098212/2024/ - UT24004631	316/316L	16,60	10,25	2,17	1,63	OK
1,2	981F.02.0034DLN(T)	Closer OUT	1	Heat : 294158 (Lot OE-15673)	MEST098212/2024/ - UT24004631	316/316L	16,69	10,30	2,13	1,65	OK
1,3	980F.04.0001DLN(T)	Stem of ball IN	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,30	10,98	2,09	1,62	OK
1,3	980F.04.0001DLN(T)	Stem of ball OUT	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,36	11,20	2,13	1,63	OK
1,4	98F.07.0001DLN(T)	Ball IN	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,47	10,08	2,11	1,40	OK
1,4	98F.07.0001DLN(T)	Ball OUT	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,53	10,01	2,10	1,45	OK
1,5	97.02.0001DLN(T)	Bonnet body	1	Heat : 291893 (Lot F24-0567)	MEST040838/2024/	316/316L	16,69	10,54	2,19	1,41	OK
1,6	97.03.0001DLN(T)	Stem	1	Heat : 172303 (Lot F23-2911)	174495	316/316L	16,30	10,15	2,46	1,66	OK
1,7	97.04.0001DLN(T)	Tip	1	Heat : 290962 (Lot F23-2912)	MEST140440/2023/	316/316L	16,28	10,49	2,39	1,67	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 105991

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
1,1	981F.01.0022DLN(T)	Valve body	1	Heat : 435799 (Lot OE-15670)	MEST080040/2024/ - UT24003628	316/316L	16,96	10,16	2,14	1,75	OK
1,2	981F.02.0034DLN(T)	Closer IN	1	Heat : 294158 (Lot OE-15673)	MEST098212/2024/ - UT24004631	316/316L	16,70	10,25	2,10	1,73	OK
1,2	981F.02.0034DLN(T)	Closer OUT	1	Heat : 294158 (Lot OE-15673)	MEST098212/2024/ - UT24004631	316/316L	16,60	10,30	2,18	1,76	OK
1,3	980F.04.0001DLN(T)	Stem of ball IN	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,32	10,92	2,08	1,63	OK
1,3	980F.04.0001DLN(T)	Stem of ball OUT	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,23	11,15	2,14	1,72	OK
1,4	98F.07.0001DLN(T)	Ball IN	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,58	10,06	2,15	1,38	OK
1,4	98F.07.0001DLN(T)	Ball OUT	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,55	10,04	2,12	1,41	OK
1,5	97.02.0001DLN(T)	Bonnet body	1	Heat : 291893 (Lot F24-0567)	MEST040838/2024/	316/316L	16,77	10,61	2,14	1,42	OK
1,6	97.03.0001DLN(T)	Stem	1	Heat : 172303 (Lot F23-2911)	174495	316/316L	16,19	10,14	2,41	1,60	OK
1,7	97.04.0001DLN(T)	Tip	1	Heat : 290962 (Lot F23-2912)	MEST140440/2023/	316/316L	16,30	10,12	2,48	1,68	OK

x CROSSWIND 16/10/24

	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 520-2024_24-01216-p150 Data/*Date* : 12-Sep-2024	MD/PMI-VSF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	**COMMESSA INDRA** *Indra Job No.*	24 01216	**NR. D'ORDINE CLIENTE** *Customer Order No.*	1724000798 REV.2	**DEL** *Dated*	26-Jun-2024	**POSIZIONE D'ORDINE CLIENTE** *Customer Item*	150	**POSIZIONE D' ORDINE INDRA** *Indra Item*	150
Percentuale particolari da testare *Percentage of elements to be tested*		100%		**CODICE** *Code*	00.VSF.2680/V			**DESCRIZIONE** *Description*	DBB-898-HR-25-F300RF3-F-D-DLF-DL-N-PG-L123-TG-TGW-TV-DP-PMI2-PD2-BI-GT-CR-TA-FE2-FS-FE-SPC1	**Q.tà da produrre (pz.)** *No. of pieces to be produced*	28

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 105992

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
1,1	981F.01.0022DLN(T)	Valve body	1	Heat : 435799 (Lot OE-15670)	MEST080040/2024/ - UT24003628	316/316L	16,86	10,16	2,19	1,80	OK
1,2	981F.02.0034DLN(T)	Closer IN	1	Heat : 294158 (Lot OE-15673)	MEST098212/2024/ - UT24004631	316/316L	16,56	10,30	2,20	1,78	OK
1,2	981F.02.0034DLN(T)	Closer OUT	1	Heat : 294158 (Lot OE-15673)	MEST098212/2024/ - UT24004631	316/316L	16,65	10,29	2,17	1,69	OK
1,3	980F.04.0001DLN(T)	Stem of ball IN	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,21	11,13	2,12	1,72	OK
1,3	980F.04.0001DLN(T)	Stem of ball OUT	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,27	10,99	2,08	1,62	OK
1,4	98F.07.0001DLN(T)	Ball IN	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,56	10,10	2,14	1,40	OK
1,4	98F.07.0001DLN(T)	Ball OUT	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,45	10,07	2,05	1,47	OK
1,5	97.02.0001DLN(T)	Bonnet body	1	Heat : 291893 (Lot F24-0567)	MEST040838/2024/	316/316L	16,77	10,55	2,12	1,48	OK
1,6	97.03.0001DLN(T)	Stem	1	Heat : 172303 (Lot F23-2911)	174495	316/316L	16,13	10,26	2,41	1,71	OK
1,7	97.04.0001DLN(T)	Tip	1	Heat : 290962 (Lot F23-2912)	MEST140440/2023/	316/316L	16,28	10,15	2,43	1,80	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 105993

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
1,1	981F.01.0022DLN(T)	Valve body	1	Heat : 435799 (Lot OE-15670)	MEST080040/2024/ - UT24003628	316/316L	16,95	10,23	2,11	1,81	OK
1,2	981F.02.0034DLN(T)	Closer IN	1	Heat : 294158 (Lot OE-15673)	MEST098212/2024/ - UT24004631	316/316L	16,60	10,33	2,12	1,80	OK
1,2	981F.02.0034DLN(T)	Closer OUT	1	Heat : 294158 (Lot OE-15673)	MEST098212/2024/ - UT24004631	316/316L	16,68	10,26	2,18	1,60	OK
1,3	980F.04.0001DLN(T)	Stem of ball IN	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,23	10,91	2,09	1,75	OK
1,3	980F.04.0001DLN(T)	Stem of ball OUT	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,21	11,07	2,08	1,79	OK
1,4	98F.07.0001DLN(T)	Ball IN	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,54	10,01	2,14	1,46	OK
1,4	98F.07.0001DLN(T)	Ball OUT	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,59	10,05	2,10	1,42	OK
1,5	97.02.0001DLN(T)	Bonnet body	1	Heat : 291893 (Lot F24-0567)	MEST040838/2024/	316/316L	16,70	10,50	2,18	1,43	OK
1,6	97.03.0001DLN(T)	Stem	1	Heat : 172303 (Lot F23-2911)	174495	316/316L	16,12	10,10	2,44	1,78	OK
1,7	97.04.0001DLN(T)	Tip	1	Heat : 290962 (Lot F23-2912)	MEST140440/2023/	316/316L	16,24	10,34	2,37	1,63	OK

x CACCIAVINO 16/10/24

indra VALVES - ITALY	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 520-2024_24-01216-p150 Data/*Date* : 12-Sep-2024	MD/PMI-VSF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	**COMMESSA INDRA** *Indra Job No.*	24 01216	**NR. D'ORDINE CLIENTE** *Customer Order No.*	1724000798 REV.2	**DEL** *Dated*	26-Jun-2024	**POSIZIONE D'ORDINE CLIENTE** *Customer Item*	150	**POSIZIONE D' ORDINE INDRA** *Indra Item*	150
Percentuale particolari da testare *Percentage of elements to be tested*		100%		**CODICE** *Code*	00.VSF.2680/V			**DESCRIZIONE** *Description*	DBB-898-HR-25-F300RF3-F-D-DLF-DL-N-PG-L123-TG-TGW-TV-DP-PMI2-PD2-BI-GT-CR-TA-FE2-FS-FE-SPC1	**Q.tà da produrre (pz.)** *No. of pieces to be produced*	28

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 105994

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
1,1	981F.01.0022DLN(T)	Valve body	1	Heat : 435799 (Lot OE-15670)	MEST080040/2024/ - UT24003628	316/316L	17,05	10,23	2,11	1,78	OK
1,2	981F.02.0034DLN(T)	Closer IN	1	Heat : 294158 (Lot OE-15673)	MEST098212/2024/ - UT24004631	316/316L	16,69	10,34	2,16	1,72	OK
1,2	981F.02.0034DLN(T)	Closer OUT	1	Heat : 294158 (Lot OE-15673)	MEST098212/2024/ - UT24004631	316/316L	16,68	10,31	2,12	1,69	OK
1,3	980F.04.0001DLN(T)	Stem of ball IN	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,35	11,15	2,14	1,71	OK
1,3	980F.04.0001DLN(T)	Stem of ball OUT	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,37	10,96	2,15	1,60	OK
1,4	98F.07.0001DLN(T)	Ball IN	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,50	10,07	2,11	1,41	OK
1,4	98F.07.0001DLN(T)	Ball OUT	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,58	10,06	2,07	1,48	OK
1,5	97.02.0001DLN(T)	Bonnet body	1	Heat : 291893 (Lot F24-0567)	MEST040838/2024/	316/316L	16,73	10,62	2,16	1,46	OK
1,6	97.03.0001DLN(T)	Stem	1	Heat : 172303 (Lot F23-2911)	174495	316/316L	16,13	10,41	2,41	1,66	OK
1,7	97.04.0001DLN(T)	Tip	1	Heat : 290962 (Lot F23-2912)	MEST140440/2023/	316/316L	16,14	10,12	2,36	1,74	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 105995

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
1,1	981F.01.0022DLN(T)	Valve body	1	Heat : 435799 (Lot OE-15670)	MEST080040/2024/ - UT24003628	316/316L	16,93	10,26	2,13	1,82	OK
1,2	981F.02.0034DLN(T)	Closer IN	1	Heat : 294158 (Lot OE-15673)	MEST098212/2024/ - UT24004631	316/316L	16,60	10,40	2,14	1,69	OK
1,2	981F.02.0034DLN(T)	Closer OUT	1	Heat : 294158 (Lot OE-15673)	MEST098212/2024/ - UT24004631	316/316L	16,58	10,27	2,19	1,66	OK
1,3	980F.04.0001DLN(T)	Stem of ball IN	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,30	11,17	2,09	1,78	OK
1,3	980F.04.0001DLN(T)	Stem of ball OUT	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,26	11,01	2,08	1,79	OK
1,4	98F.07.0001DLN(T)	Ball IN	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,58	10,05	2,15	1,37	OK
1,4	98F.07.0001DLN(T)	Ball OUT	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,47	10,00	2,07	1,37	OK
1,5	97.02.0001DLN(T)	Bonnet body	1	Heat : 291893 (Lot F24-0567)	MEST040838/2024/	316/316L	16,68	10,67	2,10	1,47	OK
1,6	97.03.0001DLN(T)	Stem	1	Heat : 172303 (Lot F23-2911)	174495	316/316L	16,22	10,15	2,45	1,70	OK
1,7	97.04.0001DLN(T)	Tip	1	Heat : 290962 (Lot F23-2912)	MEST140440/2023/	316/316L	16,30	10,47	2,41	1,76	OK

x CROSSWIND 16/10/24

	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 520-2024_24-01216-p150 Data/*Date* : 12-Sep-2024	MD/PMI-VSF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	**COMMESSA INDRA** *Indra Job No.*	24 01216	**NR. D'ORDINE CLIENTE** *Customer Order No.*	1724000798 REV.2	**DEL** *Dated*	26-Jun-2024	**POSIZIONE D'ORDINE CLIENTE** *Customer Item*	150	**POSIZIONE D' ORDINE INDRA** *Indra Item*	150
Percentuale particolari da testare *Percentage of elements to be tested*		100%		**CODICE** *Code*	00.VSF.2680/V			**DESCRIZIONE** *Description*	DBB-898-HR-25-F300RF3-F-D-DLF-DL-N-PG-L123-TG-TGW-TV-DP-PMI2-PD2-BI-GT-CR-TA-FE2-FS-FE-SPC1	**Q.tà da produrre (pz.)** *No. of pieces to be produced*	28

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 105996

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
1,1	981F.01.0022DLN(T)	Valve body	1	Heat : 435799 (Lot OE-15670)	MEST080040/2024/ - UT24003628	316/316L	17,05	10,28	2,17	1,76	OK
1,2	981F.02.0034DLN(T)	Closer IN	1	Heat : 294158 (Lot OE-15673)	MEST098212/2024/ - UT24004631	316/316L	16,66	10,35	2,18	1,80	OK
1,2	981F.02.0034DLN(T)	Closer OUT	1	Heat : 294158 (Lot OE-15673)	MEST098212/2024/ - UT24004631	316/316L	16,60	10,29	2,18	1,78	OK
1,3	980F.04.0001DLN(T)	Stem of ball IN	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,26	11,08	2,08	1,78	OK
1,3	980F.04.0001DLN(T)	Stem of ball OUT	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,28	10,83	2,10	1,77	OK
1,4	98F.07.0001DLN(T)	Ball IN	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,45	10,00	2,07	1,45	OK
1,4	98F.07.0001DLN(T)	Ball OUT	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,55	10,09	2,15	1,43	OK
1,5	97.02.0001DLN(T)	Bonnet body	1	Heat : 291893 (Lot F24-0567)	MEST040838/2024/	316/316L	16,75	10,62	2,18	1,35	OK
1,6	97.03.0001DLN(T)	Stem	1	Heat : 172303 (Lot F23-2911)	174495	316/316L	16,18	10,29	2,35	1,63	OK
1,7	97.04.0001DLN(T)	Tip	1	Heat : 290962 (Lot F23-2912)	MEST140440/2023/	316/316L	16,22	10,20	2,50	1,64	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 105997

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
1,1	981F.01.0022DLN(T)	Valve body	1	Heat : 435799 (Lot OE-15670)	MEST080040/2024/ - UT24003628	316/316L	16,83	10,19	2,16	1,81	OK
1,2	981F.02.0034DLN(T)	Closer IN	1	Heat : 294158 (Lot OE-15673)	MEST098212/2024/ - UT24004631	316/316L	16,57	10,35	2,17	1,72	OK
1,2	981F.02.0034DLN(T)	Closer OUT	1	Heat : 294158 (Lot OE-15673)	MEST098212/2024/ - UT24004631	316/316L	16,68	10,34	2,10	1,66	OK
1,3	980F.04.0001DLN(T)	Stem of ball IN	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,21	11,01	2,13	1,74	OK
1,3	980F.04.0001DLN(T)	Stem of ball OUT	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,35	11,01	2,13	1,66	OK
1,4	98F.07.0001DLN(T)	Ball IN	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,60	10,04	2,08	1,48	OK
1,4	98F.07.0001DLN(T)	Ball OUT	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,45	10,05	2,11	1,49	OK
1,5	97.02.0001DLN(T)	Bonnet body	1	Heat : 291893 (Lot F24-0567)	MEST040838/2024/	316/316L	16,79	10,68	2,20	1,43	OK
1,6	97.03.0001DLN(T)	Stem	1	Heat : 172303 (Lot F23-2911)	174495	316/316L	16,28	10,25	2,43	1,62	OK
1,7	97.04.0001DLN(T)	Tip	1	Heat : 290962 (Lot F23-2912)	MEST140440/2023/	316/316L	16,29	10,44	2,48	1,60	OK

x CROSSWINJD 16/10/24

indra VALVES - ITALY	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 520-2024_24-01216-p150 Data/*Date* : 12-Sep-2024	MD/PMI-VSF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	**COMMESSA INDRA** *Indra Job No.*	24 01216	**NR. D'ORDINE CLIENTE** *Customer Order No.*	1724000798 REV.2	**DEL** *Dated*	26-Jun-2024	**POSIZIONE D'ORDINE CLIENTE** *Customer Item*	150	**POSIZIONE D' ORDINE INDRA** *Indra Item*	150
Percentuale particolari da testare *Percentage of elements to be tested*		100%		**CODICE** *Code*	00.VSF.2680/V	**DESCRIZIONE** *Description*	DBB-898-HR-25-F300RF3-F-D-DLF-DL-N-PG-L123-TG-TGW-TV-DP-PMI2-PD2-BI-GT-CR-TA-FE2-FS-FE-SPC1	**Q.tà da produrre (pz.)** *No. of pieces to be produced*		28	

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 105998

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
1,1	981F.01.0022DLN(T)	Valve body	1	Heat : 435799 (Lot OE-15670)	MEST080040/2024/ - UT24003628	316/316L	16,91	10,15	2,17	1,77	OK
1,2	981F.02.0034DLN(T)	Closer IN	1	Heat : 294158 (Lot OE-15673)	MEST098212/2024/ - UT24004631	316/316L	16,59	10,26	2,11	1,74	OK
1,2	981F.02.0034DLN(T)	Closer OUT	1	Heat : 294158 (Lot OE-15673)	MEST098212/2024/ - UT24004631	316/316L	16,69	10,30	2,14	1,62	OK
1,3	980F.04.0001DLN(T)	Stem of ball IN	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,32	10,98	2,11	1,63	OK
1,3	980F.04.0001DLN(T)	Stem of ball OUT	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,24	10,87	2,13	1,72	OK
1,4	98F.07.0001DLN(T)	Ball IN	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,46	10,01	2,08	1,31	OK
1,4	98F.07.0001DLN(T)	Ball OUT	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,50	10,07	2,06	1,49	OK
1,5	97.02.0001DLN(T)	Bonnet body	1	Heat : 291893 (Lot F24-0567)	MEST040838/2024/	316/316L	16,69	10,60	2,19	1,35	OK
1,6	97.03.0001DLN(T)	Stem	1	Heat : 172303 (Lot F23-2911)	174495	316/316L	16,18	10,21	2,39	1,72	OK
1,7	97.04.0001DLN(T)	Tip	1	Heat : 290962 (Lot F23-2912)	MEST140440/2023/	316/316L	16,27	10,43	2,46	1,80	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 105999

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
1,1	981F.01.0022DLN(T)	Valve body	1	Heat : 435799 (Lot OE-15670)	MEST080040/2024/ - UT24003628	316/316L	17,05	10,28	2,12	1,70	OK
1,2	981F.02.0034DLN(T)	Closer IN	1	Heat : 294158 (Lot OE-15673)	MEST098212/2024/ - UT24004631	316/316L	16,63	10,38	2,15	1,76	OK
1,2	981F.02.0034DLN(T)	Closer OUT	1	Heat : 294158 (Lot OE-15673)	MEST098212/2024/ - UT24004631	316/316L	16,66	10,29	2,16	1,72	OK
1,3	980F.04.0001DLN(T)	Stem of ball IN	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,35	11,07	2,06	1,63	OK
1,3	980F.04.0001DLN(T)	Stem of ball OUT	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,31	10,97	2,12	1,63	OK
1,4	98F.07.0001DLN(T)	Ball IN	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,57	10,03	2,05	1,40	OK
1,4	98F.07.0001DLN(T)	Ball OUT	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,53	10,03	2,11	1,44	OK
1,5	97.02.0001DLN(T)	Bonnet body	1	Heat : 291893 (Lot F24-0567)	MEST040838/2024/	316/316L	16,69	10,60	2,15	1,35	OK
1,6	97.03.0001DLN(T)	Stem	1	Heat : 172303 (Lot F23-2911)	174495	316/316L	16,13	10,22	2,41	1,80	OK
1,7	97.04.0001DLN(T)	Tip	1	Heat : 290962 (Lot F23-2912)	MEST140440/2023/	316/316L	16,28	10,10	2,49	1,77	OK

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	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 520-2024_24-01216-p150 Data/*Date* : 12-Sep-2024	MD/PMI-VSF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	**COMMESSA INDRA** *Indra Job No.*	24 01216	**NR. D'ORDINE CLIENTE** *Customer Order No.*	1724000798 REV.2	**DEL** *Dated*	26-Jun-2024	**POSIZIONE D'ORDINE CLIENTE** *Customer Item*	150	**POSIZIONE D' ORDINE INDRA** *Indra Item*	150
Percentuale particolari da testare *Percentage of elements to be tested*		100%		**CODICE** *Code*	00.VSF.2680/V			**DESCRIZIONE** *Description*	DBB-89B-HR-25-F300RF3-F-D-DLF-DL-N-PG-L123-TG-TGW-TV-DP-PMI2-PD2-BI-GT-CR-TA-FE2-FS-FE-SPC1	**Q.tà da produrre (pz.)** *No. of pieces to be produced*	28

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106000

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
1,1	981F.01.0022DLN(T)	Valve body	1	Heat : 435799 (Lot OE-15670)	MEST080040/2024/ - UT24003628	316/316L	16,85	10,28	2,20	1,73	OK
1,2	981F.02.0034DLN(T)	Closer IN	1	Heat : 294158 (Lot OE-15673)	MEST098212/2024/ - UT24004631	316/316L	16,67	10,35	2,13	1,80	OK
1,2	981F.02.0034DLN(T)	Closer OUT	1	Heat : 294158 (Lot OE-15673)	MEST098212/2024/ - UT24004631	316/316L	16,65	10,25	2,10	1,62	OK
1,3	980F.04.0001DLN(T)	Stem of ball IN	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,34	10,89	2,09	1,72	OK
1,3	980F.04.0001DLN(T)	Stem of ball OUT	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,32	11,13	2,09	1,78	OK
1,4	98F.07.0001DLN(T)	Ball IN	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,47	10,02	2,10	1,37	OK
1,4	98F.07.0001DLN(T)	Ball OUT	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,52	10,02	2,10	1,44	OK
1,5	97.02.0001DLN(T)	Bonnet body	1	Heat : 291893 (Lot F24-0567)	MEST040838/2024/	316/316L	16,70	10,60	2,16	1,48	OK
1,6	97.03.0001DLN(T)	Stem	1	Heat : 172303 (Lot F23-2911)	174495	316/316L	16,27	10,37	2,46	1,78	OK
1,7	97.04.0001DLN(T)	Tip	1	Heat : 290962 (Lot F23-2912)	MEST140440/2023/	316/316L	16,29	10,18	2,37	1,64	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106001

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
1,1	981F.01.0022DLN(T)	Valve body	1	Heat : 435799 (Lot OE-15670)	MEST080040/2024/ - UT24003628	316/316L	16,95	10,19	2,10	1,73	OK
1,2	981F.02.0034DLN(T)	Closer IN	1	Heat : 294158 (Lot OE-15673)	MEST098212/2024/ - UT24004631	316/316L	16,59	10,25	2,18	1,78	OK
1,2	981F.02.0034DLN(T)	Closer OUT	1	Heat : 294158 (Lot OE-15673)	MEST098212/2024/ - UT24004631	316/316L	16,66	10,28	2,12	1,65	OK
1,3	980F.04.0001DLN(T)	Stem of ball IN	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,23	11,00	2,12	1,76	OK
1,3	980F.04.0001DLN(T)	Stem of ball OUT	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,25	10,82	2,07	1,70	OK
1,4	98F.07.0001DLN(T)	Ball IN	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,60	10,10	2,08	1,45	OK
1,4	98F.07.0001DLN(T)	Ball OUT	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,50	10,03	2,05	1,36	OK
1,5	97.02.0001DLN(T)	Bonnet body	1	Heat : 291893 (Lot F24-0567)	MEST040838/2024/	316/316L	16,74	10,67	2,11	1,40	OK
1,6	97.03.0001DLN(T)	Stem	1	Heat : 172303 (Lot F23-2911)	174495	316/316L	16,27	10,10	2,35	1,78	OK
1,7	97.04.0001DLN(T)	Tip	1	Heat : 290962 (Lot F23-2912)	MEST140440/2023/	316/316L	16,16	10,49	2,37	1,61	OK

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	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 520-2024_24-01216-p150 Data/*Date* : 12-Sep-2024	MD/PMI-VSF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	**COMMESSA INDRA** *Indra Job No.*	24 01216	**NR. D'ORDINE CLIENTE** *Customer Order No.*	1724000798 REV.2	**DEL** *Dated*	26-Jun-2024	**POSIZIONE D'ORDINE CLIENTE** *Customer Item*	150	**POSIZIONE D' ORDINE INDRA** *Indra Item*	150
Percentuale particolari da testare *Percentage of elements to be tested*		100%		**CODICE** *Code*	00.VSF.2680/V			**DESCRIZIONE** *Description*	DBB-898-HR-25-F300RF3-F-D-DLF-DL-N-PG-L123-TG-TGW-TV-DP-PMI2-PD2-BI-GT-CR-TA-FE2-FS-FE-SPC1	**Q.tà da produrre (pz.)** *No. of pieces to be produced*	28

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106002

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
1,1	981F.01.0022DLN(T)	Valve body	1	Heat : 435799 (Lot OE-15670)	MEST080040/2024/ - UT24003628	316/316L	16,91	10,27	2,10	1,85	OK
1,2	981F.02.0034DLN(T)	Closer IN	1	Heat : 294158 (Lot OE-15673)	MEST098212/2024/ - UT24004631	316/316L	16,60	10,27	2,18	1,64	OK
1,2	981F.02.0034DLN(T)	Closer OUT	1	Heat : 294158 (Lot OE-15673)	MEST098212/2024/ - UT24004631	316/316L	16,55	10,34	2,11	1,65	OK
1,3	980F.04.0001DLN(T)	Stem of ball IN	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,20	10,92	2,10	1,74	OK
1,3	980F.04.0001DLN(T)	Stem of ball OUT	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,30	10,91	2,06	1,63	OK
1,4	98F.07.0001DLN(T)	Ball IN	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,50	10,09	2,14	1,44	OK
1,4	98F.07.0001DLN(T)	Ball OUT	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,54	10,08	2,09	1,35	OK
1,5	97.02.0001DLN(T)	Bonnet body	1	Heat : 291893 (Lot F24-0567)	MEST040838/2024/	316/316L	16,77	10,51	2,20	1,48	OK
1,6	97.03.0001DLN(T)	Stem	1	Heat : 172303 (Lot F23-2911)	174495	316/316L	16,13	10,49	2,36	1,70	OK
1,7	97.04.0001DLN(T)	Tip	1	Heat : 290962 (Lot F23-2912)	MEST140440/2023/	316/316L	16,12	10,24	2,46	1,80	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106003

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
1,1	981F.01.0022DLN(T)	Valve body	1	Heat : 435799 (Lot OE-15670)	MEST080040/2024/ - UT24003628	316/316L	16,84	10,30	2,13	1,70	OK
1,2	981F.02.0034DLN(T)	Closer IN	1	Heat : 294158 (Lot OE-15673)	MEST098212/2024/ - UT24004631	316/316L	16,56	10,27	2,11	1,76	OK
1,2	981F.02.0034DLN(T)	Closer OUT	1	Heat : 294158 (Lot OE-15673)	MEST098212/2024/ - UT24004631	316/316L	16,56	10,33	2,20	1,69	OK
1,3	980F.04.0001DLN(T)	Stem of ball IN	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,26	10,90	2,05	1,66	OK
1,3	980F.04.0001DLN(T)	Stem of ball OUT	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,20	11,01	2,10	1,61	OK
1,4	98F.07.0001DLN(T)	Ball IN	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,50	10,01	2,07	1,48	OK
1,4	98F.07.0001DLN(T)	Ball OUT	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,46	10,10	2,11	1,41	OK
1,5	97.02.0001DLN(T)	Bonnet body	1	Heat : 291893 (Lot F24-0567)	MEST040838/2024/	316/316L	16,71	10,53	2,17	1,46	OK
1,6	97.03.0001DLN(T)	Stem	1	Heat : 172303 (Lot F23-2911)	174495	316/316L	16,25	10,50	2,49	1,74	OK
1,7	97.04.0001DLN(T)	Tip	1	Heat : 290962 (Lot F23-2912)	MEST140440/2023/	316/316L	16,20	10,17	2,37	1,63	OK

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indra VALVES - ITALY	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 520-2024_24-01216-p150 Data/*Date* : 12-Sep-2024	MD/PMI-VSF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	**COMMESSA INDRA** *Indra Job No.*	24 01216	**NR. D'ORDINE CLIENTE** *Customer Order No.*	1724000798 REV.2	**DEL** *Dated*	26-Jun-2024	**POSIZIONE D'ORDINE CLIENTE** *Customer Item*	150	**POSIZIONE D' ORDINE INDRA** *Indra Item*	150
Percentuale particolari da testare *Percentage of elements to be tested*		100%		**CODICE** *Code*	00.VSF.2680/V			**DESCRIZIONE** *Description*	DBB-898-HR-2S-F300RF3-F-D-DLF-DL-N-PG-L123-TG-TGW-TV-DP-PMI2-PD2-BI-GT-CR-TA-FE2-FS-FE-SPC1	**Q.tà da produrre (pz.)** *No. of pieces to be produced*	28

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106004

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
1,1	981F.01.0022DLN(T)	Valve body	1	Heat : 435799 (Lot OE-15670)	MEST080040/2024/ - UT24003628	316/316L	16,98	10,16	2,13	1,82	OK
1,2	981F.02.0034DLN(T)	Closer IN	1	Heat : 294158 (Lot OE-15673)	MEST098212/2024/ - UT24004631	316/316L	16,62	10,38	2,15	1,78	OK
1,2	981F.02.0034DLN(T)	Closer OUT	1	Heat : 294158 (Lot OE-15673)	MEST098212/2024/ - UT24004631	316/316L	16,65	10,25	2,12	1,72	OK
1,3	980F.04.0001DLN(T)	Stem of ball IN	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,29	11,12	2,14	1,61	OK
1,3	980F.04.0001DLN(T)	Stem of ball OUT	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,31	10,95	2,10	1,69	OK
1,4	98F.07.0001DLN(T)	Ball IN	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,60	10,05	2,08	1,32	OK
1,4	98F.07.0001DLN(T)	Ball OUT	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,54	10,09	2,09	1,40	OK
1,5	97.02.0001DLN(T)	Bonnet body	1	Heat : 291893 (Lot F24-0567)	MEST040838/2024/	316/316L	16,79	10,60	2,15	1,36	OK
1,6	97.03.0001DLN(T)	Stem	1	Heat : 172303 (Lot F23-2911)	174495	316/316L	16,15	10,28	2,45	1,61	OK
1,7	97.04.0001DLN(T)	Tip	1	Heat : 290962 (Lot F23-2912)	MEST140440/2023/	316/316L	16,30	10,16	2,50	1,69	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106005

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
1,1	981F.01.0022DLN(T)	Valve body	1	Heat : 435799 (Lot OE-15670)	MEST080040/2024/ - UT24003628	316/316L	17,05	10,18	2,16	1,73	OK
1,2	981F.02.0034DLN(T)	Closer IN	1	Heat : 294158 (Lot OE-15673)	MEST098212/2024/ - UT24004631	316/316L	16,58	10,29	2,16	1,79	OK
1,2	981F.02.0034DLN(T)	Closer OUT	1	Heat : 294158 (Lot OE-15673)	MEST098212/2024/ - UT24004631	316/316L	16,60	10,28	2,13	1,60	OK
1,3	980F.04.0001DLN(T)	Stem of ball IN	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,23	11,20	2,14	1,78	OK
1,3	980F.04.0001DLN(T)	Stem of ball OUT	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,38	11,11	2,08	1,71	OK
1,4	98F.07.0001DLN(T)	Ball IN	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,60	10,06	2,10	1,32	OK
1,4	98F.07.0001DLN(T)	Ball OUT	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,58	10,01	2,14	1,33	OK
1,5	97.02.0001DLN(T)	Bonnet body	1	Heat : 291893 (Lot F24-0567)	MEST040838/2024/	316/316L	16,78	10,55	2,10	1,47	OK
1,6	97.03.0001DLN(T)	Stem	1	Heat : 172303 (Lot F23-2911)	174495	316/316L	16,23	10,31	2,49	1,60	OK
1,7	97.04.0001DLN(T)	Tip	1	Heat : 290962 (Lot F23-2912)	MEST140440/2023/	316/316L	16,19	10,47	2,36	1,64	OK

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	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 520-2024_24-01216-p150 Data/*Date* : 12-Sep-2024	MD/PMI-VSF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	**COMMESSA INDRA** *Indra Job No.*	24 01216	**NR. D'ORDINE CLIENTE** *Customer Order No.*	1724000798 REV.2	**DEL** *Dated*	26-Jun-2024	**POSIZIONE D'ORDINE CLIENTE** *Customer Item*	150	**POSIZIONE D' ORDINE INDRA** *Indra Item*	150
Percentuale particolari da testare *Percentage of elements to be tested*		100%		**CODICE** *Code*	00.VSF.2680/V			**DESCRIZIONE** *Description*	DBB-898-HR-25-F300RF3-F-D-DLF-DL-N-PG-L123-TG-TGW-TV-DP-PMI2-PD2-BI-GT-CR-TA-FE2-FS-FE-SPC1	**Q.tà da produrre (pz.)** *No. of pieces to be produced*	28

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106006

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
1,1	981F.01.0022DLN(T)	Valve body	1	Heat : 435799 (Lot OE-15670)	MEST080040/2024/ - UT24003628	316/316L	16,90	10,28	2,17	1,72	OK
1,2	981F.02.0034DLN(T)	Closer IN	1	Heat : 294158 (Lot OE-15673)	MEST098212/2024/ - UT24004631	316/316L	16,68	10,26	2,12	1,69	OK
1,2	981F.02.0034DLN(T)	Closer OUT	1	Heat : 294158 (Lot OE-15673)	MEST098212/2024/ - UT24004631	316/316L	16,61	10,32	2,10	1,62	OK
1,3	980F.04.0001DLN(T)	Stem of ball IN	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,36	10,98	2,14	1,65	OK
1,3	980F.04.0001DLN(T)	Stem of ball OUT	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,28	11,08	2,14	1,79	OK
1,4	98F.07.0001DLN(T)	Ball IN	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,58	10,03	2,06	1,49	OK
1,4	98F.07.0001DLN(T)	Ball OUT	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,52	10,06	2,15	1,47	OK
1,5	97.02.0001DLN(T)	Bonnet body	1	Heat : 291893 (Lot F24-0567)	MEST040838/2024/	316/316L	16,71	10,70	2,12	1,35	OK
1,6	97.03.0001DLN(T)	Stem	1	Heat : 172303 (Lot F23-2911)	174495	316/316L	16,29	10,46	2,49	1,69	OK
1,7	97.04.0001DLN(T)	Tip	1	Heat : 290962 (Lot F23-2912)	MEST140440/2023/	316/316L	16,11	10,14	2,38	1,66	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106007

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
1,1	981F.01.0022DLN(T)	Valve body	1	Heat : 435799 (Lot OE-15670)	MEST080040/2024/ - UT24003628	316/316L	17,00	10,16	2,20	1,75	OK
1,2	981F.02.0034DLN(T)	Closer IN	1	Heat : 294158 (Lot OE-15673)	MEST098212/2024/ - UT24004631	316/316L	16,66	10,25	2,13	1,63	OK
1,2	981F.02.0034DLN(T)	Closer OUT	1	Heat : 294158 (Lot OE-15673)	MEST098212/2024/ - UT24004631	316/316L	16,66	10,38	2,16	1,62	OK
1,3	980F.04.0001DLN(T)	Stem of ball IN	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,32	11,00	2,09	1,68	OK
1,3	980F.04.0001DLN(T)	Stem of ball OUT	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,22	10,84	2,12	1,62	OK
1,4	98F.07.0001DLN(T)	Ball IN	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,46	10,09	2,08	1,44	OK
1,4	98F.07.0001DLN(T)	Ball OUT	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,56	10,08	2,05	1,34	OK
1,5	97.02.0001DLN(T)	Bonnet body	1	Heat : 291893 (Lot F24-0567)	MEST040838/2024/	316/316L	16,72	10,69	2,12	1,40	OK
1,6	97.03.0001DLN(T)	Stem	1	Heat : 172303 (Lot F23-2911)	174495	316/316L	16,23	10,35	2,48	1,79	OK
1,7	97.04.0001DLN(T)	Tip	1	Heat : 290962 (Lot F23-2912)	MEST140440/2023/	316/316L	16,29	10,23	2,36	1,64	OK

CROSSWIND 16/10/24

indra VALVES - ITALY	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 520-2024_24-01216-p150 Data/*Date* : 12-Sep-2024	MD/PMI-VSF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	**COMMESSA INDRA** *Indra Job No.*	24 01216	**NR. D'ORDINE CLIENTE** *Customer Order No.*	1724000798 REV.2	**DEL** *Dated*	26-Jun-2024	**POSIZIONE D'ORDINE CLIENTE** *Customer Item*	150	**POSIZIONE D' ORDINE INDRA** *Indra Item*	150
Percentuale particolari da testare *Percentage of elements to be tested*		100%		**CODICE** *Code*	00.VSF.2680/V			**DESCRIZIONE** *Description*	DBB-898-HR-25-F300RF3-F-D-DLF-DL-N-PG-L123-TG-TGW-TV-DP-PMI2-PD2-BI-GT-CR-TA-FE2-FS-FE-SPC1	**Q.tà da produrre (pz.)** *No. of pieces to be produced*	28

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106008

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
1,1	981F.01.0022DLN(T)	Valve body	1	Heat : 435799 (Lot OE-15670)	MEST080040/2024/ - UT24003628	316/316L	16,80	10,24	2,11	1,72	OK
1,2	981F.02.0034DLN(T)	Closer IN	1	Heat : 294158 (Lot OE-15673)	MEST098212/2024/ - UT24004631	316/316L	16,67	10,33	2,18	1,67	OK
1,2	981F.02.0034DLN(T)	Closer OUT	1	Heat : 294158 (Lot OE-15673)	MEST098212/2024/ - UT24004631	316/316L	16,65	10,34	2,12	1,72	OK
1,3	980F.04.0001DLN(T)	Stem of ball IN	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,39	10,87	2,07	1,67	OK
1,3	980F.04.0001DLN(T)	Stem of ball OUT	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,35	11,05	2,15	1,70	OK
1,4	98F.07.0001DLN(T)	Ball IN	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,58	10,07	2,06	1,40	OK
1,4	98F.07.0001DLN(T)	Ball OUT	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,49	10,05	2,08	1,31	OK
1,5	97.02.0001DLN(T)	Bonnet body	1	Heat : 291893 (Lot F24-0567)	MEST040838/2024/	316/316L	16,74	10,68	2,11	1,45	OK
1,6	97.03.0001DLN(T)	Stem	1	Heat : 172303 (Lot F23-2911)	174495	316/316L	16,13	10,39	2,36	1,70	OK
1,7	97.04.0001DLN(T)	Tip	1	Heat : 290962 (Lot F23-2912)	MEST140440/2023/	316/316L	16,14	10,27	2,35	1,67	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106009

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
1,1	981F.01.0022DLN(T)	Valve body	1	Heat : 437075 (Lot L23-1136)	MEST007058/2024/ - UT24000302	316/316L	16,98	10,24	2,14	1,76	OK
1,2	981F.02.0034DLN(T)	Closer IN	1	Heat : 294158 (Lot OE-15673)	MEST098212/2024/ - UT24004631	316/316L	16,69	10,39	2,16	1,60	OK
1,2	981F.02.0034DLN(T)	Closer OUT	1	Heat : 294158 (Lot OE-15673)	MEST098212/2024/ - UT24004631	316/316L	16,63	10,39	2,10	1,70	OK
1,3	980F.04.0001DLN(T)	Stem of ball IN	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,34	11,10	2,13	1,72	OK
1,3	980F.04.0001DLN(T)	Stem of ball OUT	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,29	10,94	2,06	1,60	OK
1,4	98F.07.0001DLN(T)	Ball IN	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,54	10,02	2,07	1,31	OK
1,4	98F.07.0001DLN(T)	Ball OUT	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,49	10,09	2,13	1,37	OK
1,5	97.02.0001DLN(T)	Bonnet body	1	Heat : 291893 (Lot F24-0567)	MEST040838/2024/	316/316L	16,69	10,53	2,12	1,46	OK
1,6	97.03.0001DLN(T)	Stem	1	Heat : 172303 (Lot F23-2911)	174495	316/316L	16,23	10,21	2,41	1,67	OK
1,7	97.04.0001DLN(T)	Tip	1	Heat : 290962 (Lot F23-2912)	MEST140440/2023/	316/316L	16,21	10,50	2,47	1,68	OK

CROSSWIND 16/10/2024

indra VALVES - ITALY	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT			Cert. n° : 520-2024_24-01216-p150 Data/*Date* : 12-Sep-2024						MD/PMI-VSF Rev.4-Dec/2022	
CLIENTE ***Customer***	ROSETTI MARINO SPA	**COMMESSA INDRA** ***Indra Job No.***	24 01216	**NR. D'ORDINE CLIENTE** ***Customer Order No.***	1724000798 REV.2	**DEL** ***Dated***	26-Jun-2024	**POSIZIONE D'ORDINE CLIENTE** ***Customer Item***	150	**POSIZIONE D' ORDINE INDRA** ***Indra Item***	150
Percentuale particolari da testare ***Percentage of elements to be tested***		100%		**CODICE** ***Code***	00.VSF.2680/V			**DESCRIZIONE** ***Description***	DBB-898-HR-25-F300RF3-F-D-DLF-DL-N-PG-L123-TG-TGW-TV-DP-PMI2-PD2-BI-GT-CR-TA-FE2-FS-FE-SPC1	**Q.tà da produrre (pz.)** ***No. of pieces to be produced***	28

x CROSSWIND
16/10/24 R

NOTE / *Remarks* : PMI 100% on body, closer and wetted parts According to NDT PROCEDURE - PT/PMI Rev.14	Data prelievo componenti / *Date of components picking* : 12-Sep-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Testing instrument: X-Ray analyzer NITON XL2 980 GOLDD	Data verifica componenti / *Date of components verification* : 12-Sep-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Serial number: 85044 - expiry 15-November-2024	Data esecuzione PMI TEST / *Date of PMI TEST execution* : 12-Sep-2024	Firma /*Signature* THOMAS PETITTI PMI OPERATOR

indra VALVES - ITALY	**Project:** CROSSWIND 24 01216 / pos 10 - 00.VSF.2684/V PO 1724000798 REV.2 pos 10 - VBC0NN06943Q00
HARDNESS TEST REPORT **EN 10204 3.1 ed 2004**	**Client:** ROSETTI MARINO SPA **Report No.:** 016 **Date:** 16-Sep-2024 **Page 1 of 1**

Location/area: Indra S.r.l Magenta (MI)		**Material:** 316/316L

Testing instrument: Durometer 1600 HV
Serial Number: 32159000013 - expiry 17-April-2027
Hardness Test Procedure: PT-HT (24-01216) Rev. 0

Surface preparation:

Grinding	Machined X	Lapping	Filling	Other

Test position: see below table

Measuring unit:

Rockwell C(HRC)	**Brinell (HB) x**	**Shore**
Rockwell B(HRB)	**Vickers (HV)**	

Location	HARDNESS (average value)						
Valve body S.N 105942	185						
Closer S.N 105942	152						
Stem of ball S.N 105942	132						
Ball S.N 105942	209						

Sketch: 981E.01.0013DLN(T) - 980E.02.0014DLN(T) - 980F.04.0001DLN(T) - 98E.07.0001DLN(T)

Quality control	TPI Inspection	Client
Name: Petitti Thomas	Name:	Name:
Sign:	Sign:	Sign:
Date: 16-Sep-2024	Date:	Date:

x CROSSWIND R
16/10/24

indra VALVES - ITALY	**Project:** CROSSWIND 24 01216 / pos 20 - 00.VSF.2687/V PO 1724000798 REV.2 pos 20 - VBC0NN06950100	
HARDNESS TEST REPORT **EN 10204 3.1 ed 2004**	**Client:** ROSETTI MARINO SPA	**Report No.:** 021 **Date:** 13-Sep-2024 **Page 1 of 3**

Location/area: Indra S.r.l Magenta (MI)		**Material:** 316/316L

Testing instrument: Durometer 1600 HV
Serial Number: 32159000013 - expiry 17-April-2027
Hardness Test Procedure: PT-HT (24-01216) Rev. 0

Surface preparation:

Grinding	Machined X	Lapping	Filling	Other

Test position: see below table

Measuring unit:

Rockwell C(HRC)	**Brinell (HB) x**	**Shore**
Rockwell B(HRB)	**Vickers (HV)**	

Location	HARDNESS (average value)						
Valve body S.N 105943	154						
Closer S.N 105943	149						
Stem of ball S.N 105943	191						
Ball S.N 105943	206						
Valve body S.N 105944	160						
Closer S.N 105944	151						
Stem of ball S.N 105944	187						
Ball S.N 105944	203						
Valve body S.N 105945	159						
Closer S.N 105945	154						
Stem of ball S.N 105945	177						
Ball S.N 105945	201						
Valve body S.N 105946	162						
Closer S.N 105946	151						
Stem of ball S.N 105946	181						
Ball S.N 105946	212						
Valve body S.N 105947	163						
Closer S.N 105947	147						
Stem of ball S.N 105947	190						
Ball S.N 105947	205						

x CROSSWIND
16/10/24

indra VALVES - ITALY	**Project:** CROSSWIND 24 01216 / pos 20 - 00.VSF.2687/V PO 1724000798 REV.2 pos 20 - VBC0NN06950100
HARDNESS TEST REPORT **EN 10204 3.1 ed 2004**	**Client:** ROSETTI MARINO SPA **Report No.:** 021 **Date:** 13-Sep-2024 **Page 2 of 3**

Location	HARDNESS (average value)						
Valve body S.N 105948	162						
Closer S.N 105948	152						
Stem of ball S.N 105948	178						
Ball S.N 105948	210						
Valve body S.N 105949	168						
Closer S.N 105949	148						
Stem of ball S.N 105949	183						
Ball S.N 105949	202						
Valve body S.N 105950	155						
Closer S.N 105950	153						
Stem of ball S.N 105950	180						
Ball S.N 105950	208						
Valve body S.N 105951	150						
Closer S.N 105951	141						
Stem of ball S.N 105951	180						
Ball S.N 105951	206						
Valve body S.N 105952	160						
Closer S.N 105952	144						
Stem of ball S.N 105952	195						
Ball S.N 105952	212						
Valve body S.N 105953	153						
Closer S.N 105953	140						
Stem of ball S.N 105953	191						
Ball S.N 105953	215						
Valve body S.N 105954	167						
Closer S.N 105954	139						
Stem of ball S.N 105954	183						
Ball S.N 105954	201						
Valve body S.N 105955	160						
Closer S.N 105955	152						
Stem of ball S.N 105955	179						
Ball S.N 105955	208						
Valve body S.N 105956	166						
Closer S.N 105965	157						
Stem of ball S.N 105956	181						
Ball S.N 105956	220						
Valve body S.N 105957	172						
Closer S.N 105957	155						
Stem of ball S.N 105957	188						
Ball S.N 105957	204						

x CROSSWIND
16/10/24

indra VALVES - ITALY	**Project:** CROSSWIND 24 01216 / pos 20 - 00.VSF.2687/V PO 1724000798 REV.2 pos 20 - VBC0NN06950100	
HARDNESS TEST REPORT **EN 10204 3.1 ed 2004**	**Client:** ROSETTI MARINO SPA	**Report No.:** 021 **Date:** 13-Sep-2024 **Page 3 of 3**

x CROSSWIND
16/10/24

Sketch: 981F.01.0003DLN(T) - 980F.02.0001DLN(T) - 980F.04.0001DLN(T) - 98F.07.0001DLN(T)

Quality control	TPI Inspection	Client
Name: Petitti Thomas Sign: Date: 13-Sep-2024	Name: Sign: Date:	Name: Sign: Date:

indra VALVES - ITALY	**Project:** CROSSWIND 24 01216 / pos 30 - 00.VSF.2690/V PO 1724000798 REV.2 pos 30 - VBC0NN06961H00	
HARDNESS TEST REPORT **EN 10204 3.1 ed 2004**	**Client:** ROSETTI MARINO SPA	**Report No.:** 018 **Date:** 12-Sep-2024 **Page 1 of 1**

Location/area: Indra S.r.l Magenta (MI)		**Material:** 316/316L

Testing instrument: Durometer 1600 HV
Serial Number: 32159000013 - expiry 17-April-2027
Hardness Test Procedure: PT-HT (24-01216) Rev. 0

Surface preparation:

Grinding	Machined **X**	Lapping	Filling	Other

Test position: see below table

Measuring unit:

Rockwell C(HRC)	**Brinell (HB) x**	**Shore**
Rockwell B(HRB)	**Vickers (HV)**	

Location	HARDNESS (average value)						
Valve body S.N 105958	157						
Closer S.N 105958	146						
Stem of ball S.N 105958	140						
Ball S.N 105958	221						
Valve body S.N 105959	162						
Closer S.N 105959	149						
Stem of ball S.N 105959	137						
Ball S.N 105959	207						

Sketch: 981H.01.0009DLN(T) - 980H.02.0002DLN(T) - 980F.04.0001DLN(T) - 980H.07.0001DLN(T)

Quality control	TPI Inspection	Client
Name: Petitti Thomas Sign: TP Date: 12-Sep-2024	Name: Sign: Date:	Name: Sign: Date:

x CROSSWIND 16/10/2024

indra VALVES - ITALY	**Project:** CROSSWIND 24 01216 / pos 40 - 00.VSF.2693/V PO 1724000798 REV.2 pos 40 - VBC0NN24343Q00
HARDNESS TEST REPORT **EN 10204 3.1 ed 2004**	**Client:** ROSETTI MARINO SPA **Report No.:** 017 **Date:** 16-Sep-2024 **Page 1 of 1**

Location/area: Indra S.r.l Magenta (MI)		**Material:** 316/316L

Testing instrument: Durometer 1600 HV
Serial Number: 32159000013 - expiry 17-April-2027
Hardness Test Procedure: PT-HT (24-01216) Rev. 0

Surface preparation:

Grinding	Machined X	Lapping	Filling	Other

Test position: see below table

Measuring unit:

Rockwell C(HRC)	**Brinell (HB) x**	**Shore**
Rockwell B(HRB)	**Vickers (HV)**	

Location	HARDNESS (average value)						
Valve body S.N 105960	185						
Closer S.N 105960	148						
Stem of ball S.N 105960	160						
Ball S.N 105960	215						
Valve body S.N 105961	181						
Closer S.N 105961	157						
Stem of ball S.N 105961	144						
Ball S.N 105961	211						

Sketch: 981E.01.0013DLN(T) - 980E.02.0014DLN(T) - 980F.04.0001DLN(T) - 98E.07.0001DLN(T)

Quality control	TPI Inspection	Client
Name: Petitti Thomas	Name:	Name:
Sign: TP	Sign:	Sign:
Date: 16-Sep-2024	Date:	Date:

x CROSSWIND
16/10/24 R

indra VALVES - ITALY	**Project:** CROSSWIND 24 01216 / pos 130 - 00.VSF.2683(T) PO 1724000798 REV.2 pos 130 - VBC0NN24893Q00
HARDNESS TEST REPORT **EN 10204 3.1 ed 2004**	**Client:** ROSETTI MARINO SPA **Report No.:** 023 **Date:** 30-Sep-2024 **Page 1 of 1**

Location/area: Indra S.r.l Magenta (MI)		**Material:** Hastelloy C276

Testing instrument: Durometer 1600 HV
Serial Number: 32159000013 - expiry 17-April-2027
Hardness Test Procedure: PT-HT (24-01216) Rev. 0

Surface preparation:

Grinding	Machined X	Lapping	Filling	Other

Test position: see below table

Measuring unit:

Rockwell C(HRC)	**Brinell (HB) x**	**Shore**
Rockwell B(HRB)	**Vickers (HV)**	

Location	HARDNESS (average value)						
Valve body S.N 105979	162						
Closer S.N 105979	135						
Stem of ball S.N 105979	132						
Ball S.N 105979	213						
Valve body S.N 105980	165						
Closer S.N 105980	139						
Stem of ball S.N 105980	143						
Ball S.N 105980	208						

Sketch: 981E.01.0096C276N(T) - 981E.02.0066C276N(T) - 980F.04.0001C276N(T) - 98E.07.0001C276N(T)

Quality control	TPI Inspection	Client
Name: Petitti Thomas	Name:	Name:
Sign:	Sign:	Sign:
Date: 30-Sep-2024	Date:	Date:

xCROSSWIND
16/10/24

indra VALVES - ITALY	**Project:** CROSSWIND 24 01216 / pos 140 - 00.VSF.2695/V PO 1724000798 REV.2 pos 140 - VBD0NN16460300	
HARDNESS TEST REPORT **EN 10204 3.1 ed 2004**	**Client:** ROSETTI MARINO SPA	**Report No.:** 019 **Date:** 16-Sep-2024 **Page 1 of 1**

Location/area: Indra S.r.l Magenta (MI)		**Material:** 316/316L

Testing instrument: Durometer 1600 HV
Serial Number: 32159000013 - expiry 17-April-2027
Hardness Test Procedure: PT-HT (24-01216) Rev. 0

Surface preparation:

Grinding	Machined X	Lapping	Filling	Other

Test position: see below table

Measuring unit:

Rockwell C(HRC)	**Brinell (HB) x**	**Shore**
Rockwell B(HRB)	**Vickers (HV)**	

Location	HARDNESS (average value)						
Valve body S.N 105981	158						
Closer S.N 105981	153						
Stem of ball S.N 105981	142						
Ball S.N 105981	165						

Sketch: 981J.01.0024DLN(T) - 981J.02.0021DLN(T) - 98J.04.0003DLN(T) - 98J.07.0001DLN(T)

Quality control	TPI Inspection	Client
Name: Petitti Thomas Sign: Date: 16-Sep-2024	Name: Sign: Date:	Name: Sign: Date:

x CROSSWIND
16/10/24

indra VALVES - ITALY	**Project:** CROSSWIND 24 01216 / pos 150 - 00.VSF.2680/V PO 1724000798 REV.2 pos 150 - VLBBNN07190100	
HARDNESS TEST REPORT **EN 10204 3.1 ed 2004**	**Client:** ROSETTI MARINO SPA	**Report No.:** 022 **Date:** 12-Sep-2024 **Page 1 of 6**

Location/area: Indra S.r.l Magenta (MI)		**Material:** 316/316L

Testing instrument: Durometer 1600 HV
Serial Number: 32159000013 - expiry 17-April-2027
Hardness Test Procedure: PT-HT (24-01216) Rev. 0

Surface preparation:

Grinding	Machined X	Lapping	Filling	Other

Test position: see below table

Measuring unit:

Rockwell C(HRC)	**Brinell (HB) x**	**Shore**
Rockwell B(HRB)	**Vickers (HV)**	

Location	HARDNESS (average value)						
Valve body S.N 105982	186						
Closer IN S.N 105982	144						
Closer OUT S.N 105982	151						
Stem of ball IN S.N 105982	199						
Stem of ball OUT S.N 105982	203						
Ball IN S.N 105982	219						
Ball OUT S.N 105982	224						
Bonnet body S.N 105982	150						
Valve body S.N 105983	181						
Closer IN S.N 105983	158						
Closer OUT S.N 105983	156						
Stem of ball IN S.N 105983	196						
Stem of ball OUT S.N 105983	200						
Ball IN S.N 105983	221						
Ball OUT S.N 105983	216						
Bonnet body S.N 105983	160						

CROSSWIND
16/10/24

indra VALVES - ITALY	**Project:** CROSSWIND 24 01216 / pos 150 - 00.VSF.2680/V PO 1724000798 REV.2 pos 150 - VLBBNN07190100
HARDNESS TEST REPORT **EN 10204 3.1 ed 2004**	**Client:** ROSETTI MARINO SPA **Report No.:** 022 **Date:** 12-Sep-2024 **Page 2 of 6**

Location	HARDNESS (average value)						
Valve body S.N 105984	188						
Closer IN S.N 105984	147						
Closer OUT S.N 105984	155						
Stem of ball IN S.N 105984	198						
Stem of ball OUT S.N 105984	196						
Ball IN S.N 105984	211						
Ball OUT S.N 105984	216						
Bonnet body S.N 105984	149						
Valve body S.N 105985	181						
Closer IN S.N 105985	155						
Closer OUT S.N 105985	151						
Stem of ball IN S.N 105985	204						
Stem of ball OUT S.N 105985	199						
Ball IN S.N 105985	222						
Ball OUT S.N 105985	224						
Bonnet body S.N 105985	154						
Valve body S.N 105986	192						
Closer IN S.N 105986	157						
Closer OUT S.N 105986	154						
Stem of ball IN S.N 105986	205						
Stem of ball OUT S.N 105986	197						
Ball IN S.N 105986	217						
Ball OUT S.N 105986	219						
Bonnet body S.N 105986	160						
Valve body S.N 105987	194						
Closer IN S.N 105987	150						
Closer OUT S.N 105987	144						
Stem of ball IN S.N 105987	206						
Stem of ball OUT S.N 105987	212						
Ball IN S.N 105987	222						
Ball OUT S.N 105987	224						
Bonnet body S.N 105987	141						
Valve body S.N 105988	189						
Closer IN S.N 105988	141						
Closer OUT S.N 105988	147						
Stem of ball IN S.N 105988	199						
Stem of ball OUT S.N 105988	209						
Ball IN S.N 105988	223						
Ball OUT S.N 105988	215						
Bonnet body S.N 105988	156						
Valve body S.N 105989	189						
Closer IN S.N 105989	149						
Closer OUT S.N 105989	158						
Stem of ball IN S.N 105989	207						
Stem of ball OUT S.N 105989	199						
Ball IN S.N 105989	224						
Ball OUT S.N 105989	217						
Bonnet body S.N 105989	170						

CROSSWIND
16/10/24

indra VALVES - ITALY	**Project:** CROSSWIND 24 01216 / pos 150 - 00.VSF.2680/V PO 1724000798 REV.2 pos 150 - VLBBNN07190100
HARDNESS TEST REPORT **EN 10204 3.1 ed 2004**	**Client:** ROSETTI MARINO SPA **Report No.:** 022 **Date:** 12-Sep-2024 **Page 3 of 6**

Location	HARDNESS (average value)						
Valve body S.N 105990	191						
Closer IN S.N 105990	156						
Closer OUT S.N 105990	145						
Stem of ball IN S.N 105990	207						
Stem of ball OUT S.N 105990	202						
Ball IN S.N 105990	215						
Ball OUT S.N 105990	225						
Bonnet body S.N 105990	157						
Valve body S.N 105991	194						
Closer IN S.N 105991	144						
Closer OUT S.N 105991	160						
Stem of ball IN S.N 105991	196						
Stem of ball OUT S.N 105991	204						
Ball IN S.N 105991	220						
Ball OUT S.N 105991	222						
Bonnet body S.N 105991	148						
Valve body S.N 105992	194						
Closer IN S.N 105992	157						
Closer OUT S.N 105992	144						
Stem of ball IN S.N 105992	202						
Stem of ball OUT S.N 105992	198						
Ball IN S.N 105992	224						
Ball OUT S.N 105992	222						
Bonnet body S.N 105992	165						
Valve body S.N 105993	192						
Closer IN S.N 105993	152						
Closer OUT S.N 105993	144						
Stem of ball IN S.N 105993	198						
Stem of ball OUT S.N 105993	196						
Ball IN S.N 105993	221						
Ball OUT S.N 105993	220						
Bonnet body S.N 105993	144						
Valve body S.N 105994	193						
Closer IN S.N 105994	158						
Closer OUT S.N 105994	150						
Stem of ball IN S.N 105994	200						
Stem of ball OUT S.N 105994	198						
Ball IN S.N 105994	220						
Ball OUT S.N 105994	222						
Bonnet body S.N 105994	160						
Valve body S.N 105995	191						
Closer IN S.N 105995	140						
Closer OUT S.N 105995	144						
Stem of ball IN S.N 105995	200						
Stem of ball OUT S.N 105995	205						
Ball IN S.N 105995	222						
Ball OUT S.N 105995	222						
Bonnet body S.N 105995	170						

CROSSWIND
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indra VALVES - ITALY

Project: CROSSWIND
24 01216 / pos 150 - 00.VSF.2680/V
PO 1724000798 REV.2 pos 150 - VLBBNN07190100

HARDNESS TEST REPORT

EN 10204 3.1 ed 2004

Client: ROSETTI MARINO SPA

Report No.: 022
Date: 12-Sep-2024

Location	HARDNESS (average value)						
Valve body S.N 105996	193						
Closer IN S.N 105996	159						
Closer OUT S.N 105996	141						
Stem of ball IN S.N 105996	208						
Stem of ball OUT S.N 105996	200						
Ball IN S.N 105996	216						
Ball OUT S.N 105996	218						
Bonnet body S.N 105996	153						
Valve body S.N 105997	185						
Closer IN S.N 105997	142						
Closer OUT S.N 105997	145						
Stem of ball IN S.N 105997	202						
Stem of ball OUT S.N 105997	209						
Ball IN S.N 105997	213						
Ball OUT S.N 105997	218						
Bonnet body S.N 105997	155						
Valve body S.N 105998	188						
Closer IN S.N 105998	142						
Closer OUT S.N 105998	144						
Stem of ball IN S.N 105998	203						
Stem of ball OUT S.N 105998	209						
Ball IN S.N 105998	216						
Ball OUT S.N 105998	218						
Bonnet body S.N 105998	161						
Valve body S.N 105999	185						
Closer IN S.N 105999	144						
Closer OUT S.N 105999	149						
Stem of ball IN S.N 105999	206						
Stem of ball OUT S.N 105999	201						
Ball IN S.N 105999	211						
Ball OUT S.N 105999	222						
Bonnet body S.N 105999	160						
Valve body S.N 10600	187						
Closer IN S.N 10600	149						
Closer OUT S.N 10600	143						
Stem of ball IN S.N 10600	209						
Stem of ball OUT S.N 10600	204						
Ball IN S.N 10600	216						
Ball OUT S.N 10600	211						
Bonnet body S.N 10600	167						
Valve body S.N 106001	189						
Closer IN S.N 106001	147						
Closer OUT S.N 106001	155						
Stem of ball IN S.N 106001	207						
Stem of ball OUT S.N 106001	205						
Ball IN S.N 106001	224						
Ball OUT S.N 106001	213						
Bonnet body S.N 106001	158						

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indra VALVES - ITALY

Project: CROSSWIND
24 01216 / pos 150 - 00.VSF.2680/V
PO 1724000798 REV.2 pos 150 - VLBBNN07190100

HARDNESS TEST REPORT

EN 10204 3.1 ed 2004

Client: ROSETTI MARINO SPA

Report No.: 022
Date: 12-Sep-2024

Location	HARDNESS (average value)						
Valve body S.N 106002	181						
Closer IN S.N 106002	140						
Closer OUT S.N 106002	152						
Stem of ball IN S.N 106002	196						
Stem of ball OUT S.N 106002	206						
Ball IN S.N 106002	219						
Ball OUT S.N 106002	222						
Bonnet body S.N 106002	161						
Valve body S.N 106003	192						
Closer IN S.N 106003	144						
Closer OUT S.N 106003	147						
Stem of ball IN S.N 106003	201						
Stem of ball OUT S.N 106003	196						
Ball IN S.N 106003	221						
Ball OUT S.N 106003	210						
Bonnet body S.N 106003	158						
Valve body S.N 106004	188						
Closer IN S.N 106004	150						
Closer OUT S.N 106004	146						
Stem of ball IN S.N 106004	197						
Stem of ball OUT S.N 106004	196						
Ball IN S.N 106004	211						
Ball OUT S.N 106004	216						
Bonnet body S.N 106004	151						
Valve body S.N 106005	191						
Closer IN S.N 106005	151						
Closer OUT S.N 106005	155						
Stem of ball IN S.N 106005	203						
Stem of ball OUT S.N 106005	205						
Ball IN S.N 106005	214						
Ball OUT S.N 106005	215						
Bonnet body S.N 106005	159						
Valve body S.N 106006	181						
Closer IN S.N 106006	151						
Closer OUT S.N 106006	155						
Stem of ball IN S.N 106006	208						
Stem of ball OUT S.N 106006	198						
Ball IN S.N 106006	224						
Ball OUT S.N 106006	221						
Bonnet body S.N 106006	160						
Valve body S.N 106007	195						
Closer IN S.N 106007	151						
Closer OUT S.N 106007	145						
Stem of ball IN S.N 106007	196						
Stem of ball OUT S.N 106007	205						
Ball IN S.N 106007	216						
Ball OUT S.N 106007	223						
Bonnet body S.N 106007	167						

CROSSWIND
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indra VALVES - ITALY	**Project:** CROSSWIND 24 01216 / pos 150 - 00.VSF.2680/V PO 1724000798 REV.2 pos 150 - VLBBNN07190100
HARDNESS TEST REPORT **EN 10204 3.1 ed 2004**	**Client:** ROSETTI MARINO SPA **Report No.:** 022 **Date:** 12-Sep-2024 **Page 6 of 6**

Location	HARDNESS (average value)						
Valve body S.N 106008	183						
Closer IN S.N 106008	142						
Closer OUT S.N 106008	149						
Stem of ball IN S.N 106008	201						
Stem of ball OUT S.N 106008	203						
Ball IN S.N 106008	222						
Ball OUT S.N 106008	223						
Bonnet body S.N 106008	154						
Valve body S.N 106009	184						
Closer IN S.N 106009	155						
Closer OUT S.N 106009	152						
Stem of ball IN S.N 106009	206						
Stem of ball OUT S.N 106009	207						
Ball IN S.N 106009	211						
Ball OUT S.N 106009	212						
Bonnet body S.N 106009	157						

CROSSWIND
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Sketch: 981F.01.0022DLN(T) - 981F.02.0034DLN(T) - 980F.04.0001DLN(T) - 98F.07.0001DLN(T) - 97.02.0001DLN(T)

Quality control	TPI Inspection	Client
Name: Petitti Thomas Sign: Date: 12-Sep-2024	Name: Sign: Date:	Name: Sign: Date:

indra VALVES - ITALY	**Project:** CROSSWIND 24 01216 / pos 322 - 00.VSF.2680/V PO 1724000798 REV.2 pos 400 - VLBBNN07190100	
HARDNESS TEST REPORT **EN 10204 3.1 ed 2004**	**Client:** ROSETTI MARINO SPA	**Report No.:** 020 **Date:** 12-Sep-2024 **Page 1 of 1**

Location/area: Indra S.r.l Magenta (MI)		**Material:** 316/316L

Testing instrument: Durometer 1600 HV
Serial Number: 32159000013 - expiry 17-April-2027
Hardness Test Procedure: PT-HT (24-01216) Rev. 0

Surface preparation:

Grinding	Machined X	Lapping	Filling	Other

Test position: see below table

Measuring unit:

Rockwell C(HRC)	**Brinell (HB) x**	**Shore**
Rockwell B(HRB)	**Vickers (HV)**	

Location	HARDNESS (average value)						
Valve body S.N 106899	192						
Closer IN S.N 106899	166						
Closer OUT S.N 106899	170						
Stem of ball IN S.N 106899	206						
Stem of ball OUT S.N 106899	212						
Ball IN S.N 106899	221						
Ball OUT S.N 106899	220						
Bonnet body S.N 106899	171						

Sketch: 981F.01.0022DLN(T) - 981F.02.0034DLN(T) - 980F.04.0001DLN(T) - 98F.07.0001DLN(T) - 97.02.0001DLN(T)

Quality control	TPI Inspection	Client
Name: Petitti Thomas Sign: TP Date: 12-Sep-2024	Name: Sign: Date:	Name: Sign: Date:

x CROSSWIND
16/10/24

ROSETTI MARINO ITEM 160

COD. VLBBNN07201H00

TAG:

BLPH-MV-032, BLPH-MV-266, BLPH-MV-389, BLPH-MV-416, BLPH-MV-433, BLPH-MV-442

INDRA ITEM 160

COD. 00.VSF.2681/V

CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 160 NS.POS/OUR ITEM 160 VS.COD./YOUR CODE VLBBNN07201H00 NS.COD./OUR CODE 00.VSF.2681/V (6 PCS)
VS.POS./YOUR ITEM 410 NS.POS/OUR ITEM 323 VS.COD./YOUR CODE VLBBNN07201H00 NS.COD./OUR CODE 00.VSF.2681/V (1 PC)

indra VALVES - ITALY	**PENETRANT TEST REPORT (PT)**	**MD-02-29** rev.02 Date 28-11-2022

Certificato No.	PT-128-2024	Internal Indra Order No.:	OE 015623,015624, 017815,017816	
Customer:	ROSETTI MARINO SPA	Qty:	6 + 1 + 12 + 2	Batch no.:
Code:	981H.01.0039DLN(T)	Description:	BODY	L24-0641-294062 (ITEM 160)
	981H.01.0039DLN(T)		BODY	L24-0735-294062 (ITEM 323)
	981H.02.0042DLN(T)		CLOSURE H300RF3	L24-0638-292410 (ITEM 160)
	981H.02.0042DLN(T)		CLOSURE H300RF3	L24-0730-292410 (ITEM 323)
Acceptance Standards:	Asme V art.6 Asme VIII Div.1 app.8			
Procedure:	*Indra Procedure PT-DP-01 (24-01216) Rev.0 dated 06-09-2024 EN 10204 3.1 ed 2004*			
Equipment:	*Luxmetro,white lamp, liquid penetrant*			

Test Conditions:

Test Surface:	EXTERNAL SIDE	INTERNAL SIDE	Surface Condition:	MACHINED
Penetrant Time: 20 min	Drying Time: 10 min	Development Time: 20 min	Cleaner:	SOLVENT-ALCOHOL
Natural Light: > 1100 Lux				
Type of Penetrant	08.122 K71B2	Batch no.	220127/BI	
Type of Developer	D112A	Batch no.	231106W150s	
Type of Removal	WATER			
Results:	ACCEPTABLE			

Note:
The inspection was conducted 100% of the surface

x CROSSWIND
23/10/24 R

Operator: Nicholas Sacchetti (LEVEL 2 acc. EN 9712:2012)	Signature:	Approved: Lucia Nosotti (RSQ)	Signature: INDRA s.r.l.
INDRA SRL VIA NOVARA 10/B-C / 20013 MAGENTA (MI)	Approval of Customer:		Date: 30 September 2024

	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 560-2024_24-01216-p160 Data/*Date* : 30-Sep-2024	MD/PMI-VSF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	**COMMESSA INDRA** *Indra Job No.*	24 01216	**NR. D'ORDINE CLIENTE** *Customer Order No.*	1724000798 REV.2	**DEL** *Dated*	26-Jun-2024	**POSIZIONE D'ORDINE CLIENTE** *Customer Item*	160	**POSIZIONE D' ORDINE INDRA** *Indra Item*	160
Percentuale particolari da testare *Percentage of elements to be tested*		100%		**CODICE** *Code*	00.VSF.2681/V	**DESCRIZIONE** *Description*	DBB-898-HR-40-H300RF3-H-D-DLF-DL-N-PG-L123-TG-TGW-TV-DP-PMI2-PD2-BI-GT-CR-TA-FE2-FS-FE SPC1	**Q.tà da produrre (pz.)** *No. of pieces to be produced*		6	

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106010

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
1,1	981H.01.0039DLN(T)	Valve body	1	Heat : 294062 (Lot L24-0641)	MEST080042/2024/ - UT24003648	316/316L	16,62	10,09	2,03	1,58	OK
1,2	981H.02.0042DLN(T)	Closer	1	Heat : 292410 (Lot L24-0638)	MEST053963/2024/ - UT24002496	316/316L	16,64	10,12	2,10	1,68	OK
1,3	981H.04.0003DLN(T)	Stem of ball	1	Heat : 291905 (Lot F23-2417)	MEST084078/2023/	316/316L	16,22	10,17	2,09	1,67	OK
1,4	98H.07.0002DLN(T)	Ball	1	Heat : 372447 (Lot F23-1781)	2023013898	316/316L	16,72	10,07	2,16	1,91	OK
1,5	97.02.0001DLN(T)	Bonnet body	1	Heat : 291893 (Lot F24-0567)	MEST040838/2024/	316/316L	16,55	10,06	2,11	1,50	OK
1,6	97.03.0001DLN(T)	Stem	1	Heat : 172303 (Lot F23-2911)	174495	316/316L	16,66	10,60	2,16	1,75	OK
1,7	97.04.0001DLN(T)	Tip	1	Heat : 290962 (Lot F23-2912)	MEST140440/2023/	316/316L	16,34	10,06	2,11	1,44	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106011

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
2,1	981H.01.0039DLN(T)	Valve body	1	Heat : 294062 (Lot L24-0641)	MEST080042/2024/ - UT24003648	316/316L	16,64	10,11	2,10	1,63	OK
2,2	981H.02.0042DLN(T)	Closer	1	Heat : 292410 (Lot L24-0638)	MEST053963/2024/ - UT24002496	316/316L	16,68	10,13	2,09	1,58	OK
2,3	981H.04.0003DLN(T)	Stem of ball	1	Heat : 291905 (Lot F23-2417)	MEST084078/2023/	316/316L	16,26	10,21	2,11	1,75	OK
2,4	98H.07.0002DLN(T)	Ball	1	Heat : 372447 (Lot F23-1781)	2023013898	316/316L	16,69	10,06	2,11	1,95	OK
2,5	97.02.0001DLN(T)	Bonnet body	1	Heat : 291893 (Lot F24-0567)	MEST040838/2024/	316/316L	16,45	10,09	2,15	1,56	OK
2,6	97.03.0001DLN(T)	Stem	1	Heat : 172303 (Lot F23-2911)	174495	316/316L	16,70	10,50	2,18	1,84	OK
2,7	97.04.0001DLN(T)	Tip	1	Heat : 290962 (Lot F23-2912)	MEST140440/2023/	316/316L	16,39	10,25	2,16	1,54	OK

x CROSSWIND
23/10/24 R

	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 560-2024_24-01216-p160 Data/*Date* : 30-Sep-2024	MD/PMI-VSF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	COMMESSA INDRA *Indra Job No.*	24 01216	NR. D'ORDINE CLIENTE *Customer Order No.*	1724000798 REV.2	DEL *Dated*	26-Jun-2024	POSIZIONE D'ORDINE CLIENTE *Customer Item*	160	POSIZIONE D' ORDINE INDRA *Indra Item*	160
Percentuale particolari da testare *Percentage of elements to be tested*		100%		CODICE *Code*	00.VSF.2681/V	DESCRIZIONE *Description*	DBB-898-HR-40-H300RF3-H-D-DLF-DL-N-PG-L123-TG-TGW-TV-DP-PMI2-PD2-BI-GT-CR-TA-FE2-FS-FE SPC1	Q.tà da produrre (pz.) *No. of pieces to be produced*	6		

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106012

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
3,1	981H.01.0039DLN(T)	Valve body	1	Heat : 294062 (Lot L24-0641)	MEST080042/2024/ - UT24003648	316/316L	16,69	10,13	2,06	1,61	OK
3,2	981H.02.0042DLN(T)	Closer	1	Heat : 292410 (Lot L24-0638)	MEST053963/2024/ - UT24002496	316/316L	16,63	10,08	2,13	1,59	OK
3,3	981H.04.0003DLN(T)	Stem of ball	1	Heat : 291905 (Lot F23-2417)	MEST084078/2023/	316/316L	16,20	10,11	2,12	1,70	OK
3,4	98H.07.0002DLN(T)	Ball	1	Heat : 372447 (Lot F23-1781)	2023013898	316/316L	16,78	10,09	2,13	1,86	OK
3,5	97.02.0001DLN(T)	Bonnet body	1	Heat : 291893 (Lot F24-0567)	MEST040838/2024/	316/316L	16,60	10,10	2,14	1,49	OK
3,6	97.03.0001DLN(T)	Stem	1	Heat : 172303 (Lot F23-2911)	174495	316/316L	16,65	10,64	2,13	1,83	OK
3,7	97.04.0001DLN(T)	Tip	1	Heat : 290962 (Lot F23-2912)	MEST140440/2023/	316/316L	16,25	10,05	2,16	1,44	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106013

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
4,1	981H.01.0039DLN(T)	Valve body	1	Heat : 294062 (Lot L24-0641)	MEST080042/2024/ - UT24003648	316/316L	16,63	10,11	2,04	1,60	OK
4,2	981H.02.0042DLN(T)	Closer	1	Heat : 292410 (Lot L24-0638)	MEST053963/2024/ - UT24002496	316/316L	16,61	10,11	2,07	1,65	OK
4,3	981H.04.0003DLN(T)	Stem of ball	1	Heat : 291905 (Lot F23-2417)	MEST084078/2023/	316/316L	16,30	10,17	2,13	1,66	OK
4,4	98H.07.0002DLN(T)	Ball	1	Heat : 372447 (Lot F23-1781)	2023013898	316/316L	16,72	10,08	2,17	1,85	OK
4,5	97.02.0001DLN(T)	Bonnet body	1	Heat : 291893 (Lot F24-0567)	MEST040838/2024/	316/316L	16,47	10,07	2,11	1,56	OK
4,6	97.03.0001DLN(T)	Stem	1	Heat : 172303 (Lot F23-2911)	174495	316/316L	16,61	10,68	2,19	1,74	OK
4,7	97.04.0001DLN(T)	Tip	1	Heat : 290962 (Lot F23-2912)	MEST140440/2023/	316/316L	16,39	10,04	2,11	1,50	OK

x CROSOWINO
23/10/24

	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 560-2024_24-01216-p160 Data/*Date* : 30-Sep-2024	MD/PMI-VSF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	COMMESSA INDRA *Indra Job No.*	24 01216	NR. D'ORDINE CLIENTE *Customer Order No.*	1724000798 REV.2	DEL *Dated*	26-Jun-2024	POSIZIONE D'ORDINE CLIENTE *Customer Item*	160	POSIZIONE D' ORDINE INDRA *Indra Item*	160
Percentuale particolari da testare *Percentage of elements to be tested*		100%		CODICE *Code*	00.VSF.2681/V	DESCRIZIONE *Description*	DBB-898-HR-40-H300RF3-H-D-DLF-DL-N-PG-L123-TG-TGW-TV-DP-PMI2-PD2-BI-GT-CR-TA-FE2-FS-FE SPC1	Q.tà da produrre (pz.) *No. of pieces to be produced*	6		

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106014

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
5,1	981H.01.0039DLN(T)	Valve body	1	Heat : 294062 (Lot L24-0641)	MEST080042/2024/ - UT24003648	316/316L	16,61	10,09	2,00	1,63	OK
5,2	981H.02.0042DLN(T)	Closer	1	Heat : 292410 (Lot L24-0638)	MEST053963/2024/ - UT24002496	316/316L	16,62	10,14	2,02	1,66	OK
5,3	981H.04.0003DLN(T)	Stem of ball	1	Heat : 291905 (Lot F23-2417)	MEST084078/2023/	316/316L	16,29	10,21	2,13	1,72	OK
5,4	98H.07.0002DLN(T)	Ball	1	Heat : 372447 (Lot F23-1781)	2023013898	316/316L	16,73	10,07	2,19	1,91	OK
5,5	97.02.0001DLN(T)	Bonnet body	1	Heat : 291893 (Lot F24-0567)	MEST040838/2024/	316/316L	16,45	10,03	2,17	1,49	OK
5,6	97.03.0001DLN(T)	Stem	1	Heat : 172303 (Lot F23-2911)	174495	316/316L	16,69	10,51	2,18	1,85	OK
5,7	97.04.0001DLN(T)	Tip	1	Heat : 290962 (Lot F23-2912)	MEST140440/2023/	316/316L	16,31	10,02	2,16	1,47	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106015

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
6,1	981H.01.0039DLN(T)	Valve body	1	Heat : 294062 (Lot L24-0641)	MEST080042/2024/ - UT24003648	316/316L	16,68	10,12	2,07	1,62	OK
6,2	981H.02.0042DLN(T)	Closer	1	Heat : 292410 (Lot L24-0638)	MEST053963/2024/ - UT24002496	316/316L	16,65	10,06	2,00	1,63	OK
6,3	981H.04.0003DLN(T)	Stem of ball	1	Heat : 291905 (Lot F23-2417)	MEST084078/2023/	316/316L	16,20	10,19	2,11	1,71	OK
6,4	98H.07.0002DLN(T)	Ball	1	Heat : 372447 (Lot F23-1781)	2023013898	316/316L	16,71	10,08	2,14	1,85	OK
6,5	97.02.0001DLN(T)	Bonnet body	1	Heat : 291893 (Lot F24-0567)	MEST040838/2024/	316/316L	16,51	10,00	2,18	1,54	OK
6,6	97.03.0001DLN(T)	Stem	1	Heat : 172303 (Lot F23-2911)	174495	316/316L	16,64	10,59	2,11	1,85	OK
6,7	97.04.0001DLN(T)	Tip	1	Heat : 290962 (Lot F23-2912)	MEST140440/2023/	316/316L	16,34	10,01	2,08	1,47	OK

NOTE / *Remarks* : PMI 100% on body, closer and wetted parts According to NDT PROCEDURE - PT/PMI Rev.14	Data prelievo componenti / *Date of components picking* : 30-Sep-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Testing instrument: X-Ray analyzer NITON XL2 980 GOLDD	Data verifica componenti / *Date of components verification* : x CROSSWIND 30-Sep-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Serial number: 85044 - expiry 15-November-2024	Data esecuzione PMI TEST / *Date of PMI TEST execution* : 23/10/24 R 30-Sep-2024	Firma /*Signature* THOMAS PETITTI PMI OPERATOR

indra VALVES - ITALY	**Project:** CROSSWIND 24 01216 / pos 160 - 00.VSF.2681/V PO 1724000798 REV.2 pos 160 - VLBBNN07201H00	
HARDNESS TEST REPORT **EN 10204 3.1 ed 2004**	**Client:** ROSETTI MARINO SPA	**Report No.:** 039 **Date:** 30-Sep-2024 **Page 1 of 2**

Location/area: Indra S.r.l Magenta (MI)		**Material:** 316/316L

Testing instrument: Durometer 1600 HV
Serial Number: 32159000013 - expiry 17-April-2027
Hardness Test Procedure: PT-HT (24-01216) Rev. 0

Surface preparation:

Grinding	Machined X	Lapping	Filling	Other

Test position: see below table

Measuring unit:

Rockwell C(HRC)	**Brinell (HB) x**	**Shore**
Rockwell B(HRB)	**Vickers (HV)**	

Location	HARDNESS (average value)						
Valve body S.N 106010	166						
Closer S.N 106010	164						
Stem of ball S.N 106010	194						
Ball S.N 106010	210						
Bonnet body S.N 106010	152						
Valve body S.N 106011	168						
Closer S.N 106011	162						
Stem of ball S.N 106011	198						
Ball S.N 106011	201						
Bonnet body S.N 106011	158						
Valve body S.N 106012	170						
Closer S.N 106012	161						
Stem of ball S.N 106012	199						
Ball S.N 106012	203						
Bonnet body S.N 106012	152						
Valve body S.N 106013	167						
Closer S.N 106013	172						
Stem of ball S.N 106013	186						
Ball S.N 106013	198						
Bonnet body S.N 106013	155						

CROSSWIND R
23/10/24

indra VALVES - ITALY	**Project:** CROSSWIND 24 01216 / pos 160 - 00.VSF.2681/V PO 1724000798 REV.2 pos 160 - VLBBNN07201H00
HARDNESS TEST REPORT **EN 10204 3.1 ed 2004**	**Client:** ROSETTI MARINO SPA **Report No.:** 039 **Date:** 30-Sep-2024 **Page 2 of 2**

Location	HARDNESS (average value)						
Valve body S.N 106014	171						
Closer S.N 106014	164						
Stem of ball S.N 106014	202						
Ball S.N 106014	204						
Bonnet body S.N 106014	152						
Valve body S.N 106015	167						
Closer S.N 106015	155						
Stem of ball S.N 106015	191						
Ball S.N 106015	209						
Bonnet body S.N 106015	147						

x CROSSWIND R
23/10/24

Sketch: 981H.01.0039DLN(T) - 981H.02.0042DLN(T) - 981H.04.0003DLN(T) - 98H.07.0002DLN(T) - 97.02.0001DLN(T)

Quality control	TPI Inspection	Client
Name: Petitti Thomas Sign: Date: 30-Sep-2024	Name: Sign: Date:	Name: Sign: Date:

FUGITIVE EMISSION PRODUCTION TEST (ISO 15848-2)
TEST REPORT
- INDRA VALVES -

MD-02-20-IT-UK-FE
Rev. 0
Data: 10-Oct-19

Nr. Certificato / *Certificate No.*	00339-FET	**Data** / *Date :*	09-Oct-24
Cliente / *Customer :*	ROSETTI MARINO SPA		
Ordine Nr. / *Order Nr.*	1724000798 REV.2	**Data** / *Date :*	26-Jun-24
Ns. commessa Nr. / *Our job Nr.*	24 01216	**Data** / *Date :*	03-Jul-24
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*	

Rev. 0

CONDIZIONI DI PROVA / TEST CONDITIONS

TEST (according to ISO 15848-2)	TEMPERATURA DI PROVA (Test Temperature)	CLASSE DI PERDITA (Tightness class)	MAX. PERDITA AMMISSIBILE (ISO 15848-2) (Mex allowable leakage)	FLUIDO DI PROVA (Test Fluid)	PRESSIONE DI PROVA (Test Pressure)	RUMORE DI FONDO (Backgrund noise)	ENDURANCE CLASS	MANOMETRO N° (Gauge ID)	DATA SCADENZA (Due Date)
Body / Closure seal	20° C	B	≤ 50 ppmv	Elium >97%	6 bar	5,1 ppmv	5 cycles	24F06-1334-01–13	3-Dec-24
Body / Body bonnet seal			≤ 50 ppmv						
Stem seal			≤ 100 ppmv						
Gland Plate / Trunnion seal			≤ 50 ppmv						

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY) PRODUCED	QTA' (QTY) TESTED	VALVE TYPE	NPS	FLANGE TYPE	RATING		Ball valve: Body / Closure seal – Leak detected (ppmv)	Ball valve: Stem seal – Leak detected (ppmv)	Ball valve: Trunnion seal – Leak detected (ppmv)	Ball valve: Gland Plate seal – Leak detected (ppmv)	Needle valve: Stem seal – Leak detected (ppmv)	Needle valve: Body bonnet seal – Leak detected (ppmv)
160	160	00.VSF.2693/V	DBB-898-HR-40-H300RF3-H-D (106015)	VLBBNN07201H00	6	1	Ball+Needle	1 ½"	RF	300	Value before cycles	0,1	0,1			0,1	0,1
											Value after 5 cycles	0,1	0,2			0,2	0,1
260	260	00.VSF.2700/V	SBB-798-HR-100-N150RF3-N-D (106039)	VLBLNN01450400	7	1	Ball+Needle	4"	RF	150	Value before cycles	0,1	0,1			0,1	0,1
											Value after 5 cycles	0,1	0,2			0,2	0,1
323	410	00.VSF.2681/V	DBB-898-HR-40-H300RF3-H-D (106016)	VLBBNN07201H00	1	1	Ball+Needle	1 ½"	RF	300	Value before cycles	0,1	0,1			0,1	0,1
											Value after 5 cycles	0,1	0,3			0,2	0,1
											Value before cycles						
											Value after 5 cycles						
											Value before cycles						
											Value after 5 cycles						
											Value before cycles						
											Value after 5 cycles						
											Value before cycles						
											Value after 5 cycles						

TEST RESULT: ☑ **SATISFACTORY** ☐ **NOT SATISFACTORY**

Strumentazione *(Equipment)* :
- Spettrometro di massa *(Mass Spectrometer)* : PFEIFFER VACUUM ASM 340 (SN.: HLD1901233)
  Minima perdita rilevabile *(Min. leak detectable)* : 5x10E-09 mbar*l/s (sniffing mode)
- Valore nominale fuga calibrata *(Calibrated leak nominal value)* : 6,09x10E-06 mbar*l/s (SN.: 40117695)

Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector	*Si / Yes* ☑ *No / No* ☐
Nominativo / Name	*Timbro e Firma / Stamp and Signature* xCROSSWIND 9/10/24
Data / Date	

PROCEDURA DI TEST
(Test procedure)
PFET (24-01216) Rev.0

COLLAUDATO DA: TESTED BY:	**MAURIZIO TOSI** Livello 1 UNI EN ISO 9712:2021 N. 24TO02901CE1	DATA / DATE:	09-Oct-24	APPROVATO DA: APPROVED BY:	**ROBERTO CAREZZO** VICE PRODUCTION MANAGER Livello 2 UNI EN ISO 9712:2021 N. 24TO00376CE1	DATA / DATE:	09-Oct-24

ROSETTI MARINO ITEM 170

COD. VLBBNN07210200

TAG:

BLPH-MV-019

INDRA ITEM 170

COD. 00.VSF.2682/V

CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 170 NS.POS/OUR ITEM 170 VS.COD./YOUR CODE VLBBNN07210200 NS.COD./OUR CODE 00.VSF.2682/V (1 PC)

indra VALVES - ITALY	**PENETRANT TEST REPORT (PT)**	**MD-02-29** rev.02 Date 28-11-2022

Certificato No.	PT-121-2024	Internal Indra Order No.:	OE 015611,015616,015626, 015627,015619,015622, 015818,015820	
Customer:	ROSETTI MARINO SPA	**Qty:**	3 + 2 + 5 + 1 + 2 + 2 + 2 + 2 + 2	Batch no.:
Code:	981F.01.0003DLN(T)	Description:	BODY	L23-0953-433747
	981F.01.0003DLN(T)		BODY	OE-06905-434671
	980F.02.0001DLN(T)		CLOSURE F150RF3	L23-1109-434829
→	981J.01.0010DLN(T)		BODY	L24-0444-293223
→	981J.02.0006DLN(T)		CLOSURE J300RF3	L24-0235-293307
	981F.01.0104DLN(T)		BODY	L24-0617-437405
	981F.02.0038DLN(T)		CLOSURE F150RF3	L24-0638-435799
	981J.01.0062DLN(T)		BODY	L24-0695-294062
	981J.02.0045DLN(T)		CLOSURE J150RF3	L24-0640-294062
Acceptance Standards:	Asme V art.6 Asme VIII Div.1 app.8			
Procedure:	*Indra Procedure PT-DP-01 (24-01216) Rev.0 dated 06-09-2024 EN 10204 3.1 ed 2004*			
Equipment:	*Luxmetro,white lamp, liquid penetrant*			

Test Conditions:

Test Surface:	EXTERNAL SIDE	INTERNAL SIDE	Surface Condition:	MACHINED
Penetrant Time: 20 min	Drying Time: 10 min	Development Time: 20 min	Cleaner:	SOLVENT-ALCOHOL
Natural Light: > 1100 Lux				
Type of Penetrant	08.122 K71B2	Batch no.	220127/BI	
Type of Developer	D112A	Batch no.	231106W150s	
Type of Removal	WATER			
Results:	ACCEPTABLE			

Note:
The inspection was conducted 100% of the surface

x CROSSWIND
9/10/24 R

Operator: Nicholas Sacchetti (LEVEL 2 acc. EN 9712:2012)	Signature:	Approved: Lucia Nosotti (RSQ)	Signature:
INDRA SRL VIA NOVARA 10/B-C / 20013 MAGENTA (MI)	Approval of Customer:		Date: 12 September 2024

	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 495-2024_24-01216-p170 Data/*Date* : 12-Sep-2024	MD/PMI-VSF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	**COMMESSA INDRA** *Indra Job No.*	24 01216	**NR. D'ORDINE CLIENTE** *Customer Order No.*	1724000798 REV.2	**DEL** *Dated*	26-Jun-2024	**POSIZIONE D'ORDINE CLIENTE** *Customer Item*	170	**POSIZIONE D' ORDINE INDRA** *Indra Item*	170
Percentuale particolari da testare *Percentage of elements to be tested*		100%		**CODICE** *Code*	00.VSF.2682/V	**DESCRIZIONE** *Description*	DBB-898-HR-S0-J300RF3-J-D-DLF-DL-N-PG-L123-TG-TGW-TV-DP-PMI2-PD2-BI-GT-CR-TA-FE2-FS-FE-SPC1	**Q.tà da produrre (pz.)** *No. of pieces to be produced*		1	

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106017

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
1,1	981J.01.0010DLN(T)	Valve body	1	Heat : 293223 (Lot L24-0444)	MEST042722/2024/ - UT24002025	316/316L	16,32	10,16	2,10	1,85	OK
1,2	981J.02.0006DLN(T)	Closer IN	1	Heat : 293307 (Lot L24-0235)	MEST007063/2024/ - UT24000314	316/316L	16,27	10,29	2,11	1,86	OK
1,2	981J.02.0006DLN(T)	Closer OUT	1	Heat : 293307 (Lot L24-0235)	MEST007063/2024/ - UT24000314	316/316L	16,32	10,24	2,08	1,79	OK
1,3	98J.04.0003DLN(T)	Stem of ball IN	1	Heat : 291905 (Lot F23-3024)	MEST084078/2023/	316/316L	16,73	10,38	2,08	1,60	OK
1,3	98J.04.0003DLN(T)	Stem of ball OUT	1	Heat : 291905 (Lot F23-3024)	MEST084078/2023/	316/316L	16,80	10,29	2,05	1,57	OK
1,4	98J.07.0001DLN(T)	Ball IN	1	Heat : 272823 (Lot F22-2706)	2022021445	316/316L	16,67	11,16	2,33	0,75	OK
1,4	98J.07.0001DLN(T)	Ball OUT	1	Heat : 272823 (Lot F22-2706)	2022021445	316/316L	16,63	10,98	2,25	0,84	OK
1,5	97.02.0001DLN(T)	Bonnet body	1	Heat : 291893 (Lot F24-0567)	MEST040838/2024/	316/316L	16,12	10,04	2,10	1,67	OK
1,6	97.03.0001DLN(T)	Stem	1	Heat : 172303 (Lot F23-2911)	174495	316/316L	16,49	10,06	2,21	1,80	OK
1,7	97.04.0001DLN(T)	Tip	1	Heat : 290962 (Lot F23-2912)	MEST140440/2023/	316/316L	16,77	10,25	2,11	1,38	OK

CROSSWIND
9/10/24 R

NOTE / *Remarks* : PMI 100% on body, closer and wetted parts According to NDT PROCEDURE - PT/PMI Rev.14	Data prelievo componenti / *Date of components picking* : 12-Sep-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Testing instrument: X-Ray analyzer NITON XL2 980 GOLDD	Data verifica componenti / *Date of components verification* : 12-Sep-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Serial number: 85044 - expiry 15-November-2024	Data esecuzione PMI TEST / *Date of PMI TEST execution* : 12-Sep-2024	Firma /*Signature* THOMAS PETITTI PMI OPERATOR

indra VALVES - ITALY	**Project:** CROSSWIND 24 01216 / pos 170 - 00.VSF.2682/V PO 1724000798 REV.2 pos 170 - VLBBNN07210200	
HARDNESS TEST REPORT **EN 10204 3.1 ed 2004**	**Client:** ROSETTI MARINO SPA	**Report No.:** 009 **Date:** 12-Sep-2024 **Page 1 of 1**

Location/area: Indra S.r.l Magenta (MI)		**Material:** 316/316L

Testing instrument: Durometer 1600 HV
Serial Number: 32159000013 - expiry 17-April-2027
Hardness Test Procedure: PT-HT (24-01216) Rev. 0

Surface preparation:

Grinding	Machined X	Lapping	Filling	Other

Test position: see below table

Measuring unit:

Rockwell C(HRC)	**Brinell (HB) x**	**Shore**
Rockwell B(HRB)	**Vickers (HV)**	

Location	HARDNESS (average value)						
Valve body S.N 106017	162						
Closer IN S.N 106017	156						
Closer OUT S.N 106017	162						
Stem of ball IN S.N 106017	112						
Stem of ball OUT S.N 106017	133						
Ball IN S.N 106017	148						
Ball OUT S.N 106017	144						
Bonnet body S.N 106017	171						

x CROSSWIND 9/10/24

Sketch: 981J.01.0010DLN(T) - 981J.02.0006DLN(T) - 98J.04.0003DLN(T) - 98J.07.0001DLN(T) - 97.02.0001DLN(T)

Quality control	TPI Inspection	Client
Name: Petitti Thomas	Name:	Name:
Sign:	Sign:	Sign:
Date: 12-Sep-2024	Date:	Date:

ROSETTI MARINO ITEM 180

COD. VLBBNN07230400

TAG:

BLPH-MV-034, BLPH-MV-222, BLPH-MV-387, BLPH-MV-423, BLPH-MV-431, BLPH-MV-440

INDRA ITEM 180

COD. 00.VSF.2679/V

CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 180 NS.POS/OUR ITEM 180 VS.COD./YOUR CODE VLBBNN07230400 NS.COD./OUR CODE 00.VSF.2679/V (6 PCS)

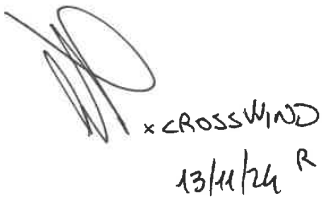
indra VALVES - ITALY	**PENETRANT TEST REPORT (PT)**	**MD-02-29** rev.02 Date 28-11-2022

Certificato No.	PT-134-2024	Internal Indra Order No.:	OE 017742,017743	
Customer:	ROSETTI MARINO SPA	Qty:	6 + 12	Batch no.:
Code:	98N.01.0006DLN(T)	Description:	BODY	OE-17767-437836
	98N.02.0003DLN(T)		CLOSURE N300RF3	OE-17768-437836
Acceptance Standards:	Asme V art.6 Asme VIII Div.1 app.8			
Procedure:	*Indra Procedure PT-DP-01 (24-01216) Rev.0 dated 06-09-2024 EN 10204 3.1 ed 2004*			
Equipment:	*Luxmetro,white lamp, liquid penetrant*			

Test Conditions:

Test Surface:	EXTERNAL SIDE	INTERNAL SIDE	Surface Condition:	MACHINED
Penetrant Time: 20 min	Drying Time: 10 min	Development Time: 20 min	Cleaner:	SOLVENT-ALCOHOL
Natural Light: > 1100 Lux				
Type of Penetrant	08.122 K71B2	Batch no.	220127/BI	
Type of Developer	D112A	Batch no.	231106W150s	
Type of Removal	WATER			
Results:	ACCEPTABLE			

Note:
The inspection was conducted 100% of the surface



Operator: Nicholas Sacchetti (LEVEL 2 acc. EN 9712:2012)	Signature:	Approved: Lucia Nosotti (RSQ)	Signature:
INDRA SRL VIA NOVARA 10/B-C / 20013 MAGENTA (MI)	Approval of Customer:		Date: 15 October 2024

	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 563-2024_24-01216-p180 Data/*Date* : 15-Oct-2024	MD/PMI-VSF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	**COMMESSA INDRA** *Indra Job No.*	24 01216	**NR. D'ORDINE CLIENTE** *Customer Order No.*	1724000798 REV.2	**DEL** *Dated*	26-Jun-2024	**POSIZIONE D'ORDINE CLIENTE** *Customer Item*	180	**POSIZIONE D' ORDINE INDRA** *Indra Item*	180
Percentuale particolari da testare *Percentage of elements to be tested*		100%		**CODICE** *Code*	00.VSF.2679/V	**DESCRIZIONE** *Description*	DBB-898-HR-100-N300RF3-N-D-DLF-DL-N-RG GE12-L123-TG-TGW-DP-PMI2-PD2-BI-GT-CR-TA-FE2-FS-FE-SPC1-SPC2	**Q.tà da produrre (pz.)** *No. of pieces to be produced*		6	

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106018

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
1,1	98N.01.0006DLN(T)	Valve body	1	Heat : 437836 (Lot OE-17767)	MEST096767/2024/ - UT24004516	316/316L	16,56	10,04	2,15	1,89	OK
1,2	98N.02.0003DLN(T)	Closer In	1	Heat : 437836 (Lot OE-17768)	MEST096767/2024/ - UT24004516	316/316L	16,75	10,53	2,24	1,95	OK
1,3	98N.02.0003DLN(T)	Closer Out	1	Heat : 437836 (Lot OE-17768)	MEST096767/2024/ - UT24004516	316/316L	16,71	10,49	2,20	1,98	OK
1,4	98N.04.0001DLN(T)	Stem of ball In	1	Heat : 073183 (Lot F23-3048)	2021002663	316/316L	16,55	10,65	2,21	1,68	OK
1,5	98N.04.0001DLN(T)	Stem of ball Out	1	Heat : 073183 (Lot F23-3048)	2021002663	316/316L	16,47	10,59	2,18	1,71	OK
1,6	98N.07.0001DLN(T)	Ball In	1	Heat : 288405 (Lot L23-0638)	MEST091415/2023/ - UT23003880	316/316L	16,57	10,42	2,11	1,82	OK
1,7	98N.07.0001DLN(T)	Ball Out	1	Heat : 288405 (Lot L23-0638)	MEST091415/2023/ - UT23003880	316/316L	16,59	10,35	2,10	1,86	OK
1,8	97.02.0001DLN(T)	Bonnet body	1	Heat : 291366 (Lot F23-2886)	MEST136234/2023/1	316/316L	16,36	10,83	2,27	1,47	OK
1,9	97.03.0001DLN(T)	Stem	1	Heat : 172303 (Lot F23-2911)	174495	316/316L	16,57	10,58	2,17	1,63	OK
1.10	97.04.0001DLN(T)	Tip	1	Heat : 290962 (Lot F24-0466)	MEST140440/2023/	316/316L	16,79	10,07	2,16	1,84	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106019

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
2,1	98N.01.0006DLN(T)	Valve body	1	Heat : 437836 (Lot OE-17767)	MEST096767/2024/ - UT24004516	316/316L	16,64	10,06	2,13	1,95	OK
2,2	98N.02.0003DLN(T)	Closer In	1	Heat : 437836 (Lot OE-17768)	MEST096767/2024/ - UT24004516	316/316L	16,69	10,59	2,29	1,96	OK
2,3	98N.02.0003DLN(T)	Closer Out	1	Heat : 437836 (Lot OE-17768)	MEST096767/2024/ - UT24004516	316/316L	16,65	10,58	2,24	1,92	OK
2,4	98N.04.0001DLN(T)	Stem of ball In	1	Heat : 073183 (Lot F23-3048)	2021002663	316/316L	16,44	10,66	2,26	1,61	OK
2,5	98N.04.0001DLN(T)	Stem of ball Out	1	Heat : 073183 (Lot F23-3048)	2021002663	316/316L	16,58	10,51	2,18	1,69	OK
2,6	98N.07.0001DLN(T)	Ball In	1	Heat : 288405 (Lot L23-0638)	MEST091415/2023/ - UT23003880	316/316L	16,54	10,50	2,11	1,86	OK
2,7	98N.07.0001DLN(T)	Ball Out	1	Heat : 288405 (Lot L23-0638)	MEST091415/2023/ - UT23003880	316/316L	16,60	10,34	2,17	1,89	OK
2,8	97.02.0001DLN(T)	Bonnet body	1	Heat : 291366 (Lot F23-2886)	MEST136234/2023/1	316/316L	16,47	10,69	2,21	1,43	OK
2,9	97.03.0001DLN(T)	Stem	1	Heat : 172303 (Lot F23-2911)	174495	316/316L	16,47	10,51	2,10	1,57	OK
2.10	97.04.0001DLN(T)	Tip	1	Heat : 290962 (Lot F24-0466)	MEST140440/2023/	316/316L	16,71	10,07	2,13	1,84	OK

	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 563-2024_24-01216-p180 Data/*Date* : 15-Oct-2024	MD/PMI-VSF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	COMMESSA INDRA *Indra Job No.*	24 01216	NR. D'ORDINE CLIENTE *Customer Order No.*	1724000798 REV.2	DEL *Dated*	26-Jun-2024	POSIZIONE D'ORDINE CLIENTE *Customer Item*	180	POSIZIONE D' ORDINE INDRA *Indra Item*	180
Percentuale particolari da testare *Percentage of elements to be tested*		100%		CODICE *Code*	00.VSF.2679/V	DESCRIZIONE *Description*	DBB-898-HR-100-N300RF3-N-D-DLF-DL-N-RG-GE12-L123-TG-TGW-DP-PMI2-PD2-BI-GT-CR-TA-FE2-FS-FE-SPC1-SPC2	Q.tà da produrre (pz.) *No. of pieces to be produced*	6		

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106020

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
3,1	98N.01.0006DLN(T)	Valve body	1	Heat : 437836 (Lot OE-17767)	MEST096767/2024/ - UT24004516	316/316L	16,57	10,07	2,19	1,92	OK
3,2	98N.02.0003DLN(T)	Closer In	1	Heat : 437836 (Lot OE-17768)	MEST096767/2024/ - UT24004516	316/316L	16,74	10,48	2,24	1,92	OK
3,3	98N.02.0003DLN(T)	Closer Out	1	Heat : 437836 (Lot OE-17768)	MEST096767/2024/ - UT24004516	316/316L	16,74	10,45	2,25	1,96	OK
3,4	98N.04.0001DLN(T)	Stem of ball In	1	Heat : 073183 (Lot F23-3048)	2021002663	316/316L	16,54	10,64	2,20	1,75	OK
3,5	98N.04.0001DLN(T)	Stem of ball Out	1	Heat : 073183 (Lot F23-3048)	2021002663	316/316L	16,44	10,68	2,22	1,67	OK
3,6	98N.07.0001DLN(T)	Ball In	1	Heat : 288405 (Lot L23-0638)	MEST091415/2023/ - UT23003880	316/316L	16,56	10,36	2,12	1,88	OK
3,7	98N.07.0001DLN(T)	Ball Out	1	Heat : 288405 (Lot L23-0638)	MEST091415/2023/ - UT23003880	316/316L	16,52	10,43	2,12	1,81	OK
3,8	97.02.0001DLN(T)	Bonnet body	1	Heat : 291366 (Lot F23-2886)	MEST136234/2023/1	316/316L	16,50	10,61	2,28	1,46	OK
3,9	97.03.0001DLN(T)	Stem	1	Heat : 172303 (Lot F23-2911)	174495	316/316L	16,59	10,52	2,19	1,56	OK
3.10	97.04.0001DLN(T)	Tip	1	Heat : 290962 (Lot F24-0466)	MEST140440/2023/	316/316L	16,79	10,07	2,13	1,89	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106021

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
4,1	98N.01.0006DLN(T)	Valve body	1	Heat : 437836 (Lot OE-17767)	MEST096767/2024/ - UT24004516	316/316L	16,55	10,01	2,18	1,86	OK
4,2	98N.02.0003DLN(T)	Closer In	1	Heat : 437836 (Lot OE-17768)	MEST096767/2024/ - UT24004516	316/316L	16,78	10,52	2,28	1,96	OK
4,3	98N.02.0003DLN(T)	Closer Out	1	Heat : 437836 (Lot OE-17768)	MEST096767/2024/ - UT24004516	316/316L	16,72	10,45	2,25	1,92	OK
4,4	98N.04.0001DLN(T)	Stem of ball In	1	Heat : 073183 (Lot F23-3048)	2021002663	316/316L	16,52	10,62	2,22	1,72	OK
4,5	98N.04.0001DLN(T)	Stem of ball Out	1	Heat : 073183 (Lot F23-3048)	2021002663	316/316L	16,42	10,67	2,25	1,73	OK
4,6	98N.07.0001DLN(T)	Ball In	1	Heat : 288405 (Lot L23-0638)	MEST091415/2023/ - UT23003880	316/316L	16,52	10,34	2,16	1,88	OK
4,7	98N.07.0001DLN(T)	Ball Out	1	Heat : 288405 (Lot L23-0638)	MEST091415/2023/ - UT23003880	316/316L	16,51	10,48	2,20	1,89	OK
4,8	97.02.0001DLN(T)	Bonnet body	1	Heat : 291366 (Lot F23-2886)	MEST136234/2023/1	316/316L	16,31	10,79	2,29	1,53	OK
4,9	97.03.0001DLN(T)	Stem	1	Heat : 172303 (Lot F23-2911)	174495	316/316L	16,51	10,54	2,12	1,57	OK
4.10	97.04.0001DLN(T)	Tip	1	Heat : 290962 (Lot F24-0466)	MEST140440/2023/	316/316L	16,72	10,01	2,13	1,80	OK

indra VALVES - ITALY	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 563-2024_24-01216-p180 Data/*Date* : 15-Oct-2024	MD/PMI-VSF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	COMMESSA INDRA *Indra Job No.*	24 01216	NR. D'ORDINE CLIENTE *Customer Order No.*	1724000798 REV.2	DEL *Dated*	26-Jun-2024	POSIZIONE D'ORDINE CLIENTE *Customer Item*	180	POSIZIONE D' ORDINE INDRA *Indra Item*	180
Percentuale particolari da testare *Percentage of elements to be tested*		100%		CODICE *Code*	00.VSF.2679/V	DESCRIZIONE *Description*	DBB-898-HR-100-N300RF3-N-D-DLF-DL-N-RG-GE12-L123-TG-TGW-DP-PMI2-PD2-BI-GT-CR-TA-FE2-FS-FE-SPC1-SPC2	Q.tà da produrre (pz.) *No. of pieces to be produced*		6	

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106022

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
5,1	98N.01.0006DLN(T)	Valve body	1	Heat : 437836 (Lot OE-17767)	MEST096767/2024/ - UT24004516	316/316L	16,55	10,02	2,17	1,90	OK
5,2	98N.02.0003DLN(T)	Closer In	1	Heat : 437836 (Lot OE-17768)	MEST096767/2024/ - UT24004516	316/316L	16,66	10,53	2,26	1,91	OK
5,3	98N.02.0003DLN(T)	Closer Out	1	Heat : 437836 (Lot OE-17768)	MEST096767/2024/ - UT24004516	316/316L	16,73	10,52	2,25	1,92	OK
5,4	98N.04.0001DLN(T)	Stem of ball In	1	Heat : 073183 (Lot F23-3048)	2021002663	316/316L	16,46	10,51	2,29	1,68	OK
5,5	98N.04.0001DLN(T)	Stem of ball Out	1	Heat : 073183 (Lot F23-3048)	2021002663	316/316L	16,47	10,64	2,20	1,68	OK
5,6	98N.07.0001DLN(T)	Ball In	1	Heat : 288405 (Lot L23-0638)	MEST091415/2023/ - UT23003880	316/316L	16,52	10,46	2,13	1,82	OK
5,7	98N.07.0001DLN(T)	Ball Out	1	Heat : 288405 (Lot L23-0638)	MEST091415/2023/ - UT23003880	316/316L	16,58	10,32	2,11	1,84	OK
5,8	97.02.0001DLN(T)	Bonnet body	1	Heat : 291366 (Lot F23-2886)	MEST136234/2023/1	316/316L	16,49	10,87	2,28	1,51	OK
5,9	97.03.0001DLN(T)	Stem	1	Heat : 172303 (Lot F23-2911)	174495	316/316L	16,52	10,53	2,13	1,68	OK
5.10	97.04.0001DLN(T)	Tip	1	Heat : 290962 (Lot F24-0466)	MEST140440/2023/	316/316L	16,83	10,08	2,11	1,90	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106023

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
6,1	98N.01.0006DLN(T)	Valve body	1	Heat : 437836 (Lot OE-17767)	MEST096767/2024/ - UT24004516	316/316L	16,64	10,09	2,15	1,95	OK
6,2	98N.02.0003DLN(T)	Closer In	1	Heat : 437836 (Lot OE-17768)	MEST096767/2024/ - UT24004516	316/316L	16,67	10,54	2,21	1,90	OK
6,63	98N.02.0003DLN(T)	Closer Out	1	Heat : 437836 (Lot OE-17768)	MEST096767/2024/ - UT24004516	316/316L	16,76	10,60	2,27	1,95	OK
6,4	98N.04.0001DLN(T)	Stem of ball In	1	Heat : 073183 (Lot F23-3048)	2021002663	316/316L	16,59	10,67	2,25	1,63	OK
6,5	98N.04.0001DLN(T)	Stem of ball Out	1	Heat : 073183 (Lot F23-3048)	2021002663	316/316L	16,44	10,62	2,18	1,62	OK
6,6	98N.07.0001DLN(T)	Ball In	1	Heat : 288405 (Lot L23-0638)	MEST091415/2023/ - UT23003880	316/316L	16,53	10,48	2,16	1,84	OK
6,7	98N.07.0001DLN(T)	Ball Out	1	Heat : 288405 (Lot L23-0638)	MEST091415/2023/ - UT23003880	316/316L	16,59	10,42	2,11	1,85	OK
6,8	97.02.0001DLN(T)	Bonnet body	1	Heat : 291366 (Lot F23-2886)	MEST136234/2023/1	316/316L	16,45	10,82	2,21	1,54	OK
6,9	97.03.0001DLN(T)	Stem	1	Heat : 172303 (Lot F23-2911)	174495	316/316L	16,58	10,55	2,18	1,57	OK
6.10	97.04.0001DLN(T)	Tip	1	Heat : 290962 (Lot F24-0466)	MEST140440/2023/	316/316L	16,77	10,02	2,15	1,90	OK

	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 563-2024_24-01216-p180 Data/*Date* : 15-Oct-2024	MD/PMI-VSF Rev.4-Dec/2022

CLIENTE ***Customer***	ROSETTI MARINO SPA	**COMMESSA INDRA** ***Indra Job No.***	24 01216	**NR. D'ORDINE CLIENTE** ***Customer Order No.***	1724000798 REV.2	**DEL** ***Dated***	26-Jun-2024	**POSIZIONE D'ORDINE CLIENTE** ***Customer Item***	180	**POSIZIONE D' ORDINE INDRA** ***Indra Item***	180
Percentuale particolari da testare ***Percentage of elements to be tested***		100%		**CODICE** ***Code***	00.VSF.2679/V			**DESCRIZIONE** ***Description***	DBB-898-HR-100-N300RF3-N-D-DU-DL-N-RG GE12-L123-TG-TGW-DP-PMI2-PD2-BI-GT-CR-TA-FE2-FS-FE-SPC1-SPC2	**Q.tà da produrre (pz.)** ***No. of pieces to be produced***	6

x CROSSWIND
13/11/24

NOTE / *Remarks* : PMI 100% on body, closer and wetted parts According to NDT PROCEDURE - PT/PMI Rev.14	Data prelievo componenti / *Date of components picking* : 15-Oct-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Testing instrument: X-Ray analyzer NITON XL2 980 GOLDD	Data verifica componenti / *Date of components verification* : 15-Oct-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Serial number: 85044 - expiry 15-November-2024	Data esecuzione PMI TEST / *Date of PMI TEST execution* : 15-Oct-2024	Firma /*Signature* THOMAS PETITTI PMI OPERATOR

indra VALVES - ITALY	**Project:** CROSSWIND 24 01216 / pos 180 - 00.VSF.2679/V PO 1724000798 REV.2 pos 180 - VLBBNN07230400	
HARDNESS TEST REPORT **EN 10204 3.1 ed 2004**	**Client:** ROSETTI MARINO SPA	**Report No.:** 042 **Date:** 15-Oct-2024 **Page 1 of 2**

Location/area: Indra S.r.l Magenta (MI)		**Material:** 316/316L

Testing instrument: Durometer 1600 HV
Serial Number: 32159000013 - expiry 17-April-2027
Hardness Test Procedure: PT-HT (24-01216) Rev. 0

Surface preparation:

Grinding	Machined X	Lapping	Filling	Other

Test position: see below table

Measuring unit:

Rockwell C(HRC)	**Brinell (HB) x**	**Shore**
Rockwell B(HRB)	**Vickers (HV)**	

Location	HARDNESS (average value)						
Valve body S.N 106018	160						
Closer IN S.N 106018	164						
Closer OUT S.N 106018	154						
Stem of ball IN S.N 106018	202						
Stem of ball OUT S.N 106018	207						
Ball IN S.N 106018	208						
Ball OUT S.N 106018	213						
Bonnet body S.N 106018	182						
Valve body S.N 106019	156						
Closer IN S.N 106019	147						
Closer OUT S.N 106019	151						
Stem of ball IN S.N 106019	211						
Stem of ball OUT S.N 106019	211						
Ball IN S.N 106019	204						
Ball OUT S.N 106019	207						
Bonnet body S.N 106019	177						
Valve body S.N 106020	163						
Closer IN S.N 106020	148						
Closer OUT S.N 106020	160						
Stem of ball IN S.N 106020	211						
Stem of ball OUT S.N 106020	207						
Ball IN S.N 106020	198						
Ball OUT S.N 106020	203						
Bonnet body S.N 106020	183						

indra VALVES - ITALY	**Project:** CROSSWIND 24 01216 / pos 180 - 00.VSF.2679/V PO 1724000798 REV.2 pos 180 - VLBBNN07230400
HARDNESS TEST REPORT **EN 10204 3.1 ed 2004**	**Client:** ROSETTI MARINO SPA **Report No.:** 042 **Date:** 15-Oct-2024 **Page 2 of 2**

Location	HARDNESS (average value)						
Valve body S.N 106021	157						
Closer IN S.N 106021	157						
Closer OUT S.N 106021	155						
Stem of ball IN S.N 106021	213						
Stem of ball OUT S.N 106021	205						
Ball IN S.N 106021	206						
Ball OUT S.N 106021	197						
Bonnet body S.N 106021	179						
Valve body S.N 106022	154						
Closer IN S.N 106022	149						
Closer OUT S.N 106022	151						
Stem of ball IN S.N 106022	218						
Stem of ball OUT S.N 106022	213						
Ball IN S.N 106022	204						
Ball OUT S.N 106022	204						
Bonnet body S.N 106022	181						
Valve body S.N 106023	162						
Closer IN S.N 106023	150						
Closer OUT S.N 106023	155						
Stem of ball IN S.N 106023	215						
Stem of ball OUT S.N 106023	207						
Ball IN S.N 106023	202						
Ball OUT S.N 106023	197						
Bonnet body S.N 106023	174						

x CROSSWIND
13/11/24

Sketch: 98N.01.0006DLN(T) - 98N.02.0003DLN(T) - 98N.04.0001DLN(T) - 98N.07.0001DLN(T) - 97.02.0001DLN(T)

Quality control	TPI Inspection	Client
Name: Petitti Thomas Sign: Date: 15-Oct-2024	Name: Sign: Date:	Name: Sign: Date:

indra VALVES - ITALY	***FUGITIVE EMISSION PRODUCTION TEST (ISO 15848-2)*** ***TEST REPORT*** ***- INDRA VALVES -***	**MD-02-20-IT-UK-FE** **Rev. 0** **Data: 10-Oct-19**

Nr. Certificato / *Certificate No.*	**00342-FET**	**Data** / *Date :*	**23-Oct-24** *Rev. 0*
Cliente / *Customer :*	**ROSETTI MARINO SPA**		
Ordine Nr. / *Order Nr.*	**1724000798 REV.2**	**Data** / *Date :*	**26-Jun-24**
Ns. commessa Nr. / *Our job Nr.*	**24 01216**	**Data** / *Date :*	**03-Jul-24**
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*	

CONDIZIONI DI PROVA / TEST CONDITIONS

TEST (according to ISO 15848-2)	*TEMPERATURA DI PROVA (Test Temperature)*	*CLASSE DI PERDITA (Tightness class)*	*MAX. PERDITA AMMISSIBILE (ISO 15848-2) (Max allowable leakage)*	*FLUIDO DI PROVA (Test Fluid)*	*PRESSIONE DI PROVA (Test Pressure)*	*RUMORE DI FONDO (Backgrund noise)*	*ENDURANCE CLASS*	*MANOMETRO N° (Gauge ID)*	*DATA SCADENZA (Due Date)*
Body / Closure seal	*21° C*	*B*	*≤ 50 ppmv*	*Elium >97%*	*6 bar*	*5,0 ppmv*	*5 cycles*	*24F06-1334-01--13*	*3-Dec-24*
Body / Body bonnet seal			*≤ 50 ppmv*						
Stem seal			*≤ 100 ppmv*						
Gland Plate / Trunnion seal			*≤ 50 ppmv*						

											Ball valve				*Needle valve*	
INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY) PRODUCED	QTA' (QTY) TESTED	VALVE TYPE	NPS	FLANGE TYPE	RATING		*Body / Closure seal* Leak detected (ppmv)	*Stem seal* Leak detected (ppmv)	*Trunnion seal* Leak detected (ppmv)	*Gland Plate seal* Leak detected (ppmv)	*Stem seal* Leak detected (ppmv)	*Body bonnet seal* Leak detected (ppmv)
180	*180*	*00.VSF.2679/V*	*DBB-898-HR-100-N300RF3-N-D (106019)*	*VLBBNN07230400*	*6*	*1*	*Ball+Needle*	*4"*	*RF*	*300*	*Value before cycles*	*0,1*	*0,1*			*0,1*	*0,1*
											Value after 5 cycles	*0,1*	*0,2*			*0,3*	*0,1*
190	*190*	*00.VSFT.0223/V*	*DBB-898-TRU-HR-150-Q300RF3-Q-D (106042)*	*VLBBNN07240600*	*6*	*1*	*Ball+Needle*	*6"*	*RF*	*300*	*Value before cycles*	*0,1*	*0,1*		*0,1*	*0,1*	*0,1*
											Value after 5 cycles	*0,1*	*0,2*		*0,1*	*0,2*	*0,1*
											Value before cycles						
											Value after 5 cycles						
											Value before cycles						
											Value after 5 cycles						
											Value before cycles						
											Value after 5 cycles						
											Value before cycles						
											Value after 5 cycles						
											Value before cycles						
											Value after 5 cycles						

TEST RESULT: ☑ **SATISFACTORY** ☐ **NOT SATISFACTORY**

Strumentazione *(Equipment)* :
- Spettrometro di massa *(Mass Spectrometer)* : PFEIFFER VACUUM ASM 340 (SN.: HLD1901233)
  Minima perdita rilevabile *(Min. leak detectable)* : 5x10E-09 mbar*l/s (sniffing mode)
- Valore nominale fuga calibrata *(Calibrated leak nominal value)* : 6,09x10E-06 mbar*l/s (SN.: 40117695)

Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector — *Si / Yes* ☑ *No / No* ☐

Nominativo / Name .....

Timbro e Firma / Stamp and Signature

Data / Date .....

x CROSSWIND W 23/10/24

PROCEDURA DI TEST
(Test procedure)
PFET (24-01216) Rev.0

COLLAUDATO DA: TESTED BY:	**MAURIZIO TOSI** **Livello 1 UNI EN ISO 9712:2021** **N. 24TO02901CE1**	DATA / DATE:	23-Oct-24	APPROVATO DA: APPROVED BY:	**ROBERTO CAREZZO** **VICE PRODUCTION MANAGER** **Livello 2 UNI EN ISO 9712:2021** **N. 24TO00376CE1**	DATA / DATE:	23-Oct-24

ROSETTI MARINO ITEM 190

COD. VLBBNN07240600

TAG:

BLPH-MV-035, BLPH-MV-264, BLPH-MV-388, BLPH-MV-424, BLPH-MV-432, BLPH-MV-441

INDRA ITEM 190

COD. 00.VSFT.0223/V

CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 190 NS.POS/OUR ITEM 190 VS.COD./YOUR CODE VLBBNN07240600 NS.COD./OUR CODE 00.VSFT.0223/V (6 PCS)

indra VALVES - ITALY	**PENETRANT TEST REPORT (PT)**	**MD-02-29** rev.02 Date 28-11-2022

Certificato No.	PT-135-2024	Internal Indra Order No.:	OE 015602,015604, 015605,015594	
Customer:	ROSETTI MARINO SPA	Qty:	4 + 2 + 12 + 12 + 24	Batch no.:
Code:	102Q3.01.0003DLN(T)	Description:	BODY	L24-0786-293299 (SN from 106042 to 106045)
	102Q3.01.0003DLN(T)		BODY	L24-0786-294238 (SN 106046,106047)
	102Q3.02.0001DLN(T)		CLOSURE Q300RF3	OE-15650-295063
	102Q1.05.0001DLN(T)		GLAND PLATE	L24-0620-294158
	102Q1.36.0001DLN(T)		BALL SUPPORT FLANGE	L24-0620-43421
Acceptance Standards:	Asme V art.6 Asme VIII Div.1 app.8			
Procedure:	*Indra Procedure PT-DP-01 (24-01216) Rev.0 dated 06-09-2024 EN 10204 3.1 ed 2004*			
Equipment:	*Luxmetro,white lamp, liquid penetrant*			

Test Conditions:

Test Surface:	EXTERNAL SIDE	INTERNAL SIDE	Surface Condition:	MACHINED
Penetrant Time: 20 min	Drying Time: 10 min	Development Time: 20 min	Cleaner:	SOLVENT-ALCOHOL
Natural Light: > 1100 Lux				
Type of Penetrant	08.122 K71B2	Batch no.	220127/BI	
Type of Developer	D112A	Batch no.	231106W150s	
Type of Removal	WATER			
Results:	ACCEPTABLE			

Note:
The inspection was conducted 100% of the surface

xCROSSWIND
13/11/24

Operator: Nicholas Sacchetti (LEVEL 2 acc. EN 9712:2012)	Signature:	Approved: Lucia Nosotti (RSQ)	Signature:
INDRA SRL VIA NOVARA 10/B-C / 20013 MAGENTA (MI)	Approval of Customer:		Date: 15 October 2024

	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 564-2024_24-01216-p190 Data/*Date* : 15-Oct-2024	MD/PMI-VSF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	**COMMESSA INDRA** *Indra Job No.*	24 01216	**NR. D'ORDINE CLIENTE** *Customer Order No.*	1724000798 REV.2	**DEL** *Dated*	26-Jun-2024	**POSIZIONE D'ORDINE CLIENTE** *Customer Item*	190	**POSIZIONE D' ORDINE INDRA** *Indra Item*	190
Percentuale particolari da testare *Percentage of elements to be tested*		100%		**CODICE** *Code*	00.VSFT.0223/V	**DESCRIZIONE** *Description*	DBB-898-TRU-HR-150-Q300RF3-Q-D-DLF-DL-N-RG-GE12-L123-TG-TGW-TV-DP-PMI2 PD2-BI-GT-CR-TA-FE2-FS-SPC1-SPC2	**Q.tà da produrre (pz.)** *No. of pieces to be produced*	6		

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106042

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
1,1	102Q3.01.0003DLNT)	Valve body	1	Heat : 293299 (Lot L24-0786)	MEST089170/2024/	316/316L	16,84	10,12	2,12	1,72	OK
1,2	102Q3.02.0001DLN(T)	Closure In	1	Heat : 295063 (Lot OE-15650)	MEST089171/2024/	316/316L	16,49	10,14	2,06	1,67	OK
1,3	102Q3.02.0001DLN(T)	Closure Out	1	Heat : 295063 (Lot OE-15650)	MEST089171/2024/	316/316L	16,53	10,16	2,08	1,73	OK
1,4	102Q1.04.0001DLN(T)	Stem of ball In	1	Heat : 2VCV (Lot F24-1283)	2023/014186	316/316L	16,66	10,63	2,03	1,68	OK
1,5	102Q1.04.0001DLN(T)	Stem of ball Out	1	Heat : 2VCV (Lot F24-1283)	2023/014186	316/316L	16,59	10,61	2,05	1,72	OK
1,6	102Q1.07.0001DLN(T)	Ball In	1	Heat : 101823 (Lot F24-0372)	2021055970	316/316L	16,16	10,04	2,11	1,88	OK
1,7	102Q1.07.0001DLN(T)	Ball Out	1	Heat : 101823 (Lot F24-0372)	2021055970	316/316L	16,24	10,08	2,07	1,90	OK
1,8	102Q1.10.0001DLNR(T)	Seat In	1	Heat : 301859 (Lot F24-2087)	2024003430	316/316L	16,98	10,38	2,09	1,57	OK
1,9	102Q1.10.0001DLNR(T)	Seat In	1	Heat : 301859 (Lot F24-2087)	2024003430	316/316L	16,87	10,27	2,11	1,59	OK
1.10	102Q1.10.0001DLNR(T)	Seat Out	1	Heat : 301859 (Lot F24-2087)	2024003430	316/316L	16,90	10,31	2,05	1,54	OK
1,11	102Q1.10.0001DLNR(T)	Seat Out	1	Heat : 301859 (Lot F24-2087)	2024003430	316/316L	16,90	10,22	2,08	1,62	OK
1,12	102Q1.36.0001DLN(T)	Ball support flange In	1	Heat : 43421 (Lot L24-0620)	2024-107037	316/316L	16,38	10,09	2,05	1,89	OK
1,13	102Q1.36.0001DLN(T)	Ball support flange In	1	Heat : 43421 (Lot L24-0620)	2024-107037	316/316L	16,42	10,12	2,06	1,91	OK
1,14	102Q1.36.0001DLN(T)	Ball support flange Out	1	Heat : 43421 (Lot L24-0620)	2024-107037	316/316L	16,40	10,08	2,04	1,84	OK
1,15	102Q1.36.0001DLN(T)	Ball support flange Out	1	Heat : 43421 (Lot L24-0620)	2024-107037	316/316L	16,51	10,08	2,08	1,87	OK
1.16	102Q1.05.0001DLN(T)	Gland plate In	1	Heat : 294158 (Lot L24-0620)	MEST076309/2024/ - UT24003464	316/316L	16,23	10,31	2,20	1,96	OK
1.17	102Q1.05.0001DLN(T)	Gland plate Out	1	Heat : 294158 (Lot L24-0620)	MEST076309/2024/ - UT24003464	316/316L	16,41	10,19	2,19	1,81	OK
1,18	97.02.0001DLN(T)	Bonnet body	1	Heat : 291893 (Lot F24-0567)	MEST040838/2024	316/316L	16,54	10,10	2,05	1,48	OK
1.19	97.03.0001DLN(T)	Stem	1	Heat : 172303 (Lot F23-2911)	174495	316/316L	16,71	10,07	2,13	1,68	OK
1.20	97.04.0001DLN(T)	Tip	1	Heat : 290962 (Lot F23-2912)	MEST140440/2023/	316/316L	16,55	10,16	2,07	1,52	OK

indra VALVES - ITALY	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 564-2024_24-01216-p190 Data/*Date* : 15-Oct-2024	MD/PMI-VSF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	**COMMESSA INDRA** *Indra Job No.*	24 01216	**NR. D'ORDINE CLIENTE** *Customer Order No.*	1724000798 REV.2	**DEL** *Dated*	26-Jun-2024	**POSIZIONE D'ORDINE CLIENTE** *Customer Item*	190	**POSIZIONE D' ORDINE INDRA** *Indra Item*	190
Percentuale particolari da testare *Percentage of elements to be tested*		100%		**CODICE** *Code*	00.VSFT.0223/V	**DESCRIZIONE** *Description*	DBB-898-TRU-NR-150-Q300RF3-Q-D-DLF-DL-N-RG-GE12-L123-TG-TGW-TV-DP-PMI2-PD2-BI-GT-CR-TA-FE2-FS-SPC1-SPC2	**Q.tà da produrre (pz.)** *No. of pieces to be produced*	6		

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106043

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
2,1	102Q3.01.0003DLNT)	Valve body	1	Heat : 293299 (Lot L24-0786)	MEST089170/2024/	316/316L	16,85	10,18	2,10	1,71	OK
2,2	102Q3.02.0001DLN(T)	Closure In	1	Heat : 295063 (Lot OE-15650)	MEST089171/2024/	316/316L	16,45	10,13	2,06	1,66	OK
2,3	102Q3.02.0001DLN(T)	Closure Out	1	Heat : 295063 (Lot OE-15650)	MEST089171/2024/	316/316L	16,50	10,16	2,06	1,77	OK
2,4	102Q1.04.0001DLN(T)	Stem of ball In	1	Heat : 2VCV (Lot F24-1283)	2023/014186	316/316L	16,61	10,75	2,08	1,80	OK
2,5	102Q1.04.0001DLN(T)	Stem of ball Out	1	Heat : 2VCV (Lot F24-1283)	2023/014186	316/316L	16,61	10,58	2,03	1,66	OK
2,6	102Q1.07.0001DLN(T)	Ball In	1	Heat : 101823 (Lot F24-0372)	2021055970	316/316L	16,20	10,00	2,09	1,88	OK
2,7	102Q1.07.0001DLN(T)	Ball Out	1	Heat : 101823 (Lot F24-0372)	2021055970	316/316L	16,22	10,03	2,11	1,81	OK
2,8	102Q1.10.0001DLNR(T)	Seat In	1	Heat : 301859 (Lot F24-2087)	2024003430	316/316L	16,90	10,27	2,14	1,59	OK
2,9	102Q1.10.0001DLNR(T)	Seat In	1	Heat : 301859 (Lot F24-2087)	2024003430	316/316L	16,98	10,13	2,08	1,58	OK
2.10	102Q1.10.0001DLNR(T)	Seat Out	1	Heat : 301859 (Lot F24-2087)	2024003430	316/316L	16,84	10,31	2,14	1,51	OK
2,11	102Q1.10.0001DLNR(T)	Seat Out	1	Heat : 301859 (Lot F24-2087)	2024003430	316/316L	16,82	10,32	2,10	1,60	OK
2,12	102Q1.36.0001DLN(T)	Ball support flange In	1	Heat : 43421 (Lot L24-0620)	2024-107037	316/316L	16,43	10,09	2,03	1,82	OK
2,13	102Q1.36.0001DLN(T)	Ball support flange In	1	Heat : 43421 (Lot L24-0620)	2024-107037	316/316L	16,36	10,12	2,02	1,88	OK
2,14	102Q1.36.0001DLN(T)	Ball support flange Out	1	Heat : 43421 (Lot L24-0620)	2024-107037	316/316L	16,45	10,07	2,07	1,89	OK
2,15	102Q1.36.0001DLN(T)	Ball support flange Out	1	Heat : 43421 (Lot L24-0620)	2024-107037	316/316L	16,32	10,14	2,01	1,80	OK
2.16	102Q1.05.0001DLN(T)	Gland plate In	1	Heat : 294158 (Lot L24-0620)	MEST076309/2024/ - UT24003464	316/316L	16,20	10,35	2,20	1,95	OK
2.17	102Q1.05.0001DLN(T)	Gland plate Out	1	Heat : 294158 (Lot L24-0620)	MEST076309/2024/ - UT24003464	316/316L	16,22	10,27	2,22	1,96	OK
2,18	97.02.0001DLN(T)	Bonnet body	1	Heat : 291893 (Lot F24-0567)	MEST040838/2024	316/316L	16,48	10,10	2,09	1,55	OK
2.19	97.03.0001DLN(T)	Stem	1	Heat : 172303 (Lot F23-2911)	174495	316/316L	16,65	10,09	2,14	1,66	OK
2.20	97.04.0001DLN(T)	Tip	1	Heat : 290962 (Lot F23-2912)	MEST140440/2023/	316/316L	16,54	10,10	2,06	1,48	OK

	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 564-2024_24-01216-p190 Data/*Date* : 15-Oct-2024	MD/PMI-VSF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	**COMMESSA INDRA** *Indra Job No.*	24 01216	**NR. D'ORDINE CLIENTE** *Customer Order No.*	1724000798 REV.2	**DEL** *Dated*	26-Jun-2024	**POSIZIONE D'ORDINE CLIENTE** *Customer Item*	190	**POSIZIONE D' ORDINE INDRA** *Indra Item*	190
Percentuale particolari da testare *Percentage of elements to be tested*		100%		**CODICE** *Code*	00.VSFT.0223/V	**DESCRIZIONE** *Description*	DBB-898-TRU-HR-150-Q300RF3-Q-D-DLF-DL-N-RG-GE12-L123-TG-TGW-TV-DP-PMI2-PD2-BI-GT-CR-TA-FE2-FS-SPC1-SPC2	**Q.tà da produrre (pz.)** *No. of pieces to be produced*		6	

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106044

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
3,1	102Q3.01.0003DLNT)	Valve body	1	Heat : 293299 (Lot L24-0786)	MEST089170/2024/	316/316L	16,81	10,19	2,11	1,76	OK
3,2	102Q3.02.0001DLN(T)	Closure In	1	Heat : 295063 (Lot OE-15650)	MEST089171/2024/	316/316L	16,57	10,17	2,10	1,73	OK
3,3	102Q3.02.0001DLN(T)	Closure Out	1	Heat : 295063 (Lot OE-15650)	MEST089171/2024/	316/316L	16,45	10,17	2,10	1,62	OK
3,4	102Q1.04.0001DLN(T)	Stem of ball In	1	Heat : 2VCV (Lot F24-1283)	2023/014186	316/316L	16,53	10,53	2,07	1,62	OK
3,5	102Q1.04.0001DLN(T)	Stem of ball Out	1	Heat : 2VCV (Lot F24-1283)	2023/014186	316/316L	16,52	10,67	2,05	1,70	OK
3,6	102Q1.07.0001DLN(T)	Ball In	1	Heat : 101823 (Lot F24-0372)	2021055970	316/316L	16,30	10,04	2,13	1,85	OK
3,7	102Q1.07.0001DLN(T)	Ball Out	1	Heat : 101823 (Lot F24-0372)	2021055970	316/316L	16,20	10,04	2,13	1,85	OK
3,8	102Q1.10.0001DLNR(T)	Seat In	1	Heat : 301859 (Lot F24-2087)	2024003430	316/316L	16,94	10,27	2,13	1,65	OK
3,9	102Q1.10.0001DLNR(T)	Seat In	1	Heat : 301859 (Lot F24-2087)	2024003430	316/316L	16,82	10,10	2,12	1,59	OK
3,10	102Q1.10.0001DLNR(T)	Seat Out	1	Heat : 301859 (Lot F24-2087)	2024003430	316/316L	16,84	10,24	2,14	1,61	OK
3,11	102Q1.10.0001DLNR(T)	Seat Out	1	Heat : 301859 (Lot F24-2087)	2024003430	316/316L	16,85	10,14	2,08	1,51	OK
3,12	102Q1.36.0001DLN(T)	Ball support flange In	1	Heat : 43421 (Lot L24-0620)	2024-107037	316/316L	16,48	10,08	2,05	1,87	OK
3,13	102Q1.36.0001DLN(T)	Ball support flange In	1	Heat : 43421 (Lot L24-0620)	2024-107037	316/316L	16,39	10,12	2,10	1,91	OK
3,14	102Q1.36.0001DLN(T)	Ball support flange Out	1	Heat : 43421 (Lot L24-0620)	2024-107037	316/316L	16,34	10,10	2,04	1,89	OK
3,15	102Q1.36.0001DLN(T)	Ball support flange Out	1	Heat : 43421 (Lot L24-0620)	2024-107037	316/316L	16,55	10,13	2,09	1,84	OK
3.16	102Q1.05.0001DLN(T)	Gland plate In	1	Heat : 294158 (Lot L24-0620)	MEST076309/2024/ - UT24003464	316/316L	16,37	10,16	2,10	1,94	OK
3.17	102Q1.05.0001DLN(T)	Gland plate Out	1	Heat : 294158 (Lot L24-0620)	MEST076309/2024/ - UT24003464	316/316L	16,27	10,30	2,21	1,88	OK
3,18	97.02.0001DLN(T)	Bonnet body	1	Heat : 291893 (Lot F24-0567)	MEST040838/2024	316/316L	16,47	10,19	2,09	1,52	OK
3.19	97.03.0001DLN(T)	Stem	1	Heat : 172303 (Lot F23-2911)	174495	316/316L	16,75	10,11	2,09	1,71	OK
3.20	97.04.0001DLN(T)	Tip	1	Heat : 290962 (Lot F23-2912)	MEST140440/2023/	316/316L	16,45	10,13	2,03	1,46	OK

	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 564-2024_24-01216-p190 Data/*Date* : 15-Oct-2024	MD/PMI-VSF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	COMMESSA INDRA *Indra Job No.*	24 01216	NR. D'ORDINE CLIENTE *Customer Order No.*	1724000798 REV.2	DEL *Dated*	26-Jun-2024	POSIZIONE D'ORDINE CLIENTE *Customer Item*	190	POSIZIONE D' ORDINE INDRA *Indra Item*	190
Percentuale particolari da testare *Percentage of elements to be tested*		100%		CODICE *Code*	00.VSFT.0223/V	DESCRIZIONE *Description*	DBB-898-TRU-HR-150-Q300RF3-Q-D-DLF-DL-N-RG-GE12-L123-TG-TGW-TV-DP-PMI2-PD2-BI-GT-CR-TA-FE2-FS-SPC1-SPC2	Q.tà da produrre (pz.) *No. of pieces to be produced*	6		

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106045

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
4,1	102Q3.01.0003DLNT)	Valve body	1	Heat : 293299 (Lot L24-0786)	MEST089170/2024/	316/316L	16,82	10,17	2,08	1,70	OK
4,2	102Q3.02.0001DLN(T)	Closure In	1	Heat : 295063 (Lot OE-15650)	MEST089171/2024/	316/316L	16,46	10,14	2,13	1,74	OK
4,3	102Q3.02.0001DLN(T)	Closure Out	1	Heat : 295063 (Lot OE-15650)	MEST089171/2024/	316/316L	16,52	10,19	2,05	1,58	OK
4,4	102Q1.04.0001DLN(T)	Stem of ball In	1	Heat : 2VCV (Lot F24-1283)	2023/014186	316/316L	16,55	10,60	2,00	1,77	OK
4,5	102Q1.04.0001DLN(T)	Stem of ball Out	1	Heat : 2VCV (Lot F24-1283)	2023/014186	316/316L	16,70	10,72	2,09	1,69	OK
4,6	102Q1.07.0001DLN(T)	Ball In	1	Heat : 101823 (Lot F24-0372)	2021055970	316/316L	16,25	10,00	2,07	1,86	OK
4,7	102Q1.07.0001DLN(T)	Ball Out	1	Heat : 101823 (Lot F24-0372)	2021055970	316/316L	16,35	10,03	2,08	1,85	OK
4,8	102Q1.10.0001DLNR(T)	Seat In	1	Heat : 301859 (Lot F24-2087)	2024003430	316/316L	16,90	10,24	2,08	1,59	OK
4,9	102Q1.10.0001DLNR(T)	Seat In	1	Heat : 301859 (Lot F24-2087)	2024003430	316/316L	16,89	10,29	2,14	1,56	OK
4.10	102Q1.10.0001DLNR(T)	Seat Out	1	Heat : 301859 (Lot F24-2087)	2024003430	316/316L	16,88	10,24	2,11	1,63	OK
4,11	102Q1.10.0001DLNR(T)	Seat Out	1	Heat : 301859 (Lot F24-2087)	2024003430	316/316L	16,95	10,11	2,11	1,61	OK
4,12	102Q1.36.0001DLN(T)	Ball support flange In	1	Heat : 43421 (Lot L24-0620)	2024-107037	316/316L	16,46	10,10	2,09	1,85	OK
4,13	102Q1.36.0001DLN(T)	Ball support flange In	1	Heat : 43421 (Lot L24-0620)	2024-107037	316/316L	16,42	10,08	2,00	1,85	OK
4,14	102Q1.36.0001DLN(T)	Ball support flange Out	1	Heat : 43421 (Lot L24-0620)	2024-107037	316/316L	16,58	10,06	2,01	1,92	OK
4,15	102Q1.36.0001DLN(T)	Ball support flange Out	1	Heat : 43421 (Lot L24-0620)	2024-107037	316/316L	16,31	10,07	2,03	1,88	OK
4.16	102Q1.05.0001DLN(T)	Gland plate In	1	Heat : 294158 (Lot L24-0620)	MEST076309/2024/ - UT24003464	316/316L	16,32	10,22	2,25	1,96	OK
4.17	102Q1.05.0001DLN(T)	Gland plate Out	1	Heat : 294158 (Lot L24-0620)	MEST076309/2024/ - UT24003464	316/316L	16,25	10,30	2,14	1,85	OK
4,18	97.02.0001DLN(T)	Bonnet body	1	Heat : 291893 (Lot F24-0567)	MEST040838/2024	316/316L	16,59	10,14	2,03	1,50	OK
4.19	97.03.0001DLN(T)	Stem	1	Heat : 172303 (Lot F23-2911)	174495	316/316L	16,78	10,12	2,10	1,65	OK
4.20	97.04.0001DLN(T)	Tip	1	Heat : 290962 (Lot F23-2912)	MEST140440/2023/	316/316L	16,53	10,13	2,10	1,54	OK

	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 564-2024_24-01216-p190 Data/*Date* : 15-Oct-2024	MD/PMI-VSF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	**COMMESSA INDRA** *Indra Job No.*	24 01216	**NR. D'ORDINE CLIENTE** *Customer Order No.*	1724000798 REV.2	**DEL** *Dated*	26-Jun-2024	**POSIZIONE D'ORDINE CLIENTE** *Customer Item*	190	**POSIZIONE D' ORDINE INDRA** *Indra Item*	190
Percentuale particolari da testare *Percentage of elements to be tested*		100%		**CODICE** *Code*	00.VSFT.0223/V	**DESCRIZIONE** *Description*	DBB-B9B-TRU-HR-150-Q300RF3-Q-D-DLF-DL-N-RG-GE12-L123-TG-TGW-TV-DP-PMI2-PD2-BI-GT-CR-TA-FE2-FS-SPC1-SPC2			**Q.tà da produrre (pz.)** *No. of pieces to be produced*	6

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106046

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
5,1	102Q3.01.0003DLNT)	Valve body	1	Heat : 294238 (Lot L24-0786)	MEST090433/2024/	316/316L	16,76	10,07	2,05	1,75	OK
5,2	102Q3.02.0001DLN(T)	Closure In	1	Heat : 295063 (Lot OE-15650)	MEST089171/2024/	316/316L	16,58	10,18	2,15	1,61	OK
5,3	102Q3.02.0001DLN(T)	Closure Out	1	Heat : 295063 (Lot OE-15650)	MEST089171/2024/	316/316L	16,45	10,12	2,14	1,76	OK
5,4	102Q1.04.0001DLN(T)	Stem of ball In	1	Heat : 2VCV (Lot F24-1283)	2023/014186	316/316L	16,64	10,66	2,09	1,68	OK
5,5	102Q1.04.0001DLN(T)	Stem of ball Out	1	Heat : 2VCV (Lot F24-1283)	2023/014186	316/316L	16,64	10,52	2,03	1,68	OK
5,6	102Q1.07.0001DLN(T)	Ball In	1	Heat : 101823 (Lot F24-0372)	2021055970	316/316L	16,14	10,07	2,09	1,94	OK
5,7	102Q1.07.0001DLN(T)	Ball Out	1	Heat : 101823 (Lot F24-0372)	2021055970	316/316L	16,13	10,03	2,10	1,87	OK
5,8	102Q1.10.0001DLNR(T)	Seat In	1	Heat : 301859 (Lot F24-2087)	2024003430	316/316L	16,98	10,17	2,08	1,55	OK
5,9	102Q1.10.0001DLNR(T)	Seat In	1	Heat : 301859 (Lot F24-2087)	2024003430	316/316L	16,94	10,17	2,12	1,65	OK
5.10	102Q1.10.0001DLNR(T)	Seat Out	1	Heat : 301859 (Lot F24-2087)	2024003430	316/316L	16,81	10,34	2,13	1,51	OK
5,11	102Q1.10.0001DLNR(T)	Seat Out	1	Heat : 301859 (Lot F24-2087)	2024003430	316/316L	16,85	10,40	2,13	1,51	OK
5,12	102Q1.36.0001DLN(T)	Ball support flange In	1	Heat : 43421 (Lot L24-0620)	2024-107037	316/316L	16,58	10,06	2,05	1,88	OK
5,13	102Q1.36.0001DLN(T)	Ball support flange In	1	Heat : 43421 (Lot L24-0620)	2024-107037	316/316L	16,43	10,09	2,08	1,84	OK
5,14	102Q1.36.0001DLN(T)	Ball support flange Out	1	Heat : 43421 (Lot L24-0620)	2024-107037	316/316L	16,45	10,10	2,03	1,80	OK
5,15	102Q1.36.0001DLN(T)	Ball support flange Out	1	Heat : 43421 (Lot L24-0620)	2024-107037	316/316L	16,52	10,10	2,09	1,81	OK
5.16	102Q1.05.0001DLN(T)	Gland plate In	1	Heat : 294158 (Lot L24-0620)	MEST076309/2024/ - UT24003464	316/316L	16,24	10,30	2,13	1,90	OK
5.17	102Q1.05.0001DLN(T)	Gland plate Out	1	Heat : 294158 (Lot L24-0620)	MEST076309/2024/ - UT24003464	316/316L	16,23	10,26	2,10	1,83	OK
5,18	97.02.0001DLN(T)	Bonnet body	1	Heat : 291893 (Lot F24-0567)	MEST040838/2024	316/316L	16,57	10,13	2,00	1,48	OK
5.19	97.03.0001DLN(T)	Stem	1	Heat : 172303 (Lot F23-2911)	174495	316/316L	16,66	10,11	2,10	1,73	OK
5.20	97.04.0001DLN(T)	Tip	1	Heat : 290962 (Lot F23-2912)	MEST140440/2023/	316/316L	16,57	10,14	2,10	1,45	OK

indra VALVES - ITALY	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 564-2024_24-01216-p190 Data/*Date* : 15-Oct-2024	MD/PMI-VSF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	COMMESSA INDRA *Indra Job No.*	24 01216	NR. D'ORDINE CLIENTE *Customer Order No.*	1724000798 REV.2	DEL *Dated*	26-Jun-2024	POSIZIONE D'ORDINE CLIENTE *Customer Item*	190	POSIZIONE D' ORDINE INDRA *Indra Item*	190
Percentuale particolari da testare *Percentage of elements to be tested*		100%		CODICE *Code*		00.VSFT.0223/V		DESCRIZIONE *Description*	DBB-89B-TRU-HR-150-Q300RF3-Q-D-DLF-DL-N-RG-GE12-L123-TG-TGW-TV-DP-PMI2-PD2-BI-GT-CR-TA-FE2-FS-SPC1-SPC2	Q.tà da produrre (pz.) *No. of pieces to be produced*	6

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106047

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
6,1	102Q3.01.0003DLNT)	Valve body	1	Heat : 294238 (Lot L24-0786)	MEST090433/2024/	316/316L	16,86	10,13	2,08	1,72	OK
6,2	102Q3.02.0001DLN(T)	Closure In	1	Heat : 295063 (Lot OE-15650)	MEST089171/2024/	316/316L	16,59	10,19	2,14	1,61	OK
6,3	102Q3.02.0001DLN(T)	Closure Out	1	Heat : 295063 (Lot OE-15650)	MEST089171/2024/	316/316L	16,57	10,11	2,13	1,67	OK
6,4	102Q1.04.0001DLN(T)	Stem of ball In	1	Heat : 2VCV (Lot F24-1283)	2023/014186	316/316L	16,67	10,52	2,02	1,78	OK
6,5	102Q1.04.0001DLN(T)	Stem of ball Out	1	Heat : 2VCV (Lot F24-1283)	2023/014186	316/316L	16,66	10,60	2,09	1,60	OK
6,6	102Q1.07.0001DLN(T)	Ball In	1	Heat : 101823 (Lot F24-0372)	2021055970	316/316L	16,22	10,10	2,14	1,85	OK
6,7	102Q1.07.0001DLN(T)	Ball Out	1	Heat : 101823 (Lot F24-0372)	2021055970	316/316L	16,30	10,06	2,09	1,92	OK
6,8	102Q1.10.0001DLNR(T)	Seat In	1	Heat : 301859 (Lot F24-2087)	2024003430	316/316L	16,90	10,32	2,10	1,65	OK
6,9	102Q1.10.0001DLNR(T)	Seat In	1	Heat : 301859 (Lot F24-2087)	2024003430	316/316L	16,94	10,29	2,07	1,62	OK
6.10	102Q1.10.0001DLNR(T)	Seat Out	1	Heat : 301859 (Lot F24-2087)	2024003430	316/316L	16,82	10,31	2,06	1,62	OK
6,11	102Q1.10.0001DLNR(T)	Seat Out	1	Heat : 301859 (Lot F24-2087)	2024003430	316/316L	16,90	10,27	2,05	1,61	OK
6,12	102Q1.36.0001DLN(T)	Ball support flange In	1	Heat : 43421 (Lot L24-0620)	2024-107037	316/316L	16,48	10,10	2,00	1,81	OK
6,13	102Q1.36.0001DLN(T)	Ball support flange In	1	Heat : 43421 (Lot L24-0620)	2024-107037	316/316L	16,57	10,12	2,00	1,92	OK
6,14	102Q1.36.0001DLN(T)	Ball support flange Out	1	Heat : 43421 (Lot L24-0620)	2024-107037	316/316L	16,41	10,06	2,10	1,95	OK
6,15	102Q1.36.0001DLN(T)	Ball support flange Out	1	Heat : 43421 (Lot L24-0620)	2024-107037	316/316L	16,47	10,13	2,10	1,87	OK
6.16	102Q1.05.0001DLN(T)	Gland plate In	1	Heat : 294158 (Lot L24-0620)	MEST076309/2024/ - UT24003464	316/316L	16,38	10,16	2,10	1,93	OK
6.17	102Q1.05.0001DLN(T)	Gland plate Out	1	Heat : 294158 (Lot L24-0620)	MEST076309/2024/ - UT24003464	316/316L	16,26	10,30	2,21	1,89	OK
6,18	97.02.0001DLN(T)	Bonnet body	1	Heat : 291893 (Lot F24-0567)	MEST040838/2024	316/316L	16,60	10,17	2,07	1,46	OK
6.19	97.03.0001DLN(T)	Stem	1	Heat : 172303 (Lot F23-2911)	174495	316/316L	16,70	10,14	2,14	1,70	OK
6.20	97.04.0001DLN(T)	Tip	1	Heat : 290962 (Lot F23-2912)	MEST140440/2023/	316/316L	16,51	10,16	2,01	1,55	OK

	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 564-2024_24-01216-p190 Data/*Date* : 15-Oct-2024	MD/PMI-VSF Rev.4-Dec/2022

CLIENTE ***Customer***	ROSETTI MARINO SPA	**COMMESSA INDRA** ***Indra Job No.***	24 01216	**NR. D'ORDINE CLIENTE** ***Customer Order No.***	1724000798 REV.2	**DEL** ***Dated***	26-Jun-2024	**POSIZIONE D'ORDINE CLIENTE** ***Customer Item***	190	**POSIZIONE D' ORDINE INDRA** ***Indra Item***	190
Percentuale particolari da testare ***Percentage of elements to be tested***		100%		**CODICE** ***Code***	00.VSFT.0223/V			**DESCRIZIONE** ***Description***	DBB-898-TRU-NR-150-Q300RF3-Q-D-DLF-DL-N-RG-GE12-L123-TG-TGW-TV-DP-PMI2-PD2-BI-GT-CR-TA-FE2-FS-SPC1-SPC2	**Q.tà da produrre (pz.)** ***No. of pieces to be produced***	6

x CROSSWIND
13/11/24

NOTE / *Remarks* : PMI 100% on body, closer and wetted parts According to NDT PROCEDURE - PT/PMI Rev.14	Data prelievo componenti / *Date of components picking* : 15-Oct-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Testing instrument: X-Ray analyzer NITON XL2 980 GOLDD	Data verifica componenti / *Date of components verification* : 15-Oct-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Serial number: 85044 - expiry 15-November-2024	Data esecuzione PMI TEST / *Date of PMI TEST execution* : 15-Oct-2024	Firma /*Signature* THOMAS PETITTI PMI OPERATOR

indra VALVES - ITALY	**Project:** CROSSWIND 24 01216 / pos 190 - 00.VSFT.0223/V PO 1724000798 REV.2 pos 190 - VLBBNN07240600
HARDNESS TEST REPORT **EN 10204 3.1 ed 2004**	**Client:** ROSETTI MARINO SPA **Report No.:** 043 **Date:** 15-Oct-2024 **Page 1 of 4**

Location/area: Indra S.r.l Magenta (MI)		**Material:** 316/316L

Testing instrument: Durometer 1600 HV
Serial Number: 32159000013 - expiry 17-April-2027
Hardness Test Procedure: PT-HT (24-01216) Rev. 0

Surface preparation:

Grinding	Machined X	Lapping	Filling	Other

Test position: see below table

Measuring unit:

Rockwell C(HRC)	**Brinell (HB) x**	**Shore**
Rockwell B(HRB)	**Vickers (HV)**	

Location	HARDNESS (average value)						
Valve body S.N 106042	177						
Closer IN S.N 106042	151						
Closer OUT S.N 106042	155						
Stem of ball IN S.N 106042	166						
Stem of ball OUT S.N 106042	159						
Ball IN S.N 106042	172						
Ball OUT S.N 106042	158						
Seat In S.N 106042	135						
Seat In S.N 106042	120						
Seat Out S.N 106042	118						
Seat Out S.N 106042	122						
Ball support flange In S.N 106042	138						
Ball support flange In S.N 106042	137						
Ball support flange Out S.N 106042	148						
Ball support flange Out S.N 106042	134						
Gland plate In S.N 106042	174						
Gland plate Out S.N 106042	163						
Bonnet body S.N 106042	177						

indra VALVES - ITALY	**Project:** CROSSWIND 24 01216 / pos 190 - 00.VSFT.0223/V PO 1724000798 REV.2 pos 190 - VLBBNN07240600
HARDNESS TEST REPORT **EN 10204 3.1 ed 2004**	**Client:** ROSETTI MARINO SPA **Report No.:** 043 **Date:** 15-Oct-2024 **Page 2 of 4**

Location	HARDNESS (average value)						
Valve body S.N 106043	172						
Closer IN S.N 106043	152						
Closer OUT S.N 106043	150						
Stem of ball IN S.N 106043	164						
Stem of ball OUT S.N 106043	161						
Ball IN S.N 106043	157						
Ball OUT S.N 106043	157						
Seat In S.N 106043	127						
Seat In S.N 106043	135						
Seat Out S.N 106043	128						
Seat Out S.N 106043	124						
Ball support flange In S.N 106043	134						
Ball support flange In S.N 106043	138						
Ball support flange Out S.N 106043	144						
Ball support flange Out S.N 106043	140						
Gland plate In S.N 106043	172						
Gland plate Out S.N 106043	167						
Bonnet body S.N 106043	185						
Valve body S.N 106044	175						
Closer IN S.N 106044	158						
Closer OUT S.N 106044	152						
Stem of ball IN S.N 106044	160						
Stem of ball OUT S.N 106044	165						
Ball IN S.N 106044	160						
Ball OUT S.N 106044	177						
Seat In S.N 106044	131						
Seat In S.N 106044	120						
Seat Out S.N 106044	133						
Seat Out S.N 106044	127						
Ball support flange In S.N 106044	145						
Ball support flange In S.N 106044	135						
Ball support flange Out S.N 106044	140						
Ball support flange Out S.N 106044	142						
Gland plate In S.N 106044	160						
Gland plate Out S.N 106044	157						
Bonnet body S.N 106044	174						

indra VALVES - ITALY

Project: CROSSWIND
24 01216 / pos 190 - 00.VSFT.0223/V
PO 1724000798 REV.2 pos 190 - VLBBNN07240600

HARDNESS TEST REPORT

EN 10204 3.1 ed 2004

Client: ROSETTI MARINO SPA

Report No.: 043
Date: 15-Oct-2024

Location	HARDNESS (average value)						
Valve body S.N 106045	173						
Closer IN S.N 106045	149						
Closer OUT S.N 106045	153						
Stem of ball IN S.N 106045	157						
Stem of ball OUT S.N 106045	162						
Ball IN S.N 106045	159						
Ball OUT S.N 106045	164						
Seat In S.N 106045	120						
Seat In S.N 106045	131						
Seat Out S.N 106045	121						
Seat Out S.N 106045	134						
Ball support flange In S.N 106045	139						
Ball support flange In S.N 106045	138						
Ball support flange Out S.N 106045	142						
Ball support flange Out S.N 106045	148						
Gland plate In S.N 106045	163						
Gland plate Out S.N 106045	172						
Bonnet body S.N 106045	181						
Valve body S.N 106046	173						
Closer IN S.N 106046	154						
Closer OUT S.N 106046	154						
Stem of ball IN S.N 106046	155						
Stem of ball OUT S.N 106046	164						
Ball IN S.N 106046	168						
Ball OUT S.N 106046	157						
Seat In S.N 106046	123						
Seat In S.N 106046	119						
Seat Out S.N 106046	133						
Seat Out S.N 106046	126						
Ball support flange In S.N 106046	145						
Ball support flange In S.N 106046	142						
Ball support flange Out S.N 106046	147						
Ball support flange Out S.N 106046	135						
Gland plate In S.N 106046	155						
Gland plate Out S.N 106046	161						
Bonnet body S.N 106046	180						

indra VALVES - ITALY	**Project:** CROSSWIND 24 01216 / pos 190 - 00.VSFT.0223/V PO 1724000798 REV.2 pos 190 - VLBBNN07240600
HARDNESS TEST REPORT **EN 10204 3.1 ed 2004**	**Client:** ROSETTI MARINO SPA **Report No.:** 043 **Date:** 15-Oct-2024 **Page 4 of 4**

Location	HARDNESS (average value)						
Valve body S.N 106047	179						
Closer IN S.N 106047	151						
Closer OUT S.N 106047	156						
Stem of ball IN S.N 106047	163						
Stem of ball OUT S.N 106047	167						
Ball IN S.N 106047	171						
Ball OUT S.N 106047	166						
Seat In S.N 106047	134						
Seat In S.N 106047	130						
Seat Out S.N 106047	123						
Seat Out S.N 106047	135						
Ball support flange In S.N 106047	139						
Ball support flange In S.N 106047	134						
Ball support flange Out S.N 106047	135						
Ball support flange Out S.N 106047	141						
Gland plate In S.N 106047	167						
Gland plate Out S.N 106047	162						
Bonnet body S.N 106047	169						

xCROSSWIND
13/11/24

Sketch: 102Q3.01.0003DLNT) - 102Q3.02.0001DLN(T) - 102Q1.04.0001DLN(T) - 102Q1.07.0001DLN(T) - 102Q1.10.0001DLNR(T) - 102Q1.36.0001DLN(T) - 102Q1.05.0001DLN(T) - 97.02.0001DLN(T)

Quality control	TPI Inspection	Client
Name: Petitti Thomas Sign: TP Date: 15-Oct-2024	Name: Sign: Date:	Name: Sign: Date:

indra VALVES - ITALY	***FUGITIVE EMISSION PRODUCTION TEST (ISO 15848-2)*** ***TEST REPORT*** ***- INDRA VALVES -***	**MD-02-20-IT-UK-FE** **Rev. 0** **Data: 10-Oct-19**

Nr. Certificato / *Certificate No.*	**00342-FET**	**Data** / *Date :*	**23-Oct-24** *Rev. 0*
Cliente / *Customer :*	**ROSETTI MARINO SPA**		
Ordine Nr. / *Order Nr.*	**1724000798 REV.2**	**Data** / *Date :*	**26-Jun-24**
Ns. commessa Nr. / *Our job Nr.*	**24 01216**	**Data** / *Date :*	**03-Jul-24**
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*	

CONDIZIONI DI PROVA / TEST CONDITIONS

TEST (according to ISO 15848-2)	*TEMPERATURA DI PROVA (Test Temperature)*	*CLASSE DI PERDITA (Tightness class)*	*MAX. PERDITA AMMISSIBILE (ISO 15848-2) (Max allowable leakage)*	*FLUIDO DI PROVA (Test Fluid)*	*PRESSIONE DI PROVA (Test Pressure)*	*RUMORE DI FONDO (Backgrund noise)*	*ENDURANCE CLASS*	*MANOMETRO N° (Gauge ID)*	*DATA SCADENZA (Due Date)*
Body / Closure seal	*21° C*	*B*	*≤ 50 ppmv*	*Elium >97%*	*6 bar*	*5,0 ppmv*	*5 cycles*	*24F06-1334-01--13*	*3-Dec-24*
Body / Body bonnet seal			*≤ 50 ppmv*						
Stem seal			*≤ 100 ppmv*						
Gland Plate / Trunnion seal			*≤ 50 ppmv*						

											Ball valve				*Needle valve*	
INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY) PRODUCED	QTA' (QTY) TESTED	VALVE TYPE	NPS	FLANGE TYPE	RATING		*Body / Closure seal* Leak detected (ppmv)	*Stem seal* Leak detected (ppmv)	*Trunnion seal* Leak detected (ppmv)	*Gland Plate seal* Leak detected (ppmv)	*Stem seal* Leak detected (ppmv)	*Body bonnet seal* Leak detected (ppmv)
180	*180*	*00.VSF.2679/V*	*DBB-898-HR-100-N300RF3-N-D (106019)*	*VLBBNN07230400*	*6*	*1*	*Ball+Needle*	*4"*	*RF*	*300*	*Value before cycles*	*0,1*	*0,1*			*0,1*	*0,1*
											Value after 5 cycles	*0,1*	*0,2*			*0,3*	*0,1*
190	*190*	*00.VSFT.0223/V*	*DBB-898-TRU-HR-150-Q300RF3-Q-D (106042)*	*VLBBNN07240600*	*6*	*1*	*Ball+Needle*	*6"*	*RF*	*300*	*Value before cycles*	*0,1*	*0,1*		*0,1*	*0,1*	*0,1*
											Value after 5 cycles	*0,1*	*0,2*		*0,1*	*0,2*	*0,1*
											Value before cycles						
											Value after 5 cycles						
											Value before cycles						
											Value after 5 cycles						
											Value before cycles						
											Value after 5 cycles						
											Value before cycles						
											Value after 5 cycles						
											Value before cycles						
											Value after 5 cycles						

TEST RESULT: ☑ **SATISFACTORY** ☐ **NOT SATISFACTORY**

Strumentazione *(Equipment)* :
- Spettrometro di massa *(Mass Spectrometer)* : PFEIFFER VACUUM ASM 340 (SN.: HLD1901233)
  Minima perdita rilevabile *(Min. leak detectable)* : 5x10E-09 mbar*l/s (sniffing mode)
- Valore nominale fuga calibrata *(Calibrated leak nominal value)* : 6,09x10E-06 mbar*l/s (SN.: 40117695)

Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector — *Si / Yes* ☑ *No / No* ☐

Nominativo / Name .....

Timbro e Firma / Stamp and Signature

Data / Date .....

x CROSSWIND W 23/10/24

PROCEDURA DI TEST
(Test procedure)
PFET (24-01216) Rev.0

COLLAUDATO DA: TESTED BY:	**MAURIZIO TOSI** **Livello 1 UNI EN ISO 9712:2021** **N. 24TO02901CE1**	DATA / DATE:	23-Oct-24	APPROVATO DA: APPROVED BY:	**ROBERTO CAREZZO** **VICE PRODUCTION MANAGER** **Livello 2 UNI EN ISO 9712:2021** **N. 24TO00376CE1**	DATA / DATE:	23-Oct-24

ROSETTI MARINO ITEM 200

COD. VLBLNN01280100

TAG:

BLPH-MV-269, BLPH-MV-271,

BLPH-MV-409

INDRA ITEM 200

COD. 00.VSF.2697/V

	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 553-2024_24-01216-p200 Data/*Date* : 08-Oct-2024	MD/PMI-VSF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	COMMESSA INDRA *Indra Job No.*	24 01216	NR. D'ORDINE CLIENTE *Customer Order No.*	1724000798 REV.2	DEL *Dated*	26-Jun-2024	POSIZIONE D'ORDINE CLIENTE *Customer Item*	200	POSIZIONE D' ORDINE INDRA *Indra Item*	200
Percentuale particolari da testare *Percentage of elements to be tested*		100%		CODICE *Code*	00.VSF.2697/V	DESCRIZIONE *Description*	SBB-798-25-F150RF3-F-D-LF2-DL-CA3-N-PG-Y3-L13-TG-TGW-TV-PMI2-PD2-BI-CR-TA-FS-SPC1	Q.tà da produrre (pz.) *No. of pieces to be produced*	3		

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106024

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
1,1	980F.04.0001DLN(T)	Stem of ball	1	Heat : E30822 (Lot F24-0277)	173501	316/316L	16,73	10,38	2,08	1,60	OK
1,2	98F.07.0001DLN(T)	Ball	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,67	11,16	2,33	0,75	OK
1,3	97.03.0004DLN(T)	Stem	1	Heat : 290765 (Lot F23-1878)	MEST056657/2023/1	316/316L	16,19	10,21	2,18	1,97	OK
1,4	97.04.0002DLN(T)	Tip	1	Heat : 272849 (Lot F23-3169)	499910	316/316L	16,10	10,25	2,14	1,77	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106025

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
2,1	980F.04.0001DLN(T)	Stem of ball	1	Heat : E30822 (Lot F24-0277)	173501	316/316L	16,68	10,40	2,05	1,55	OK
2,2	98F.07.0001DLN(T)	Ball	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,65	11,02	2,27	0,93	OK
2,3	97.03.0004DLN(T)	Stem	1	Heat : 290765 (Lot F23-1878)	MEST056657/2023/1	316/316L	16,24	10,15	2,15	1,94	OK
2,4	97.04.0002DLN(T)	Tip	1	Heat : 272849 (Lot F23-3169)	499910	316/316L	16,08	10,23	2,11	1,81	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106026

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
3,1	980F.04.0001DLN(T)	Stem of ball	1	Heat : E30822 (Lot F24-0277)	173501	316/316L	16,71	10,44	2,11	1,62	OK
3,2	98F.07.0001DLN(T)	Ball	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,57	11,25	2,27	0,55	OK
3,3	97.03.0004DLN(T)	Stem	1	Heat : 290765 (Lot F23-1878)	MEST056657/2023/1	316/316L	16,21	10,13	2,13	1,89	OK
3,4	97.04.0002DLN(T)	Tip	1	Heat : 272849 (Lot F23-3169)	499910	316/316L	16,13	10,21	2,10	1,71	OK

Ok x cross wind

indra VALVES - ITALY	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT				Cert. n° : 553-2024_24-01216-p200 Data/*Date* : 08-Oct-2024						MD/PMI-VSF Rev.4-Dec/2022
CLIENTE ***Customer***	ROSETTI MARINO SPA	**COMMESSA INDRA** ***Indra Job No.***	24 01216	**NR. D'ORDINE CLIENTE** ***Customer Order No.***	1724000798 REV.2	**DEL** ***Dated***	26-Jun-2024	**POSIZIONE D'ORDINE CLIENTE** ***Customer Item***	200	**POSIZIONE D' ORDINE INDRA** ***Indra Item***	200
Percentuale particolari da testare ***Percentage of elements to be tested***		100%		**CODICE** ***Code***	00.VSF.2697/V			**DESCRIZIONE** ***Description***	SBB-798-25-F150RF3-F-D-LF2-DL-CA3-N-PG-Y3-L13-TG-TGW-TV-PMI2-PD2-BI-CR-TA-FS-SPC1	**Q.tà da produrre (pz.)** ***No. of pieces to be produced***	3

NOTE / *Remarks* : PMI 100% on wetted parts (excluded carbon steel) According to NDT PROCEDURE - PT/PMI Rev.14	Data prelievo componenti / *Date of components picking* : 08-Oct-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Testing instrument: X-Ray analyzer NITON XL2 980 GOLDD	Data verifica componenti / *Date of components verification* : 08-Oct-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Serial number: 85044 - expiry 15-November-2024	Data esecuzione PMI TEST / *Date of PMI TEST execution* : 08-Oct-2024	Firma /*Signature* THOMAS PETITTI PMI OPERATOR

indra VALVES - ITALY	**Project:** CROSSWIND 24 01216 / pos 200 - 00.VSF.2697/V PO 1724000798 REV.2 pos 200 - VLBLNN01280100
HARDNESS TEST REPORT **EN 10204 3.1 ed 2004**	**Client:** ROSETTI MARINO SPA **Report No.:** 034 **Date:** 08-Oct-2024 **Page 1 of 1**

Location/area: Indra S.r.l Magenta (MI)		**Material:** ASTM A350 LF2 - 316/316L

Testing instrument: Durometer 1600 HV
Serial Number: 32159000013 - expiry 17-April-2027
Hardness Test Procedure: PT-HT (24-01216) Rev. 0

Surface preparation:

Grinding	Machined X	Lapping	Filling	Other

Test position: see below table

Measuring unit:

Rockwell C(HRC)	**Brinell (HB) x**	**Shore**
Rockwell B(HRB)	**Vickers (HV)**	

Location	HARDNESS (average value)						
Valve body S.N 106024	150						
Closer S.N 106024	131						
Stem of ball S.N 106024	202						
Ball S.N 106024	211						
Bonnet body S.N 106024	119						
Valve body S.N 106025	153						
Closer S.N 106025	126						
Stem of ball S.N 106025	197						
Ball S.N 106025	204						
Bonnet body S.N 106025	123						
Valve body S.N 106026	152						
Closer S.N 106026	130						
Stem of ball S.N 106026	194						
Ball S.N 106026	206						
Bonnet body S.N 106026	119						

Sketch: 981F.01.0105LF2N(T) - 981F.02.0038LF2N(T) - 980F.04.0001DLN(T) - 98F.07.0001DLN(T) - 97.02.0012LF2N(T)

Quality control	TPI Inspection	Client
Name: Petitti Thomas Sign: TP Date: 08-Oct-2024	Name: Sign: Date:	Name: Sign: Date:

Indra x CROSS WIND

ROSETTI MARINO ITEM 210

COD. VLBLNN01291H00

TAG:

BLPH-MV-278

INDRA ITEM 210

COD. 00.VSF.2699/V

	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 554-2024_24-01216-p210 Data/*Date* : 08-Oct-2024	MD/PMI-VSF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	**COMMESSA INDRA** *Indra Job No.*	24 01216	**NR. D'ORDINE CLIENTE** *Customer Order No.*	1724000798 REV.2	**DEL** *Dated*	26-Jun-2024	**POSIZIONE D'ORDINE CLIENTE** *Customer Item*	210	**POSIZIONE D' ORDINE INDRA** *Indra Item*	210
Percentuale particolari da testare *Percentage of elements to be tested*		100%		**CODICE** *Code*	00.VSF.2699/V	**DESCRIZIONE** *Description*	SBB-798-40-H150RF3-H-D-LF2-DL-CA3-N-PG-Y3-L13-TG-TGW-TV-PMI2-PD2-BI-CR-TA-FS-SPC1	**Q.tà da produrre (pz.)** *No. of pieces to be produced*		1	

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106027

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
1,1	981H.04.0003DLN(T)	Stem of ball	1	Heat : 291905 (Lot F23-2417)	MEST084078/2023/	316/316L	16,29	10,03	2,13	1,82	OK
1,2	98H.07.0002DLN(T)	Ball	1	Heat : 372447 (Lot F23-1781)	2023013898	316/316L	16,53	10,55	2,24	1,87	OK
1,3	97.03.0004DLN(T)	Stem	1	Heat : 290765 (Lot F23-1878)	MEST056657/2023/1	316/316L	16,95	10,46	2,16	1,60	OK
1,4	97.04.0002DLN(T)	Tip	1	Heat : 272849 (Lot F23-3169)	499910	316/316L	16,43	10,60	2,10	1,56	OK

CROSSWIND

NOTE / *Remarks* : PMI 100% on wetted parts (excluded carbon steel) According to NDT PROCEDURE - PT/PMI Rev.14	Data prelievo componenti / *Date of components picking* : 08-Oct-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Testing instrument: X-Ray analyzer NITON XL2 980 GOLDD	Data verifica componenti / *Date of components verification* : 08-Oct-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Serial number: 85044 - expiry 15-November-2024	Data esecuzione PMI TEST / *Date of PMI TEST execution* : 08-Oct-2024	Firma /*Signature* THOMAS PETITTI PMI OPERATOR

indra VALVES - ITALY	**Project:** CROSSWIND 24 01216 / pos 210 - 00.VSF.2699/V PO 1724000798 REV.2 pos 210 - VLBLNN01291H00
HARDNESS TEST REPORT **EN 10204 3.1 ed 2004**	**Client:** ROSETTI MARINO SPA **Report No.:** 035 **Date:** 08-Oct-2024 **Page 1 of 1**

Location/area: Indra S.r.l Magenta (MI)		**Material:** ASTM A350 LF2 - 316/316L

Testing instrument: Durometer 1600 HV
Serial Number: 32159000013 - expiry 17-April-2027
Hardness Test Procedure: PT-HT (24-01216) Rev. 0

Surface preparation:

Grinding	Machined X	Lapping	Filling	Other

Test position: see below table

Measuring unit:

Rockwell C(HRC)	**Brinell (HB) x**	**Shore**
Rockwell B(HRB)	**Vickers (HV)**	

Location	HARDNESS (average value)						
Valve body S.N 106027	155						
Closer S.N 106027	136						
Stem of ball S.N 106027	187						
Ball S.N 106027	215						
Bonnet body S.N 106027	123						

Sketch: 981H.01.0047LF2N(T) - 981H.02.0047LF2N(T) - 981H.04.0003DLN(T) - 98H.07.0002DLN(T) - 97.02.0012LF2N(T)

Quality control	TPI Inspection	Client
Name: Petitti Thomas Sign: TP Date: 08-Oct-2024	Name: Sign: Date:	Name: Sign: Date:

lotto + crosswind

ROSETTI MARINO ITEM 220

COD. VLBLNN01320100

TAG:

BLPH-MV-007, BLPH-MV-009

INDRA ITEM 220

COD. 00.VSF.2701/V

CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 220 NS.POS/OUR ITEM 220 VS.COD./YOUR CODE VLBLNN01320100 NS.COD./OUR CODE 00.VSF.2701/V (2 PCS)

indra VALVES - ITALY	**PENETRANT TEST REPORT (PT)**	**MD-02-29** rev.02 Date 28-11-2022

Certificato No.	PT-121-2024	Internal Indra Order No.:	OE 015611,015616,015626, 015627,015619,015622, 015818,015820	
Customer:	ROSETTI MARINO SPA	**Qty:**	3 + 2 + 5 + 1 + 2 + 2 + 2 + 2 + 2	Batch no.:
Code:	981F.01.0003DLN(T)	Description:	BODY	L23-0953-433747
	981F.01.0003DLN(T)		BODY	OE-06905-434671
	980F.02.0001DLN(T)		CLOSURE F150RF3	L23-1109-434829
	981J.01.0010DLN(T)		BODY	L24-0444-293223
	981J.02.0006DLN(T)		CLOSURE J300RF3	L24-0235-293307
→	981F.01.0104DLN(T)		BODY	L24-0617-437405
→	981F.02.0038DLN(T)		CLOSURE F150RF3	L24-0638-435799
	981J.01.0062DLN(T)		BODY	L24-0695-294062
	981J.02.0045DLN(T)		CLOSURE J150RF3	L24-0640-294062
Acceptance Standards:	Asme V art.6 Asme VIII Div.1 app.8			
Procedure:	*Indra Procedure PT-DP-01 (24-01216) Rev.0 dated 06-09-2024 EN 10204 3.1 ed 2004*			
Equipment:	*Luxmetro,white lamp, liquid penetrant*			

Test Conditions:

Test Surface:	EXTERNAL SIDE	INTERNAL SIDE	Surface Condition:	MACHINED
Penetrant Time: 20 min	Drying Time: 10 min	Development Time: 20 min	Cleaner:	SOLVENT-ALCOHOL
Natural Light: > 1100 Lux				
Type of Penetrant	08.122 K71B2	Batch no.	220127/BI	
Type of Developer	D112A	Batch no.	231106W150s	
Type of Removal	WATER			
Results:	ACCEPTABLE			

Note:
The inspection was conducted 100% of the surface

x CROSSWIND
9/10/24 R

Operator: Nicholas Sacchetti (LEVEL 2 acc. EN 9712:2012)	Signature:	Approved: Lucia Nosotti (RSQ)	Signature:
INDRA SRL VIA NOVARA 10/B-C / 20013 MAGENTA (MI)	Approval of Customer:		Date: 12 September 2024

	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 493-2024_24-01216-p220 Data/*Date* : 11-Sep-2024	MD/PMI-VSF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	COMMESSA INDRA *Indra Job No.*	24 01216	NR. D'ORDINE CLIENTE *Customer Order No.*	1724000798 REV.2	DEL *Dated*	26-Jun-2024	POSIZIONE D'ORDINE CLIENTE *Customer Item*	220	POSIZIONE D' ORDINE INDRA *Indra Item*	220
Percentuale particolari da testare *Percentage of elements to be tested*		100%		CODICE *Code*	00.VSF.2701/V	DESCRIZIONE *Description*	SBB-798-HR-25-F150RF3-F-D-DLF-DL-N-PG-L13-TG-TGW-TV-DP-PMI2-PD2-BI-GT-CR-TA-FE2-FS-FE-SPC1	Q.tà da produrre (pz.) *No. of pieces to be produced*	2		

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106028

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
1,1	981F.01.0104DLN(T)	Valve body	1	Heat : 437405 (Lot L24-0617)	MEST080041/2024/ - UT24003643	316/316L	16,81	10,06	2,05	1,71	OK
1,2	981F.02.0038DLN(T)	Closer	1	Heat : 435799 (Lot L24-0638)	MEST080040/2024/ - UT24003628	316/316L	16,60	10,06	2,11	1,91	OK
1,3	980F.04.0001DLN(T)	Stem of ball	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,26	10,01	2,20	1,80	OK
1,4	98F.07.0001DLN(T)	Ball	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,36	10,11	2,08	1,53	OK
1,5	97.02.0001DLN(T)	Bonnet body	1	Heat : 291893 (Lot F24-0567)	MEST040838/2024/	316/316L	17,27	10,45	2,02	1,27	OK
1,6	97.03.0001DLN(T)	Stem	1	Heat : 172303 (Lot F23-2911)	174495	316/316L	16,52	10,58	2,23	1,94	OK
1,7	97.04.0001DLN(T)	Tip	1	Heat : 290962 (Lot F23-2912)	MEST140440/2023/	316/316L	16,10	10,13	2,17	1,77	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106029

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
2,1	981F.01.0104DLN(T)	Valve body	1	Heat : 437405 (Lot L24-0617)	MEST080041/2024/ - UT24003643	316/316L	16,48	10,06	2,02	1,74	OK
2,2	981F.02.0038DLN(T)	Closer	1	Heat : 435799 (Lot L24-0638)	MEST080040/2024/ - UT24003628	316/316L	16,53	10,02	2,13	1,87	OK
2,3	980F.04.0001DLN(T)	Stem of ball	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,31	10,04	2,17	1,82	OK
2,4	98F.07.0001DLN(T)	Ball	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,40	10,13	2,05	1,44	OK
2,5	97.02.0001DLN(T)	Bonnet body	1	Heat : 291893 (Lot F24-0567)	MEST040838/2024/	316/316L	17,02	10,38	2,01	1,30	OK
2,6	97.03.0001DLN(T)	Stem	1	Heat : 172303 (Lot F23-2911)	174495	316/316L	16,60	10,44	2,19	1,92	OK
2,7	97.04.0001DLN(T)	Tip	1	Heat : 290962 (Lot F23-2912)	MEST140440/2023/	316/316L	16,12	10,11	2,21	1,79	OK

NOTE / *Remarks* : PMI 100% on body, closer and wetted parts According to NDT PROCEDURE - PT/PMI Rev.14	Data prelievo componenti / *Date of components picking* : 11-Sep-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Testing instrument: X-Ray analyzer NITON XL2 980 GOLDD	Data verifica componenti / *Date of components verification* : 11-Sep-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Serial number: 85044 - expiry 15-November-2024	Data esecuzione PMI TEST / *Date of PMI TEST execution* : 11-Sep-2024	Firma /*Signature* THOMAS PETITTI PMI OPERATOR

x CROSSWIND 9/10/24 R

indra VALVES - ITALY	**Project:** CROSSWIND 24 01216 / pos 220 - 00.VSF.2701/V PO 1724000798 REV.2 pos 220 - VLBLNN01320100	
HARDNESS TEST REPORT **EN 10204 3.1 ed 2004**	**Client:** ROSETTI MARINO SPA	**Report No.:** 007 **Date:** 12-Sep-2024 **Page 1 of 1**

Location/area: Indra S.r.l Magenta (MI)		**Material:** 316/316L

Testing instrument: Durometer 1600 HV
Serial Number: 32159000013 - expiry 17-April-2027
Hardness Test Procedure: PT-HT (24-01216) Rev. 0

Surface preparation:

Grinding	Machined X	Lapping	Filling	Other

Test position: see below table

Measuring unit:

Rockwell C(HRC)	**Brinell (HB) x**	**Shore**
Rockwell B(HRB)	**Vickers (HV)**	

Location	HARDNESS (average value)						
Valve body S.N 106028	183						
Closer S.N 106028	150						
Stem of ball S.N 106028	145						
Ball S.N 106028	214						
Bonnet body S.N 106028	185						
Valve body S.N 106029	176						
Closer S.N 106029	154						
Stem of ball S.N 106029	156						
Ball S.N 106029	223						
Bonnet body S.N 106029	178						

x CROSSWIND 9/10/24 R

Sketch: 981F.01.0104DLN(T) - 981F.02.0038DLN(T) - 980F.04.0001DLN(T) - 98F.07.0001DLN(T) - 97.02.0001DLN(T)

Quality control	TPI Inspection	Client
Name: Petitti Thomas	Name:	Name:
Sign: TP	Sign:	Sign:
Date: 12-Sep-2024	Date:	Date:

ROSETTI MARINO ITEM 230

COD. VLBLNN01381H00

TAG:

BLPH-MV-043, BLPH-MV-050

INDRA ITEM 230

COD. 00.VSF.2698(T)

indra VALVES - ITALY	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 555-2024_24-01216-230 Data/*Date* : 11-Oct-2024	MD/PMI-VSF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	**COMMESSA INDRA** *Indra Job No.*	24 01216	**NR. D'ORDINE CLIENTE** *Customer Order No.*	1724000798 REV.2	**DEL** *Dated*	26-Jun-2024	**POSIZIONE D'ORDINE CLIENTE** *Customer Item*	230	**POSIZIONE D' ORDINE INDRA** *Indra Item*	230
Percentuale particolari da testare *Percentage of elements to be tested*		100%		**CODICE** *Code*	00.VSF.2698(T)	**DESCRIZIONE** *Description*	SBB-798-40-H150RF3-H-D-F55F-F55-N-PG-ESX100-EXY3-L13-TG-TGW-IT2-PMI2-PD2-BI-CR-TA-FS-SPC1-SPC2			**Q.tà da produrre (pz.)** *No. of pieces to be produced*	2

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106030

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*						RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	W	Cu	
1,1	981H.01.0046F55N(T)	Valve body	1	Heat : 200930 (Lot L24-0739)	2300218 Rev.1 - UT 2300218	F55	25,41	7,78	3,60	0,52	0,51	0,62	OK
1,2	981H.02.0047F55N(T)	Closer	1	Heat : 200930 (Lot L24-0727)	2300218 Rev.1 - UT 2300218	F55	25,17	7,82	3,63	0,50	0,56	0,62	OK
1,3	981H.04.0003F55N(T)	Stem of ball	1	Heat : 278285 (Lot F18-04148)	2023013924 - N.US.523/23	F55	25,42	7,40	3,44	0,67	0,52	0,58	OK
1,3	98H.07.0002F55N(T)	Ball	1	Heat : 370169 (Lot F18-04203)	2014054694 - N.US.1306/14	F55	25,12	7,69	3,44	0,71	0,51	0,57	OK
1,3	97.02.0007F55N(T)	Bonnet body	1	Heat : 178391 (Lot L24-0742)	2201656 - UT 2201656	F55	24,61	7,46	3,79	0,65	0,53	0,65	OK
1,3	97.03.0009F55N(T)	Stem	1	Heat : 566657 (Lot L24-0736)	DN071162-Z17040U1 - A/23-151118	F55	24,29	7,42	3,97	0,61	0,55	0,59	OK
1,4	97.04.0002F55N(T)	Tip	1	Heat : 870052 (Lot F20-01280)	2018036042 - N.US.1217/18	F55	25,05	7,90	3,56	0,83	0,51	0,58	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106031

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*						RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	W	Cu	
1,1	981H.01.0046F55N(T)	Valve body	1	Heat : 200930 (Lot L24-0739)	2300218 Rev.1 - UT 2300218	F55	25,32	7,81	3,55	0,55	0,50	0,64	OK
1,2	981H.02.0047F55N(T)	Closer	1	Heat : 200930 (Lot L24-0727)	2300218 Rev.1 - UT 2300218	F55	25,21	7,76	3,61	0,50	0,52	0,60	OK
1,3	981H.04.0003F55N(T)	Stem of ball	1	Heat : 278285 (Lot F18-04148)	2023013924 - N.US.523/23	F55	25,38	7,37	3,48	0,62	0,54	0,55	OK
1,3	98H.07.0002F55N(T)	Ball	1	Heat : 370169 (Lot F18-04203)	2014054694 - N.US.1306/14	F55	25,19	7,71	3,42	0,68	0,54	0,55	OK
1,3	97.02.0007F55N(T)	Bonnet body	1	Heat : 178391 (Lot L24-0742)	2201656 - UT 2201656	F55	24,55	7,31	3,71	0,64	0,57	0,61	OK
1,3	97.03.0009F55N(T)	Stem	1	Heat : 566657 (Lot L24-0736)	DN071162-Z17040U1 - A/23-151118	F55	24,33	7,35	3,84	0,60	0,51	0,55	OK
1,4	97.04.0002F55N(T)	Tip	1	Heat : 870052 (Lot F20-01280)	2018036042 - N.US.1217/18	F55	25,12	7,88	3,62	0,77	0,54	0,57	OK

both x crossmixed R

NOTE / *Remarks* : PMI 100% on body, closer and wetted parts According to NDT PROCEDURE - PT/PMI Rev.14	Data prelievo componenti / *Date of components picking* : 11-Oct-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Testing instrument: X-Ray analyzer NITON XL2 980 GOLDD	Data verifica componenti / *Date of components verification* : 11-Oct-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Serial number: 85044 - expiry 15-November-2024	Data esecuzione PMI TEST / *Date of PMI TEST execution* : 11-Oct-2024	Firma /*Signature* THOMAS PETITTI PMI OPERATOR

indra VALVES - ITALY	**Project:** CROSSWIND 24 01216 / pos 230 - 00.VSF.2698(T) PO 1724000798 REV.2 pos 230 - VLBLNN01381H00
HARDNESS TEST REPORT **EN 10204 3.1 ed 2004**	**Client:** ROSETTI MARINO SPA **Report No.:** 037 **Date:** 11-Oct-2024 **Page 1 of 1**

Location/area: Indra S.r.l Magenta (MI)		**Material:** Superd Duplex F55

Testing instrument: Durometer 1600 HV
Serial Number: 32159000013 - expiry 17-April-2027
Hardness Test Procedure: PT-HT (24-01216) Rev. 0

Surface preparation:

Grinding	Machined X	Lapping	Filling	Other

Test position: see below table

Measuring unit:

Rockwell C(HRC)	**Brinell (HB) x**	**Shore**
Rockwell B(HRB)	**Vickers (HV)**	

Location	HARDNESS (average value)						
Valve body S.N 106030	288						
Closer S.N 106030	271						
Stem of ball S.N 106030	258						
Ball S.N 106030	292						
Bonnet body S.N 106030	253						
Valve body S.N 106031	292						
Closer S.N 106031	265						
Stem of ball S.N 106031	240						
Ball S.N 106031	295						
Bonnet body S.N 106031	249						

Sketch: 981H.01.0046F55N(T) - 981H.02.0047F55N(T) - 981H.04.0003F55N(T) - 98H.07.0002F55N(T) - 97.02.0007F55N(T)

Quality control	TPI Inspection	Client
Name: Petitti Thomas Sign: TP Date: 11-Oct-2024	Name: Sign: Date:	Name: Sign: Date:

CROSSWIND

ROSETTI MARINO ITEM 240

COD. VLBLNN01410100

TAG:

BLPH-MV-001

INDRA ITEM 240

COD. 00.VSF.2696/V

indra VALVES - ITALY	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 494-2024_24-01216-p240 Data/*Date* : 11-Sep-2024	MD/PMI-VSF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	**COMMESSA INDRA** *Indra Job No.*	24 01216	**NR. D'ORDINE CLIENTE** *Customer Order No.*	1724000798 REV.2	**DEL** *Dated*	26-Jun-2024	**POSIZIONE D'ORDINE CLIENTE** *Customer Item*	240	**POSIZIONE D' ORDINE INDRA** *Indra Item*	240
Percentuale particolari da testare *Percentage of elements to be tested*		100%		**CODICE** *Code*	00.VSF.2696/V			**DESCRIZIONE** *Description*	SBB-798-25-F150RF3-F-D-DLF-DL-N-PG-ESX100-EXY3-L13-TG-TGW-TV-PMI2-PD2-BI-CR-TA-FS-SPC1	**Q.tà da produrre (pz.)** *No. of pieces to be produced*	1

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106032

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
1,1	981F.01.0103DLN(T)	Valve body	1	Heat : 437405 (Lot L24-0617)	MEST080041/2024/ - UT24003643	316/316L	17,08	10,36	2,08	1,72	OK
1,2	981F.02.0038DLN(T)	Closer	1	Heat : 437405 (Lot L24-0638)	MEST080041/2024/ - UT24003643	316/316L	16,69	10,12	2,08	1,98	OK
1,3	980F.04.0001DLN(T)	Stem of ball	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,50	10,49	2,22	1,94	OK
1,4	98F.07.0001DLN(T)	Ball	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,15	10,19	2,32	1,69	OK
1,5	97.02.0007DLN(T)	Bonnet body	1	Heat : 292255 (Lot F14-00622)	MEST004991/2024/	316/316L	16,29	10,70	2,06	1,60	OK
1,6	97.03.0009DLN(T)	Stem	1	Heat : 283925 (Lot F20-0205)	MEST690625/2021/	316/316L	16,42	10,80	2,23	1,67	OK
1,7	97.04.0002DLN(T)	Tip	1	Heat : 272849 (Lot F23-3473)	499910	316/316L	16,50	10,06	2,10	1,34	OK

x CROSSWIND
9/10/24 R

NOTE / *Remarks* : PMI 100% on body, closer and wetted parts According to NDT PROCEDURE - PT/PMI Rev.14	Data prelievo componenti / *Date of components picking* : 11-Sep-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Testing instrument: X-Ray analyzer NITON XL2 980 GOLDD	Data verifica componenti / *Date of components verification* : 11-Sep-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Serial number: 85044 - expiry 15-November-2024	Data esecuzione PMI TEST / *Date of PMI TEST execution* : 11-Sep-2024	Firma /*Signature* THOMAS PETITTI PMI OPERATOR

indra VALVES - ITALY	**Project:** CROSSWIND 24 01216 / pos 240 - 00.VSF.2696/V PO 1724000798 REV.2 pos 240 - VLBLNN01410100		
HARDNESS TEST REPORT **EN 10204 3.1 ed 2004**	**Client:** ROSETTI MARINO SPA	**Report No.:** 008 **Date:** 12-Sep-2024 **Page 1 of 1**	

Location/area: Indra S.r.l Magenta (MI)		**Material:** 316/316L

Testing instrument: Durometer 1600 HV
Serial Number: 32159000013 - expiry 17-April-2027
Hardness Test Procedure: PT-HT (24-01216) Rev. 0

Surface preparation:

Grinding	Machined X	Lapping	Filling	Other

Test position: see below table

Measuring unit:

Rockwell C(HRC)	**Brinell (HB) x**	**Shore**
Rockwell B(HRB)	**Vickers (HV)**	

Location	HARDNESS (average value)						
Valve body S.N 106032	165						
Closer S.N 106032	153						
Stem of ball S.N 106032	132						
Ball S.N 106032	226						
Bonnet body S.N 106032	159						

x CROSSWIND 9/10/24

Sketch: 981F.01.0103DLN(T) - 981F.02.0038DLN(T) - 980F.04.0001DLN(T) - 98F.07.0001DLN(T) - 97.02.0007DLN(T)

Quality control	TPI Inspection	Client
Name: Petitti Thomas	Name:	Name:
Sign:	Sign:	Sign:
Date: 12-Sep-2024	Date:	Date:

ROSETTI MARINO ITEM 250

COD. VLBLNN0143020

TAG:

BLPH-MV-002M, BLPH-MV-016

INDRA ITEM 250

COD. 00.VSF.2702/V

CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 250 NS.POS/OUR ITEM 250 VS.COD./YOUR CODE VLBLNN0143020 NS.COD./OUR CODE 00.VSF.2702/V (2 PCS)

indra VALVES - ITALY	**PENETRANT TEST REPORT (PT)**	**MD-02-29** rev.02 Date 28-11-2022

Certificato No.	PT-121-2024	Internal Indra Order No.:	OE 015611,015616,015626, 015627,015619,015622, 015818,015820	
Customer:	ROSETTI MARINO SPA	**Qty:**	3 + 2 + 5 + 1 + 2 + 2 + 2 + 2 + 2	Batch no.:
Code:	981F.01.0003DLN(T)	Description:	BODY	L23-0953-433747
	981F.01.0003DLN(T)		BODY	OE-06905-434671
	980F.02.0001DLN(T)		CLOSURE F150RF3	L23-1109-434829
	981J.01.0010DLN(T)		BODY	L24-0444-293223
	981J.02.0006DLN(T)		CLOSURE J300RF3	L24-0235-293307
	981F.01.0104DLN(T)		BODY	L24-0617-437405
	981F.02.0038DLN(T)		CLOSURE F150RF3	L24-0638-435799
	→ 981J.01.0062DLN(T)		BODY	L24-0695-294062
	→ 981J.02.0045DLN(T)		CLOSURE J150RF3	L24-0640-294062
Acceptance Standards:	Asme V art.6 Asme VIII Div.1 app.8			
Procedure:	*Indra Procedure PT-DP-01 (24-01216) Rev.0 dated 06-09-2024 EN 10204 3.1 ed 2004*			
Equipment:	*Luxmetro,white lamp, liquid penetrant*			

Test Conditions:

Test Surface:	EXTERNAL SIDE	INTERNAL SIDE	Surface Condition:	MACHINED
Penetrant Time: 20 min	Drying Time: 10 min	Development Time: 20 min	Cleaner:	SOLVENT-ALCOHOL
Natural Light: > 1100 Lux				
Type of Penetrant	08.122 K71B2	Batch no.	220127/BI	
Type of Developer	D112A	Batch no.	231106W150s	
Type of Removal	WATER			
Results:	ACCEPTABLE			

Note:
The inspection was conducted 100% of the surface

x CROSSWIND
9/10/24 R

Operator: Nicholas Sacchetti (LEVEL 2 acc. EN 9712:2012)	Signature:	Approved: Lucia Nosotti (RSQ)	Signature:
INDRA SRL VIA NOVARA 10/B-C / 20013 MAGENTA (MI)	Approval of Customer:		Date: 12 September 2024

indra VALVES - ITALY	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 490-2024_24-01216-p250 Data/*Date* : 11-Sep-2024	MD/PMI-VSF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	**COMMESSA INDRA** *Indra Job No.*	24 01216	**NR. D'ORDINE CLIENTE** *Customer Order No.*	1724000798 REV.2	**DEL** *Dated*	26-Jun-2024	**POSIZIONE D'ORDINE CLIENTE** *Customer Item*	250	**POSIZIONE D' ORDINE INDRA** *Indra Item*	250
Percentuale particolari da testare *Percentage of elements to be tested*		100%		**CODICE** *Code*	00.VSF.2702/V	**DESCRIZIONE** *Description*	SBB-798-HR-50-J150RF3-J-D-DLF-DL-N-PG-L13-TG TGW-TV-DP-PMI2-PD2-BI-GT-CR-TA-FE2-FS-FE-SPC1	**Q.tà da produrre (pz.)** *No. of pieces to be produced*		2	

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106033

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
1,1	981J.01.0062DLN(T)	Valve body	1	Heat : 294062 (Lot L24-0695)	MEST083699/2024/	316/316L	16,58	10,02	2,01	1,76	OK
1,2	981J.02.0045DLN(T)	Closer	1	Heat : 294062 (Lot L24-0640)	MEST080043/2024/ - UT24003626	316/316L	16,48	10,09	2,04	1,82	OK
1,3	98J.04.0003DLN(T)	Stem of ball	1	Heat : 291905 (Lot F23-3024)	MEST084078/2023/	316/316L	16,59	10,45	2,24	0,93	OK
1,4	98J.07.0001DLN(T)	Ball	1	Heat : 272823 (Lot F22-2706)	2022021445	316/316L	16,43	10,19	2,09	1,57	OK
1,5	97.02.0001DLN(T)	Bonnet body	1	Heat : 291893 (Lot F24-0567)	MEST040838/2024/	316/316L	16,05	10,01	2,11	1,71	OK
1,6	97.03.0001DLN(T)	Stem	1	Heat : 172303 (Lot F23-2911)	174495	316/316L	16,53	10,04	2,26	1,82	OK
1,7	97.04.0001DLN(T)	Tip	1	Heat : 290962 (Lot F23-2912)	MEST140440/2023/	316/316L	16,80	10,32	2,07	1,33	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106034

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
2,1	981J.01.0062DLN(T)	Valve body	1	Heat : 294062 (Lot L24-0695)	MEST083699/2024/	316/316L	16,62	10,05	2,03	1,71	OK
2,2	981J.02.0045DLN(T)	Closer	1	Heat : 294062 (Lot L24-0640)	MEST080043/2024/ - UT24003626	316/316L	16,54	10,12	2,02	1,80	OK
2,3	98J.04.0003DLN(T)	Stem of ball	1	Heat : 291905 (Lot F23-3024)	MEST084078/2023/	316/316L	16,62	10,31	2,27	1,02	OK
2,4	98J.07.0001DLN(T)	Ball	1	Heat : 272823 (Lot F22-2706)	2022021445	316/316L	16,37	10,24	2,07	1,44	OK
2,5	97.02.0001DLN(T)	Bonnet body	1	Heat : 291893 (Lot F24-0567)	MEST040838/2024/	316/316L	16,10	10,03	2,13	1,68	OK
2,6	97.03.0001DLN(T)	Stem	1	Heat : 172303 (Lot F23-2911)	174495	316/316L	16,62	10,01	2,20	1,77	OK
2,7	97.04.0001DLN(T)	Tip	1	Heat : 290962 (Lot F23-2912)	MEST140440/2023/	316/316L	16,77	10,40	2,08	1,39	OK

NOTE / *Remarks* : PMI 100% on body, closer and wetted parts According to NDT PROCEDURE - PT/PMI Rev.14	Data prelievo componenti / *Date of components picking* : x CROSSWIND 11-Sep-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Testing instrument: X-Ray analyzer NITON XL2 980 GOLDD	Data verifica componenti / *Date of components verification* : 9/10/24 R 11-Sep-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Serial number: 85044 - expiry 15-November-2024	Data esecuzione PMI TEST / *Date of PMI TEST execution* : 11-Sep-2024	Firma /*Signature* THOMAS PETITTI PMI OPERATOR

indra VALVES - ITALY	**Project:** CROSSWIND 24 01216 / pos 250 - 00.VSF.2702/V PO 1724000798 REV.2 pos 250 - VLBLNN0143020	
HARDNESS TEST REPORT **EN 10204 3.1 ed 2004**	**Client:** ROSETTI MARINO SPA	**Report No.:** 006 **Date:** 12-Sep-2024 **Page 1 of 1**

Location/area: Indra S.r.l Magenta (MI)		**Material:** 316/316L

Testing instrument: Durometer 1600 HV
Serial Number: 32159000013 - expiry 17-April-2027
Hardness Test Procedure: PT-HT (24-01216) Rev. 0

Surface preparation:

Grinding	Machined X	Lapping	Filling	Other

Test position: see below table

Measuring unit:

Rockwell C(HRC)	**Brinell (HB) x**	**Shore**
Rockwell B(HRB)	**Vickers (HV)**	

Location	HARDNESS (average value)						
Valve body S.N 106033	160						
Closer S.N 106033	154						
Stem of ball S.N 106033	148						
Ball S.N 106033	153						
Bonnet body S.N 106033	188						
Valve body S.N 106034	163						
Closer S.N 106034	152						
Stem of ball S.N 106034	120						
Ball S.N 106034	145						
Bonnet body S.N 106034	167						

x CROSSWIND 9/10/24

Sketch: 981J.01.0062DLN(T) - 981J.02.0045DLN(T) - 98J.04.0003DLN(T) - 98J.07.0001DLN(T) - 97.02.0001DLN(T)

Quality control	TPI Inspection	Client
Name: Petitti Thomas	Name:	Name:
Sign: TP	Sign:	Sign:
Date: 12-Sep-2024	Date:	Date:

ROSETTI MARINO ITEM 260

COD. VLBLNN01450400

TAG:

BLPH-MV-006, BLPH-MV-033, BLPH-MV-191, BLPH-MV-194 BLPH-MV-196, BLPH-MV-199, BLPH-MV-201

INDRA ITEM 260

COD. 00.VSF.2700/V

CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 260 NS.POS/OUR ITEM 260 VS.COD./YOUR CODE VLBLNN01450400 NS.COD./OUR CODE 00.VSF.2700/V (7 PCS)

indra VALVES - ITALY	**PENETRANT TEST REPORT (PT)**	**MD-02-29** rev.02 Date 28-11-2022

Certificato No.	PT-127-2024	Internal Indra Order No.:	OE 015828,015829,015832	
Customer:	ROSETTI MARINO SPA	Qty:	7 + 7 + 7	Batch no.:
Code:	98N.01.0005DLN(T)	Description:	BODY	OE-15851-294714
	98N.02.0001DLN(T)		CLOSURE N150RF3	L24-0057-292904
	98N.35.0001DLN(T)		COVER PLATE	F24-0054-377292
Acceptance Standards:	Asme V art.6 Asme VIII Div.1 app.8			
Procedure:	*Indra Procedure PT-DP-01 (24-01216) Rev.0 dated 06-09-2024 EN 10204 3.1 ed 2004*			
Equipment:	*Luxmetro,white lamp, liquid penetrant*			

Test Conditions:

Test Surface:	EXTERNAL SIDE	INTERNAL SIDE	Surface Condition:	MACHINED
Penetrant Time: 20 min	Drying Time: 10 min	Development Time: 20 min	Cleaner:	SOLVENT-ALCOHOL
Natural Light: > 1100 Lux				
Type of Penetrant	08.122 K71B2	Batch no.	220127/BI	
Type of Developer	D112A	Batch no.	231106W150s	
Type of Removal	WATER			
Results:	ACCEPTABLE			

Note:
The inspection was conducted 100% of the surface

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Operator: Nicholas Sacchetti (LEVEL 2 acc. EN 9712:2012)	Signature:	Approved: Lucia Nosotti (RSQ)	Signature: INDRA s.r.l.
INDRA SRL VIA NOVARA 10/B-C / 20013 MAGENTA (MI)	Approval of Customer:		Date: 12 September 2024

	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 562-2024_24-01216-p260 Data/*Date* : 12-Sep-2024	MD/PMI-VSF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	**COMMESSA INDRA** *Indra Job No.*	24 01216	**NR. D'ORDINE CLIENTE** *Customer Order No.*	1724000798 REV.2	**DEL** *Dated*	26-Jun-2024	**POSIZIONE D'ORDINE CLIENTE** *Customer Item*	260	**POSIZIONE D' ORDINE INDRA** *Indra Item*	260
Percentuale particolari da testare *Percentage of elements to be tested*		100%		**CODICE** *Code*	00.VSF.2700/V	**DESCRIZIONE** *Description*	SBB-798-HR-100-N150RF3-N-D-DLF-DL-N-RG-L13-TG-TGW-TV-DP-PMI2-PD2-BI-GT-CR-TA-FE2-FS-FE SPC1	**Q.tà da produrre (pz.)** *No. of pieces to be produced*		7	

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106035

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
1,1	98N.01.0005DLN(T)	Valve body	1	Heat : 294714 (Lot OE-15851)	MEST083701/2024/	316/316L	16,69	10,06	2,10	1,86	OK
1,2	98N.02.0001DLN(T)	Closer	1	Heat : 292904 (Lot L24-0057)	MEST007281/2024/ - UT24000320	316/316L	16,56	10,21	2,15	1,74	OK
1,3	98N.04.0001DLN(T)	Stem of ball	1	Heat : 073183 (Lot F23-3048)	2021002663	316/316L	16,48	10,77	2,08	1,59	OK
1,4	98N.07.0001DLN(T)	Ball	1	Heat : 288405 (Lot L23-0638)	MEST091415/2023/ - UT23003880	316/316L	16,46	10,34	2,02	1,81	OK
1,5	98N.35.0001DLN(T)	Cover plate	1	Heat : 377292 (Lot F24-0054)	2023041944	316/316L	16,65	10,10	2,11	1,59	OK
1,6	97.02.0001DLN(T)	Bonnet body	1	Heat : 291893 (Lot F24-0567)	MEST040838/2024	316/316L	16,87	10,03	2,08	1,49	OK
1,7	97.03.0001DLN(T)	Stem	1	Heat : 172303 (Lot F23-2911)	174495	316/316L	16,29	10,54	2,22	1,82	OK
1,8	97.04.0001DLN(T)	Tip	1	Heat : 290962 (Lot F23-2912)	MEST140440/2023/	316/316L	16,36	10,27	2,13	1,42	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106036

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
2,1	98N.01.0005DLN(T)	Valve body	1	Heat : 294714 (Lot OE-15851)	MEST083701/2024/	316/316L	16,70	10,04	2,10	1,95	OK
2,2	98N.02.0001DLN(T)	Closer	1	Heat : 292904 (Lot L24-0057)	MEST007281/2024/ - UT24000320	316/316L	16,50	10,23	2,19	1,73	OK
2,3	98N.04.0001DLN(T)	Stem of ball	1	Heat : 073183 (Lot F23-3048)	2021002663	316/316L	16,50	10,68	2,11	1,54	OK
2,4	98N.07.0001DLN(T)	Ball	1	Heat : 288405 (Lot L23-0638)	MEST091415/2023/ - UT23003880	316/316L	16,54	10,41	2,00	1,82	OK
2,5	98N.35.0001DLN(T)	Cover plate	1	Heat : 377292 (Lot F24-0054)	2023041944	316/316L	16,63	10,15	2,18	1,51	OK
2,6	97.02.0001DLN(T)	Bonnet body	1	Heat : 291893 (Lot F24-0567)	MEST040838/2024	316/316L	16,87	10,08	2,09	1,47	OK
2,7	97.03.0001DLN(T)	Stem	1	Heat : 172303 (Lot F23-2911)	174495	316/316L	16,31	10,53	2,21	1,86	OK
2,8	97.04.0001DLN(T)	Tip	1	Heat : 290962 (Lot F23-2912)	MEST140440/2023/	316/316L	16,20	10,33	2,10	1,45	OK

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indra VALVES - ITALY	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 562-2024_24-01216-p260 Data/*Date* : 12-Sep-2024	MD/PMI-VSF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	**COMMESSA INDRA** *Indra Job No.*	24 01216	**NR. D'ORDINE CLIENTE** *Customer Order No.*	1724000798 REV.2	**DEL** *Dated*	26-Jun-2024	**POSIZIONE D'ORDINE CLIENTE** *Customer Item*	260	**POSIZIONE D' ORDINE INDRA** *Indra Item*	260
Percentuale particolari da testare *Percentage of elements to be tested*		100%		**CODICE** *Code*	00.VSF.2700/V			**DESCRIZIONE** *Description*	SBB-798-HR-100-N150RF3-N-D-DLF-DL-N-RG-L13-TG-TGW-TV-DP-PMI2-PD2-BI-GT-CR-TA-FE2-FS-FE SPC1	**Q.tà da produrre (pz.)** *No. of pieces to be produced*	7

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106037

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
3,1	98N.01.0005DLN(T)	Valve body	1	Heat : 294714 (Lot OE-15851)	MEST083701/2024/	316/316L	16,78	10,07	2,14	1,95	OK
3,2	98N.02.0001DLN(T)	Closer	1	Heat : 292904 (Lot L24-0057)	MEST007281/2024/ - UT24000320	316/316L	16,58	10,25	2,14	1,73	OK
3,3	98N.04.0001DLN(T)	Stem of ball	1	Heat : 073183 (Lot F23-3048)	2021002663	316/316L	16,48	10,78	2,10	1,52	OK
3,4	98N.07.0001DLN(T)	Ball	1	Heat : 288405 (Lot L23-0638)	MEST091415/2023/ - UT23003880	316/316L	16,55	10,37	2,08	1,82	OK
3,5	98N.35.0001DLN(T)	Cover plate	1	Heat : 377292 (Lot F24-0054)	2023041944	316/316L	16,68	10,06	2,19	1,55	OK
3,6	97.02.0001DLN(T)	Bonnet body	1	Heat : 291893 (Lot F24-0567)	MEST040838/2024	316/316L	16,75	10,02	2,07	1,43	OK
3,7	97.03.0001DLN(T)	Stem	1	Heat : 172303 (Lot F23-2911)	174495	316/316L	16,39	10,54	2,26	1,80	OK
3,8	97.04.0001DLN(T)	Tip	1	Heat : 290962 (Lot F23-2912)	MEST140440/2023/	316/316L	16,26	10,22	2,13	1,43	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106038

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
4,1	98N.01.0005DLN(T)	Valve body	1	Heat : 294714 (Lot OE-15851)	MEST083701/2024/	316/316L	16,74	10,05	2,13	1,84	OK
4,2	98N.02.0001DLN(T)	Closer	1	Heat : 292904 (Lot L24-0057)	MEST007281/2024/ - UT24000320	316/316L	16,61	10,24	2,10	1,78	OK
4,3	98N.04.0001DLN(T)	Stem of ball	1	Heat : 073183 (Lot F23-3048)	2021002663	316/316L	16,52	10,68	2,00	1,62	OK
4,4	98N.07.0001DLN(T)	Ball	1	Heat : 288405 (Lot L23-0638)	MEST091415/2023/ - UT23003880	316/316L	16,45	10,34	2,07	1,84	OK
4,5	98N.35.0001DLN(T)	Cover plate	1	Heat : 377292 (Lot F24-0054)	2023041944	316/316L	16,66	10,12	2,13	1,63	OK
4,6	97.02.0001DLN(T)	Bonnet body	1	Heat : 291893 (Lot F24-0567)	MEST040838/2024	316/316L	16,89	10,05	2,13	1,42	OK
4,7	97.03.0001DLN(T)	Stem	1	Heat : 172303 (Lot F23-2911)	174495	316/316L	16,23	10,60	2,17	1,88	OK
4,8	97.04.0001DLN(T)	Tip	1	Heat : 290962 (Lot F23-2912)	MEST140440/2023/	316/316L	16,36	10,30	2,20	1,54	OK

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indra VALVES - ITALY	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 562-2024_24-01216-p260 Data/*Date* : 12-Sep-2024	MD/PMI-VSF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	COMMESSA INDRA *Indra Job No.*	24 01216	NR. D'ORDINE CLIENTE *Customer Order No.*	1724000798 REV.2	DEL *Dated*	26-Jun-2024	POSIZIONE D'ORDINE CLIENTE *Customer Item*	260	POSIZIONE D' ORDINE INDRA *Indra Item*	260
Percentuale particolari da testare *Percentage of elements to be tested*		100%		CODICE *Code*	00.VSF.2700/V	DESCRIZIONE *Description*	SBB-798-HR-100-N150RF3-N-D-DLF-DL-N-RG-L13-TG-TGW-TV-DP-PMI2-PD2-BI-GT-CR-TA-FE2-FS-FE SPC1	Q.tà da produrre (pz.) *No. of pieces to be produced*		7	

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106039

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
5,1	98N.01.0005DLN(T)	Valve body	1	Heat : 294714 (Lot OE-15851)	MEST083701/2024/	316/316L	16,72	10,05	2,12	1,91	OK
5,2	98N.02.0001DLN(T)	Closer	1	Heat : 292904 (Lot L24-0057)	MEST007281/2024/ - UT24000320	316/316L	16,51	10,22	2,20	1,80	OK
5,3	98N.04.0001DLN(T)	Stem of ball	1	Heat : 073183 (Lot F23-3048)	2021002663	316/316L	16,42	10,80	2,05	1,50	OK
5,4	98N.07.0001DLN(T)	Ball	1	Heat : 288405 (Lot L23-0638)	MEST091415/2023/ - UT23003880	316/316L	16,52	10,50	2,06	1,89	OK
5,5	98N.35.0001DLN(T)	Cover plate	1	Heat : 377292 (Lot F24-0054)	2023041944	316/316L	16,66	10,06	2,14	1,55	OK
5,6	97.02.0001DLN(T)	Bonnet body	1	Heat : 291893 (Lot F24-0567)	MEST040838/2024	316/316L	16,80	10,06	2,11	1,47	OK
5,7	97.03.0001DLN(T)	Stem	1	Heat : 172303 (Lot F23-2911)	174495	316/316L	16,20	10,60	2,27	1,80	OK
5,8	97.04.0001DLN(T)	Tip	1	Heat : 290962 (Lot F23-2912)	MEST140440/2023/	316/316L	16,39	10,40	2,19	1,41	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106040

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
6,1	98N.01.0005DLN(T)	Valve body	1	Heat : 294714 (Lot OE-15851)	MEST083701/2024/	316/316L	16,70	10,07	2,14	1,92	OK
6,2	98N.02.0001DLN(T)	Closer	1	Heat : 292904 (Lot L24-0057)	MEST007281/2024/ - UT24000320	316/316L	16,62	10,26	2,12	1,68	OK
6,3	98N.04.0001DLN(T)	Stem of ball	1	Heat : 073183 (Lot F23-3048)	2021002663	316/316L	16,53	10,67	2,09	1,57	OK
6,4	98N.07.0001DLN(T)	Ball	1	Heat : 288405 (Lot L23-0638)	MEST091415/2023/ - UT23003880	316/316L	16,52	10,49	2,01	1,86	OK
6,5	98N.35.0001DLN(T)	Cover plate	1	Heat : 377292 (Lot F24-0054)	2023041944	316/316L	16,67	10,11	2,18	1,58	OK
6,6	97.02.0001DLN(T)	Bonnet body	1	Heat : 291893 (Lot F24-0567)	MEST040838/2024	316/316L	16,88	10,04	2,07	1,44	OK
6,7	97.03.0001DLN(T)	Stem	1	Heat : 172303 (Lot F23-2911)	174495	316/316L	16,35	10,50	2,15	1,88	OK
6,8	97.04.0001DLN(T)	Tip	1	Heat : 290962 (Lot F23-2912)	MEST140440/2023/	316/316L	16,36	10,39	2,11	1,40	OK

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indra VALVES - ITALY	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 562-2024_24-01216-p260 Data/*Date* : 12-Sep-2024	MD/PMI-VSF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	**COMMESSA INDRA** *Indra Job No.*	24 01216	**NR. D'ORDINE CLIENTE** *Customer Order No.*	1724000798 REV.2	**DEL** *Dated*	26-Jun-2024	**POSIZIONE D'ORDINE CLIENTE** *Customer Item*	260	**POSIZIONE D' ORDINE INDRA** *Indra Item*	260
Percentuale particolari da testare *Percentage of elements to be tested*		100%		**CODICE** *Code*	00.VSF.2700/V	**DESCRIZIONE** *Description*	SBB-798-HR-100-N150RF3-N-D-DLF-DL-N-RG-L13-TG-TGW-TV-DP-PMI2-PD2-BI-GT-CR-TA-FE2-FS-FE SPC1	**Q.tà da produrre (pz.)** *No. of pieces to be produced*		7	

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106041

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
7,1	98N.01.0005DLN(T)	Valve body	1	Heat : 294714 (Lot OE-15851)	MEST083701/2024/	316/316L	16,77	10,07	2,10	1,82	OK
7,2	98N.02.0001DLN(T)	Closer	1	Heat : 292904 (Lot L24-0057)	MEST007281/2024/ - UT24000320	316/316L	16,59	10,27	2,10	1,80	OK
7,3	98N.04.0001DLN(T)	Stem of ball	1	Heat : 073183 (Lot F23-3048)	2021002663	316/316L	16,51	10,73	2,05	1,56	OK
7,4	98N.07.0001DLN(T)	Ball	1	Heat : 288405 (Lot L23-0638)	MEST091415/2023/ - UT23003880	316/316L	16,49	10,50	2,09	1,89	OK
7,5	98N.35.0001DLN(T)	Cover plate	1	Heat : 377292 (Lot F24-0054)	2023041944	316/316L	16,56	10,10	2,18	1,58	OK
7,6	97.02.0001DLN(T)	Bonnet body	1	Heat : 291893 (Lot F24-0567)	MEST040838/2024	316/316L	16,83	10,03	2,08	1,40	OK
7,7	97.03.0001DLN(T)	Stem	1	Heat : 172303 (Lot F23-2911)	174495	316/316L	16,30	10,52	2,20	1,88	OK
7,8	97.04.0001DLN(T)	Tip	1	Heat : 290962 (Lot F23-2912)	MEST140440/2023/	316/316L	16,23	10,29	2,16	1,59	OK

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NOTE / *Remarks* : PMI 100% on body, closer and wetted parts According to NDT PROCEDURE - PT/PMI Rev.14	Data prelievo componenti / *Date of components picking* : 12-Sep-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Testing instrument: X-Ray analyzer NITON XL2 980 GOLDD	Data verifica componenti / *Date of components verification* : 12-Sep-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Serial number: 85044 - expiry 15-November-2024	Data esecuzione PMI TEST / *Date of PMI TEST execution* : 12-Sep-2024	Firma /*Signature* THOMAS PETITTI PMI OPERATOR

indra VALVES - ITALY	**Project:** CROSSWIND 24 01216 / pos 260 - 00.VSF.2700/V PO 1724000798 REV.2 pos 260 - VLBLNN01450400	
HARDNESS TEST REPORT **EN 10204 3.1 ed 2004**	**Client:** ROSETTI MARINO SPA	**Report No.:** 041 **Date:** 12-Sep-2024 **Page 1 of 2**

Location/area: Indra S.r.l Magenta (MI)		**Material:** 316/316L

Testing instrument: Durometer 1600 HV
Serial Number: 32159000013 - expiry 17-April-2027
Hardness Test Procedure: PT-HT (24-01216) Rev. 0

Surface preparation:

Grinding	Machined X	Lapping	Filling	Other

Test position: see below table

Measuring unit:

Rockwell C(HRC)	**Brinell (HB) x**	**Shore**
Rockwell B(HRB)	**Vickers (HV)**	

Location	HARDNESS (average value)						
Valve body S.N 106035	180						
Closer S.N 106035	177						
Stem of ball S.N 106035	192						
Ball S.N 106035	207						
Cover plate S.N 106035	147						
Bonnet body S.N 106035	149						
Valve body S.N 106036	167						
Closer S.N 106036	179						
Stem of ball S.N 106036	198						
Ball S.N 106036	198						
Cover plate S.N 106036	154						
Bonnet body S.N 106036	136						
Valve body S.N 106037	173						
Closer S.N 106037	169						
Stem of ball S.N 106037	199						
Ball S.N 106037	201						
Cover plate S.N 106037	148						
Bonnet body S.N 106037	136						
Valve body S.N 106038	173						
Closer S.N 106038	176						
Stem of ball S.N 106038	193						
Ball S.N 106038	206						
Cover plate S.N 106038	156						
Bonnet body S.N 106038	138						

x CROSSWIND
23/10/24

indra VALVES - ITALY	**Project:** CROSSWIND 24 01216 / pos 260 - 00.VSF.2700/V PO 1724000798 REV.2 pos 260 - VLBLNN01450400
HARDNESS TEST REPORT **EN 10204 3.1 ed 2004**	**Client:** ROSETTI MARINO SPA **Report No.:** 041 **Date:** 12-Sep-2024 **Page 2 of 2**

Location	HARDNESS (average value)						
Valve body S.N 106039	177						
Closer S.N 106039	170						
Stem of ball S.N 106039	201						
Ball S.N 106039	202						
Cover plate S.N 106039	157						
Bonnet body S.N 106039	149						
Valve body S.N 106040	176						
Closer S.N 106040	178						
Stem of ball S.N 106040	193						
Ball S.N 106040	200						
Cover plate S.N 106040	158						
Bonnet body S.N 106040	141						
Valve body S.N 106041	170						
Closer S.N 106041	178						
Stem of ball S.N 106041	186						
Ball S.N 106041	195						
Cover plate S.N 106041	153						
Bonnet body S.N 106041	137						



Sketch: 98N.01.0005DLN(T) - 98N.02.0001DLN(T) - 98N.04.0001DLN(T) - 98N.07.0001DLN(T) - 98N.35.0001DLN(T) - 97.02.0001DLN(T)

Quality control	TPI Inspection	Client
Name: Petitti Thomas Sign: TP Date: 12-Sep-2024	Name: Sign: Date:	Name: Sign: Date:

FUGITIVE EMISSION PRODUCTION TEST (ISO 15848-2)
TEST REPORT
- INDRA VALVES -

MD-02-20-IT-UK-FE
Rev. 0
Data: 10-Oct-19

Nr. Certificato / *Certificate No.*	00339-FET	**Data** / *Date :*	09-Oct-24
Cliente / *Customer :*	ROSETTI MARINO SPA		
Ordine Nr. / *Order Nr.*	1724000798 REV.2	**Data** / *Date :*	26-Jun-24
Ns. commessa Nr. / *Our job Nr.*	24 01216	**Data** / *Date :*	03-Jul-24
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*	

Rev. 0

CONDIZIONI DI PROVA / TEST CONDITIONS

TEST (according to ISO 15848-2)	TEMPERATURA DI PROVA (Test Temperature)	CLASSE DI PERDITA (Tightness class)	MAX. PERDITA AMMISSIBILE (ISO 15848-2) (Mex allowable leakage)	FLUIDO DI PROVA (Test Fluid)	PRESSIONE DI PROVA (Test Pressure)	RUMORE DI FONDO (Backgrund noise)	ENDURANCE CLASS	MANOMETRO N° (Gauge ID)	DATA SCADENZA (Due Date)
Body / Closure seal	20° C	B	≤ 50 ppmv	Elium >97%	6 bar	5,1 ppmv	5 cycles	24F06-1334-01–13	3-Dec-24
Body / Body bonnet seal			≤ 50 ppmv						
Stem seal			≤ 100 ppmv						
Gland Plate / Trunnion seal			≤ 50 ppmv						

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY) PRODUCED	QTA' (QTY) TESTED	VALVE TYPE	NPS	FLANGE TYPE	RATING		Ball valve: Body / Closure seal Leak detected (ppmv)	Ball valve: Stem seal Leak detected (ppmv)	Ball valve: Trunnion seal Leak detected (ppmv)	Ball valve: Gland Plate seal Leak detected (ppmv)	Needle valve: Stem seal Leak detected (ppmv)	Needle valve: Body bonnet seal Leak detected (ppmv)
160	160	00.VSF.2693/V	DBB-898-HR-40-H300RF3-H-D (106015)	VLBBNN07201H00	6	1	Ball+Needle	1 ½"	RF	300	Value before cycles	0,1	0,1			0,1	0,1
											Value after 5 cycles	0,1	0,2			0,2	0,1
260	260	00.VSF.2700/V	SBB-798-HR-100-N150RF3-N-D (106039)	VLBLNN01450400	7	1	Ball+Needle	4"	RF	150	Value before cycles	0,1	0,1			0,1	0,1
											Value after 5 cycles	0,1	0,2			0,2	0,1
323	410	00.VSF.2681/V	DBB-898-HR-40-H300RF3-H-D (106016)	VLBBNN07201H00	1	1	Ball+Needle	1 ½"	RF	300	Value before cycles	0,1	0,1			0,1	0,1
											Value after 5 cycles	0,1	0,3			0,2	0,1
											Value before cycles						
											Value after 5 cycles						
											Value before cycles						
											Value after 5 cycles						
											Value before cycles						
											Value after 5 cycles						
											Value before cycles						
											Value after 5 cycles						

TEST RESULT: ☑ **SATISFACTORY** ☐ **NOT SATISFACTORY**

Strumentazione *(Equipment)* :
- Spettrometro di massa *(Mass Spectrometer)* : PFEIFFER VACUUM ASM 340 (SN.: HLD1901233)
  Minima perdita rilevabile *(Min. leak detectable)* : 5x10E-09 mbar*l/s (sniffing mode)
- Valore nominale fuga calibrata *(Calibrated leak nominal value)* : 6,09x10E-06 mbar*l/s (SN.: 40117695)

Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector — *Si / Yes* ☑ *No / No* ☐

Nominativo / Name .....

Data / Date .....

Timbro e Firma / Stamp and Signature xCROSSWIND W 9/10/24

PROCEDURA DI TEST
(Test procedure)
PFET (24-01216) Rev.0

COLLAUDATO DA: TESTED BY:	**MAURIZIO TOSI** Livello 1 UNI EN ISO 9712:2021 N. 24TO02901CE1	DATA / DATE:	09-Oct-24	APPROVATO DA: APPROVED BY:	**ROBERTO CAREZZO** VICE PRODUCTION MANAGER Livello 2 UNI EN ISO 9712:2021 N. 24TO00376CE1	DATA / DATE:	09-Oct-24

ROSETTI MARINO ITEM 270

COD. VLBLNN01460600

TAG:

BLPH-MV-005

INDRA ITEM 270

COD. 00.VSFT.0224/V

CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 270 NS.POS/OUR ITEM 270 VS.COD./YOUR CODE VLBLNN01460600 NS.COD./OUR CODE 00.VSFT.0224/V (1 PC)

indra VALVES - ITALY	**PENETRANT TEST REPORT (PT)**	**MD-02-29** rev.02 Date 28-11-2022

Certificato No.	PT-129-2024	Internal Indra Order No.:	OE 015590,015591 015595,015603	
Customer:	ROSETTI MARINO SPA	Qty:	1 + 2 + 1 + 2	Batch no.:
Code:	102Q1.01.0001DLN(T)	Description:	BODY	OE-15637-293867
	102Q1.02.0001DLN(T)		CLOSURE Q150RF3	OE-15638-293771
	102Q1.05.0001DLN(T)		GLAND PLATE	L24-0620-294158
	102Q1.36.0001DLN(T)		BALL SUPPORT FLANGE	L24-0620-43421
Acceptance Standards:	Asme V art.6 Asme VIII Div.1 app.8			
Procedure:	*Indra Procedure PT-DP-01 (24-01216) Rev.0 dated 06-09-2024 EN 10204 3.1 ed 2004*			
Equipment:	*Luxmetro,white lamp, liquid penetrant*			

Test Conditions:

Test Surface:	EXTERNAL SIDE	INTERNAL SIDE	Surface Condition:	MACHINED
Penetrant Time: 20 min	Drying Time: 10 min	Development Time: 20 min	Cleaner:	SOLVENT-ALCOHOL
Natural Light: > 1100 Lux				
Type of Penetrant	08.122 K71B2	Batch no.	220127/BI	
Type of Developer	D112A	Batch no.	231106W150s	
Type of Removal	WATER			
Results:	ACCEPTABLE			

Note:
The inspection was conducted 100% of the surface

Operator: Nicholas Sacchetti (LEVEL 2 acc. EN 9712:2012)	Signature:	Approved: Lucia Nosotti (RSQ)	Signature: INDRA s.r.l.
INDRA SRL VIA NOVARA 10/B-C / 20013 MAGENTA (MI)	Approval of Customer:		Date: 08 October 2024

	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 559-2024_24-01216-p270 Data/*Date* : 08-Oct-2024	MD/PMI-VSF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	**COMMESSA INDRA** *Indra Job No.*	24 01216	**NR. D'ORDINE CLIENTE** *Customer Order No.*	1724000798 REV.2	**DEL** *Dated*	26-Jun-2024	**POSIZIONE D'ORDINE CLIENTE** *Customer Item*	270	**POSIZIONE D' ORDINE INDRA** *Indra Item*	270
Percentuale particolari da testare *Percentage of elements to be tested*		100%		**CODICE** *Code*	00.VSFT.0224/V	**DESCRIZIONE** *Description*	SB-598-TRU-HR-150-Q150RF3-Q-DLF-DL-N-RG-GE1-L1-TG-TGW-TV-DP-PMI2-PD2-BI-GT-CR-TA-FE2-FS-FE-SPC1-SPC2	**Q.tà da produrre (pz.)** *No. of pieces to be produced*	1		

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106048

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
1,1	102Q1.01.0001DLNT)	Valve body	1	Heat : 293867 (Lot OE-15637)	MEST017246/2024/ - UT24000815	316/316L	16,72	10,07	2,11	1,91	OK
1,2	102Q1.02.0001DLN(T)	Closure In	1	Heat : 293771 (Lot OE-15638)	MEST017245/2024/ - UT24000814	316/316L	16,59	10,11	2,18	1,88	OK
1,3	102Q1.02.0001DLN(T)	Closure Out	1	Heat : 293771 (Lot OE-15638)	MEST017245/2024/ - UT24000814	316/316L	16,61	10,14	2,08	1,83	OK
1,4	102Q1.04.0001DLN(T)	Stem of ball	1	Heat : 2VCV (Lot F24-1283)	2023/014186	316/316L	16,35	10,02	2,04	1,45	OK
1,5	102Q1.07.0001DLN(T)	Ball	1	Heat : 101823 (Lot F24-1465)	2021055970	316/316L	16,44	10,60	2,05	1,68	OK
1,6	102Q1.10.0001DLNR(T)	Seat	1	Heat : 301859 (Lot F24-2087)	2024003430	316/316L	16,25	10,10	2,05	1,72	OK
1,7	102Q1.10.0001DLNR(T)	Seat	1	Heat : 301859 (Lot F24-2087)	2024003430	316/316L	16,31	10,12	2,08	1,74	OK
1,8	102Q1.36.0001DLN(T)	Ball support plate	1	Heat : 43421 (Lot L24-0620)	2024-107037	316/316L	16,51	10,15	2,11	1,55	OK
1,9	102Q1.36.0001DLN(T)	Ball support plate	1	Heat : 43421 (Lot L24-0620)	2024-107037	316/316L	16,54	10,11	2,14	1,49	OK
1.10	102Q1.05.0001DLN(T)	Gland plate	1	Heat : 294158 (Lot L24-0620)	MEST076309/2024/ - UT24003464	316/316L	16,59	10,06	2,10	1,37	OK

NOTE / *Remarks* : PMI 100% on body, closer and wetted parts According to NDT PROCEDURE - PT/PMI Rev.14	Data prelievo componenti / *Date of components picking* : 08-Oct-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Testing instrument: X-Ray analyzer NITON XL2 980 GOLDD	Data verifica componenti / *Date of components verification* : 08-Oct-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Serial number: 85044 - expiry 15-November-2024	Data esecuzione PMI TEST / *Date of PMI TEST execution* : 08-Oct-2024	Firma /*Signature* THOMAS PETITTI PMI OPERATOR

indra VALVES - ITALY	**Project:** CROSSWIND 24 01216 / pos 270 - 00.VSFT.0224/V PO 1724000798 REV.2 pos 270 - VLBLNN01460600	
HARDNESS TEST REPORT **EN 10204 3.1 ed 2004**	**Client:** ROSETTI MARINO SPA	**Report No.:** 038 **Date:** 08-Oct-2024 **Page 1 of 1**

Location/area: Indra S.r.l Magenta (MI)		**Material:** 316/316L

Testing instrument: Durometer 1600 HV
Serial Number: 32159000013 - expiry 17-April-2027
Hardness Test Procedure: PT-HT (24-01216) Rev. 0

Surface preparation:

Grinding	Machined X	Lapping	Filling	Other

Test position: see below table

Measuring unit:

Rockwell C(HRC)	**Brinell (HB) x**	**Shore**
Rockwell B(HRB)	**Vickers (HV)**	

Location	HARDNESS (average value)						
Valve body S.N 106048	194						
Closer In S.N 106048	177						
Closer Out S.N 106048	184						
Stem of ball S.N 106048	163						
Ball S.N 106048	159						
Seat S.N 106048	124						
Seat S.N 106048	119						
Ball support flange S.N 106048	158						
Ball support flange S.N 106048	163						
Gland plate S.N 106048	148						

Sketch: 102Q1.01.0001DLNT) - 102Q1.02.0001DLN(T) - 102Q1.04.0001DLN(T) - 102Q1.07.0001DLN(T) - 102Q1.10.0001DLNR(T) - 102Q1.36.0001DLN(T) - 102Q1.05.0001DLN(T)

Quality control	TPI Inspection	Client
Name: Petitti Thomas Sign: TP Date: 08-Oct-2024	Name: Sign: Date:	Name: Sign: Date:

Ath x CROSS WIND

indra VALVES - ITALY	***FUGITIVE EMISSION PRODUCTION TEST (ISO 15848-2)*** ***TEST REPORT*** ***- INDRA VALVES -***	**MD-02-20-IT-UK-FE** **Rev. 0** **Data: 10-Oct-19**

Nr. Certificato / *Certificate No.*	**00341-FET**	**Data** / *Date :*	**16-Oct-24**
Cliente / *Customer :*	**ROSETTI MARINO SPA**		
Ordine Nr. / *Order Nr.*	**1724000798 REV.2**	**Data** / *Date :*	**26-Jun-24**
Ns. commessa Nr. / *Our job Nr.*	**24 01216**	**Data** / *Date :*	**03-Jul-24**
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*	

Rev. 0

CONDIZIONI DI PROVA / TEST CONDITIONS

TEST (according to ISO 15848-2)	*TEMPERATURA DI PROVA (Test Temperature)*	*CLASSE DI PERDITA (Tightness class)*	*MAX. PERDITA AMMISSIBILE (ISO 15848-2) (Max allowable leakage)*	*FLUIDO DI PROVA (Test Fluid)*	*PRESSIONE DI PROVA (Test Pressure)*	*RUMORE DI FONDO (Backgrund noise)*	*ENDURANCE CLASS*	*MANOMETRO N° (Gauge ID)*	*DATA SCADENZA (Due Date)*
Body / Closure seal	*21° C*	*B*	*≤ 50 ppmv*	*Elium >97%*	*6 bar*	*4,9 ppmv*	*5 cycles*	*24F06-1334-01-13*	*3-Dec-24*
Body / Body bonnet seal			*≤ 50 ppmv*						
Stem seal			*≤ 100 ppmv*						
Gland Plate / Trunnion seal			*≤ 50 ppmv*						

												Ball valve				*Needle valve*	
INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY) PRODUCED	QTA' (QTY) TESTED	VALVE TYPE	NPS	FLANGE TYPE	RATING		*Body / Closure seal* Leak detected (ppmv)	*Stem seal* Leak detected (ppmv)	*Trunnion seal* Leak detected (ppmv)	*Gland Plate seal* Leak detected (ppmv)	*Stem seal* Leak detected (ppmv)	*Body bonnet seal* Leak detected (ppmv)
270	270	00.VSFT.0224/V	SB-598-TRU-HR-150-Q150RF3-Q (106048)	VLBLNN01460600	1	1	Ball	6"	RF	150	*Value before cycles*	0,1	0,1		0,1		
											Value after 5 cycles	0,1	0,2		0,1		
											Value before cycles						
											Value after 5 cycles						
											Value before cycles						
											Value after 5 cycles						
											Value before cycles						
											Value after 5 cycles						
											Value before cycles						
											Value after 5 cycles						
											Value before cycles						
											Value after 5 cycles						
											Value before cycles						
											Value after 5 cycles						

TEST RESULT: ☑ **SATISFACTORY** ☐ **NOT SATISFACTORY**

Strumentazione *(Equipment)* :
- Spettrometro di massa *(Mass Spectrometer)* : PFEIFFER VACUUM ASM 340 (SN.: HLD1901233)
  Minima perdita rilevabile *(Min. leak detectable)* : 5x10E-09 mbar*l/s (sniffing mode)
- Valore nominale fuga calibrata *(Calibrated leak nominal value)* : 6,09x10E-06 mbar*l/s (SN.: 40117695)

Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector	*Si / Yes* ☑ *No / No* ☐
Nominativo / Name	*Timbro e Firma / Stamp and Signature* x CROSSMIND 16/10/24
Data / Date	

PROCEDURA DI TEST
(Test procedure)
PFET (24-01216) Rev.0

COLLAUDATO DA: TESTED BY:	**MAURIZIO TOSI** **Livello 1 UNI EN ISO 9712:2021** **N. 24TO02901CE1**	DATA / DATE:	16-Oct-24	APPROVATO DA: APPROVED BY:	**ROBERTO CAREZZO** **VICE PRODUCTION MANAGER** **Livello 2 UNI EN ISO 9712:2021** **N. 24TO00376CE1**	DATA / DATE:	16-Oct-24

ROSETTI MARINO ITEM 280

COD. VLBMNN00013Q0H

TAG:

BLPH-MV-013, BLPH-MV-014,

BLPH-MV-091, BLPH-MV-092

BLPH-MV-096, BLPH-MV-097,

BLPH-MV-204, BLPH-MV-205

BLPH-MV-282, BLPH-MV-283,

BLPH-MV-421, BLPH-MV-422

BLPH-MV-438, BLPH-MV-439

INDRA ITEM 280

COD. 00.MNF.0604/V

	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 500-2024_24-01216-p280 Data/*Date* : 11-Sep-2024	MD/PMI-MNF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	**COMMESSA INDRA** *Indra Job No.*	24 01216	**NR. D'ORDINE CLIENTE** *Customer Order No.*	1724000798 REV.2	**DEL** *Dated*	26-Jun-2024	**POSIZIONE D'ORDINE CLIENTE** *Customer Item*	280	**POSIZIONE D' ORDINE INDRA** *Indra Item*	280
Percentuale particolari da testare *Percentage of elements to be tested*		100%		**CODICE** *Code*	00.MNF.0604/V	**DESCRIZIONE** *Description*	DBB-737-HR-E300RF3-D-D-DLF-DL-N-K-G-HFT-Y123-L123-V2-TG-TGW-TV-DP-DP2-PMI2-PD2-GT-FE2-FS-FE	**Q.tà da produrre (pz.)** *No. of pieces to be produced*		14	

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106049

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*						RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	W	Co	
1,1	97.01.0798DLN(T)	Valve body	1	Heat : 437749 (Lot L24-0829)	MEST100670/2024/ - UT24004803	316/316L	16,52	10,14	2,12	1,69			OK
1,2	97.02.0012DLN(T)	Bonnet body isolate	1	Heat : 372648 (Lot F24-1037)	2023029311	316/316L	16,36	10,04	2,02	1,68			OK
1,3	97.03.0004DLN(T)	Stem isolate	1	Heat : 290765 (Lot F23-1878)	MEST056657/2023/1	316/316L	16,94	10,24	2,05	1,43			OK
1,4	97.04.0002S(T)	Tip isolate	1	Heat : 30948 (Lot F24-2661)	OR24 - 30948	Stellite	28,55	0,11	0,26		5,34	61,85	OK
1,5	97.02.0012DLN(T)	Bonnet body vent	1	Heat : 372648 (Lot F24-1037)	2023029311	316/316L	16,58	10,06	2,00	1,71			OK
1,6	97.03.0004DLN(T)	Stem vent	1	Heat : 290765 (Lot F23-1878)	MEST056657/2023/1	316/316L	17,14	10,27	2,01	1,42			OK
1,7	97.04.0002S(T)	Tip vent	1	Heat : 30948 (Lot F24-2661)	OR24 - 30948	Stellite	28,43	0,12	0,21		5,26	61,81	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106050

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*						RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	W	Co	
2,1	97.01.0798DLN(T)	Valve body	1	Heat : 437749 (Lot L24-0829)	MEST100670/2024/ - UT24004803	316/316L	16,37	10,19	2,10	1,82			OK
2,2	97.02.0012DLN(T)	Bonnet body isolate	1	Heat : 372648 (Lot F24-1037)	2023029311	316/316L	16,48	10,00	2,03	1,72			OK
2,3	97.03.0004DLN(T)	Stem isolate	1	Heat : 290765 (Lot F23-1878)	MEST056657/2023/1	316/316L	16,97	10,24	2,08	1,41			OK
2,4	97.04.0002S(T)	Tip isolate	1	Heat : 30948 (Lot F24-2661)	OR24 - 30948	Stellite	28,64	0,16	0,12		5,37	61,71	OK
2,5	97.02.0012DLN(T)	Bonnet body vent	1	Heat : 372648 (Lot F24-1037)	2023029311	316/316L	16,69	10,07	2,07	1,73			OK
2,6	97.03.0004DLN(T)	Stem vent	1	Heat : 290765 (Lot F23-1878)	MEST056657/2023/1	316/316L	17,00	10,28	2,04	1,31			OK
2,7	97.04.0002S(T)	Tip vent	1	Heat : 30948 (Lot F24-2661)	OR24 - 30948	Stellite	28,53	0,10	0,13		5,48	61,63	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106051

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*						RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	W	Co	
3,1	97.01.0798DLN(T)	Valve body	1	Heat : 437749 (Lot L24-0829)	MEST100670/2024/ - UT24004803	316/316L	16,43	10,18	2,17	1,85			OK
3,2	97.02.0012DLN(T)	Bonnet body isolate	1	Heat : 372648 (Lot F24-1037)	2023029311	316/316L	16,54	10,02	2,06	1,79			OK
3,3	97.03.0004DLN(T)	Stem isolate	1	Heat : 290765 (Lot F23-1878)	MEST056657/2023/1	316/316L	16,97	10,25	2,08	1,33			OK
3,4	97.04.0002S(T)	Tip isolate	1	Heat : 30948 (Lot F24-2661)	OR24 - 30948	Stellite	28,33	0,11	0,12		5,29	61,70	OK
3,5	97.02.0012DLN(T)	Bonnet body vent	1	Heat : 372648 (Lot F24-1037)	2023029311	316/316L	16,63	10,01	2,05	1,68			OK
3,6	97.03.0004DLN(T)	Stem vent	1	Heat : 290765 (Lot F23-1878)	MEST056657/2023/1	316/316L	17,12	10,26	2,07	1,31			OK
3,7	97.04.0002S(T)	Tip vent	1	Heat : 30948 (Lot F24-2661)	OR24 - 30948	Stellite	28,51	0,15	0,24		5,58	61,52	OK

indra VALVES - ITALY	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 500-2024_24-01216-p280 Data/*Date* : 11-Sep-2024	MD/PMI-MNF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	**COMMESSA INDRA** *Indra Job No.*	24 01216	**NR. D'ORDINE CLIENTE** *Customer Order No.*	1724000798 REV.2	**DEL** *Dated*	26-Jun-2024	**POSIZIONE D'ORDINE CLIENTE** *Customer Item*	280	**POSIZIONE D' ORDINE INDRA** *Indra Item*	280
Percentuale particolari da testare *Percentage of elements to be tested*		100%		**CODICE** *Code*	00.MNF.0604/V	**DESCRIZIONE** *Description*	DBB-737-HR-E300RF3-D-D-DLF-DL-N-K-G-HFT-Y123-L123-V2-TG-TGW-TV-DP-DP2-PMI2-PD2-GT-FE2-FS-FE	**Q.tà da produrre (pz.)** *No. of pieces to be produced*	14		

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106052

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*						RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	W	Co	
4,1	97.01.0798DLN(T)	Valve body	1	Heat : 437749 (Lot L24-0829)	MEST100670/2024/ - UT24004803	316/316L	16,36	10,13	2,11	1,85			OK
4,2	97.02.0012DLN(T)	Bonnet body isolate	1	Heat : 372648 (Lot F24-1037)	2023029311	316/316L	16,56	10,03	2,09	1,66			OK
4,3	97.03.0004DLN(T)	Stem isolate	1	Heat : 290765 (Lot F23-1878)	MEST056657/2023/1	316/316L	16,94	10,17	2,10	1,42			OK
4,4	97.04.0002S(T)	Tip isolate	1	Heat : 30948 (Lot F24-2661)	OR24 - 30948	Stellite	28,54	0,19	0,24		5,68	61,63	OK
4,5	97.02.0012DLN(T)	Bonnet body vent	1	Heat : 372648 (Lot F24-1037)	2023029311	316/316L	16,49	10,08	2,03	1,75			OK
4,6	97.03.0004DLN(T)	Stem vent	1	Heat : 290765 (Lot F23-1878)	MEST056657/2023/1	316/316L	17,03	10,30	2,09	1,35			OK
4,7	97.04.0002S(T)	Tip vent	1	Heat : 30948 (Lot F24-2661)	OR24 - 30948	Stellite	28,54	0,15	0,12		5,65	61,59	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106053

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*						RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	W	Co	
5,1	97.01.0798DLN(T)	Valve body	1	Heat : 437749 (Lot L24-0829)	MEST100670/2024/ - UT24004803	316/316L	16,43	10,13	2,14	1,91			OK
5,2	97.02.0012DLN(T)	Bonnet body isolate	1	Heat : 372648 (Lot F24-1037)	2023029311	316/316L	16,53	10,05	2,06	1,75			OK
5,3	97.03.0004DLN(T)	Stem isolate	1	Heat : 290765 (Lot F23-1878)	MEST056657/2023/1	316/316L	16,93	10,23	2,03	1,30			OK
5,4	97.04.0002S(T)	Tip isolate	1	Heat : 30948 (Lot F24-2661)	OR24 - 30948	Stellite	28,34	0,17	0,27		5,69	61,79	OK
5,5	97.02.0012DLN(T)	Bonnet body vent	1	Heat : 372648 (Lot F24-1037)	2023029311	316/316L	16,50	10,10	2,08	1,79			OK
5,6	97.03.0004DLN(T)	Stem vent	1	Heat : 290765 (Lot F23-1878)	MEST056657/2023/1	316/316L	17,09	10,30	2,05	1,41			OK
5,7	97.04.0002S(T)	Tip vent	1	Heat : 30948 (Lot F24-2661)	OR24 - 30948	Stellite	28,65	0,14	0,10		5,52	61,77	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106054

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*						RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	W	Co	
6,1	97.01.0798DLN(T)	Valve body	1	Heat : 437749 (Lot L24-0829)	MEST100670/2024/ - UT24004803	316/316L	16,49	10,16	2,17	1,93			OK
6,2	97.02.0012DLN(T)	Bonnet body isolate	1	Heat : 372648 (Lot F24-1037)	2023029311	316/316L	16,59	10,05	2,09	1,66			OK
6,3	97.03.0004DLN(T)	Stem isolate	1	Heat : 290765 (Lot F23-1878)	MEST056657/2023/1	316/316L	16,91	10,20	2,00	1,26			OK
6,4	97.04.0002S(T)	Tip isolate	1	Heat : 30948 (Lot F24-2661)	OR24 - 30948	Stellite	28,49	0,06	0,10		5,32	61,84	OK
6,5	97.02.0012DLN(T)	Bonnet body vent	1	Heat : 372648 (Lot F24-1037)	2023029311	316/316L	16,56	10,03	2,01	1,68			OK
6,6	97.03.0004DLN(T)	Stem vent	1	Heat : 290765 (Lot F23-1878)	MEST056657/2023/1	316/316L	17,08	10,20	2,09	1,37			OK
6,7	97.04.0002S(T)	Tip vent	1	Heat : 30948 (Lot F24-2661)	OR24 - 30948	Stellite	28,63	0,15	0,24		5,67	61,68	OK

indra VALVES - ITALY	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 500-2024_24-01216-p280 Data/*Date* : 11-Sep-2024	MD/PMI-MNF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	**COMMESSA INDRA** *Indra Job No.*	24 01216	**NR. D'ORDINE CLIENTE** *Customer Order No.*	1724000798 REV.2	**DEL** *Dated*	26-Jun-2024	**POSIZIONE D'ORDINE CLIENTE** *Customer Item*	280	**POSIZIONE D' ORDINE INDRA** *Indra Item*	280
Percentuale particolari da testare *Percentage of elements to be tested*		100%		**CODICE** *Code*	00.MNF.0604/V	**DESCRIZIONE** *Description*	D8B-737-HR-E300RF3-D-D-DLF-DL-N-K-G-HFT-Y123-L123-V2-TG-TGW-TV-DP-DP2-PMI2-PD2-GT FE2-FS-FE	**Q.tà da produrre (pz.)** *No. of pieces to be produced*	14		

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106055

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*						RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	W	Co	
7,1	97.01.0798DLN(T)	Valve body	1	Heat : 437749 (Lot L24-0829)	MEST100670/2024/ - UT24004803	316/316L	16,47	10,11	2,11	1,87			OK
7,2	97.02.0012DLN(T)	Bonnet body isolate	1	Heat : 372648 (Lot F24-1037)	2023029311	316/316L	16,56	10,01	2,02	1,69			OK
7,3	97.03.0004DLN(T)	Stem isolate	1	Heat : 290765 (Lot F23-1878)	MEST056657/2023/1	316/316L	17,24	10,24	2,05	1,41			OK
7,4	97.04.0002S(T)	Tip isolate	1	Heat : 30948 (Lot F24-2661)	OR24 - 30948	Stellite	28,42	0,19	0,25		5,25	61,65	OK
7,5	97.02.0012DLN(T)	Bonnet body vent	1	Heat : 372648 (Lot F24-1037)	2023029311	316/316L	16,52	10,05	2,06	1,71			OK
7,6	97.03.0004DLN(T)	Stem vent	1	Heat : 290765 (Lot F23-1878)	MEST056657/2023/1	316/316L	17,13	10,17	2,09	1,34			OK
7,7	97.04.0002S(T)	Tip vent	1	Heat : 30948 (Lot F24-2661)	OR24 - 30948	Stellite	28,64	0,20	0,12		5,50	61,66	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106056

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*						RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	W	Co	
8,1	97.01.0798DLN(T)	Valve body	1	Heat : 437749 (Lot L24-0829)	MEST100670/2024/ - UT24004803	316/316L	16,47	10,17	2,12	1,86			OK
8,2	97.02.0012DLN(T)	Bonnet body isolate	1	Heat : 372648 (Lot F24-1037)	2023029311	316/316L	16,46	10,07	2,05	1,71			OK
8,3	97.03.0004DLN(T)	Stem isolate	1	Heat : 290765 (Lot F23-1878)	MEST056657/2023/1	316/316L	17,14	10,20	2,02	1,25			OK
8,4	97.04.0002S(T)	Tip isolate	1	Heat : 30948 (Lot F24-2661)	OR24 - 30948	Stellite	28,65	0,14	0,26		5,51	61,73	OK
8,5	97.02.0012DLN(T)	Bonnet body vent	1	Heat : 372648 (Lot F24-1037)	2023029311	316/316L	16,45	10,07	2,05	1,70			OK
8,6	97.03.0004DLN(T)	Stem vent	1	Heat : 290765 (Lot F23-1878)	MEST056657/2023/1	316/316L	17,16	10,20	2,05	1,39			OK
8,7	97.04.0002S(T)	Tip vent	1	Heat : 30948 (Lot F24-2661)	OR24 - 30948	Stellite	28,36	0,07	0,14		5,55	61,61	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106057

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*						RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	W	Co	
9,1	97.01.0798DLN(T)	Valve body	1	Heat : 437749 (Lot L24-0829)	MEST100670/2024/ - UT24004803	316/316L	16,31	10,13	2,15	1,87			OK
9,2	97.02.0012DLN(T)	Bonnet body isolate	1	Heat : 372648 (Lot F24-1037)	2023029311	316/316L	16,66	10,00	2,00	1,69			OK
9,3	97.03.0004DLN(T)	Stem isolate	1	Heat : 290765 (Lot F23-1878)	MEST056657/2023/1	316/316L	17,08	10,26	2,02	1,37			OK
9,4	97.04.0002S(T)	Tip isolate	1	Heat : 30948 (Lot F24-2661)	OR24 - 30948	Stellite	28,37	0,17	0,18		5,55	61,51	OK
9,5	97.02.0012DLN(T)	Bonnet body vent	1	Heat : 372648 (Lot F24-1037)	2023029311	316/316L	16,64	10,10	2,04	1,78			OK
9,6	97.03.0004DLN(T)	Stem vent	1	Heat : 290765 (Lot F23-1878)	MEST056657/2023/1	316/316L	17,07	10,20	2,05	1,40			OK
9,7	97.04.0002S(T)	Tip vent	1	Heat : 30948 (Lot F24-2661)	OR24 - 30948	Stellite	28,37	0,06	0,16		5,29	61,60	OK

indra VALVES - ITALY	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 500-2024_24-01216-p280 Data/*Date* : 11-Sep-2024	MD/PMI-MNF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	COMMESSA INDRA *Indra Job No.*	24 01216	NR. D'ORDINE CLIENTE *Customer Order No.*	1724000798 REV.2	DEL *Dated*	26-Jun-2024	POSIZIONE D'ORDINE CLIENTE *Customer Item*	280	POSIZIONE D' ORDINE INDRA *Indra Item*	280
Percentuale particolari da testare *Percentage of elements to be tested*		100%		CODICE *Code*	00.MNF.0604/V	DESCRIZIONE *Description*	DBB-737-HR-E300RF3-D-D-DLF-DL-N-K-G-HFT-Y123-L123-V2-TG-TGW-TV-DP-DP2-PMI2-PD2-GT-FE2-FS-FE			Q.tà da produrre (pz.) *No. of pieces to be produced*	14

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106058

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*						RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	W	Co	
10,1	97.01.0798DLN(T)	Valve body	1	Heat : 437749 (Lot L24-0829)	MEST100670/2024/ - UT24004803	316/316L	16,39	10,20	2,19	1,82			OK
10,2	97.02.0012DLN(T)	Bonnet body isolate	1	Heat : 372648 (Lot F24-1037)	2023029311	316/316L	16,62	10,04	2,05	1,79			OK
10,3	97.03.0004DLN(T)	Stem isolate	1	Heat : 290765 (Lot F23-1878)	MEST056657/2023/1	316/316L	16,95	10,26	2,05	1,39			OK
10,4	97.04.0002S(T)	Tip isolate	1	Heat : 30948 (Lot F24-2661)	OR24 - 30948	Stellite	28,40	0,08	0,21		5,30	61,83	OK
10,5	97.02.0012DLN(T)	Bonnet body vent	1	Heat : 372648 (Lot F24-1037)	2023029311	316/316L	16,60	10,10	2,00	1,75			OK
10,6	97.03.0004DLN(T)	Stem vent	1	Heat : 290765 (Lot F23-1878)	MEST056657/2023/1	316/316L	16,91	10,28	2,00	1,29			OK
10,7	97.04.0002S(T)	Tip vent	1	Heat : 30948 (Lot F24-2661)	OR24 - 30948	Stellite	28,49	0,12	0,22		5,21	61,71	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106059

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*						RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	W	Co	
11,1	97.01.0798DLN(T)	Valve body	1	Heat : 437749 (Lot L24-0829)	MEST100670/2024/ - UT24004803	316/316L	16,39	10,12	2,19	1,93			OK
11,2	97.02.0012DLN(T)	Bonnet body isolate	1	Heat : 372648 (Lot F24-1037)	2023029311	316/316L	16,46	10,06	2,00	1,74			OK
11,3	97.03.0004DLN(T)	Stem isolate	1	Heat : 290765 (Lot F23-1878)	MEST056657/2023/1	316/316L	17,00	10,29	2,05	1,33			OK
11,4	97.04.0002S(T)	Tip isolate	1	Heat : 30948 (Lot F24-2661)	OR24 - 30948	Stellite	28,68	0,10	0,26		5,28	61,50	OK
11,5	97.02.0012DLN(T)	Bonnet body vent	1	Heat : 372648 (Lot F24-1037)	2023029311	316/316L	16,62	10,10	2,05	1,72			OK
11,6	97.03.0004DLN(T)	Stem vent	1	Heat : 290765 (Lot F23-1878)	MEST056657/2023/1	316/316L	17,07	10,19	2,06	1,29			OK
11,7	97.04.0002S(T)	Tip vent	1	Heat : 30948 (Lot F24-2661)	OR24 - 30948	Stellite	28,57	0,10	0,13		5,51	61,51	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106060

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*						RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	W	Co	
12,1	97.01.0798DLN(T)	Valve body	1	Heat : 437749 (Lot L24-0829)	MEST100670/2024/ - UT24004803	316/316L	16,35	10,15	2,14	1,93			OK
12,2	97.02.0012DLN(T)	Bonnet body isolate	1	Heat : 372648 (Lot F24-1037)	2023029311	316/316L	16,55	10,07	2,08	1,80			OK
12,3	97.03.0004DLN(T)	Stem isolate	1	Heat : 290765 (Lot F23-1878)	MEST056657/2023/1	316/316L	17,14	10,25	2,06	1,38			OK
12,4	97.04.0002S(T)	Tip isolate	1	Heat : 30948 (Lot F24-2661)	OR24 - 30948	Stellite	28,34	0,06	0,18		5,62	61,55	OK
12,5	97.02.0012DLN(T)	Bonnet body vent	1	Heat : 372648 (Lot F24-1037)	2023029311	316/316L	16,61	10,05	2,09	1,75			OK
12,6	97.03.0004DLN(T)	Stem vent	1	Heat : 290765 (Lot F23-1878)	MEST056657/2023/1	316/316L	17,12	10,24	2,00	1,25			OK
12,7	97.04.0002S(T)	Tip vent	1	Heat : 30948 (Lot F24-2661)	OR24 - 30948	Stellite	28,56	0,05	0,21		5,42	61,57	OK

indra VALVES - ITALY	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 500-2024_24-01216-p280 Data/*Date* : 11-Sep-2024	MD/PMI-MNF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	COMMESSA INDRA *Indra Job No.*	24 01216	NR. D'ORDINE CLIENTE *Customer Order No.*	1724000798 REV.2	DEL *Dated*	26-Jun-2024	POSIZIONE D'ORDINE CLIENTE *Customer Item*	280	POSIZIONE D' ORDINE INDRA *Indra Item*	280
Percentuale particolari da testare *Percentage of elements to be tested*		100%		CODICE *Code*	00.MNF.0604/V	DESCRIZIONE *Description*	DBB-737-HR-E300RF3-D-D-DLF-DL-N-K-G-HFT-Y123-L123-V2-TG-TGW-TV-DP-DP2-PMI2-PD2-GT FE2-FS-FE	Q.tà da produrre (pz.) *No. of pieces to be produced*	14		

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106061

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*						RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	W	Co	
13,1	97.01.0798DLN(T)	Valve body	1	Heat : 437749 (Lot L24-0829)	MEST100670/2024/ - UT24004803	316/316L	16,44	10,23	2,15	1,93			OK
13,2	97.02.0012DLN(T)	Bonnet body isolate	1	Heat : 372648 (Lot F24-1037)	2023029311	316/316L	16,58	10,10	2,08	1,74			OK
13,3	97.03.0004DLN(T)	Stem isolate	1	Heat : 290765 (Lot F23-1878)	MEST056657/2023/1	316/316L	17,10	10,17	2,05	1,39			OK
13,4	97.04.0002S(T)	Tip isolate	1	Heat : 30948 (Lot F24-2661)	OR24 - 30948	Stellite	28,51	0,14	0,24		5,41	61,80	OK
13,5	97.02.0012DLN(T)	Bonnet body vent	1	Heat : 372648 (Lot F24-1037)	2023029311	316/316L	16,58	10,10	2,05	1,80			OK
13,6	97.03.0004DLN(T)	Stem vent	1	Heat : 290765 (Lot F23-1878)	MEST056657/2023/1	316/316L	17,01	10,17	2,03	1,34			OK
13,7	97.04.0002S(T)	Tip vent	1	Heat : 30948 (Lot F24-2661)	OR24 - 30948	Stellite	28,50	0,15	0,15		5,54	61,66	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106062

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*						RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	W	Co	
14,1	97.01.0798DLN(T)	Valve body	1	Heat : 437749 (Lot L24-0829)	MEST100670/2024/ - UT24004803	316/316L	16,35	10,18	2,12	1,91			OK
14,2	97.02.0012DLN(T)	Bonnet body isolate	1	Heat : 372648 (Lot F24-1037)	2023029311	316/316L	16,50	10,00	2,08	1,67			OK
14,3	97.03.0004DLN(T)	Stem isolate	1	Heat : 290765 (Lot F23-1878)	MEST056657/2023/1	316/316L	17,20	10,17	2,10	1,42			OK
14,4	97.04.0002S(T)	Tip isolate	1	Heat : 30948 (Lot F24-2661)	OR24 - 30948	Stellite	28,33	0,13	0,28		5,31	61,73	OK
14,5	97.02.0012DLN(T)	Bonnet body vent	1	Heat : 372648 (Lot F24-1037)	2023029311	316/316L	16,58	10,02	2,04	1,75			OK
14,6	97.03.0004DLN(T)	Stem vent	1	Heat : 290765 (Lot F23-1878)	MEST056657/2023/1	316/316L	17,24	10,29	2,04	1,31			OK
14,7	97.04.0002S(T)	Tip vent	1	Heat : 30948 (Lot F24-2661)	OR24 - 30948	Stellite	28,50	0,07	0,17		5,43	61,62	OK

x CROSSWIND
9/10/24 R

NOTE / *Remarks* : PMI 100% on body and wetted parts According to NDT PROCEDURE - PT/PMI Rev.14	Data prelievo componenti / *Date of components picking* : 11-Sep-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Testing instrument: X-Ray analyzer NITON XL2 980 GOLDD	Data verifica componenti / *Date of components verification* : 11-Sep-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Serial number: 85044 - expiry 15-November-2024	Data esecuzione PMI TEST / *Date of PMI TEST execution* : 11-Sep-2024	Firma /*Signature* THOMAS PETITTI PMI OPERATOR

CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 280 NS.POS/OUR ITEM 280 VS.COD./YOUR CODE VLBMNN00013Q0H NS.COD./OUR CODE 00.MNF.0604/V (14 PCS)

indra VALVES - ITALY	**PENETRANT TEST REPORT (PT)**	**MD-02-29** rev.02 Date 28-11-2022

Certificato No.	PT-122-2024	Internal Indra Order No.:	OE 019795,019857, 019797,019859	
Customer:	ROSETTI MARINO SPA	**Qty:**	14 + 42 + 4 + 8	Batch no.:
Code: →	97.01.0798DLN(T)	Description:	BODY	L24-0829-437749
→	97.02.0012DLN(T)		BONNET BODY	F24-1037-372648
	97.01.0903DLN(T)		BODY	L24-0831-437405
	97.02.0012DLN(T)		BONNET BODY	F24-1037-372648
Acceptance Standards:	Asme V art.6 Asme VIII Div.1 app.8			
Procedure:	*Indra Procedure PT-DP-01 (24-01216) Rev.0 dated 06-09-2024 EN 10204 3.1 ed 2004*			
Equipment:	*Luxmetro,white lamp, liquid penetrant*			

Test Conditions:

Test Surface:	EXTERNAL SIDE	INTERNAL SIDE	Surface Condition:	MACHINED
Penetrant Time: 20 min	Drying Time: 10 min	Development Time: 20 min	Cleaner:	SOLVENT-ALCOHOL
Natural Light: > 1100 Lux				
Type of Penetrant	08.122 K71B2	Batch no.	220127/BI	
Type of Developer	D112A	Batch no.	231106W150s	
Type of Removal	WATER			
Results:	ACCEPTABLE			

Note:
The inspection was conducted 100% of the surface

× CROSSWIND
9/10/24 R

Operator: Nicholas Sacchetti (LEVEL 2 acc. EN 9712:2012)	Signature:	Approved: Lucia Nosotti (RSQ)	Signature:
INDRA SRL VIA NOVARA 10/B-C / 20013 MAGENTA (MI)	Approval of Customer:		Date: 12 September 2024

indra VALVES - ITALY	**Project:** CROSSWIND 24 01216 / pos 280 - 00.MNF.0604/V PO 1724000798 REV.2 pos 280 - VLBMNN00013Q0H	
HARDNESS TEST REPORT **EN 10204 3.1 ed 2004**	**Client:** ROSETTI MARINO SPA	**Report No.:** 015 **Date:** 12-Sep-2024 **Page 1 of 2**

Location/area: Indra S.r.l Magenta (MI)		**Material:** 316/316L

Testing instrument: Durometer 1600 HV
Serial Number: 32159000013 - expiry 17-April-2027
Hardness Test Procedure: PT-HT (24-01216) Rev. 0

Surface preparation:

Grinding	Machined X	Lapping	Filling	Other

Test position: see below table

Measuring unit:

Rockwell C(HRC)	**Brinell (HB) x**	**Shore**
Rockwell B(HRB)	**Vickers (HV)**	

Location	HARDNESS (average value)						
Valve body S.N 106049	172						
Bonnet body isolate 1 S.N 106049	214						
Bonnet body isolate 2 S.N 106049	222						
Bonnet body vent S.N 106049	224						
Valve body S.N 106050	170						
Bonnet body isolate 1 S.N 106050	207						
Bonnet body isolate 2 S.N 106050	218						
Bonnet body vent S.N 106050	214						
Valve body S.N 106051	170						
Bonnet body isolate 1 S.N 106051	209						
Bonnet body isolate 2 S.N 106051	221						
Bonnet body vent S.N 106051	218						
Valve body S.N 106052	169						
Bonnet body isolate 1 S.N 106052	224						
Bonnet body isolate 2 S.N 106052	201						
Bonnet body vent S.N 106052	213						
Valve body S.N 106053	171						
Bonnet body isolate 1 S.N 106053	220						
Bonnet body isolate 2 S.N 106053	224						
Bonnet body vent S.N 106053	206						

x CROSSWIND
3/10/24 R

indra VALVES - ITALY

Project: CROSSWIND
24 01216 / pos 280 - 00.MNF.0604/V
PO 1724000798 REV.2 pos 280 - VLBMNN00013Q0H

HARDNESS TEST REPORT

EN 10204 3.1 ed 2004

Client: ROSETTI MARINO SPA

Report No.: 015
Date: 12-Sep-2024

Location	HARDNESS						
Valve body S.N 106054	160						
Bonnet body isolate 1 S.N 106054	213						
Bonnet body isolate 2 S.N 106054	201						
Bonnet body vent S.N 106054	207						
Valve body S.N 106055	164						
Bonnet body isolate 1 S.N 106055	214						
Bonnet body isolate 2 S.N 106055	215						
Bonnet body vent S.N 106055	203						
Valve body S.N 106056	173						
Bonnet body isolate 1 S.N 106056	210						
Bonnet body isolate 2 S.N 106056	209						
Bonnet body vent S.N 106056	207						
Valve body S.N 106057	171						
Bonnet body isolate 1 S.N 106057	213						
Bonnet body isolate 2 S.N 106057	218						
Bonnet body vent S.N 106057	210						
Valve body S.N 106058	175						
Bonnet body isolate 1 S.N 106058	209						
Bonnet body isolate 2 S.N 106058	219						
Bonnet body vent S.N 106058	215						
Valve body S.N 106059	169						
Bonnet body isolate 1 S.N 106059	214						
Bonnet body isolate 2 S.N 106059	215						
Bonnet body vent S.N 106059	208						
Valve body S.N 106060	181						
Bonnet body isolate 1 S.N 106060	206						
Bonnet body isolate 2 S.N 106060	222						
Bonnet body vent S.N 106060	221						
Valve body S.N 106061	164						
Bonnet body isolate 1 S.N 106061	200						
Bonnet body isolate 2 S.N 106061	223						
Bonnet body vent S.N 106061	204						
Valve body S.N 106062	177						
Bonnet body isolate 1 S.N 106062	209						
Bonnet body isolate 2 S.N 106062	219						
Bonnet body vent S.N 106062	216						

Sketch: 97.01.0798DLN(T) - 97.02.0012DLN(T)

Quality control	TPI Inspection	Client
Name: Petitti Thomas	Name:	Name:
Sign: TP	Sign:	Sign:
Date: 12-Sep-2024	Date:	Date:

x CROSSWIND
9/10/24

ROSETTI MARINO ITEM 290

COD. VLBNNN00023Q0H

TAG:

BLPH-MV-025, BLPH-MV-038,

BLPH-MV-213, BLPH-MV-407

INDRA ITEM 290

COD. 00.MNF.0608/V

CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 290 NS.POS/OUR ITEM 290 VS.COD./YOUR CODE VLBNNN00023Q0H NS.COD./OUR CODE 00.MNF.0608/V (4 PCS)

indra VALVES - ITALY	**PENETRANT TEST REPORT (PT)**	**MD-02-29** rev.02 Date 28-11-2022

Certificato No.	PT-122-2024	Internal Indra Order No.:	OE 019795,019857, 019797,019859	
Customer:	ROSETTI MARINO SPA	**Qty:**	14 + 42 + 4 + 8	Batch no.:
Code:	97.01.0798DLN(T)	Description:	BODY	L24-0829-437749
	97.02.0012DLN(T)		BONNET BODY	F24-1037-372648
→	97.01.0903DLN(T)		BODY	L24-0831-437405
→	97.02.0012DLN(T)		BONNET BODY	F24-1037-372648
Acceptance Standards:	Asme V art.6 Asme VIII Div.1 app.8			
Procedure:	*Indra Procedure PT-DP-01 (24-01216) Rev.0 dated 06-09-2024 EN 10204 3.1 ed 2004*			
Equipment:	*Luxmetro,white lamp, liquid penetrant*			

Test Conditions:

Test Surface:	EXTERNAL SIDE	INTERNAL SIDE	Surface Condition:	MACHINED
Penetrant Time: 20 min	Drying Time: 10 min	Development Time: 20 min	Cleaner:	SOLVENT-ALCOHOL
Natural Light: > 1100 Lux				
Type of Penetrant	08.122 K71B2	Batch no.	220127/BI	
Type of Developer	D112A	Batch no.	231106W150s	
Type of Removal	WATER			
Results:	ACCEPTABLE			

Note:
The inspection was conducted 100% of the surface

x CROSSWIND
31/10/24

Operator: Nicholas Sacchetti (LEVEL 2 acc. EN 9712:2012)	Signature:	Approved: Lucia Nosotti (RSQ)	Signature:
INDRA SRL VIA NOVARA 10/B-C / 20013 MAGENTA (MI)	Approval of Customer:		Date: 12 September 2024

indra VALVES - ITALY	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 496-2024_24-01216-p290 Data/*Date* : 11-Sep-2024	MD/PMI-MNF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	COMMESSA INDRA *Indra Job No.*	24 01216	NR. D'ORDINE CLIENTE *Customer Order No.*	1724000798 REV.2	DEL *Dated*	26-Jun-2024	POSIZIONE D'ORDINE CLIENTE *Customer Item*	290	POSIZIONE D' ORDINE INDRA *Indra Item*	290
Percentuale particolari da testare *Percentage of elements to be tested*		100%		CODICE *Code*	00.MNF.0608/V	DESCRIZIONE *Description*	SBB-727-HR-E150RF3-D-D-DLF-DL-N-K-G-MFT-Y13-L13-V2-TG-TGW-TV-DP-DP2-PMI2-PD2-GT-FE2-FS-FE-SPC1	Q.tà da produrre (pz.) *No. of pieces to be produced*	4		

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106063

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*						RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	W	Co	
1,1	97.01.0903DLN(T)	Valve body	1	Heat : 437405 (Lot L24-0831)	MEST053965/2024/ - UT24002497	316/316L	16,45	10,43	2,16	1,64			OK
1,2	97.02.0012DLN(T)	Bonnet body isolate	1	Heat : 372648 (Lot F24-1037)	2023029311	316/316L	16,67	10,35	2,11	1,65			OK
1,3	97.03.0004DLN(T)	Stem isolate	1	Heat : 290765 (Lot F23-1878)	MEST056657/2023/1	316/316L	16,73	10,43	2,10	1,51			OK
1,4	97.04.0002S(T)	Tip isolate	1	Heat : 30948 (Lot F24-2661)	OR24 - 30948	Stellite	28,68	0,14	0,05		5,73	61,75	OK
1,5	97.02.0012DLN(T)	Bonnet body vent	1	Heat : 372648 (Lot F24-1037)	2023029311	316/316L	16,73	10,26	2,17	1,70			OK
1,6	97.03.0004DLN(T)	Stem vent	1	Heat : 290765 (Lot F23-1878)	MEST056657/2023/1	316/316L	16,73	10,47	2,16	1,48			OK
1,7	97.04.0002S(T)	Tip vent	1	Heat : 30948 (Lot F24-2661)	OR24 - 30948	Stellite	28,73	0,22	0,15		5,68	61,83	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106064

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*						RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	W	Co	
2,1	97.01.0903DLN(T)	Valve body	1	Heat : 437405 (Lot L24-0831)	MEST053965/2024/ - UT24002497	316/316L	16,55	10,35	2,19	1,66			OK
2,2	97.02.0012DLN(T)	Bonnet body isolate	1	Heat : 372648 (Lot F24-1037)	2023029311	316/316L	16,80	10,36	2,14	1,69			OK
2,3	97.03.0004DLN(T)	Stem isolate	1	Heat : 290765 (Lot F23-1878)	MEST056657/2023/1	316/316L	16,61	10,44	2,10	1,57			OK
2,4	97.04.0002S(T)	Tip isolate	1	Heat : 30948 (Lot F24-2661)	OR24 - 30948	Stellite	28,55	0,20	0,13		5,69	61,85	OK
2,5	97.02.0012DLN(T)	Bonnet body vent	1	Heat : 372648 (Lot F24-1037)	2023029311	316/316L	16,75	10,29	2,16	1,66			OK
2,6	97.03.0004DLN(T)	Stem vent	1	Heat : 290765 (Lot F23-1878)	MEST056657/2023/1	316/316L	16,80	10,43	2,19	1,57			OK
2,7	97.04.0002S(T)	Tip vent	1	Heat : 30948 (Lot F24-2661)	OR24 - 30948	Stellite	28,62	0,25	0,12		5,70	61,91	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106065

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*						RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	W	Co	
3,1	97.01.0903DLN(T)	Valve body	1	Heat : 437405 (Lot L24-0831)	MEST053965/2024/ - UT24002497	316/316L	16,42	10,36	2,19	1,69			OK
3,2	97.02.0012DLN(T)	Bonnet body isolate	1	Heat : 372648 (Lot F24-1037)	2023029311	316/316L	16,66	10,27	2,16	1,66			OK
3,3	97.03.0004DLN(T)	Stem isolate	1	Heat : 290765 (Lot F23-1878)	MEST056657/2023/1	316/316L	16,77	10,37	2,12	1,57			OK
3,4	97.04.0002S(T)	Tip isolate	1	Heat : 30948 (Lot F24-2661)	OR24 - 30948	Stellite	28,53	0,33	0,07		5,72	61,77	OK
3,5	97.02.0012DLN(T)	Bonnet body vent	1	Heat : 372648 (Lot F24-1037)	2023029311	316/316L	16,73	10,32	2,16	1,65			OK
3,6	97.03.0004DLN(T)	Stem vent	1	Heat : 290765 (Lot F23-1878)	MEST056657/2023/1	316/316L	16,70	10,37	2,13	1,55			OK
3,7	97.04.0002S(T)	Tip vent	1	Heat : 30948 (Lot F24-2661)	OR24 - 30948	Stellite	28,61	0,20	0,11		5,55	61,84	OK

indra VALVES - ITALY	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 496-2024_24-01216-p290 Data/*Date* : 11-Sep-2024	MD/PMI-MNF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	**COMMESSA INDRA** *Indra Job No.*	24 01216	**NR. D'ORDINE CLIENTE** *Customer Order No.*	1724000798 REV.2	**DEL** *Dated*	26-Jun-2024	**POSIZIONE D'ORDINE CLIENTE** *Customer Item*	290	**POSIZIONE D' ORDINE INDRA** *Indra Item*	290
Percentuale particolari da testare *Percentage of elements to be tested*		100%		**CODICE** *Code*	00.MNF.0608/V	**DESCRIZIONE** *Description*	SBB-727-HR-E150RF3-D-D-DLF-DL-N-K-G-HFT-Y13-L13-V2-TG-TGW-TV-DP-DP2-PMI2-PD2-GT-FE2-FS-FE-SPC1	**Q.tà da produrre (pz.)** *No. of pieces to be produced*	4		

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106066

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*						RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	W	Co	
4,1	97.01.0903DLN(T)	Valve body	1	Heat : 437405 (Lot L24-0831)	MEST053965/2024/ - UT24002497	316/316L	16,49	10,38	2,24	1,57			OK
4,2	97.02.0012DLN(T)	Bonnet body isolate	1	Heat : 372648 (Lot F24-1037)	2023029311	316/316L	16,75	10,36	2,11	1,70			OK
4,3	97.03.0004DLN(T)	Stem isolate	1	Heat : 290765 (Lot F23-1878)	MEST056657/2023/1	316/316L	16,80	10,44	2,15	1,48			OK
4,4	97.04.0002S(T)	Tip isolate	1	Heat : 30948 (Lot F24-2661)	OR24 - 30948	Stellite	28,59	0,24	0,10		5,51	61,86	OK
4,5	97.02.0012DLN(T)	Bonnet body vent	1	Heat : 372648 (Lot F24-1037)	2023029311	316/316L	16,71	10,39	2,14	1,72			OK
4,6	97.03.0004DLN(T)	Stem vent	1	Heat : 290765 (Lot F23-1878)	MEST056657/2023/1	316/316L	16,73	10,49	2,18	1,57			OK
4,7	97.04.0002S(T)	Tip vent	1	Heat : 30948 (Lot F24-2661)	OR24 - 30948	Stellite	28,53	0,24	0,14		5,59	91,95	OK

X CROSSMIND
9/10/24 R

NOTE / *Remarks* : PMI 100% on body and wetted parts According to NDT PROCEDURE - PT/PMI Rev.14	Data prelievo componenti / *Date of components picking* : 11-Sep-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Testing instrument: X-Ray analyzer NITON XL2 980 GOLDD	Data verifica componenti / *Date of components verification* : 11-Sep-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Serial number: 85044 - expiry 15-November-2024	Data esecuzione PMI TEST / *Date of PMI TEST execution* : 11-Sep-2024	Firma /*Signature* THOMAS PETITTI PMI OPERATOR

indra VALVES - ITALY	**Project:** CROSSWIND 24 01216 / pos 290 - 00.MNF.0608/V PO 1724000798 REV.2 pos 290 - VLBNNN00023Q0H	
HARDNESS TEST REPORT **EN 10204 3.1 ed 2004**	**Client:** ROSETTI MARINO SPA	**Report No.:** 014 **Date:** 12-Sep-2024 **Page 1 of 1**

Location/area: Indra S.r.l Magenta (MI)		**Material:** 316/316L

Testing instrument: Durometer 1600 HV
Serial Number: 32159000013 - expiry 17-April-2027
Hardness Test Procedure: PT-HT (24-01216) Rev. 0

Surface preparation:

Grinding	Machined X	Lapping	Filling	Other

Test position: see below table

Measuring unit:

Rockwell C(HRC)	**Brinell (HB) x**	**Shore**
Rockwell B(HRB)	**Vickers (HV)**	

Location	HARDNESS (average value)						
Valve body S.N 106063	178						
Bonnet body isolate S.N 106063	116						
Bonnet body vent S.N 106063	112						
Valve body S.N 106064	182						
Bonnet body isolate S.N 106064	111						
Bonnet body vent S.N 106064	111						
Valve body S.N 106065	170						
Bonnet body isolate S.N 106065	115						
Bonnet body vent S.N 106065	109						
Valve body S.N 106066	184						
Bonnet body isolate S.N 106066	112						
Bonnet body vent S.N 106066	110						

Sketch: 97.01.0903DLN(T) - 97.02.0012DLN(T)

x CROSSWIND
3/10/24

Quality control	TPI Inspection	Client
Name: Petitti Thomas	Name:	Name:
Sign: TP	Sign:	Sign:
Date: 12-Sep-2024	Date:	Date:

ROSETTI MARINO ITEM 300

COD. VLBNNN00033Q0H

TAG:

BLPH-MV-150, BLPH-MV-151

INDRA ITEM 300

COD. 00.MNF.0605/V

indra VALVES - ITALY	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT			Cert. n° : 497-2024_24-01216-p300 Data/*Date* : 11-Sep-2024						MD/PMI-MNF Rev.4-Dec/2022	
CLIENTE *Customer*	ROSETTI MARINO SPA	**COMMESSA INDRA** *Indra Job No.*	24 01216	**NR. D'ORDINE CLIENTE** *Customer Order No.*	1724000798 REV.2	**DEL** *Dated*	26-Jun-2024	**POSIZIONE D'ORDINE CLIENTE** *Customer Item*	300	**POSIZIONE D' ORDINE INDRA** *Indra Item*	300
Percentuale particolari da testare *Percentage of elements to be tested*		100%		**CODICE** *Code*	00.MNF.0605/V	**DESCRIZIONE** *Description*	SBB-727-E150RF3-D-D-DLF-DL-N-K-G-HFT-Y13-L13-V2-TG-TGW-TV-PMI2-PD2-FS-SPC1			**Q.tà da produrre (pz.)** *No. of pieces to be produced*	2

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106067

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*						RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	W	Co	
1,1	97.01.0903DLN(T)	Valve body	1	Heat : 437405 (Lot L24-0831)	MEST053965/2024/ - UT24002497	316/316L	16,43	10,56	2,25	1,62			OK
1,2	97.02.0012DLN(T)	Bonnet body isolate	1	Heat : 372648 (Lot F24-1037)	2023029311	316/316L	16,46	10,74	2,13	1,49			OK
1,3	97.03.0004DLN(T)	Stem isolate	1	Heat : 290765 (Lot F23-1878)	MEST056657/2023/1	316/316L	16,95	10,13	2,03	1,48			OK
1,4	97.04.0002S(T)	Tip isolate	1	Heat : 30948 (Lot F24-2661)	OR24 - 30948	Stellite	28,40	0,23	0,12		5,48	61,92	OK
1,5	97.02.0012DLN(T)	Bonnet body vent	1	Heat : 372648 (Lot F24-1037)	2023029311	316/316L	16,62	10,33	2,11	1,55			OK
1,6	97.03.0004DLN(T)	Stem vent	1	Heat : 290765 (Lot F23-1878)	MEST056657/2023/1	316/316L	16,81	10,27	2,09	1,50			OK
1,7	97.04.0002S(T)	Tip vent	1	Heat : 30948 (Lot F24-2661)	OR24 - 30948	Stellite	28,59	0,21	0,12		5,73	61,71	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106068

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*						RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	W	Co	
2,1	97.01.0903DLN(T)	Valve body	1	Heat : 437405 (Lot L24-0831)	MEST053965/2024/ - UT24002497	316/316L	16,51	10,44	2,20	1,59			OK
2,2	97.02.0012DLN(T)	Bonnet body isolate	1	Heat : 372648 (Lot F24-1037)	2023029311	316/316L	16,51	10,63	2,10	1,41			OK
2,3	97.03.0004DLN(T)	Stem isolate	1	Heat : 290765 (Lot F23-1878)	MEST056657/2023/1	316/316L	16,84	10,09	2,05	1,50			OK
2,4	97.04.0002S(T)	Tip isolate	1	Heat : 30948 (Lot F24-2661)	OR24 - 30948	Stellite	28,49	0,33	0,10		5,24	61,68	OK
2,5	97.02.0012DLN(T)	Bonnet body vent	1	Heat : 372648 (Lot F24-1037)	2023029311	316/316L	16,42	10,33	2,11	1,55			OK
2,6	97.03.0004DLN(T)	Stem vent	1	Heat : 290765 (Lot F23-1878)	MEST056657/2023/1	316/316L	16,83	10,34	2,12	1,41			OK
2,7	97.04.0002S(T)	Tip vent	1	Heat : 30948 (Lot F24-2661)	OR24 - 30948	Stellite	28,70	0,19	0,15		5,80	61,73	OK

x CROSSWIND
9/10/24 R

NOTE / *Remarks* : PMI 100% on body and wetted parts According to NDT PROCEDURE - PT/PMI Rev.14	Data prelievo componenti / *Date of components picking* : 11-Sep-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Testing instrument: X-Ray analyzer NITON XL2 980 GOLDD	Data verifica componenti / *Date of components verification* : 11-Sep-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Serial number: 85044 - expiry 15-November-2024	Data esecuzione PMI TEST / *Date of PMI TEST execution* : 11-Sep-2024	Firma /*Signature* THOMAS PETITTI PMI OPERATOR

indra VALVES - ITALY	**Project:** CROSSWIND 24 01216 / pos 300 - 00.MNF.0605/V PO 1724000798 REV.2 pos 300 - VLBNNN00033Q0H		
HARDNESS TEST REPORT **EN 10204 3.1 ed 2004**	**Client:** ROSETTI MARINO SPA	**Report No.:** 010 **Date:** 12-Sep-2024 **Page 1 of 1**	

Location/area: Indra S.r.l Magenta (MI)		**Material:** 316/316L

Testing instrument: Durometer 1600 HV
Serial Number: 32159000013 - expiry 17-April-2027
Hardness Test Procedure: PT-HT (24-01216) Rev. 0

Surface preparation:

Grinding	Machined X	Lapping	Filling	Other

Test position: see below table

Measuring unit:

Rockwell C(HRC)	**Brinell (HB) x**	**Shore**
Rockwell B(HRB)	**Vickers (HV)**	

Location	HARDNESS (average value)						
Valve body S.N 106067	171						
Bonnet body isolate S.N 106067	119						
Bonnet body vent S.N 106067	124						
Valve body S.N 106068	167						
Bonnet body isolate S.N 106068	128						
Bonnet body vent S.N 106068	115						

Sketch: 97.01.0903DLN(T) - 97.02.0012DLN(T)

x CROSSWIND 9/10/24

Quality control	TPI Inspection	Client
Name: Petitti Thomas	Name:	Name:
Sign:	Sign:	Sign:
Date: 12-Sep-2024	Date:	Date:

ROSETTI MARINO ITEM 310

COD. VLBNNN00063Q0H

TAG:

BLPH-MV-166, BLPH-MV-167,

BLPH-MV-386

INDRA ITEM 310

COD. 00.MNF.0612/V

	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 498-2024_24-01216-p310 Data/*Date* : 11-Sep-2024	MD/PMI-MNF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	**COMMESSA INDRA** *Indra Job No.*	24 01216	**NR. D'ORDINE CLIENTE** *Customer Order No.*	1724000798 REV.2	**DEL** *Dated*	26-Jun-2024	**POSIZIONE D'ORDINE CLIENTE** *Customer Item*	310	**POSIZIONE D' ORDINE INDRA** *Indra Item*	310
Percentuale particolari da testare *Percentage of elements to be tested*		100%		**CODICE** *Code*	00.MNF.0612/V	**DESCRIZIONE** *Description*	SBB-727-E150RF3-D-D-LF2-DL-CA3-N-G-HFT-Y13-L13-V2-TG-TGW-TV-PMI2-PD2-FS-SPC1	**Q.tà da produrre (pz.)** *No. of pieces to be produced*		3	

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106069

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*						RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	W	Co	
1,1	97.03.0004DLN(T)	Stem isolate	1	Heat : 290765 (Lot F23-1878)	MEST056657/2023/1	316/316L	16,82	10,40	2,17	1,37			OK
1,2	97.04.0002S(T)	Tip isolate	1	Heat : 30948 (Lot F24-2661)	OR24 - 30948	Stellite	28,76	0,19	0,26		5,51	61,46	OK
1,3	97.03.0004DLN(T)	Stem vent	1	Heat : 290765 (Lot F23-1878)	MEST056657/2023/1	316/316L	16,84	10,77	2,13	1,21			OK
1,4	97.04.0002S(T)	Tip vent	1	Heat : 30948 (Lot F24-2661)	OR24 - 30948	Stellite	28,76	0,17	0,25		5,63	61,40	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106070

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*						RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	W	Co	
2,1	97.03.0004DLN(T)	Stem isolate	1	Heat : 290765 (Lot F23-1878)	MEST056657/2023/1	316/316L	16,85	10,54	2,07	1,47			OK
2,2	97.04.0002S(T)	Tip isolate	1	Heat : 30948 (Lot F24-2661)	OR24 - 30948	Stellite	28,85	0,26	0,26		5,69	61,57	OK
2,3	97.03.0004DLN(T)	Stem vent	1	Heat : 290765 (Lot F23-1878)	MEST056657/2023/1	316/316L	16,67	10,65	2,17	1,33			OK
2,4	97.04.0002S(T)	Tip vent	1	Heat : 30948 (Lot F24-2661)	OR24 - 30948	Stellite	28,51	0,25	0,29		5,28	61,87	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106071

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*						RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	W	Co	
3,1	97.03.0004DLN(T)	Stem isolate	1	Heat : 290765 (Lot F23-1878)	MEST056657/2023/1	316/316L	16,85	10,52	2,20	1,20			OK
3,2	97.04.0002S(T)	Tip isolate	1	Heat : 30948 (Lot F24-2661)	OR24 - 30948	Stellite	28,88	0,19	0,21		5,41	61,43	OK
3,3	97.03.0004DLN(T)	Stem vent	1	Heat : 290765 (Lot F23-1878)	MEST056657/2023/1	316/316L	16,63	10,65	2,10	1,49			OK
3,4	97.04.0002S(T)	Tip vent	1	Heat : 30948 (Lot F24-2661)	OR24 - 30948	Stellite	28,66	0,25	0,16		5,32	61,44	OK

xCROSSWIND
Stellite R

NOTE / *Remarks* : PMI 100% on wetted parts (excluded carbon steel) According to NDT PROCEDURE - PT/PMI Rev.14 Testing instrument: X-Ray analyzer NITON XL2 980 GOLDD Serial number: 85044 - expiry 15-November-2024	Data prelievo componenti / *Date of components picking* : 11-Sep-2024 Data verifica componenti / *Date of components verification* : 11-Sep-2024 Data esecuzione PMI TEST / *Date of PMI TEST execution* : 11-Sep-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR Firma /*Signature* THOMAS PETITTI PMI OPERATOR

indra VALVES - ITALY	**Project:** CROSSWIND 24 01216 / pos 310 - 00.MNF.0612/V PO 1724000798 REV.2 pos 310 - VLBNNN00063Q0H	
HARDNESS TEST REPORT **EN 10204 3.1 ed 2004**	**Client:** ROSETTI MARINO SPA	**Report No.:** 011 **Date:** 12-Sep-2024 **Page 1 of 1**

Location/area: Indra S.r.l Magenta (MI)		**Material:** ASTM A350 LF2

Testing instrument: Durometer 1600 HV
Serial Number: 32159000013 - expiry 17-April-2027
Hardness Test Procedure: PT-HT (24-01216) Rev. 0

Surface preparation:

Grinding	Machined X	Lapping	Filling	Other

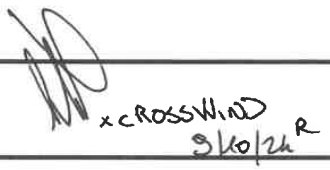
Test position: see below table

Measuring unit:

Rockwell C(HRC)	**Brinell (HB) x**	**Shore**
Rockwell B(HRB)	**Vickers (HV)**	

Location	HARDNESS (average value)						
Valve body S.N 106069	140						
Bonnet body isolate S.N 106069	113						
Bonnet body vent S.N 106069	109						
Valve body S.N 106070	136						
Bonnet body isolate S.N 106070	119						
Bonnet body vent S.N 106070	111						
Valve body S.N 106071	142						
Bonnet body isolate S.N 106071	110						
Bonnet body vent S.N 106071	114						

Sketch: 97.01.0903LF2N(T) - 97.02.0012LF2N(T)



Quality control	TPI Inspection	Client
Name: Petitti Thomas	Name:	Name:
Sign:	Sign:	Sign:
Date: 12-Sep-2024	Date:	Date:

indra VALVES - ITALY	**Project:** CROSSWIND 24 01216 / pos 320 - 00.MNF.0606/V PO 1724000798 REV.2 pos 320 - VLBNNN00063Q0H	
HARDNESS TEST REPORT **EN 10204 3.1 ed 2004**	**Client:** ROSETTI MARINO SPA	**Report No.:** 012 **Date:** 12-Sep-2024 **Page 1 of 1**

Location/area: Indra S.r.l Magenta (MI)		**Material:** ASTM A350 LF2

Testing instrument: Durometer 1600 HV
Serial Number: 32159000013 - expiry 17-April-2027
Hardness Test Procedure: PT-HT (24-01216) Rev. 0

Surface preparation:

Grinding	Machined X	Lapping	Filling	Other

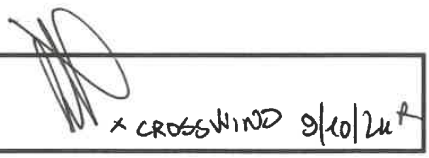
Test position: see below table

Measuring unit:

Rockwell C(HRC)	**Brinell (HB) x**	**Shore**
Rockwell B(HRB)	**Vickers (HV)**	

Location	HARDNESS (average value)						
Valve body S.N 106072	145						
Bonnet body isolate S.N 106072	105						
Bonnet body vent S.N 106072	101						

Sketch: 97.01.0903LF2N(T) - 97.02.0007LF2N(T)



Quality control	TPI Inspection	Client
Name: Petitti Thomas	Name:	Name:
Sign:	Sign:	Sign:
Date: 12-Sep-2024	Date:	Date:

ROSETTI MARINO ITEM 320

COD. VLBNNN00063Q0H

TAG:

BLPH-MV-411

INDRA ITEM 320

COD. 00.MNF.0606/V

indra VALVES - ITALY	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT			Cert. n° : 499-2024_24-01216-p320 Data/*Date* : 11-Sep-2024						MD/PMI-MNF Rev.4-Dec/2022	
CLIENTE *Customer*	ROSETTI MARINO SPA	**COMMESSA INDRA** *Indra Job No.*	24 01216	**NR. D'ORDINE CLIENTE** *Customer Order No.*	1724000798 REV.2	**DEL** *Dated*	26-Jun-2024	**POSIZIONE D'ORDINE CLIENTE** *Customer Item*	320	**POSIZIONE D' ORDINE INDRA** *Indra Item*	320
Percentuale particolari da testare *Percentage of elements to be tested*		100%		**CODICE** *Code*	00.MNF.0606/V	**DESCRIZIONE** *Description*	SBB-727-E150RF3-D-D-LF2-DL-CA3-N-G-HFT-EXS100-EXY13-L13-V2-TG-TGW-TV-PMI2-PD2-FS-SPC1			**Q.tà da produrre (pz.)** *No. of pieces to be produced*	1

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106072

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*						RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	W	Co	
1,1	97.03.0009DLN(T)	Stem isolate	1	Heat : 283925 (Lot F20-0205)	MEST690625/2021/	316/316L	16,18	10,12	2,22	1,64			OK
1,2	97.04.0002S(T)	Tip isolate	1	Heat : 30948 (Lot F24-2661)	OR24 - 30948	Stellite	28,93	0,21	0,20		5,39	61,33	OK
1,3	97.03.0009DLN(T)	Stem vent	1	Heat : 283925 (Lot F20-0205)	MEST690625/2021/	316/316L	16,29	10,43	2,18	1,39			OK
1,4	97.04.0002S(T)	Tip vent	1	Heat : 30948 (Lot F24-2661)	OR24 - 30948	Stellite	28,76	0,13	0,27		5,46	61,72	OK

x CROSSWIND
9/10/24 R

NOTE / *Remarks* : PMI 100% on wetted parts (excluded carbon steel) According to NDT PROCEDURE - PT/PMI Rev.14	Data prelievo componenti / *Date of components picking* : 11-Sep-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Testing instrument: X-Ray analyzer NITON XL2 980 GOLDD	Data verifica componenti / *Date of components verification* : 11-Sep-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Serial number: 85044 - expiry 15-November-2024	Data esecuzione PMI TEST / *Date of PMI TEST execution* : 11-Sep-2024	Firma /*Signature* THOMAS PETITTI PMI OPERATOR

indra VALVES - ITALY	**Project:** CROSSWIND 24 01216 / pos 320 - 00.MNF.0606/V PO 1724000798 REV.2 pos 320 - VLBNNN00063Q0H	
HARDNESS TEST REPORT **EN 10204 3.1 ed 2004**	**Client:** ROSETTI MARINO SPA	**Report No.:** 012 **Date:** 12-Sep-2024 **Page 1 of 1**

Location/area: Indra S.r.l Magenta (MI)		**Material:** ASTM A350 LF2

Testing instrument: Durometer 1600 HV
Serial Number: 32159000013 - expiry 17-April-2027
Hardness Test Procedure: PT-HT (24-01216) Rev. 0

Surface preparation:

Grinding	Machined X	Lapping	Filling	Other

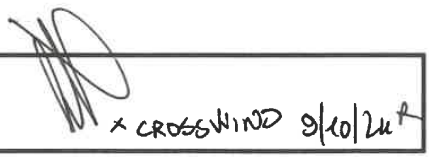
Test position: see below table

Measuring unit:

Rockwell C(HRC)	**Brinell (HB) x**	**Shore**
Rockwell B(HRB)	**Vickers (HV)**	

Location	HARDNESS (average value)						
Valve body S.N 106072	145						
Bonnet body isolate S.N 106072	105						
Bonnet body vent S.N 106072	101						

Sketch: 97.01.0903LF2N(T) - 97.02.0007LF2N(T)



Quality control	TPI Inspection	Client
Name: Petitti Thomas	Name:	Name:
Sign:	Sign:	Sign:
Date: 12-Sep-2024	Date:	Date:

ROSETTI MARINO ITEM 390

COD. VBD0NN16610300

TAG:

BLPH-MV-467

INDRA ITEM 321

COD. 00.VSF.2716/V

indra VALVES - ITALY	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 552-2024_24-01216-p321 Data/*Date* : 08-Oct-2024	MD/PMI-VSF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	**COMMESSA INDRA** *Indra Job No.*	24 01216	**NR. D'ORDINE CLIENTE** *Customer Order No.*	1724000798 REV.2	**DEL** *Dated*	26-Jun-2024	**POSIZIONE D'ORDINE CLIENTE** *Customer Item*	390	**POSIZIONE D' ORDINE INDRA** *Indra Item*	321
Percentuale particolari da testare *Percentage of elements to be tested*		100%		**CODICE** *Code*	00.VSF.2716/V	**DESCRIZIONE** *Description*	SB-598-50-L150RF3-L-LF2-DL-CA3-N-RG-EXS100-L1-TG-TGW-TV-PMI2-PD2-BI-CR-TA-FS-SPC1	**Q.tà da produrre (pz.)** *No. of pieces to be produced*		1	

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106898

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
1,1	98J.04.0003DLN(T)	Stem of ball	1	Heat : 291905 (Lot F23-3024)	MEST084078/2023/	316/316L	16,11	10,50	2,06	1,82	OK
1,2	98J.07.0001DLN(T)	Ball	1	Heat : 272823 (Lot F22-2706)	2022021445	316/316L	16,64	10,81	2,20	0,89	OK

NOTE / *Remarks* : PMI 100% on wetted parts (excluded carbon steel) According to NDT PROCEDURE - PT/PMI Rev.14	Data prelievo componenti / *Date of components picking* : 08-Oct-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Testing instrument: X-Ray analyzer NITON XL2 980 GOLDD	Data verifica componenti / *Date of components verification* : 08-Oct-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Serial number: 85044 - expiry 15-November-2024	Data esecuzione PMI TEST / *Date of PMI TEST execution* : 08-Oct-2024	Firma /*Signature* THOMAS PETITTI PMI OPERATOR

indra VALVES - ITALY	**Project:** CROSSWIND 24 01216 / pos 321 - 00.VSF.2716/V PO 1724000798 REV.2 pos 390 - VBD0NN16610300	
HARDNESS TEST REPORT **EN 10204 3.1 ed 2004**	**Client:** ROSETTI MARINO SPA	**Report No.:** 033 **Date:** 10-Oct-2024 **Page 1 of 1**

Location/area: Indra S.r.l Magenta (MI)		**Material:** ASTM A350 LF2 - 316/316L

Testing instrument: Durometer 1600 HV
Serial Number: 32159000013 - expiry 17-April-2027
Hardness Test Procedure: PT-HT (24-01216) Rev. 0

Surface preparation:

Grinding	Machined X	Lapping	Filling	Other

Test position: see below table

Measuring unit:

Rockwell C(HRC)	**Brinell (HB) x**	**Shore**
Rockwell B(HRB)	**Vickers (HV)**	

Location	HARDNESS (average value)						
Valve body S.N 106898	124						
Closer S.N 106898	127						
Stem of ball S.N 106898	144						
Ball S.N 106898	157						

Sketch: 981J.01.0061LF2N(T) - 981J.02.0021LF2N(T) - 98J.04.0003DLN(T) - 98J.07.0001DLN(T)

Quality control	TPI Inspection	Client
Name: Petitti Thomas Sign: TP Date: 10-Oct-2024	Name: Sign: Date:	Name: Sign: Date:

ROSETTI MARINO ITEM 400

COD. VLBBNN07190100

TAG:

BLPH-MV-466

INDRA ITEM 322

COD. 00.VSF.2680/V

CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 400 NS.POS/OUR ITEM 322 VS.COD./YOUR CODE VLBBNN07190100 NS.COD./OUR CODE 00.VSF.2680/V (1 PC)

indra VALVES - ITALY	**PENETRANT TEST REPORT (PT)**	**MD-02-29** rev.02 Date 28-11-2022

Certificato No.	PT-123-2024	Internal Indra Order No.:	OE 015617,015620 017813, 017814	
Customer:	ROSETTI MARINO SPA	**Qty:**	27 + 1 + 56 + 1 + 2	Batch no.:
Code:	981F.01.0022DLN(T)	Description:	BODY	OE-15670-435799
	981F.01.0022DLN(T)		BODY	L23-1136-437075
	981F.02.0034DLN(T)		CLOSURE F300RF3	OE-15673-294158
→	981F.01.0022DLN(T)		BODY	OE-17820-435799
→	981F.02.0034DLN(T)		CLOSURE F300RF3	OE-17821-294158
Acceptance Standards:	Asme V art.6 Asme VIII Div.1 app.8			
Procedure:	*Indra Procedure PT-DP-01 (24-01216) Rev.0 dated 06-09-2024 EN 10204 3.1 ed 2004*			
Equipment:	*Luxmetro,white lamp, liquid penetrant*			

Test Conditions:

Test Surface:	EXTERNAL SIDE	INTERNAL SIDE	Surface Condition:	MACHINED
Penetrant Time: 20 min	Drying Time: 10 min	Development Time: 20 min	Cleaner:	SOLVENT-ALCOHOL
Natural Light: > 1100 Lux				
Type of Penetrant	08.122 K71B2	Batch no.	220127/BI	
Type of Developer	D112A	Batch no.	231106W150s	
Type of Removal	WATER			
Results:	ACCEPTABLE			

Note:
The inspection was conducted 100% of the surface

1 CROSSWIND
16/10/24R

Operator: Nicholas Sacchetti (LEVEL 2 acc. EN 9712:2012)	Signature:	Approved: Lucia Nosotti (RSQ)	Signature:
INDRA SRL VIA NOVARA 10/B-C / 20013 MAGENTA (MI)	Approval of Customer:		Date: 13 September 2024

indra VALVES - ITALY	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 519-2024_24-01216-p322 Data/*Date* : 12-Sep-2024	MD/PMI-VSF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	**COMMESSA INDRA** *Indra Job No.*	24 01216	**NR. D'ORDINE CLIENTE** *Customer Order No.*	1724000798 REV.2	**DEL** *Dated*	26-Jun-2024	**POSIZIONE D'ORDINE CLIENTE** *Customer Item*	400	**POSIZIONE D' ORDINE INDRA** *Indra Item*	322
Percentuale particolari da testare *Percentage of elements to be tested*		100%		**CODICE** *Code*	00.VSF.2680/V	**DESCRIZIONE** *Description*	DBB-898-HR-25-F300RF3-F-D-DLF-DL-N-PG-L123-TG-TGW-TV-DP-PMI2-PD2-BI-GT-CR-TA-FE2-FS-FE SPC1	**Q.tà da produrre (pz.)** *No. of pieces to be produced*		1	

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106899

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
1,1	981F.01.0022DLN(T)	Valve body	1	Heat : 435799 (Lot OE-17820)	MEST080040/2024/ - UT24003628	316/316L	16,42	10,15	2,21	1,94	OK
1,2	981F.02.0034DLN(T)	Closer IN	1	Heat : 294158 (Lot OE-17821)	MEST095530/2024/ - UT24004432	316/316L	16,65	10,32	2,19	1,90	OK
1,3	981F.02.0034DLN(T)	Closer OUT	1	Heat : 294158 (Lot OE-17821)	MEST095530/2024/ - UT24004432	316/316L	16,68	10,28	2,13	1,88	OK
1,4	980F.04.0001DLN(T)	Stem of ball IN	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,33	10,41	2,05	1,79	OK
1,5	980F.04.0001DLN(T)	Stem of ball OUT	1	Heat : E30822 (Lot F23-3487)	173501	316/316L	16,38	10,31	2,08	1,82	OK
1,6	98F.07.0001DLN(T)	Ball IN	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,30	10,33	2,14	1,47	OK
1,7	98F.07.0001DLN(T)	Ball OUT	1	Heat : 072244 (Lot F24-0485)	2020018438	316/316L	16,25	10,31	2,12	1,54	OK
1,8	97.02.0001DLN(T)	Bonnet body	1	Heat : 291366 (Lot F23-2886)	MEST136234/2023/1	316/316L	16,34	10,05	2,08	1,77	OK
1,9	97.03.0001DLN(T)	Stem	1	Heat : 172303 (Lot F23-2911)	174495	316/316L	16,59	10,58	2,10	1,63	OK
1,1	97.04.0001DLN(T)	Tip	1	Heat : 290962 (Lot F24-0466)	MEST140440/2023/	316/316L	16,80	10,36	2,20	1,77	OK

CROSSWIND
16/10/24

NOTE / *Remarks* : PMI 100% on body, closer and wetted parts According to NDT PROCEDURE - PT/PMI Rev.14	Data prelievo componenti / *Date of components picking* : 12-Sep-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Testing instrument: X-Ray analyzer NITON XL2 980 GOLDD	Data verifica componenti / *Date of components verification* : 12-Sep-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Serial number: 85044 - expiry 15-November-2024	Data esecuzione PMI TEST / *Date of PMI TEST execution* : 12-Sep-2024	Firma /*Signature* THOMAS PETITTI PMI OPERATOR

indra VALVES - ITALY	**Project:** CROSSWIND 24 01216 / pos 322 - 00.VSF.2680/V PO 1724000798 REV.2 pos 400 - VLBBNN07190100	
HARDNESS TEST REPORT **EN 10204 3.1 ed 2004**	**Client:** ROSETTI MARINO SPA	**Report No.:** 020 **Date:** 12-Sep-2024 **Page 1 of 1**

Location/area: Indra S.r.l Magenta (MI)		**Material:** 316/316L

Testing instrument: Durometer 1600 HV
Serial Number: 32159000013 - expiry 17-April-2027
Hardness Test Procedure: PT-HT (24-01216) Rev. 0

Surface preparation:

Grinding	Machined X	Lapping	Filling	Other

Test position: see below table

Measuring unit:

Rockwell C(HRC)	**Brinell (HB) x**	**Shore**
Rockwell B(HRB)	**Vickers (HV)**	

Location	HARDNESS (average value)						
Valve body S.N 106899	192						
Closer IN S.N 106899	166						
Closer OUT S.N 106899	170						
Stem of ball IN S.N 106899	206						
Stem of ball OUT S.N 106899	212						
Ball IN S.N 106899	221						
Ball OUT S.N 106899	220						
Bonnet body S.N 106899	171						

Sketch: 981F.01.0022DLN(T) - 981F.02.0034DLN(T) - 980F.04.0001DLN(T) - 98F.07.0001DLN(T) - 97.02.0001DLN(T)

Quality control	TPI Inspection	Client
Name: Petitti Thomas Sign: TP Date: 12-Sep-2024	Name: Sign: Date:	Name: Sign: Date:

x CROSSWIND
16/10/24

ROSETTI MARINO ITEM 410

COD. VLBBNN07201H00

TAG:

BLPH-MV-468

INDRA ITEM 323

COD. 00.VSF.2681/V

CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 160 NS.POS/OUR ITEM 160 VS.COD./YOUR CODE VLBBNN07201H00 NS.COD./OUR CODE 00.VSF.2681/V (6 PCS)
VS.POS./YOUR ITEM 410 NS.POS/OUR ITEM 323 VS.COD./YOUR CODE VLBBNN07201H00 NS.COD./OUR CODE 00.VSF.2681/V (1 PC)

indra VALVES - ITALY	**PENETRANT TEST REPORT (PT)**	**MD-02-29** rev.02 Date 28-11-2022

Certificato No.	PT-128-2024	Internal Indra Order No.:	OE 015623,015624, 017815,017816	
Customer:	ROSETTI MARINO SPA	Qty:	6 + 1 + 12 + 2	Batch no.:
Code:	981H.01.0039DLN(T)	Description:	BODY	L24-0641-294062 (ITEM 160)
	981H.01.0039DLN(T)		BODY	L24-0735-294062 (ITEM 323)
	981H.02.0042DLN(T)		CLOSURE H300RF3	L24-0638-292410 (ITEM 160)
	981H.02.0042DLN(T)		CLOSURE H300RF3	L24-0730-292410 (ITEM 323)
Acceptance Standards:	Asme V art.6 Asme VIII Div.1 app.8			
Procedure:	*Indra Procedure PT-DP-01 (24-01216) Rev.0 dated 06-09-2024 EN 10204 3.1 ed 2004*			
Equipment:	*Luxmetro,white lamp, liquid penetrant*			

Test Conditions:

Test Surface:	EXTERNAL SIDE	INTERNAL SIDE	Surface Condition:	MACHINED
Penetrant Time: 20 min	Drying Time: 10 min	Development Time: 20 min	Cleaner:	SOLVENT-ALCOHOL
Natural Light: > 1100 Lux				
Type of Penetrant	08.122 K71B2	Batch no.	220127/BI	
Type of Developer	D112A	Batch no.	231106W150s	
Type of Removal	WATER			
Results:	ACCEPTABLE			

Note:
The inspection was conducted 100% of the surface

x CROSSWIND
23/10/24 R

Operator: Nicholas Sacchetti (LEVEL 2 acc. EN 9712:2012)	Signature:	Approved: Lucia Nosotti (RSQ)	Signature: INDRA s.r.l.
INDRA SRL VIA NOVARA 10/B-C / 20013 MAGENTA (MI)	Approval of Customer:		Date: 30 September 2024

	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 561-2024_24-01216-p323 Data/*Date* : 30-Sep-2024	MD/PMI-VSF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	**COMMESSA INDRA** *Indra Job No.*	24 01216	**NR. D'ORDINE CLIENTE** *Customer Order No.*	1724000798 REV.2	**DEL** *Dated*	26-Jun-2024	**POSIZIONE D'ORDINE CLIENTE** *Customer Item*	410	**POSIZIONE D' ORDINE INDRA** *Indra Item*	323
Percentuale particolari da testare *Percentage of elements to be tested*		100%		**CODICE** *Code*	00.VSF.2681/V	**DESCRIZIONE** *Description*	DBB-898-HR-40-H300RF3-H-D-DLF-DL-N-PG-L123-TG-TGW-TV-DP-PMI2-PD2-BI-GT-CR-TA-FE2-FS-FE SPC1	**Q.tà da produrre (pz.)** *No. of pieces to be produced*		1	

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106016

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*				RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	
1,1	981H.01.0039DLN(T)	Valve body	1	Heat : 294062 (Lot L24-0735)	MEST083699/2024/	316/316L	16,73	10,05	2,05	1,53	OK
1,2	981H.02.0042DLN(T)	Closer	1	Heat : 292410 (Lot L24-0730)	MEST053963/2024/ - UT24002496	316/316L	16,68	10,10	2,08	1,62	OK
1,3	981H.04.0003DLN(T)	Stem of ball	1	Heat : 291905 (Lot F23-2417)	MEST084078/2023/	316/316L	16,29	10,12	2,07	1,62	OK
1,4	98H.07.0002DLN(T)	Ball	1	Heat : 372447 (Lot F23-1781)	2023013898	316/316L	16,73	10,02	2,18	1,86	OK
1,5	97.02.0001DLN(T)	Bonnet body	1	Heat : 291366 (Lot F23-2886)	MEST136234/2023/1	316/316L	16,63	10,11	2,05	1,49	OK
1,6	97.03.0001DLN(T)	Stem	1	Heat : 172303 (Lot F23-2911)	174495	316/316L	16,62	10,57	2,11	1,78	OK
1,7	97.04.0001DLN(T)	Tip	1	Heat : 290962 (Lot F24-0466)	MEST140440/2023/	316/316L	16,38	10,07	2,08	1,52	OK

xCROSSWIND R
23/10/24

NOTE / *Remarks* : PMI 100% on body, closer and wetted parts According to NDT PROCEDURE - PT/PMI Rev.14	Data prelievo componenti / *Date of components picking* : 30-Sep-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Testing instrument: X-Ray analyzer NITON XL2 980 GOLDD	Data verifica componenti / *Date of components verification* : 30-Sep-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Serial number: 85044 - expiry 15-November-2024	Data esecuzione PMI TEST / *Date of PMI TEST execution* : 30-Sep-2024	Firma /*Signature* THOMAS PETITTI PMI OPERATOR

indra VALVES - ITALY	**Project:** CROSSWIND 24 01216 / pos 323 - 00.VSF.2681/V PO 1724000798 REV.2 pos 410 - VLBBNN07201H00	
HARDNESS TEST REPORT **EN 10204 3.1 ed 2004**	**Client:** ROSETTI MARINO SPA	**Report No.:** 040 **Date:** 30-Sep-2024 **Page 1 of 1**

Location/area: Indra S.r.l Magenta (MI)		**Material:** 316/316L

Testing instrument: Durometer 1600 HV
Serial Number: 32159000013 - expiry 17-April-2027
Hardness Test Procedure: PT-HT (24-01216) Rev. 0

Surface preparation:

Grinding	Machined X	Lapping	Filling	Other

Test position: see below table

Measuring unit:

Rockwell C(HRC)	**Brinell (HB) x**	**Shore**
Rockwell B(HRB)	**Vickers (HV)**	

Location	HARDNESS (average value)						
Valve body S.N 106016	174						
Closer S.N 106016	167						
Stem of ball S.N 106016	186						
Ball S.N 106016	201						
Bonnet body S.N 106016	148						

x CROSSWIND 23/10/24

Sketch: 981H.01.0039DLN(T) - 981H.02.0042DLN(T) - 981H.04.0003DLN(T) - 98H.07.0002DLN(T) - 97.02.0001DLN(T)

Quality control	TPI Inspection	Client
Name: Petitti Thomas Sign: VP Date: 30-Sep-2024	Name: Sign: Date:	Name: Sign: Date:

FUGITIVE EMISSION PRODUCTION TEST (ISO 15848-2)
TEST REPORT
- INDRA VALVES -

MD-02-20-IT-UK-FE
Rev. 0
Data: 10-Oct-19

Nr. Certificato / *Certificate No.*	00339-FET	**Data** / *Date :*	09-Oct-24
Cliente / *Customer :*	ROSETTI MARINO SPA		
Ordine Nr. / *Order Nr.*	1724000798 REV.2	**Data** / *Date :*	26-Jun-24
Ns. commessa Nr. / *Our job Nr.*	24 01216	**Data** / *Date :*	03-Jul-24
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*	

Rev. 0

CONDIZIONI DI PROVA / TEST CONDITIONS

TEST (according to ISO 15848-2)	TEMPERATURA DI PROVA (Test Temperature)	CLASSE DI PERDITA (Tightness class)	MAX. PERDITA AMMISSIBILE (ISO 15848-2) (Mex allowable leakage)	FLUIDO DI PROVA (Test Fluid)	PRESSIONE DI PROVA (Test Pressure)	RUMORE DI FONDO (Backgrund noise)	ENDURANCE CLASS	MANOMETRO N° (Gauge ID)	DATA SCADENZA (Due Date)
Body / Closure seal	20° C	B	≤ 50 ppmv	Elium >97%	6 bar	5,1 ppmv	5 cycles	24F06-1334-01–13	3-Dec-24
Body / Body bonnet seal			≤ 50 ppmv						
Stem seal			≤ 100 ppmv						
Gland Plate / Trunnion seal			≤ 50 ppmv						

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY) PRODUCED	QTA' (QTY) TESTED	VALVE TYPE	NPS	FLANGE TYPE	RATING		Ball valve: Body / Closure seal – Leak detected (ppmv)	Ball valve: Stem seal – Leak detected (ppmv)	Ball valve: Trunnion seal – Leak detected (ppmv)	Ball valve: Gland Plate seal – Leak detected (ppmv)	Needle valve: Stem seal – Leak detected (ppmv)	Needle valve: Body bonnet seal – Leak detected (ppmv)
160	160	00.VSF.2693/V	DBB-898-HR-40-H300RF3-H-D (106015)	VLBBNN07201H00	6	1	Ball+Needle	1 ½"	RF	300	Value before cycles	0,1	0,1			0,1	0,1
											Value after 5 cycles	0,1	0,2			0,2	0,1
260	260	00.VSF.2700/V	SBB-798-HR-100-N150RF3-N-D (106039)	VLBLNN01450400	7	1	Ball+Needle	4"	RF	150	Value before cycles	0,1	0,1			0,1	0,1
											Value after 5 cycles	0,1	0,2			0,2	0,1
323	410	00.VSF.2681/V	DBB-898-HR-40-H300RF3-H-D (106016)	VLBBNN07201H00	1	1	Ball+Needle	1 ½"	RF	300	Value before cycles	0,1	0,1			0,1	0,1
											Value after 5 cycles	0,1	0,3			0,2	0,1
											Value before cycles						
											Value after 5 cycles						
											Value before cycles						
											Value after 5 cycles						
											Value before cycles						
											Value after 5 cycles						
											Value before cycles						
											Value after 5 cycles						

TEST RESULT: ☑ **SATISFACTORY** ☐ **NOT SATISFACTORY**

Strumentazione *(Equipment)* :
- Spettrometro di massa *(Mass Spectrometer)* : PFEIFFER VACUUM ASM 340 (SN.: HLD1901233)
  Minima perdita rilevabile *(Min. leak detectable)* : 5x10E-09 mbar*l/s (sniffing mode)
- Valore nominale fuga calibrata *(Calibrated leak nominal value)* : 6,09x10E-06 mbar*l/s (SN.: 40117695)

Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector — *Si / Yes* ☑ *No / No* ☐

Nominativo / Name .....

Data / Date .....

Timbro e Firma / Stamp and Signature xCROSSWIND W 9/10/24

PROCEDURA DI TEST
(Test procedure)
PFET (24-01216) Rev.0

COLLAUDATO DA: TESTED BY:	**MAURIZIO TOSI** Livello 1 UNI EN ISO 9712:2021 N. 24TO02901CE1	DATA / DATE:	09-Oct-24	APPROVATO DA: APPROVED BY:	**ROBERTO CAREZZO** VICE PRODUCTION MANAGER Livello 2 UNI EN ISO 9712:2021 N. 24TO00376CE1	DATA / DATE:	09-Oct-24

ROSETTI MARINO ITEM 430

COD. VLBLNN01370100

TAG:

BLPH-MV-469, BLPH-MV-470,

BLPH-MV-471

INDRA ITEM 324

COD. 00.VSF.2784(T)

	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 558-2024_24-01216-p324 Data/*Date* : 11-Oct-2024	MD/PMI-VSF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	COMMESSA INDRA *Indra Job No.*	24 01216	NR. D'ORDINE CLIENTE *Customer Order No.*	1724000798 REV.2	DEL *Dated*	26-Jun-2024	POSIZIONE D'ORDINE CLIENTE *Customer Item*	430	POSIZIONE D' ORDINE INDRA *Indra Item*	324
Percentuale particolari da testare *Percentage of elements to be tested*		100%		CODICE *Code*	00.VSF.2784(T)			DESCRIZIONE *Description*	S8B-798-2S-F150RF3-F-D-F55F-F55-N-PG-EXS100-EXY3-L13-TG-TGW-IT2-PMI2-PD2-CR-TA-FS-SPC1-SPC2	Q.tà da produrre (pz.) *No. of pieces to be produced*	3

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106900

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*						RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	W	Cu	
1,1	981F.01.0103F55N(T)	Valve body	1	Heat : 400186 (Lot OE-19824)	FA0300091081 00 / V0 - 480652	F55	25,33	7,84	3,55	0,36	0,52	0,63	OK
1,2	981F.02.0038F55N(T)	Closer	1	Heat : 400186 (Lot OE-19826)	FA0300091081 00 / V0 - 480652	F55	25,58	7,68	3,46	0,53	0,50	0,65	OK
1,3	980F.04.0001F55N(T)	Stem of ball	1	Heat : 400520 (Lot L24-0737)	FA0300090721 00 / V0 - 480854	F55	24,54	7,89	3,75	0,74	0,55	0,62	OK
1,4	98F.07.0001F55N(T)	Ball	1	Heat : 070136 (Lot L24-0732)	2021003757 - N.US.122/2021	F55	24,67	7,05	3,58	0,60	0,55	0,53	OK
1,5	97.02.0007F55N(T)	Bonnet body	1	Heat : 178391 (Lot L24-0742)	2201656 - UT 2201656	F55	24,67	7,35	3,79	0,75	0,53	0,68	OK
1,6	97.03.0009F55N(T)	Stem	1	Heat : 400520 (Lot L24-0822)	FA0300090721 00 / V0 - 480854	F55	24,48	7,20	3,90	0,89	0,52	0,50	OK
1,7	97.04.0002F55N(T)	Tip	1	Heat : 870052 (Lot F20-01280)	2018036042 - N.US.1217/18	F55	25,21	7,99	3,43	0,71	0,50	0,53	OK

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106901

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*						RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	W	Cu	
2,1	981F.01.0103F55N(T)	Valve body	1	Heat : 400186 (Lot OE-19824)	FA0300091081 00 / V0 - 480652	F55	25,37	7,79	3,56	0,39	0,55	0,67	OK
2,2	981F.02.0038F55N(T)	Closer	1	Heat : 400186 (Lot OE-19826)	FA0300091081 00 / V0 - 480652	F55	25,52	7,55	3,41	0,55	0,51	0,62	OK
2,3	980F.04.0001F55N(T)	Stem of ball	1	Heat : 400520 (Lot L24-0737)	FA0300090721 00 / V0 - 480854	F55	24,48	7,91	3,77	0,71	0,52	0,64	OK
2,4	98F.07.0001F55N(T)	Ball	1	Heat : 070136 (Lot L24-0732)	2021003757 - N.US.122/2021	F55	24,71	7,09	3,62	0,63	0,52	0,57	OK
2,5	97.02.0007F55N(T)	Bonnet body	1	Heat : 178391 (Lot L24-0742)	2201656 - UT 2201656	F55	24,74	7,28	3,74	0,70	0,57	0,61	OK
2,6	97.03.0009F55N(T)	Stem	1	Heat : 400520 (Lot L24-0822)	FA0300090721 00 / V0 - 480854	F55	24,53	7,12	3,86	0,76	0,51	0,55	OK
2,7	97.04.0002F55N(T)	Tip	1	Heat : 870052 (Lot F20-01280)	2018036042 - N.US.1217/18	F55	25,15	7,96	3,51	0,68	0,52	0,50	OK

× CROSSWIND

indra VALVES - ITALY	RAPPORTO DI PROVA PMI PMI TEST DOCUMENT	Cert. n° : 558-2024_24-01216-p324 Data/*Date* : 11-Oct-2024	MD/PMI-VSF Rev.4-Dec/2022

CLIENTE *Customer*	ROSETTI MARINO SPA	**COMMESSA INDRA** *Indra Job No.*	24 01216	**NR. D'ORDINE CLIENTE** *Customer Order No.*	1724000798 REV.2	**DEL** *Dated*	26-Jun-2024	**POSIZIONE D'ORDINE CLIENTE** *Customer Item*	430	**POSIZIONE D' ORDINE INDRA** *Indra Item*	324
Percentuale particolari da testare *Percentage of elements to be tested*		100%		**CODICE** *Code*	00.VSF.2784(T)	**DESCRIZIONE** *Description*	SBB-798-25-F150RF3-F-D-F55F-F55-N-PG-EXS100-EXY3-L13-TG-TGW-IT2-PMI2-PD2-CR-TA-FS-SPC1-SPC2	**Q.tà da produrre (pz.)** *No. of pieces to be produced*		3	

TAG TESTATO / *Tag tested* - VALVOLA NR. / *Valve no.* 106902

POS. / *Item*	CODICE DEL COMPONENTE / *Component code*	DESCRIZIONE / *Description*	Q.TA' DA TESTARE / Q.ty to be tested	LOTTO PRELEVATO / *Picking lot*	CERTIFICATO DEI MATERIALI/ *Certificate of material*	MATERIALE/ *Material*	VALORI DEL PMI TEST / *Values of PMI test (%)*						RISULTATO DEL PMI/ PMI result
							Cr	Ni	Mo	Mn	W	Cu	
3,1	981F.01.0103F55N(T)	Valve body	1	Heat : 400186 (Lot OE-19824)	FA0300091081 00 / V0 - 480652	F55	25,29	7,81	3,57	0,30	0,55	0,59	OK
3,2	981F.02.0038F55N(T)	Closer	1	Heat : 400186 (Lot OE-19826)	FA0300091081 00 / V0 - 480652	F55	25,60	7,59	3,48	0,59	0,57	0,62	OK
3,3	980F.04.0001F55N(T)	Stem of ball	1	Heat : 400520 (Lot L24-0737)	FA0300090721 00 / V0 - 480854	F55	24,49	7,80	3,67	0,71	0,50	0,65	OK
3,4	98F.07.0001F55N(T)	Ball	1	Heat : 070136 (Lot L24-0732)	2021003757 - N.US.122/2021	F55	24,61	7,01	3,59	0,55	0,56	0,51	OK
3,5	97.02.0007F55N(T)	Bonnet body	1	Heat : 178391 (Lot L24-0742)	2201656 - UT 2201656	F55	24,67	7,26	3,68	0,79	0,54	0,60	OK
3,6	97.03.0009F55N(T)	Stem	1	Heat : 400520 (Lot L24-0822)	FA0300090721 00 / V0 - 480854	F55	24,55	7,18	3,84	0,84	0,50	0,50	OK
3,7	97.04.0002F55N(T)	Tip	1	Heat : 870052 (Lot F20-01280)	2018036042 - N.US.1217/18	F55	25,26	7,92	3,52	0,70	0,50	0,52	OK

NOTE / *Remarks* : PMI 100% on body, closer and wetted parts According to NDT PROCEDURE - PT/PMI Rev.14	Data prelievo componenti / *Date of components picking* :	11-Oct-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Testing instrument: X-Ray analyzer NITON XL2 980 GOLDD	Data verifica componenti / *Date of components verification* :	11-Oct-2024	Firma /*Signature* IVAN RAMPOLDI ASSEMBLY OPERATOR
Serial number: 85044 - expiry 15-November-2024	Data esecuzione PMI TEST / *Date of PMI TEST execution* :	11-Oct-2024	Firma /*Signature* THOMAS PETITTI PMI OPERATOR

indra VALVES - ITALY	**Project:** CROSSWIND 24 01216 / pos 324 - 00.VSF.2784(T) PO 1724000798 REV.2 pos 430 - VLBLNN01370100
HARDNESS TEST REPORT **EN 10204 3.1 ed 2004**	**Client:** ROSETTI MARINO SPA **Report No.:** 037 **Date:** 11-Oct-2024 **Page 1 of 1**

Location/area: Indra S.r.l Magenta (MI)		**Material:** Super Duplex F55

Testing instrument: Durometer 1600 HV
Serial Number: 32159000013 - expiry 17-April-2027
Hardness Test Procedure: PT-HT (24-01216) Rev. 0

Surface preparation:

Grinding	Machined X	Lapping	Filling	Other

Test position: see below table

Measuring unit:

Rockwell C(HRC)	**Brinell (HB) x**	**Shore**
Rockwell B(HRB)	**Vickers (HV)**	

Location	HARDNESS (average value)						
Valve body S.N 106900	290						
Closer S.N 106900	223						
Stem of ball S.N 106900	233						
Ball S.N 106900	228						
Bonnet body S.N 106900	266						
Valve body S.N 106901	284						
Closer S.N 106901	220						
Stem of ball S.N 106901	233						
Ball S.N 106901	224						
Bonnet body S.N 106901	259						
Valve body S.N 106902	287						
Closer S.N 106902	229						
Stem of ball S.N 106902	237						
Ball S.N 106902	221						
Bonnet body S.N 106902	261						

Sketch: 981F.01.0103F55N(T) - 981F.02.0038F55N(T) - 980F.04.0001F55N(T) - 98F.07.0001F55N(T) - 97.02.0007F55N(T)

Quality control	TPI Inspection	Client
Name: Petitti Thomas Sign: Date: 11-Oct-2024	Name: Sign: Date:	Name: Sign: Date:

Indra x CROSSWIND

PART 2 – CERTIFICATION DOSSIER

CHAPTER 2

SECTION 10

PAINTING CERTIFICATES

ROSETTI MARINO ITEM 10

COD.VBC0NN06943Q00

TAG: BLPH-MV-111

INDRA ITEM 10

COD. 00.VSF.2684/V

CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216

VS.POS./YOUR ITEM 10	NS.POS/OUR ITEM 10	VS.COD./YOUR CODE VBC0NN06943Q00	NS.COD./OUR CODE 00.VSF.2684/V (1 PC)
VS.POS./YOUR ITEM 20	NS.POS/OUR ITEM 20	VS.COD./YOUR CODE VBC0NN06950100	NS.COD./OUR CODE 00.VSF.2687/V (15 PCS)
VS.POS./YOUR ITEM 30	NS.POS/OUR ITEM 30	VS.COD./YOUR CODE VBC0NN06961H00	NS.COD./OUR CODE 00.VSF.2690/V (2 PCS)
VS.POS./YOUR ITEM 40	NS.POS/OUR ITEM 40	VS.COD./YOUR CODE VBC0NN24343Q00	NS.COD./OUR CODE 00.VSF.2693/V (2 PCS)
VS.POS./YOUR ITEM 140	NS.POS/OUR ITEM 140	VS.COD./YOUR CODE VBD0NN16460300	NS.COD./OUR CODE 00.VSF.2695/V (1 PC)
VS.POS./YOUR ITEM 150	NS.POS/OUR ITEM 150	VS.COD./YOUR CODE VLBBNN07190100	NS.COD./OUR CODE 00.VSF.2680/V (28 PCS)
VS.POS./YOUR ITEM 400	NS.POS/OUR ITEM 322	VS.COD./YOUR CODE VLBBNN07190100	NS.COD./OUR CODE 00.VSF.2680/V (1 PC)

GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

REPORT IDENTIFICATION			
Date	**Certificate ID**	**Ref. Transport Note ID**	**Client**
09/10/2024	710/2024	1581-1586/2024	INDRA
Customer Job No.	**Description**	**Item**	**Painting Specification/Procedure**
CL24 00698	See Attachment – ITEM LIST	/	PP-44 2024 rev. 4 SYSTEM 6A

AMBIENT CONDITION					
Date	**Hour**	**Ambient Temp. °C**	**Steel Temp. °C**	**Humidity %**	**Dew Point °C**
04/10/2024	9.00	25.2	24.8	48.9	14.8

SURFACE PREPARATION					
Degreasing			**Abrasive Type**		
THINNER NITRO ANTINEBBIA			GARNET		
Roughness			**Cleanliness and Surface Preparation**		
40 µm			SSPC-SP16		
Soluble Contaminants Test - ISO 8502-6/9			**Dust Test - ISO 8502-3**		
Result (mg/m²):	7.7		**Result:**	Rate 1	Size 1

PAINTING					
Number of Coats	**1**	**2**	**3**	**4**	**5**
Date	04/10/2024	07/10/2024	08/10/2024		
Hour	10.00	13.30	10.00		
Room Temperature °C	25.3	25.2	25.8		
Steel Temperature °C	24.8	24.2	25.1		
Humidity %	47.2	47.2	47.7		
Dew Point °C	14.9	14.3	13.2		
Application Method	Conventional spray	Conventional spray	Conventional spray		
Paint Product Name	INTERGARD 269	INTERGARD 475 HS	INTERTHANE 990		
Product Batch Number	A: 2243167018 B: 2243177028	A: 2243333015 B: 2243284075	RAL 9002 A: 2333167027 RAL 9005 A: 2333167027 B: 2333172046		
Colour	RED	GREY	RAL 9002 VALVES RAL 9005 LEVERS & HW		
DFT	68 µm	176 µm	266 µm		
Visual Aspect Result	SATISFACTORY	SATISFACTORY	SATISFACTORY		
Remarks	NO REMARKS				

MEASURING INSTRUMENTS		
POSITECTOR – SST/6000/RTR	DUST TEST KIT	

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	x CROSSWIND 16/10/24 WIR	EXP. 09/2025

COMPANY USE INFORMATION

INDRA s.r.l.
COPIA CONFORME ALL'ORIGINALE
VERIFIED TRUE COPY OF ORIGINAL

CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216

VS.POS./YOUR ITEM 10	NS.POS/OUR ITEM 10	VS.COD./YOUR CODE VBC0NN06943Q00	NS.COD./OUR CODE 00.VSF.2684/V (1 PC)
VS.POS./YOUR ITEM 20	NS.POS/OUR ITEM 20	VS.COD./YOUR CODE VBC0NN06950100	NS.COD./OUR CODE 00.VSF.2687/V (15 PCS)
VS.POS./YOUR ITEM 30	NS.POS/OUR ITEM 30	VS.COD./YOUR CODE VBC0NN06961H00	NS.COD./OUR CODE 00.VSF.2690/V (2 PCS)
VS.POS./YOUR ITEM 40	NS.POS/OUR ITEM 40	VS.COD./YOUR CODE VBC0NN24343Q00	NS.COD./OUR CODE 00.VSF.2693/V (2 PCS)
VS.POS./YOUR ITEM 140	NS.POS/OUR ITEM 140	VS.COD./YOUR CODE VBD0NN16460300	NS.COD./OUR CODE 00.VSF.2695/V (1 PC)
VS.POS./YOUR ITEM 150	NS.POS/OUR ITEM 150	VS.COD./YOUR CODE VLBBNN07190100	NS.COD./OUR CODE 00.VSF.2680/V (28 PCS)
VS.POS./YOUR ITEM 400	NS.POS/OUR ITEM 322	VS.COD./YOUR CODE VLBBNN07190100	NS.COD./OUR CODE 00.VSF.2680/V (1 PC)

GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

ITEM LIST

JOB	DESCRIPTION	QUANTITY
CL24 00698	00.VSF.2684/V LOTTO 24 01216 POS.10	1
CL24 00698	00.VSF.2687/V LOTTO 24 01216 POS. 20	15
CL24 00698	00.VSF.2690/V LOTTO 24 01216 POS. 30	2
CL24 00698	00.VSF.2693/V LOTTO 24 01216 POS. 40	2
CL24 00698	00.VSF.2695/V LOTTO 24 01216 POS. 140	1
CL24 00698	00.VSF.2680/V LOTTO 24 01216 POS. 150	28
CL24 00698	00.VSF.2680/V LOTTO 24 01216 POS. 322	1
CL24 00698	981F.08.0001-V31 LEVA DI COMANDO PIEGATA SS316 L250	28
CL24 00698	981F.08.0007-NP-V29 LEVA DI COMANDO PIEGATA RIALZATA L250M	28
CL24 00698	981F.08.0001-V31 LEVA DI COMANDO PIEGATA SS316 L250	2
CL24 00698	981F.08.0005-V29 LEVA DI COMANDO PER CASTELLETTO SS316	1
CL24 00698	981F.08.0005-V29 LEVA DI COMANDO PER CASTELLETTO SS316	15
CL24 00698	981F.08.0005-V29 LEVA DI COMANDO PER CASTELLETTO SS316	2
CL24 00698	981J.08.0006-V22 LEVA DI COMANDO PIEGATA SS316-BUR-	1
CL24 00698	981F.08.0001-V31 LEVA DI COMANDO PIEGATA SS316 L250	1
CL24 00698	981F.08.0005.V29 LEVA DI COMANDO PER CASTELLETTO SS316	2
CL24 00698	981F.08.0007-NP-V29 LEVA DI COMANDO PIEGATA RIALZATA L250M-	1

x CROSSWIND
16/10/24 WIR

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.		

COMPANY USE INFORMATION

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NACE INTERNATIONAL INSTITUTE

Certificate of Achievement

The NACE International Institute Recognizes

Flavio Brero

As a Certified

NACE Certified Coating Inspector - Level 3

x CROSSWIND
9/10/24 R

Executive Director
NACE International Institute

Expires
August 31, 2025

Cert No.2727

145678

ROSETTI MARINO ITEM 20

COD.VBC0NN06950100

TAG: BLPH-MV-210, BLPH-MV-242,

BLPH-MV-447, BLPH-MV-448, BLPH-MV-449, BLPH-MV-450, BLPH-MV-451, BLPH-MV-452, BLPH-MV-453, BLPH-MV-454, BLPH-MV-455, BLPH-MV-456, BLPH-MV-457, BLPH-MV-458 BLPH-MV-459

INDRA ITEM 20

COD. 00.VSF.2687/V

CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216

VS.POS./YOUR ITEM 10	NS.POS/OUR ITEM 10	VS.COD./YOUR CODE VBC0NN06943Q00	NS.COD./OUR CODE 00.VSF.2684/V (1 PC)
VS.POS./YOUR ITEM 20	NS.POS/OUR ITEM 20	VS.COD./YOUR CODE VBC0NN06950100	NS.COD./OUR CODE 00.VSF.2687/V (15 PCS)
VS.POS./YOUR ITEM 30	NS.POS/OUR ITEM 30	VS.COD./YOUR CODE VBC0NN06961H00	NS.COD./OUR CODE 00.VSF.2690/V (2 PCS)
VS.POS./YOUR ITEM 40	NS.POS/OUR ITEM 40	VS.COD./YOUR CODE VBC0NN24343Q00	NS.COD./OUR CODE 00.VSF.2693/V (2 PCS)
VS.POS./YOUR ITEM 140	NS.POS/OUR ITEM 140	VS.COD./YOUR CODE VBD0NN16460300	NS.COD./OUR CODE 00.VSF.2695/V (1 PC)
VS.POS./YOUR ITEM 150	NS.POS/OUR ITEM 150	VS.COD./YOUR CODE VLBBNN07190100	NS.COD./OUR CODE 00.VSF.2680/V (28 PCS)
VS.POS./YOUR ITEM 400	NS.POS/OUR ITEM 322	VS.COD./YOUR CODE VLBBNN07190100	NS.COD./OUR CODE 00.VSF.2680/V (1 PC)

GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

REPORT IDENTIFICATION			
Date	**Certificate ID**	**Ref. Transport Note ID**	**Client**
09/10/2024	710/2024	1581-1586/2024	INDRA
Customer Job No.	**Description**	**Item**	**Painting Specification/Procedure**
CL24 00698	See Attachment – ITEM LIST	/	PP-44 2024 rev. 4 SYSTEM 6A

AMBIENT CONDITION					
Date	**Hour**	**Ambient Temp. °C**	**Steel Temp. °C**	**Humidity %**	**Dew Point °C**
04/10/2024	9.00	25.2	24.8	48.9	14.8

SURFACE PREPARATION					
Degreasing			**Abrasive Type**		
THINNER NITRO ANTINEBBIA			GARNET		
Roughness			**Cleanliness and Surface Preparation**		
40 µm			SSPC-SP16		
Soluble Contaminants Test - ISO 8502-6/9			**Dust Test - ISO 8502-3**		
Result (mg/m²):	7.7		**Result:**	Rate 1	Size 1

PAINTING					
Number of Coats	**1**	**2**	**3**	**4**	**5**
Date	04/10/2024	07/10/2024	08/10/2024		
Hour	10.00	13.30	10.00		
Room Temperature °C	25.3	25.2	25.8		
Steel Temperature °C	24.8	24.2	25.1		
Humidity %	47.2	47.2	47.7		
Dew Point °C	14.9	14.3	13.2		
Application Method	Conventional spray	Conventional spray	Conventional spray		
Paint Product Name	INTERGARD 269	INTERGARD 475 HS	INTERTHANE 990		
Product Batch Number	A: 2243167018 B: 2243177028	A: 2243333015 B: 2243284075	RAL 9002 A: 2333167027 RAL 9005 A: 2333167027 B: 2333172046		
Colour	RED	GREY	RAL 9002 VALVES RAL 9005 LEVERS & HW		
DFT	68 µm	176 µm	266 µm		
Visual Aspect Result	SATISFACTORY	SATISFACTORY	SATISFACTORY		
Remarks	NO REMARKS				

MEASURING INSTRUMENTS		
POSITECTOR – SST/6000/RTR	DUST TEST KIT	

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	x CROSSWIND 16/10/24 WIR	CERTIFIED PAINT INSPECTOR EXP. 09/2025

COMPANY USE INFORMATION

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CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216

VS.POS./YOUR ITEM 10	NS.POS/OUR ITEM 10	VS.COD./YOUR CODE VBC0NN06943Q00	NS.COD./OUR CODE 00.VSF.2684/V (1 PC)
VS.POS./YOUR ITEM 20	NS.POS/OUR ITEM 20	VS.COD./YOUR CODE VBC0NN06950100	NS.COD./OUR CODE 00.VSF.2687/V (15 PCS)
VS.POS./YOUR ITEM 30	NS.POS/OUR ITEM 30	VS.COD./YOUR CODE VBC0NN06961H00	NS.COD./OUR CODE 00.VSF.2690/V (2 PCS)
VS.POS./YOUR ITEM 40	NS.POS/OUR ITEM 40	VS.COD./YOUR CODE VBC0NN24343Q00	NS.COD./OUR CODE 00.VSF.2693/V (2 PCS)
VS.POS./YOUR ITEM 140	NS.POS/OUR ITEM 140	VS.COD./YOUR CODE VBD0NN16460300	NS.COD./OUR CODE 00.VSF.2695/V (1 PC)
VS.POS./YOUR ITEM 150	NS.POS/OUR ITEM 150	VS.COD./YOUR CODE VLBBNN07190100	NS.COD./OUR CODE 00.VSF.2680/V (28 PCS)
VS.POS./YOUR ITEM 400	NS.POS/OUR ITEM 322	VS.COD./YOUR CODE VLBBNN07190100	NS.COD./OUR CODE 00.VSF.2680/V (1 PC)

GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

ITEM LIST

JOB	DESCRIPTION	QUANTITY
CL24 00698	00.VSF.2684/V LOTTO 24 01216 POS.10	1
CL24 00698	00.VSF.2687/V LOTTO 24 01216 POS. 20	15
CL24 00698	00.VSF.2690/V LOTTO 24 01216 POS. 30	2
CL24 00698	00.VSF.2693/V LOTTO 24 01216 POS. 40	2
CL24 00698	00.VSF.2695/V LOTTO 24 01216 POS. 140	1
CL24 00698	00.VSF.2680/V LOTTO 24 01216 POS. 150	28
CL24 00698	00.VSF.2680/V LOTTO 24 01216 POS. 322	1
CL24 00698	981F.08.0001-V31 LEVA DI COMANDO PIEGATA SS316 L250	28
CL24 00698	981F.08.0007-NP-V29 LEVA DI COMANDO PIEGATA RIALZATA L250M	28
CL24 00698	981F.08.0001-V31 LEVA DI COMANDO PIEGATA SS316 L250	2
CL24 00698	981F.08.0005-V29 LEVA DI COMANDO PER CASTELLETTO SS316	1
CL24 00698	981F.08.0005-V29 LEVA DI COMANDO PER CASTELLETTO SS316	15
CL24 00698	981F.08.0005-V29 LEVA DI COMANDO PER CASTELLETTO SS316	2
CL24 00698	981J.08.0006-V22 LEVA DI COMANDO PIEGATA SS316-BUR-	1
CL24 00698	981F.08.0001-V31 LEVA DI COMANDO PIEGATA SS316 L250	1
CL24 00698	981F.08.0005.V29 LEVA DI COMANDO PER CASTELLETTO SS316	2
CL24 00698	981F.08.0007-NP-V29 LEVA DI COMANDO PIEGATA RIALZATA L250M-	1

x CROSSWIND
16/10/24 WIR

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.		CERTIFIED PAINT INSPECTOR EXP. 09/2025 2723

COMPANY USE INFORMATION

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Certificate of Achievement

The NACE International Institute Recognizes

Flavio Brero

As a Certified

NACE Certified Coating Inspector - Level 3

x CROSSWIND
9/10/24 R

Executive Director
NACE International Institute

Expires
August 31, 2025

Cert No.2727

145678

ROSETTI MARINO ITEM 30

COD. VBC0NN06961H00

TAG: BLPH-MV-149, BLPH-MV-270

INDRA ITEM 30

COD. 00.VSF.2690/V

CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216

VS.POS./YOUR ITEM 10	NS.POS/OUR ITEM 10	VS.COD./YOUR CODE VBC0NN06943Q00	NS.COD./OUR CODE 00.VSF.2684/V (1 PC)
VS.POS./YOUR ITEM 20	NS.POS/OUR ITEM 20	VS.COD./YOUR CODE VBC0NN06950100	NS.COD./OUR CODE 00.VSF.2687/V (15 PCS)
VS.POS./YOUR ITEM 30	NS.POS/OUR ITEM 30	VS.COD./YOUR CODE VBC0NN06961H00	NS.COD./OUR CODE 00.VSF.2690/V (2 PCS)
VS.POS./YOUR ITEM 40	NS.POS/OUR ITEM 40	VS.COD./YOUR CODE VBC0NN24343Q00	NS.COD./OUR CODE 00.VSF.2693/V (2 PCS)
VS.POS./YOUR ITEM 140	NS.POS/OUR ITEM 140	VS.COD./YOUR CODE VBD0NN16460300	NS.COD./OUR CODE 00.VSF.2695/V (1 PC)
VS.POS./YOUR ITEM 150	NS.POS/OUR ITEM 150	VS.COD./YOUR CODE VLBBNN07190100	NS.COD./OUR CODE 00.VSF.2680/V (28 PCS)
VS.POS./YOUR ITEM 400	NS.POS/OUR ITEM 322	VS.COD./YOUR CODE VLBBNN07190100	NS.COD./OUR CODE 00.VSF.2680/V (1 PC)

GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

REPORT IDENTIFICATION			
Date	**Certificate ID**	**Ref. Transport Note ID**	**Client**
09/10/2024	710/2024	1581-1586/2024	INDRA
Customer Job No.	**Description**	**Item**	**Painting Specification/Procedure**
CL24 00698	See Attachment – ITEM LIST	/	PP-44 2024 rev. 4 SYSTEM 6A

AMBIENT CONDITION					
Date	**Hour**	**Ambient Temp. °C**	**Steel Temp. °C**	**Humidity %**	**Dew Point °C**
04/10/2024	9.00	25.2	24.8	48.9	14.8

SURFACE PREPARATION					
Degreasing			**Abrasive Type**		
THINNER NITRO ANTINEBBIA			GARNET		
Roughness			**Cleanliness and Surface Preparation**		
40 µm			SSPC-SP16		
Soluble Contaminants Test - ISO 8502-6/9			**Dust Test - ISO 8502-3**		
Result (mg/m²):	7.7		**Result:**	Rate 1	Size 1

PAINTING					
Number of Coats	**1**	**2**	**3**	**4**	**5**
Date	04/10/2024	07/10/2024	08/10/2024		
Hour	10.00	13.30	10.00		
Room Temperature °C	25.3	25.2	25.8		
Steel Temperature °C	24.8	24.2	25.1		
Humidity %	47.2	47.2	47.7		
Dew Point °C	14.9	14.3	13.2		
Application Method	Conventional spray	Conventional spray	Conventional spray		
Paint Product Name	INTERGARD 269	INTERGARD 475 HS	INTERTHANE 990		
Product Batch Number	A: 2243167018 B: 2243177028	A: 2243333015 B: 2243284075	RAL 9002 A: 2333167027 RAL 9005 A: 2333167027 B: 2333172046		
Colour	RED	GREY	RAL 9002 VALVES RAL 9005 LEVERS & HW		
DFT	68 µm	176 µm	266 µm		
Visual Aspect Result	SATISFACTORY	SATISFACTORY	SATISFACTORY		
Remarks	NO REMARKS				

MEASURING INSTRUMENTS		
POSITECTOR – SST/6000/RTR	DUST TEST KIT	

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	x CROSSWIND 16/10/24 WIR	CERTIFIED NACE INTERNATIONAL COATING INSPECTOR EXP. 09/2025 27221

COMPANY USE INFORMATION

INDRA s.r.l.
COPIA CONFORME ALL'ORIGINALE
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CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216

VS.POS./YOUR ITEM 10	NS.POS/OUR ITEM 10	VS.COD./YOUR CODE VBC0NN06943Q00	NS.COD./OUR CODE 00.VSF.2684/V (1 PC)
VS.POS./YOUR ITEM 20	NS.POS/OUR ITEM 20	VS.COD./YOUR CODE VBC0NN06950100	NS.COD./OUR CODE 00.VSF.2687/V (15 PCS)
VS.POS./YOUR ITEM 30	NS.POS/OUR ITEM 30	VS.COD./YOUR CODE VBC0NN06961H00	NS.COD./OUR CODE 00.VSF.2690/V (2 PCS)
VS.POS./YOUR ITEM 40	NS.POS/OUR ITEM 40	VS.COD./YOUR CODE VBC0NN24343Q00	NS.COD./OUR CODE 00.VSF.2693/V (2 PCS)
VS.POS./YOUR ITEM 140	NS.POS/OUR ITEM 140	VS.COD./YOUR CODE VBD0NN16460300	NS.COD./OUR CODE 00.VSF.2695/V (1 PC)
VS.POS./YOUR ITEM 150	NS.POS/OUR ITEM 150	VS.COD./YOUR CODE VLBBNN07190100	NS.COD./OUR CODE 00.VSF.2680/V (28 PCS)
VS.POS./YOUR ITEM 400	NS.POS/OUR ITEM 322	VS.COD./YOUR CODE VLBBNN07190100	NS.COD./OUR CODE 00.VSF.2680/V (1 PC)

GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

ITEM LIST

JOB	DESCRIPTION	QUANTITY
CL24 00698	00.VSF.2684/V LOTTO 24 01216 POS.10	1
CL24 00698	00.VSF.2687/V LOTTO 24 01216 POS. 20	15
CL24 00698	00.VSF.2690/V LOTTO 24 01216 POS. 30	2
CL24 00698	00.VSF.2693/V LOTTO 24 01216 POS. 40	2
CL24 00698	00.VSF.2695/V LOTTO 24 01216 POS. 140	1
CL24 00698	00.VSF.2680/V LOTTO 24 01216 POS. 150	28
CL24 00698	00.VSF.2680/V LOTTO 24 01216 POS. 322	1
CL24 00698	981F.08.0001-V31 LEVA DI COMANDO PIEGATA SS316 L250	28
CL24 00698	981F.08.0007-NP-V29 LEVA DI COMANDO PIEGATA RIALZATA L250M	28
CL24 00698	981F.08.0001-V31 LEVA DI COMANDO PIEGATA SS316 L250	2
CL24 00698	981F.08.0005-V29 LEVA DI COMANDO PER CASTELLETTO SS316	1
CL24 00698	981F.08.0005-V29 LEVA DI COMANDO PER CASTELLETTO SS316	15
CL24 00698	981F.08.0005-V29 LEVA DI COMANDO PER CASTELLETTO SS316	2
CL24 00698	981J.08.0006-V22 LEVA DI COMANDO PIEGATA SS316-BUR-	1
CL24 00698	981F.08.0001-V31 LEVA DI COMANDO PIEGATA SS316 L250	1
CL24 00698	981F.08.0005.V29 LEVA DI COMANDO PER CASTELLETTO SS316	2
CL24 00698	981F.08.0007-NP-V29 LEVA DI COMANDO PIEGATA RIALZATA L250M-	1

x CROSSWIND
16/10/24 WIR

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.		CERTIFIED PAINT INSPECTOR EXP. 09/2025 2723

COMPANY USE INFORMATION

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Flavio Brero

As a Certified

NACE Certified Coating Inspector - Level 3

x CROSSWIND
9/10/24 R

Executive Director
NACE International Institute

Expires
August 31, 2025

Cert No.2727

145678

ROSETTI MARINO ITEM 40

COD. VBC0NN24343Q00

TAG: BLPH-MV-024, BLPH-MV-028

INDRA ITEM 40

COD. 00.VSF.2693/V

CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216

VS.POS./YOUR ITEM 10	NS.POS/OUR ITEM 10	VS.COD./YOUR CODE VBC0NN06943Q00	NS.COD./OUR CODE 00.VSF.2684/V (1 PC)
VS.POS./YOUR ITEM 20	NS.POS/OUR ITEM 20	VS.COD./YOUR CODE VBC0NN06950100	NS.COD./OUR CODE 00.VSF.2687/V (15 PCS)
VS.POS./YOUR ITEM 30	NS.POS/OUR ITEM 30	VS.COD./YOUR CODE VBC0NN06961H00	NS.COD./OUR CODE 00.VSF.2690/V (2 PCS)
VS.POS./YOUR ITEM 40	NS.POS/OUR ITEM 40	VS.COD./YOUR CODE VBC0NN24343Q00	NS.COD./OUR CODE 00.VSF.2693/V (2 PCS)
VS.POS./YOUR ITEM 140	NS.POS/OUR ITEM 140	VS.COD./YOUR CODE VBD0NN16460300	NS.COD./OUR CODE 00.VSF.2695/V (1 PC)
VS.POS./YOUR ITEM 150	NS.POS/OUR ITEM 150	VS.COD./YOUR CODE VLBBNN07190100	NS.COD./OUR CODE 00.VSF.2680/V (28 PCS)
VS.POS./YOUR ITEM 400	NS.POS/OUR ITEM 322	VS.COD./YOUR CODE VLBBNN07190100	NS.COD./OUR CODE 00.VSF.2680/V (1 PC)

GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

REPORT IDENTIFICATION			
Date	**Certificate ID**	**Ref. Transport Note ID**	**Client**
09/10/2024	710/2024	1581-1586/2024	INDRA
Customer Job No.	**Description**	**Item**	**Painting Specification/Procedure**
CL24 00698	See Attachment – ITEM LIST	/	PP-44 2024 rev. 4 SYSTEM 6A

AMBIENT CONDITION					
Date	**Hour**	**Ambient Temp. °C**	**Steel Temp. °C**	**Humidity %**	**Dew Point °C**
04/10/2024	9.00	25.2	24.8	48.9	14.8

SURFACE PREPARATION					
Degreasing			**Abrasive Type**		
THINNER NITRO ANTINEBBIA			GARNET		
Roughness			**Cleanliness and Surface Preparation**		
40 µm			SSPC-SP16		
Soluble Contaminants Test - ISO 8502-6/9			**Dust Test - ISO 8502-3**		
Result (mg/m²):	7.7		**Result:**	Rate 1	Size 1

PAINTING					
Number of Coats	**1**	**2**	**3**	**4**	**5**
Date	04/10/2024	07/10/2024	08/10/2024		
Hour	10.00	13.30	10.00		
Room Temperature °C	25.3	25.2	25.8		
Steel Temperature °C	24.8	24.2	25.1		
Humidity %	47.2	47.2	47.7		
Dew Point °C	14.9	14.3	13.2		
Application Method	Conventional spray	Conventional spray	Conventional spray		
Paint Product Name	INTERGARD 269	INTERGARD 475 HS	INTERTHANE 990		
Product Batch Number	A: 2243167018 B: 2243177028	A: 2243333015 B: 2243284075	RAL 9002 A: 2333167027 RAL 9005 A: 2333167027 B: 2333172046		
Colour	RED	GREY	RAL 9002 VALVES RAL 9005 LEVERS & HW		
DFT	68 µm	176 µm	266 µm		
Visual Aspect Result	SATISFACTORY	SATISFACTORY	SATISFACTORY		
Remarks	NO REMARKS				

MEASURING INSTRUMENTS		
POSITECTOR – SST/6000/RTR	DUST TEST KIT	

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	x CROSSWIND 16/10/24 WIR	CERTIFIED NACE INTERNATIONAL COATING INSPECTOR EXP. 09/2025 27221

COMPANY USE INFORMATION

INDRA s.r.l.
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CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216

VS.POS./YOUR ITEM 10	NS.POS/OUR ITEM 10	VS.COD./YOUR CODE VBC0NN06943Q00	NS.COD./OUR CODE 00.VSF.2684/V (1 PC)
VS.POS./YOUR ITEM 20	NS.POS/OUR ITEM 20	VS.COD./YOUR CODE VBC0NN06950100	NS.COD./OUR CODE 00.VSF.2687/V (15 PCS)
VS.POS./YOUR ITEM 30	NS.POS/OUR ITEM 30	VS.COD./YOUR CODE VBC0NN06961H00	NS.COD./OUR CODE 00.VSF.2690/V (2 PCS)
VS.POS./YOUR ITEM 40	NS.POS/OUR ITEM 40	VS.COD./YOUR CODE VBC0NN24343Q00	NS.COD./OUR CODE 00.VSF.2693/V (2 PCS)
VS.POS./YOUR ITEM 140	NS.POS/OUR ITEM 140	VS.COD./YOUR CODE VBD0NN16460300	NS.COD./OUR CODE 00.VSF.2695/V (1 PC)
VS.POS./YOUR ITEM 150	NS.POS/OUR ITEM 150	VS.COD./YOUR CODE VLBBNN07190100	NS.COD./OUR CODE 00.VSF.2680/V (28 PCS)
VS.POS./YOUR ITEM 400	NS.POS/OUR ITEM 322	VS.COD./YOUR CODE VLBBNN07190100	NS.COD./OUR CODE 00.VSF.2680/V (1 PC)

GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

ITEM LIST

JOB	DESCRIPTION	QUANTITY
CL24 00698	00.VSF.2684/V LOTTO 24 01216 POS.10	1
CL24 00698	00.VSF.2687/V LOTTO 24 01216 POS. 20	15
CL24 00698	00.VSF.2690/V LOTTO 24 01216 POS. 30	2
CL24 00698	00.VSF.2693/V LOTTO 24 01216 POS. 40	2
CL24 00698	00.VSF.2695/V LOTTO 24 01216 POS. 140	1
CL24 00698	00.VSF.2680/V LOTTO 24 01216 POS. 150	28
CL24 00698	00.VSF.2680/V LOTTO 24 01216 POS. 322	1
CL24 00698	981F.08.0001-V31 LEVA DI COMANDO PIEGATA SS316 L250	28
CL24 00698	981F.08.0007-NP-V29 LEVA DI COMANDO PIEGATA RIALZATA L250M	28
CL24 00698	981F.08.0001-V31 LEVA DI COMANDO PIEGATA SS316 L250	2
CL24 00698	981F.08.0005-V29 LEVA DI COMANDO PER CASTELLETTO SS316	1
CL24 00698	981F.08.0005-V29 LEVA DI COMANDO PER CASTELLETTO SS316	15
CL24 00698	981F.08.0005-V29 LEVA DI COMANDO PER CASTELLETTO SS316	2
CL24 00698	981J.08.0006-V22 LEVA DI COMANDO PIEGATA SS316-BUR-	1
CL24 00698	981F.08.0001-V31 LEVA DI COMANDO PIEGATA SS316 L250	1
CL24 00698	981F.08.0005.V29 LEVA DI COMANDO PER CASTELLETTO SS316	2
CL24 00698	981F.08.0007-NP-V29 LEVA DI COMANDO PIEGATA RIALZATA L250M-	1

x CROSSWIND
16/10/24 WIR

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.		

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NACE Certified Coating Inspector - Level 3

x CROSSWIND
9/10/24 R

Executive Director
NACE International Institute

Expires
August 31, 2025

Cert No.2727

145678

ROSETTI MARINO ITEM 50

COD. VBC0NN24350100

TAG: BLPH-MV-172, BLPH-MV-404, BLPH-MV-405, BLPH-MV-462, BLPH-MV-463

INDRA ITEM 50

COD. 00.VSF.2694/V

CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 50 NS.POS/OUR ITEM 50 VS.COD./YOUR CODE VBC0NN24350100 NS.COD./OUR CODE 00.VSF.2694/V (5 PCS)
VS.POS./YOUR ITEM 170 NS.POS/OUR ITEM 170 VS.COD./YOUR CODE VLBBNN07210200 NS.COD./OUR CODE 00.VSF.2682/V (1 PC)
VS.POS./YOUR ITEM 220 NS.POS/OUR ITEM 220 VS.COD./YOUR CODE VLBLNN01320100 NS.COD./OUR CODE 00.VSF.2701/V (2 PCS)
VS.POS./YOUR ITEM 250 NS.POS/OUR ITEM 250 VS.COD./YOUR CODE VLBLNN0143020 NS.COD./OUR CODE 00.VSF.2702/V (2 PCS)
(VALVE AND LEVER)
VS.POS./YOUR ITEM 280 NS.POS/OUR ITEM 280 VS.COD./YOUR CODE VLBMNN00013Q0H NS.COD./OUR CODE 00.MNF.0604/V (14 PCS)
VS.POS./YOUR ITEM 290 NS.POS/OUR ITEM 290 VS.COD./YOUR CODE VLBNNN00023Q0H NS.COD./OUR CODE 00.MNF.0608/V (4 PCS)
VS.POS./YOUR ITEM 300 NS.POS/OUR ITEM 300 VS.COD./YOUR CODE VLBNNN00033Q0H NS.COD./OUR CODE 00.MNF.0605/V (2 PCS)
(VALVE)

GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

REPORT IDENTIFICATION			
Date	**Certificate ID**	**Ref. Transport Note ID**	**Client**
03/10/2024	695/2024	1547/2024	INDRA
Customer Job No.	**Description**	**Item**	**Painting Specification/Procedure**
CL24 00698	See Attachment – ITEM LIST	/	PP-44 2024 rev. 4 SYSTEM 6A

AMBIENT CONDITION					
Date	**Hour**	**Ambient Temp. °C**	**Steel Temp. °C**	**Humidity %**	**Dew Point °C**
30/09/2024	10.00	24.9	25.1	47.8	15.8

SURFACE PREPARATION					
Degreasing			**Abrasive Type**		
THINNER NITRO ANTINEBBIA			GARNET		
Roughness			**Cleanliness and Surface Preparation**		
40 µm			SSPC-SP16		
Soluble Contaminants Test - ISO 8502-6/9			**Dust Test - ISO 8502-3**		
Result (mg/m²):	7.1		**Result:**	Rate 1	Size 1

PAINTING					
Number of Coats	**1**	**2**	**3**	**4**	**5**
Date	30/09/2024	01/10/2024	02/10/2024		
Hour	11.00	8.30	12.00		
Room Temperature °C	26.2	25.1	25.3		
Steel Temperature °C	25.2	26.3	24.9		
Humidity %	48.4	49.2	50.1		
Dew Point °C	15.8	16.8	16.3		
Application Method	Conventional spray	Conventional spray	Conventional spray		
Paint Product Name	INTERGARD 269	INTERGARD 475 HS	INTERTHANE 990		
Product Batch Number	A: 2243167018 B: 2243177028	A: 2243333015 B: 2243284075	RAL 9002 A: 2333167027 RAL 9005 A: 2333167027 B: 2333172046		
Colour	RED	GREY	RAL 9002 VALVES RAL 9005 LEVERS & HW		
DFT	62 µm	172 µm	260 µm		
Visual Aspect Result	SATISFACTORY	SATISFACTORY	SATISFACTORY		
Remarks	NO REMARKS				

MEASURING INSTRUMENTS		
POSITECTOR – SST/6000/RTR	DUST TEST KIT	

CROSSWIND 3/10/24 R

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	ROSETTI MARINO SpA Michele Sacchi Quality Control Dept. NACE # 35 246 + REVIEW	CERTIFIED NACE INTERNATIONAL COATING INSPECTOR EXP. 08/2025 27223 R

COMPANY USE INFORMATION

INDRA s.r.l.
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CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 50 NS.POS/OUR ITEM 50 VS.COD./YOUR CODE VBC0NN24350100 NS.COD./OUR CODE 00.VSF.2694/V (5 PCS)
VS.POS./YOUR ITEM 170 NS.POS/OUR ITEM 170 VS.COD./YOUR CODE VLBBNN07210200 NS.COD./OUR CODE 00.VSF.2682/V (1 PC)
VS.POS./YOUR ITEM 220 NS.POS/OUR ITEM 220 VS.COD./YOUR CODE VLBLNN01320100 NS.COD./OUR CODE 00.VSF.2701/V (2 PCS)
VS.POS./YOUR ITEM 250 NS.POS/OUR ITEM 250 VS.COD./YOUR CODE VLBLNN0143020 NS.COD./OUR CODE 00.VSF.2702/V (2 PCS)
(VALVE AND LEVER)
VS.POS./YOUR ITEM 280 NS.POS/OUR ITEM 280 VS.COD./YOUR CODE VLBMNN00013Q0H NS.COD./OUR CODE 00.MNF.0604/V (14 PCS)
VS.POS./YOUR ITEM 290 NS.POS/OUR ITEM 290 VS.COD./YOUR CODE VLBNNN00023Q0H NS.COD./OUR CODE 00.MNF.0608/V (4 PCS)
VS.POS./YOUR ITEM 300 NS.POS/OUR ITEM 300 VS.COD./YOUR CODE VLBNNN00033Q0H NS.COD./OUR CODE 00.MNF.0605/V (2 PCS)
(VALVE)

GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

ITEM LIST

JOB	DESCRIPTION	QUANTITY
CL24 00698	00.VSF.2694/V LOTTO 24 01216 POS 50	5
CL24 00698	00.VSF.2682/V LOTTO 24 01216 POS. 170	1
CL24 00698	00.VSF.2701/V LOTTO 24 01216 POS. 220	2
CL24 00698	00.VSF.2702/V LOTTO 24 01216 POS. 250	2
CL24 00698	00.MNF.0604/V LOTTO 24 0126 POS.280	14
CL24 00698	00.MNF.0608/V LOTTO 24 01216 POS. 290	4
CL24 00698	00.MNF.0605/V LOTTO 24 01216 POS. 300	2
CL24 00698	981F.08.0005-V29 LOTTO 24 01216 POS.50	5
CL24 00698	981J.08.0006-V22 LOTTO 24 01216 POS.170	1
CL24 00698	981J.08.0007-V4 LOTTO 24 01216 POS.170	1
CL24 00698	981F.08.0005-V29 LOTTO 24 01216 POS.220	2
CL24 00698	981J.08.0006-V22 LOTTO 24 01216 POS.250	2
CL24 00698	981F.08.0005-V29 LOTTO 24 01216 POS.240	1

x CROSSWIND
9/10/24 W/R

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	ROSETTI MARINO SpA Michele Sacchi Quality Control Dept. NACE #35744 X REVIEW	EXP. 09/2025 2723 R

COMPANY USE INFORMATION

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Flavio Brero

As a Certified

NACE Certified Coating Inspector - Level 3

x CROSSWIND
9/10/24 R

Executive Director
NACE International Institute

Expires
August 31, 2025

Cert No.2727

145678

ROSETTI MARINO ITEM 60

COD. VBC0NN24433Q00

TAG: BLPH-MV-044, BLPH-MV-054, BLPH-MV-241

INDRA ITEM 60

COD. 00.VSF.2685(T)

CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 60 NS.POS/OUR ITEM 60 VS.COD./YOUR CODE VBC0NN24433Q00 NS.COD./OUR CODE 00.VSF.2685(T) (3 PCS)
VS.POS./YOUR ITEM 70 NS.POS/OUR ITEM 70 VS.COD./YOUR CODE VBC0NN24440100 NS.COD./OUR CODE 00.VSF.2688(T) (2 PCS)
VS.POS./YOUR ITEM 80 NS.POS/OUR ITEM 80 VS.COD./YOUR CODE VBC0NN24460200 NS.COD./OUR CODE 00.VSF.2692(T) (2 PCS)
VS.POS./YOUR ITEM 230 NS.POS/OUR ITEM 230 VS.COD./YOUR CODE VLBLNN01381H00 NS.COD./OUR CODE 00.VSF.2698(T) 2 PCS)
VS.POS./YOUR ITEM 430 NS.POS/OUR ITEM 324 VS.COD./YOUR CODE VLBLNN01370100 NS.COD./OUR CODE 00.VSF.2784(T) (3 PCS)
(LEVER)

GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

REPORT IDENTIFICATION			
Date	**Certificate ID**	**Ref. Transport Note ID**	**Client**
28/10/2024	727/2024	1668-1670/2024	INDRA
Customer Job No.	**Description**	**Item**	**Painting Specification/Procedure**
CL24 00698	See Attachment – ITEM LIST	/	PP-44 2024 rev. 4 SYSTEM 6A

AMBIENT CONDITION					
Date	**Hour**	**Ambient Temp. °C**	**Steel Temp. °C**	**Humidity %**	**Dew Point °C**
23/10/2024	14.30	18.5	17.8	76.6	14.4

SURFACE PREPARATION							
Degreasing			**Abrasive Type**				
THINNER NITRO ANTINEBBIA			GARNET				
Roughness			**Cleanliness and Surface Preparation**				
40 µm			SSPC-SP16				
Soluble Contaminants Test - ISO 8502-6/9			**Dust Test - ISO 8502-3**				
Result (mg/m²):	7.9		**Result:**	Rate	1	Size	1

PAINTING					
Number of Coats	**1**	**2**	**3**	**4**	**5**
Date	23/10/2024	24/10/2024	25/10/2024		
Hour	15.00	10.00	11.00		
Room Temperature °C	18.4	17.5	17.7		
Steel Temperature °C	18.2	17.4	17.8		
Humidity %	78	79.7	79.3		
Dew Point °C	14.5	14	14.1		
Application Method	Conventional spray	Conventional spray	Conventional spray		
Paint Product Name	INTERGARD 269	INTERGARD 475 HS	INTERTHANE 990		
Product Batch Number	A: 2243167018 B: 2243177028	A: 2243333015 B: 2243284075	RAL 9002 A: 2333167027 RAL 9005 A: 2333167027 B: 2333172046		
Colour	RED	GREY	RAL 9002 VALVES RAL 9005 LEVERS & HW		
DFT	72 µm	180 µm	276 µm		
Visual Aspect Result	SATISFACTORY	SATISFACTORY	SATISFACTORY		
Remarks	NO REMARKS				

MEASURING INSTRUMENTS		
POSITECTOR – SST/6000/RTR	DUST TEST KIT	

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	CROSSWIND 30/10/24 B/W	CERTIFIED INTERNATIONAL COATING INSPECTOR Exp. 08/2025 3222 R M

COMPANY USE INFORMATION

INDRA s.r.l.
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CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 60 NS.POS/OUR ITEM 60 VS.COD./YOUR CODE VBC0NN24433Q00 NS.COD./OUR CODE 00.VSF.2685(T) (3 PCS)
VS.POS./YOUR ITEM 70 NS.POS/OUR ITEM 70 VS.COD./YOUR CODE VBC0NN24440100 NS.COD./OUR CODE 00.VSF.2688(T) (2 PCS)
VS.POS./YOUR ITEM 80 NS.POS/OUR ITEM 80 VS.COD./YOUR CODE VBC0NN24460200 NS.COD./OUR CODE 00.VSF.2692(T) (2 PCS)
VS.POS./YOUR ITEM 230 NS.POS/OUR ITEM 230 VS.COD./YOUR CODE VLBLNN01381H00 NS.COD./OUR CODE 00.VSF.2698(T) 2 PCS)
VS.POS./YOUR ITEM 430 NS.POS/OUR ITEM 324 VS.COD./YOUR CODE VLBLNN01370100 NS.COD./OUR CODE 00.VSF.2784(T) (3 PCS)
(LEVER)

GMP COLOR

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MD-009 (rev 0 - 19/09/2020)

ITEM LIST

JOB	DESCRIPTION	QUANTITY
CL24 00698	00.VSFT.0224/V 24 01216 POS 270	1
CL24 00698	981J.08.0006-V22	1
CL24 00698	981J.08.0019-V6	1
CL24 00698	981J.08.0019-V6	2
CL24 00698	981F.08.0005-V29	3
CL24 00698	981F.08.0005-V29	2
CL24 00698	981F.08.0005-V29	1
CL24 00698	981F.08.0005-V29	2
CL24 00698	981F.08.0005-V29	1
CL24 00698	981F.08.0005-V29	3
CL24 00698	99.50.0533-V	1
CL24 00698	981F.08.0005-V29	3
CL24 00698	981F.08.0012-NP-V22	1
CL24 00698	981J.08.0006-V22	2

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	3/10/24	EXP. 09/2025

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August 31, 2025

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ROSETTI MARINO ITEM 70

COD. VBC0NN24440100

TAG: BLPH-MV-048, BLPH-MV-051

INDRA ITEM 70

COD. 00.VSF.2688(T)

CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 60 NS.POS/OUR ITEM 60 VS.COD./YOUR CODE VBC0NN24433Q00 NS.COD./OUR CODE 00.VSF.2685(T) (3 PCS)
VS.POS./YOUR ITEM 70 NS.POS/OUR ITEM 70 VS.COD./YOUR CODE VBC0NN24440100 NS.COD./OUR CODE 00.VSF.2688(T) (2 PCS)
VS.POS./YOUR ITEM 80 NS.POS/OUR ITEM 80 VS.COD./YOUR CODE VBC0NN24460200 NS.COD./OUR CODE 00.VSF.2692(T) (2 PCS)
VS.POS./YOUR ITEM 230 NS.POS/OUR ITEM 230 VS.COD./YOUR CODE VLBLNN01381H00 NS.COD./OUR CODE 00.VSF.2698(T) 2 PCS)
VS.POS./YOUR ITEM 430 NS.POS/OUR ITEM 324 VS.COD./YOUR CODE VLBLNN01370100 NS.COD./OUR CODE 00.VSF.2784(T) (3 PCS)
(LEVER)

GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

REPORT IDENTIFICATION			
Date	**Certificate ID**	**Ref. Transport Note ID**	**Client**
28/10/2024	727/2024	1668-1670/2024	INDRA
Customer Job No.	**Description**	**Item**	**Painting Specification/Procedure**
CL24 00698	See Attachment – ITEM LIST	/	PP-44 2024 rev. 4 SYSTEM 6A

AMBIENT CONDITION					
Date	**Hour**	**Ambient Temp. °C**	**Steel Temp. °C**	**Humidity %**	**Dew Point °C**
23/10/2024	14.30	18.5	17.8	76.6	14.4

SURFACE PREPARATION							
Degreasing			**Abrasive Type**				
THINNER NITRO ANTINEBBIA			GARNET				
Roughness			**Cleanliness and Surface Preparation**				
40 µm			SSPC-SP16				
Soluble Contaminants Test - ISO 8502-6/9			**Dust Test - ISO 8502-3**				
Result (mg/m²):	7.9		**Result:**	Rate	1	Size	1

PAINTING					
Number of Coats	**1**	**2**	**3**	**4**	**5**
Date	23/10/2024	24/10/2024	25/10/2024		
Hour	15.00	10.00	11.00		
Room Temperature °C	18.4	17.5	17.7		
Steel Temperature °C	18.2	17.4	17.8		
Humidity %	78	79.7	79.3		
Dew Point °C	14.5	14	14.1		
Application Method	Conventional spray	Conventional spray	Conventional spray		
Paint Product Name	INTERGARD 269	INTERGARD 475 HS	INTERTHANE 990		
Product Batch Number	A: 2243167018 B: 2243177028	A: 2243333015 B: 2243284075	RAL 9002 A: 2333167027 RAL 9005 A: 2333167027 B: 2333172046		
Colour	RED	GREY	RAL 9002 VALVES RAL 9005 LEVERS & HW		
DFT	72 µm	180 µm	276 µm		
Visual Aspect Result	SATISFACTORY	SATISFACTORY	SATISFACTORY		
Remarks	NO REMARKS				

MEASURING INSTRUMENTS		
POSITECTOR – SST/6000/RTR	DUST TEST KIT	

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	CROSSWIND 30/10/24 B/W	CERTIFIED INTERNATIONAL COATING INSPECTOR Exp. 08/2025 3222 R M

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CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 60 NS.POS/OUR ITEM 60 VS.COD./YOUR CODE VBC0NN24433Q00 NS.COD./OUR CODE 00.VSF.2685(T) (3 PCS)
VS.POS./YOUR ITEM 70 NS.POS/OUR ITEM 70 VS.COD./YOUR CODE VBC0NN24440100 NS.COD./OUR CODE 00.VSF.2688(T) (2 PCS)
VS.POS./YOUR ITEM 80 NS.POS/OUR ITEM 80 VS.COD./YOUR CODE VBC0NN24460200 NS.COD./OUR CODE 00.VSF.2692(T) (2 PCS)
VS.POS./YOUR ITEM 230 NS.POS/OUR ITEM 230 VS.COD./YOUR CODE VLBLNN01381H00 NS.COD./OUR CODE 00.VSF.2698(T) 2 PCS)
VS.POS./YOUR ITEM 430 NS.POS/OUR ITEM 324 VS.COD./YOUR CODE VLBLNN01370100 NS.COD./OUR CODE 00.VSF.2784(T) (3 PCS)
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GMP COLOR

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MD-009 (rev 0 - 19/09/2020)

ITEM LIST

JOB	DESCRIPTION	QUANTITY
CL24 00698	00.VSFT.0224/V 24 01216 POS 270	1
CL24 00698	981J.08.0006-V22	1
CL24 00698	981J.08.0019-V6	1
CL24 00698	981J.08.0019-V6	2
CL24 00698	981F.08.0005-V29	3
CL24 00698	981F.08.0005-V29	2
CL24 00698	981F.08.0005-V29	1
CL24 00698	981F.08.0005-V29	2
CL24 00698	981F.08.0005-V29	1
CL24 00698	981F.08.0005-V29	3
CL24 00698	99.50.0533-V	1
CL24 00698	981F.08.0005-V29	3
CL24 00698	981F.08.0012-NP-V22	1
CL24 00698	981J.08.0006-V22	2

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	3/10/24	EXP. 09/2025

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ROSETTI MARINO ITEM 80

COD. VBC0NN24460200

TAG: BLPH-MV-464, BLPH-MV-465

INDRA ITEM 80

COD. 00.VSF.2692(T)

CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 60 NS.POS/OUR ITEM 60 VS.COD./YOUR CODE VBC0NN24433Q00 NS.COD./OUR CODE 00.VSF.2685(T) (3 PCS)
VS.POS./YOUR ITEM 70 NS.POS/OUR ITEM 70 VS.COD./YOUR CODE VBC0NN24440100 NS.COD./OUR CODE 00.VSF.2688(T) (2 PCS)
VS.POS./YOUR ITEM 80 NS.POS/OUR ITEM 80 VS.COD./YOUR CODE VBC0NN24460200 NS.COD./OUR CODE 00.VSF.2692(T) (2 PCS)
VS.POS./YOUR ITEM 230 NS.POS/OUR ITEM 230 VS.COD./YOUR CODE VLBLNN01381H00 NS.COD./OUR CODE 00.VSF.2698(T) 2 PCS)
VS.POS./YOUR ITEM 430 NS.POS/OUR ITEM 324 VS.COD./YOUR CODE VLBLNN01370100 NS.COD./OUR CODE 00.VSF.2784(T) (3 PCS)
(LEVER)

GMP COLOR

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MD-009 (rev 0 - 19/09/2020)

REPORT IDENTIFICATION			
Date	**Certificate ID**	**Ref. Transport Note ID**	**Client**
28/10/2024	727/2024	1668-1670/2024	INDRA
Customer Job No.	**Description**	**Item**	**Painting Specification/Procedure**
CL24 00698	See Attachment – ITEM LIST	/	PP-44 2024 rev. 4 SYSTEM 6A

AMBIENT CONDITION					
Date	**Hour**	**Ambient Temp. °C**	**Steel Temp. °C**	**Humidity %**	**Dew Point °C**
23/10/2024	14.30	18.5	17.8	76.6	14.4

SURFACE PREPARATION							
Degreasing			**Abrasive Type**				
THINNER NITRO ANTINEBBIA			GARNET				
Roughness			**Cleanliness and Surface Preparation**				
40 µm			SSPC-SP16				
Soluble Contaminants Test - ISO 8502-6/9			**Dust Test - ISO 8502-3**				
Result (mg/m²):	7.9		**Result:**	Rate	1	Size	1

PAINTING					
Number of Coats	**1**	**2**	**3**	**4**	**5**
Date	23/10/2024	24/10/2024	25/10/2024		
Hour	15.00	10.00	11.00		
Room Temperature °C	18.4	17.5	17.7		
Steel Temperature °C	18.2	17.4	17.8		
Humidity %	78	79.7	79.3		
Dew Point °C	14.5	14	14.1		
Application Method	Conventional spray	Conventional spray	Conventional spray		
Paint Product Name	INTERGARD 269	INTERGARD 475 HS	INTERTHANE 990		
Product Batch Number	A: 2243167018 B: 2243177028	A: 2243333015 B: 2243284075	RAL 9002 A: 2333167027 RAL 9005 A: 2333167027 B: 2333172046		
Colour	RED	GREY	RAL 9002 VALVES RAL 9005 LEVERS & HW		
DFT	72 µm	180 µm	276 µm		
Visual Aspect Result	SATISFACTORY	SATISFACTORY	SATISFACTORY		
Remarks	NO REMARKS				

MEASURING INSTRUMENTS		
POSITECTOR – SST/6000/RTR	DUST TEST KIT	

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	CROSSWIND 30/10/24 B/W	CERTIFIED INTERNATIONAL COATING INSPECTOR Exp. 08/2025 3222 R M

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VS.POS./YOUR ITEM 60 NS.POS/OUR ITEM 60 VS.COD./YOUR CODE VBC0NN24433Q00 NS.COD./OUR CODE 00.VSF.2685(T) (3 PCS)
VS.POS./YOUR ITEM 70 NS.POS/OUR ITEM 70 VS.COD./YOUR CODE VBC0NN24440100 NS.COD./OUR CODE 00.VSF.2688(T) (2 PCS)
VS.POS./YOUR ITEM 80 NS.POS/OUR ITEM 80 VS.COD./YOUR CODE VBC0NN24460200 NS.COD./OUR CODE 00.VSF.2692(T) (2 PCS)
VS.POS./YOUR ITEM 230 NS.POS/OUR ITEM 230 VS.COD./YOUR CODE VLBLNN01381H00 NS.COD./OUR CODE 00.VSF.2698(T) 2 PCS)
VS.POS./YOUR ITEM 430 NS.POS/OUR ITEM 324 VS.COD./YOUR CODE VLBLNN01370100 NS.COD./OUR CODE 00.VSF.2784(T) (3 PCS)
(LEVER)

GMP COLOR

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MD-009 (rev 0 - 19/09/2020)

ITEM LIST

JOB	DESCRIPTION	QUANTITY
CL24 00698	00.VSFT.0224/V 24 01216 POS 270	1
CL24 00698	981J.08.0006-V22	1
CL24 00698	981J.08.0019-V6	1
CL24 00698	981J.08.0019-V6	2
CL24 00698	981F.08.0005-V29	3
CL24 00698	981F.08.0005-V29	2
CL24 00698	981F.08.0005-V29	1
CL24 00698	981F.08.0005-V29	2
CL24 00698	981F.08.0005-V29	1
CL24 00698	981F.08.0005-V29	3
CL24 00698	99.50.0533-V	1
CL24 00698	981F.08.0005-V29	3
CL24 00698	981F.08.0012-NP-V22	1
CL24 00698	981J.08.0006-V22	2

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	3/10/24 R/	EXP. 09/2025

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ROSETTI MARINO ITEM 90

COD. VBC0NN24703Q00

TAG: BLPH-MV-275

INDRA ITEM 90

COD. 00.VSF.2686/V

CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 90 NS.POS/OUR ITEM 90 VS.COD./YOUR CODE VBC0NN24703Q00 NS.COD./OUR CODE 00.VSF.2686/V (1 PC)
VS.POS./YOUR ITEM 100 NS.POS/OUR ITEM 100 VS.COD./YOUR CODE VBC0NN24710100 NS.COD./OUR CODE 00.VSF.2770/V (2 PCS)
VS.POS./YOUR ITEM 200 NS.POS/OUR ITEM 200 VS.COD./YOUR CODE VLBLNN01280100 NS.COD./OUR CODE 00.VSF.2697/V (3 PCS)
VS.POS./YOUR ITEM 210 NS.POS/OUR ITEM 210 VS.COD./YOUR CODE VLBLNN01291H00 NS.COD./OUR CODE 00.VSF.2699/V (1 PC)
(VALVE)

GMP COLOR

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MD-009 (rev 0 - 19/09/2020)

REPORT IDENTIFICATION			
Date	**Certificate ID**	**Ref. Transport Note ID**	**Client**
28/10/2024	728/2024	1670/2024	INDRA
Customer Job No.	**Description**	**Item**	**Painting Specification/Procedure**
CL24 00698	See Attachment – ITEM LIST	/	PP-44 2024 rev. 4 SYSTEM 1

AMBIENT CONDITION					
Date	**Hour**	**Ambient Temp. °C**	**Steel Temp. °C**	**Humidity %**	**Dew Point °C**
23/10/2024	14.30	18.5	17.8	76.6	14.4

SURFACE PREPARATION							
Degreasing			**Abrasive Type**				
THINNER NITRO ANTINEBBIA			GARNET				
Roughness			**Cleanliness and Surface Preparation**				
50 µm			SA 2 1/2				
Soluble Contaminants Test - ISO 8502-6/9			**Dust Test - ISO 8502-3**				
Result (mg/m²):	8.9		**Result:**	Rate	1	Size	1

PAINTING					
Number of Coats	1	2	3	4	5
Date	23/10/2024	24/10/2024	25/10/2024		
Hour	15.00	10.00	11.00		
Room Temperature °C	18.4	17.5	17.7		
Steel Temperature °C	18.2	17.4	17.8		
Humidity %	78	79.7	79.3		
Dew Point °C	14.5	14	14.1		
Application Method	Conventional spray	Conventional spray	Conventional spray		
Paint Product Name	INTERZINC 52	INTERGARD 475 HS	INTERTHANE 990		
Product Batch Number	A: 2333251057 B: 2333142041	A: 2243333015 B: 2243284075	RAL 9002 A: 2333167027 RAL 9005 A: 2333167027 B: 2333172046		
Colour	GREY	GREY	RAL 9002 VALVES RAL 9005 GEAR		
DFT	78 µm	280 µm	338 µm		
Visual Aspect Result	SATISFACTORY	SATISFACTORY	SATISFACTORY		
Remarks	NO REMARKS				

MEASURING INSTRUMENTS		
POSITECTOR – SST/6000/RTR	DUST TEST KIT	

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	CROSSWIND 30/10/24. P/W	CERTIFIED TIME INTERNATIONAL COATING INSPECTOR EXP. 09/2025 2223 R W

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GMP COLOR

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MD-009 (rev 0 - 19/09/2020)

ITEM LIST

JOB	DESCRIPTION	QUANTITY
CL24 00698	00.VSF.2686/V 24 01216 POS 90	1
CL24 00698	00.VSF.2770/V 24 01216 POS 100	2
CL24 00698	00.VSF.2697/V 24 01216 POS 200	3
CL24 00698	00.VSF.2699/V 24 01216 POS 210	1
CL24 00698	99.50.0162SX-V	1

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	CROSS WIND 30/10/24 R/W	CERTIFIED PAINT INSPECTOR EXP. 09/2025 2727

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CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 90 NS.POS/OUR ITEM 90 VS.COD./YOUR CODE VBC0NN24703Q00 NS.COD./OUR CODE 00.VSF.2686/V (1 PC)
VS.POS./YOUR ITEM 100 NS.POS/OUR ITEM 100 VS.COD./YOUR CODE VBC0NN24710100 NS.COD./OUR CODE 00.VSF.2770/V (2 PCS)
VS.POS./YOUR ITEM 200 NS.POS/OUR ITEM 200 VS.COD./YOUR CODE VLBLNN01280100 NS.COD./OUR CODE 00.VSF.2697/V (3 PCS)
VS.POS./YOUR ITEM 210 NS.POS/OUR ITEM 210 VS.COD./YOUR CODE VLBLNN01291H00 NS.COD./OUR CODE 00.VSF.2699/V (1 PC) 3/4
(LEVER)

GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

REPORT IDENTIFICATION			
Date	**Certificate ID**	**Ref. Transport Note ID**	**Client**
28/10/2024	727/2024	1668-1670/2024	INDRA
Customer Job No.	**Description**	**Item**	**Painting Specification/Procedure**
CL24 00698	See Attachment – ITEM LIST	/	PP-44 2024 rev. 4 SYSTEM 6A

AMBIENT CONDITION					
Date	**Hour**	**Ambient Temp. °C**	**Steel Temp. °C**	**Humidity %**	**Dew Point °C**
23/10/2024	14.30	18.5	17.8	76.6	14.4

SURFACE PREPARATION					
Degreasing			**Abrasive Type**		
THINNER NITRO ANTINEBBIA			GARNET		
Roughness			**Cleanliness and Surface Preparation**		
40 µm			SSPC-SP16		
Soluble Contaminants Test - ISO 8502-6/9			**Dust Test - ISO 8502-3**		
Result (mg/m²):	7.9		**Result:**	Rate 1	Size 1

PAINTING					
Number of Coats	**1**	**2**	**3**	**4**	**5**
Date	23/10/2024	24/10/2024	25/10/2024		
Hour	15.00	10.00	11.00		
Room Temperature °C	18.4	17.5	17.7		
Steel Temperature °C	18.2	17.4	17.8		
Humidity %	78	79.7	79.3		
Dew Point °C	14.5	14	14.1		
Application Method	Conventional spray	Conventional spray	Conventional spray		
Paint Product Name	INTERGARD 269	INTERGARD 475 HS	INTERTHANE 990		
Product Batch Number	A: 2243167018 B: 2243177028	A: 2243333015 B: 2243284075	RAL 9002 A: 2333167027 RAL 9005 A: 2333167027 B: 2333172046		
Colour	RED	GREY	RAL 9002 VALVES RAL 9005 LEVERS & HW		
DFT	72 µm	180 µm	276 µm		
Visual Aspect Result	SATISFACTORY	SATISFACTORY	SATISFACTORY		
Remarks	NO REMARKS				

MEASURING INSTRUMENTS		
POSITECTOR – SST/6000/RTR	DUST TEST KIT	

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	CROSS WIND 30/10/24 P/W	CERTIFIED PAINT INSPECTOR INTERNATIONAL COATING INSPECTOR EXP. 09/2025 3722 R

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CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 90 NS.POS/OUR ITEM 90 VS.COD./YOUR CODE VBC0NN24703Q00 NS.COD./OUR CODE 00.VSF.2686/V (1 PC)
VS.POS./YOUR ITEM 100 NS.POS/OUR ITEM 100 VS.COD./YOUR CODE VBC0NN24710100 NS.COD./OUR CODE 00.VSF.2770/V (2 PCS)
VS.POS./YOUR ITEM 200 NS.POS/OUR ITEM 200 VS.COD./YOUR CODE VLBLNN01280100 NS.COD./OUR CODE 00.VSF.2697/V (3 PCS)
VS.POS./YOUR ITEM 210 NS.POS/OUR ITEM 210 VS.COD./YOUR CODE VLBLNN01291H00 NS.COD./OUR CODE 00.VSF.2699/V (1 PC) 4/4
(LEVER)

GMP COLOR

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MD-009 (rev 0 - 19/09/2020)

ITEM LIST

JOB	DESCRIPTION	QUANTITY
CL24 00698	00.VSFT.0224/V 24 01216 POS 270	1
CL24 00698	981J.08.0006-V22	1
CL24 00698	981J.08.0019-V6	1
CL24 00698	981J.08.0019-V6	2
CL24 00698	981F.08.0005-V29	3
CL24 00698	981F.08.0005-V29	2
CL24 00698	981F.08.0005-V29	1
CL24 00698	981F.08.0005-V29	2
CL24 00698	981F.08.0005-V29	1
CL24 00698	981F.08.0005-V29	3
CL24 00698	99.50.0533-V	1
CL24 00698	981F.08.0005-V29	3
CL24 00698	981F.08.0012-NP-V22	1
CL24 00698	981J.08.0006-V22	2

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.		CERTIFIED PAINTING INSPECTOR EXP. 08/2025 2222

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Flavio Brero

As a Certified

NACE Certified Coating Inspector - Level 3

x CROSSWIND
9/10/24 R

Executive Director
NACE International Institute

Expires
August 31, 2025

Cert No.2727

145678

ROSETTI MARINO ITEM 100

COD. BC0NN24710100

TAG: BLPH-MV-263, BLPH-MV-419

INDRA ITEM 100

COD. 00.VSF.2770/V

CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 90 NS.POS/OUR ITEM 90 VS.COD./YOUR CODE VBC0NN24703Q00 NS.COD./OUR CODE 00.VSF.2686/V (1 PC)
VS.POS./YOUR ITEM 100 NS.POS/OUR ITEM 100 VS.COD./YOUR CODE VBC0NN24710100 NS.COD./OUR CODE 00.VSF.2770/V (2 PCS)
VS.POS./YOUR ITEM 200 NS.POS/OUR ITEM 200 VS.COD./YOUR CODE VLBLNN01280100 NS.COD./OUR CODE 00.VSF.2697/V (3 PCS)
VS.POS./YOUR ITEM 210 NS.POS/OUR ITEM 210 VS.COD./YOUR CODE VLBLNN01291H00 NS.COD./OUR CODE 00.VSF.2699/V (1 PC)
(VALVE)

GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

REPORT IDENTIFICATION			
Date	**Certificate ID**	**Ref. Transport Note ID**	**Client**
28/10/2024	728/2024	1670/2024	INDRA
Customer Job No.	**Description**	**Item**	**Painting Specification/Procedure**
CL24 00698	See Attachment – ITEM LIST	/	PP-44 2024 rev. 4 SYSTEM 1

AMBIENT CONDITION					
Date	**Hour**	**Ambient Temp. °C**	**Steel Temp. °C**	**Humidity %**	**Dew Point °C**
23/10/2024	14.30	18.5	17.8	76.6	14.4

SURFACE PREPARATION							
Degreasing			**Abrasive Type**				
THINNER NITRO ANTINEBBIA			GARNET				
Roughness			**Cleanliness and Surface Preparation**				
50 µm			SA 2 1/2				
Soluble Contaminants Test - ISO 8502-6/9			**Dust Test - ISO 8502-3**				
Result (mg/m²):	8.9		**Result:**	Rate	1	Size	1

PAINTING					
Number of Coats	1	2	3	4	5
Date	23/10/2024	24/10/2024	25/10/2024		
Hour	15.00	10.00	11.00		
Room Temperature °C	18.4	17.5	17.7		
Steel Temperature °C	18.2	17.4	17.8		
Humidity %	78	79.7	79.3		
Dew Point °C	14.5	14	14.1		
Application Method	Conventional spray	Conventional spray	Conventional spray		
Paint Product Name	INTERZINC 52	INTERGARD 475 HS	INTERTHANE 990		
Product Batch Number	A: 2333251057 B: 2333142041	A: 2243333015 B: 2243284075	RAL 9002 A: 2333167027 RAL 9005 A: 2333167027 B: 2333172046		
Colour	GREY	GREY	RAL 9002 VALVES RAL 9005 GEAR		
DFT	78 µm	280 µm	338 µm		
Visual Aspect Result	SATISFACTORY	SATISFACTORY	SATISFACTORY		
Remarks	NO REMARKS				

MEASURING INSTRUMENTS		
POSITECTOR – SST/6000/RTR	DUST TEST KIT	

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	CROSSWIND 30/10/24. P/W	CERTIFIED TRAINEE INTERNATIONAL COATING INSPECTOR EXP. 09/2025 2223 R W

COMPANY USE INFORMATION

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GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

ITEM LIST

JOB	DESCRIPTION	QUANTITY
CL24 00698	00.VSF.2686/V 24 01216 POS 90	1
CL24 00698	00.VSF.2770/V 24 01216 POS 100	2
CL24 00698	00.VSF.2697/V 24 01216 POS 200	3
CL24 00698	00.VSF.2699/V 24 01216 POS 210	1
CL24 00698	99.50.0162SX-V	1

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	CROSS WIND 30/10/24 R/W	CERTIFIED PAINT INSPECTOR EXP. 09/2025 2727

COMPANY USE INFORMATION

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CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 90 NS.POS/OUR ITEM 90 VS.COD./YOUR CODE VBC0NN24703Q00 NS.COD./OUR CODE 00.VSF.2686/V (1 PC)
VS.POS./YOUR ITEM 100 NS.POS/OUR ITEM 100 VS.COD./YOUR CODE VBC0NN24710100 NS.COD./OUR CODE 00.VSF.2770/V (2 PCS)
VS.POS./YOUR ITEM 200 NS.POS/OUR ITEM 200 VS.COD./YOUR CODE VLBLNN01280100 NS.COD./OUR CODE 00.VSF.2697/V (3 PCS)
VS.POS./YOUR ITEM 210 NS.POS/OUR ITEM 210 VS.COD./YOUR CODE VLBLNN01291H00 NS.COD./OUR CODE 00.VSF.2699/V (1 PC)
(LEVER)

GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

REPORT IDENTIFICATION			
Date	**Certificate ID**	**Ref. Transport Note ID**	**Client**
28/10/2024	727/2024	1668-1670/2024	INDRA
Customer Job No.	**Description**	**Item**	**Painting Specification/Procedure**
CL24 00698	See Attachment – ITEM LIST	/	PP-44 2024 rev. 4 SYSTEM 6A

AMBIENT CONDITION					
Date	**Hour**	**Ambient Temp. °C**	**Steel Temp. °C**	**Humidity %**	**Dew Point °C**
23/10/2024	14.30	18.5	17.8	76.6	14.4

SURFACE PREPARATION					
Degreasing			**Abrasive Type**		
THINNER NITRO ANTINEBBIA			GARNET		
Roughness			**Cleanliness and Surface Preparation**		
40 µm			SSPC-SP16		
Soluble Contaminants Test - ISO 8502-6/9			**Dust Test - ISO 8502-3**		
Result (mg/m²):	7.9		**Result:**	Rate 1	Size 1

PAINTING					
Number of Coats	**1**	**2**	**3**	**4**	**5**
Date	23/10/2024	24/10/2024	25/10/2024		
Hour	15.00	10.00	11.00		
Room Temperature °C	18.4	17.5	17.7		
Steel Temperature °C	18.2	17.4	17.8		
Humidity %	78	79.7	79.3		
Dew Point °C	14.5	14	14.1		
Application Method	Conventional spray	Conventional spray	Conventional spray		
Paint Product Name	INTERGARD 269	INTERGARD 475 HS	INTERTHANE 990		
Product Batch Number	A: 2243167018 B: 2243177028	A: 2243333015 B: 2243284075	RAL 9002 A: 2333167027 RAL 9005 A: 2333167027 B: 2333172046		
Colour	RED	GREY	RAL 9002 VALVES RAL 9005 LEVERS & HW		
DFT	72 µm	180 µm	276 µm		
Visual Aspect Result	SATISFACTORY	SATISFACTORY	SATISFACTORY		
Remarks	NO REMARKS				

MEASURING INSTRUMENTS		
POSITECTOR – SST/6000/RTR	DUST TEST KIT	

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	CROSS WIND 30/10/24 P/W	CERTIFIED PAINT INSPECTOR EXP. 09/2025 3722

COMPANY USE INFORMATION

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CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 90 NS.POS/OUR ITEM 90 VS.COD./YOUR CODE VBC0NN24703Q00 NS.COD./OUR CODE 00.VSF.2686/V (1 PC)
VS.POS./YOUR ITEM 100 NS.POS/OUR ITEM 100 VS.COD./YOUR CODE VBC0NN24710100 NS.COD./OUR CODE 00.VSF.2770/V (2 PCS)
VS.POS./YOUR ITEM 200 NS.POS/OUR ITEM 200 VS.COD./YOUR CODE VLBLNN01280100 NS.COD./OUR CODE 00.VSF.2697/V (3 PCS)
VS.POS./YOUR ITEM 210 NS.POS/OUR ITEM 210 VS.COD./YOUR CODE VLBLNN01291H00 NS.COD./OUR CODE 00.VSF.2699/V (1 PC) 4/4
(LEVER)

GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

ITEM LIST

JOB	DESCRIPTION	QUANTITY
CL24 00698	00.VSFT.0224/V 24 01216 POS 270	1
CL24 00698	981J.08.0006-V22	1
CL24 00698	981J.08.0019-V6	1
CL24 00698	981J.08.0019-V6	2
CL24 00698	981F.08.0005-V29	3
CL24 00698	981F.08.0005-V29	2
CL24 00698	981F.08.0005-V29	1
CL24 00698	981F.08.0005-V29	2
CL24 00698	981F.08.0005-V29	1
CL24 00698	981F.08.0005-V29	3
CL24 00698	99.50.0533-V	1
CL24 00698	981F.08.0005-V29	3
CL24 00698	981F.08.0012-NP-V22	1
CL24 00698	981J.08.0006-V22	2

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.		

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Certificate 727/2024 - Page 2 of 2

NACE INTERNATIONAL INSTITUTE

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The NACE International Institute Recognizes

Flavio Brero

As a Certified

NACE Certified Coating Inspector - Level 3

x CROSSWIND
9/10/24 R

Executive Director
NACE International Institute

Expires
August 31, 2025

Cert No.2727

145678

ROSETTI MARINO ITEM 110

COD. VBC0NN24710100

TAG: BLPH-MV-417

INDRA ITEM 110

COD. 00.VSF.2689/V

CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 110 NS.POS/OUR ITEM 110 VS.COD./YOUR CODE VBC0NN24710100 NS.COD./OUR CODE 00.VSF.2689/V (1 PC)
VS.POS./YOUR ITEM 120 NS.POS/OUR ITEM 120 VS.COD./YOUR CODE VBC0NN24721H00 NS.COD./OUR CODE 00.VSF.2691/V (1 PC)
VS.POS./YOUR ITEM 390 NS.POS/OUR ITEM 321 VS.COD./YOUR CODE VBD0NN16610300 NS.COD./OUR CODE 00.VSF.2716/V (1 PC) 1/4
(VALVE)

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

REPORT IDENTIFICATION			
Date	**Certificate ID**	**Ref. Transport Note ID**	**Client**
28/10/2024	729/2024	1670/2024	INDRA
Customer Job No.	**Description**	**Item**	**Painting Specification/Procedure**
CL24 00698	See Attachment – ITEM LIST	/	PP-44 2024 rev. 4 SYSTEM 9

AMBIENT CONDITION					
Date	**Hour**	**Ambient Temp. °C**	**Steel Temp. °C**	**Humidity %**	**Dew Point °C**
23/10/2024	14.30	18.5	17.8	76.6	14.4

SURFACE PREPARATION							
Degreasing			**Abrasive Type**				
THINNER NITRO ANTINEBBIA			GARNET				
Roughness			**Cleanliness and Surface Preparation**				
50 µm			SA 2 1/2				
Soluble Contaminants Test - ISO 8502-6/9			**Dust Test - ISO 8502-3**				
Result (mg/m²):	8.5		**Result:**	Rate	1	Size	1

PAINTING					
Number of Coats	**1**	**2**	**3**	**4**	**5**
Date	23/10/2024	24/10/2024			
Hour	15.00	10.00			
Room Temperature °C	18.4	17.5			
Steel Temperature °C	18.2	17.4			
Humidity %	78	79.7			
Dew Point °C	14.5	14			
Application Method	Conventional spray	Conventional spray			
Paint Product Name	THERMALINE 440	THERMALINE 440			
Product Batch Number	A: 230630016A B: 230630039A	A: 230922027A B: 230630039A			
Colour	RED	RAL 9002			
DFT	164 µm	332 µm			
Visual Aspect Result	SATISFACTORY	SATISFACTORY			
Remarks	NO REMARKS				

MEASURING INSTRUMENTS	
POSITECTOR – SST/6000/RTR	DUST TEST KIT

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	CROSSWIND 30/10/24 P/W	CERTIFIED INTERNATIONAL COATING INSPECTOR EXP. 08/2025

COMPANY USE INFORMATION

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GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

ITEM LIST

JOB	DESCRIPTION	QUANTITY
CL24 00698	00.VSF.2689/V 24 01216 POS 110	1
CL24 00698	00.VSF.2691/V 24 01216 POS 120	1
CL24 00698	00.VSF.2716/V 24 01216 POS 321	1

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.		CERTIFIED INTERNATIONAL COATING INSPECTOR EXP. 09/2025 2222 R M

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GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

REPORT IDENTIFICATION			
Date	**Certificate ID**	**Ref. Transport Note ID**	**Client**
28/10/2024	727/2024	1668-1670/2024	INDRA
Customer Job No.	**Description**	**Item**	**Painting Specification/Procedure**
CL24 00698	See Attachment – ITEM LIST	/	PP-44 2024 rev. 4 SYSTEM 6A

AMBIENT CONDITION					
Date	**Hour**	**Ambient Temp. °C**	**Steel Temp. °C**	**Humidity %**	**Dew Point °C**
23/10/2024	14.30	18.5	17.8	76.6	14.4

SURFACE PREPARATION					
Degreasing			**Abrasive Type**		
THINNER NITRO ANTINEBBIA			GARNET		
Roughness			**Cleanliness and Surface Preparation**		
40 µm			SSPC-SP16		
Soluble Contaminants Test - ISO 8502-6/9			**Dust Test - ISO 8502-3**		
Result (mg/m²):	7.9		**Result:**	Rate 1	Size 1

PAINTING					
Number of Coats	**1**	**2**	**3**	**4**	**5**
Date	23/10/2024	24/10/2024	25/10/2024		
Hour	15.00	10.00	11.00		
Room Temperature °C	18.4	17.5	17.7		
Steel Temperature °C	18.2	17.4	17.8		
Humidity %	78	79.7	79.3		
Dew Point °C	14.5	14	14.1		
Application Method	Conventional spray	Conventional spray	Conventional spray		
Paint Product Name	INTERGARD 269	INTERGARD 475 HS	INTERTHANE 990		
Product Batch Number	A: 2243167018 B: 2243177028	A: 2243333015 B: 2243284075	RAL 9002 A: 2333167027 RAL 9005 A: 2333167027 B: 2333172046		
Colour	RED	GREY	RAL 9002 VALVES RAL 9005 LEVERS & HW		
DFT	72 µm	180 µm	276 µm		
Visual Aspect Result	SATISFACTORY	SATISFACTORY	SATISFACTORY		
Remarks	NO REMARKS				

MEASURING INSTRUMENTS		
POSITECTOR – SST/6000/RTR	DUST TEST KIT	

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	CROSSWIND 30/10/24	CERTIFIED INTERNATIONAL COATING INSPECTOR EXP. 08/2025 2224 R

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GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

ITEM LIST

JOB	DESCRIPTION	QUANTITY
CL24 00698	00.VSFT.0224/V 24 01216 POS 270	1
CL24 00698	981J.08.0006-V22	1
CL24 00698	981J.08.0019-V6	1
CL24 00698	981J.08.0019-V6	2
CL24 00698	981F.08.0005-V29	3
CL24 00698	981F.08.0005-V29	2
CL24 00698	981F.08.0005-V29	1
CL24 00698	981F.08.0005-V29	2
CL24 00698	981F.08.0005-V29	1
CL24 00698	981F.08.0005-V29	3
CL24 00698	99.50.0533-V	1
CL24 00698	981F.08.0005-V29	3
CL24 00698	981F.08.0012-NP-V22	1
CL24 00698	981J.08.0006-V22	2

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	CROSSWIND 30/10/24	CERTIFICATE INTERNATIONAL COATING INSPECTOR EXP. 09/2025

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Flavio Brero

As a Certified

NACE Certified Coating Inspector - Level 3

x CROSSWIND
9/10/24 R

Executive Director
NACE International Institute

Expires
August 31, 2025

Cert No.2727

145678

ROSETTI MARINO ITEM 120

COD. VBC0NN24721H00

TAG: BLPH-MV-412

INDRA ITEM 120

COD. 00.VSF.2691/V

CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 110 NS.POS/OUR ITEM 110 VS.COD./YOUR CODE VBC0NN24710100 NS.COD./OUR CODE 00.VSF.2689/V (1 PC)
VS.POS./YOUR ITEM 120 NS.POS/OUR ITEM 120 VS.COD./YOUR CODE VBC0NN24721H00 NS.COD./OUR CODE 00.VSF.2691/V (1 PC)
VS.POS./YOUR ITEM 390 NS.POS/OUR ITEM 321 VS.COD./YOUR CODE VBD0NN16610300 NS.COD./OUR CODE 00.VSF.2716/V (1 PC) 1/4
(VALVE)

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

REPORT IDENTIFICATION			
Date	**Certificate ID**	**Ref. Transport Note ID**	**Client**
28/10/2024	729/2024	1670/2024	INDRA
Customer Job No.	**Description**	**Item**	**Painting Specification/Procedure**
CL24 00698	See Attachment – ITEM LIST	/	PP-44 2024 rev. 4 SYSTEM 9

AMBIENT CONDITION					
Date	**Hour**	**Ambient Temp. °C**	**Steel Temp. °C**	**Humidity %**	**Dew Point °C**
23/10/2024	14.30	18.5	17.8	76.6	14.4

SURFACE PREPARATION							
Degreasing			**Abrasive Type**				
THINNER NITRO ANTINEBBIA			GARNET				
Roughness			**Cleanliness and Surface Preparation**				
50 µm			SA 2 1/2				
Soluble Contaminants Test - ISO 8502-6/9			**Dust Test - ISO 8502-3**				
Result (mg/m²):	8.5		**Result:**	Rate	1	Size	1

PAINTING					
Number of Coats	**1**	**2**	**3**	**4**	**5**
Date	23/10/2024	24/10/2024			
Hour	15.00	10.00			
Room Temperature °C	18.4	17.5			
Steel Temperature °C	18.2	17.4			
Humidity %	78	79.7			
Dew Point °C	14.5	14			
Application Method	Conventional spray	Conventional spray			
Paint Product Name	THERMALINE 440	THERMALINE 440			
Product Batch Number	A: 230630016A B: 230630039A	A: 230922027A B: 230630039A			
Colour	RED	RAL 9002			
DFT	164 µm	332 µm			
Visual Aspect Result	SATISFACTORY	SATISFACTORY			
Remarks	NO REMARKS				

MEASURING INSTRUMENTS	
POSITECTOR – SST/6000/RTR	DUST TEST KIT

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	CROSSWIND 30/10/24 P/W	CERTIFIED INTERNATIONAL COATING INSPECTOR EXP. 08/2025

COMPANY USE INFORMATION

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GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

ITEM LIST

JOB	DESCRIPTION	QUANTITY
CL24 00698	00.VSF.2689/V 24 01216 POS 110	1
CL24 00698	00.VSF.2691/V 24 01216 POS 120	1
CL24 00698	00.VSF.2716/V 24 01216 POS 321	1

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.		CERTIFIED INTERNATIONAL COATING INSPECTOR EXP. 09/2025 2222 R M

COMPANY USE INFORMATION

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GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

REPORT IDENTIFICATION			
Date	**Certificate ID**	**Ref. Transport Note ID**	**Client**
28/10/2024	727/2024	1668-1670/2024	INDRA
Customer Job No.	**Description**	**Item**	**Painting Specification/Procedure**
CL24 00698	See Attachment – ITEM LIST	/	PP-44 2024 rev. 4 SYSTEM 6A

AMBIENT CONDITION					
Date	**Hour**	**Ambient Temp. °C**	**Steel Temp. °C**	**Humidity %**	**Dew Point °C**
23/10/2024	14.30	18.5	17.8	76.6	14.4

SURFACE PREPARATION					
Degreasing			**Abrasive Type**		
THINNER NITRO ANTINEBBIA			GARNET		
Roughness			**Cleanliness and Surface Preparation**		
40 µm			SSPC-SP16		
Soluble Contaminants Test - ISO 8502-6/9			**Dust Test - ISO 8502-3**		
Result (mg/m²):	7.9		**Result:**	Rate 1	Size 1

PAINTING					
Number of Coats	**1**	**2**	**3**	**4**	**5**
Date	23/10/2024	24/10/2024	25/10/2024		
Hour	15.00	10.00	11.00		
Room Temperature °C	18.4	17.5	17.7		
Steel Temperature °C	18.2	17.4	17.8		
Humidity %	78	79.7	79.3		
Dew Point °C	14.5	14	14.1		
Application Method	Conventional spray	Conventional spray	Conventional spray		
Paint Product Name	INTERGARD 269	INTERGARD 475 HS	INTERTHANE 990		
Product Batch Number	A: 2243167018 B: 2243177028	A: 2243333015 B: 2243284075	RAL 9002 A: 2333167027 RAL 9005 A: 2333167027 B: 2333172046		
Colour	RED	GREY	RAL 9002 VALVES RAL 9005 LEVERS & HW		
DFT	72 µm	180 µm	276 µm		
Visual Aspect Result	SATISFACTORY	SATISFACTORY	SATISFACTORY		
Remarks	NO REMARKS				

MEASURING INSTRUMENTS		
POSITECTOR – SST/6000/RTR	DUST TEST KIT	

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	CROSSWINDS 30/10/24 R/W	CERTIFIED INTERNATIONAL COATING INSPECTOR EXP. 09/2025 2224 R

COMPANY USE INFORMATION

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CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 110 NS.POS/OUR ITEM 110 VS.COD./YOUR CODE VBC0NN24710100 NS.COD./OUR CODE 00.VSF.2689/V (1 PC)
VS.POS./YOUR ITEM 120 NS.POS/OUR ITEM 120 VS.COD./YOUR CODE VBC0NN24721H00 NS.COD./OUR CODE 00.VSF.2691/V (1 PC)
VS.POS./YOUR ITEM 390 NS.POS/OUR ITEM 321 VS.COD./YOUR CODE VBD0NN16610300 NS.COD./OUR CODE 00.VSF.2716/V (1 PC) 4/4
(LEVER)

GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

ITEM LIST

JOB	DESCRIPTION	QUANTITY
CL24 00698	00.VSFT.0224/V 24 01216 POS 270	1
CL24 00698	981J.08.0006-V22	1
CL24 00698	981J.08.0019-V6	1
CL24 00698	981J.08.0019-V6	2
CL24 00698	981F.08.0005-V29	3
CL24 00698	981F.08.0005-V29	2
CL24 00698	981F.08.0005-V29	1
CL24 00698	981F.08.0005-V29	2
CL24 00698	981F.08.0005-V29	1
CL24 00698	981F.08.0005-V29	3
CL24 00698	99.50.0533-V	1
CL24 00698	981F.08.0005-V29	3
CL24 00698	981F.08.0012-NP-V22	1
CL24 00698	981J.08.0006-V22	2

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	30/10/24	CERTIFICATE INTERNATIONAL COATING INSPECTOR EXP. 09/2025

COMPANY USE INFORMATION

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Certificate 727/2024 - Page 2 of 2

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x CROSSWIND
9/10/24 R

Executive Director
NACE International Institute

Expires
August 31, 2025

Cert No.2727

145678

ROSETTI MARINO ITEM 130

COD. VBC0NN24893Q00

TAG: BLPH-MV-214,

BLPH-MV-400

INDRA ITEM 130

COD. 00.VSF.2683(T)

NOT PAINTED

ROSETTI MARINO ITEM 140

COD. VBD0NN16460300

TAG: BLPH-MV-402

INDRA ITEM 140

COD. 00.VSF.2695/V

CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216

VS.POS./YOUR ITEM 10	NS.POS/OUR ITEM 10	VS.COD./YOUR CODE VBC0NN06943Q00	NS.COD./OUR CODE 00.VSF.2684/V (1 PC)
VS.POS./YOUR ITEM 20	NS.POS/OUR ITEM 20	VS.COD./YOUR CODE VBC0NN06950100	NS.COD./OUR CODE 00.VSF.2687/V (15 PCS)
VS.POS./YOUR ITEM 30	NS.POS/OUR ITEM 30	VS.COD./YOUR CODE VBC0NN06961H00	NS.COD./OUR CODE 00.VSF.2690/V (2 PCS)
VS.POS./YOUR ITEM 40	NS.POS/OUR ITEM 40	VS.COD./YOUR CODE VBC0NN24343Q00	NS.COD./OUR CODE 00.VSF.2693/V (2 PCS)
VS.POS./YOUR ITEM 140	NS.POS/OUR ITEM 140	VS.COD./YOUR CODE VBD0NN16460300	NS.COD./OUR CODE 00.VSF.2695/V (1 PC)
VS.POS./YOUR ITEM 150	NS.POS/OUR ITEM 150	VS.COD./YOUR CODE VLBBNN07190100	NS.COD./OUR CODE 00.VSF.2680/V (28 PCS)
VS.POS./YOUR ITEM 400	NS.POS/OUR ITEM 322	VS.COD./YOUR CODE VLBBNN07190100	NS.COD./OUR CODE 00.VSF.2680/V (1 PC)

GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

REPORT IDENTIFICATION			
Date	**Certificate ID**	**Ref. Transport Note ID**	**Client**
09/10/2024	710/2024	1581-1586/2024	INDRA
Customer Job No.	**Description**	**Item**	**Painting Specification/Procedure**
CL24 00698	See Attachment – ITEM LIST	/	PP-44 2024 rev. 4 SYSTEM 6A

AMBIENT CONDITION					
Date	**Hour**	**Ambient Temp. °C**	**Steel Temp. °C**	**Humidity %**	**Dew Point °C**
04/10/2024	9.00	25.2	24.8	48.9	14.8

SURFACE PREPARATION					
Degreasing			**Abrasive Type**		
THINNER NITRO ANTINEBBIA			GARNET		
Roughness			**Cleanliness and Surface Preparation**		
40 µm			SSPC-SP16		
Soluble Contaminants Test - ISO 8502-6/9			**Dust Test - ISO 8502-3**		
Result (mg/m²):	7.7		**Result:**	Rate 1	Size 1

PAINTING					
Number of Coats	**1**	**2**	**3**	**4**	**5**
Date	04/10/2024	07/10/2024	08/10/2024		
Hour	10.00	13.30	10.00		
Room Temperature °C	25.3	25.2	25.8		
Steel Temperature °C	24.8	24.2	25.1		
Humidity %	47.2	47.2	47.7		
Dew Point °C	14.9	14.3	13.2		
Application Method	Conventional spray	Conventional spray	Conventional spray		
Paint Product Name	INTERGARD 269	INTERGARD 475 HS	INTERTHANE 990		
Product Batch Number	A: 2243167018 B: 2243177028	A: 2243333015 B: 2243284075	RAL 9002 A: 2333167027 RAL 9005 A: 2333167027 B: 2333172046		
Colour	RED	GREY	RAL 9002 VALVES RAL 9005 LEVERS & HW		
DFT	68 µm	176 µm	266 µm		
Visual Aspect Result	SATISFACTORY	SATISFACTORY	SATISFACTORY		
Remarks	NO REMARKS				

MEASURING INSTRUMENTS		
POSITECTOR – SST/6000/RTR	DUST TEST KIT	

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	x CROSSWIND 16/10/24 WIR	CERTIFIED NACE INTERNATIONAL COATING INSPECTOR EXP. 09/2025

COMPANY USE INFORMATION

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CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216

VS.POS./YOUR ITEM 10	NS.POS/OUR ITEM 10	VS.COD./YOUR CODE VBC0NN06943Q00	NS.COD./OUR CODE 00.VSF.2684/V (1 PC)
VS.POS./YOUR ITEM 20	NS.POS/OUR ITEM 20	VS.COD./YOUR CODE VBC0NN06950100	NS.COD./OUR CODE 00.VSF.2687/V (15 PCS)
VS.POS./YOUR ITEM 30	NS.POS/OUR ITEM 30	VS.COD./YOUR CODE VBC0NN06961H00	NS.COD./OUR CODE 00.VSF.2690/V (2 PCS)
VS.POS./YOUR ITEM 40	NS.POS/OUR ITEM 40	VS.COD./YOUR CODE VBC0NN24343Q00	NS.COD./OUR CODE 00.VSF.2693/V (2 PCS)
VS.POS./YOUR ITEM 140	NS.POS/OUR ITEM 140	VS.COD./YOUR CODE VBD0NN16460300	NS.COD./OUR CODE 00.VSF.2695/V (1 PC)
VS.POS./YOUR ITEM 150	NS.POS/OUR ITEM 150	VS.COD./YOUR CODE VLBBNN07190100	NS.COD./OUR CODE 00.VSF.2680/V (28 PCS)
VS.POS./YOUR ITEM 400	NS.POS/OUR ITEM 322	VS.COD./YOUR CODE VLBBNN07190100	NS.COD./OUR CODE 00.VSF.2680/V (1 PC)

GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

ITEM LIST

JOB	DESCRIPTION	QUANTITY
CL24 00698	00.VSF.2684/V LOTTO 24 01216 POS.10	1
CL24 00698	00.VSF.2687/V LOTTO 24 01216 POS. 20	15
CL24 00698	00.VSF.2690/V LOTTO 24 01216 POS. 30	2
CL24 00698	00.VSF.2693/V LOTTO 24 01216 POS. 40	2
CL24 00698	00.VSF.2695/V LOTTO 24 01216 POS. 140	1
CL24 00698	00.VSF.2680/V LOTTO 24 01216 POS. 150	28
CL24 00698	00.VSF.2680/V LOTTO 24 01216 POS. 322	1
CL24 00698	981F.08.0001-V31 LEVA DI COMANDO PIEGATA SS316 L250	28
CL24 00698	981F.08.0007-NP-V29 LEVA DI COMANDO PIEGATA RIALZATA L250M	28
CL24 00698	981F.08.0001-V31 LEVA DI COMANDO PIEGATA SS316 L250	2
CL24 00698	981F.08.0005-V29 LEVA DI COMANDO PER CASTELLETTO SS316	1
CL24 00698	981F.08.0005-V29 LEVA DI COMANDO PER CASTELLETTO SS316	15
CL24 00698	981F.08.0005-V29 LEVA DI COMANDO PER CASTELLETTO SS316	2
CL24 00698	981J.08.0006-V22 LEVA DI COMANDO PIEGATA SS316-BUR-	1
CL24 00698	981F.08.0001-V31 LEVA DI COMANDO PIEGATA SS316 L250	1
CL24 00698	981F.08.0005.V29 LEVA DI COMANDO PER CASTELLETTO SS316	2
CL24 00698	981F.08.0007-NP-V29 LEVA DI COMANDO PIEGATA RIALZATA L250M-	1

x CROSSWIND
16/10/24 WIR

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.		CERTIFIED PAINT INSPECTOR EXP. 09/2025 2723

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Flavio Brero

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NACE Certified Coating Inspector - Level 3

x CROSSWIND
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Executive Director
NACE International Institute

Expires
August 31, 2025

Cert No.2727

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ROSETTI MARINO ITEM 150

COD. VLBBNN07190100

TAG:

BLPH-MV-003, BLPH-MV-010, BLPH-MV-018, BLPH-MV-029, BLPH-MV-086, BLPH-MV-087, BLPH-MV-088, BLPH-MV-093, BLPH-MV-094, BLPH-MV-098, BLPH-MV-192, BLPH-MV-193, BLPH-MV-195, BLPH-MV-197, BLPH-MV-198, BLPH-MV-200, BLPH-MV-206, BLPH-MV-207, BLPH-MV-211,BLPH-MV-212 BLPH-MV-384, BLPH-MV-385, BLPH-MV-390,BLPH-MV-391, BLPH-MV-426, BLPH-MV-428, BLPH-MV-434, BLPH-MV-435

INDRA ITEM 150

COD. 00.VSF.2680/V

CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216

VS.POS./YOUR ITEM 10	NS.POS/OUR ITEM 10	VS.COD./YOUR CODE VBC0NN06943Q00	NS.COD./OUR CODE 00.VSF.2684/V (1 PC)
VS.POS./YOUR ITEM 20	NS.POS/OUR ITEM 20	VS.COD./YOUR CODE VBC0NN06950100	NS.COD./OUR CODE 00.VSF.2687/V (15 PCS)
VS.POS./YOUR ITEM 30	NS.POS/OUR ITEM 30	VS.COD./YOUR CODE VBC0NN06961H00	NS.COD./OUR CODE 00.VSF.2690/V (2 PCS)
VS.POS./YOUR ITEM 40	NS.POS/OUR ITEM 40	VS.COD./YOUR CODE VBC0NN24343Q00	NS.COD./OUR CODE 00.VSF.2693/V (2 PCS)
VS.POS./YOUR ITEM 140	NS.POS/OUR ITEM 140	VS.COD./YOUR CODE VBD0NN16460300	NS.COD./OUR CODE 00.VSF.2695/V (1 PC)
VS.POS./YOUR ITEM 150	NS.POS/OUR ITEM 150	VS.COD./YOUR CODE VLBBNN07190100	NS.COD./OUR CODE 00.VSF.2680/V (28 PCS)
VS.POS./YOUR ITEM 400	NS.POS/OUR ITEM 322	VS.COD./YOUR CODE VLBBNN07190100	NS.COD./OUR CODE 00.VSF.2680/V (1 PC)

GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

REPORT IDENTIFICATION			
Date	**Certificate ID**	**Ref. Transport Note ID**	**Client**
09/10/2024	710/2024	1581-1586/2024	INDRA
Customer Job No.	**Description**	**Item**	**Painting Specification/Procedure**
CL24 00698	See Attachment – ITEM LIST	/	PP-44 2024 rev. 4 SYSTEM 6A

AMBIENT CONDITION					
Date	**Hour**	**Ambient Temp. °C**	**Steel Temp. °C**	**Humidity %**	**Dew Point °C**
04/10/2024	9.00	25.2	24.8	48.9	14.8

SURFACE PREPARATION					
Degreasing			**Abrasive Type**		
THINNER NITRO ANTINEBBIA			GARNET		
Roughness			**Cleanliness and Surface Preparation**		
40 µm			SSPC-SP16		
Soluble Contaminants Test - ISO 8502-6/9			**Dust Test - ISO 8502-3**		
Result (mg/m²):	7.7		**Result:**	Rate 1	Size 1

PAINTING					
Number of Coats	**1**	**2**	**3**	**4**	**5**
Date	04/10/2024	07/10/2024	08/10/2024		
Hour	10.00	13.30	10.00		
Room Temperature °C	25.3	25.2	25.8		
Steel Temperature °C	24.8	24.2	25.1		
Humidity %	47.2	47.2	47.7		
Dew Point °C	14.9	14.3	13.2		
Application Method	Conventional spray	Conventional spray	Conventional spray		
Paint Product Name	INTERGARD 269	INTERGARD 475 HS	INTERTHANE 990		
Product Batch Number	A: 2243167018 B: 2243177028	A: 2243333015 B: 2243284075	RAL 9002 A: 2333167027 RAL 9005 A: 2333167027 B: 2333172046		
Colour	RED	GREY	RAL 9002 VALVES RAL 9005 LEVERS & HW		
DFT	68 µm	176 µm	266 µm		
Visual Aspect Result	SATISFACTORY	SATISFACTORY	SATISFACTORY		
Remarks	NO REMARKS				

MEASURING INSTRUMENTS		
POSITECTOR – SST/6000/RTR	DUST TEST KIT	

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	x CROSSWIND 16/10/24 WIR	CERTIFIED NACE INTERNATIONAL COATING INSPECTOR EXP. 09/2025 27221

COMPANY USE INFORMATION

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CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216

VS.POS./YOUR ITEM 10	NS.POS/OUR ITEM 10	VS.COD./YOUR CODE VBC0NN06943Q00	NS.COD./OUR CODE 00.VSF.2684/V (1 PC)
VS.POS./YOUR ITEM 20	NS.POS/OUR ITEM 20	VS.COD./YOUR CODE VBC0NN06950100	NS.COD./OUR CODE 00.VSF.2687/V (15 PCS)
VS.POS./YOUR ITEM 30	NS.POS/OUR ITEM 30	VS.COD./YOUR CODE VBC0NN06961H00	NS.COD./OUR CODE 00.VSF.2690/V (2 PCS)
VS.POS./YOUR ITEM 40	NS.POS/OUR ITEM 40	VS.COD./YOUR CODE VBC0NN24343Q00	NS.COD./OUR CODE 00.VSF.2693/V (2 PCS)
VS.POS./YOUR ITEM 140	NS.POS/OUR ITEM 140	VS.COD./YOUR CODE VBD0NN16460300	NS.COD./OUR CODE 00.VSF.2695/V (1 PC)
VS.POS./YOUR ITEM 150	NS.POS/OUR ITEM 150	VS.COD./YOUR CODE VLBBNN07190100	NS.COD./OUR CODE 00.VSF.2680/V (28 PCS)
VS.POS./YOUR ITEM 400	NS.POS/OUR ITEM 322	VS.COD./YOUR CODE VLBBNN07190100	NS.COD./OUR CODE 00.VSF.2680/V (1 PC)

GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

ITEM LIST

JOB	DESCRIPTION	QUANTITY
CL24 00698	00.VSF.2684/V LOTTO 24 01216 POS.10	1
CL24 00698	00.VSF.2687/V LOTTO 24 01216 POS. 20	15
CL24 00698	00.VSF.2690/V LOTTO 24 01216 POS. 30	2
CL24 00698	00.VSF.2693/V LOTTO 24 01216 POS. 40	2
CL24 00698	00.VSF.2695/V LOTTO 24 01216 POS. 140	1
CL24 00698	00.VSF.2680/V LOTTO 24 01216 POS. 150	28
CL24 00698	00.VSF.2680/V LOTTO 24 01216 POS. 322	1
CL24 00698	981F.08.0001-V31 LEVA DI COMANDO PIEGATA SS316 L250	28
CL24 00698	981F.08.0007-NP-V29 LEVA DI COMANDO PIEGATA RIALZATA L250M	28
CL24 00698	981F.08.0001-V31 LEVA DI COMANDO PIEGATA SS316 L250	2
CL24 00698	981F.08.0005-V29 LEVA DI COMANDO PER CASTELLETTO SS316	1
CL24 00698	981F.08.0005-V29 LEVA DI COMANDO PER CASTELLETTO SS316	15
CL24 00698	981F.08.0005-V29 LEVA DI COMANDO PER CASTELLETTO SS316	2
CL24 00698	981J.08.0006-V22 LEVA DI COMANDO PIEGATA SS316-BUR-	1
CL24 00698	981F.08.0001-V31 LEVA DI COMANDO PIEGATA SS316 L250	1
CL24 00698	981F.08.0005.V29 LEVA DI COMANDO PER CASTELLETTO SS316	2
CL24 00698	981F.08.0007-NP-V29 LEVA DI COMANDO PIEGATA RIALZATA L250M-	1

x CROSSWIND
16/10/24 WIR

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.		CERTIFIED PAINT INSPECTOR EXP. 09/2025 2723

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NACE International Institute

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ROSETTI MARINO ITEM 160

COD. VLBBNN07201H00

TAG:

BLPH-MV-032, BLPH-MV-266, BLPH-MV-389, BLPH-MV-416, BLPH-MV-433, BLPH-MV-442

INDRA ITEM 160

COD. 00.VSF.2681/V

CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 160 NS.POS/OUR ITEM 160 VS.COD./YOUR CODE VLBBNN07201H00 NS.COD./OUR CODE 00.VSF.2681/V (6 PCS)
VS.POS./YOUR ITEM 260 NS.POS/OUR ITEM 260 VS.COD./YOUR CODE VLBLNN01450400 NS.COD./OUR CODE 00.VSF.2700/V (7 PCS)
VS.POS./YOUR ITEM 410 NS.POS/OUR ITEM 323 VS.COD./YOUR CODE VLBBNN07201H00 NS.COD./OUR CODE 00.VSF.2681/V (1 PC)

GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

REPORT IDENTIFICATION			
Date	Certificate ID	Ref. Transport Note ID	Client
17/10/2024	714/2024	1616/2024	INDRA
Customer Job No.	Description	Item	Painting Specification/Procedure
CL24 00698	See Attachment – ITEM LIST	/	PP-44 2024 rev. 4 SYSTEM 6A

AMBIENT CONDITION					
Date	Hour	Ambient Temp. °C	Steel Temp. °C	Humidity %	Dew Point °C
14/10/2024	11.00	24.3	24.8	48.9	14.8

SURFACE PREPARATION							
Degreasing			Abrasive Type				
THINNER NITRO ANTINEBBIA			GARNET				
Roughness			Cleanliness and Surface Preparation				
40 µm			SSPC-SP16				
Soluble Contaminants Test - ISO 8502-6/9			Dust Test - ISO 8502-3				
Result (mg/m²):	7.7		Result:	Rate	1	Size	1

PAINTING					
Number of Coats	1	2	3	4	5
Date	14/10/2024	15/10/2024	16/10/2024		
Hour	13.30	10.00	11.00		
Room Temperature °C	25.3	25.7	24.3		
Steel Temperature °C	24.5	25.3	24.1		
Humidity %	47.8	47.9	46.3		
Dew Point °C	14.7	13.4	13.9		
Application Method	Conventional spray	Conventional spray	Conventional spray		
Paint Product Name	INTERGARD 269	INTERGARD 475 HS	INTERTHANE 990		
Product Batch Number	A: 2243167018 B: 2243177028	A: 2243333015 B: 2243284075	RAL 9002 A: 2333167027 RAL 9005 A: 2333167027 B: 2333172046		
Colour	RED	GREY	RAL 9002 VALVES RAL 9005 LEVERS & HW		
DFT	70 µm	178 µm	270 µm		
Visual Aspect Result	SATISFACTORY	SATISFACTORY	SATISFACTORY		
Remarks	NO REMARKS				

MEASURING INSTRUMENTS		
POSITECTOR – SST/6000/RTR	DUST TEST KIT	

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	x CROSSWIND WIR 23/10/24	CERTIFIED INTERNATIONAL COATING INSPECTOR EXP. 09/2025

COMPANY USE INFORMATION

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CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 160 NS.POS/OUR ITEM 160 VS.COD./YOUR CODE VLBBNN07201H00 NS.COD./OUR CODE 00.VSF.2681/V (6 PCS)
VS.POS./YOUR ITEM 260 NS.POS/OUR ITEM 260 VS.COD./YOUR CODE VLBLNN01450400 NS.COD./OUR CODE 00.VSF.2700/V (7 PCS)
VS.POS./YOUR ITEM 410 NS.POS/OUR ITEM 323 VS.COD./YOUR CODE VLBBNN07201H00 NS.COD./OUR CODE 00.VSF.2681/V (1 PC)

GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

ITEM LIST

JOB	DESCRIPTION	QUANTITY
CL24 00698	00.VSF.2681/V LOTTO 24-01216/160	6
CL24 00698	00.VSF.2681/V LOTTO 24-01216/323	1
CL24 00698	00.VSF.2700/V LOTTO 24-01216/260	7
CL24 00698	981J.08.0018-V6 LEVA DI COMANDO ALTA	1
CL24 00698	981J.08.0019-V6 LEVA DI COMANDO	1
CL24 00698	98N.08.0001-V6 LEVA SS316	7
CL24 00698	981J.08.0019-V6 LEVA DI COMANDO	6
CL24 00698	981J.08.0018-V6 LEVA DI COMANDO ALTA	6

x CROSSWIND W|R
23/10/24

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.		CERTIFIED PAINT INSPECTOR INTERNATIONAL COATING INSPECTOR EXP. 09/2025 2722 R

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Executive Director
NACE International Institute

Expires
August 31, 2025

Cert No.2727

145678

ROSETTI MARINO ITEM 170

COD. VLBBNN07210200

TAG:

BLPH-MV-019

INDRA ITEM 170

COD. 00.VSF.2682/V

CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 50 NS.POS/OUR ITEM 50 VS.COD./YOUR CODE VBC0NN24350100 NS.COD./OUR CODE 00.VSF.2694/V (5 PCS)
VS.POS./YOUR ITEM 170 NS.POS/OUR ITEM 170 VS.COD./YOUR CODE VLBBNN07210200 NS.COD./OUR CODE 00.VSF.2682/V (1 PC)
VS.POS./YOUR ITEM 220 NS.POS/OUR ITEM 220 VS.COD./YOUR CODE VLBLNN01320100 NS.COD./OUR CODE 00.VSF.2701/V (2 PCS)
VS.POS./YOUR ITEM 250 NS.POS/OUR ITEM 250 VS.COD./YOUR CODE VLBLNN0143020 NS.COD./OUR CODE 00.VSF.2702/V (2 PCS)
(VALVE AND LEVER)
VS.POS./YOUR ITEM 280 NS.POS/OUR ITEM 280 VS.COD./YOUR CODE VLBMNN00013Q0H NS.COD./OUR CODE 00.MNF.0604/V (14 PCS)
VS.POS./YOUR ITEM 290 NS.POS/OUR ITEM 290 VS.COD./YOUR CODE VLBNNN00023Q0H NS.COD./OUR CODE 00.MNF.0608/V (4 PCS)
VS.POS./YOUR ITEM 300 NS.POS/OUR ITEM 300 VS.COD./YOUR CODE VLBNNN00033Q0H NS.COD./OUR CODE 00.MNF.0605/V (2 PCS)
(VALVE)

GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

REPORT IDENTIFICATION			
Date	**Certificate ID**	**Ref. Transport Note ID**	**Client**
03/10/2024	695/2024	1547/2024	INDRA
Customer Job No.	**Description**	**Item**	**Painting Specification/Procedure**
CL24 00698	See Attachment – ITEM LIST	/	PP-44 2024 rev. 4 SYSTEM 6A

AMBIENT CONDITION					
Date	**Hour**	**Ambient Temp. °C**	**Steel Temp. °C**	**Humidity %**	**Dew Point °C**
30/09/2024	10.00	24.9	25.1	47.8	15.8

SURFACE PREPARATION					
Degreasing			**Abrasive Type**		
THINNER NITRO ANTINEBBIA			GARNET		
Roughness			**Cleanliness and Surface Preparation**		
40 µm			SSPC-SP16		
Soluble Contaminants Test - ISO 8502-6/9			**Dust Test - ISO 8502-3**		
Result (mg/m²):	7.1		**Result:**	Rate 1	Size 1

PAINTING					
Number of Coats	**1**	**2**	**3**	**4**	**5**
Date	30/09/2024	01/10/2024	02/10/2024		
Hour	11.00	8.30	12.00		
Room Temperature °C	26.2	25.1	25.3		
Steel Temperature °C	25.2	26.3	24.9		
Humidity %	48.4	49.2	50.1		
Dew Point °C	15.8	16.8	16.3		
Application Method	Conventional spray	Conventional spray	Conventional spray		
Paint Product Name	INTERGARD 269	INTERGARD 475 HS	INTERTHANE 990		
Product Batch Number	A: 2243167018 B: 2243177028	A: 2243333015 B: 2243284075	RAL 9002 A: 2333167027 RAL 9005 A: 2333167027 B: 2333172046		
Colour	RED	GREY	RAL 9002 VALVES RAL 9005 LEVERS & HW		
DFT	62 µm	172 µm	260 µm		
Visual Aspect Result	SATISFACTORY	SATISFACTORY	SATISFACTORY		
Remarks	NO REMARKS				

MEASURING INSTRUMENTS		
POSITECTOR – SST/6000/RTR	DUST TEST KIT	

CROSSWIND 3/10/24 R

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	ROSETTI MARINO SpA Michele Sacchi Quality Control Dept. NACE # 35 246 + REVIEW	CERTIFIED NACE INTERNATIONAL COATING INSPECTOR EXP. 08/2025 27223 R

COMPANY USE INFORMATION

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CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 50 NS.POS/OUR ITEM 50 VS.COD./YOUR CODE VBC0NN24350100 NS.COD./OUR CODE 00.VSF.2694/V (5 PCS)
VS.POS./YOUR ITEM 170 NS.POS/OUR ITEM 170 VS.COD./YOUR CODE VLBBNN07210200 NS.COD./OUR CODE 00.VSF.2682/V (1 PC)
VS.POS./YOUR ITEM 220 NS.POS/OUR ITEM 220 VS.COD./YOUR CODE VLBLNN01320100 NS.COD./OUR CODE 00.VSF.2701/V (2 PCS)
VS.POS./YOUR ITEM 250 NS.POS/OUR ITEM 250 VS.COD./YOUR CODE VLBLNN0143020 NS.COD./OUR CODE 00.VSF.2702/V (2 PCS)
(VALVE AND LEVER)
VS.POS./YOUR ITEM 280 NS.POS/OUR ITEM 280 VS.COD./YOUR CODE VLBMNN00013Q0H NS.COD./OUR CODE 00.MNF.0604/V (14 PCS)
VS.POS./YOUR ITEM 290 NS.POS/OUR ITEM 290 VS.COD./YOUR CODE VLBNNN00023Q0H NS.COD./OUR CODE 00.MNF.0608/V (4 PCS)
VS.POS./YOUR ITEM 300 NS.POS/OUR ITEM 300 VS.COD./YOUR CODE VLBNNN00033Q0H NS.COD./OUR CODE 00.MNF.0605/V (2 PCS)
(VALVE)

GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

ITEM LIST

JOB	DESCRIPTION	QUANTITY
CL24 00698	00.VSF.2694/V LOTTO 24 01216 POS 50	5
CL24 00698	00.VSF.2682/V LOTTO 24 01216 POS. 170	1
CL24 00698	00.VSF.2701/V LOTTO 24 01216 POS. 220	2
CL24 00698	00.VSF.2702/V LOTTO 24 01216 POS. 250	2
CL24 00698	00.MNF.0604/V LOTTO 24 0126 POS.280	14
CL24 00698	00.MNF.0608/V LOTTO 24 01216 POS. 290	4
CL24 00698	00.MNF.0605/V LOTTO 24 01216 POS. 300	2
CL24 00698	981F.08.0005-V29 LOTTO 24 01216 POS.50	5
CL24 00698	981J.08.0006-V22 LOTTO 24 01216 POS.170	1
CL24 00698	981J.08.0007-V4 LOTTO 24 01216 POS.170	1
CL24 00698	981F.08.0005-V29 LOTTO 24 01216 POS.220	2
CL24 00698	981J.08.0006-V22 LOTTO 24 01216 POS.250	2
CL24 00698	981F.08.0005-V29 LOTTO 24 01216 POS.240	1

x CROSSWIND
9/10/24 W/R

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	ROSETTI MARINO SpA Michele Sacchi Quality Control Dept. NACE #35744 X REVIEW	EXP. 09/2025 2723 R

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x CROSSWIND
9/10/24 R

Executive Director
NACE International Institute

Expires
August 31, 2025

Cert No.2727

145678

ROSETTI MARINO ITEM 180

COD. VLBBNN07230400

TAG:

BLPH-MV-034, BLPH-MV-222, BLPH-MV-387, BLPH-MV-423, BLPH-MV-431, BLPH-MV-440

INDRA ITEM 180

COD. 00.VSF.2679/V

CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 180 NS.POS/OUR ITEM 180 VS.COD./YOUR CODE VLBBNN07230400 NS.COD./OUR CODE 00.VSF.2679/V (6 PCS)
VS.POS./YOUR ITEM 190 NS.POS/OUR ITEM 190 VS.COD./YOUR CODE VLBBNN07240600 NS.COD./OUR CODE 00.VSFT.0223/V (6 PCS)
(VALVE AND HANDWHEEL)

GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

REPORT IDENTIFICATION			
Date	**Certificate ID**	**Ref. Transport Note ID**	**Client**
11/11/2024	746/2024	1741-1743/2024	INDRA
Customer Job No.	**Description**	**Item**	**Painting Specification/Procedure**
CL24 00698	See Attachment – ITEM LIST	/	PP-44 2024 rev. 4 SYSTEM 6A

AMBIENT CONDITION					
Date	**Hour**	**Ambient Temp. °C**	**Steel Temp. °C**	**Humidity %**	**Dew Point °C**
06/11/2024	11.00	18.9	17.9	75.2	13.2

SURFACE PREPARATION					
Degreasing		**Abrasive Type**			
THINNER NITRO ANTINEBBIA		GARNET			
Roughness		**Cleanliness and Surface Preparation**			
40 µm		SSPC-SP16			
Soluble Contaminants Test - ISO 8502-6/9		**Dust Test - ISO 8502-3**			
Result (mg/m²):	7.8	**Result:**	**Rate** 1	**Size** 1	

PAINTING					
Number of Coats	**1**	**2**	**3**	**4**	**5**
Date	06/11/2024	07/11/2024	08/11/2024		
Hour	11.30	10.00	12.00		
Room Temperature °C	18.4	17.4	18.9		
Steel Temperature °C	17.7	16.9	18.4		
Humidity %	76.3	65.9	72.2		
Dew Point °C	12.8	13.2	13.6		
Application Method	Conventional spray	Conventional spray	Conventional spray		
Paint Product Name	INTERGARD 269	INTERGARD 475 HS	INTERTHANE 990		
Product Batch Number	A: 2243167018 B: 2243177028	A: 2243333015 B: 2243284075	RAL 9002 A: 2333167027 RAL 9005 A: 2333167027 B: 2333172046		
Colour	RED	GREY	RAL 9002 VALVES RAL 9005 HW		
DFT	78 µm	200 µm	296 µm		
Visual Aspect Result	SATISFACTORY	SATISFACTORY	SATISFACTORY		
Remarks	NO REMARKS				

MEASURING INSTRUMENTS		
POSITECTOR – SST/6000/RTR	DUST TEST KIT	

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	x CROSS WIND 13/11/24 N/R	CERTIFIED PAINT INSPECTOR – PAINT INTERNATIONAL COATING INSPECTOR – EXP. 09/2025 – 2222

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GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

ITEM LIST

JOB	DESCRIPTION	QUANTITY
CL24 00698	00.VSF.2679/V 24 01216 POS 180	6
CL24 00698	99.50.0533/V HANDWHEEL	12
CL24 00698	00.VSFT.0223/V 24 01216 POS 190	6
CL24 00698	99.50.0532/V HANDWHEEL	12

x CROSS WIND
13/11/24

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.		CERTIFIED INTERNATIONAL COATING INSPECTOR Exp. 09.2025 2722 R

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GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

REPORT IDENTIFICATION			
Date	**Certificate ID**	**Ref. Transport Note ID**	**Client**
11/11/2024	747/2024	1741-1743/2024	INDRA
Customer Job No.	**Description**	**Item**	**Painting Specification/Procedure**
CL24 00698	See Attachment – ITEM LIST	/	PP-44 2024 rev. 4 SYSTEM 1

AMBIENT CONDITION					
Date	**Hour**	**Ambient Temp. °C**	**Steel Temp. °C**	**Humidity %**	**Dew Point °C**
06/11/2024	14.30	18.5	17.8	76.6	14.4

SURFACE PREPARATION						
Degreasing		**Abrasive Type**				
THINNER NITRO ANTINEBBIA		GARNET				
Roughness		**Cleanliness and Surface Preparation**				
50 µm		SA 2 1/2				
Soluble Contaminants Test - ISO 8502-6/9		**Dust Test - ISO 8502-3**				
Result (mg/m²):	8.5	**Result:**	**Rate**	1	**Size**	1

PAINTING					
Number of Coats	**1**	**2**	**3**	**4**	**5**
Date	06/11/2024	07/11/2024	08/11/2024		
Hour	15.00	10.00	11.00		
Room Temperature °C	18.4	17.5	17.7		
Steel Temperature °C	18.2	17.4	17.8		
Humidity %	78	79.7	79.3		
Dew Point °C	14.5	14	14.1		
Application Method	Conventional spray	Conventional spray	Conventional spray		
Paint Product Name	INTERZINC 52	INTERGARD 475 HS	INTERTHANE 990		
Product Batch Number	A: 2333251057 B: 2333142041	A: 2243333015 B: 2243284075	A: 2333167027 B: 2333172046		
Colour	GREY	GREY	RAL 9005		
DFT	80 µm	284 µm	348 µm		
Visual Aspect Result	SATISFACTORY	SATISFACTORY	SATISFACTORY		
Remarks	NO REMARKS				

MEASURING INSTRUMENTS		
POSITECTOR – SST/6000/RTR	DUST TEST KIT	

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	13/11/24	EXP. 09/2025 2722

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GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

ITEM LIST

JOB	DESCRIPTION	QUANTITY
CL24 00698	99.50.0172SX-V GEAR	6
CL24 00698	99.50.0173DX-V GEAR	6
CL24 00698	99.50.0163SX-V GEAR	6
CL24 00698	99.50.0164DX-V GEAR	6

×CROSSWIND

13/11/24

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.		CERTIFIED NACE INTERNATIONAL COATING INSPECTOR EXP. 08/2025 2723 R

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9/10/24 R

Executive Director
NACE International Institute

Expires
August 31, 2025

Cert No.2727

145678

ROSETTI MARINO ITEM 190

COD. VLBBNN07240600

TAG:

BLPH-MV-035, BLPH-MV-264, BLPH-MV-388, BLPH-MV-424, BLPH-MV-432, BLPH-MV-441

INDRA ITEM 190

COD. 00.VSFT.0223/V

CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 180 NS.POS/OUR ITEM 180 VS.COD./YOUR CODE VLBBNN07230400 NS.COD./OUR CODE 00.VSF.2679/V (6 PCS)
VS.POS./YOUR ITEM 190 NS.POS/OUR ITEM 190 VS.COD./YOUR CODE VLBBNN07240600 NS.COD./OUR CODE 00.VSFT.0223/V (6 PCS)
(VALVE AND HANDWHEEL)

GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

REPORT IDENTIFICATION			
Date	**Certificate ID**	**Ref. Transport Note ID**	**Client**
11/11/2024	746/2024	1741-1743/2024	INDRA
Customer Job No.	**Description**	**Item**	**Painting Specification/Procedure**
CL24 00698	See Attachment – ITEM LIST	/	PP-44 2024 rev. 4 SYSTEM 6A

AMBIENT CONDITION					
Date	**Hour**	**Ambient Temp. °C**	**Steel Temp. °C**	**Humidity %**	**Dew Point °C**
06/11/2024	11.00	18.9	17.9	75.2	13.2

SURFACE PREPARATION					
Degreasing		**Abrasive Type**			
THINNER NITRO ANTINEBBIA		GARNET			
Roughness		**Cleanliness and Surface Preparation**			
40 µm		SSPC-SP16			
Soluble Contaminants Test - ISO 8502-6/9		**Dust Test - ISO 8502-3**			
Result (mg/m²):	7.8	**Result:**	**Rate** 1	**Size** 1	

PAINTING					
Number of Coats	**1**	**2**	**3**	**4**	**5**
Date	06/11/2024	07/11/2024	08/11/2024		
Hour	11.30	10.00	12.00		
Room Temperature °C	18.4	17.4	18.9		
Steel Temperature °C	17.7	16.9	18.4		
Humidity %	76.3	65.9	72.2		
Dew Point °C	12.8	13.2	13.6		
Application Method	Conventional spray	Conventional spray	Conventional spray		
Paint Product Name	INTERGARD 269	INTERGARD 475 HS	INTERTHANE 990		
Product Batch Number	A: 2243167018 B: 2243177028	A: 2243333015 B: 2243284075	RAL 9002 A: 2333167027 RAL 9005 A: 2333167027 B: 2333172046		
Colour	RED	GREY	RAL 9002 VALVES RAL 9005 HW		
DFT	78 µm	200 µm	296 µm		
Visual Aspect Result	SATISFACTORY	SATISFACTORY	SATISFACTORY		
Remarks	NO REMARKS				

MEASURING INSTRUMENTS		
POSITECTOR – SST/6000/RTR	DUST TEST KIT	

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	CROSS WIND 13/11/24 N/R	CERTIFIED PAINT INSPECTOR – PAINT INTERNATIONAL COATING INSPECTOR – EXP. 09/2025 – 2222

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GMP COLOR

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MD-009 (rev 0 - 19/09/2020)

ITEM LIST

JOB	DESCRIPTION	QUANTITY
CL24 00698	00.VSF.2679/V 24 01216 POS 180	6
CL24 00698	99.50.0533/V HANDWHEEL	12
CL24 00698	00.VSFT.0223/V 24 01216 POS 190	6
CL24 00698	99.50.0532/V HANDWHEEL	12

x CROSS WIND
13/11/24

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.		CERTIFIED INTERNATIONAL COATING INSPECTOR Exp. 09/2025 2722 R

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MD-009 (rev 0 - 19/09/2020)

REPORT IDENTIFICATION			
Date	**Certificate ID**	**Ref. Transport Note ID**	**Client**
11/11/2024	747/2024	1741-1743/2024	INDRA
Customer Job No.	**Description**	**Item**	**Painting Specification/Procedure**
CL24 00698	See Attachment – ITEM LIST	/	PP-44 2024 rev. 4 SYSTEM 1

AMBIENT CONDITION					
Date	**Hour**	**Ambient Temp. °C**	**Steel Temp. °C**	**Humidity %**	**Dew Point °C**
06/11/2024	14.30	18.5	17.8	76.6	14.4

SURFACE PREPARATION						
Degreasing		**Abrasive Type**				
THINNER NITRO ANTINEBBIA		GARNET				
Roughness		**Cleanliness and Surface Preparation**				
50 µm		SA 2 1/2				
Soluble Contaminants Test - ISO 8502-6/9		**Dust Test - ISO 8502-3**				
Result (mg/m²):	8.5	**Result:**	**Rate**	1	**Size**	1

PAINTING					
Number of Coats	**1**	**2**	**3**	**4**	**5**
Date	06/11/2024	07/11/2024	08/11/2024		
Hour	15.00	10.00	11.00		
Room Temperature °C	18.4	17.5	17.7		
Steel Temperature °C	18.2	17.4	17.8		
Humidity %	78	79.7	79.3		
Dew Point °C	14.5	14	14.1		
Application Method	Conventional spray	Conventional spray	Conventional spray		
Paint Product Name	INTERZINC 52	INTERGARD 475 HS	INTERTHANE 990		
Product Batch Number	A: 2333251057 B: 2333142041	A: 2243333015 B: 2243284075	A: 2333167027 B: 2333172046		
Colour	GREY	GREY	RAL 9005		
DFT	80 µm	284 µm	348 µm		
Visual Aspect Result	SATISFACTORY	SATISFACTORY	SATISFACTORY		
Remarks	NO REMARKS				

MEASURING INSTRUMENTS		
POSITECTOR – SST/6000/RTR	DUST TEST KIT	

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	13/11/24	

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MD-009 (rev 0 - 19/09/2020)

ITEM LIST

JOB	DESCRIPTION	QUANTITY
CL24 00698	99.50.0172SX-V GEAR	6
CL24 00698	99.50.0173DX-V GEAR	6
CL24 00698	99.50.0163SX-V GEAR	6
CL24 00698	99.50.0164DX-V GEAR	6

x CROSSWIND

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.		CERTIFIED INTERNATIONAL COATING INSPECTOR EXP. 09/2023 2723

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x CROSSWIND
9/10/24 R

Executive Director
NACE International Institute

Expires
August 31, 2025

Cert No.2727

145678

ROSETTI MARINO ITEM 200

COD. VLBLNN01280100

TAG:

BLPH-MV-269, BLPH-MV-271,

BLPH-MV-409

INDRA ITEM 200

COD. 00.VSF.2697/V

CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 90 NS.POS/OUR ITEM 90 VS.COD./YOUR CODE VBC0NN24703Q00 NS.COD./OUR CODE 00.VSF.2686/V (1 PC)
VS.POS./YOUR ITEM 100 NS.POS/OUR ITEM 100 VS.COD./YOUR CODE VBC0NN24710100 NS.COD./OUR CODE 00.VSF.2770/V (2 PCS)
VS.POS./YOUR ITEM 200 NS.POS/OUR ITEM 200 VS.COD./YOUR CODE VLBLNN01280100 NS.COD./OUR CODE 00.VSF.2697/V (3 PCS)
VS.POS./YOUR ITEM 210 NS.POS/OUR ITEM 210 VS.COD./YOUR CODE VLBLNN01291H00 NS.COD./OUR CODE 00.VSF.2699/V (1 PC)
(VALVE)

GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

REPORT IDENTIFICATION			
Date	**Certificate ID**	**Ref. Transport Note ID**	**Client**
28/10/2024	728/2024	1670/2024	INDRA
Customer Job No.	**Description**	**Item**	**Painting Specification/Procedure**
CL24 00698	See Attachment – ITEM LIST	/	PP-44 2024 rev. 4 SYSTEM 1

AMBIENT CONDITION					
Date	**Hour**	**Ambient Temp. °C**	**Steel Temp. °C**	**Humidity %**	**Dew Point °C**
23/10/2024	14.30	18.5	17.8	76.6	14.4

SURFACE PREPARATION							
Degreasing			**Abrasive Type**				
THINNER NITRO ANTINEBBIA			GARNET				
Roughness			**Cleanliness and Surface Preparation**				
50 µm			SA 2 1/2				
Soluble Contaminants Test - ISO 8502-6/9			**Dust Test - ISO 8502-3**				
Result (mg/m²):	8.9		**Result:**	Rate	1	Size	1

PAINTING					
Number of Coats	1	2	3	4	5
Date	23/10/2024	24/10/2024	25/10/2024		
Hour	15.00	10.00	11.00		
Room Temperature °C	18.4	17.5	17.7		
Steel Temperature °C	18.2	17.4	17.8		
Humidity %	78	79.7	79.3		
Dew Point °C	14.5	14	14.1		
Application Method	Conventional spray	Conventional spray	Conventional spray		
Paint Product Name	INTERZINC 52	INTERGARD 475 HS	INTERTHANE 990		
Product Batch Number	A: 2333251057 B: 2333142041	A: 2243333015 B: 2243284075	RAL 9002 A: 2333167027 RAL 9005 A: 2333167027 B: 2333172046		
Colour	GREY	GREY	RAL 9002 VALVES RAL 9005 GEAR		
DFT	78 µm	280 µm	338 µm		
Visual Aspect Result	SATISFACTORY	SATISFACTORY	SATISFACTORY		
Remarks	NO REMARKS				

MEASURING INSTRUMENTS		
POSITECTOR – SST/6000/RTR	DUST TEST KIT	

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	CROSSWIND 30/10/24. P/W	CERTIFIED TIME INTERNATIONAL COATING INSPECTOR EXP. 09/2025 2223 R W

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GMP COLOR

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MD-009 (rev 0 - 19/09/2020)

ITEM LIST

JOB	DESCRIPTION	QUANTITY
CL24 00698	00.VSF.2686/V 24 01216 POS 90	1
CL24 00698	00.VSF.2770/V 24 01216 POS 100	2
CL24 00698	00.VSF.2697/V 24 01216 POS 200	3
CL24 00698	00.VSF.2699/V 24 01216 POS 210	1
CL24 00698	99.50.0162SX-V	1

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	CROSS WIND 30/10/24 R/W	CERTIFIED INTERNATIONAL COATING INSPECTOR EXP. 09/2025 2727 R M

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CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 90 NS.POS/OUR ITEM 90 VS.COD./YOUR CODE VBC0NN24703Q00 NS.COD./OUR CODE 00.VSF.2686/V (1 PC)
VS.POS./YOUR ITEM 100 NS.POS/OUR ITEM 100 VS.COD./YOUR CODE VBC0NN24710100 NS.COD./OUR CODE 00.VSF.2770/V (2 PCS)
VS.POS./YOUR ITEM 200 NS.POS/OUR ITEM 200 VS.COD./YOUR CODE VLBLNN01280100 NS.COD./OUR CODE 00.VSF.2697/V (3 PCS)
VS.POS./YOUR ITEM 210 NS.POS/OUR ITEM 210 VS.COD./YOUR CODE VLBLNN01291H00 NS.COD./OUR CODE 00.VSF.2699/V (1 PC) 3/4
(LEVER)

GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

REPORT IDENTIFICATION			
Date	**Certificate ID**	**Ref. Transport Note ID**	**Client**
28/10/2024	727/2024	1668-1670/2024	INDRA
Customer Job No.	**Description**	**Item**	**Painting Specification/Procedure**
CL24 00698	See Attachment – ITEM LIST	/	PP-44 2024 rev. 4 SYSTEM 6A

AMBIENT CONDITION					
Date	**Hour**	**Ambient Temp. °C**	**Steel Temp. °C**	**Humidity %**	**Dew Point °C**
23/10/2024	14.30	18.5	17.8	76.6	14.4

SURFACE PREPARATION					
Degreasing			**Abrasive Type**		
THINNER NITRO ANTINEBBIA			GARNET		
Roughness			**Cleanliness and Surface Preparation**		
40 µm			SSPC-SP16		
Soluble Contaminants Test - ISO 8502-6/9			**Dust Test - ISO 8502-3**		
Result (mg/m²):	7.9		**Result:**	Rate 1	Size 1

PAINTING					
Number of Coats	**1**	**2**	**3**	**4**	**5**
Date	23/10/2024	24/10/2024	25/10/2024		
Hour	15.00	10.00	11.00		
Room Temperature °C	18.4	17.5	17.7		
Steel Temperature °C	18.2	17.4	17.8		
Humidity %	78	79.7	79.3		
Dew Point °C	14.5	14	14.1		
Application Method	Conventional spray	Conventional spray	Conventional spray		
Paint Product Name	INTERGARD 269	INTERGARD 475 HS	INTERTHANE 990		
Product Batch Number	A: 2243167018 B: 2243177028	A: 2243333015 B: 2243284075	RAL 9002 A: 2333167027 RAL 9005 A: 2333167027 B: 2333172046		
Colour	RED	GREY	RAL 9002 VALVES RAL 9005 LEVERS & HW		
DFT	72 µm	180 µm	276 µm		
Visual Aspect Result	SATISFACTORY	SATISFACTORY	SATISFACTORY		
Remarks	NO REMARKS				

MEASURING INSTRUMENTS		
POSITECTOR – SST/6000/RTR	DUST TEST KIT	

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	CROSS WIND 30/10/24 P/W	CERTIFIED PAINT INSPECTOR INTERNATIONAL COATING INSPECTOR EXP. 09/2025 3722 R

COMPANY USE INFORMATION

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CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 90 NS.POS/OUR ITEM 90 VS.COD./YOUR CODE VBC0NN24703Q00 NS.COD./OUR CODE 00.VSF.2686/V (1 PC)
VS.POS./YOUR ITEM 100 NS.POS/OUR ITEM 100 VS.COD./YOUR CODE VBC0NN24710100 NS.COD./OUR CODE 00.VSF.2770/V (2 PCS)
VS.POS./YOUR ITEM 200 NS.POS/OUR ITEM 200 VS.COD./YOUR CODE VLBLNN01280100 NS.COD./OUR CODE 00.VSF.2697/V (3 PCS)
VS.POS./YOUR ITEM 210 NS.POS/OUR ITEM 210 VS.COD./YOUR CODE VLBLNN01291H00 NS.COD./OUR CODE 00.VSF.2699/V (1 PC) 4/4
(LEVER)

GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

ITEM LIST

JOB	DESCRIPTION	QUANTITY
CL24 00698	00.VSFT.0224/V 24 01216 POS 270	1
CL24 00698	981J.08.0006-V22	1
CL24 00698	981J.08.0019-V6	1
CL24 00698	981J.08.0019-V6	2
CL24 00698	981F.08.0005-V29	3
CL24 00698	981F.08.0005-V29	2
CL24 00698	981F.08.0005-V29	1
CL24 00698	981F.08.0005-V29	2
CL24 00698	981F.08.0005-V29	1
CL24 00698	981F.08.0005-V29	3
CL24 00698	99.50.0533-V	1
CL24 00698	981F.08.0005-V29	3
CL24 00698	981F.08.0012-NP-V22	1
CL24 00698	981J.08.0006-V22	2

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.		

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Certificate 727/2024 - Page 2 of 2

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9/10/24 R

Executive Director
NACE International Institute

Expires
August 31, 2025

Cert No.2727

145678

ROSETTI MARINO ITEM 210

COD. VLBLNN01291H00

TAG:

BLPH-MV-278

INDRA ITEM 210

COD. 00.VSF.2699/V

CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 90 NS.POS/OUR ITEM 90 VS.COD./YOUR CODE VBC0NN24703Q00 NS.COD./OUR CODE 00.VSF.2686/V (1 PC)
VS.POS./YOUR ITEM 100 NS.POS/OUR ITEM 100 VS.COD./YOUR CODE VBC0NN24710100 NS.COD./OUR CODE 00.VSF.2770/V (2 PCS)
VS.POS./YOUR ITEM 200 NS.POS/OUR ITEM 200 VS.COD./YOUR CODE VLBLNN01280100 NS.COD./OUR CODE 00.VSF.2697/V (3 PCS)
VS.POS./YOUR ITEM 210 NS.POS/OUR ITEM 210 VS.COD./YOUR CODE VLBLNN01291H00 NS.COD./OUR CODE 00.VSF.2699/V (1 PC)
(VALVE)

GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

REPORT IDENTIFICATION			
Date	**Certificate ID**	**Ref. Transport Note ID**	**Client**
28/10/2024	728/2024	1670/2024	INDRA
Customer Job No.	**Description**	**Item**	**Painting Specification/Procedure**
CL24 00698	See Attachment – ITEM LIST	/	PP-44 2024 rev. 4 SYSTEM 1

AMBIENT CONDITION					
Date	**Hour**	**Ambient Temp. °C**	**Steel Temp. °C**	**Humidity %**	**Dew Point °C**
23/10/2024	14.30	18.5	17.8	76.6	14.4

SURFACE PREPARATION							
Degreasing			**Abrasive Type**				
THINNER NITRO ANTINEBBIA			GARNET				
Roughness			**Cleanliness and Surface Preparation**				
50 µm			SA 2 1/2				
Soluble Contaminants Test - ISO 8502-6/9			**Dust Test - ISO 8502-3**				
Result (mg/m²):	8.9		**Result:**	Rate	1	Size	1

PAINTING					
Number of Coats	1	2	3	4	5
Date	23/10/2024	24/10/2024	25/10/2024		
Hour	15.00	10.00	11.00		
Room Temperature °C	18.4	17.5	17.7		
Steel Temperature °C	18.2	17.4	17.8		
Humidity %	78	79.7	79.3		
Dew Point °C	14.5	14	14.1		
Application Method	Conventional spray	Conventional spray	Conventional spray		
Paint Product Name	INTERZINC 52	INTERGARD 475 HS	INTERTHANE 990		
Product Batch Number	A: 2333251057 B: 2333142041	A: 2243333015 B: 2243284075	RAL 9002 A: 2333167027 RAL 9005 A: 2333167027 B: 2333172046		
Colour	GREY	GREY	RAL 9002 VALVES RAL 9005 GEAR		
DFT	78 µm	280 µm	338 µm		
Visual Aspect Result	SATISFACTORY	SATISFACTORY	SATISFACTORY		
Remarks	NO REMARKS				

MEASURING INSTRUMENTS		
POSITECTOR – SST/6000/RTR	DUST TEST KIT	

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	CROSSWIND 30/10/24. P/W	CERTIFIED TIME INTERNATIONAL COATING INSPECTOR EXP. 09/2025 2223 R W

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GMP COLOR

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MD-009 (rev 0 - 19/09/2020)

ITEM LIST

JOB	DESCRIPTION	QUANTITY
CL24 00698	00.VSF.2686/V 24 01216 POS 90	1
CL24 00698	00.VSF.2770/V 24 01216 POS 100	2
CL24 00698	00.VSF.2697/V 24 01216 POS 200	3
CL24 00698	00.VSF.2699/V 24 01216 POS 210	1
CL24 00698	99.50.0162SX-V	1

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	CROSS WIND 30/10/24 R/W	CERTIFIED PAINT INSPECTOR EXP. 09/2025 2727

COMPANY USE INFORMATION

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CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 90 NS.POS/OUR ITEM 90 VS.COD./YOUR CODE VBC0NN24703Q00 NS.COD./OUR CODE 00.VSF.2686/V (1 PC)
VS.POS./YOUR ITEM 100 NS.POS/OUR ITEM 100 VS.COD./YOUR CODE VBC0NN24710100 NS.COD./OUR CODE 00.VSF.2770/V (2 PCS)
VS.POS./YOUR ITEM 200 NS.POS/OUR ITEM 200 VS.COD./YOUR CODE VLBLNN01280100 NS.COD./OUR CODE 00.VSF.2697/V (3 PCS)
VS.POS./YOUR ITEM 210 NS.POS/OUR ITEM 210 VS.COD./YOUR CODE VLBLNN01291H00 NS.COD./OUR CODE 00.VSF.2699/V (1 PC) 3/4
(LEVER)

GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

REPORT IDENTIFICATION			
Date	**Certificate ID**	**Ref. Transport Note ID**	**Client**
28/10/2024	727/2024	1668-1670/2024	INDRA
Customer Job No.	**Description**	**Item**	**Painting Specification/Procedure**
CL24 00698	See Attachment – ITEM LIST	/	PP-44 2024 rev. 4 SYSTEM 6A

AMBIENT CONDITION					
Date	**Hour**	**Ambient Temp. °C**	**Steel Temp. °C**	**Humidity %**	**Dew Point °C**
23/10/2024	14.30	18.5	17.8	76.6	14.4

SURFACE PREPARATION					
Degreasing			**Abrasive Type**		
THINNER NITRO ANTINEBBIA			GARNET		
Roughness			**Cleanliness and Surface Preparation**		
40 µm			SSPC-SP16		
Soluble Contaminants Test - ISO 8502-6/9			**Dust Test - ISO 8502-3**		
Result (mg/m²):	7.9		**Result:**	Rate 1	Size 1

PAINTING					
Number of Coats	**1**	**2**	**3**	**4**	**5**
Date	23/10/2024	24/10/2024	25/10/2024		
Hour	15.00	10.00	11.00		
Room Temperature °C	18.4	17.5	17.7		
Steel Temperature °C	18.2	17.4	17.8		
Humidity %	78	79.7	79.3		
Dew Point °C	14.5	14	14.1		
Application Method	Conventional spray	Conventional spray	Conventional spray		
Paint Product Name	INTERGARD 269	INTERGARD 475 HS	INTERTHANE 990		
Product Batch Number	A: 2243167018 B: 2243177028	A: 2243333015 B: 2243284075	RAL 9002 A: 2333167027 RAL 9005 A: 2333167027 B: 2333172046		
Colour	RED	GREY	RAL 9002 VALVES RAL 9005 LEVERS & HW		
DFT	72 µm	180 µm	276 µm		
Visual Aspect Result	SATISFACTORY	SATISFACTORY	SATISFACTORY		
Remarks	NO REMARKS				

MEASURING INSTRUMENTS		
POSITECTOR – SST/6000/RTR	DUST TEST KIT	

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	cross wind 30/10/24 p/w	EXP. 09/2025 3722 R

COMPANY USE INFORMATION

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CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 90 NS.POS/OUR ITEM 90 VS.COD./YOUR CODE VBC0NN24703Q00 NS.COD./OUR CODE 00.VSF.2686/V (1 PC)
VS.POS./YOUR ITEM 100 NS.POS/OUR ITEM 100 VS.COD./YOUR CODE VBC0NN24710100 NS.COD./OUR CODE 00.VSF.2770/V (2 PCS)
VS.POS./YOUR ITEM 200 NS.POS/OUR ITEM 200 VS.COD./YOUR CODE VLBLNN01280100 NS.COD./OUR CODE 00.VSF.2697/V (3 PCS)
VS.POS./YOUR ITEM 210 NS.POS/OUR ITEM 210 VS.COD./YOUR CODE VLBLNN01291H00 NS.COD./OUR CODE 00.VSF.2699/V (1 PC) 4/4
(LEVER)

GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

ITEM LIST

JOB	DESCRIPTION	QUANTITY
CL24 00698	00.VSFT.0224/V 24 01216 POS 270	1
CL24 00698	981J.08.0006-V22	1
CL24 00698	981J.08.0019-V6	1
CL24 00698	981J.08.0019-V6	2
CL24 00698	981F.08.0005-V29	3
CL24 00698	981F.08.0005-V29	2
CL24 00698	981F.08.0005-V29	1
CL24 00698	981F.08.0005-V29	2
CL24 00698	981F.08.0005-V29	1
CL24 00698	981F.08.0005-V29	3
CL24 00698	99.50.0533-V	1
CL24 00698	981F.08.0005-V29	3
CL24 00698	981F.08.0012-NP-V22	1
CL24 00698	981J.08.0006-V22	2

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.		

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Certificate 727/2024 - Page 2 of 2

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x CROSSWIND
9/10/24 R

Executive Director
NACE International Institute

Expires
August 31, 2025

Cert No.2727

145678

ROSETTI MARINO ITEM 220

COD. VLBLNN01320100

TAG:

BLPH-MV-007, BLPH-MV-009

INDRA ITEM 220

COD. 00.VSF.2701/V

CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 50 NS.POS/OUR ITEM 50 VS.COD./YOUR CODE VBC0NN24350100 NS.COD./OUR CODE 00.VSF.2694/V (5 PCS)
VS.POS./YOUR ITEM 170 NS.POS/OUR ITEM 170 VS.COD./YOUR CODE VLBBNN07210200 NS.COD./OUR CODE 00.VSF.2682/V (1 PC)
VS.POS./YOUR ITEM 220 NS.POS/OUR ITEM 220 VS.COD./YOUR CODE VLBLNN01320100 NS.COD./OUR CODE 00.VSF.2701/V (2 PCS)
VS.POS./YOUR ITEM 250 NS.POS/OUR ITEM 250 VS.COD./YOUR CODE VLBLNN0143020 NS.COD./OUR CODE 00.VSF.2702/V (2 PCS)
(VALVE AND LEVER)
VS.POS./YOUR ITEM 280 NS.POS/OUR ITEM 280 VS.COD./YOUR CODE VLBMNN00013Q0H NS.COD./OUR CODE 00.MNF.0604/V (14 PCS)
VS.POS./YOUR ITEM 290 NS.POS/OUR ITEM 290 VS.COD./YOUR CODE VLBNNN00023Q0H NS.COD./OUR CODE 00.MNF.0608/V (4 PCS)
VS.POS./YOUR ITEM 300 NS.POS/OUR ITEM 300 VS.COD./YOUR CODE VLBNNN00033Q0H NS.COD./OUR CODE 00.MNF.0605/V (2 PCS)
(VALVE)

GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

REPORT IDENTIFICATION			
Date	**Certificate ID**	**Ref. Transport Note ID**	**Client**
03/10/2024	695/2024	1547/2024	INDRA
Customer Job No.	**Description**	**Item**	**Painting Specification/Procedure**
CL24 00698	See Attachment – ITEM LIST	/	PP-44 2024 rev. 4 SYSTEM 6A

AMBIENT CONDITION					
Date	**Hour**	**Ambient Temp. °C**	**Steel Temp. °C**	**Humidity %**	**Dew Point °C**
30/09/2024	10.00	24.9	25.1	47.8	15.8

SURFACE PREPARATION					
Degreasing			**Abrasive Type**		
THINNER NITRO ANTINEBBIA			GARNET		
Roughness			**Cleanliness and Surface Preparation**		
40 µm			SSPC-SP16		
Soluble Contaminants Test - ISO 8502-6/9			**Dust Test - ISO 8502-3**		
Result (mg/m²):	7.1		**Result:**	Rate 1	Size 1

PAINTING					
Number of Coats	**1**	**2**	**3**	**4**	**5**
Date	30/09/2024	01/10/2024	02/10/2024		
Hour	11.00	8.30	12.00		
Room Temperature °C	26.2	25.1	25.3		
Steel Temperature °C	25.2	26.3	24.9		
Humidity %	48.4	49.2	50.1		
Dew Point °C	15.8	16.8	16.3		
Application Method	Conventional spray	Conventional spray	Conventional spray		
Paint Product Name	INTERGARD 269	INTERGARD 475 HS	INTERTHANE 990		
Product Batch Number	A: 2243167018 B: 2243177028	A: 2243333015 B: 2243284075	RAL 9002 A: 2333167027 RAL 9005 A: 2333167027 B: 2333172046		
Colour	RED	GREY	RAL 9002 VALVES RAL 9005 LEVERS & HW		
DFT	62 µm	172 µm	260 µm		
Visual Aspect Result	SATISFACTORY	SATISFACTORY	SATISFACTORY		
Remarks	NO REMARKS				

MEASURING INSTRUMENTS		
POSITECTOR – SST/6000/RTR	DUST TEST KIT	

CROSSWIND 3/10/24 R

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	ROSETTI MARINO SpA Michele Sacchi Quality Control Dept. NACE # 35 246 + REVIEW	CERTIFIED INTERNATIONAL COATING INSPECTOR EXP. 08/2025 2723 R

COMPANY USE INFORMATION

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CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 50 NS.POS/OUR ITEM 50 VS.COD./YOUR CODE VBC0NN24350100 NS.COD./OUR CODE 00.VSF.2694/V (5 PCS)
VS.POS./YOUR ITEM 170 NS.POS/OUR ITEM 170 VS.COD./YOUR CODE VLBBNN07210200 NS.COD./OUR CODE 00.VSF.2682/V (1 PC)
VS.POS./YOUR ITEM 220 NS.POS/OUR ITEM 220 VS.COD./YOUR CODE VLBLNN01320100 NS.COD./OUR CODE 00.VSF.2701/V (2 PCS)
VS.POS./YOUR ITEM 250 NS.POS/OUR ITEM 250 VS.COD./YOUR CODE VLBLNN0143020 NS.COD./OUR CODE 00.VSF.2702/V (2 PCS)
(VALVE AND LEVER)
VS.POS./YOUR ITEM 280 NS.POS/OUR ITEM 280 VS.COD./YOUR CODE VLBMNN00013Q0H NS.COD./OUR CODE 00.MNF.0604/V (14 PCS)
VS.POS./YOUR ITEM 290 NS.POS/OUR ITEM 290 VS.COD./YOUR CODE VLBNNN00023Q0H NS.COD./OUR CODE 00.MNF.0608/V (4 PCS)
VS.POS./YOUR ITEM 300 NS.POS/OUR ITEM 300 VS.COD./YOUR CODE VLBNNN00033Q0H NS.COD./OUR CODE 00.MNF.0605/V (2 PCS)
(VALVE)

GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

ITEM LIST

JOB	DESCRIPTION	QUANTITY
CL24 00698	00.VSF.2694/V LOTTO 24 01216 POS 50	5
CL24 00698	00.VSF.2682/V LOTTO 24 01216 POS. 170	1
CL24 00698	00.VSF.2701/V LOTTO 24 01216 POS. 220	2
CL24 00698	00.VSF.2702/V LOTTO 24 01216 POS. 250	2
CL24 00698	00.MNF.0604/V LOTTO 24 0126 POS.280	14
CL24 00698	00.MNF.0608/V LOTTO 24 01216 POS. 290	4
CL24 00698	00.MNF.0605/V LOTTO 24 01216 POS. 300	2
CL24 00698	981F.08.0005-V29 LOTTO 24 01216 POS.50	5
CL24 00698	981J.08.0006-V22 LOTTO 24 01216 POS.170	1
CL24 00698	981J.08.0007-V4 LOTTO 24 01216 POS.170	1
CL24 00698	981F.08.0005-V29 LOTTO 24 01216 POS.220	2
CL24 00698	981J.08.0006-V22 LOTTO 24 01216 POS.250	2
CL24 00698	981F.08.0005-V29 LOTTO 24 01216 POS.240	1

x CROSSWIND
9/10/24 W/R

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	ROSETTI MARINO SpA Michele Sacchi Quality Control Dept. NACE #35744 X REVIEW	CERTIFIED NACE INTERNATIONAL COATING INSPECTOR EXP. 09/2025 27223 R X

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9/10/24 R

Executive Director
NACE International Institute

Expires
August 31, 2025

Cert No.2727

145678

ROSETTI MARINO ITEM 230

COD. VLBLNN01381H00

TAG:

BLPH-MV-043, BLPH-MV-050

INDRA ITEM 230

COD. 00.VSF.2698(T)

CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 60 NS.POS/OUR ITEM 60 VS.COD./YOUR CODE VBC0NN24433Q00 NS.COD./OUR CODE 00.VSF.2685(T) (3 PCS)
VS.POS./YOUR ITEM 70 NS.POS/OUR ITEM 70 VS.COD./YOUR CODE VBC0NN24440100 NS.COD./OUR CODE 00.VSF.2688(T) (2 PCS)
VS.POS./YOUR ITEM 80 NS.POS/OUR ITEM 80 VS.COD./YOUR CODE VBC0NN24460200 NS.COD./OUR CODE 00.VSF.2692(T) (2 PCS)
VS.POS./YOUR ITEM 230 NS.POS/OUR ITEM 230 VS.COD./YOUR CODE VLBLNN01381H00 NS.COD./OUR CODE 00.VSF.2698(T) 2 PCS)
VS.POS./YOUR ITEM 430 NS.POS/OUR ITEM 324 VS.COD./YOUR CODE VLBLNN01370100 NS.COD./OUR CODE 00.VSF.2784(T) (3 PCS)
(LEVER)

GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

REPORT IDENTIFICATION			
Date	**Certificate ID**	**Ref. Transport Note ID**	**Client**
28/10/2024	727/2024	1668-1670/2024	INDRA
Customer Job No.	**Description**	**Item**	**Painting Specification/Procedure**
CL24 00698	See Attachment – ITEM LIST	/	PP-44 2024 rev. 4 SYSTEM 6A

AMBIENT CONDITION					
Date	**Hour**	**Ambient Temp. °C**	**Steel Temp. °C**	**Humidity %**	**Dew Point °C**
23/10/2024	14.30	18.5	17.8	76.6	14.4

SURFACE PREPARATION							
Degreasing			**Abrasive Type**				
THINNER NITRO ANTINEBBIA			GARNET				
Roughness			**Cleanliness and Surface Preparation**				
40 µm			SSPC-SP16				
Soluble Contaminants Test - ISO 8502-6/9			**Dust Test - ISO 8502-3**				
Result (mg/m²):	7.9		**Result:**	Rate	1	Size	1

PAINTING					
Number of Coats	**1**	**2**	**3**	**4**	**5**
Date	23/10/2024	24/10/2024	25/10/2024		
Hour	15.00	10.00	11.00		
Room Temperature °C	18.4	17.5	17.7		
Steel Temperature °C	18.2	17.4	17.8		
Humidity %	78	79.7	79.3		
Dew Point °C	14.5	14	14.1		
Application Method	Conventional spray	Conventional spray	Conventional spray		
Paint Product Name	INTERGARD 269	INTERGARD 475 HS	INTERTHANE 990		
Product Batch Number	A: 2243167018 B: 2243177028	A: 2243333015 B: 2243284075	RAL 9002 A: 2333167027 RAL 9005 A: 2333167027 B: 2333172046		
Colour	RED	GREY	RAL 9002 VALVES RAL 9005 LEVERS & HW		
DFT	72 µm	180 µm	276 µm		
Visual Aspect Result	SATISFACTORY	SATISFACTORY	SATISFACTORY		
Remarks	NO REMARKS				

MEASURING INSTRUMENTS		
POSITECTOR – SST/6000/RTR	DUST TEST KIT	

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	CROSSWIND 30/10/24 B/W	CERTIFICATE INTERNATIONAL COATING INSPECTOR Exp. 08/2025 3222 R M

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Certificate 727/2024 - Page 1 of 2

CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 60 NS.POS/OUR ITEM 60 VS.COD./YOUR CODE VBC0NN24433Q00 NS.COD./OUR CODE 00.VSF.2685(T) (3 PCS)
VS.POS./YOUR ITEM 70 NS.POS/OUR ITEM 70 VS.COD./YOUR CODE VBC0NN24440100 NS.COD./OUR CODE 00.VSF.2688(T) (2 PCS)
VS.POS./YOUR ITEM 80 NS.POS/OUR ITEM 80 VS.COD./YOUR CODE VBC0NN24460200 NS.COD./OUR CODE 00.VSF.2692(T) (2 PCS)
VS.POS./YOUR ITEM 230 NS.POS/OUR ITEM 230 VS.COD./YOUR CODE VLBLNN01381H00 NS.COD./OUR CODE 00.VSF.2698(T) 2 PCS)
VS.POS./YOUR ITEM 430 NS.POS/OUR ITEM 324 VS.COD./YOUR CODE VLBLNN01370100 NS.COD./OUR CODE 00.VSF.2784(T) (3 PCS)
(LEVER)

GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

ITEM LIST

JOB	DESCRIPTION	QUANTITY
CL24 00698	00.VSFT.0224/V 24 01216 POS 270	1
CL24 00698	981J.08.0006-V22	1
CL24 00698	981J.08.0019-V6	1
→ CL24 00698	981J.08.0019-V6	2
CL24 00698	981F.08.0005-V29	3
CL24 00698	981F.08.0005-V29	2
CL24 00698	981F.08.0005-V29	1
→ CL24 00698	981F.08.0005-V29	2
CL24 00698	981F.08.0005-V29	1
→ CL24 00698	981F.08.0005-V29	3
CL24 00698	99.50.0533-V	1
→ CL24 00698	981F.08.0005-V29	3
CL24 00698	981F.08.0012-NP-V22	1
→ CL24 00698	981J.08.0006-V22	2

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	3/10/24 R/	EXP. 09/2025 322 R A

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x CROSSWIND
9/10/24 R

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Expires
August 31, 2025

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145678

ROSETTI MARINO ITEM 240

COD. VLBLNN01410100

TAG:

BLPH-MV-001

INDRA ITEM 240

COD. 00.VSF.2696/V

GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

REPORT IDENTIFICATION			
Date	**Certificate ID**	**Ref. Transport Note ID**	**Client**
03/10/2024	698/2024	1547/2024	INDRA
Customer Job No.	**Description**	**Item**	**Painting Specification/Procedure**
CL24 00698	See Attachment – ITEM LIST	/	PP-44 2024 rev. 4 SYSTEM 6C

AMBIENT CONDITION					
Date	**Hour**	**Ambient Temp. °C**	**Steel Temp. °C**	**Humidity %**	**Dew Point °C**
01/10/2024	8.00	25.2	26.5	50.1	16.4

SURFACE PREPARATION					
Degreasing			**Abrasive Type**		
THINNER NITRO ANTINEBBIA			GARNET		
Roughness			**Cleanliness and Surface Preparation**		
40 µm			SSPC-SP16		
Soluble Contaminants Test - ISO 8502-6/9			**Dust Test - ISO 8502-3**		
Result (mg/m²):	6.4		**Result:**	Rate 1	Size 1

PAINTING					
Number of Coats	**1**	**2**	**3**	**4**	**5**
Date	01/10/2024	02/10/2024			
Hour	8.30	12.00			
Room Temperature °C	25.1	25.3			
Steel Temperature °C	26.3	24.9			
Humidity %	49.2	50.1			
Dew Point °C	16.8	16.3			
Application Method	Conventional spray	Conventional spray			
Paint Product Name	THERMALINE 440	THERMALINE 440			
Product Batch Number	A: 230630016A B: 230630039A	A: 230922027A B: 230630039A			
Colour	RED	RAL 9002			
DFT	138 µm	270 µm			
Visual Aspect Result	SATISFACTORY	SATISFACTORY			
Remarks	NO REMARKS				

MEASURING INSTRUMENTS		
POSITECTOR – SST/6000/RTR	DUST TEST KIT	

x CROSSHEAD NIR 9/10/24

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	ROSETTI MARINO SpA Michela Sacchi Quality Control Dept. NACE #35644 Level 3 Peritus	NACE INTERNATIONAL COATING INSPECTOR EXP. 08/2025 35644 R

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GMP COLOR

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MD-009 (rev 0 - 19/09/2020)

ITEM LIST

JOB	DESCRIPTION	QUANTITY
CL24 00698	00.VSF.2696/V LOTTO 24 01216 POS. 240	1

x CROSSWIND
9/10/24 WIR

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	ROSETTI MARINO SpA Michele Cacchi Quality Control Dept. NACE #33744 X REVIEW	CERTIFIED PAINT INSPECTOR INTERNATIONAL COATING INSPECTOR EXP. 09/2025 2722 R X

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GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

REPORT IDENTIFICATION			
Date	**Certificate ID**	**Ref. Transport Note ID**	**Client**
03/10/2024	695/2024	1547/2024	INDRA
Customer Job No.	**Description**	**Item**	**Painting Specification/Procedure**
CL24 00698	See Attachment – ITEM LIST	/	PP-44 2024 rev. 4 SYSTEM 6A

AMBIENT CONDITION					
Date	**Hour**	**Ambient Temp. °C**	**Steel Temp. °C**	**Humidity %**	**Dew Point °C**
30/09/2024	10.00	24.9	25.1	47.8	15.8

SURFACE PREPARATION					
Degreasing			**Abrasive Type**		
THINNER NITRO ANTINEBBIA			GARNET		
Roughness			**Cleanliness and Surface Preparation**		
40 µm			SSPC-SP16		
Soluble Contaminants Test - ISO 8502-6/9			**Dust Test - ISO 8502-3**		
Result (mg/m²):	7.1		**Result:**	Rate 1	Size 1

PAINTING					
Number of Coats	**1**	**2**	**3**	**4**	**5**
Date	30/09/2024	01/10/2024	02/10/2024		
Hour	11.00	8.30	12.00		
Room Temperature °C	26.2	25.1	25.3		
Steel Temperature °C	25.2	26.3	24.9		
Humidity %	48.4	49.2	50.1		
Dew Point °C	15.8	16.8	16.3		
Application Method	Conventional spray	Conventional spray	Conventional spray		
Paint Product Name	INTERGARD 269	INTERGARD 475 HS	INTERTHANE 990		
Product Batch Number	A: 2243167018 B: 2243177028	A: 2243333015 B: 2243284075	RAL 9002 A: 2333167027 RAL 9005 A: 2333167027 B: 2333172046		
Colour	RED	GREY	RAL 9002 VALVES RAL 9005 LEVERS & HW		
DFT	62 µm	172 µm	260 µm		
Visual Aspect Result	SATISFACTORY	SATISFACTORY	SATISFACTORY		
Remarks	NO REMARKS				

MEASURING INSTRUMENTS		
POSITECTOR – SST/6000/RTR	DUST TEST KIT	

x CROSSWIND 3/10/24 WR

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	ROSETTI MARINO SpA Michele Sacchi Quality Control Dept. NACE#3 SP&L X REVIEW	CERTIFIED PAINT INSPECTOR EXP. 09/2025 2223

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GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

ITEM LIST

JOB	DESCRIPTION	QUANTITY
CL24 00698	00.VSF.2694/V LOTTO 24 01216 POS 50	5
CL24 00698	00.VSF.2682/V LOTTO 24 01216 POS. 170	1
CL24 00698	00.VSF.2701/V LOTTO 24 01216 POS. 220	2
CL24 00698	00.VSF.2702/V LOTTO 24 01216 POS. 250	2
CL24 00698	00.MNF.0604/V LOTTO 24 0126 POS.280	14
CL24 00698	00.MNF.0608/V LOTTO 24 01216 POS. 290	4
CL24 00698	00.MNF.0605/V LOTTO 24 01216 POS. 300	2
CL24 00698	981F.08.0005-V29 LOTTO 24 01216 POS.50	5
CL24 00698	981J.08.0006-V22 LOTTO 24 01216 POS.170	1
CL24 00698	981J.08.0007-V4 LOTTO 24 01216 POS.170	1
CL24 00698	981F.08.0005-V29 LOTTO 24 01216 POS.220	2
CL24 00698	981J.08.0006-V22 LOTTO 24 01216 POS.250	2
→ CL24 00698	981F.08.0005-V29 LOTTO 24 01216 POS.240	1

x CROSSWIND
9/10/24 W/R

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	ROSETTI MARINO SpA Michele Sanzini Quality Control Dept. NACE #35744 X REVIEW	CERTIFIED PAINT INSPECTOR EXP. 09/2025

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145678

ROSETTI MARINO ITEM 250

COD. VLBLNN0143020

TAG:

BLPH-MV-002M, BLPH-MV-016

INDRA ITEM 250

COD. 00.VSF.2702/V

CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 50 NS.POS/OUR ITEM 50 VS.COD./YOUR CODE VBC0NN24350100 NS.COD./OUR CODE 00.VSF.2694/V (5 PCS)
VS.POS./YOUR ITEM 170 NS.POS/OUR ITEM 170 VS.COD./YOUR CODE VLBBNN07210200 NS.COD./OUR CODE 00.VSF.2682/V (1 PC)
VS.POS./YOUR ITEM 220 NS.POS/OUR ITEM 220 VS.COD./YOUR CODE VLBLNN01320100 NS.COD./OUR CODE 00.VSF.2701/V (2 PCS)
VS.POS./YOUR ITEM 250 NS.POS/OUR ITEM 250 VS.COD./YOUR CODE VLBLNN0143020 NS.COD./OUR CODE 00.VSF.2702/V (2 PCS)
(VALVE AND LEVER)
VS.POS./YOUR ITEM 280 NS.POS/OUR ITEM 280 VS.COD./YOUR CODE VLBMNN00013Q0H NS.COD./OUR CODE 00.MNF.0604/V (14 PCS)
VS.POS./YOUR ITEM 290 NS.POS/OUR ITEM 290 VS.COD./YOUR CODE VLBNNN00023Q0H NS.COD./OUR CODE 00.MNF.0608/V (4 PCS)
VS.POS./YOUR ITEM 300 NS.POS/OUR ITEM 300 VS.COD./YOUR CODE VLBNNN00033Q0H NS.COD./OUR CODE 00.MNF.0605/V (2 PCS)
(VALVE)

GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

REPORT IDENTIFICATION			
Date	**Certificate ID**	**Ref. Transport Note ID**	**Client**
03/10/2024	695/2024	1547/2024	INDRA
Customer Job No.	**Description**	**Item**	**Painting Specification/Procedure**
CL24 00698	See Attachment – ITEM LIST	/	PP-44 2024 rev. 4 SYSTEM 6A

AMBIENT CONDITION					
Date	**Hour**	**Ambient Temp. °C**	**Steel Temp. °C**	**Humidity %**	**Dew Point °C**
30/09/2024	10.00	24.9	25.1	47.8	15.8

SURFACE PREPARATION					
Degreasing			**Abrasive Type**		
THINNER NITRO ANTINEBBIA			GARNET		
Roughness			**Cleanliness and Surface Preparation**		
40 µm			SSPC-SP16		
Soluble Contaminants Test - ISO 8502-6/9			**Dust Test - ISO 8502-3**		
Result (mg/m²):	7.1		**Result:**	Rate 1	Size 1

PAINTING					
Number of Coats	1	2	3	4	5
Date	30/09/2024	01/10/2024	02/10/2024		
Hour	11.00	8.30	12.00		
Room Temperature °C	26.2	25.1	25.3		
Steel Temperature °C	25.2	26.3	24.9		
Humidity %	48.4	49.2	50.1		
Dew Point °C	15.8	16.8	16.3		
Application Method	Conventional spray	Conventional spray	Conventional spray		
Paint Product Name	INTERGARD 269	INTERGARD 475 HS	INTERTHANE 990		
Product Batch Number	A: 2243167018 B: 2243177028	A: 2243333015 B: 2243284075	RAL 9002 A: 2333167027 RAL 9005 A: 2333167027 B: 2333172046		
Colour	RED	GREY	RAL 9002 VALVES RAL 9005 LEVERS & HW		
DFT	62 µm	172 µm	260 µm		
Visual Aspect Result	SATISFACTORY	SATISFACTORY	SATISFACTORY		
Remarks	NO REMARKS				

MEASURING INSTRUMENTS		
POSITECTOR – SST/6000/RTR	DUST TEST KIT	

CROSSWIND 01/10/24 R

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	ROSETTI MARINO SpA Michele Sacchi Quality Control Dept. NACE # 35 246 + REVIEW	CERTIFIED INTERNATIONAL COATING INSPECTOR EXP. 08/2025 2723 R

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CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 50 NS.POS/OUR ITEM 50 VS.COD./YOUR CODE VBC0NN24350100 NS.COD./OUR CODE 00.VSF.2694/V (5 PCS)
VS.POS./YOUR ITEM 170 NS.POS/OUR ITEM 170 VS.COD./YOUR CODE VLBBNN07210200 NS.COD./OUR CODE 00.VSF.2682/V (1 PC)
VS.POS./YOUR ITEM 220 NS.POS/OUR ITEM 220 VS.COD./YOUR CODE VLBLNN01320100 NS.COD./OUR CODE 00.VSF.2701/V (2 PCS)
VS.POS./YOUR ITEM 250 NS.POS/OUR ITEM 250 VS.COD./YOUR CODE VLBLNN0143020 NS.COD./OUR CODE 00.VSF.2702/V (2 PCS)
(VALVE AND LEVER)
VS.POS./YOUR ITEM 280 NS.POS/OUR ITEM 280 VS.COD./YOUR CODE VLBMNN00013Q0H NS.COD./OUR CODE 00.MNF.0604/V (14 PCS)
VS.POS./YOUR ITEM 290 NS.POS/OUR ITEM 290 VS.COD./YOUR CODE VLBNNN00023Q0H NS.COD./OUR CODE 00.MNF.0608/V (4 PCS)
VS.POS./YOUR ITEM 300 NS.POS/OUR ITEM 300 VS.COD./YOUR CODE VLBNNN00033Q0H NS.COD./OUR CODE 00.MNF.0605/V (2 PCS)
(VALVE)

GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

ITEM LIST

JOB	DESCRIPTION	QUANTITY
CL24 00698	00.VSF.2694/V LOTTO 24 01216 POS 50	5
CL24 00698	00.VSF.2682/V LOTTO 24 01216 POS. 170	1
CL24 00698	00.VSF.2701/V LOTTO 24 01216 POS. 220	2
CL24 00698	00.VSF.2702/V LOTTO 24 01216 POS. 250	2
CL24 00698	00.MNF.0604/V LOTTO 24 0126 POS.280	14
CL24 00698	00.MNF.0608/V LOTTO 24 01216 POS. 290	4
CL24 00698	00.MNF.0605/V LOTTO 24 01216 POS. 300	2
CL24 00698	981F.08.0005-V29 LOTTO 24 01216 POS.50	5
CL24 00698	981J.08.0006-V22 LOTTO 24 01216 POS.170	1
CL24 00698	981J.08.0007-V4 LOTTO 24 01216 POS.170	1
CL24 00698	981F.08.0005-V29 LOTTO 24 01216 POS.220	2
CL24 00698	981J.08.0006-V22 LOTTO 24 01216 POS.250	2
CL24 00698	981F.08.0005-V29 LOTTO 24 01216 POS.240	1

x CROSSWIND
9/10/24 W/R

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	ROSETTI MARINO SpA Michele Sacchi Quality Control Dept. NACE #35744 X REVIEW	EXP. 09/2025 2723 R

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9/10/24 R

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ROSETTI MARINO ITEM 260

COD. VLBLNN01450400

TAG:

BLPH-MV-006, BLPH-MV-033, BLPH-MV-191, BLPH-MV-194 BLPH-MV-196, BLPH-MV-199, BLPH-MV-201

INDRA ITEM 260

COD. 00.VSF.2700/V

CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 160 NS.POS/OUR ITEM 160 VS.COD./YOUR CODE VLBBNN07201H00 NS.COD./OUR CODE 00.VSF.2681/V (6 PCS)
VS.POS./YOUR ITEM 260 NS.POS/OUR ITEM 260 VS.COD./YOUR CODE VLBLNN01450400 NS.COD./OUR CODE 00.VSF.2700/V (7 PCS)
VS.POS./YOUR ITEM 410 NS.POS/OUR ITEM 323 VS.COD./YOUR CODE VLBBNN07201H00 NS.COD./OUR CODE 00.VSF.2681/V (1 PC)

GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

REPORT IDENTIFICATION			
Date	**Certificate ID**	**Ref. Transport Note ID**	**Client**
17/10/2024	714/2024	1616/2024	INDRA
Customer Job No.	**Description**	**Item**	**Painting Specification/Procedure**
CL24 00698	See Attachment – ITEM LIST	/	PP-44 2024 rev. 4 SYSTEM 6A

AMBIENT CONDITION					
Date	**Hour**	**Ambient Temp. °C**	**Steel Temp. °C**	**Humidity %**	**Dew Point °C**
14/10/2024	11.00	24.3	24.8	48.9	14.8

SURFACE PREPARATION							
Degreasing			**Abrasive Type**				
THINNER NITRO ANTINEBBIA			GARNET				
Roughness			**Cleanliness and Surface Preparation**				
40 µm			SSPC-SP16				
Soluble Contaminants Test - ISO 8502-6/9			**Dust Test - ISO 8502-3**				
Result (mg/m²):	7.7		**Result:**	**Rate**	1	**Size**	1

PAINTING					
Number of Coats	1	2	3	4	5
Date	14/10/2024	15/10/2024	16/10/2024		
Hour	13.30	10.00	11.00		
Room Temperature °C	25.3	25.7	24.3		
Steel Temperature °C	24.5	25.3	24.1		
Humidity %	47.8	47.9	46.3		
Dew Point °C	14.7	13.4	13.9		
Application Method	Conventional spray	Conventional spray	Conventional spray		
Paint Product Name	INTERGARD 269	INTERGARD 475 HS	INTERTHANE 990		
Product Batch Number	A: 2243167018 B: 2243177028	A: 2243333015 B: 2243284075	RAL 9002 A: 2333167027 RAL 9005 A: 2333167027 B: 2333172046		
Colour	RED	GREY	RAL 9002 VALVES RAL 9005 LEVERS & HW		
DFT	70 µm	178 µm	270 µm		
Visual Aspect Result	SATISFACTORY	SATISFACTORY	SATISFACTORY		
Remarks	NO REMARKS				

MEASURING INSTRUMENTS		
POSITECTOR – SST/6000/RTR	DUST TEST KIT	

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	x CROSSWIND WIR 23/10/24	CERTIFIED INTERNATIONAL COATING INSPECTOR EXP. 09/2025

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CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 160 NS.POS/OUR ITEM 160 VS.COD./YOUR CODE VLBBNN07201H00 NS.COD./OUR CODE 00.VSF.2681/V (6 PCS)
VS.POS./YOUR ITEM 260 NS.POS/OUR ITEM 260 VS.COD./YOUR CODE VLBLNN01450400 NS.COD./OUR CODE 00.VSF.2700/V (7 PCS)
VS.POS./YOUR ITEM 410 NS.POS/OUR ITEM 323 VS.COD./YOUR CODE VLBBNN07201H00 NS.COD./OUR CODE 00.VSF.2681/V (1 PC)

GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

ITEM LIST

JOB	DESCRIPTION	QUANTITY
CL24 00698	00.VSF.2681/V LOTTO 24-01216/160	6
CL24 00698	00.VSF.2681/V LOTTO 24-01216/323	1
CL24 00698	00.VSF.2700/V LOTTO 24-01216/260	7
CL24 00698	981J.08.0018-V6 LEVA DI COMANDO ALTA	1
CL24 00698	981J.08.0019-V6 LEVA DI COMANDO	1
CL24 00698	98N.08.0001-V6 LEVA SS316	7
CL24 00698	981J.08.0019-V6 LEVA DI COMANDO	6
CL24 00698	981J.08.0018-V6 LEVA DI COMANDO ALTA	6

x CROSSWIND W|R
23/10/24

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.		CERTIFIED PAINT INSPECTOR INTERNATIONAL COATING INSPECTOR EXP. 09/2025 2722 R

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x CROSSWIND
9/10/24 R

Executive Director
NACE International Institute

Expires
August 31, 2025

Cert No.2727

145678

ROSETTI MARINO ITEM 270

COD. VLBLNN01460600

TAG:

BLPH-MV-005

INDRA ITEM 270

COD. 00.VSFT.0224/V

GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

REPORT IDENTIFICATION			
Date	**Certificate ID**	**Ref. Transport Note ID**	**Client**
28/10/2024	727/2024	1668-1670/2024	INDRA
Customer Job No.	**Description**	**Item**	**Painting Specification/Procedure**
CL24 00698	See Attachment – ITEM LIST	/	PP-44 2024 rev. 4 SYSTEM 6A

AMBIENT CONDITION					
Date	**Hour**	**Ambient Temp. °C**	**Steel Temp. °C**	**Humidity %**	**Dew Point °C**
23/10/2024	14.30	18.5	17.8	76.6	14.4

SURFACE PREPARATION					
Degreasing			**Abrasive Type**		
THINNER NITRO ANTINEBBIA			GARNET		
Roughness			**Cleanliness and Surface Preparation**		
40 µm			SSPC-SP16		
Soluble Contaminants Test - ISO 8502-6/9			**Dust Test - ISO 8502-3**		
Result (mg/m²):	7.9		**Result:**	Rate 1	Size 1

PAINTING					
Number of Coats	**1**	**2**	**3**	**4**	**5**
Date	23/10/2024	24/10/2024	25/10/2024		
Hour	15.00	10.00	11.00		
Room Temperature °C	18.4	17.5	17.7		
Steel Temperature °C	18.2	17.4	17.8		
Humidity %	78	79.7	79.3		
Dew Point °C	14.5	14	14.1		
Application Method	Conventional spray	Conventional spray	Conventional spray		
Paint Product Name	INTERGARD 269	INTERGARD 475 HS	INTERTHANE 990		
Product Batch Number	A: 2243167018 B: 2243177028	A: 2243333015 B: 2243284075	RAL 9002 A: 2333167027 RAL 9005 A: 2333167027 B: 2333172046		
Colour	RED	GREY	RAL 9002 VALVES RAL 9005 LEVERS & HW		
DFT	72 µm	180 µm	276 µm		
Visual Aspect Result	SATISFACTORY	SATISFACTORY	SATISFACTORY		
Remarks	NO REMARKS				

MEASURING INSTRUMENTS		
POSITECTOR – SST/6000/RTR	DUST TEST KIT	

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	CROSS WIND 30/10/24	CERTIFIED NACE INTERNATIONAL COATING INSPECTOR EXP. 09/2025 2222 R M

COMPANY USE INFORMATION

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GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

ITEM LIST

JOB	DESCRIPTION	QUANTITY
CL24 00698	00.VSFT.0224/V 24 01216 POS 270	1
CL24 00698	981J.08.0006-V22	1
CL24 00698	981J.08.0019-V6	1
CL24 00698	981J.08.0019-V6	2
CL24 00698	981F.08.0005-V29	3
CL24 00698	981F.08.0005-V29	2
CL24 00698	981F.08.0005-V29	1
CL24 00698	981F.08.0005-V29	2
CL24 00698	981F.08.0005-V29	1
CL24 00698	981F.08.0005-V29	3
CL24 00698	99.50.0533-V	1
CL24 00698	981F.08.0005-V29	3
CL24 00698	981F.08.0012-NP-V22	1
CL24 00698	981J.08.0006-V22	2

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	CROSSWIND 30/10/24	CERTIFIED INTERNATIONAL COATING INSPECTOR EXP. 09/2025 2223 R M

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GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

REPORT IDENTIFICATION			
Date	**Certificate ID**	**Ref. Transport Note ID**	**Client**
28/10/2024	728/2024	1670/2024	INDRA
Customer Job No.	**Description**	**Item**	**Painting Specification/Procedure**
CL24 00698	See Attachment – ITEM LIST	/	PP-44 2024 rev. 4 SYSTEM 1

AMBIENT CONDITION					
Date	**Hour**	**Ambient Temp. °C**	**Steel Temp. °C**	**Humidity %**	**Dew Point °C**
23/10/2024	14.30	18.5	17.8	76.6	14.4

SURFACE PREPARATION					
Degreasing			**Abrasive Type**		
THINNER NITRO ANTINEBBIA			GARNET		
Roughness			**Cleanliness and Surface Preparation**		
50 µm			SA 2 1/2		
Soluble Contaminants Test - ISO 8502-6/9			**Dust Test - ISO 8502-3**		
Result (mg/m²):	8.9		**Result:**	Rate 1	Size 1

PAINTING					
Number of Coats	**1**	**2**	**3**	**4**	**5**
Date	23/10/2024	24/10/2024	25/10/2024		
Hour	15.00	10.00	11.00		
Room Temperature °C	18.4	17.5	17.7		
Steel Temperature °C	18.2	17.4	17.8		
Humidity %	78	79.7	79.3		
Dew Point °C	14.5	14	14.1		
Application Method	Conventional spray	Conventional spray	Conventional spray		
Paint Product Name	INTERZINC 52	INTERGARD 475 HS	INTERTHANE 990		
Product Batch Number	A: 2333251057 B: 2333142041	A: 2243333015 B: 2243284075	RAL 9002 A: 2333167027 RAL 9005 A: 2333167027 B: 2333172046		
Colour	GREY	GREY	RAL 9002 VALVES RAL 9005 GEAR		
DFT	78 µm	280 µm	338 µm		
Visual Aspect Result	SATISFACTORY	SATISFACTORY	SATISFACTORY		
Remarks	NO REMARKS				

MEASURING INSTRUMENTS		
POSITECTOR – SST/6000/RTR	DUST TEST KIT	

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	CROSSWIND 30/10/24	CERTIFIED PAINT INSPECTOR INTERNATIONAL COATING INSPECTOR EXP. 09/2025 2722

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GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

ITEM LIST

JOB	DESCRIPTION	QUANTITY
CL24 00698	00.VSF.2686/V 24 01216 POS 90	1
CL24 00698	00.VSF.2770/V 24 01216 POS 100	2
CL24 00698	00.VSF.2697/V 24 01216 POS 200	3
CL24 00698	00.VSF.2699/V 24 01216 POS 210	1
CL24 00698	99.50.0162SX-V	1

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	CROSSWIND 30/10/24 R	CERTIFIED INTERNATIONAL COATING INSPECTOR EXP. 09/2025 22274 R

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Flavio Brero

As a Certified

NACE Certified Coating Inspector - Level 3

x CROSSWIND
9/10/24 R

Executive Director
NACE International Institute

Expires
August 31, 2025

Cert No.2727

145678

ROSETTI MARINO ITEM 280

COD. VLBMNN00013Q0H

TAG:

BLPH-MV-013, BLPH-MV-014,

BLPH-MV-091, BLPH-MV-092

BLPH-MV-096, BLPH-MV-097,

BLPH-MV-204, BLPH-MV-205

BLPH-MV-282, BLPH-MV-283,

BLPH-MV-421, BLPH-MV-422

BLPH-MV-438, BLPH-MV-439

INDRA ITEM 280

COD. 00.MNF.0604/V

CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 50 NS.POS/OUR ITEM 50 VS.COD./YOUR CODE VBC0NN24350100 NS.COD./OUR CODE 00.VSF.2694/V (5 PCS)
VS.POS./YOUR ITEM 170 NS.POS/OUR ITEM 170 VS.COD./YOUR CODE VLBBNN07210200 NS.COD./OUR CODE 00.VSF.2682/V (1 PC)
VS.POS./YOUR ITEM 220 NS.POS/OUR ITEM 220 VS.COD./YOUR CODE VLBLNN01320100 NS.COD./OUR CODE 00.VSF.2701/V (2 PCS)
VS.POS./YOUR ITEM 250 NS.POS/OUR ITEM 250 VS.COD./YOUR CODE VLBLNN0143020 NS.COD./OUR CODE 00.VSF.2702/V (2 PCS)
(VALVE AND LEVER)
VS.POS./YOUR ITEM 280 NS.POS/OUR ITEM 280 VS.COD./YOUR CODE VLBMNN00013Q0H NS.COD./OUR CODE 00.MNF.0604/V (14 PCS)
VS.POS./YOUR ITEM 290 NS.POS/OUR ITEM 290 VS.COD./YOUR CODE VLBNNN00023Q0H NS.COD./OUR CODE 00.MNF.0608/V (4 PCS)
VS.POS./YOUR ITEM 300 NS.POS/OUR ITEM 300 VS.COD./YOUR CODE VLBNNN00033Q0H NS.COD./OUR CODE 00.MNF.0605/V (2 PCS)
(VALVE)

GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

REPORT IDENTIFICATION			
Date	**Certificate ID**	**Ref. Transport Note ID**	**Client**
03/10/2024	695/2024	1547/2024	INDRA
Customer Job No.	**Description**	**Item**	**Painting Specification/Procedure**
CL24 00698	See Attachment – ITEM LIST	/	PP-44 2024 rev. 4 SYSTEM 6A

AMBIENT CONDITION					
Date	**Hour**	**Ambient Temp. °C**	**Steel Temp. °C**	**Humidity %**	**Dew Point °C**
30/09/2024	10.00	24.9	25.1	47.8	15.8

SURFACE PREPARATION					
Degreasing			**Abrasive Type**		
THINNER NITRO ANTINEBBIA			GARNET		
Roughness			**Cleanliness and Surface Preparation**		
40 µm			SSPC-SP16		
Soluble Contaminants Test - ISO 8502-6/9			**Dust Test - ISO 8502-3**		
Result (mg/m²):	7.1		**Result:**	Rate 1	Size 1

PAINTING					
Number of Coats	**1**	**2**	**3**	**4**	**5**
Date	30/09/2024	01/10/2024	02/10/2024		
Hour	11.00	8.30	12.00		
Room Temperature °C	26.2	25.1	25.3		
Steel Temperature °C	25.2	26.3	24.9		
Humidity %	48.4	49.2	50.1		
Dew Point °C	15.8	16.8	16.3		
Application Method	Conventional spray	Conventional spray	Conventional spray		
Paint Product Name	INTERGARD 269	INTERGARD 475 HS	INTERTHANE 990		
Product Batch Number	A: 2243167018 B: 2243177028	A: 2243333015 B: 2243284075	RAL 9002 A: 2333167027 RAL 9005 A: 2333167027 B: 2333172046		
Colour	RED	GREY	RAL 9002 VALVES RAL 9005 LEVERS & HW		
DFT	62 µm	172 µm	260 µm		
Visual Aspect Result	SATISFACTORY	SATISFACTORY	SATISFACTORY		
Remarks	NO REMARKS				

MEASURING INSTRUMENTS		
POSITECTOR – SST/6000/RTR	DUST TEST KIT	

CROSSWIND 3/10/24 R

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	ROSETTI MARINO SpA Michele Sacchi Quality Control Dept. NACE # 35 246 + REVIEW	CERTIFIED INTERNATIONAL COATING INSPECTOR EXP. 08/2025 2723 R

COMPANY USE INFORMATION

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CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 50 NS.POS/OUR ITEM 50 VS.COD./YOUR CODE VBC0NN24350100 NS.COD./OUR CODE 00.VSF.2694/V (5 PCS)
VS.POS./YOUR ITEM 170 NS.POS/OUR ITEM 170 VS.COD./YOUR CODE VLBBNN07210200 NS.COD./OUR CODE 00.VSF.2682/V (1 PC)
VS.POS./YOUR ITEM 220 NS.POS/OUR ITEM 220 VS.COD./YOUR CODE VLBLNN01320100 NS.COD./OUR CODE 00.VSF.2701/V (2 PCS)
VS.POS./YOUR ITEM 250 NS.POS/OUR ITEM 250 VS.COD./YOUR CODE VLBLNN0143020 NS.COD./OUR CODE 00.VSF.2702/V (2 PCS)
(VALVE AND LEVER)
VS.POS./YOUR ITEM 280 NS.POS/OUR ITEM 280 VS.COD./YOUR CODE VLBMNN00013Q0H NS.COD./OUR CODE 00.MNF.0604/V (14 PCS)
VS.POS./YOUR ITEM 290 NS.POS/OUR ITEM 290 VS.COD./YOUR CODE VLBNNN00023Q0H NS.COD./OUR CODE 00.MNF.0608/V (4 PCS)
VS.POS./YOUR ITEM 300 NS.POS/OUR ITEM 300 VS.COD./YOUR CODE VLBNNN00033Q0H NS.COD./OUR CODE 00.MNF.0605/V (2 PCS)
(VALVE)

GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

ITEM LIST

JOB	DESCRIPTION	QUANTITY
CL24 00698	00.VSF.2694/V LOTTO 24 01216 POS 50	5
CL24 00698	00.VSF.2682/V LOTTO 24 01216 POS. 170	1
CL24 00698	00.VSF.2701/V LOTTO 24 01216 POS. 220	2
CL24 00698	00.VSF.2702/V LOTTO 24 01216 POS. 250	2
CL24 00698	00.MNF.0604/V LOTTO 24 0126 POS.280	14
CL24 00698	00.MNF.0608/V LOTTO 24 01216 POS. 290	4
CL24 00698	00.MNF.0605/V LOTTO 24 01216 POS. 300	2
CL24 00698	981F.08.0005-V29 LOTTO 24 01216 POS.50	5
CL24 00698	981J.08.0006-V22 LOTTO 24 01216 POS.170	1
CL24 00698	981J.08.0007-V4 LOTTO 24 01216 POS.170	1
CL24 00698	981F.08.0005-V29 LOTTO 24 01216 POS.220	2
CL24 00698	981J.08.0006-V22 LOTTO 24 01216 POS.250	2
CL24 00698	981F.08.0005-V29 LOTTO 24 01216 POS.240	1

x CROSSWIND
9/10/24 W/R

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	ROSETTI MARINO SpA Michele Sacchi Quality Control Dept. NACE #35744 X REVIEW	EXP. 08/2025 2723 R K

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x CROSSWIND
9/10/24 R

Executive Director
NACE International Institute

Expires
August 31, 2025

Cert No.2727

145678

ROSETTI MARINO ITEM 290

COD. VLBNNN00023Q0H

TAG:

BLPH-MV-025, BLPH-MV-038,

BLPH-MV-213, BLPH-MV-407

INDRA ITEM 290

COD. 00.MNF.0608/V

CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 50 NS.POS/OUR ITEM 50 VS.COD./YOUR CODE VBC0NN24350100 NS.COD./OUR CODE 00.VSF.2694/V (5 PCS)
VS.POS./YOUR ITEM 170 NS.POS/OUR ITEM 170 VS.COD./YOUR CODE VLBBNN07210200 NS.COD./OUR CODE 00.VSF.2682/V (1 PC)
VS.POS./YOUR ITEM 220 NS.POS/OUR ITEM 220 VS.COD./YOUR CODE VLBLNN01320100 NS.COD./OUR CODE 00.VSF.2701/V (2 PCS)
VS.POS./YOUR ITEM 250 NS.POS/OUR ITEM 250 VS.COD./YOUR CODE VLBLNN0143020 NS.COD./OUR CODE 00.VSF.2702/V (2 PCS)
(VALVE AND LEVER)
VS.POS./YOUR ITEM 280 NS.POS/OUR ITEM 280 VS.COD./YOUR CODE VLBMNN00013Q0H NS.COD./OUR CODE 00.MNF.0604/V (14 PCS)
VS.POS./YOUR ITEM 290 NS.POS/OUR ITEM 290 VS.COD./YOUR CODE VLBNNN00023Q0H NS.COD./OUR CODE 00.MNF.0608/V (4 PCS)
VS.POS./YOUR ITEM 300 NS.POS/OUR ITEM 300 VS.COD./YOUR CODE VLBNNN00033Q0H NS.COD./OUR CODE 00.MNF.0605/V (2 PCS)
(VALVE)

GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

REPORT IDENTIFICATION			
Date	**Certificate ID**	**Ref. Transport Note ID**	**Client**
03/10/2024	695/2024	1547/2024	INDRA
Customer Job No.	**Description**	**Item**	**Painting Specification/Procedure**
CL24 00698	See Attachment – ITEM LIST	/	PP-44 2024 rev. 4 SYSTEM 6A

AMBIENT CONDITION					
Date	**Hour**	**Ambient Temp. °C**	**Steel Temp. °C**	**Humidity %**	**Dew Point °C**
30/09/2024	10.00	24.9	25.1	47.8	15.8

SURFACE PREPARATION					
Degreasing			**Abrasive Type**		
THINNER NITRO ANTINEBBIA			GARNET		
Roughness			**Cleanliness and Surface Preparation**		
40 µm			SSPC-SP16		
Soluble Contaminants Test - ISO 8502-6/9			**Dust Test - ISO 8502-3**		
Result (mg/m²):	7.1		**Result:**	Rate 1	Size 1

PAINTING					
Number of Coats	1	2	3	4	5
Date	30/09/2024	01/10/2024	02/10/2024		
Hour	11.00	8.30	12.00		
Room Temperature °C	26.2	25.1	25.3		
Steel Temperature °C	25.2	26.3	24.9		
Humidity %	48.4	49.2	50.1		
Dew Point °C	15.8	16.8	16.3		
Application Method	Conventional spray	Conventional spray	Conventional spray		
Paint Product Name	INTERGARD 269	INTERGARD 475 HS	INTERTHANE 990		
Product Batch Number	A: 2243167018 B: 2243177028	A: 2243333015 B: 2243284075	RAL 9002 A: 2333167027 RAL 9005 A: 2333167027 B: 2333172046		
Colour	RED	GREY	RAL 9002 VALVES RAL 9005 LEVERS & HW		
DFT	62 µm	172 µm	260 µm		
Visual Aspect Result	SATISFACTORY	SATISFACTORY	SATISFACTORY		
Remarks	NO REMARKS				

MEASURING INSTRUMENTS		
POSITECTOR – SST/6000/RTR	DUST TEST KIT	

CROSSWIND 01/10/24 R

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	ROSETTI MARINO SpA Michele Sacchi Quality Control Dept. NACE # 35 246 + REVIEW	CERTIFIED INTERNATIONAL COATING INSPECTOR EXP. 08/2025 2723 R

COMPANY USE INFORMATION

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CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 50 NS.POS/OUR ITEM 50 VS.COD./YOUR CODE VBC0NN24350100 NS.COD./OUR CODE 00.VSF.2694/V (5 PCS)
VS.POS./YOUR ITEM 170 NS.POS/OUR ITEM 170 VS.COD./YOUR CODE VLBBNN07210200 NS.COD./OUR CODE 00.VSF.2682/V (1 PC)
VS.POS./YOUR ITEM 220 NS.POS/OUR ITEM 220 VS.COD./YOUR CODE VLBLNN01320100 NS.COD./OUR CODE 00.VSF.2701/V (2 PCS)
VS.POS./YOUR ITEM 250 NS.POS/OUR ITEM 250 VS.COD./YOUR CODE VLBLNN0143020 NS.COD./OUR CODE 00.VSF.2702/V (2 PCS)
(VALVE AND LEVER)
VS.POS./YOUR ITEM 280 NS.POS/OUR ITEM 280 VS.COD./YOUR CODE VLBMNN00013Q0H NS.COD./OUR CODE 00.MNF.0604/V (14 PCS)
VS.POS./YOUR ITEM 290 NS.POS/OUR ITEM 290 VS.COD./YOUR CODE VLBNNN00023Q0H NS.COD./OUR CODE 00.MNF.0608/V (4 PCS)
VS.POS./YOUR ITEM 300 NS.POS/OUR ITEM 300 VS.COD./YOUR CODE VLBNNN00033Q0H NS.COD./OUR CODE 00.MNF.0605/V (2 PCS)
(VALVE)

GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

ITEM LIST

JOB	DESCRIPTION	QUANTITY
CL24 00698	00.VSF.2694/V LOTTO 24 01216 POS 50	5
CL24 00698	00.VSF.2682/V LOTTO 24 01216 POS. 170	1
CL24 00698	00.VSF.2701/V LOTTO 24 01216 POS. 220	2
CL24 00698	00.VSF.2702/V LOTTO 24 01216 POS. 250	2
CL24 00698	00.MNF.0604/V LOTTO 24 0126 POS.280	14
CL24 00698	00.MNF.0608/V LOTTO 24 01216 POS. 290	4
CL24 00698	00.MNF.0605/V LOTTO 24 01216 POS. 300	2
CL24 00698	981F.08.0005-V29 LOTTO 24 01216 POS.50	5
CL24 00698	981J.08.0006-V22 LOTTO 24 01216 POS.170	1
CL24 00698	981J.08.0007-V4 LOTTO 24 01216 POS.170	1
CL24 00698	981F.08.0005-V29 LOTTO 24 01216 POS.220	2
CL24 00698	981J.08.0006-V22 LOTTO 24 01216 POS.250	2
CL24 00698	981F.08.0005-V29 LOTTO 24 01216 POS.240	1

x CROSSWIND
9/10/24 W/R

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	ROSETTI MARINO SpA Michele Sacchi Quality Control Dept. NACE #35744 X REVIEW	CERTIFIED NACE INTERNATIONAL COATING INSPECTOR EXP. 09/2025 27223 R K

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x CROSSWIND
9/10/24 R

Executive Director
NACE International Institute

Expires
August 31, 2025

Cert No.2727

145678

ROSETTI MARINO ITEM 300

COD. VLBNNN00033Q0H

TAG:

BLPH-MV-150, BLPH-MV-151

INDRA ITEM 300

COD. 00.MNF.0605/V

CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 50 NS.POS/OUR ITEM 50 VS.COD./YOUR CODE VBC0NN24350100 NS.COD./OUR CODE 00.VSF.2694/V (5 PCS)
VS.POS./YOUR ITEM 170 NS.POS/OUR ITEM 170 VS.COD./YOUR CODE VLBBNN07210200 NS.COD./OUR CODE 00.VSF.2682/V (1 PC)
VS.POS./YOUR ITEM 220 NS.POS/OUR ITEM 220 VS.COD./YOUR CODE VLBLNN01320100 NS.COD./OUR CODE 00.VSF.2701/V (2 PCS)
VS.POS./YOUR ITEM 250 NS.POS/OUR ITEM 250 VS.COD./YOUR CODE VLBLNN0143020 NS.COD./OUR CODE 00.VSF.2702/V (2 PCS)
(VALVE AND LEVER)
VS.POS./YOUR ITEM 280 NS.POS/OUR ITEM 280 VS.COD./YOUR CODE VLBMNN00013Q0H NS.COD./OUR CODE 00.MNF.0604/V (14 PCS)
VS.POS./YOUR ITEM 290 NS.POS/OUR ITEM 290 VS.COD./YOUR CODE VLBNNN00023Q0H NS.COD./OUR CODE 00.MNF.0608/V (4 PCS)
VS.POS./YOUR ITEM 300 NS.POS/OUR ITEM 300 VS.COD./YOUR CODE VLBNNN00033Q0H NS.COD./OUR CODE 00.MNF.0605/V (2 PCS)
(VALVE)

GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

REPORT IDENTIFICATION			
Date	**Certificate ID**	**Ref. Transport Note ID**	**Client**
03/10/2024	695/2024	1547/2024	INDRA
Customer Job No.	**Description**	**Item**	**Painting Specification/Procedure**
CL24 00698	See Attachment – ITEM LIST	/	PP-44 2024 rev. 4 SYSTEM 6A

AMBIENT CONDITION					
Date	**Hour**	**Ambient Temp. °C**	**Steel Temp. °C**	**Humidity %**	**Dew Point °C**
30/09/2024	10.00	24.9	25.1	47.8	15.8

SURFACE PREPARATION					
Degreasing			**Abrasive Type**		
THINNER NITRO ANTINEBBIA			GARNET		
Roughness			**Cleanliness and Surface Preparation**		
40 µm			SSPC-SP16		
Soluble Contaminants Test - ISO 8502-6/9			**Dust Test - ISO 8502-3**		
Result (mg/m²):	7.1		**Result:**	Rate 1	Size 1

PAINTING					
Number of Coats	1	2	3	4	5
Date	30/09/2024	01/10/2024	02/10/2024		
Hour	11.00	8.30	12.00		
Room Temperature °C	26.2	25.1	25.3		
Steel Temperature °C	25.2	26.3	24.9		
Humidity %	48.4	49.2	50.1		
Dew Point °C	15.8	16.8	16.3		
Application Method	Conventional spray	Conventional spray	Conventional spray		
Paint Product Name	INTERGARD 269	INTERGARD 475 HS	INTERTHANE 990		
Product Batch Number	A: 2243167018 B: 2243177028	A: 2243333015 B: 2243284075	RAL 9002 A: 2333167027 RAL 9005 A: 2333167027 B: 2333172046		
Colour	RED	GREY	RAL 9002 VALVES RAL 9005 LEVERS & HW		
DFT	62 µm	172 µm	260 µm		
Visual Aspect Result	SATISFACTORY	SATISFACTORY	SATISFACTORY		
Remarks	NO REMARKS				

MEASURING INSTRUMENTS		
POSITECTOR – SST/6000/RTR	DUST TEST KIT	

CROSSWIND 01/10/24 R

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	ROSETTI MARINO SpA Michele Sacchi Quality Control Dept. NACE #35246 + REVIEW	CERTIFIED INTERNATIONAL COATING INSPECTOR EXP. 08/2025 2723 R

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CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 50 NS.POS/OUR ITEM 50 VS.COD./YOUR CODE VBC0NN24350100 NS.COD./OUR CODE 00.VSF.2694/V (5 PCS)
VS.POS./YOUR ITEM 170 NS.POS/OUR ITEM 170 VS.COD./YOUR CODE VLBBNN07210200 NS.COD./OUR CODE 00.VSF.2682/V (1 PC)
VS.POS./YOUR ITEM 220 NS.POS/OUR ITEM 220 VS.COD./YOUR CODE VLBLNN01320100 NS.COD./OUR CODE 00.VSF.2701/V (2 PCS)
VS.POS./YOUR ITEM 250 NS.POS/OUR ITEM 250 VS.COD./YOUR CODE VLBLNN0143020 NS.COD./OUR CODE 00.VSF.2702/V (2 PCS)
(VALVE AND LEVER)
VS.POS./YOUR ITEM 280 NS.POS/OUR ITEM 280 VS.COD./YOUR CODE VLBMNN00013Q0H NS.COD./OUR CODE 00.MNF.0604/V (14 PCS)
VS.POS./YOUR ITEM 290 NS.POS/OUR ITEM 290 VS.COD./YOUR CODE VLBNNN00023Q0H NS.COD./OUR CODE 00.MNF.0608/V (4 PCS)
VS.POS./YOUR ITEM 300 NS.POS/OUR ITEM 300 VS.COD./YOUR CODE VLBNNN00033Q0H NS.COD./OUR CODE 00.MNF.0605/V (2 PCS)
(VALVE)

GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

ITEM LIST

JOB	DESCRIPTION	QUANTITY
CL24 00698	00.VSF.2694/V LOTTO 24 01216 POS 50	5
CL24 00698	00.VSF.2682/V LOTTO 24 01216 POS. 170	1
CL24 00698	00.VSF.2701/V LOTTO 24 01216 POS. 220	2
CL24 00698	00.VSF.2702/V LOTTO 24 01216 POS. 250	2
CL24 00698	00.MNF.0604/V LOTTO 24 0126 POS.280	14
CL24 00698	00.MNF.0608/V LOTTO 24 01216 POS. 290	4
CL24 00698	00.MNF.0605/V LOTTO 24 01216 POS. 300	2
CL24 00698	981F.08.0005-V29 LOTTO 24 01216 POS.50	5
CL24 00698	981J.08.0006-V22 LOTTO 24 01216 POS.170	1
CL24 00698	981J.08.0007-V4 LOTTO 24 01216 POS.170	1
CL24 00698	981F.08.0005-V29 LOTTO 24 01216 POS.220	2
CL24 00698	981J.08.0006-V22 LOTTO 24 01216 POS.250	2
CL24 00698	981F.08.0005-V29 LOTTO 24 01216 POS.240	1

x CROSSWIND
9/10/24 W/R

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	ROSETTI MARINO SpA Michele Sacchi Quality Control Dept. NACE #35744 X REVIEW	EXP. 09/2025 2723 R

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9/10/24 R

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Expires
August 31, 2025

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145678

ROSETTI MARINO ITEM 310

COD. VLBNNN00063Q0H

TAG:

BLPH-MV-166, BLPH-MV-167,

BLPH-MV-386

INDRA ITEM 310

COD. 00.MNF.0612/V

CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 310 NS.POS/OUR ITEM 310 VS.COD./YOUR CODE VLBNNN00063Q0H NS.COD./OUR CODE 00.MNF.0612/V (3 PCS)
(VALVE)

GMP COLOR

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MD-009 (rev 0 - 19/09/2020)

REPORT IDENTIFICATION			
Date	**Certificate ID**	**Ref. Transport Note ID**	**Client**
03/10/2024	696/2024	1547/2024	INDRA
Customer Job No.	**Description**	**Item**	**Painting Specification/Procedure**
CL24 00698	See Attachment – ITEM LIST	/	PP-44 2024 rev. 4 SYSTEM 1

AMBIENT CONDITION					
Date	**Hour**	**Ambient Temp. °C**	**Steel Temp. °C**	**Humidity %**	**Dew Point °C**
30/09/2024	10.00	24.9	25.1	47.8	15.8

SURFACE PREPARATION							
Degreasing			**Abrasive Type**				
THINNER NITRO ANTINEBBIA			GARNET				
Roughness			**Cleanliness and Surface Preparation**				
50 µm			SA 2 1/2				
Soluble Contaminants Test - ISO 8502-6/9			**Dust Test - ISO 8502-3**				
Result (mg/m²):	8.6		**Result:**	Rate	1	Size	1

PAINTING					
Number of Coats	**1**	**2**	**3**	**4**	**5**
Date	30/09/2024	01/10/2024	02/10/2024		
Hour	11.00	8.30	12.00		
Room Temperature °C	26.2	25.1	25.3		
Steel Temperature °C	25.2	26.3	24.9		
Humidity %	48.4	49.2	50.1		
Dew Point °C	15.8	16.8	16.3		
Application Method	Conventional spray	Conventional spray	Conventional spray		
Paint Product Name	INTERZINC 52	INTERGARD 475 HS	INTERTHANE 990		
Product Batch Number	A: 2333251057 B: 2333142041	A: 2243333015 B: 2243284075	A: 2333167027 B: 2333172046		
Colour	GREY	GREY	RAL 9002		
DFT	80 µm	282 µm	340 µm		
Visual Aspect Result	SATISFACTORY	SATISFACTORY	SATISFACTORY		
Remarks	NO REMARKS				

MEASURING INSTRUMENTS		
POSITECTOR – SST/6000/RTR	DUST TEST KIT	

x CROSS WIND

9/10/24 MR

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	ROSETTI MARINO S.p.A. Michele Sacchi Quality Control Dept. NACE #35746 X REVIEW	CERTIFIED NACE INTERNATIONAL COATING INSPECTOR EXP. 09/2025 2123 R W

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CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 310 NS.POS/OUR ITEM 310 VS.COD./YOUR CODE VLBNNN00063Q0H NS.COD./OUR CODE 00.MNF.0612/V (3 PCS)
(VALVE)

GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

ITEM LIST

JOB	DESCRIPTION	QUANTITY
CL24 00698	00.MNF.0612/V LOTTO 24 01216 POS.310	3

x CROSSWIND
9/10/24 W/R

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	ROSETTI MARINO SpA Michele Sacchi Quality Control Dept. NACE #35446 + REVIEW	CERTIFIED INTERNATIONAL COATING INSPECTOR EXP. 08/2025 2723 R W

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Certificate 696/2024 - Page 2 of 2

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9/10/24 R

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NACE International Institute

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August 31, 2025

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ROSETTI MARINO ITEM 320

COD. VLBNNN00063Q0H

TAG:

BLPH-MV-411

INDRA ITEM 320

COD. 00.MNF.0606/V

CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 320 NS.POS/OUR ITEM 320 VS.COD./YOUR CODE VLBNNN00063Q0H NS.COD./OUR CODE 00.MNF.0606/V (1 PC) (VALVE)

GMP COLOR

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MD-009 (rev 0 - 19/09/2020)

REPORT IDENTIFICATION			
Date	**Certificate ID**	**Ref. Transport Note ID**	**Client**
03/10/2024	697/2024	1547/2024	INDRA
Customer Job No.	**Description**	**Item**	**Painting Specification/Procedure**
CL24 00698	See Attachment – ITEM LIST	/	PP-44 2024 rev. 4 SYSTEM 9

AMBIENT CONDITION					
Date	**Hour**	**Ambient Temp. °C**	**Steel Temp. °C**	**Humidity %**	**Dew Point °C**
01/10/2024	8.00	25.2	26.5	50.1	16.4

SURFACE PREPARATION							
Degreasing			**Abrasive Type**				
THINNER NITRO ANTINEBBIA			GARNET				
Roughness			**Cleanliness and Surface Preparation**				
50 µm			SA 2 1/2				
Soluble Contaminants Test - ISO 8502-6/9			**Dust Test - ISO 8502-3**				
Result (mg/m²):	8.5		**Result:**	Rate	1	Size	1

PAINTING					
Number of Coats	**1**	**2**	**3**	**4**	**5**
Date	01/10/2024	02/10/2024			
Hour	8.30	12.00			
Room Temperature °C	25.1	25.3			
Steel Temperature °C	26.3	24.9			
Humidity %	49.2	50.1			
Dew Point °C	16.8	16.3			
Application Method	Conventional spray	Conventional spray			
Paint Product Name	THERMALINE 440	THERMALINE 440			
Product Batch Number	A: 230630016A B: 230630039A	A: 230922027A B: 230630039A			
Colour	RED	RAL 9002			
DFT	168 µm	330 µm			
Visual Aspect Result	SATISFACTORY	SATISFACTORY			
Remarks	NO REMARKS				

MEASURING INSTRUMENTS		
POSITECTOR – SST/6000/RTR	DUST TEST KIT	

x CROSSHATCH 03/10/24 M/R

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	ROSETTI MARINO SpA Michele Sacchi Quality Control Dept. NACE #35744 X REVIEW	CERTIFIED INTERNATIONAL COATING INSPECTOR EXP. 09/2025 2723 R M

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CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 320 NS.POS/OUR ITEM 320 VS.COD./YOUR CODE VLBNNN00063Q0H NS.COD./OUR CODE 00.MNF.0606/V (1 PC) (VALVE)

GMP COLOR

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MD-009 (rev 0 - 19/09/2020)

ITEM LIST

JOB	DESCRIPTION	QUANTITY
CL24 00698	00.MNF.0606/V LOTTO 24 01216 POS. 320	1

x CROSSWIND
9/10/24 WIR

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	ROSETTI MARINO SpA Michele Sacchi Quality Control Dept. NACE#35 FIG X REVIEW	CERTIFIED IAFE INTERNATIONAL COATING INSPEC. BR EXP. 09/2025 2723 R

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9/10/24 R

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NACE International Institute

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145678

ROSETTI MARINO ITEM 390

COD. VBD0NN16610300

TAG:

BLPH-MV-467

INDRA ITEM 321

COD. 00.VSF.2716/V

CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 110 NS.POS/OUR ITEM 110 VS.COD./YOUR CODE VBC0NN24710100 NS.COD./OUR CODE 00.VSF.2689/V (1 PC)
VS.POS./YOUR ITEM 120 NS.POS/OUR ITEM 120 VS.COD./YOUR CODE VBC0NN24721H00 NS.COD./OUR CODE 00.VSF.2691/V (1 PC)
VS.POS./YOUR ITEM 390 NS.POS/OUR ITEM 321 VS.COD./YOUR CODE VBD0NN16610300 NS.COD./OUR CODE 00.VSF.2716/V (1 PC) 1/4
(VALVE)

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

REPORT IDENTIFICATION			
Date	**Certificate ID**	**Ref. Transport Note ID**	**Client**
28/10/2024	729/2024	1670/2024	INDRA
Customer Job No.	**Description**	**Item**	**Painting Specification/Procedure**
CL24 00698	See Attachment – ITEM LIST	/	PP-44 2024 rev. 4 SYSTEM 9

AMBIENT CONDITION					
Date	**Hour**	**Ambient Temp. °C**	**Steel Temp. °C**	**Humidity %**	**Dew Point °C**
23/10/2024	14.30	18.5	17.8	76.6	14.4

SURFACE PREPARATION							
Degreasing			**Abrasive Type**				
THINNER NITRO ANTINEBBIA			GARNET				
Roughness			**Cleanliness and Surface Preparation**				
50 µm			SA 2 1/2				
Soluble Contaminants Test - ISO 8502-6/9			**Dust Test - ISO 8502-3**				
Result (mg/m²):	8.5		**Result:**	Rate	1	Size	1

PAINTING					
Number of Coats	**1**	**2**	**3**	**4**	**5**
Date	23/10/2024	24/10/2024			
Hour	15.00	10.00			
Room Temperature °C	18.4	17.5			
Steel Temperature °C	18.2	17.4			
Humidity %	78	79.7			
Dew Point °C	14.5	14			
Application Method	Conventional spray	Conventional spray			
Paint Product Name	THERMALINE 440	THERMALINE 440			
Product Batch Number	A: 230630016A B: 230630039A	A: 230922027A B: 230630039A			
Colour	RED	RAL 9002			
DFT	164 µm	332 µm			
Visual Aspect Result	SATISFACTORY	SATISFACTORY			
Remarks	NO REMARKS				

MEASURING INSTRUMENTS		
POSITECTOR – SST/6000/RTR	DUST TEST KIT	

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	CROSSWIND 30/10/24 P/W	CERTIFIED INTERNATIONAL COATING INSPECTOR EXP. 09/2025

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ITEM LIST

JOB	DESCRIPTION	QUANTITY
CL24 00698	00.VSF.2689/V 24 01216 POS 110	1
CL24 00698	00.VSF.2691/V 24 01216 POS 120	1
CL24 00698	00.VSF.2716/V 24 01216 POS 321	1

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.		

CERTIFIED INTERNATIONAL COATING INSPECTOR EXP. 09/2025 2222 R M

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GMP COLOR

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MD-009 (rev 0 - 19/09/2020)

REPORT IDENTIFICATION			
Date	**Certificate ID**	**Ref. Transport Note ID**	**Client**
28/10/2024	727/2024	1668-1670/2024	INDRA
Customer Job No.	**Description**	**Item**	**Painting Specification/Procedure**
CL24 00698	See Attachment – ITEM LIST	/	PP-44 2024 rev. 4 SYSTEM 6A

AMBIENT CONDITION					
Date	**Hour**	**Ambient Temp. °C**	**Steel Temp. °C**	**Humidity %**	**Dew Point °C**
23/10/2024	14.30	18.5	17.8	76.6	14.4

SURFACE PREPARATION					
Degreasing			**Abrasive Type**		
THINNER NITRO ANTINEBBIA			GARNET		
Roughness			**Cleanliness and Surface Preparation**		
40 µm			SSPC-SP16		
Soluble Contaminants Test - ISO 8502-6/9			**Dust Test - ISO 8502-3**		
Result (mg/m²):	7.9		**Result:**	Rate 1	Size 1

PAINTING					
Number of Coats	**1**	**2**	**3**	**4**	**5**
Date	23/10/2024	24/10/2024	25/10/2024		
Hour	15.00	10.00	11.00		
Room Temperature °C	18.4	17.5	17.7		
Steel Temperature °C	18.2	17.4	17.8		
Humidity %	78	79.7	79.3		
Dew Point °C	14.5	14	14.1		
Application Method	Conventional spray	Conventional spray	Conventional spray		
Paint Product Name	INTERGARD 269	INTERGARD 475 HS	INTERTHANE 990		
Product Batch Number	A: 2243167018 B: 2243177028	A: 2243333015 B: 2243284075	RAL 9002 A: 2333167027 RAL 9005 A: 2333167027 B: 2333172046		
Colour	RED	GREY	RAL 9002 VALVES RAL 9005 LEVERS & HW		
DFT	72 µm	180 µm	276 µm		
Visual Aspect Result	SATISFACTORY	SATISFACTORY	SATISFACTORY		
Remarks	NO REMARKS				

MEASURING INSTRUMENTS		
POSITECTOR – SST/6000/RTR	DUST TEST KIT	

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	CROSSWIND 30/10/24	CERTIFIED PAINT INSPECTOR INTERNATIONAL COATING EXP. 09/2025 2224

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GMP COLOR

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MD-009 (rev 0 - 19/09/2020)

ITEM LIST

JOB	DESCRIPTION	QUANTITY
CL24 00698	00.VSFT.0224/V 24 01216 POS 270	1
CL24 00698	981J.08.0006-V22	1
CL24 00698	981J.08.0019-V6	1
CL24 00698	981J.08.0019-V6	2
CL24 00698	981F.08.0005-V29	3
CL24 00698	981F.08.0005-V29	2
CL24 00698	981F.08.0005-V29	1
CL24 00698	981F.08.0005-V29	2
CL24 00698	981F.08.0005-V29	1
CL24 00698	981F.08.0005-V29	3
CL24 00698	99.50.0533-V	1
CL24 00698	981F.08.0005-V29	3
CL24 00698	981F.08.0012-NP-V22	1
CL24 00698	981J.08.0006-V22	2

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	CROSSWIND 30/10/24	CERTIFICATE INTERNATIONAL COATING INSPECTOR EXP. 09/2025

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9/10/24 R

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August 31, 2025

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ROSETTI MARINO ITEM 400

COD. VLBBNN07190100

TAG:

BLPH-MV-466

INDRA ITEM 322

COD. 00.VSF.2680/V

CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216

VS.POS./YOUR ITEM 10	NS.POS/OUR ITEM 10	VS.COD./YOUR CODE VBC0NN06943Q00	NS.COD./OUR CODE 00.VSF.2684/V (1 PC)
VS.POS./YOUR ITEM 20	NS.POS/OUR ITEM 20	VS.COD./YOUR CODE VBC0NN06950100	NS.COD./OUR CODE 00.VSF.2687/V (15 PCS)
VS.POS./YOUR ITEM 30	NS.POS/OUR ITEM 30	VS.COD./YOUR CODE VBC0NN06961H00	NS.COD./OUR CODE 00.VSF.2690/V (2 PCS)
VS.POS./YOUR ITEM 40	NS.POS/OUR ITEM 40	VS.COD./YOUR CODE VBC0NN24343Q00	NS.COD./OUR CODE 00.VSF.2693/V (2 PCS)
VS.POS./YOUR ITEM 140	NS.POS/OUR ITEM 140	VS.COD./YOUR CODE VBD0NN16460300	NS.COD./OUR CODE 00.VSF.2695/V (1 PC)
VS.POS./YOUR ITEM 150	NS.POS/OUR ITEM 150	VS.COD./YOUR CODE VLBBNN07190100	NS.COD./OUR CODE 00.VSF.2680/V (28 PCS)
VS.POS./YOUR ITEM 400	NS.POS/OUR ITEM 322	VS.COD./YOUR CODE VLBBNN07190100	NS.COD./OUR CODE 00.VSF.2680/V (1 PC)

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MD-009 (rev 0 - 19/09/2020)

REPORT IDENTIFICATION			
Date	**Certificate ID**	**Ref. Transport Note ID**	**Client**
09/10/2024	710/2024	1581-1586/2024	INDRA
Customer Job No.	**Description**	**Item**	**Painting Specification/Procedure**
CL24 00698	See Attachment – ITEM LIST	/	PP-44 2024 rev. 4 SYSTEM 6A

AMBIENT CONDITION					
Date	**Hour**	**Ambient Temp. °C**	**Steel Temp. °C**	**Humidity %**	**Dew Point °C**
04/10/2024	9.00	25.2	24.8	48.9	14.8

SURFACE PREPARATION					
Degreasing			**Abrasive Type**		
THINNER NITRO ANTINEBBIA			GARNET		
Roughness			**Cleanliness and Surface Preparation**		
40 µm			SSPC-SP16		
Soluble Contaminants Test - ISO 8502-6/9			**Dust Test - ISO 8502-3**		
Result (mg/m²):	7.7		**Result:**	Rate 1	Size 1

PAINTING					
Number of Coats	**1**	**2**	**3**	**4**	**5**
Date	04/10/2024	07/10/2024	08/10/2024		
Hour	10.00	13.30	10.00		
Room Temperature °C	25.3	25.2	25.8		
Steel Temperature °C	24.8	24.2	25.1		
Humidity %	47.2	47.2	47.7		
Dew Point °C	14.9	14.3	13.2		
Application Method	Conventional spray	Conventional spray	Conventional spray		
Paint Product Name	INTERGARD 269	INTERGARD 475 HS	INTERTHANE 990		
Product Batch Number	A: 2243167018 B: 2243177028	A: 2243333015 B: 2243284075	RAL 9002 A: 2333167027 RAL 9005 A: 2333167027 B: 2333172046		
Colour	RED	GREY	RAL 9002 VALVES RAL 9005 LEVERS & HW		
DFT	68 µm	176 µm	266 µm		
Visual Aspect Result	SATISFACTORY	SATISFACTORY	SATISFACTORY		
Remarks	NO REMARKS				

MEASURING INSTRUMENTS		
POSITECTOR – SST/6000/RTR	DUST TEST KIT	

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	x CROSSWIND 16/10/24 WIR	CERTIFIED INTERNATIONAL COATING INSPECTOR EXP. 09/2025

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CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216

VS.POS./YOUR ITEM 10	NS.POS/OUR ITEM 10	VS.COD./YOUR CODE VBC0NN06943Q00	NS.COD./OUR CODE 00.VSF.2684/V (1 PC)
VS.POS./YOUR ITEM 20	NS.POS/OUR ITEM 20	VS.COD./YOUR CODE VBC0NN06950100	NS.COD./OUR CODE 00.VSF.2687/V (15 PCS)
VS.POS./YOUR ITEM 30	NS.POS/OUR ITEM 30	VS.COD./YOUR CODE VBC0NN06961H00	NS.COD./OUR CODE 00.VSF.2690/V (2 PCS)
VS.POS./YOUR ITEM 40	NS.POS/OUR ITEM 40	VS.COD./YOUR CODE VBC0NN24343Q00	NS.COD./OUR CODE 00.VSF.2693/V (2 PCS)
VS.POS./YOUR ITEM 140	NS.POS/OUR ITEM 140	VS.COD./YOUR CODE VBD0NN16460300	NS.COD./OUR CODE 00.VSF.2695/V (1 PC)
VS.POS./YOUR ITEM 150	NS.POS/OUR ITEM 150	VS.COD./YOUR CODE VLBBNN07190100	NS.COD./OUR CODE 00.VSF.2680/V (28 PCS)
VS.POS./YOUR ITEM 400	NS.POS/OUR ITEM 322	VS.COD./YOUR CODE VLBBNN07190100	NS.COD./OUR CODE 00.VSF.2680/V (1 PC)

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MD-009 (rev 0 - 19/09/2020)

ITEM LIST

JOB	DESCRIPTION	QUANTITY
CL24 00698	00.VSF.2684/V LOTTO 24 01216 POS.10	1
CL24 00698	00.VSF.2687/V LOTTO 24 01216 POS. 20	15
CL24 00698	00.VSF.2690/V LOTTO 24 01216 POS. 30	2
CL24 00698	00.VSF.2693/V LOTTO 24 01216 POS. 40	2
CL24 00698	00.VSF.2695/V LOTTO 24 01216 POS. 140	1
CL24 00698	00.VSF.2680/V LOTTO 24 01216 POS. 150	28
CL24 00698	00.VSF.2680/V LOTTO 24 01216 POS. 322	1
CL24 00698	981F.08.0001-V31 LEVA DI COMANDO PIEGATA SS316 L250	28
CL24 00698	981F.08.0007-NP-V29 LEVA DI COMANDO PIEGATA RIALZATA L250M	28
CL24 00698	981F.08.0001-V31 LEVA DI COMANDO PIEGATA SS316 L250	2
CL24 00698	981F.08.0005-V29 LEVA DI COMANDO PER CASTELLETTO SS316	1
CL24 00698	981F.08.0005-V29 LEVA DI COMANDO PER CASTELLETTO SS316	15
CL24 00698	981F.08.0005-V29 LEVA DI COMANDO PER CASTELLETTO SS316	2
CL24 00698	981J.08.0006-V22 LEVA DI COMANDO PIEGATA SS316-BUR-	1
CL24 00698	981F.08.0001-V31 LEVA DI COMANDO PIEGATA SS316 L250	1
CL24 00698	981F.08.0005.V29 LEVA DI COMANDO PER CASTELLETTO SS316	2
CL24 00698	981F.08.0007-NP-V29 LEVA DI COMANDO PIEGATA RIALZATA L250M-	1

x CROSSWIND
16/10/24 WIR

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August 31, 2025

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ROSETTI MARINO ITEM 410

COD. VLBBNN07201H00

TAG:

BLPH-MV-468

INDRA ITEM 323

COD. 00.VSF.2681/V

CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 160 NS.POS/OUR ITEM 160 VS.COD./YOUR CODE VLBBNN07201H00 NS.COD./OUR CODE 00.VSF.2681/V (6 PCS)
VS.POS./YOUR ITEM 260 NS.POS/OUR ITEM 260 VS.COD./YOUR CODE VLBLNN01450400 NS.COD./OUR CODE 00.VSF.2700/V (7 PCS)
VS.POS./YOUR ITEM 410 NS.POS/OUR ITEM 323 VS.COD./YOUR CODE VLBBNN07201H00 NS.COD./OUR CODE 00.VSF.2681/V (1 PC)

GMP COLOR

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MD-009 (rev 0 - 19/09/2020)

REPORT IDENTIFICATION			
Date	**Certificate ID**	**Ref. Transport Note ID**	**Client**
17/10/2024	714/2024	1616/2024	INDRA
Customer Job No.	**Description**	**Item**	**Painting Specification/Procedure**
CL24 00698	See Attachment – ITEM LIST	/	PP-44 2024 rev. 4 SYSTEM 6A

AMBIENT CONDITION					
Date	**Hour**	**Ambient Temp. °C**	**Steel Temp. °C**	**Humidity %**	**Dew Point °C**
14/10/2024	11.00	24.3	24.8	48.9	14.8

SURFACE PREPARATION							
Degreasing			**Abrasive Type**				
THINNER NITRO ANTINEBBIA			GARNET				
Roughness			**Cleanliness and Surface Preparation**				
40 µm			SSPC-SP16				
Soluble Contaminants Test - ISO 8502-6/9			**Dust Test - ISO 8502-3**				
Result (mg/m²):	7.7		**Result:**	**Rate**	1	**Size**	1

PAINTING					
Number of Coats	1	2	3	4	5
Date	14/10/2024	15/10/2024	16/10/2024		
Hour	13.30	10.00	11.00		
Room Temperature °C	25.3	25.7	24.3		
Steel Temperature °C	24.5	25.3	24.1		
Humidity %	47.8	47.9	46.3		
Dew Point °C	14.7	13.4	13.9		
Application Method	Conventional spray	Conventional spray	Conventional spray		
Paint Product Name	INTERGARD 269	INTERGARD 475 HS	INTERTHANE 990		
Product Batch Number	A: 2243167018 B: 2243177028	A: 2243333015 B: 2243284075	RAL 9002 A: 2333167027 RAL 9005 A: 2333167027 B: 2333172046		
Colour	RED	GREY	RAL 9002 VALVES RAL 9005 LEVERS & HW		
DFT	70 µm	178 µm	270 µm		
Visual Aspect Result	SATISFACTORY	SATISFACTORY	SATISFACTORY		
Remarks	NO REMARKS				

MEASURING INSTRUMENTS	
POSITECTOR – SST/6000/RTR	DUST TEST KIT

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VS.POS./YOUR ITEM 260 NS.POS/OUR ITEM 260 VS.COD./YOUR CODE VLBLNN01450400 NS.COD./OUR CODE 00.VSF.2700/V (7 PCS)
VS.POS./YOUR ITEM 410 NS.POS/OUR ITEM 323 VS.COD./YOUR CODE VLBBNN07201H00 NS.COD./OUR CODE 00.VSF.2681/V (1 PC)

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MD-009 (rev 0 - 19/09/2020)

ITEM LIST

JOB	DESCRIPTION	QUANTITY
CL24 00698	00.VSF.2681/V LOTTO 24-01216/160	6
CL24 00698	00.VSF.2681/V LOTTO 24-01216/323	1
CL24 00698	00.VSF.2700/V LOTTO 24-01216/260	7
CL24 00698	981J.08.0018-V6 LEVA DI COMANDO ALTA	1
CL24 00698	981J.08.0019-V6 LEVA DI COMANDO	1
CL24 00698	98N.08.0001-V6 LEVA SS316	7
CL24 00698	981J.08.0019-V6 LEVA DI COMANDO	6
CL24 00698	981J.08.0018-V6 LEVA DI COMANDO ALTA	6

x CROSSWIND W|R
23/10/24

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August 31, 2025

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ROSETTI MARINO ITEM 430

COD. VLBLNN01370100

TAG:

BLPH-MV-469, BLPH-MV-470, BLPH-MV-471

INDRA ITEM 324

COD. 00.VSF.2784(T)

CLIENTE/CUSTOMER: ROSETTI MARINO SPA
VS.ORDINE/YOUR ORDER: 1724000798 REV.2 NS.ORDINE/OUR ORDER 24 01216
VS.POS./YOUR ITEM 60 NS.POS/OUR ITEM 60 VS.COD./YOUR CODE VBC0NN24433Q00 NS.COD./OUR CODE 00.VSF.2685(T) (3 PCS)
VS.POS./YOUR ITEM 70 NS.POS/OUR ITEM 70 VS.COD./YOUR CODE VBC0NN24440100 NS.COD./OUR CODE 00.VSF.2688(T) (2 PCS)
VS.POS./YOUR ITEM 80 NS.POS/OUR ITEM 80 VS.COD./YOUR CODE VBC0NN24460200 NS.COD./OUR CODE 00.VSF.2692(T) (2 PCS)
VS.POS./YOUR ITEM 230 NS.POS/OUR ITEM 230 VS.COD./YOUR CODE VLBLNN01381H00 NS.COD./OUR CODE 00.VSF.2698(T) 2 PCS)
VS.POS./YOUR ITEM 430 NS.POS/OUR ITEM 324 VS.COD./YOUR CODE VLBLNN01370100 NS.COD./OUR CODE 00.VSF.2784(T) (3 PCS)
(LEVER)

GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

REPORT IDENTIFICATION			
Date	**Certificate ID**	**Ref. Transport Note ID**	**Client**
28/10/2024	727/2024	1668-1670/2024	INDRA
Customer Job No.	**Description**	**Item**	**Painting Specification/Procedure**
CL24 00698	See Attachment – ITEM LIST	/	PP-44 2024 rev. 4 SYSTEM 6A

AMBIENT CONDITION					
Date	**Hour**	**Ambient Temp. °C**	**Steel Temp. °C**	**Humidity %**	**Dew Point °C**
23/10/2024	14.30	18.5	17.8	76.6	14.4

SURFACE PREPARATION							
Degreasing			**Abrasive Type**				
THINNER NITRO ANTINEBBIA			GARNET				
Roughness			**Cleanliness and Surface Preparation**				
40 µm			SSPC-SP16				
Soluble Contaminants Test - ISO 8502-6/9			**Dust Test - ISO 8502-3**				
Result (mg/m²):	7.9		**Result:**	Rate	1	Size	1

PAINTING					
Number of Coats	**1**	**2**	**3**	**4**	**5**
Date	23/10/2024	24/10/2024	25/10/2024		
Hour	15.00	10.00	11.00		
Room Temperature °C	18.4	17.5	17.7		
Steel Temperature °C	18.2	17.4	17.8		
Humidity %	78	79.7	79.3		
Dew Point °C	14.5	14	14.1		
Application Method	Conventional spray	Conventional spray	Conventional spray		
Paint Product Name	INTERGARD 269	INTERGARD 475 HS	INTERTHANE 990		
Product Batch Number	A: 2243167018 B: 2243177028	A: 2243333015 B: 2243284075	RAL 9002 A: 2333167027 RAL 9005 A: 2333167027 B: 2333172046		
Colour	RED	GREY	RAL 9002 VALVES RAL 9005 LEVERS & HW		
DFT	72 µm	180 µm	276 µm		
Visual Aspect Result	SATISFACTORY	SATISFACTORY	SATISFACTORY		
Remarks	NO REMARKS				

MEASURING INSTRUMENTS		
POSITECTOR – SST/6000/RTR	DUST TEST KIT	

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	CROSSWIND 30/10/24 B/W	CERTIFIED INTERNATIONAL COATING INSPECTOR Exp. 08/2025 3222 R M

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VS.POS./YOUR ITEM 60 NS.POS/OUR ITEM 60 VS.COD./YOUR CODE VBC0NN24433Q00 NS.COD./OUR CODE 00.VSF.2685(T) (3 PCS)
VS.POS./YOUR ITEM 70 NS.POS/OUR ITEM 70 VS.COD./YOUR CODE VBC0NN24440100 NS.COD./OUR CODE 00.VSF.2688(T) (2 PCS)
VS.POS./YOUR ITEM 80 NS.POS/OUR ITEM 80 VS.COD./YOUR CODE VBC0NN24460200 NS.COD./OUR CODE 00.VSF.2692(T) (2 PCS)
VS.POS./YOUR ITEM 230 NS.POS/OUR ITEM 230 VS.COD./YOUR CODE VLBLNN01381H00 NS.COD./OUR CODE 00.VSF.2698(T) 2 PCS)
VS.POS./YOUR ITEM 430 NS.POS/OUR ITEM 324 VS.COD./YOUR CODE VLBLNN01370100 NS.COD./OUR CODE 00.VSF.2784(T) (3 PCS)
(LEVER)

GMP COLOR

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

ITEM LIST

JOB	DESCRIPTION	QUANTITY
CL24 00698	00.VSFT.0224/V 24 01216 POS 270	1
CL24 00698	981J.08.0006-V22	1
CL24 00698	981J.08.0019-V6	1
→ CL24 00698	981J.08.0019-V6	2
CL24 00698	981F.08.0005-V29	3
CL24 00698	981F.08.0005-V29	2
CL24 00698	981F.08.0005-V29	1
→ CL24 00698	981F.08.0005-V29	2
CL24 00698	981F.08.0005-V29	1
→ CL24 00698	981F.08.0005-V29	3
CL24 00698	99.50.0533-V	1
→ CL24 00698	981F.08.0005-V29	3
CL24 00698	981F.08.0012-NP-V22	1
→ CL24 00698	981J.08.0006-V22	2

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.	3/10/24 R/	EXP. 09/2025 322 R

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PART 2 – CERTIFICATION DOSSIER

CHAPTER 2

SECTION 13

PAINTING PROCEDURE

Base Load Power Hub (BLPH)

INDRA SRL

PAINTING PROCEDURE

Document Number: 1724000798-MAT-PRO-00005

ROSETTI MARINO

1	NO COMMENTS - APPROVED - WORK MAY PROCEED
2	MINOR COMMENTS - REVISE AND RESUBMIT - WORK MAY PROCEED
3	MAJOR COMMENTS – REJECTED – DO NOT PROCEED
4	APPROVAL NOT REQUIRED

NOTE: Approval doesn't relieve the supplier from mandatory compliance with contractual documents and specifications. Comments made do not imply acceptance of any cost or delivery impact.

Sign	Date
Michele Sacchi	08-10-2024

Document Class: 2

3	04/10/2024	Accepted for Construction (AFC)	F.CRIMELLA	G.GRANATA	A.DE CARLI
2	23/09/2024	Accepted for Construction (AFC)	F.CRIMELLA	G.GRANATA	A.DE CARLI
1	02/08/2024	Issue for Review (IFR)	F.CRIMELLA	G.GRANATA	A.DE CARLI
0	18/07/2024	Issue for Review (IFR)	F.CRIMELLA	G.GRANATA	A.DE CARLI
Rev.	Date	Description	Prepared	Reviewed	Approved

indra VALVES - ITALY

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File: 1724000798-MAT-PRO-00005_3.*docx*

Revision / Change Log

Rev.	Description
0	Issue for Review (IFR)
1	Issue for Review (IFR)
2	Accepted for Construction (AFC)
3	Accepted for Construction (AFC)

HOLDS LIST

No.	Description
1	
2	
3	
4	

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1 INTRODUCTION

1.1 PROJECT OVERVIEW

Crosswind, a Shell and Eneco joint venture, was awarded the tender to develop the offshore Hollandse Kust Noord (HKN) wind farm, located 18.5km off the coast of Netherlands near the town of Egmond aan Zee. The consortium plans to have HKN operational in 2023 with an installed capacity of 759MW generating at least 3.3TWh per year. This is sufficient renewable power to supply more than 1 million Dutch households with green electricity.

Offshore wind farms produce intermittent electricity and balancing these dips and peaks and integrating this electricity into the national energy system requires new technologies. For this reason, the offshore wind farm will include several new technologies that could be implemented at full-scale in the future. The new technologies being explored include a floating solar park, a short-duration battery storage as well as long-term storage via green hydrogen produced by water electrolysis and subsequently consumed in a fuel cell. The combination of these individual measures, herein referred to as the Base Load Power Hub (BLPH) will ensure a continuous power supply regardless of the wind situation.

1.1.1 Project Location

The Hollandse Kust Noord (HKN) wind farm is located 18.5km off the coast of the Netherlands near the town of Egmond aan Zee.

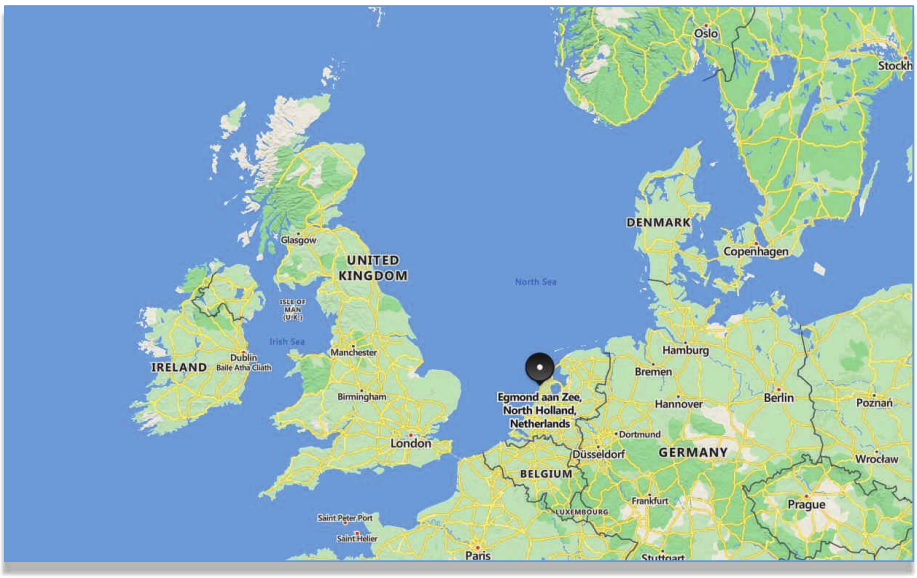


Figure 1 HOLLANDSE KUST NOORD WIND PARK Location Map



Figure 2 - Wind Park Details

The wind farm will consist of No. 69 x 11.5MW wind turbine generators each to be installed on a dedicated monopile structure. A 70th monopile located on coordinates E 590719.1, N 5841602.3 is reserved for installing the platform accommodating the BLPH. The monopile structure was designed and installed by Van Oord Offshore Wind (VooW) and therefore not part of the BLPH scope.

1.1.2 Project Concept

All components included in the BLPH will be integrated onshore on a topsides and installed in an offshore location within the boundaries of the HKN wind farm. At its simplest, the BLPH will store energy during periods of high electricity generation from renewable sources (a wind turbine generator and the floating solar PV farm) and release it during periods of low generation. In practice. It is expected that the energy stored will supplement generation from renewable sources to ensure that at least 1.0MW of power is exported to the electrical grid regardless of wind/solar availability.

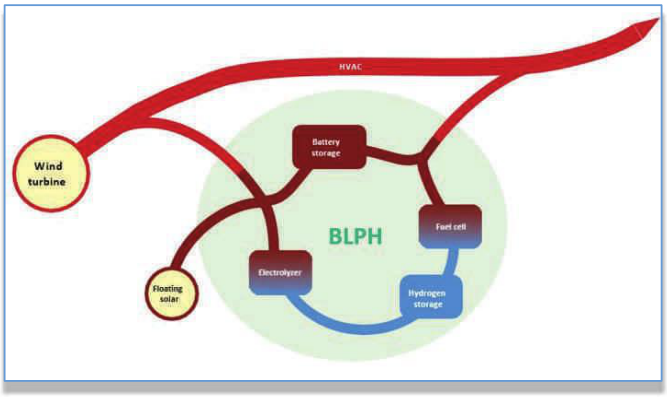


Figure 3 – BLPH Concept

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Electricity in the BLPH will be stored in the form of electrons in a battery energy storage system (BESS) as well as converted into green hydrogen via water electrolysis. When the power output from the connecting wind turbine drops to below 1 MWe, the BLPH will return its stored energy to supplement the remaining power output. This will be by discharging the BESS, while stored hydrogen will be converted back into electricity using a fuel cell to extend the discharge duration.

The purpose of the BLPH s to function as a testbed for the integration of energy storage technologies with renewable generation. It is expected that equipment installed on the BLPH will operate as Normally Unmanned Installation for at least two (2) years with no or minimal maintenance and it will have its own independent control room with the ability to communicate with Crosswind's control room.

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2 DOCUMENT SCOPE

2.1 DEFINITIONS AND ABBREVIATIONS

COMPANY or Client (CPY):	Crosswind
CONTRACTOR (CTR):	ROSETTI MARINO S.p.A.
PROJECT:	HOLLANDSE KUST NOORD WIND PARK Project

Table 2 - Definitions and Abbreviations

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PP 44/2024

PAINTING PROCEDURE

PROCEDURA DI VERNICIATURA

COATINGS APPLICATION ACCORDING TO SPEC. 123A90-DDL-MAT-SP-60006_00 SYSTEMS 1/6A/6C/9

APPLICAZIONE DEI RIVESTIMENTI SECONDO

Spec. 123A90-DDL-MAT-SP-60006_00 – Cicli 1/6A/6C/9

REVISIONI PROCEDURA				
Rev.	**Data**	**Elaborata da**	**Approvato da**	**Note di emissione**
0	15/07/2024	M. Essaalaoui	A. Gasparri	First issue
1	01/08/2024	M. Essaalaoui	A. Gasparri	Second issue
2	02/09/2024	M. Essaalaoui	A. Gasparri	Third issue

3	20/09/2024	M. Essaalaoui	A. Gasparri	Fourth issue
4	30/9/2024	M. Essaalaoui	A. Gasparri	Fifth issue

1. SCOPE

SCOPO

This procedure defines the minimum requirements for materials, application process, inspection, and tests of anticorrosive coating according to spec. 123A90-DDL-MAT-SP-60006_00, coating systems 1, 6A, 6C and 9.

Il presente documento definisce i requisiti minimi di materiali, processo di applicazione, ispezioni e controlli dei rivestimenti anticorrosivi secondo spec. 123A90-DDL-MAT-SP-60006_00, cicli 1,6A, 6C e 9.

Item list

INDRA Item	Cust. Item	Indra Part Number	Qty.	Size	Body Material	1st Isolate	SPEC	System			RAL	
								Valve Body	Lever / Handwheel	Gear	Valve Body	Lever / Handwheel / Gear
4	10	00.VSF.2684/V	1	3/4"	A182 316/316L	Lever	123A90-DDL-MAT-SP-60006	Sys-6A	Sys-6A	-	RAL 9002	RAL 9005
5	20	00.VSF.2687/V	15	1"	A182 316/316L	Lever	123A90-DDL-MAT-SP-60006	Sys-6A	Sys-6A	-	RAL 9002	RAL 9005
6	30	00.VSF.2690/V	2	1" 1/2	A182 316/316L	Lever	123A90-DDL-MAT-SP-60006	Sys-6A	Sys-6A	-	RAL 9002	RAL 9005
7	90	00.VSF.2686/V	1	3/4"	A350 LF2	Lever	123A90-DDL-MAT-SP-60006	Sys-1	Sys-6A	-	RAL 9002	RAL 9005
8	120	00.VSF.2691/V	1	1" 1/2	A350 LF2	Extended Ball Stem	123A90-DDL-MAT-SP-60006	Sys-9	Sys-6A	-	RAL 9002	RAL 9005
11	130	00.VSF.2683(T)	2	3/4"	B564 Hastelloy	Extended Ball Stem	Unpainted		Sys-6A	-		RAL 9005
13	70	00.VSF.2688(T)	2	1"	A182 F55	Extended Ball Stem	Unpainted		Sys-6A	-		RAL 9005
14	60	00.VSF.2685(T)	3	3/4"	A182 F55	Extended Ball Stem	Unpainted		Sys-6A	-		RAL 9005
15	40	00.VSF.2693/V	2	3/4"	A182 316/316L	Lever	123A90-DDL-MAT-SP-60006	Sys-6A	Sys-6A	-	RAL 9002	RAL 9005
16	50	00.VSF.2694/V	5	1"	A182 316/316L	Lever	123A90-DDL-MAT-SP-60006	Sys-6A	Sys-6A	-	RAL 9002	RAL 9005
18	140	00.VSF.2695/V	1	3"	A182 316/316L	Lever	123A90-DDL-MAT-SP-60006	Sys-6A	Sys-6A	-	RAL 9002	RAL 9005
20	100	00.VSF.2770/V	2	1"	A350 LF2	Lever	123A90-DDL-MAT-SP-60006	Sys-1	Sys-6A	-	RAL 9002	RAL 9005
21	110	00.VSF.2689/V	1	1"	A350 LF2	Extended Ball Stem	123A90-DDL-MAT-SP-60006	Sys-9	Sys-6A	-	RAL 9002	RAL 9005
22	80	00.VSF.2692(T)	2	2"	A182 F55	Extended Ball Stem	Unpainted		Sys-6A	-		RAL 9005
23	150	00.VSF.2680/V	28	1"	A182 316/316L	Lever	123A90-DDL-MAT-SP-60006	Sys-6A	Sys-6A	-	RAL 9002	RAL 9005
24	160	00.VSF.2681/V	6	1" 1/2	A182 316/316L	Lever	123A90-DDL-MAT-SP-60006	Sys-6A	Sys-6A	-	RAL 9002	RAL 9005
25	170	00.VSF.2682/V	1	2"	A182 316/316L	Lever	123A90-DDL-MAT-SP-60006	Sys-6A	Sys-6A	-	RAL 9002	RAL 9005
26	200	00.VSF.2697/V	3	1"	A350 LF2	Lever	123A90-DDL-MAT-SP-60006	Sys-1	Sys-6A	-	RAL 9002	RAL 9005
27	220	00.VSF.2701/V	2	1"	A182 316/316L	Lever	123A90-DDL-MAT-SP-60006	Sys-6A	Sys-6A	-	RAL 9002	RAL 9005
28	250	00.VSF.2702/V	2	2"	A182 316/316L	Lever	123A90-DDL-MAT-SP-60006	Sys-6A	Sys-6A	-	RAL 9002	RAL 9005
30	240	00.VSF.2696/V	1	1"	A182 316/316L	Extended Ball Stem	123A90-DDL-MAT-SP-60006	Sys-6C	Sys-6A	-	RAL 9002	RAL 9005
31	260	00.VSF.2700/V	7	4"	A182 316/316L	Lever	123A90-DDL-MAT-SP-60006	Sys-6A	Sys-6A	-	RAL 9002	RAL 9005

33	180	00.VSF.2679/V	6	4"	A182 316/316L	Gear	123A90-DDL-MAT-SP-60006	Sys-6A	Sys-6A	Sys-1	RAL 9002	RAL 9005
34	210	00.VSF.2699/V	1	1" 1/2	A350 LF2	Lever	123A90-DDL-MAT-SP-60006	Sys-1	Sys-6A	-	RAL 9002	RAL 9005
35	230	00.VSF.2698(T)	2	1" 1/2	A182 F55	Extended Ball Stem	Unpainted		Sys-6A	-		RAL 9005
40	190	00.VSFT.0223/V	6	6"	A182 316/316L	Gear	123A90-DDL-MAT-SP-60006	Sys-6A	Sys-6A	Sys-1	RAL 9002	RAL 9005
41	270	00.VSFT.0224/V	1	6"	A182 316/316L	Gear	123A90-DDL-MAT-SP-60006	Sys-6A	Sys-6A	Sys-1	RAL 9002	RAL 9005
42	280	00.MNF.0604/V	14	3/4"	A182 316/316L	OS&Y Bonnet	123A90-DDL-MAT-SP-60006	Sys-6A	-	-	RAL 9002	-
43	290	00.MNF.0608/V	4	3/4"	A182 316/316L	OS&Y Bonnet	123A90-DDL-MAT-SP-60006	Sys-6A	-	-	RAL 9002	-
45	300	00.MNF.0605/V	2	3/4"	A182 316/316L	OS&Y Bonnet	123A90-DDL-MAT-SP-60006	Sys-6A	-	-	RAL 9002	-
46	310	00.MNF.0612/V	3	3/4"	A350 LF2	OS&Y Bonnet	123A90-DDL-MAT-SP-60006	Sys-1	-	-	RAL 9002	-
47	320	00.MNF.0606/V	1	3/4"	A350 LF2	Extended OS&Y Bonnet	123A90-DDL-MAT-SP-60006	Sys-9	-	-	RAL 9002	-
48	390	00.VSF.2716/V	1	3"	A350 LF2	Extended Ball Stem	123A90-DDL-MAT-SP-60006	Sys-9	Sys-6A	-	RAL 9002	RAL 9005
49	400	00.VSF.2680/V	1	1"	A182 316/316L	Lever	123A90-DDL-MAT-SP-60006	Sys-6A	Sys-6A	-	RAL 9002	RAL 9005
50	410	00.VSF.2681/V	1	1" 1/2	A182 316/316L	Lever	123A90-DDL-MAT-SP-60006	Sys-6A	Sys-6A	-	RAL 9002	RAL 9005
51	430	00.VSF.2784(T)	3	1"	A182 F55	Extended Ball Stem	Unpainted		Sys-6A	-		RAL 9005

2. REFERENCE STANDARDS

STANDARD DI RIFERIMENTO

- 123A90-DDL-MAT-SP-60006 rev. 00 of 2023.
- Norsok M-501 Edi.6 of 2012 - Surface preparation and protective coating.
- ISO 8501-1 of 2007 Preparation of steel substrates before application of paints and related products - Visual assessment of surface cleanliness. Pictorial surface preparation standard.
- ISO 8501-3 of 2006 Preparation of steel substrates before application of paints and related products - Visual assessment of surface cleanliness. Preparation grades of welds, cut edge and other areas with surface imperfections.
- ISO 8502-3 of 2017 Preparation of steel substrates before application of paints and related products -Test for the assessment of surface cleanliness. Assessment of dust.
- ISO 8502-6 of 2006 Preparation of steel substrates before application of paints and related products -Test for the assessment of surface cleanliness. Salt contamination by Bresle method.
- ISO 8502-9 of 2020 Preparation of steel substrates before application of paints and related products -Test for the assessment of surface cleanliness. Field method for the conductometric determination of water-soluble salts.
- ISO 8503-1 of 2013 Preparation of steel substrates before application of paints and related products - Surface roughness characteristics of blast cleaned substrates.
- ISO 19840 of 2012 Paints and varnishes – Corrosion protection of steel structures by protective paint systems – Measurement of, and acceptance criteria for, the thickness of dry film on rough surfaces.
- ISO 16276-1 of 2007 Paints and varnishes - Pull-off test for adhesion.
- ASTM D 4541 of 2022 Standard test method for Pull-off Strength of coatings.
- ASTM D 4285 of 2018 Standard test method for Indicating Oil or Water Compressed Air.
- ISO 29601 of 2011 Discontinuity (Holiday) Testing of New Protective Coatings on Conductive Substrates
- SSPC-SP 1 of 2016 Solvent Cleaning.
- ASTM D4940 of 2020 Standard Test Method for Conductimetric Analysis of Water-Soluble Ionic Contamination of Blast Cleaning Abrasives

3. SURFACE PREPARATION

PREPARAZIONE DELLE SUPERFICI

3.1. Before any blasting operation, surfaces shall be visually inspected to verify the absence of defects such as weld spatters, pores, lamination defects, fragments, and dents. If any, they shall be grinded smooth. Sharp edges shall be rounded at a 2 mm radius, unless otherwise specified.

Prima della sabbiatura, le superfici devono essere ispezionate visivamente per accertare l'assenza di difetti quali pallini di saldatura, pori, laminazioni e incisioni, che devono essere eliminati a mezzo molatura. Gli spigoli vivi devono essere arrotondati ad un raggio di 2 mm, se non diversamente specificato.

3.2. All surfaces shall be solvent cleaned as per SSPC-SP1 and shall be free of dust, oil, grease, and other contaminants before sand blasting. If any contamination is detected before painting, the affected surface shall be properly cleaned and re-blasted.
Tutte le superfici devono essere pulite secondo SSPC-SP1 e devono essere prive di polvere, olio, grasso e altri contaminanti prima della sabbiatura. Se viene rilevata qualsiasi contaminazione prima della verniciatura, la superficie interessata dovrà essere adeguatamente pulita e sabbiata nuovamente.

3.3. All stainless-steel surfaces shall be blasted according to SSPC-SP16, and all carbon-steel surfaces shall be blasted according to ISO 8501-1 SA 2 1/2. The blasting media shall be Garnet 30/60, sized to produce a profile of 25-85 µm for stainless-steel surfaces shall be and 50-85 µm for carbon-steel surfaces. Blasting will be performed inside a cabin, fitted with recycling system. Abrasive free of moisture, oil, and contaminants, check using ASTM D4940.
Tutte le superfici in acciaio inossidabile dovranno essere sabbiate secondo SSPC-SP16 e tutte le superfici in acciaio al carbonio dovranno essere sabbiate secondo ISO 8501-1 SA 2 1/2. Il mezzo di sabbiatura dovrà essere Garnet 30/60, dimensionato per produrre un profilo di 25-85 µm per le superfici in acciaio inossidabile e di 50-85 µm per le superfici in acciaio al carbonio. La sabbiatura verrà eseguita all'interno di una cabina, dotata di sistema di riciclaggio. Abrasivo privo di umidità, olio e contaminanti, controllo secondo ASTM D4940.

3.4. Compressed air used for surface cleaning shall be free of water and oil contamination. Adequate separators and traps shall be provided, installed in the coolest part of the system. All traps, separators and filters shall be cleaned regularly, i.e. daily or more frequently if required. Cleanliness of compressed air shall be verified using a blotter test in accordance with ASTM D4285-83 (2018) at least once per working shift.
L'aria compressa utilizzata per la pulizia delle superfici deve essere priva di contaminazione di acqua e olio. Dovranno essere previsti separatori e trappole adeguati, installati nella parte più fredda dell'impianto. Tutte le trappole, i separatori e i filtri devono essere puliti regolarmente, ovvero quotidianamente o più frequentemente se necessario. La pulizia dell'aria compressa deve essere verificata utilizzando un test blotter in conformità con ASTM D4285-83 (2018) almeno una volta per turno di lavoro.

4. COATINGS APPLICATION
APPLICAZIONE DEI PRODOTTI VERNICIANTI

4.1. The first coat of paint shall be applied before any oxidation or turning appears on the surface, and in any case within 4 hours after blasting is completed.
La prima mano del ciclo deve essere applicata prima che sia visibile qualunque ossidazione o modifica del colore della superficie ed in ogni caso entro 4 ore dalla fine della sabbiatura.

4.2. All welds, sharp edges, angles, bolts and nut heads, and any other surface of difficult access to spray, shall be stripe-coated by brush before full coat application for each coat.
Saldature, spigoli vivi, angoli bulloni, dadi e ogni altra superficie di difficile accesso alle operazioni di applicazione devono essere passate a pennello ("stripe coat") per ogni strato.

4.3. Before painting, ambient conditions shall be checked, to verify air and support temperature, dew point and relative humidity. Painting shall be performed only if support temperature is at least 3°C above dew point. Paint manufacturer recommendations and instructions included in paints technical data sheets shall be followed. No painting is allowed if the steel temperature is below 5°C, and relative humidity above 85 %.

Prima di iniziare l'applicazione, deve essere verificata la temperatura dell'aria, del supporto e l'umidità relativa, calcolando il punto di rugiada. L'applicazione deve essere effettuata solo se la temperatura del supporto è di almeno 3°C superiore al punto di rugiada. Devono essere seguite le istruzioni del produttore incluse nelle schede tecniche dei prodotti vernicianti. L'applicazione non è consentita se la temperatura del supporto è inferiore a 5°C e quando l'umidità relativa è superiore all'85 %.

4.4. Between coats, surface shall be inspected to check the presence of moisture, water, oil or other contaminants. Ambient conditions shall be also checked before and during each coat of paint application. DFT of each coat shall be measured, and any damage, defects or areas outside the specified thickness repaired prior to follow on coats in the system.
Tra una mano e l'altra, deve essere eseguito un controllo visivo, al fine di verificare l'assenza di condensa, acqua, unto o altri contaminanti. Anche le condizioni ambientali devono essere misurate prima e durante l'applicazione di ciascuna mano. Deve essere misurato lo spessore secco di ciascuna mano ed ogni danno, difetto o spessore non conforme deve essere riparato prima di procedere con la mano successiva.

4.5. The repair of defects will follow the methods described below:
La riparazione dei difetti deve seguire quanto di seguito indicato:

4.5.1. Damage of paint work without exposure of metal surface - The damaged area will be washed with solvent to remove all contamination, rinsed with fresh water, and left dry. The paint adjacent to the damaged area shall be feathered using a suitable method, to ensure the continuity with the repaired area and a good mechanical adhesion. After the surface preparation, the original coating system shall be applied up to the required thickness. The overlap of the new coats over the exiting coating system shall be at least 25mm.
Danni al ciclo senza esposizione del substrato metallico - L'area danneggiata deve essere lavata con solvente per rimuovere ogni contaminazione, risciacquata con acqua dolce e fatta asciugare. La vernice adiacente all'area danneggiata sarà irruvidita in modo adeguato al fine di garantire la continuità del film con l'area danneggiata ed una buona adesione meccanica. Dopo la preparazione, deve essere applicato il ciclo originale, fino a raggiungere lo spessore richiesto. La sovrapposizione dei nuovi strati sul sistema di rivestimento esistente deve essere di almeno 25 mm.

4.5.2. Damage of paintwork with exposure of metal surface - The damaged area will be cleaned and re-blasted as originally, and the complete coating system shall be applied in accordance with the Manufacturer instructions. The repaired area shall be extended at least one inch into the existing paint, and the edges will be feathered using a suitable method.
Danni al ciclo con esposizione del substrato metallico – L'area danneggiata deve essere pulita e risabbiata come in origine, e deve essere applicato il ciclo originale completo, come da istruzione del produttore. L'area riparata deve essere estesa per almeno 25 mm sul ciclo esistente ed I bordi devono essere irruviditi in modo adeguato.

4.6. All paints application parameters, such as mixing ratio, thinner, nozzle pressure, tip size, etc., shall be according to paint manufacturer technical data sheets. Application techniques shall be according SSPC Volume 1° - Good Painting Practice.
I parametri applicativi, quali rapporto di miscelazione, diluizione, diametro dell'ugello e pressione di spruzzo, ecc., devono essere in linea con le schede tecniche del produttore. L'applicazione deve essere a regola d'arte, in accordo con SSPC Volume 1° - Good Painting Practice.

5. COATING SYSTEM

CICLO DI VERNICIATURA

The coating systems to be applied:
Il ciclo da applicare:

System 1
Grade of cleanliness: ISO 8501-1 SA 2 1/2.
Roughness: 50÷85 µm R_{y5}, according to ISO 8503-5
Nominal dry film thickness (NDFT): 325 µm

Coat Mano	Type Tipo	Product name Nome del prodotto	Minimum DFT Spessore minimo	Colour Colore
1	Epoxy Zinc	INTERZINC 52	75 µm	GREY
2	Epoxy	INTERGARD 475 HS	200 µm	GREY
3	UV-resistant topcoat	INTERTHANE 990	50 µm	NOTE
		Total minimum DFT Spessore minimo totale	325 µm	

COLOR NOTE:
RAL 9002 FOR VALVES
RAL 9005 FOR GEARS

System 6A
Grade of cleanliness: SSPC-SP16.
Roughness: 25÷85 µm R_{y5}, according to ISO 8503-5
Nominal dry film thickness (NDFT): 225 µm

Coat Mano	Type Tipo	Product name Nome del prodotto	Minimum DFT Spessore minimo	Colour Colore
1	Epoxy	INTERGARD 269	50 µm	RED
2	Epoxy	INTERGARD 475 HS	100 µm	GREY
3	UV-resistant topcoat	INTERTHANE 990	75 µm	NOTE
		Total minimum DFT Spessore minimo totale	225 µm	

COLOR NOTE:
RAL 9002 FOR VALVES
RAL 9005 FOR LEVERS AND HANDWHEELS

System 6C
Grade of cleanliness: SSPC-SP16.
Roughness: 25÷85 µm R_{y5}, according to ISO 8503-5
Nominal dry film thickness (NDFT): 250 µm

Coat Mano	Type Tipo	Product name Nome del prodotto	Minimum DFT Spessore minimo	Colour Colore
1	Epoxy, Epoxy phenolic, Epoxy novolac	THERMALINE 440	125 µm	RED
2	Epoxy, Epoxy phenolic, Epoxy novolac	THERMALINE 440	125 µm	RAL 9002
		Total minimum DFT Spessore minimo totale	250 µm	

System 9
Grade of cleanliness: ISO 8501-1 SA 2 1/2.
Roughness: 50÷85 µm R_{y5}, according to ISO 8503-5
Nominal dry film thickness (NDFT): 300 µm

Coat Mano	Type Tipo	Product name Nome del prodotto	Minimum DFT Spessore minimo	Colour Colore
1	Epoxy, Epoxy phenolic, Epoxy novolac	THERMALINE 440	150 µm	RED
2	Epoxy, Epoxy phenolic, Epoxy novolac	THERMALINE 440	150 µm	RAL 9002
		Total minimum DFT Spessore minimo totale	300 µm	

6. INSPECTIONS AND TESTS
ISPEZIONI E CONTROLLI

6.1. The inspector in charge for quality control shall provide to carry out inspections and tests as listed in the ITP below.
L'ispettore addetto al controllo qualità provvederà ad effettuare le ispezioni ed i test elencati nel seguente piano dei controlli.

6.2. All items listed in the ITP shall be considered as "Hold Point", so that the work shall not proceed until the results are conforming.
I punti del piano di controllo devono essere considerati punti vincolanti, per cui il processo non può proseguire fino a quando i risultati dei test non sono conformi.

6.3. Test results shall be recorded in a painting inspection report, together with all important items identification data.
I risultati dei test devono essere registrati sul rapporto di verniciatura, assieme ad ogni altro dato identificativo del manufatto trattato.

Test type	What to control	Method	Frequency	Acceptance criteria	Consequence
Coating material conformity	Paint quality	Doc. review	Each delivery	Manufacturer certificate	Paint not to be used
Abrasive conformity	Size & chemical composition	Doc. review	Each delivery	Manufacturer certificate	Abrasive not to be used
Blotter test	Absence of moisture and oil	ASTM D 4285	At start	No moisture, no oil	Install oil and moisture traps
Steel imperfections	Absence of sharp edges, weld spatters, indentations, etc.	ISO 8501-3	100%	Grade P3	Repair defects
Salt Test	Absence of salts contamination	ISO 8502-6 & -9	Spot check	20 mg/m² NaCl	re-blast and re-test
Abrasive conductivity	Absence of salts contamination	ASTM D4920	Spot check	< 150 µS/cm	Abrasive not to be used
Dust test	Dust removal	ISO 8502-3	Spot check	Max quantity and size rating 2	Blow with clean air and re-test
Roughness	Anchor pattern	ISO 8503-5	Once per shift	SS 25-85 µm R_Y CS 50-85 µm R_Y	Re-blast
Material conformity	Batch number Container integrity Storage temperature	Visual	Each batch	Technical data sheet	Paint not to be used

Material preparation	Mixing and thinning	Visual	Each coat	Technical data sheet	Paint not to be used
Environmental conditions	Ambient and steel temperature Relative humidity Dew point	Thermo-hygrometer	Beginning of each coat, then every four hours	According to materials data sheets	No painting
Wet film thickness	Wet film thickness	Wet film gage	Beginning of each coat	According to materials data sheets	Adjust thickness
Visual examination of coatings	No contaminants, pinholes, blisters, sags, surface defects	Visual	100% after each coat	No defect	Repair of defects
Repairs	Respect of repair procedure	Visual	100%	As per ITP	Repeat repairs
Total DFT	Specified DFT	ISO 19840	100 %	According to systems 1/6A/6C/9	Repair, additional coats or recoat as appropriate
Curing	Coating curing	Visual	100 %	According to materials data sheets	Coating to be rejected
Holiday Detection	Absence of film discontinuities	ISO 29601	100%	No holidays	Repair and retest
Adhesion	On test panel	ISO 16276-1	One each lot	Absolute min. 5 MPa	Coating to be rejected

7. Personnel Qualification

Qualifica del personale

All operators are qualified according Norsok M-501 and ASTM D-4228 international standard, in relation with use of blasting and spraying equipment, paint storage, mixing, thinning and application techniques. Qualification certificates are attached. Personnel carrying out inspections and tests shall be certified at Level 3 (FROSIO or NACE).

Tutti gli operatori sono qualificati secondo lo standard internazionale Norsok M-501 e ASTM D-4228, in relazione all'uso di attrezzature per la sabbiatura e la spruzzatura, lo stoccaggio della vernice, la miscelazione, la diluizione e le tecniche di applicazione. I certificati di qualifica sono allegati. Il personale che effettua ispezioni e prove è certificato a livello 3 (FROSIO o NACE).

8. Health & Safety

Salute e Sicurezza

Working environment and infrastructure are in compliance with the laws, norms and rules regarding health and safety. The staff is aware through appropriate training of the procedures regarding health and safety.

Details of safety measures and PPE are included in the internal safety procedure.

L'ambiente di lavoro e le infrastrutture sono conformi alle leggi, alle norme e alle regole in materia di salute e sicurezza. Il personale è consapevole, attraverso un'adeguata formazione, delle procedure in materia di salute e sicurezza.

I dettagli delle misure di sicurezza e dei DPI sono inclusi nella procedura di sicurezza interna.

9. Attachments
Allegati

- Products Technical Data Sheets.
- Abrasive Chemical Analysis.
- Operator Qualification Certificates.
- Inspector Qualification Certificates.
- Painting Certificates Samples.
- Adhesion Certificates Samples.
- Schede tecniche dei prodotti.
- Analisi chimica abrasivo.
- Certificati di qualifica dell'operatore.
- Certificati di qualifica dell'ispettore.
- Esempio di Certificato di Verniciatura.
- Esempio di certificato di test di adesione.

Interzinc® 52

Epoxy Zinc-Rich

PRODUCT DESCRIPTION

A two component, metallic zinc rich epoxy primer which complies with the composition and performance requirements of SSPC Paint 20.

INTENDED USES

As a high performance primer to give maximum protection as part of any anti-corrosive coating system for aggressive environments including those found on offshore structures, petrochemical facilities, pulp and paper plants, bridges and power plants.

Interzinc 52 has been designed to provide excellent corrosion resistance in both maintenance and new construction situations.

PRACTICAL INFORMATION FOR INTERZINC 52

Colour	Blue, Grey, Green
Gloss Level	Matt
Volume Solids	59% ± 2%
Typical Thickness	50-75 microns (2-3 mils) dry equivalent to 85-127 microns (3.4-5.1 mils) wet
Theoretical Coverage	7.87 m²/litre at 75 microns d.f.t and stated volume solids 315 sq.ft/US gallon at 3 mils d.f.t and stated volume solids
Practical Coverage	Allow appropriate loss factors
Method of Application	Airless Spray, Air Spray, Brush

Drying Time

			Overcoating Interval with recommended topcoats	
Temperature	**Touch Dry**	**Hard Dry**	*Minimum*	*Maximum*
5°C (41°F)	2 hours	10 hours	8 hours	Extended[1]
15°C (59°F)	90 minutes	6 hours	4 hours	Extended[1]
25°C (77°F)	75 minutes	4 hours	3 hours	Extended[1]
40°C (104°F)	45 minutes	2 hours	2 hours	Extended[1]

[1] See International Protective Coatings Definitions and Abbreviations

For curing at low temperatures an alternative curing agent is available. See Product Characteristics for details.

Maximum overcoating intervals are shorter when using polysiloxane topcoats. Consult International Protective Coatings for further details.

REGULATORY DATA

Flash Point (Typical)	Part A 29°C (84°F); Part B 30°C (86°F); Mixed 29°C (84°F)	
Product Weight	2.52 kg/l (21.0 lb/gal)	
VOC	2.80 lb/gal (336 g/lt)	EPA Method 24
	152 g/kg	EU Solvent Emissions Directive (Council Directive 1999/13/EC)
	360 g/lt	Chinese National Standard GB23985

See Product Characteristics section for further details

Interzinc® 52

Epoxy Zinc-Rich

SURFACE PREPARATION

All surfaces to be coated should be clean, dry and free from contamination. Prior to paint application all surfaces should be assessed and treated in accordance with ISO 8504:2000.

Oil or grease should be removed in accordance with SSPC-SP1 solvent cleaning.

Abrasive Blast Cleaning

Abrasive blast clean to Sa2½ (ISO 8501-1:2007) or SSPC-SP6. If oxidation has occurred between blasting and application of Interzinc 52, the surface should be reblasted to the specified visual standard.

Surface defects revealed by the blast cleaning process should be ground, filled, or treated in the appropriate manner.

A surface profile of 40-75 microns (1.6-3.0 mils) is recommended.

Shop Primed Steelwork

Interzinc 52 is suitable for application to unweathered steelwork freshly coated with zinc silicate shop primers.

If the zinc shop primer shows extensive or widely scattered breakdown, or excessive zinc corrosion products, overall sweep blasting will be necessary. Other types of shop primer are not suitable for overcoating and will require complete removal by abrasive blast cleaning.

Weld seams and damaged areas should be cleaned to a minimum St3 (ISO 8501-1:2007) or SSPC-SP3. Optimum performance will be achieved with blasting to Sa2½ (ISO 8501-1:2007) or SSPC-SP6; where this is not practical, power tool preparation to SSPC-SP11 is recommended.

APPLICATION

Mixing

Material is supplied in two containers as a unit. Always mix a complete unit in the proportions supplied. Once the unit has been mixed it must be used within the working pot life specified.

(1) Agitate Base (Part A) with a power agitator.

(2) Combine entire contents of Curing Agent (Part B) with Base (Part A) and mix thoroughly with power agitator.

Mix Ratio

4 part(s) : 1 part(s) by volume

Working Pot Life

5°C (41°F)	15°C (59°F)	25°C (77°F)	40°C (104°F)
24 hours	12 hours	5 hours	2 hours

Airless Spray

Recommended

Tip Range 0.43-0.53 mm (17-21 thou)
Total output fluid pressure at spray tip not less than 176 kg/cm² (2503 p.s.i.)

Air Spray (Pressure Pot)

Recommended

Gun DeVilbiss MBC or JGA
Air Cap 704 or 765
Fluid Tip E

Brush

Suitable - small areas only

Typically 50-75 microns (2.0-3.0 mils) can be achieved

Roller

Not recommended

Thinner

International GTA220 (or International GTA415)

Thinning is not normally required. Consult the local representative for advice during application in extreme conditions. Do not thin more than allowed by local environmental legislation.

Cleaner

International GTA822 (or International GTA415)

Work Stoppages

Do not allow material to remain in hoses, gun or spray equipment. Thoroughly flush all equipment with International GTA822. Once units of paint have been mixed they should not be resealed and it is advised that after prolonged stoppages work recommences with freshly mixed units.

Clean Up

Clean all equipment immediately after use with International GTA822. It is good working practice to periodically flush out spray equipment during the course of the working day. Frequency of cleaning will depend upon amount sprayed, temperature and elapsed time, including any delays.

All surplus materials and empty containers should be disposed of in accordance with approrpriate regional regulations/legislation.

Interzinc® 52

Epoxy Zinc-Rich

PRODUCT CHARACTERISTICS

In order to ensure good anti-corrosive performance, it is important to achieve a minimum dry film thickness of Interzinc 52 of 40 microns (1.5 mils). To achieve a uniform, coalesced, closed film at this dry film thickness, it will be necessary to thin Interzinc 52 10% with International thinners. The film thickness of Interzinc 52 applied must be compatible with the blast profile achieved during surface preparation. Low film thickness should not be applied over coarse blast profiles.

Care should be excercised to avoid the application of dry film thicknesses in excess of 150 microns (6 mils). Care should be exercised to avoid over-application, which may result in cohesive film failure with subsequent high builds, and to avoid dry spray which can lead to pinholing of subsequent coats. Over-application will also result in slower curing and extended handling and overcoating times. Over-application of Interzinc 52 will extend both the minimum overcoating periods and handling times, and may be detrimental to long term overcoating properties.

When Interzinc 52 is allowed to weather before topcoating ensure all zinc salts are removed prior to paint application and only topcoat with recommended materials.

Surface temperature must always be a minimum of 3°C (5°F) above dew point.

Interzinc 52 is not normally recommended for underwater use. Please consult International Protective Coatings for details in this situation.

Interzinc 52 is suitable for the localised repair of damaged inorganic zinc primer - consult International Protective Coatings for specific advice.

Low Temperature Curing

An alternative curing agent is available for applications at temperatures less than 5°C (41°F). When using this alternative curing agent it should be noted that the VOC will increase to 384 g/l (EPA Method 24) and the Part B flash point is 24ºC (79ºF).

Interzinc 52 is capable of curing at temperatures below 0°C (32°F). However, this product should not be applied at temperatures below 0°C (32°F) where there is a possibility of ice formation on the substrate.

			Minimum overcoating interval with recommended topcoats		
Temperature	Touch Dry	Hard Dry	*Minimum*	*Maximum*	Pot Life
-5°C (23°F)	3 hours	31 hours	31 hours	Extended*	18 hours
0°C (32°F)	2.5 hours	16 hours	16 hours	Extended*	18 hours
5°C (41°F)	30 minutes	4 hours	4 hours	Extended*	18 hours
15°C (59°F)	20 minutes	3.5 hours	3.5 hours	Extended*	8 hours
25°C (77°F)	15 minutes	3 hours	3 hours	Extended*	2.5 hours

Touch dry times shown above are actual drying times due to chemical cure, rather than physical set due to solidification of the coating film at temperatures below 0°C (32°F)

* See International Protective Coatings Definitions & Abbreviations

For further details regarding cure times and overcoatability, please contact International Protective Coatings.

This product has the following specification approvals:
- Steel Structures Painting Council - SSPC Paint 20

On consultation with International Protective Coatings this product is compatible with alternative application methods such as flow coating.

Note: VOC values are typical and are provided for guidance purpose only. These may be subject to variation depending on factors such as differences in colour and normal manufacturing tolerances.

Low molecular weight reactive additives, which will form part of the film during normal ambient cure conditions, will also affect VOC values determined using EPA Method 24.

SYSTEMS COMPATIBILITY

Interzinc 52 is designed for application to correctly prepared steel. However, it is also possible to apply over approved prefabrication primers. Further details of these can be obtained from International Protective Coatings. Recommended topcoats are:

Intercure 200	InterH2O 401
Intercure 420	Interseal 670HS
Interfine 629HS	Interthane 990
Intergard 251	Interzone 1000
Intergard 269	Interzone 505
Intergard 475HS	Interzone 954
Intergard 740	

For other suitable topcoats, consult International Protective Coatings.

ADDITIONAL INFORMATION

Further information regarding industry standards, terms and abbreviations used in this data sheet can be found in the following documents available at www.international-pc.com:

- Definitions & Abbreviations
- Surface Preparation
- Paint Application
- Theoretical & Practical Coverage

Individual copies of these information sections are available upon request.

SAFETY PRECAUTIONS

This product is intended for use only by professional applicators in industrial situations in accordance with the advice given on this sheet, the Material Safety Data Sheet and the container(s), and should not be used without reference to the Material Safety Data Sheet (MSDS) which International Protective Coatings has provided to its customers.

All work involving the application and use of this product should be performed in compliance with all relevant national, Health, Safety & Environmental standards and regulations.

In the event welding or flame cutting is performed on metal coated with this product, dust and fumes will be emitted which will require the use of appropriate personal protective equipment and adequate local exhaust ventilation.

If in doubt regarding the suitability of use of this product, consult International Protective Coatings for further advice.

PACK SIZE	Unit Size	Part A		Part B	
		Vol	Pack	Vol	Pack
	10 litre	8 litre	10 litre	2 litre	2.5 litre
	3 US gal	2.4 US gal	3.5 US gal	0.6 US gal	1 US gal
	For availability of other pack sizes, contact International Protective Coatings.				
SHIPPING WEIGHT (TYPICAL)	Unit Size	Part A		Part B	
	10 litre	24.5 kg		2.1 kg	
	3 US gal	63.3 lb		5.3 lb	
STORAGE	Shelf Life	12 months minimum at 25°C (77°F). Subject to re-inspection thereafter. Store in dry, shaded conditions away from sources of heat and ignition.			

Important Note

The information in this data sheet is not intended to be exhaustive; any person using the product for any purpose other than that specifically recommended in this data sheet without first obtaining written confirmation from us as to the suitability of the product for the intended purpose does so at their own risk. All advice given or statements made about the product (whether in this data sheet or otherwise) is correct to the best of our knowledge but we have no control over the quality or the condition of the substrate or the many factors affecting the use and application of the product. Therefore, unless we specifically agree in writing to do so, we do not accept any liability at all for the performance of the product or for (subject to the maximum extent permitted by law) any loss or damage arising out of the use of the product. We hereby disclaim any warranties or representations, express or implied, by operation of law or otherwise, including, without limitation, any implied warranty of merchantability or fitness for a particular purpose. All products supplied and technical advice given are subject to our Conditions of Sale. You should request a copy of this document and review it carefully. The information contained in this data sheet is liable to modification from time to time in the light of experience and our policy of continuous development. It is the user's responsibility to check with their local representative that this data sheet is current prior to using the product.

This Technical Data Sheet is available on our website at www.international-marine.com or www.international-pc.com, and should be the same as this document. Should there be any discrepancies between this document and the version of the Technical Data Sheet that appears on the website, then the version on the website will take precedence.

Issue date: 16/05/2017

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www.international-pc.com

Intergard® 269

Epoxy

PRODUCT DESCRIPTION

A quick drying two component epoxy primer.

Suitable for overcoating after prolonged periods of weathering.

INTENDED USES

As a blast holding primer suitable for use in immersed and exposed conditions and overcoatable with a wide range of high performance systems.

For use at both new construction and maintenance.

Also for use as a tie coat on zinc silicate to prevent zinc salt formation on weathering and pinholing of subsequent high build topcoats.

PRACTICAL INFORMATION FOR INTERGARD 269

Colour	Red (See Product Characteristics section for further details)
Gloss Level	Matt
Volume Solids	47%
Typical Thickness	40 microns (1.6 mils) dry equivalent to 85 microns (3.4 mils) wet
Theoretical Coverage	11.80 m²/litre at 40 microns d.f.t and stated volume solids 471 sq.ft/US gallon at 1.6 mils d.f.t and stated volume solids
Practical Coverage	Allow appropriate loss factors
Method of Application	Airless Spray, Air Spray, Brush, Roller

Drying Time

			Overcoating Interval with recommended topcoats	
Temperature	**Touch Dry**	**Hard Dry**	*Minimum*	*Maximum*
10°C (50°F)	40 minutes	16 hours	16 hours	Extended[1]
15°C (59°F)	35 minutes	12 hours	12 hours	Extended[1]
25°C (77°F)	30 minutes	8 hours	8 hours	Extended[1]
40°C (104°F)	15 minutes	1 hour	4 hours	Extended[1]

[1] Maximum overcoating intervals are shorter when using polysiloxane topcoats. Consult International Protective Coatings for further details.

REGULATORY DATA

Flash Point (Typical)	Part A 26°C (79°F); Part B 25°C (77°F); Mixed 26°C (79°F)	
Product Weight	1.53 kg/l (12.8 lb/gal)	
VOC	3.75 lb/gal (450 g/lt)	EPA Method 24
	293 g/kg	EU Solvent Emissions Directive (Council Directive 1999/13/EC)

See Product Characteristics section for further details

SURFACE PREPARATION

All surfaces to be coated should be clean, dry and free from contamination. Prior to paint application all surfaces should be assessed and treated in accordance with ISO 8504:2000.

Oil or grease should be removed in accordance with SSPC-SP1 solvent cleaning.

Abrasive Blast Cleaning

For immersion service, Intergard 269 must be applied to surfaces blast cleaned to Sa2½ (ISO 8501-1:2007) or SSPC-SP10. However, for atmospheric exposure Intergard 269 may be applied to surfaces prepared to a minimum of Sa2½ (ISO 8501-1:2007) or SSPC-SP6.

Surface defects revealed by the blast cleaning process should be ground, filled, or treated in the appropriate manner.

Ultra High Pressure Hydroblasting / (non-immersed service only)

May be applied to surfaces prepared to Sa2 (ISO 8501-1:2007) or SSPC-SP6 which have flash rusted to no worse than Grade HB2M (refer to International Hydroblasting Standards). Further information is available from International Protective Coatings.

Tie Coat Applications (see Product Characteristics)

In the case of zinc primers, where necessary, remove weld spatter, smooth weld seams and sharp edges and blast clean welds and damaged primer to Sa2½ (ISO 8501-1:2007) or SSPC-SP6. The shop primer or other primer surface should be dry and free of all contamination (oil, grease, salt etc) and overcoated with Intergard 269 within the overcoating intervals specified for the primer (consult the relevant product data sheet).

Ensure that the zinc primer has fully cured and is clean, dry and free from zinc salts prior to overcoating.

APPLICATION

Mixing

Material is supplied in two containers as a unit. Always mix a complete unit in the proportions supplied. Once the unit has been mixed it must be used within the working pot life specified.

(1) Agitate Base (Part A) with a power agitator.

(2) Combine entire contents of Curing Agent (Part B) with Base (Part A) and mix thoroughly with power agitator.

Mix Ratio

4 part(s) : 1 part(s) by volume

Working Pot Life

10°C (50°F)	15°C (59°F)	25°C (77°F)	40°C (104°F)
17 hours	12 hours	8 hours	3 hours

Airless Spray	Recommended	Tip Range 0.38-0.53 mm (15-21 thou) Total output fluid pressure at spray tip not less than 141 kg/cm² (2005 p.s.i.)
Air Spray (Pressure Pot)	Recommended	Gun DeVilbiss MBC or JGA Air Cap 704 or 765 Fluid Tip E
Brush	Suitable - small areas only	Typically 25-30 microns (1.0-1.2 mils) can be achieved
Roller	Suitable - small areas only	Typically 25-30 microns (1.0-1.2 mils) can be achieved
Thinner	International GTA220 (or International GTA415)	Do not thin more than allowed by local environmental legislation

Cleaner

International GTA822 or International GTA415

Work Stoppages

Do not allow material to remain in hoses, gun or spray equipment. Thoroughly flush all equipment with International GTA822. Once units of paint have been mixed they should not be resealed and it is advised that after prolonged stoppages work recommences with freshly mixed units.

Clean Up

Clean all equipment immediately after use with International GTA822. It is good working practice to periodically flush out spray equipment during the course of the working day. Frequency of cleaning will depend upon amount sprayed, temperature and elapsed time, including any delays.

All surplus materials and empty containers should be disposed of in accordance with appropriate regional regulations/legislation.

Intergard® 269

Epoxy

PRODUCT CHARACTERISTICS

Use as a Holding Primer

Intergard 269 is suitable for use as a blast holding primer for steelwork intended for exposure in both immersed and atmospheric exposure conditions. Apply Intergard 269 at the recommended thickness as over-application will result in a glossy surface which may not be suitable for overcoating after ageing.

When coating steel in high ambient temperatures thinning with International thinners may be necessary to prevent dry spray and control film thickness.

This product will not cure adequately below 5°C (41°F). For maximum performance ambient curing temperatures should be above 10°C (50°F).

Intergard 269 is also suitable for application to degreased and abraded stainless steel and galvanised steel. Abrasion can be carried out by light blasting using a non-ferrous abrasive or by carborundum disking on small areas.

Use as a Tie Coat

To ensure good penetration of zinc silicate coatings Intergard 269 should be thinned by 15-25% with International thinners. Intergard 269 should be allowed to cure before topcoating with high builds otherwise the effectiveness in preventing pinholing is reduced.

Excessive film thickness may lead to splitting of the film when overcoated with high build systems.

For application at temperatures below 10°C (50°F) alternative tie coats are available. For information contact International Protective Coatings.

When used in a marine environment the schemes and overcoating intervals utilised may differ.

Intergard 269 is globally available in Red; alternative shades may be available upon request. Consult International Protective Coatings for further details.

Note: VOC values quoted are based on maximum possible for the product taking into account variations due to colour differences and normal manufacturing tolerances.

Low molecular weight reactive additives, which will form part of the film during normal ambient cure conditions, will also affect VOC values determined using EPA Method 24.

SYSTEMS COMPATIBILITY

Intergard 269 is suitable for use over the following primers:

Interzinc 22
Interzinc 52

The following topcoats/intermediates are recommended for Intergard 269:

Intercure 200HS	Intergard 740
Intercure 420	Interseal 670HS
Interfine 629HS	Interthane 870
Interfine 878	Interthane 990
Interfine 979	Interzone 505
Intergard 251	Interzone 954
Intergard 345	Interzone 1000
Intergard 475HS	

For details of other systems, consult International Protective Coatings.

ADDITIONAL INFORMATION

Further information regarding industry standards, terms and abbreviations used in this data sheet can be found in the following documents available at www.international-pc.com:

- Definitions & Abbreviations
- Surface Preparation
- Paint Application
- Theoretical & Practical Coverage

Individual copies of these information sections are available upon request.

SAFETY PRECAUTIONS

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All work involving the application and use of this product should be performed in compliance with all relevant national, Health, Safety & Environmental standards and regulations.

In the event welding or flame cutting is performed on metal coated with this product, dust and fumes will be emitted which will require the use of appropriate personal protective equipment and adequate local exhaust ventilation.

If in doubt regarding the suitability of use of this product, consult International Protective Coatings for further advice.

PACK SIZE	Unit Size	Part A		Part B	
		Vol	Pack	Vol	Pack
	20 litre	16 litre	20 litre	4 litre	5 litre
	5 US gal	4 US gal	5 US gal	1 US gal	1 US gal
	For availability of other pack sizes, contact International Protective Coatings.				

SHIPPING WEIGHT (TYPICAL)	Unit Size	Part A	Part B
	20 litre	28.9 kg	4.1 kg
	5 US gal	59.7 lb	8.4 lb

STORAGE	Shelf Life	12 months minimum at 25°C (77°F). Subject to re-inspection thereafter. Store in dry, shaded conditions away from sources of heat and ignition.

Important Note

The information in this data sheet is not intended to be exhaustive; any person using the product for any purpose other than that specifically recommended in this data sheet without first obtaining written confirmation from us as to the suitability of the product for the intended purpose does so at their own risk. All advice given or statements made about the product (whether in this data sheet or otherwise) is correct to the best of our knowledge but we have no control over the quality or the condition of the substrate or the many factors affecting the use and application of the product. Therefore, unless we specifically agree in writing to do so, we do not accept any liability at all for the performance of the product or for (subject to the maximum extent permitted by law) any loss or damage arising out of the use of the product. We hereby disclaim any warranties or representations, express or implied, by operation of law or otherwise, including, without limitation, any implied warranty of merchantability or fitness for a particular purpose. All products supplied and technical advice given are subject to our Conditions of Sale. You should request a copy of this document and review it carefully. The information contained in this data sheet is liable to modification from time to time in the light of experience and our policy of continuous development. It is the user's responsibility to check with their local representative that this data sheet is current prior to using the product.

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Issue date: 05/02/2015

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Intergard® 475HS

Epoxy

PRODUCT DESCRIPTION

A low VOC, high solids, high build, two component epoxy coating. Available with conventional pigmentation, or alternatively can be pigmented with micaceous iron oxide to provide enhanced overcoating properties.

INTENDED USES

For use as a high build epoxy coating to improve barrier protection for a range of anti-corrosive coating systems in a wide range of environments including offshore structures, petrochemical plants, pulp and paper mills and bridges. Suitable for use in both maintenance and new construction situations as part of an anti-corrosive coating system. The micaceous iron oxide variant improves long term overcoating properties, better facilitating application in the fabrication shop, prior to shipping, with final overcoating on site.

PRACTICAL INFORMATION FOR INTERGARD 475HS

Color Light gray MIO and a selected range of colors

Gloss Level Matte

Volume Solids 80%

Typical Thickness 4-8 mils (100-200 microns) dry equivalent to 5-10 mils (125-250 microns) wet

Theoretical Coverage 257 sq.ft/US gallon at 5 mils d.f.t and stated volume solids
6.40 m²/liter at 125 microns d.f.t and stated volume solids

Practical Coverage Allow appropriate loss factors

Method of Application Airless Spray, Air Spray, Brush, Roller

Drying Time

			Overcoating Interval with recommended topcoats	
Temperature	**Touch Dry**	**Hard Dry**	*Minimum*	*Maximum*
23°F (-5°C)	150 minutes	48 hours	48 hours	Extended[1]
41°F (5°C)	90 minutes	16 hours	16 hours	Extended[1]
50°F (10°C)	80 minutes	14 hours	13 hours	Extended[1]
59°F (15°C)	75 minutes	10 hours	10 hours	Extended[1]
77°F (25°C)	60 minutes	5 hours	5 hours	Extended[1]

[1] See International Protective Coatings Definitions & Abbreviations
Maximum overcoating intervals are shorter when using polysiloxane topcoats. Consult International Protective Coatings for further details.

For curing at elevated temperatures an alternative curing agent is available. See Product Characteristics for details.

REGULATORY DATA

Flash Point (Typical) Part A 93°F (34°C); Part B 88°F (31°C); Mixed 91°F (33°C)

VOC

1.72 lb/gal (207 g/lt) 92 g/kg	EPA Method 24 EU Solvent Emissions Directive (Council Directive 1999/13/EC)
159 g/lt (1.32 lb/US Gal)	Chinese National Standard GB23985

See Product Characteristics section for further details

Intergard® 475HS

Epoxy

SURFACE PREPARATION

All surfaces to be coated should be clean, dry and free from contamination. Prior to paint application, all surfaces should be assessed and treated in accordance with ISO 8504:2000.

Primed Surfaces

Intergard 475HS should always be applied over a recommended anti-corrosive coating scheme. The primer surface should be dry and free from all contamination, and Intergard 475HS must be applied within the overcoating intervals specified (consult the relevant product data sheet).

Areas of breakdown, damage etc., should be prepared to the specified standard (e.g. SSPC-SP6 or Sa2½ (ISO 8501 -1:2007), Abrasive Blasting, or SSPC-SP11, Power Tool Cleaning) and patch primed prior to the application of Intergard 475HS.

Zinc Primed Surfaces

Ensure that the surface of the primer is clean, dry and free from contamination and zinc salts before application of Intergard 475HS. Ensure zinc primers are fully cured before overcoating.

APPLICATION

Mixing

Material is supplied in two containers as a unit. Always mix a complete unit in the proportions supplied. Once the unit has been mixed, it must be used within the working pot life specified.

(1) Agitate Base (Part A) with a power agitator.
(2) Combine entire contents of Curing Agent (Part B) with Base (Part A) and mix thoroughly with power agitator.

Mix Ratio

3 part(s) : 1 part(s) by volume

Working Pot Life

23°F (-5°C)	41°F (5°C)	59°F (15°C)	77°F (25°C)
3 hours	3 hours	2.5 hours	2 hours

Airless Spray

Recommended

Tip Range 21-25 thou (0.53-0.63 mm)
Total output fluid pressure at spray tip not less than 2702 psi (190 kg/cm²)

Air Spray (Pressure Pot)

Recommended

Gun	DeVilbiss MBC or JGA
Air Cap	704 or 765
Fluid Tip	E

Brush

Suitable

Typically 3.0 mils (75 microns) can be achieved

Roller

Suitable

Typically 3.0 mils (75 microns) can be achieved

Thinner

International GTA007

Thinning is not normally required. Consult the local representative for advice during application in extreme conditions. Do not thin more than allowed by local environmental legislation.

Cleaner

International GTA822 (or International GTA415)

Choice of cleaner may be subject to local legislation. Please consult your local representative for specific advice.

Work Stoppages

Do not allow material to remain in hoses, gun or spray equipment. Thoroughly flush all equipment with International GTA822. Once units of paint have been mixed they should not be resealed and it is advised that after prolonged stoppages work recommences with freshly mixed units.

Clean Up

Clean all equipment immediately after use with International GTA822. It is good working practice to periodically flush out spray equipment during the course of the working day. Frequency of cleaning will depend upon amount sprayed, temperature and elapsed time, including any delays.

All surplus materials and empty containers should be disposed of in accordance with appropriate regional regulations/legislation

Intergard® 475HS

Epoxy

PRODUCT CHARACTERISTICS

Intergard 475HS is primarily designed for use as a high build barrier coat to impart barrier protection to a coating system. It is recommended that it should be overcoated with a durable finish from the Interfine or Interthane range when appearance is important.

Maximum film build in one coat is best attained by airless spray. When applying by methods other than airless spray, the required film build is unlikely to be achieved. Application by air spray may require a multiple cross spray pattern to attain maximum film build. Lower or high temperatures may require specific application techniques to achieve maximum film build.

When applying Intergard 475HS by brush or roller, it may be necessary to apply multiple coats to achieve the total specified system dry film thickness.

Surface temperature must always be a minimum of 5°F (3°C) above dew point. When applying Intergard 475HS in confined spaces, ensure adequate ventilation. Exposure to unacceptably low temperatures and/or high humidities during, or immediately after, application may result in incomplete cure and surface contamination that could jeopardize subsequent intercoat adhesion.

Elevated Temperature Curing

An alternative curing agent is available for applications at temperatures greater than 77°F (25°C).

			Overcoating Interval with recommended topcoats	
Temperature	Touch Dry	Hard Dry	*Minimum*	*Maximum*
77°F (25°C)	90 minutes	6 hours	6 hours	Extended *
104°F (40°C)	60 minutes	2 hours	2 hours	Extended *

* See International Protective Coatings Definitions and Abbreviations

Interchanging standard and elevated temperature curing agents during application to a specific structure will give rise to an observable color change due to the difference in the yellowing/discoloration process common to all epoxies on exposure to UV light. In common with all epoxies, Intergard 475HS will chalk and discolor on exterior exposure. However, these phenomena are not detrimental to anti-corrosive performance.

Intergard 475HS is not designed for continuous water immersion.

The micaceous iron oxide variant of this product is frequently used as a “travel coat” prior to final overcoating on site. To ensure best extended overcoating properties, ensure overapplication does not occur and that the surface is fully cleaned of any contamination which may be present in the surface texture due to the coarse nature of the micaceous iron oxide pigmentation.

When applying Intergard 475HS at temperatures less than 59°F (15°C) or wet film thicknesses of 6 mils (150 microns) or less, addition of around 5% International GTA007 thinners will improve film appearance, sprayability and aid film thickness control.

On consultation with International Protective Coatings this product is compatible with alternative application methods such as flow coating.

Note: VOC values are typical and are provided for guidance purpose only. These may be subject to variation depending on factors such as differences in color and normal manufacturing tolerances.

Low molecular weight reactive additives, which will form part of the film during normal ambient cure conditions, will also affect VOC values determined using EPA Method 24.

SYSTEMS COMPATIBILITY

Intergard 475HS is designed for use over correctly primed steel. Suitable primers are:

Intercure 200	Interzinc 22 (mist coat or tie coat recommended)*
Intergard 251	Interzinc 315
Intergard 251HS	Interzinc 52
Intergard 269	Interzinc 52E
Interzinc 2280(mist coat or tie coat recommended)*	

Suitable topcoats are:

Intergard 740	Interfine 629HS
Interfine 878	Interfine 979
Interthane 990	Intergard 475HS

Interthane 990E

For alternative primers and finishes, consult International Protective Coatings.

* See relevant product data sheet for details.

Interthane 990

Polyurethane Finish

PRODUCT DESCRIPTION

A two pack, acrylic polyurethane finish giving excellent durability and long term recoatability.

INTENDED USES

As a cosmetic finish on above water areas. Suitable for use on topsides, external superstructure, external decks and boottops.
For use at Newbuilding, Maintenance & Repair or On Board Maintenance.

PRODUCT INFORMATION

Colour	PHB000-White, PHY999-Black ; and a wide range of colours.
Finish/Sheen	High Gloss
Part B (Curing Agent)	PHA046
Volume Solids	57% ±3% (ISO 3233:1998)
Mix Ratio	6.00 volume(s) Part A to 1 volume(s) Part B
Typical Film Thickness	50 microns dry (88 microns wet)
Theoretical Coverage	11.4 m²/litre at 50 microns dft, allow appropriate loss factors
Method of Application	Airless Spray, Brush, Conventional Spray, Roller
Flash Point (Typical)	Part A 34°C; Part B 49°C; Mixed 35°C
Induction Period	Not required

Drying Information	-5°C	5°C	25°C	35°C
Touch Dry [ISO 9117/3:2010]	8 hrs	5 hrs	1.5 hrs	60 mins
Hard Dry [ISO 9117-1:2009]	60 hrs	24 hrs	6 hrs	4 hrs
Pot Life	26 hrs	12 hrs	2 hrs	60 mins

Overcoating Data - see limitations

	Substrate Temperature							
	-5°C		5°C		25°C		35°C	
Overcoated By	Min	Max	Min	Max	Min	Max	Min	Max
Interthane 990	60 hrs	ext	24 hrs	ext	6 hrs	ext	4 hrs	ext

Note Drying and overcoating times quoted are measured at 50 microns dry, at higher film thickness times will be increased.

REGULATORY DATA

VOC

420 g/lt as supplied (EPA Method 24)
341 g/kg of liquid paint as supplied. EU Solvent Emissions Directive (Council Directive 1999/13/EC)
379 g/lt Chinese National Standard GB23985

Note: VOC values are typical and are provided for guidance purposes only. These may be subject to variation depending on factors such as differences in colour and normal manufacturing tolerances.

Interthane 990

Polyurethane Finish

CERTIFICATION

When used as part of an approved scheme, this material has the following certification:

- Fire Resistance - Surface Spread of Flame (Exova Warringtonfire)
- Fire Resistance - Smoke & Toxicity (Exova Warringtonfire)
- NORSOK M-501, Rev 4, system no.1 (NITN)
- Fire Resistance - Marine Equipment Directive compliant

Consult your International Paint representative for details.

SYSTEMS AND COMPATIBILITY

Interthane 990 must be applied over a recommended primer system, which will vary depending upon the vessel area. Direct application is acceptable over the following marine anticorrosives:

Intergard 264 (USA)
Intergard 400
Intergard 5600
Intergard 5620
Intergard 7600
Intershield 300
Intershield 803

A tiecoat of Intergard 263, Intergard 267 or Intergard 269 may be required if Interthane 990 is to be applied over other epoxy primers and may also be used to extend the maximum overcoating interval when Interthane 990 is to be applied over those primers listed above.

Interprime 198 may also be used as a primer for Interthane 990.

Consult your International Paint representative for the system best suited for the surfaces to be protected.

SURFACE PREPARATIONS

Use in accordance with the standard Worldwide Marine Specifications.
All surfaces to be coated should be clean, dry and free from contamination.
High pressure fresh water wash or fresh water wash, as appropriate, and remove all oil or grease, soluble contaminants and other foreign matter in accordance with SSPC-SP1 solvent cleaning.

NEWBUILDING/MAJOR REFURBISHMENT
Interthane 990 should always be applied over a recommended primer coating scheme. The primer surface should be dry and free from all contamination, and Interthane 990 must be applied within the overcoating intervals specified (consult the relevant product data sheet). For boottop areas the overcoating intervals for primers are reduced. Consult International Paint.
Areas of breakdown, damage etc. should be prepared to the specified standard (eg. Sa2½ (ISO 8501-1:2007)) and primed prior to the application of Interthane 990.

REPAIR/OBM
Interthane 990 should always be applied over a recommended primer coating scheme. The primer surface should be dry and free from all contamination, and Interthane 990 must be applied within the overcoating intervals specified (consult the relevant product data sheet). For boottop areas the overcoating intervals for primers are reduced. Consult International Paint.
Areas of breakdown, damage etc. should be prepared to the specified standard (eg. Sa2½ (ISO 8501-1:2007)) and primed prior to the application of Interthane 990.
Interthane 990 may be applied directly over aged Interthane 990 following thorough fresh water washing and degreasing provided the coating to be overcoated is in an intact and tightly adherent condition. Loose or flaking coatings should be removed back to a firm edge and Interthane 990 or an appropriate primer should be used to repair the area before application of the full coat.
This product may be applied directly over most generic types of paint that have been aged for at least 3 months. It is advisable that a small trial be carried out before applying a full coat.

Consult your International Paint representative for specific recommendations.

NOTE
For use in Marine situations in North America, the following surface preparation standards can be used: SSPC-SP10 in place of Sa2½ (ISO 8501-1:2007)

Interthane 990

Polyurethane Finish

APPLICATION

Mixing	Material is supplied in 2 containers as a unit. Always mix a complete unit in the proportions supplied. (1) Agitate Base (Part A) with a power agitator. (2) Combine entire contents of Curing Agent (Part B) with Base (Part A) and mix thoroughly with power agitator.
Thinner	Thinning is not normally required. Consult the local representative for advice during application in extreme conditions. Do not thin more than allowed by local environmental legislation.
Airless Spray	Recommended Tip Range 0.33-0.45 mm (13-18 thou) Total output fluid pressure at spray tip not less than 155 kg/cm² (2200 p.s.i.)
Conventional Spray	Use suitable proprietary equipment. Thinning may be required.
Brush	Suitable.
Roller	Suitable.
Cleaner	International GTA056/GTA713/GTA733
Work Stoppages and Cleanup	Do not allow material to remain in hoses, gun or spray equipment. Thoroughly flush all equipment with International GTA056/GTA713/GTA733. Once units of paint have been mixed they should not be resealed and it is advised that after prolonged stoppages work recommences with freshly mixed units. Clean all equipment immediately after use with International GTA056/GTA713/GTA733. It is good working practice to periodically flush out spray equipment during the course of the working day. Frequency of cleaning will depend upon amount sprayed, temperature and elapsed time, including any delays. Do not exceed pot life limitations. All surplus materials and empty containers should be disposed of in accordance with appropriate regional regulations/legislation.
Welding	In the event welding or flame cutting is performed on metal coated with this product, dust and fumes will be emitted which will require the use of appropriate personal protective equipment and adequate local exhaust ventilation. In North America do so in accordance with instruction in ANSI/ASC Z49.1 "Safety in Welding and Cutting."

SAFETY

All work involving the application and use of this product should be performed in compliance with all relevant national Health, Safety & Environmental standards and regulations.

Prior to use, obtain, consult and follow the Material Safety Data Sheet for this product concerning health and safety information. Read and follow all precautionary notices on the Material Safety Data Sheet and container labels. If you do not fully understand these warnings and instructions or if you can not strictly comply with them, do not use this product. Proper ventilation and protective measures must be provided during application and drying to keep solvent vapour concentrations within safe limits and to protect against toxic or oxygen deficient hazards. Take precautions to avoid skin and eye contact (ie. gloves, goggles, face masks, barrier creams etc.) Actual safety measures are dependant on application methods and work environment.
EMERGENCY CONTACT NUMBERS:
USA/Canada - Medical Advisory Number 1-800-854-6813
Europe - Contact (44) 191 4696111. For advice to Doctors & Hospitals only contact (44) 207 6359191
China – Contact (86) 532 83889090
R.O.W. - Contact Regional Office

Warning: Contains isocyanate. Wear air-fed hood for spray application.

Interthane 990

Polyurethane Finish

LIMITATIONS

This product is not recommended for use in permanantly immersed conditions.
Interthane 990 may be used on boottop areas at reduced overcoating intervals over appropriate primers. Consult International Paint.
For brush and roller application, and in some colours, two coats of Interthane 990 may be required to give uniform coverage, especially when applying Interthane 990 over dark undercoats and when using certain lead-free bright finish colours such as yellows and oranges. Best practice is to use a colour compatible intermediate or anticorrosive coating under Interthane 990.
Interthane 990 may be applied at substrate temperatures down to -15°C. Before applications are made below -5°C consult your local IP representative for further detail of application procedure.
Low temperature, high relative humidity and condensation occurring during or immediately after application may result in a matt finish and an inferior film. Premature exposure to ponding water will cause colour change, especially in dark colours and at low temperatures.
Overcoating information is given for guidance only and is subject to regional variation depending upon local climate and environmental conditions. Consult your local International Paint representative for specific recommendations.
Apply in good weather. Temperature of the surface to be coated must be at least 3°C above the dew point. For optimum application properties bring the material to 21-27°C, unless specifically instructed otherwise, prior to mixing and application. Unmixed material (in closed containers) should be maintained in protected storage in accordance with information given in the STORAGE Section of this data sheet. Technical and application data herein is for the purpose of establishing a general guideline of the coating application procedures. Test performance results were obtained in a controlled laboratory environment and International Paint makes no claim that the exhibited published test results, or any other tests, accurately represent results found in all field environments. As application, environmental and design factors can vary significantly, due care should be exercised in the selection, verification of performance and use of the coating.
In the overcoating data section 'ext' = extended overcoating period. Please refer to our Marine Painting Guide - Definitions and Abbreviations available on our website.

UNIT SIZE

Unit Size	Part A		Part B	
	Vol	Pack	Vol	Pack
20 lt	17.14 lt	20 lt	2.86 lt	5 lt
5 US gal	5 US gal	5 US gal	1 US gal	1 US gal
1 US gal	1 US gal	1 US gal	1 US quart	1 US quart

Note : US containers are short filled
For availability of other unit sizes consult International Paint

UNIT SHIPPING WEIGHT (TYPICAL)

Unit Size	Unit Weight
1 US gal	13.7 lb
20 lt	26.59 Kg
5 US gal	54.7 lb

STORAGE

Shelf Life: Part A - 24 months minimum at 25°C.
Part B - 12 months minimum at 25°C
Subject to reinspection thereafter. Store in dry, shaded conditions away from sources of heat and ignition.

WORLDWIDE AVAILABILITY Consult International Paint.

IMPORTANT NOTE

The information in this data sheet is not intended to be exhaustive; any person using the product for any purpose other than that specifically recommended in this data sheet without first obtaining written confirmation from us as to the suitability of the product for the intended purpose does so at their own risk. All advice given or statements made about the product (whether in this data sheet or otherwise) is correct to the best of our knowledge but we have no control over the quality or the condition of the substrate or the many factors affecting the use and application of the product. Therefore, unless we specifically agree in writing to do so, we do not accept any liability at all for the performance of the product or for (subject to the maximum extent permitted by law) any loss or damage arising out of the use of the product. We hereby disclaim any warranties or representations, express or implied, by operation of law or otherwise, including, without limitation, any implied warranty of merchantability or fitness for a particular purpose. All products supplied and technical advice given are subject to our Conditions of Sale. You should request a copy of this document and review it carefully. The information contained in this data sheet is liable to modification from time to time in the light of experience and our policy of continuous development. It is the user's responsibility to check with their local representative that this data sheet is current prior to using the product.

This Technical Data Sheet is available on our website at www.international-marine.com or www.international-pc.com, and should be the same as this document. Should there be any discrepancies between this document and the version of the Technical Data Sheet that appears on the website, then the version on the website will take precedence.

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www.international-marine.com

SELECT ON & SPECIFICATION DATA

Generic Type	Modified Epoxy Phenolic
Description	Thermaline 440 (formerly Thermaline 400 EU) is a high performance, heat resistant epoxy phenolic that specializes in providing color for uninsulated piping and equipment. This immersion-grade coating which has excellent resistance to wet/dry cycling conditions at elevated temperatures when using dry grind pigments. This formulation allows for use on hot steel substrates under insulation operating continuously up to 400°F (204°C). It has excellent chemical resistance properties to handle the corrosive effects of wet insulation under thermal cycling conditions.
Features	• Versatile use from *cryogenic temperatures* of -320°F (-196°C) up to 400°F (204ºC) xposures • Very good flexibility • Excellent overall chemical resistance • Very good abrasion resistance • Easily applied by spray • Acceptable for use over stainless steels • Rapid Tint System Colors available* * Contact your Carboline Representative for availability
Color	0500 (Red), G760 (Grey) are standard A wide range of colors are available using our rapid tint system. Contact your local Carbolin representative for availability. Rapid tint colors are not recommended for CUI and/or immersion service. *Coating discoloration can be expected when exposed to elevated temperatures in excess of 200°F (93°C). This discoloration does not affect performance.*
Finish	Semi-Gloss
Dry Film Thickness	5 - 6 mils (127 - 152 microns) per coat Dry film thickness above 10 mils (250 microns) per coat, is not recommended.
Solid(s) Content	Solids by volume: 52 ± 2%
Theoretical Coverage Rates	166 sq.ft/gallon at 5.0 mils DFT (4.0 sq.m/liter at 125 µm) 139 sq.ft/gallon at 6.0 mils DFT (3.4 sq.m/liter at 150 µm) Mixing and application losses will vary and must be taken into consideration when estimating project requirements.
VOC Values	**As Supplied** : 3.50 lbs/gal (420 g/l) Thinner 236 E : 3.50 lbs/gal (420 g/l) Thinner 2 : 3.68 lbs/gal (441 g/l) Thinner 33 : 3.69 lbs/gal (443 g/l) The use of Thinner 2 or Thinner 33 may exceed your local allowances for VOC. Please check your local regulations before using. Thinner 236 E is a US EPA VOC exempt solvent
Under Insulation Resistance	Continuous: 400°F (204°C) Non-Continuous: 450°F (232°C)

SELECT ON & SPECIFICATION DATA

Limitations	Discoloration will occur when exposed to temperatures in excess of 200°F (93°C), however product will perform as intended. Not recommended for exposure to strong mineral or organic acids. For CUI & immersion projects use only factory made material in special colors. Epoxies may lose gloss, discolor and eventually chalk in sunlight exposure.

SUBSTRATES & SURFACE PREPARATION

General	Surfaces must be clean and dry. All surfaces must be thoroughly cleaned to remove dirt, grease, and any other contaminants that can reduce adhesion per SSPC-SP1 solvent cleaning with recommended surface preparation.
Steel	Abrasive blast to SSPC-SP10 (ISO 8501-1 Sa 2½) to obtain a 1.5 - 3.0 mil (35 - 75 µm) anchor profile. For previously prepared substrates that have an existing anchor profile, High Pressur Water Jetting (HPWJ) to a minimum WJ-1 standard is acceptable.
Stainless Steel	Surface profile should be a dense angular 1.0 - 2.0 (25 - 50 µm) mils and is best achieved through abrasive blasting (non-metallic abrasive)per SSPC-SP16. Remove all contaminants that would interfere with the performance of stainless steel for the intended service such as, but not limited to, embedded iron or chlorides.

M X NG & TH NN NG

Mixing	Power mix components separately; then combine and mix thoroughly for a minimum of two minutes. **DO NOT MIX PARTIAL KITS**
Thinning	Maybe be thinned up to 5% by volume with Thinner 236 E, Thinner 2* or Thinner 33* for spray application. Use of thinners other than those supplied or approved by Carboline may adversely affect product performance and will void product warranty whether express or implied. * The use of these thinners may exceed your local allowances for VOC. Check your local regulations before using.
Ratio	2:1 by volume (A to B)
Pot Life	4 hours at 75°F (24°C) and less at higher temperature. Pot life ends when coating loses body and begins to sag.

APPL CAT ON EQU PMENT GU DEL NES

Listed below are general equipment guidelines for the application of this product. Job site conditions may require modifications to these guidelines to achieve the desired results.

General	Thermaline 440 may require adjustments in spray techniques. Wet film thickness is easily and quickly achieved. The following spray equipment has been found suitable and is available from manufacturers such as Binks, DeVilbiss and Graco.
Conventional Spray	Pressure pot equipped with dual regulators, 3/8" ID minimum material hose, conventional spray gun using a 0.055-0.070" fluid tip with appropriate air cap.

APPL CAT ON EQU PMENT GU DEL NES

Listed below are general equipment guidelines for the application of this product. Job site conditions may require modifications to these guidelines to achieve the desired results.

Airless Spray	Pump Ratio: 30:1 (min)* GPM Output: 3.0 (min) Material Hose: 3/8" ID (min) Tip Size: 0.017-0.021" Output PSI: 2000-2500 Filter Size: 60 mesh *PTFE packings are recommended.
Brush & Roller (General)	Recommended for touch-up, striping of weld seams, and hard-to-reach areas in addition to larger surface areas. Multiple coats will be required for larger areas to obtain the desired appearance and required dry film thickness. Application by roller to large surface areas should be holiday tested. Apply in full strokes, avoid re-brushing or re-rolling. Use a natural bristle brush and short nap mohair roller with a phenolic core.
Roller	Use a short nap (3/8" - 1/2") mohair roller with a phenolic cor

APPL CAT ON COND T ONS

Condition	Material	Surface	Ambient	Humidity
Minimum	55°F (13°C)	41°F (5°C)	41°F (5°C)	0%
Maximum	95°F (35°C)	167°F (75°C)	104°F (40°C)	85%

Condensation due to substrate temperatures below the dew point can cause flash rusting on prepared steel and interfere with proper adhesion to the substrate. Do not apply when the surface temperature is less than 5F above the dew point. High substrat temperatures may lead to faster curing and porous film. Special thinning and application techniques may be required above or below normal conditions.

CUR NG SCHEDULE

Surface Temp.	Dry to Recoat	Final Cure Immersion
41°F (5°C)	24 Hours	NR
50°F (10°C)	15 Hours	4 Days
59°F (15°C)	10 Hours	3 Days
77°F (25°C)	6 Hours	2 Days

These times are based on the recommended dry film thickness. Excessive film thickness or inadequate ventilation conditions after application require longer dry times and will cause premature failure in extreme cases. Maximum recoat time is 60 days at 75°F (24°C), 50% relative humidity, and protected from UV. If exceeded and depending on curing time and exposure, pretreatment may be required prior to overcoating. Contact Carboline for further information.
EXCESSIVE HUMIDITY OR CONDENSATION ON THE SURFACE DURING CURING MAY RESULT IN SURFACE HAZE OR BLUSH; ANY HAZE OR BLUSH SHOULD BE REMOVED BY WASHING WITH WATER BEFORE RECOATING.

CLEANUP & SAFETY

Cleanup	Use Carboline Thinner 2. In case of spillage, absorb and dispose of in accordance with local applicable regulations.

CLEANUP & SAFETY

Safety	Read and follow all caution statements on this product data sheet and on the SDS for this product. Employ normal workmanlike safety precautions. Hypersensitive persons should wear protectiv clothing, gloves and use protective cream on face, hands and all exposed areas.
Ventilation	When used in enclosed areas, thorough air circulation must be used during and after application until the coating is cured. The ventilation system should be capable of preventing the solvent vapor concentration from reaching the lower explosion limit for the solvents used. User should test and monitor exposure levels to insure all personnel are below guidelines. If not sure or if not able to monitor levels, use MSHA/NIOSH approved supplied air respirator.
Caution	This product contains flammable solvents. Keep away from sparks and open flames. All electrical equipment and installations should be made and grounded in accordance with the National Electric Code. In areas where explosion hazards exist, workmen should be required to use non-ferrous tools and wear conductive and non-sparking shoes.

PACKAG NG, HANDL NG & STORAGE

Packaging	**North America** Part A & B available in both 1 and 5 gallon kits **Outside North America** Part A 3.5 gallon (13,3 liters) Part B 1.76 gallon (6,7 liters or Part A 1.76 gallon (6,7 liters*) Part B 0.871 gallon (3,3 liters*) * Not available in all locations.
Shelf Life	24 months when stored at 75°F (24°C)and in original, unopened containers.
Storage Temperature & Humidity	40°-110°F(4°-43°C) 0-95% Relative Humidity
Storage	Store indoors and out of direct sunlight
Shipping Weight (Approximate)	**North America** 1 Gallon Kit - 15 lbs (6.8 kg) 5 Gallon Kit - 75 lbs (34 kg) **Outside North America** 10 liter kit - 18.1 kg 20 liter kit - 36.2 kg
Flash Point (Setaflash)	Thermaline 440 Part A: 64°F(18°C) Thermaline 440 Part B: 80°F(27°C)

WARRANTY

To the best of our knowledge the technical data contained herein is true and accurate on the date of publication and is subject to change without prior notice. User must contact Carboline Company to verify correctness before specifying or ordering. No guarantee of accuracy is given or implied. We guarantee our products to conform to Carboline quality control. We assume no responsibility for coverage, performance, injuries or damages resulting from use. Carbolines sole obligation, if any, is to replac or refund the purchase price of the Carboline product(s) proven to be defective, at Carbolines option. Carboline shall not be liabl for any loss or damage. NO OTHER WARRANTY OR GUARANTEE OF ANY KIND IS MADE BY CARBOLINE, EXPRESS OR IMPLIED, STATUTORY, BY OPERATION OF LAW, OR OTHERWISE, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. All of the trademarks referenced above are the property of Carboline International Corporation unless otherwise indicated.

Product Data Sheet

GMA PremiumBlast™

Average Chemical Composition (Typical)	
SiO_2*	33%
Al_2O_3	17%
FeO	NA
Fe_2O_3	35%
MgO	7%
CaO	5%
TiO_2	1%
MnO	1%

**Refers to SiO_2 bound within the lattice of the homogeneous garnet crystal (not free silica)*

Mineral Composition (Typical)	
Garnet (predominately Almandine)	91%
Pyroxene	3%
Ilmenite	<1%
Quartz (free silica)	<0.2%
Hornblende	4%
Others	1%

Physical Characteristics (Typical)	
Bulk Density	143.58 lbs/ft^3 (2.3 t/m^3)
Specific Gravity	4.1
Hardness (moh)	7.5 – 8.0
Melting Point	2282°F (1250°C)
Shape of Natural Grains	Angular

Other Characteristics (Typical)	
Radioactivity	Non-detectable above background
Moisture Absorption	Non-hygroscopic, Inert
Total Chlorides	1 – 2 ppm
Conductivity	46 µS/cm (4.6 mS/m)

**Tested in accordance to ISO and ASTM standards.*

Product Range (typical weight % retained)

Mesh	Microns	Cumulative	Discrete
25	710	0	1
30	600	1	5
35	500	6	21
40	425	27	28
45	355	55	24
50	300	79	14
60	250	93	4
70	212	97	2
80	180	99	1
PAN	PAN	100	0

Packaging

- 55 lb. (25 kg) paper bags on 1 metric ton or 2 metric ton pallet
- 1 metric ton or 2 metric ton bulk bags with bottom spout and an inner plastic liner
- Loose bulk delivered by pneumatic truck.

Source

- Made in USA
- Product code: GMX-USA-30/60
- Product specification: 30/60 Mesh Garnet.

PDS Code: GMX-USA-30/60 PDS-V1-2018-08

INDUSTRIAL PAINTING QUALIFICATION OF OPERATORS

QUALIFICA DEGLI OPERATORI DEL SETTORE VERNICIATURA INDUSTRIALE

CERTIFICATE

this is to certify that

si attesta che

Mr. ANDREA GASPARRI

Born in/nato a: Busto Arsizio (VA) On/il: November 5th 1993

CF: GSPNDR93S05B300B

has been evaluated according

è stato valutato in riferimento ai seguenti standard

- NORSOK M-501:2012 rev. 6 "surface preparation and protective coating"
- BAKER HUGHES Painting Specification ITN07791:2018 - rev. 18
- ASTM D-4228 "Standard Practice for Qualification of Coating Applicators for Application of Coatings to Steel Surfaces"

and qualified as

e qualificato come

BLASTER

Qualification awarded on the basis of the evidence collected and the examination held on

Qualifica assegnata sulla base delle evidenze raccolte e dell'esame svolto il

September 8th to 24th 2020

The examination was carried out at the workshop

La valutazione è stata effettuata presso lo stabilimento della società

GMP COLOR

Via per Legnano, 59
20023 Cerro Maggiore (MI)

September 28th 2020

STUDIO ACG INT
DI CARLO BRERO
Via Dante Alighieri 21, 45011 Adria (RO), Italy
www.studioacgint.com - +39 - 338 - 320 72 11

Carlo Brero
NACE Coating Insp. Lev. 2 Certified
CIP Certification Number 10937
ARAMCO insp. SAP 70012504
CEPAS Lead auditor - cert. ID 443

NACE LEAD

CERTIFIED NACE INTERNATIONAL COATING INSPECTOR
EXP. 09/2022
2727
R W

QUALIFICATION OF INDUSTRIAL PAINTING OPERATORS

CERTIFICATE

This is to certify that

Mr. SUNDAY EDOMWONYI OGIEVA

Born in/ : Nigeria on/ : September 13th, 1988

C.F.: DMWSDY88P13Z335U

Has been evaluated according

- Norsok M-50, Edition 6, February 2021: Surface Preparation and Protective Coating
- ASTM D-4228-2017: Standard Practice for Qualification of Coating Applicators for Application of Coatings to Steel Surfaces

and qualified as

BLASTER

Qualification awarded on the basis of evidence collected and examination held on

October 4th to 9th, 2021

Examination was carried out at: GMP COLOR Via per Legnano, 59
20025 Cerro Maggiore (MI)

Examiner:

Flavio Brero
Certified NACE International Coating Inspector Level III°

CERTIFIED NACE INTERNATIONAL COATING INSPECTOR
EXP. 09/2022
2727
R W

INDUSTRIAL PAINTING QUALIFICATION OF OPERATORS

QUALIFICA DEGLI OPERATORI DEL SETTORE VERNICIATURA INDUSTRIALE

CERTIFICATE

this is to certify that

si attesta che

Mr. RISSAOUI AHMED

Born in/nato a: Morocco On/il: June 15th 1967

CF: RSSHMD67H15Z330Z

has been evaluated according

è stato valutato in riferimento ai seguenti standard

- NORSOK M-501:2012 rev. 6 "surface preparation and protective coating"
- ASTM D-4228 "Standard Practice for Qualification of Coating Applicators for Application of Coatings to Steel Surfaces"

and qualified as

e qualificato come

PAINTER

Qualification awarded on the basis of the evidence collected and the examination held on

Qualifica assegnata sulla base delle evidenze raccolte e dell'esame svolto il

September 8th to 24th 2020

The examination was carried out at the workshop

La valutazione è stata effettuata presso lo stabilimento della società

GMP COLOR

Via per Legnano, 59
20023 Cerro Maggiore (MI)

September 28th 2020

CERTIFIED NACE INTERNATIONAL COATING INSPECTOR
EXP. 09/2022
2727
R W

STUDIO ACG INT
DI CARLO BRERO
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www.studioacgint.com - +39 - 338 - 320 72 11

Carlo Brero
NACE Coating Insp. Lev.2 Certified
CIP Certification Number 10937
ARAMCO insp. SAP 70012504
CEPAS Lead auditor - cert. ID 443

NACE LEAD

QUALIFICATION OF INDUSTRIAL PAINTING OPERATORS

CERTIFICATE

This is to certify that

Mr. MANUEL MOLENT

Born in/ : Legnano (MI) on/ : February 26th, 1988

C.F.: MLNMNL98B26E514J

Has been evaluated according

- Norsok M-50, Edition 6, February 2021: Surface Preparation and Protective Coating
- ASTM D-4228-2017: Standard Practice for Qualification of Coating Applicators for Application of Coatings to Steel Surfaces

and qualified as

PAINTER/SPRAYER

Qualification awarded on the basis of evidence collected and examination held on

October 4th to 9th, 2021

Examination was carried out at: GMP COLOR Via per Legnano, 59
20025 Cerro Maggiore (MI)

Examiner:

Flavio Brero
Certified NACE International Coating Inspector Level III°

CERTIFIED NACE INTERNATIONAL COATING INSPECTOR
EXP. 09/2022
2727
R W

NACE INTERNATIONAL INSTITUTE

Certificate of Achievement

The NACE International Institute Recognizes

Flavio Brero

As a Certified

NACE Certified Coating Inspector - Level 3

Executive Director
NACE International Institute

Expires
August 31, 2025

Cert No.2727

145678

PAINTING CERTIFICATE

MD-009 (rev 0 - 19/09/2020)

REPORT IDENTIFICATION			
Date	Certificate ID	Ref. Transport Note ID	Client
Customer Job No.	Description	Item	Painting Specification/Procedure

AMBIENT CONDITION					
Date	Hour	Ambient Temp. °C	Steel Temp. °C	Humidity %	Dew Point

SURFACE PREPARATION			
Degreasing		Abrasive Type	
Roughness		Cleaners	
Soluble Contaminants Test - ISO 8502-6/9		Dust Test - ISO 8502-3	
Result (mg/m²):		Result (rate):	

PAINTING				
Number of Coats	1	2	3	4
Date				
Hour				
Room Temperature				
Steel Temperature				
Humidity %				
Dew Point				
Application Method				
Paint Product Name				
Product Batch Number				
Colour				
Total dry film thickness (ISO 19840)				
Visual Aspect Result				
Remarks				

MEASURING INSTRUMENTS		

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR

COMPANY USE INFORMATION

ADHESION TEST REPORT

MD-023 (rev 0 - 24/09/2020)

REPORT IDENTIFICATION			
Date	**Certificate ID**	**Ref. Transport Note ID**	**Client**
.	.	.	.
Customer Job No.	**Description**	**Item**	**Painting Specification/Procedure**
.	Test Plate	**REF. TO CERTIFICATE** .	.

Adhesion Test according to …… has been carried out, with the following results:

TEST RESULTS					
Dollies	**1**	**2**	**3**	**4**	
DFT	.	.	.	.	
Pull-off Strength	.	.	.	.	
Failure Distribution	.	.	.	.	
Dollies	**5**	**6**	**7**	**8**	
DFT					
Pull-off strength					
Failure Distribution					
Remarks	- **Test carried out on sample plate** - **Glue: Loctite 496**				

MEASURING INSTRUMENTS		
POSITEST ATM20A	S.N. AT17055	Calibration expiring date: December 2024

GMP COLOR	CLIENT'S INSPECTOR	THIRD PARTY INSPECTOR
GMP COLOR S.R.L.		

COMPANY USE INFORMATION

PART 2 – CERTIFICATION DOSSIER

CHAPTER 2

SECTION 14

WORKER QUALIFICATION

CICPND SERVIZI S.R.L.
SOCIETÀ A RESPONSABILITÀ LIMITATA CON UNICO SOCIO
Via C. Pisacane, 46
20025 Legnano (MI)
Tel. +39 0331 545600
Fax +39 0331 543030

Web: www.cicpndservizi.com
E-mail: segreteria@cicpndservizi.com
PEC: info@pec.cicpndservizi.com
C.F. e P.I. 08439360960
C.C.I.A.A. di Milano R.E.A. n° 2026983

ACCREDIA
L'ENTE ITALIANO DI ACCREDITAMENTO
PRS N° 012C
Membro degli Accordi di Mutuo Riconoscimento EA, IAF e ILAC
Signatory of EA, IAF and ILAC Mutual Recognition Agreement

CERTIFICATO DI LIVELLO 2
LEVEL 2 CERTIFICATE

N° 35662/PND/C

Si certifica la qualificazione per esami in Prove Non Distruttive al **LIVELLO 2**
*This is to certify qualification by examinations in Non-Destructive Testing at the **LEVEL 2***

di / of

Sacchetti Nicholas

nato a / *born in* **Magenta (MI)**

il / *on* **02 giugno 2000**

per il metodo / *for the method:*

PT (Liquidi Penetranti)

per i settori / *for the sectors:*

PS (Plurisettoriale)

Il presente certificato viene rilasciato in conformità alla Norma UNI EN ISO 9712:2012.
This certificate is issued according to UNI EN ISO 9712:2012.

Firma persona certificata
Signature of certificate holder

Direttore Generale
General Manager

M. Reggiani

Data Delibera: 22/11/2021
Approval Date

Data Scadenza: 22/11/2026 C
Expiry Date

AIPnD

PART 2 – CERTIFICATION DOSSIER

CHAPTER 2

SECTION 15

COMPLIANCE WITH CE MARKING, ATEX, AND PED REQUIREMENTS AS RELEVANT TO THE SCOPE OF SUPPLY.

Uffici: 20013 Magenta (MI) Italy – Via Novara, 10/B – C
Stabilimento: 20013 Magenta (MI) Italy – Via Novara, 10/B – C
Tel. 02-97298663 Fax. 02-97291855 indra@indra.it www.indra.it

Dichiarazione UE di Conformità
EU Declaration of Conformity

Dichiariamo qui di seguito che per i prodotti /*We declare here following that the products*

Valvole a Sfera Floating / *Floating Ball Valve*
fino a DN200 e Rating 15.000 (tutte le connessioni)
up to DN200 and 15.000 Rating (any connection)

Valvole a Sfera Trunnion / *Trunnion Ball Valve*
fino a DN200 e Rating 15.000 (tutte le connessioni)
up to DN200 and 15.000 Rating (any connection)

Valvole a Spillo /*Needle Type Valve*
fino a DN200 e Rating 15.000 (tutte le connessioni)
up to DN200 and 15.000 Rating (any connection)

Monoflange e Manifold /*Monoflanges and Manifold*
fino a DN200 e Rating 15.000 (tutte le connessioni)
up to DN200 and 15.000 Rating (any connection)

Check Valve /*Check valves*
fino a DN200 e Rating 15.000 (tutte le connessioni)
up to DN200 and 15.000 Rating (any connection)

sono conformi alla Direttiva PED 2014/68/UE /***are compliant to the PED Directive 2014/68/UE***

Ente notificato /*Notified Body*: TUV Italia srl Via G.Carducci,125 - Sesto S. Giovanni (MI) **CE0948**

La certificazione è stata eseguita in accordo alla procedura /*Certification has been performed according to procedure:*
Mod. **H**, Cert. n° **PED-0948-QSH-547-19 Rev.1**

Questa dichiarazione di conformità è rilasciata sotto la sola responsabilità del costruttore.
This declaration of conformity is issued under the sole responsibility of manufacturer

Codici e Norme progettuali di riferimento /*Rules and engineering codes:*

API 598 / 6A / 6D
ASME/ANSI B16.34
ASME/ANSI B16.5
ASME/ANSI B31.3
ASME VIII

Si veda il numero seriale sul Rapporto di Collaudo allegato "10036/AC" in ultima revisione.
See serial number on attached Test Report "10036/AC" latest revision.

Date: 21-Sep-2024

INDRA srl
Emilio Renato Imbriani
Managing Director

x CROSSWIND
9/10/24 R

ZERTIFIKAT ◆ CERTIFICATE ◆ 認證證書 ◆ СЕРТИФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT

CERTIFICATO
CERTIFICATE

Italia

L'Ente di Certificazione TÜV Italia Srl
Organismo Notificato 0948 Direttiva Attrezzature a Pressione
The Certification Body of TÜV Italia Srl
Pressure Equipment Directive 0948 Notified Body

certifica che
certifies that

INDRA S.r.l.
Sede Legale: Corso XXII Marzo, 8 I-20135 MILANO (MI)
Sede operativa: Via Novara, 10/B-C I–20013 Magenta (MI)

ha realizzato, gestisce e mantiene un sistema qualità come descritto nella Pressure Equipment Directive 2014/68/UE Allegato III Modulo H
has implemented, operates and maintains a quality system as described in the Pressure Equipment Directive 2014/68/EU Annex III Module H

per il seguente campo di applicazione
for the scope of approval

Progettazione, costruzione e collaudo delle seguenti famiglie di valvole :
Valvole a sfera floating fino a DN200 (> DN25) e fino Classe 15000
Valvole a sfera trunnion split body fino a DN200 (> DN25) e fino Classe 15000
Valvole a spillo fino a DN200 (> DN25) e fino Classe 15000
Manifold/Monoflangia fino a DN200 (> DN25) e fino Classe 15000
Valvole di ritegno fino a DN200 (> DN25) e fino Classe 15000

Il rapporto finale No. AR-TIS-PED-MI-22-11-273803-28849 comprova che il sistema qualità soddisfa i requisiti della Pressure Equipment Directive 2014/68/UE
Evidence that the quality system satisfies the Pressure Equipment Directive 2014/68/EU requirements is documented in Assessment Report No.: AR-TIS-PED-MI-22-11-273803-28849

Il fabbricante è pertanto autorizzato ad apporre sull'attrezzatura a pressione, nell'ambito del suddetto campo di applicazione del sistema qualità, la marcatura CE e il seguente numero identificativo dell'Organismo Notificato (come di seguito illustrato)

The manufacturer is, therefore, authorized to provide the pressure equipment manufactured within the scope of the assessed quality system with CE mark and the Notified Body identification number (as illustrated):

CE 0948

Certificato No. / *Certificate No.*: **PED-0948-QSH-547-19 Rev.1**

Data emissione / *Issue date:* **22/11/2022**
Data 1° emissione / *First issue date*: **28/11/2019**
Data scadenza / *Expiry date:* **27/11/2025**

TÜV ITALIA Srl
Organismo Notificato No. 0948
Notified Body, No. 0948

ACCREDIA
L'ENTE ITALIANO DI ACCREDITAMENTO
PRD N° 081B
Membro degli Accordi di Mutuo Riconoscimento EA, IAF e ILAC
Signatory of EA, IAF and ILAC Mutual Recognition Agreements

Alberto Carelli
Industry Service - Real Estate & Infrastructure
Managing Director

x CROSSWIND
9/10/24

Uffici: 20013 Magenta (MI) Italy – Via Novara, 10/B – C
Stabilimento: 20013 Magenta (MI) Italy – Via Novara, 10/B – C
Tel. 02-97298663 Fax. 02-97291855 indra@indra.it www.indra.it

Dichiarazione UE di Conformità
EU Declaration of Conformity

Dichiariamo qui di seguito che per i prodotti /*We declare here following that the products*

Valvole a Sfera Floating / *Floating Ball Valve*
fino a DN200 e Rating 15.000 (tutte le connessioni)
up to DN200 and 15.000 Rating (any connection)

Valvole a Sfera Trunnion / *Trunnion Ball Valve*
fino a DN200 e Rating 15.000 (tutte le connessioni)
up to DN200 and 15.000 Rating (any connection)

Valvole a Spillo /*Needle Type Valve*
fino a DN200 e Rating 15.000 (tutte le connessioni)
up to DN200 and 15.000 Rating (any connection)

Monoflange e Manifold /*Monoflanges and Manifold*
fino a DN200 e Rating 15.000 (tutte le connessioni)
up to DN200 and 15.000 Rating (any connection)

Check Valve /*Check valves*
fino a DN200 e Rating 15.000 (tutte le connessioni)
up to DN200 and 15.000 Rating (any connection)

sono conformi alla Direttiva PED 2014/68/UE /***are compliant to the PED Directive 2014/68/UE***

Ente notificato /*Notified Body*: TUV Italia srl Via G.Carducci,125 - Sesto S. Giovanni (MI) **CE0948**

La certificazione è stata eseguita in accordo alla procedura /*Certification has been performed according to procedure:*
Mod. **H**, Cert. n° **PED-0948-QSH-547-19 Rev.1**

Questa dichiarazione di conformità è rilasciata sotto la sola responsabilità del costruttore.
This declaration of conformity is issued under the sole responsibility of manufacturer

Codici e Norme progettuali di riferimento /*Rules and engineering codes:*

API 598 / 6A / 6D
ASME/ANSI B16.34
ASME/ANSI B16.5
ASME/ANSI B31.3
ASME VIII

Si veda il numero seriale sul Rapporto di Collaudo allegato "10046/AC" in ultima revisione.
See serial number on attached Test Report "10046/AC" latest revision.

Date: 25-Sep-2024

INDRA srl
Emilio Renato Imbriani
Managing Director

x CROSSWIND
9/10/24

ZERTIFIKAT ◆ CERTIFICATE ◆ 認證證書 ◆ СЕРТИФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT

Italia

CERTIFICATO
CERTIFICATE

L'Ente di Certificazione TÜV Italia Srl
Organismo Notificato 0948 Direttiva Attrezzature a Pressione
The Certification Body of TÜV Italia Srl
Pressure Equipment Directive 0948 Notified Body

certifica che
certifies that

INDRA S.r.l.
Sede Legale: Corso XXII Marzo, 8 I-20135 MILANO (MI)
Sede operativa: Via Novara, 10/B-C I–20013 Magenta (MI)

ha realizzato, gestisce e mantiene un sistema qualità come descritto nella Pressure Equipment Directive 2014/68/UE Allegato III Modulo H
has implemented, operates and maintains a quality system as described in the Pressure Equipment Directive 2014/68/EU Annex III Module H

per il seguente campo di applicazione
for the scope of approval

Progettazione, costruzione e collaudo delle seguenti famiglie di valvole :
Valvole a sfera floating fino a DN200 (> DN25) e fino Classe 15000
Valvole a sfera trunnion split body fino a DN200 (> DN25) e fino Classe 15000
Valvole a spillo fino a DN200 (> DN25) e fino Classe 15000
Manifold/Monoflangia fino a DN200 (> DN25) e fino Classe 15000
Valvole di ritegno fino a DN200 (> DN25) e fino Classe 15000

Il rapporto finale No. AR-TIS-PED-MI-22-11-273803-28849 comprova che il sistema qualità soddisfa i requisiti della Pressure Equipment Directive 2014/68/UE
Evidence that the quality system satisfies the Pressure Equipment Directive 2014/68/EU requirements is documented in Assessment Report No.: AR-TIS-PED-MI-22-11-273803-28849

Il fabbricante è pertanto autorizzato ad apporre sull'attrezzatura a pressione, nell'ambito del suddetto campo di applicazione del sistema qualità, la marcatura CE e il seguente numero identificativo dell'Organismo Notificato (come di seguito illustrato)

The manufacturer is, therefore, authorized to provide the pressure equipment manufactured within the scope of the assessed quality system with CE mark and the Notified Body identification number (as illustrated):

CE 0948

Certificato No. / *Certificate No.*: **PED-0948-QSH-547-19 Rev.1**

Data emissione / *Issue date:* **22/11/2022**
Data 1° emissione / *First issue date*: **28/11/2019**
Data scadenza / *Expiry date:* **27/11/2025**

TÜV ITALIA Srl
Organismo Notificato No. 0948
Notified Body, No. 0948

ACCREDIA
L'ENTE ITALIANO DI ACCREDITAMENTO
PRD N° 081B
Membro degli Accordi di Mutuo Riconoscimento EA, IAF e ILAC
Signatory of EA, IAF and ILAC Mutual Recognition Agreements

Alberto Carelli
Industry Service - Real Estate & Infrastructure
Managing Director

x CROSSWIND
9/10/24

20013 Magenta (MI) Italy - Via Novara, 10/B-C
Tel. +39 02 97298663 r.a. - Fax +39 02 97291855
E-mail: indra@indra.it - http://www.indra.it
www.indravalves.it - www.indracontrols.it - www.indrapartners.it

Dichiarazione / *Declaration*

Direttiva PED 2014/68/UE – SEP / *Directive PED 2014/68/EU – SEP*

Valvole & Manifold a spillo per strumentazione
Instrumentation Valves & Manifold needle type

Valvole a sfera SB-SBB-DB-DBB
SB-SBB-DB-DBB Ball Valves

Si dichiara che i prodotti richiamati nella presente sono conformi a quanto previsto dell'art.4, par.3 della Direttiva 2014/68/UE, (PED – Pressure Equipment Directive), in materia di attrezzature in pressione e sono stati progettati e fabbricati secondo la corretta prassi costruttiva (SEP – Sound Engineering Practice).
In base all'art.4, par.3, questa tipologia di materiale non reca la marcatura CE.

We hereby declare that the products mentioned above conform to art.4, par.3, section of the Directive 2014/68/EU (PED – Pressure Equipment Directive), concerning equipment under pressure and were designed and manufactured in accordance with sound engineering practice (SEP – Sound Engineering Practice).

Magenta, 03/08/2016

INDRA SRL

PART 2 – CERTIFICATION DOSSIER

CHAPTER 2

SECTION 16

RELEVANT EQUIPMENT DESIGN IRCS (WHERE APPLICABLE)

ROSETTI MARINO	RELEASE NOTE	Nr. RN-0798-IND-01	Sheet 1 of 2
		Date 11/10/2024	Rev. 0

PROGETTO *Project*	CLIENTE *Client*	COMMESSA *Job*
HOLLANDSE KUST NOORD WIND PARK	CROSSWIND	*123A90*

FORNITORE *Vendor*	NUMERO D' ORDINE *Purchase Order No.*
INDRA SRL	*124000798*

Release Note	☐ FOR PAYMENT	☒ FOR SHIPMENT

RELEASE NOTE FOR PAYMENT

PO Art.		

RELEASE NOTE FOR SHIPMENT

POS. Item	Q.TA' Quantity	DESCRIZIONE Description	Nr. TAG TAG No.	TIPO DI ISPEZIONE / Kind of Inspection	ESITO / Result
50	5	Ball Valve Split Body FB 150LB FLG RF ø1" BS01C01RFH	n/a	n/a	POSITIVE
170	1	Double Block & Bleed Valve 300LB FLG RF ø2" DA03C01RFH	n/a	n/a	POSITIVE
220	2	Block & Bleed Valve 150LB FLG RF ø1" BS01C01RFHS	n/a	n/a	POSITIVE
240	1	Block & Bleed Valve 150LB FLG RF ø1" BS01C01RFS Stem Extension 100mm	n/a	n/a	POSITIVE
250	2	Block & Bleed Valve 150LB FLG RF ø2" BA01C01RFHS 1 pc LO, 1 pc FB-LO	n/a	n/a	POSITIVE
280	14	VLBMNN00013Q0H 14 PC 367,82 / PC 5.149,48 Monoflange Double Block & Bleed Valve 300LB FLGxNPT-F RF ø3/4"x1/2" MD03C02YH	n/a	n/a	POSITIVE
290	4	Monoflange Block & Bleed Valve 150LB FLGxNPT-F RF ø3/4"x1/2" MS01C02YH	n/a	n/a	POSITIVE
300	2	Monoflange Block & Bleed Valve 150LB FLGxNPT-F RF ø3/4"x1/2" MS01C02Y	n/a	n/a	POSITIVE
310	3	Monoflange Block & Bleed Valve 150LB FLGxNPT-F RF ø3/4"x1/2" MS01B02Y	n/a	n/a	POSITIVE
320	1	Monoflange Block & Bleed Valve 150LB FLGxNPT-F RF ø3/4"x1/2" MS01B02Y Stem Extension 100mm	n/a	n/a	POSITIVE

Warehouse open Monday to Friday From 08.00 to12.00 and from 13.00 to 17.00.
Contact Mr Rota +39 3451608099

DOCUMENTI APPLICABILI / *APPLICABLE DOCUMENTS*

POSIZIONE *Items*	TIPO DI DOCUMENTO *Type of Document*	NUMERO DI DOCUMENTO *Document Number*	Rev.	COD. DI APPROV. *Approv. Code*
n/a	PO	124000798	2	N/A
n/a	PRE-BOLLA	2024 - IT 003854	0	N/A

PUNCH LIST: ☐ SI / *YES* VEDI PUNCH LIST ALLEGATA N° / *REFER TO ATTACHED PUNCH LIST N°*
☒ NO/ *NO*

CONTROLLO VALIDITA' FIDEJUSSIONE ***/ PERFORMANCE or WARRANTY BOND expiration date check***
Estensione Fidejussione Richiesta *(Performance or Warranty Bond Extension of Validity required)*
☐ SI / *YES* ☒ NO/ *NO*
Acceptance Method: *Performance or Warranty Bond valid if actually delivery date it's not greater than two weeks from contractual delivery date.*

L' INCARICATO */Person in charge* ROSETTI MARINO *Supply Management dept.*		IL RAPPR. DEL CLIENTE / *Client Representative*	IL FORNITORE */Vendor*	CONSTRUCTION MANAGER *Only requested for Punch List to be closed at Yard*
Nome Cognome *Name Surname*	**Firma** *Signature*			
Massimiliano Berghenti		N.A.	N.A.	N.A.

QUESTO DOCUMENTO NON SOLLEVA IL FORNITORE DALLA RESPONSABILITA' DI EVENTUALI DIFETTI E/O MALFUNZIONAMENTI RILEVATI DURANTE L'USO / *The present RELEASE NOTE does not relieve the Supplier of the responsibility of any possible defects and/or malfunctioning arising during the utilisation.*

ROSETTI MARINO	RELEASE NOTE	Nr. RN-0798-IND-01	Sheet 2 of 2
		Date 11/10/2024	Rev. 0

PROGETTO *Project*	CLIENTE *Client*	COMMESSA *Job*
HOLLANDSE KUST NOORD WIND PARK	CROSSWIND	*123A90*

FORNITORE *Vendor*	INDRA SRL	NUMERO D' ORDINE *Purchase Order No.*	*124000798*

RELEASE NOTE

RISULTATO / *RESULT*	FORNITURA / *SUPPLY*	DISTRIBUZIONE A: / *DISTRIBUTION TO:*	
☒ POSITIVO / *POSITIVE*	☐ COMPLETA / *COMPLETE*	☒ Project Manager	☒ Administration
☐ NEGATIVO / *NEGATIVE*	☒ PARZIALE / *PARTIAL*	☒ Project Quality Manager	☒ Project Eng-/Procurement Coord
☐ PUNTI PENDENTI / *PUNCH-LIST*	☐ ULTIMA / *FINAL*	☐ Warehouse	☐ Supplier

NOTE / *NOTES*

Note:
None

L' INCARICATO /*Person in charge* ROSETTI MARINO *Supply Management dept.*		IL RAPPR. DEL CLIENTE / *Client Representative*	IL FORNITORE /*Vendor*	CONSTRUCTION MANAGER *Only requested for Punch List to be closed at Yard*
Nome Cognome *Name Surname*	**Firma** *Signature*			
Massimiliano Berghenti		N.A.	N.A.	N.A.

QUESTO DOCUMENTO NON SOLLEVA IL FORNITORE DALLA RESPONSABILITA' DI EVENTUALI DIFETTI E/O MALFUNZIONAMENTI RILEVATI DURANTE L'USO / *The present RELEASE NOTE does not relieve the Supplier of the responsibility of any possible defects and/or malfunctioning arising during the utilisation.*

ROSETTI MARINO	RELEASE NOTE	Nr. RN-0798-IND-02	Sheet 1 of 2
		Date 17/10/2024	Rev. 0

PROGETTO *Project*	CLIENTE *Client*	COMMESSA *Job*
HOLLANDSE KUST NOORD WIND PARK	CROSSWIND	*123A90*

FORNITORE *Vendor*		NUMERO D' ORDINE *Purchase Order No.*	
	INDRA SRL		*124000798*

Release Note	☐ FOR PAYMENT	☒ FOR SHIPMENT

RELEASE NOTE FOR PAYMENT

PO Art.		

RELEASE NOTE FOR SHIPMENT

POS. Item	Q.TA' Quantity	DESCRIZIONE Description	Nr. TAG TAG No.	TIPO DI ISPEZIONE / Kind of Inspection	ESITO / Result
10	1	Ball Valve Split Body FB 150LB FLG RF ø3/4" BS01C01RF	n/a	n/a	POSITIVE
20	15	Ball Valve Split Body FB 150LB FLG RF ø1" BS01C01RF	n/a	n/a	POSITIVE
30	2	Ball Valve Split Body FB 150LB FLG RF ø1.1/2" BS01C01RF LO	n/a	n/a	POSITIVE
40	2	Ball Valve Split Body FB 150LB FLG RF ø3/4" BS01C01RFH	n/a	n/a	POSITIVE
130	2	Ball Valve Split Body FB 10 Bar SE ø3/4" BA01P01KT Stem Extension 100mm	n/a	n/a	POSITIVE
140	1	Ball Valve Split Body RB 150LB FLG RF ø3" BC01C01RFH	n/a	n/a	POSITIVE
150	28	Double Block & Bleed Valve 300LB FLG RF ø1" DA03C01RFH 3 pcs FB-LO, 25 pcs LO	n/a	n/a	POSITIVE
400 (322)	1	Double Block & Bleed Valve 300LB FLG RF ø1" DA03C01RFH	n/a	n/a	POSITIVE

Warehouse open Monday to Friday From 08.00 to12.00 and from 13.00 to 17.00.
Contact Mr Rota +39 3451608099

DOCUMENTI APPLICABILI / *APPLICABLE DOCUMENTS*

POSIZIONE *Items*	TIPO DI DOCUMENTO *Type of Document*	NUMERO DI DOCUMENTO *Document Number*	Rev.	COD. DI APPROV. *Approv. Code*
n/a	P.O.	124000798	2	N/A
n/a	PRE-BOLLA	2024 - IT 003918	0	N/A

PUNCH LIST: ☐ SI / *YES* VEDI PUNCH LIST ALLEGATA N° / *REFER TO ATTACHED PUNCH LIST N°*
☒ NO/ *NO*

CONTROLLO VALIDITA' FIDEJUSSIONE ***/ PERFORMANCE or WARRANTY BOND expiration date check***
Estensione Fidejussione Richiesta *(Performance or Warranty Bond Extension of Validity required)*
☐ SI / *YES* ☒ NO/ *NO*
Acceptance Method: *Performance or Warranty Bond valid if actually delivery date it's not greater than two weeks from contractual delivery date.*

RELEASE NOTE

RISULTATO / *RESULT*	FORNITURA / *SUPPLY*	DISTRIBUZIONE A: / *DISTRIBUTION TO:*	
☒ POSITIVO / *POSITIVE*	☐ COMPLETA / *COMPLETE*	☒ Project Manager	☒ Administration

L' INCARICATO */Person in charge* ROSETTI MARINO *Supply Management dept.*		IL RAPPR. DEL CLIENTE / *Client Representative*	IL FORNITORE */Vendor*	CONSTRUCTION MANAGER *Only requested for Punch List to be closed at Yard*
Nome Cognome *Name Surname*	**Firma** *Signature*			
Massimiliano Berghenti		N.A.	N.A.	N.A.

QUESTO DOCUMENTO NON SOLLEVA IL FORNITORE DALLA RESPONSABILITA' DI EVENTUALI DIFETTI E/O MALFUNZIONAMENTI RILEVATI DURANTE L'USO / *The present RELEASE NOTE does not relieve the Supplier of the responsibility of any possible defects and/or malfunctioning arising during the utilisation.*

ROSETTI MARINO	RELEASE NOTE	Nr. RN-0798-IND-02	Sheet 2 of 2
		Date 17/10/2024	Rev. 0

PROGETTO *Project*	CLIENTE *Client*	COMMESSA *Job*
HOLLANDSE KUST NOORD WIND PARK	CROSSWIND	*123A90*

FORNITORE *Vendor*		NUMERO D' ORDINE *Purchase Order No.*	
	INDRA SRL		*124000798*

☐ NEGATIVO / *NEGATIVE*	☒ PARZIALE / *PARTIAL*	☒ Project Quality Manager	☒ Project Eng-/Procurement Coord
☐ PUNTI PENDENTI / *PUNCH-LIST*	☐ ULTIMA / *FINAL*	☐ Warehouse	☐ Supplier

NOTE / *NOTES*

Note:
None

L' INCARICATO /*Person in charge* ROSETTI MARINO *Supply Management dept.*		IL RAPPR. DEL CLIENTE / *Client Representative*	IL FORNITORE /*Vendor*	CONSTRUCTION MANAGER *Only requested for Punch List to be closed at Yard*
Nome Cognome *Name Surname*	**Firma** *Signature*			
Massimiliano Berghenti		N.A.	N.A.	N.A.

QUESTO DOCUMENTO NON SOLLEVA IL FORNITORE DALLA RESPONSABILITA' DI EVENTUALI DIFETTI E/O MALFUNZIONAMENTI RILEVATI DURANTE L'USO / *The present RELEASE NOTE does not relieve the Supplier of the responsibility of any possible defects and/or malfunctioning arising during the utilisation.*

ROSETTI MARINO	RELEASE NOTE	Nr. RN-0798-IND-03	Sheet 1 of 1
		Date 24/10/2024	Rev. 0

PROGETTO *Project*	CLIENTE *Client*	COMMESSA *Job*
HOLLANDSE KUST NOORD WIND PARK	CROSSWIND	*123A90*

FORNITORE *Vendor*	NUMERO D' ORDINE *Purchase Order No.*
INDRA SRL	*124000798*

Release Note	☐ FOR PAYMENT	☒ FOR SHIPMENT

RELEASE NOTE FOR PAYMENT

PO Art.		

RELEASE NOTE FOR SHIPMENT

POS. Item	Q.TA' Quantity	DESCRIZIONE Description	Nr. TAG TAG No.	TIPO DI ISPEZIONE / Kind of Inspection	ESITO / Result
160	6	Double Block & Bleed Valve 300LB FLG RF ø1.1/2" DA03C01RFH FB-LO	n/a	n/a	POSITIVE
260	7	Block & Bleed Valve 150LB FLG RF ø4" BA01C01RFHS FB-LO	n/a	n/a	POSITIVE
410 (323)	1	Double Block & Bleed Valve 300LB FLG RF ø1.1/2" DA03C01RFH	n/a	n/a	POSITIVE

Warehouse open Monday to Friday From 08.00 to12.00 and from 13.00 to 17.00.
Contact Mr Rota +39 3451608099

DOCUMENTI APPLICABILI / *APPLICABLE DOCUMENTS*

POSIZIONE *Items*	TIPO DI DOCUMENTO *Type of Document*	NUMERO DI DOCUMENTO *Document Number*	Rev.	COD. DI APPROV. *Approv. Code*
n/a	P.O.	124000798	2	N/A
n/a	PRE-BOLLA	2024 - IT 004022	0	N/A

PUNCH LIST: ☐ SI / *YES* VEDI PUNCH LIST ALLEGATA N° / *REFER TO ATTACHED PUNCH LIST N°*
☒ NO/ *NO*

CONTROLLO VALIDITA' FIDEJUSSIONE / *PERFORMANCE or WARRANTY BOND expiration date check*
Estensione Fidejussione Richiesta *(Performance or Warranty Bond Extension of Validity required)*
☐ SI / *YES* ☒ NO/ *NO*
Acceptance Method: *Performance or Warranty Bond valid if actually delivery date it's not greater than two weeks from contractual delivery date.*

RELEASE NOTE

RISULTATO / *RESULT*	FORNITURA / *SUPPLY*	DISTRIBUZIONE A: / *DISTRIBUTION TO:*	
☒ POSITIVO / *POSITIVE*	☐ COMPLETA / *COMPLETE*	☒ Project Manager	☒ Administration
☐ NEGATIVO / *NEGATIVE*	☒ PARZIALE / *PARTIAL*	☒ Project Quality Manager	☒ Project Eng-/Procurement Coord
☐ PUNTI PENDENTI / *PUNCH-LIST*	☐ ULTIMA / *FINAL*	☐ Warehouse	☐ Supplier

NOTE / *NOTES*

Note:
None

L' INCARICATO /*Person in charge* ROSETTI MARINO *Supply Management dept.*		IL RAPPR. DEL CLIENTE / *Client Representative*	IL FORNITORE /*Vendor*	CONSTRUCTION MANAGER *Only requested for Punch List to be closed at Yard*
Nome Cognome *Name Surname*	**Firma** *Signature*			
Massimiliano Berghenti		N.A.	N.A.	N.A.

QUESTO DOCUMENTO NON SOLLEVA IL FORNITORE DALLA RESPONSABILITA' DI EVENTUALI DIFETTI E/O MALFUNZIONAMENTI RILEVATI DURANTE L'USO / *The present RELEASE NOTE does not relieve the Supplier of the responsibility of any possible defects and/or malfunctioning arising during the utilisation.*

ROSETTI MARINO	RELEASE NOTE	Nr. RN-0798-IND-04	Sheet 1 of 2
		Date 31/10/2024	Rev. 0

PROGETTO *Project*	CLIENTE *Client*	COMMESSA *Job*
HOLLANDSE KUST NOORD WIND PARK	CROSSWIND	*123A90*

FORNITORE *Vendor*		NUMERO D' ORDINE *Purchase Order No.*
	INDRA SRL	*124000798*

Release Note	☐ FOR PAYMENT	☒ FOR SHIPMENT

RELEASE NOTE FOR PAYMENT

PO Art.		

RELEASE NOTE FOR SHIPMENT

POS. Item	Q.TA' Quantity	DESCRIZIONE Description	Nr. TAG TAG No.	TIPO DI ISPEZIONE / Kind of Inspection	ESITO / Result
60	3	Ball Valve Split Body FB 150LB FLG RF ø3/4" BS01F01RF Stem Extension 100mm	n/a	n/a	POSITIVE
70	2	Ball Valve Split Body FB 150LB FLG RF ø1" BS01F01RF Stem Extension 100mm	n/a	n/a	POSITIVE
80	2	Ball Valve Split Body FB 150LB FLG RF ø2" BA01F01RF Stem Extension 100mm	n/a	n/a	POSITIVE
90	1	Ball Valve Split Body FB 150LB FLG RF ø3/4" BS01B01RF	n/a	n/a	POSITIVE
100	2	Ball Valve Split Body FB 150LB FLG RF ø1" BS01B01RF 1 pc LC	n/a	n/a	POSITIVE
110	1	Ball Valve Split Body FB 150LB FLG RF ø1" BS01B01RF Stem Extension 100mm	n/a	n/a	POSITIVE
120	1	Ball Valve Split Body FB 150LB FLG RF ø1.1/2" BS01B01RF Stem Extension 100mm - LO	n/a	n/a	POSITIVE
200	3	Block & Bleed Valve 150LB FLG RF ø1" BS01B01RFS 1 pc LC, 2 pcs LO	n/a	n/a	POSITIVE
210	1	Block & Bleed Valve 150LB FLG RF ø1.1/2" BS01B01RFS FB-LO	n/a	n/a	POSITIVE
230	2	Block & Bleed Valve 150LB FLG RF ø1.1/2" BS01F01RFS Stem Extension 100mm	n/a	n/a	POSITIVE
270	1	Block & Bleed Valve 150LB FLG RF ø6" BA01C01RFHS FB-LO	n/a	n/a	POSITIVE
390 (321)	1	Ball Valve Split Body RB 150LB FLG RF ø3" BC01B01RF Stem Extension 100mm	n/a	n/a	POSITIVE
430 (324)	3	Block & Bleed Valve 150LB FLG RF ø1" BS01F01RFS Stem Extension 100mm	n/a	n/a	POSITIVE

Warehouse open Monday to Friday from 08.00 to12.00 and from 13.00 to 17.00.
Contact Mr Rota +39 3451608099

DOCUMENTI APPLICABILI / *APPLICABLE DOCUMENTS*

POSIZIONE *Items*	TIPO DI DOCUMENTO *Type of Document*	NUMERO DI DOCUMENTO *Document Number*	Rev.	COD. DI APPROV. *Approv. Code*
n/a	P.O.	124000798	2	N/A
n/a	PRE-BOLLA	2024 - IT 004135	0	N/A

PUNCH LIST: ☐ SI / *YES* VEDI PUNCH LIST ALLEGATA N° / *REFER TO ATTACHED PUNCH LIST N°*
☒ NO/ *NO*

L' INCARICATO /*Person in charge* ROSETTI MARINO *Supply Management dept.*		IL RAPPR. DEL CLIENTE / *Client Representative*	IL FORNITORE /*Vendor*	CONSTRUCTION MANAGER *Only requested for Punch List to be closed at Yard*
Nome Cognome *Name Surname*	**Firma** *Signature*			
Massimiliano Berghenti		N.A.	N.A.	N.A.

QUESTO DOCUMENTO NON SOLLEVA IL FORNITORE DALLA RESPONSABILITA' DI EVENTUALI DIFETTI E/O MALFUNZIONAMENTI RILEVATI DURANTE L'USO / *The present RELEASE NOTE does not relieve the Supplier of the responsibility of any possible defects and/or malfunctioning arising during the utilisation.*

ROSETTI MARINO	RELEASE NOTE	Nr. RN-0798-IND-04	Sheet 2 of 2
		Date 31/10/2024	Rev. 0

PROGETTO *Project*	CLIENTE *Client*	COMMESSA *Job*
HOLLANDSE KUST NOORD WIND PARK	CROSSWIND	*123A90*

FORNITORE *Vendor*		NUMERO D' ORDINE *Purchase Order No.*	
	INDRA SRL		*124000798*

CONTROLLO VALIDITA' FIDEJUSSIONE / *PERFORMANCE or WARRANTY BOND expiration date check*
Estensione Fidejussione Richiesta *(Performance or Warranty Bond Extension of Validity required)*
☐ SI / *YES* ☒ NO/ *NO*
Acceptance Method: *Performance or Warranty Bond valid if actually delivery date it's not greater than two weeks from contractual delivery date.*

RELEASE NOTE

RISULTATO / *RESULT*	**FORNITURA / *SUPPLY***	**DISTRIBUZIONE A: / *DISTRIBUTION TO:***	
☒POSITIVO / *POSITIVE*	☐COMPLETA / *COMPLETE*	☒Project Manager	☒Administration
☐ NEGATIVO / *NEGATIVE*	☒ PARZIALE / *PARTIAL*	☒ Project Quality Manager	☒ Project Eng-/Procurement Coord
☐PUNTI PENDENTI / *PUNCH-LIST*	☐ ULTIMA / *FINAL*	☒ Warehouse	☐ Supplier

NOTE / *NOTES*

Note:
None

L' INCARICATO /*Person in charge* ROSETTI MARINO *Supply Management dept.*		IL RAPPR. DEL CLIENTE / *Client Representative*	IL FORNITORE /*Vendor*	CONSTRUCTION MANAGER *Only requested for Punch List to be closed at Yard*
Nome Cognome *Name Surname*	**Firma** *Signature*			
Massimiliano Berghenti		N.A.	N.A.	N.A.

QUESTO DOCUMENTO NON SOLLEVA IL FORNITORE DALLA RESPONSABILITA' DI EVENTUALI DIFETTI E/O MALFUNZIONAMENTI RILEVATI DURANTE L'USO / *The present RELEASE NOTE does not relieve the Supplier of the responsibility of any possible defects and/or malfunctioning arising during the utilisation.*

ROSETTI MARINO	RELEASE NOTE	Nr. RN-0798-IND-05	Sheet 1 of 1
		Date 18/11/2024	Rev. 0

PROGETTO *Project*	CLIENTE *Client*	COMMESSA *Job*
HOLLANDSE KUST NOORD WIND PARK	CROSSWIND	*123A90*

FORNITORE *Vendor*	NUMERO D' ORDINE *Purchase Order No.*
INDRA SRL	*124000798*

Release Note	☐ FOR PAYMENT	☒ FOR SHIPMENT

RELEASE NOTE FOR PAYMENT

PO Art.	

RELEASE NOTE FOR SHIPMENT

POS. Item	Q.TA' Quantity	DESCRIZIONE Description	Nr. TAG TAG No.	TIPO DI ISPEZIONE / Kind of Inspection	ESITO / Result
180	6	Double Block & Bleed Valve 300LB FLG RF ø4" DA03C01RFH - FB-LO	n/a	n/a	POSITIVE
190	6	Double Block & Bleed Valve 300LB FLG RF ø6" DA03C01RFH - FB-LO	n/a	n/a	POSITIVE
330	1 set	Spare parts for pre- commissioning, commissioning, start-up	n/a	n/a	POSITIVE
340	1 set	Spare parts for 2 Years Operation	n/a	n/a	POSITIVE

Warehouse open Monday to Friday from 08.00 to12.00 and from 13.00 to 17.00.
Contact Mr Rota +39 3451608099

DOCUMENTI APPLICABILI / *APPLICABLE DOCUMENTS*

POSIZIONE *Items*	TIPO DI DOCUMENTO *Type of Document*	NUMERO DI DOCUMENTO *Document Number*	Rev.	COD. DI APPROV. *Approv. Code*
n/a	P.O.	124000798	2	N/A
n/a	PRE-BOLLA	2024 - IT 004298	0	N/A

PUNCH LIST: ☐ SI / *YES* VEDI PUNCH LIST ALLEGATA N° / *REFER TO ATTACHED PUNCH LIST N°*
☒ NO/ *NO*

CONTROLLO VALIDITA' FIDEJUSSIONE / *PERFORMANCE or WARRANTY BOND expiration date check*
Estensione Fidejussione Richiesta *(Performance or Warranty Bond Extension of Validity required)*
☐ SI / *YES* ☒ NO/ *NO*
Acceptance Method: *Performance or Warranty Bond valid if actually delivery date it's not greater than two weeks from contractual delivery date.*

RELEASE NOTE

RISULTATO / *RESULT*	FORNITURA / *SUPPLY*	DISTRIBUZIONE A: / *DISTRIBUTION TO:*	
☒ POSITIVO / *POSITIVE*	☐ COMPLETA / *COMPLETE*	☒ Project Manager	☒ Administration
☐ NEGATIVO / *NEGATIVE*	☐ PARZIALE / *PARTIAL*	☒ Project Quality Manager	☒ Project Eng-/Procurement Coord
☐ PUNTI PENDENTI / *PUNCH-LIST*	☒ ULTIMA / *FINAL*	☒ Warehouse	☒ Supplier

NOTE / *NOTES*

Note:
None

L' INCARICATO /*Person in charge* ROSETTI MARINO *Supply Management dept.*		IL RAPPR. DEL CLIENTE / *Client Representative*	IL FORNITORE /*Vendor*	CONSTRUCTION MANAGER *Only requested for Punch List to be closed at Yard*
Nome Cognome *Name Surname*	**Firma** *Signature*			
Massimiliano Berghenti		N.A.	N.A.	N.A.

QUESTO DOCUMENTO NON SOLLEVA IL FORNITORE DALLA RESPONSABILITA' DI EVENTUALI DIFETTI E/O MALFUNZIONAMENTI RILEVATI DURANTE L'USO / *The present RELEASE NOTE does not relieve the Supplier of the responsibility of any possible defects and/or malfunctioning arising during the utilisation.*

PART 2 – CERTIFICATION DOSSIER

CHAPTER 2

SECTION 17

PRESSURE & FUNCTION TEST REPORTS

SEE CHAPTER 3 SECTION 4

PART 2 – CERTIFICATION DOSSIER

CHAPTER 3

SECTION 4

FAT REPORTS

ROSETTI MARINO ITEM 10

COD.VBC0NN06943Q00

TAG: BLPH-MV-111

INDRA ITEM 10

COD. 00.VSF.2684/V

indra VALVES - ITALY	**RAPPORTO DI COLLAUDO** ***TEST REPORT*** ***- INDRA VALVES -***	**MD-02-05-IT-UK / P** **Rev. 24** **Data: 24-Mar-23**

Nr. Certificato / *Certificate No.*	**10070/AC**	**Data** / *Date :*	**02-Oct-24** *Rev. 0*
Cliente / *Customer :*	**ROSETTI MARINO SPA**		
Ordine Nr. / *Order Nr.*	**1724000798 REV.2**	**Data** / *Date :*	**26-Jun-24**
Ns. commessa Nr. / *Our job Nr.*	**24 01216**	**Data** / *Date :*	**03-Jul-24**
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*	

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST (according to API 598 & API 6D)	*FLUIDO (Fluid)*	*DURATA (Duration)*	*PRESSIONE (Pressure)*	*MAX. PERDITA AMMISSIBILE (ISO 5208) (Max allowable leakage)*	*MANOMETRO N° (Gauge ID)*	*DATA SCADENZA (Due Date)*
Shell test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*
High pressure closure test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*
Low pressure closure test (only for ball valves)	*Aria / Air*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*24F06-1334-01--13*	*03-Dec-24*
Back seat test (only for needle valves)	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY)		VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi)		High pressure closure test bar (psi)		Low pressure closure test bar (psi)		Back seat test bar (psi)		Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
					PRODUCED	TESTED						Pressure	Result	Pressure	Result	Pressure	Result	Pressure	Result				
10	*10*	*00.VSF.2684/V*	*SB-598-20-E150RF3-E (105942)*	*VBC0NN06943Q00*	*1*	*1*	*Ball*	*¾"*	*RF*	*150*	*AISI 316/316L NACE MR01.75*	29 (421)	N.L	21 (305)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
20	*20*	*00.VSF.2687/V*	*SB-598-25-F150RF3-F (105944, 105949)*	*VBC0NN06950100*	*15*	*2*	*Ball*	*1"*	*RF*	*150*	*AISI 316/316L NACE MR01.75*	29 (421)	N.L	21 (305)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
40	*40*	*00.VSF.2693/V*	*SB-598-HR-20-E150RF3-E (105960)*	*VBC0NN24343Q00*	*2*	*1*	*Ball*	*¾"*	*RF*	*150*	*AISI 316/316L NACE MR01.75*	29 (421)	N.L	21 (305)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
150	*150*	*00.VSF.2680/V*	*DBB-898-HR-25-F300RF3-F-D (105990, 105991, 106004)*	*VLBBNN07190100*	*28*	*3*	*Ball+Needle*	*1"*	*RF*	*300*	*AISI 316/316L NACE MR01.75*	75 (1088)	N.L	55 (798)	N.L	6 (87)	N.L	55 (798)	N.L	YES	A	24F06-1334-01--13	03-Dec-24
322	*400*	*00.VSF.2680/V*	*DBB-898-HR-25-F300RF3-F-D (106899)*	*VLBBNN07190100*	*1*	*1*	*Ball+Needle*	*1"*	*RF*	*300*	*AISI 316/316L NACE MR01.75*	75 (1088)	N.L	55 (798)	N.L	6 (87)	N.L	55 (798)	N.L	YES	A	24F06-1334-01--13	03-Dec-24

☐ REVIEWED ☑ WITNESSED

DATE: - 2 OTT 2024

NAME: MASSIMILIANO BERGHENTI ROSETTI MARINO

ON BEHALF OF :

SIGNATURE:

CROSSWIND 2/10/24

Note / Remarks:

- CAVITY SEAT RELIEF TEST PERFORMED ON 100% RESULT:OK
- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno

(Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)

- N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE

Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector	*Si / Yes* ☑ *No / No* ☐
Nominativo / Name	*Timbro e Firma / Stamp and Signature*
.....	
Data / Date	
.....	

PROCEDURA DI COLLAUDO
(Test procedure)

PT VSP-VSF-ITA/ENG
(24-01216)

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** **TESTING OPERATOR**	DATA / DATE: 02-Oct-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** **PRODUCTION MANAGER**	DATA / DATE: 02-Oct-24

indra VALVES - ITALY
20013 Magenta (MI) Italy - Via Novara, 10/B-C
Tel. +39 02 97298663 r.a. - Fax +39 02 97291855
E-mail: indra@indra.it - http://www.indra.it

WATER QUALITY ANALYSIS UP TO 27-Aug-2024
EN 10204-2.1 ed. 2004

Parametri / Parameters	*Valore rilevato / Detected value*	*Valori di legge / Legal limit*
Ammonio / Ammonium (NH_4^+) [mg/l]	*< 0,1*	*0,5*
Arsenico / Arsenic (As_{tot}) [µg/l]	*< 1*	*10*
Bicarbonato / Bicarbonate (HCO_3^-) [mg/l]	*317*	*Non previsto / Not expected*
Calcio / Calcium (Ca^{2+}) [mg/l]	*87*	*Non previsto / Not expected*
Cloruri / Chlorides (Cl^-) [mg/l]	*12*	*250*
Composti organoalogenati / Organohalogen compounds [µg/l]	*<1*	*30*
Conducibilità / Conductivity (µS/cm)	*501*	*2500*
Cromo / Chromium [µg/l]	*<5*	*50*
Durezza Totale / Total hardness [°f]	*30*	*Non previsto / Not expected*
Fluoruri / Fluorides (F^-) [mg/l]	*<0,2*	*1,5*
Magnesio / Magnesium (Mg^{2+}) [mg/l]	*20*	*Non previsto / Not expected*
Manganese / Manganese (Mn_{tot}) [µg/l]	*< 5*	*50*
Microinquinanti tot / Micropollutants tot [µg/l]	*<0,01*	*0,5*
Nitrati / Nitrates (NO_3^-) [mg/l]	*31*	*50*
Nitriti / Nitrites (NO_2^-) [mg/l]	*<0,02*	*0,5*
Potassio / Potassium (K^+) [mg/l]	*1*	*Non previsto / Not expected*
Residuo secco a 180°C / Dry residue at 180°C [mg/l]	*361*	*1500*
Sodio / Sodium (NA^+) [mg/l]	*5*	*200*
Solfati / Sulfates (SO_4^{2-}) [mg/l]	*31*	*250*
pH / pH	*7*	*6,5 - 9,5*

* I dati corrispondono ai valori pubblicati dal laboratorio Amiacque dell'acquedotto del comune di Magenta (MI) - Italia.

* All the data correspond to the values published by the laboratory Amiacque of the Magenta's municipality aqueduct (MI) - Italy.

x CROSSWIND

2/10/24 R

☑ REVIEWED ☐ WITNESSED

DATE: - 2 OTT 2024

NAME: MASSIMILIANO BERGHENTI
ON BEHALF OF :
SIGNATURE:
ROSETTI MARINO

indra VALVES - ITALY

RAPPORTO DI COLLAUDO
TEST REPORT
- INDRA VALVES -

MD-02-05-IT-UK / P
Rev. 24
Data: 24-Mar-23

Nr. Certificato / *Certificate No.*	10068/AC	**Data** / *Date :*	30-Sep-24	*Rev. 0*
Cliente / *Customer :*	ROSETTI MARINO SPA			
Ordine Nr. / *Order Nr.*	1724000798 REV.2	**Data** / *Date :*	26-Jun-24	
Ns. commessa Nr. / *Our job Nr.*	24 01216	**Data** / *Date :*	03-Jul-24	
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*		

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST (according to API 598 & API 6D)	*FLUIDO (Fluid)*	*DURATA (Duration)*	*PRESSIONE (Pressure)*	*MAX. PERDITA AMMISSIBILE (ISO 5208) (Max allowable leakage)*	*MANOMETRO N° (Gauge ID)*	*DATA SCADENZA (Due Date)*
Shell test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*
High pressure closure test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*
Low pressure closure test (only for ball valves)	*Aria / Air*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*24F06-1334-01--13*	*03-Dec-24*
Back seat test (only for needle valves)	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY)		VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi)		High pressure closure test bar (psi)		Low pressure closure test bar (psi)		Back seat test bar (psi)		Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
					PRODUCED	TESTED						Pressure	Result	Pressure	Result	Pressure	Result	Pressure	Result				
10	*10*	*00.VSF.2684/V*	*SB-598-20-E150RF3-E (105942)*	*VBC0NN06943Q00*	*1*	*100%*	*Ball*	*¾"*	*RF*	*150*	*AISI 316/316L NACE MR01.75*	29 (421)	N.L	21 (305)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
20	*20*	*00.VSF.2687/V*	*SB-598-25-F150RF3-F (From 105943 To 105957)*	*VBC0NN06950100*	*15*	*100%*	*Ball*	*1"*	*RF*	*150*	*AISI 316/316L NACE MR01.75*	29 (421)	N.L	21 (305)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
40	*40*	*00.VSF.2693/V*	*SB-598-HR-20-E150RF3-E (From 105960 To 105961)*	*VBC0NN24343Q00*	*2*	*100%*	*Ball*	*¾"*	*RF*	*150*	*AISI 316/316L NACE MR01.75*	29 (421)	N.L	21 (305)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
150	*150*	*00.VSF.2680/V*	*DBB-898-HR-25-F300RF3-F-D (From 105982 To 106009)*	*VLBBNN07190100*	*28*	*100%*	*Ball+Needle*	*1"*	*RF*	*300*	*AISI 316/316L NACE MR01.75*	75 (1088)	N.L	55 (798)	N.L	6 (87)	N.L	55 (798)	N.L	YES	A	24F06-1334-01--13	03-Dec-24
322	*400*	*00.VSF.2680/V*	*DBB-898-HR-25-F300RF3-F-D (106899)*	*VLBBNN07190100*	*1*	*100%*	*Ball+Needle*	*1"*	*RF*	*300*	*AISI 316/316L NACE MR01.75*	75 (1088)	N.L	55 (798)	N.L	6 (87)	N.L	55 (798)	N.L	YES	A	24F06-1334-01--13	03-Dec-24

Note / Remarks:
- CAVITY SEAT RELIEF TEST PERFORMED ON 100% RESULT:OK
- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno
(Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)
- *N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE*
Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector — *Si / Yes* ☐ *No / No* ☑

Nominativo / Name .....

Data / Date .....

Timbro e Firma / Stamp and Signature

A CROSSWIND 16/10/24

PROCEDURA DI COLLAUDO
(Test procedure)
PT VSP-VSF-ITA/ENG
(24-01216)

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** TESTING OPERATOR	DATA / DATE:	30-Sep-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** PRODUCTION MANAGER	DATA / DATE:	30-Sep-24

indra VALVES - ITALY

RAPPORTO DI COLLAUDO COPPIA DI MANOVRA E RESISTENZA ELETTRICA
TORQUE AND ELECTRICAL RESISTANCE REPORT
- INDRA VALVES -

MD-02-14-IT-UK / P
Rev. 0
Data: 01-Jul-14

Nr. Certificato / *Certificate No.*	10068/AC-TET-A	**Data** / *Date :*	30-Sep-24	*Rev. 0*
Cliente / *Customer :*	ROSETTI MARINO SPA			
Ordine Nr. / *Order Nr.*	1724000798 REV.2	**Data** / *Date :*	26-Jun-24	
Ns. commessa Nr. / *Our job Nr.*	24 01216	**Data** / *Date :*	03-Jul-24	
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*		

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST according to API 598 , API 6D, BS EN 12266-1	*VALORE MASSIMO (Limit)*	*STRUMENTO DI MISURA (Gauge Instrument)*	*SCADENZA (Due Date)*
Torque test			
Electrical resistance test	*10 Ohm*	*Digital Multimeter DMM249 13290*	*31-May-25*

POS. (ITEM)	CODICE (CODE)	DESCRIZIONE (DESCRIPTION)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY) PRODUCED	QTA' (QTY) TESTED
10	*00.VSF.2684/V*	*SB-598-20-E150RF3-E*	*VBC0NN06943Q00*	*1*	*1*

n° SERIALE (Serial n°)	LATO (Side)	Torque test Nm Value	Torque test Nm Result	Electrical resistance Body-stem Ohm Value	Electrical resistance Body-stem Ohm Result	Electrical resistance Body-ball Ohm Value	Electrical resistance Body-ball Ohm Result
105942	*A*			0,4	OK	0,6	OK

n° SERIALE (Serial n°)	LATO (Side)	Torque test Nm Value	Torque test Nm Result	Electrical resistance Body-stem Ohm Value	Electrical resistance Body-stem Ohm Result	Electrical resistance Body-ball Ohm Value	Electrical resistance Body-ball Ohm Result

n° SERIALE (Serial n°)	LATO (Side)	Torque test Nm Value	Torque test Nm Result	Value	Result	Value	Result

Note / ***Remarks:***
- Test Antistatico eseguito su 1 pz. per posizione (Antistatic test executed on 1 pc. per item)

x CROSSINI ND 16/10/24 R

PROCEDURA DI COLLAUDO
(Test procedure)
PT/VSP-VSF-HP / ATP_00

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** TESTING OPERATOR	DATA / DATE:	30-Sep-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** PRODUCTION MANAGER	DATA / DATE: 30-Sep-24

ROSETTI MARINO ITEM 20

COD.VBC0NN06950100

TAG: BLPH-MV-210, BLPH-MV-242,

BLPH-MV-447, BLPH-MV-448, BLPH-MV-449, BLPH-MV-450, BLPH-MV-451, BLPH-MV-452, BLPH-MV-453, BLPH-MV-454, BLPH-MV-455, BLPH-MV-456, BLPH-MV-457, BLPH-MV-458 BLPH-MV-459

INDRA ITEM 20

COD. 00.VSF.2687/V

indra VALVES - ITALY	**RAPPORTO DI COLLAUDO** ***TEST REPORT*** ***- INDRA VALVES -***	**MD-02-05-IT-UK / P** **Rev. 24** **Data: 24-Mar-23**

Nr. Certificato / *Certificate No.*	**10070/AC**	**Data** / *Date :*	**02-Oct-24** *Rev. 0*
Cliente / *Customer :*	**ROSETTI MARINO SPA**		
Ordine Nr. / *Order Nr.*	**1724000798 REV.2**	**Data** / *Date :*	**26-Jun-24**
Ns. commessa Nr. / *Our job Nr.*	**24 01216**	**Data** / *Date :*	**03-Jul-24**
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*	

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST (according to API 598 & API 6D)	*FLUIDO (Fluid)*	*DURATA (Duration)*	*PRESSIONE (Pressure)*	*MAX. PERDITA AMMISSIBILE (ISO 5208) (Max allowable leakage)*	*MANOMETRO N° (Gauge ID)*	*DATA SCADENZA (Due Date)*
Shell test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*
High pressure closure test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*
Low pressure closure test (only for ball valves)	*Aria / Air*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*24F06-1334-01--13*	*03-Dec-24*
Back seat test (only for needle valves)	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY)		VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi)		High pressure closure test bar (psi)		Low pressure closure test bar (psi)		Back seat test bar (psi)		Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
					PRODUCED	TESTED						Pressure	Result	Pressure	Result	Pressure	Result	Pressure	Result				
10	*10*	*00.VSF.2684/V*	*SB-598-20-E150RF3-E (105942)*	*VBC0NN06943Q00*	*1*	*1*	*Ball*	*¾"*	*RF*	*150*	*AISI 316/316L NACE MR01.75*	29 (421)	N.L	21 (305)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
20	*20*	*00.VSF.2687/V*	*SB-598-25-F150RF3-F (105944, 105949)*	*VBC0NN06950100*	*15*	*2*	*Ball*	*1"*	*RF*	*150*	*AISI 316/316L NACE MR01.75*	29 (421)	N.L	21 (305)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
40	*40*	*00.VSF.2693/V*	*SB-598-HR-20-E150RF3-E (105960)*	*VBC0NN24343Q00*	*2*	*1*	*Ball*	*¾"*	*RF*	*150*	*AISI 316/316L NACE MR01.75*	29 (421)	N.L	21 (305)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
150	*150*	*00.VSF.2680/V*	*DBB-898-HR-25-F300RF3-F-D (105990, 105991, 106004)*	*VLBBNN07190100*	*28*	*3*	*Ball+Needle*	*1"*	*RF*	*300*	*AISI 316/316L NACE MR01.75*	75 (1088)	N.L	55 (798)	N.L	6 (87)	N.L	55 (798)	N.L	YES	A	24F06-1334-01--13	03-Dec-24
322	*400*	*00.VSF.2680/V*	*DBB-898-HR-25-F300RF3-F-D (106899)*	*VLBBNN07190100*	*1*	*1*	*Ball+Needle*	*1"*	*RF*	*300*	*AISI 316/316L NACE MR01.75*	75 (1088)	N.L	55 (798)	N.L	6 (87)	N.L	55 (798)	N.L	YES	A	24F06-1334-01--13	03-Dec-24

☐ REVIEWED ☑ WITNESSED

DATE: - 2 OTT 2024

NAME: MASSIMILIANO BERGHENTI ROSETTI MARINO

ON BEHALF OF : CROSSWIND

SIGNATURE: 2/10/24

Note / Remarks:

- CAVITY SEAT RELIEF TEST PERFORMED ON 100% RESULT:OK
- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno

(Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)

- N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE

Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector	*Si / Yes* ☑ *No / No* ☐
Nominativo / Name	*Timbro e Firma / Stamp and Signature*
.....	
Data / Date	
.....	

PROCEDURA DI COLLAUDO
(Test procedure)

PT VSP-VSF-ITA/ENG
(24-01216)

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** **TESTING OPERATOR**	DATA / DATE: 02-Oct-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** **PRODUCTION MANAGER**	DATA / DATE: 02-Oct-24

indra VALVES - ITALY
20013 Magenta (MI) Italy - Via Novara, 10/B-C
Tel. +39 02 97298663 r.a. - Fax +39 02 97291855
E-mail: indra@indra.it - http://www.indra.it

WATER QUALITY ANALYSIS UP TO 27-Aug-2024
EN 10204-2.1 ed. 2004

Parametri / Parameters	*Valore rilevato / Detected value*	*Valori di legge / Legal limit*
Ammonio / Ammonium (NH_4^+) [mg/l]	*< 0,1*	*0,5*
Arsenico / Arsenic (As_{tot}) [µg/l]	*< 1*	*10*
Bicarbonato / Bicarbonate (HCO_3^-) [mg/l]	*317*	*Non previsto / Not expected*
Calcio / Calcium (Ca^{2+}) [mg/l]	*87*	*Non previsto / Not expected*
Cloruri / Chlorides (Cl^-) [mg/l]	*12*	*250*
Composti organoalogenati / Organohalogen compounds [µg/l]	*<1*	*30*
Conducibilità / Conductivity (µS/cm)	*501*	*2500*
Cromo / Chromium [µg/l]	*<5*	*50*
Durezza Totale / Total hardness [°f]	*30*	*Non previsto / Not expected*
Fluoruri / Fluorides (F^-) [mg/l]	*<0,2*	*1,5*
Magnesio / Magnesium (Mg^{2+}) [mg/l]	*20*	*Non previsto / Not expected*
Manganese / Manganese (Mn_{tot}) [µg/l]	*< 5*	*50*
Microinquinanti tot / Micropollutants tot [µg/l]	*<0,01*	*0,5*
Nitrati / Nitrates (NO_3^-) [mg/l]	*31*	*50*
Nitriti / Nitrites (NO_2^-) [mg/l]	*<0,02*	*0,5*
Potassio / Potassium (K^+) [mg/l]	*1*	*Non previsto / Not expected*
Residuo secco a 180°C / Dry residue at 180°C [mg/l]	*361*	*1500*
Sodio / Sodium (NA^+) [mg/l]	*5*	*200*
Solfati / Sulfates (SO_4^{2-}) [mg/l]	*31*	*250*
pH / pH	*7*	*6,5 - 9,5*

* I dati corrispondono ai valori pubblicati dal laboratorio Amiacque dell'acquedotto del comune di Magenta (MI) - Italia.

* All the data correspond to the values published by the laboratory Amiacque of the Magenta's municipality aqueduct (MI) - Italy.

x CROSSWIND

2/10/24 R

☑ REVIEWED ☐ WITNESSED

DATE: - 2 OTT 2024

NAME: MASSIMILIANO BERGHENTI
ON BEHALF OF :
SIGNATURE:
ROSETTI MARINO

indra VALVES - ITALY

RAPPORTO DI COLLAUDO
TEST REPORT
- INDRA VALVES -

MD-02-05-IT-UK / P
Rev. 24
Data: 24-Mar-23

Nr. Certificato / *Certificate No.*	10068/AC	**Data** / *Date :*	30-Sep-24	*Rev. 0*
Cliente / *Customer :*	ROSETTI MARINO SPA			
Ordine Nr. / *Order Nr.*	1724000798 REV.2	**Data** / *Date :*	26-Jun-24	
Ns. commessa Nr. / *Our job Nr.*	24 01216	**Data** / *Date :*	03-Jul-24	
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*		

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST (according to API 598 & API 6D)	*FLUIDO (Fluid)*	*DURATA (Duration)*	*PRESSIONE (Pressure)*	*MAX. PERDITA AMMISSIBILE (ISO 5208) (Max allowable leakage)*	*MANOMETRO N° (Gauge ID)*	*DATA SCADENZA (Due Date)*
Shell test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*
High pressure closure test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*
Low pressure closure test (only for ball valves)	*Aria / Air*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*24F06-1334-01--13*	*03-Dec-24*
Back seat test (only for needle valves)	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY)		VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi)		High pressure closure test bar (psi)		Low pressure closure test bar (psi)		Back seat test bar (psi)		Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
					PRODUCED	TESTED						Pressure	Result	Pressure	Result	Pressure	Result	Pressure	Result				
10	*10*	*00.VSF.2684/V*	*SB-598-20-E150RF3-E (105942)*	*VBC0NN06943Q00*	*1*	*100%*	*Ball*	*¾"*	*RF*	*150*	*AISI 316/316L NACE MR01.75*	29 (421)	N.L	21 (305)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
20	*20*	*00.VSF.2687/V*	*SB-598-25-F150RF3-F (From 105943 To 105957)*	*VBC0NN06950100*	*15*	*100%*	*Ball*	*1"*	*RF*	*150*	*AISI 316/316L NACE MR01.75*	29 (421)	N.L	21 (305)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
40	*40*	*00.VSF.2693/V*	*SB-598-HR-20-E150RF3-E (From 105960 To 105961)*	*VBC0NN24343Q00*	*2*	*100%*	*Ball*	*¾"*	*RF*	*150*	*AISI 316/316L NACE MR01.75*	29 (421)	N.L	21 (305)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
150	*150*	*00.VSF.2680/V*	*DBB-898-HR-25-F300RF3-F-D (From 105982 To 106009)*	*VLBBNN07190100*	*28*	*100%*	*Ball+Needle*	*1"*	*RF*	*300*	*AISI 316/316L NACE MR01.75*	75 (1088)	N.L	55 (798)	N.L	6 (87)	N.L	55 (798)	N.L	YES	A	24F06-1334-01--13	03-Dec-24
322	*400*	*00.VSF.2680/V*	*DBB-898-HR-25-F300RF3-F-D (106899)*	*VLBBNN07190100*	*1*	*100%*	*Ball+Needle*	*1"*	*RF*	*300*	*AISI 316/316L NACE MR01.75*	75 (1088)	N.L	55 (798)	N.L	6 (87)	N.L	55 (798)	N.L	YES	A	24F06-1334-01--13	03-Dec-24

Note / Remarks:
- CAVITY SEAT RELIEF TEST PERFORMED ON 100% RESULT:OK
- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno
(Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)
- *N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE*
Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector — *Si / Yes* ☐ *No / No* ☑
Nominativo / Name .....
Data / Date .....
Timbro e Firma / Stamp and Signature
A CROSSWIND 16/10/24

PROCEDURA DI COLLAUDO
(Test procedure)
PT VSP-VSF-ITA/ENG
(24-01216)

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** TESTING OPERATOR		DATA / DATE:	30-Sep-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** PRODUCTION MANAGER	DATA / DATE: 30-Sep-24

indra VALVES - ITALY

RAPPORTO DI COLLAUDO COPPIA DI MANOVRA E RESISTENZA ELETTRICA
TORQUE AND ELECTRICAL RESISTANCE REPORT
- INDRA VALVES -

MD-02-14-IT-UK / P
Rev. 0
Data: 01-Jul-14

Nr. Certificato / *Certificate No.*	10068/AC-TET-B	**Data** / *Date :*	30-Sep-24	*Rev. 0*
Cliente / *Customer :*	ROSETTI MARINO SPA			
Ordine Nr. / *Order Nr.*	1724000798 REV.2	**Data** / *Date :*	26-Jun-24	
Ns. commessa Nr. / *Our job Nr.*	24 01216	**Data** / *Date :*	03-Jul-24	
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*		

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST according to API 598 , API 6D, BS EN 12266-1	*VALORE MASSIMO (Limit)*	*STRUMENTO DI MISURA (Gauge Instrument)*	*SCADENZA (Due Date)*
Torque test			
Electrical resistance test	*10 Ohm*	*Digital Multimeter DMM249 13290*	*31-May-25*

POS. (ITEM)	CODICE (CODE)	DESCRIZIONE (DESCRIPTION)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY) PRODUCED	TESTED
20	*00.VSF.2687/V*	*SB-598-25-F150RF3-F*	*VBC0NN06950100*	*15*	*1*

n° SERIALE (Serial n°)	LATO (Side)	Torque test Nm Value	Torque test Nm Result	Electrical resistance Body-stem Ohm Value	Electrical resistance Body-stem Ohm Result	Electrical resistance Body-ball Ohm Value	Electrical resistance Body-ball Ohm Result
105943	*A*			0,5	OK	0,7	OK

n° SERIALE (Serial n°)	LATO (Side)	Torque test Nm Value	Torque test Nm Result	Electrical resistance Body-stem Ohm Value	Electrical resistance Body-stem Ohm Result	Electrical resistance Body-ball Ohm Value	Electrical resistance Body-ball Ohm Result

n° SERIALE (Serial n°)	LATO (Side)	Torque test Nm Value	Torque test Nm Result	Value	Result	Value	Result

Note / ***Remarks:***
- Test Antistatico eseguito su 1 pz. per posizione (Antistatic test executed on 1 pc. per item)

x CROSSWIND 16/10/24 R

PROCEDURA DI COLLAUDO *(Test procedure)*
PT/VSP-VSF-HP / ATP_00

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** TESTING OPERATOR	DATA / DATE:	30-Sep-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** PRODUCTION MANAGER	DATA / DATE: 30-Sep-24

ROSETTI MARINO ITEM 30

COD. VBC0NN06961H00

TAG: BLPH-MV-149, BLPH-MV-270

INDRA ITEM 30

COD. 00.VSF.2690/V

indra VALVES - ITALY

RAPPORTO DI COLLAUDO "PED"
"PED" TEST REPORT
- INDRA VALVES -

MD-02-09-IT-UK
Rev. 8
Data: 24-Mar-23

Nr. Certificato / *Certificate No.*	10071/AC	**Data** / *Date :*	02-Oct-24	*Rev. 0*
Cliente / *Customer :*	ROSETTI MARINO SPA			
Ordine Nr. / *Order Nr.*	1724000798 REV.2	**Data** / *Date :*	26-Jun-24	
Ns. commessa Nr. / *Our job Nr.*	24 01216	**Data** / *Date :*	03-Jul-24	
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*		

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST (according to API 598, API 6D & 2014/68/UE PED)	FLUIDO (Fluid)	DURATA (Duration)	PRESSIONE (Pressure)	MAX. PERDITA AMMISSIBILE (ISO 5208) (Max allowable leakage)	MANOMETRO N° (Gauge ID)	DATA SCADENZA (Due Date)
Shell test	Acqua / Water	2 min.	vedi sotto / see below	nessuna perdita / no leakage	vedi sotto / see below	vedi sotto / see below
High pressure closure test	Acqua / Water	2 min.	vedi sotto / see below	vedi sotto / see below	vedi sotto / see below	vedi sotto / see below
Low pressure closure test (only for ball valves)	Aria / Air	2 min.	vedi sotto / see below	vedi sotto / see below	327268-79	15-Jan-25
Back seat test (only for needle valves)	Acqua / Water	2 min.	vedi sotto / see below	nessuna perdita / no leakage	vedi sotto / see below	vedi sotto / see below

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY)		VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi)		High pressure closure test bar (psi)		Low pressure closure test bar (psi)		Back seat test bar (psi)		Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
					PRODUCED	TESTED						Pressure	Result	Pressure	Result	Pressure	Result	Pressure	Result				
30	30	00.VSF.2690/V	SB-598-40-H150RF3-H (105959)	VBC0NN06961H00	2	1	Ball	1 ½"	RF	150	AISI 316/316L NACE MR01.75	29 (421)	N.L	21 (305)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01-13	03-Dec-24
140	140	00.VSF.2695/V	SB-598-HR-50-L150RF3-L (105981)	VBD0NN16460300	1	1	Ball	3"	RF	150	AISI 316/316L NACE MR01.75	29 (421)	N.L	21 (305)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01-13	03-Dec-24

☐ REVIEWED ☑ WITNESSED

DATE: - 2 OTT 2024

NAME: MASSIMILIANO SERGHENTI

ON BEHALF OF : ROSETTI MARINO

SIGNATURE:

CROSSWIND 2/10/24

INDRA SRL dichiara che le valvole fornite sono conformi ai requisiti stabiliti dalla API 598 - ASME B16.34 - 2014/68/UE PED Cert. Modulo H emesso da TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948

INDRA SRL declares that the supplied valves are in conformity with the requirements of API 598 - ASME B16.34 - 2014/68/UE PED Cert. Module H issued by TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948

Note / Remarks:

- CAVITY SEAT RELIEF TEST PERFORMED ON 100% RESULT:OK
- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno
  (Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)
- *N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE*

Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector — *Si / Yes* ☑ *No / No* ☐

Nominativo / Name ..... *Timbro e Firma / Stamp and Signature*

Data / Date .....

PROCEDURA DI COLLAUDO
(Test procedure)

PT VSP-VSF-ITA/ENG
(24-01216)

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** TESTING OPERATOR	DATA / DATE:	02-Oct-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** PRODUCTION MANAGER	DATA / DATE:	02-Oct-24

indra VALVES - ITALY
20013 Magenta (MI) Italy - Via Novara, 10/B-C
Tel. +39 02 97298663 r.a. - Fax +39 02 97291855
E-mail: indra@indra.it - http://www.indra.it

WATER QUALITY ANALYSIS UP TO 27-Aug-2024
EN 10204-2.1 ed. 2004

Parametri / Parameters	*Valore rilevato / Detected value*	*Valori di legge / Legal limit*
Ammonio / Ammonium (NH_4^+) [mg/l]	*< 0,1*	*0,5*
Arsenico / Arsenic (As_{tot}) [µg/l]	*< 1*	*10*
Bicarbonato / Bicarbonate (HCO_3^-) [mg/l]	*317*	*Non previsto / Not expected*
Calcio / Calcium (Ca^{2+}) [mg/l]	*87*	*Non previsto / Not expected*
Cloruri / Chlorides (Cl^-) [mg/l]	*12*	*250*
Composti organoalogenati / Organohalogen compounds [µg/l]	*<1*	*30*
Conducibilità / Conductivity (µS/cm)	*501*	*2500*
Cromo / Chromium [µg/l]	*<5*	*50*
Durezza Totale / Total hardness [°f]	*30*	*Non previsto / Not expected*
Fluoruri / Fluorides (F^-) [mg/l]	*<0,2*	*1,5*
Magnesio / Magnesium (Mg^{2+}) [mg/l]	*20*	*Non previsto / Not expected*
Manganese / Manganese (Mn_{tot}) [µg/l]	*< 5*	*50*
Microinquinanti tot / Micropollutants tot [µg/l]	*<0,01*	*0,5*
Nitrati / Nitrates (NO_3^-) [mg/l]	*31*	*50*
Nitriti / Nitrites (NO_2^-) [mg/l]	*<0,02*	*0,5*
Potassio / Potassium (K^+) [mg/l]	*1*	*Non previsto / Not expected*
Residuo secco a 180°C / Dry residue at 180°C [mg/l]	*361*	*1500*
Sodio / Sodium (NA^+) [mg/l]	*5*	*200*
Solfati / Sulfates (SO_4^{2-}) [mg/l]	*31*	*250*
pH / pH	*7*	*6,5 - 9,5*

* I dati corrispondono ai valori pubblicati dal laboratorio Amiacque dell'acquedotto del comune di Magenta (MI) - Italia.

* All the data correspond to the values published by the laboratory Amiacque of the Magenta's municipality aqueduct (MI) - Italy.

x CROSSWIND

2/10/24 R

☑ REVIEWED ☐ WITNESSED

DATE: - 2 OTT 2024

NAME: MASSIMILIANO BERGHENTI
ON BEHALF OF :
SIGNATURE:
ROSETTI MARINO

indra VALVES - ITALY

RAPPORTO DI COLLAUDO COPPIA DI MANOVRA E RESISTENZA ELETTRICA
TORQUE AND ELECTRICAL RESISTANCE REPORT
- INDRA VALVES -

MD-02-14-IT-UK / P
Rev. 0
Data: 01-Jul-14

Nr. Certificato / *Certificate No.*	10069/AC-TET-A	**Data** / *Date :*	30-Sep-24	*Rev. 0*
Cliente / *Customer :*	ROSETTI MARINO SPA			
Ordine Nr. / *Order Nr.*	1724000798 REV.2	**Data** / *Date :*	26-Jun-24	
Ns. commessa Nr. / *Our job Nr.*	24 01216	**Data** / *Date :*	03-Jul-24	
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*		

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST according to API 598 , API 6D, BS EN 12266-1	*VALORE MASSIMO (Limit)*	*STRUMENTO DI MISURA (Gauge Instrument)*	*SCADENZA (Due Date)*
Torque test			
Electrical resistance test	*10 Ohm*	*Digital Multimeter DMM249 13290*	*31-May-25*

POS. (ITEM)	CODICE (CODE)	DESCRIZIONE (DESCRIPTION)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY) PRODUCED	QTA' (QTY) TESTED
30	*00.VSF.2690/V*	*SB-598-40-H150RF3-H*	*VBC0NN06961H00*	*2*	*1*

n° SERIALE (Serial n°)	LATO (Side)	Torque test Nm Value	Torque test Nm Result	Electrical resistance Body-stem Ohm Value	Electrical resistance Body-stem Ohm Result	Electrical resistance Body-ball Ohm Value	Electrical resistance Body-ball Ohm Result
105958	*A*			0,6	OK	0,8	OK

n° SERIALE (Serial n°)	LATO (Side)	Torque test Nm Value	Torque test Nm Result	Electrical resistance Body-stem Ohm Value	Electrical resistance Body-stem Ohm Result	Electrical resistance Body-ball Ohm Value	Electrical resistance Body-ball Ohm Result

n° SERIALE (Serial n°)	LATO (Side)	Torque test Nm Value	Torque test Nm Result				

Note / ***Remarks:***
- Test Antistatico eseguito su 1 pz. per posizione (Antistatic test executed on 1 pc. per item)

x CROSSWIND R 16/10/24

PROCEDURA DI COLLAUDO *(Test procedure)*
PT/VSP-VSF-HP / ATP_00

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** TESTING OPERATOR	DATA / DATE:	30-Sep-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** PRODUCTION MANAGER

DATA / DATE: 30-Sep-24

ROSETTI MARINO ITEM 40

COD. VBC0NN24343Q00

TAG: BLPH-MV-024, BLPH-MV-028

INDRA ITEM 40

COD. 00.VSF.2693/V

indra VALVES - ITALY	**RAPPORTO DI COLLAUDO** ***TEST REPORT*** ***- INDRA VALVES -***	**MD-02-05-IT-UK / P** **Rev. 24** **Data: 24-Mar-23**

Nr. Certificato / *Certificate No.*	**10070/AC**	**Data** / *Date :*	**02-Oct-24** *Rev. 0*
Cliente / *Customer :*	**ROSETTI MARINO SPA**		
Ordine Nr. / *Order Nr.*	**1724000798 REV.2**	**Data** / *Date :*	**26-Jun-24**
Ns. commessa Nr. / *Our job Nr.*	**24 01216**	**Data** / *Date :*	**03-Jul-24**
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*	

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST ***(according to API 598 & API 6D)***	***FLUIDO*** *(Fluid)*	***DURATA*** *(Duration)*	***PRESSIONE*** *(Pressure)*	***MAX. PERDITA AMMISSIBILE (ISO 5208)*** *(Max allowable leakage)*	***MANOMETRO N°*** *(Gauge ID)*	***DATA SCADENZA*** *(Due Date)*
Shell test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*
High pressure closure test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*
Low pressure closure test (only for ball valves)	*Aria / Air*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*24F06-1334-01--13*	*03-Dec-24*
Back seat test (only for needle valves)	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY)		VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi)		High pressure closure test bar (psi)		Low pressure closure test bar (psi)		Back seat test bar (psi)		Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
					PRODUCED	TESTED						Pressure	Result	Pressure	Result	Pressure	Result	Pressure	Result				
10	*10*	*00.VSF.2684/V*	*SB-598-20-E150RF3-E (105942)*	*VBC0NN06943Q00*	*1*	*1*	*Ball*	*¾"*	*RF*	*150*	*AISI 316/316L NACE MR01.75*	29 (421)	N.L	21 (305)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
20	*20*	*00.VSF.2687/V*	*SB-598-25-F150RF3-F (105944, 105949)*	*VBC0NN06950100*	*15*	*2*	*Ball*	*1"*	*RF*	*150*	*AISI 316/316L NACE MR01.75*	29 (421)	N.L	21 (305)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
40	*40*	*00.VSF.2693/V*	*SB-598-HR-20-E150RF3-E (105960)*	*VBC0NN24343Q00*	*2*	*1*	*Ball*	*¾"*	*RF*	*150*	*AISI 316/316L NACE MR01.75*	29 (421)	N.L	21 (305)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
150	*150*	*00.VSF.2680/V*	*DBB-898-HR-25-F300RF3-F-D (105990, 105991, 106004)*	*VLBBNN07190100*	*28*	*3*	*Ball+Needle*	*1"*	*RF*	*300*	*AISI 316/316L NACE MR01.75*	75 (1088)	N.L	55 (798)	N.L	6 (87)	N.L	55 (798)	N.L	YES	A	24F06-1334-01--13	03-Dec-24
322	*400*	*00.VSF.2680/V*	*DBB-898-HR-25-F300RF3-F-D (106899)*	*VLBBNN07190100*	*1*	*1*	*Ball+Needle*	*1"*	*RF*	*300*	*AISI 316/316L NACE MR01.75*	75 (1088)	N.L	55 (798)	N.L	6 (87)	N.L	55 (798)	N.L	YES	A	24F06-1334-01--13	03-Dec-24

☐ REVIEWED ☑ WITNESSED

DATE: - 2 OTT 2024

NAME: MASSIMILIANO BERGHENTI ROSETTI MARINO

ON BEHALF OF :

SIGNATURE:

CROSSWIND 2/10/24

Note / Remarks:

- CAVITY SEAT RELIEF TEST PERFORMED ON 100% RESULT:OK
- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno

(Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)

- N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE

Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector	*Si / Yes* ☑ *No / No* ☐
Nominativo / Name	*Timbro e Firma / Stamp and Signature*
.....	
Data / Date	
.....	

PROCEDURA DI COLLAUDO
(Test procedure)

PT VSP-VSF-ITA/ENG
(24-01216)

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** **TESTING OPERATOR**	DATA / DATE: 02-Oct-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** **PRODUCTION MANAGER**	DATA / DATE: 02-Oct-24

indra VALVES - ITALY
20013 Magenta (MI) Italy - Via Novara, 10/B-C
Tel. +39 02 97298663 r.a. - Fax +39 02 97291855
E-mail: indra@indra.it - http://www.indra.it

WATER QUALITY ANALYSIS UP TO 27-Aug-2024
EN 10204-2.1 ed. 2004

Parametri / Parameters	*Valore rilevato / Detected value*	*Valori di legge / Legal limit*
Ammonio / Ammonium (NH_4^+) [mg/l]	*< 0,1*	*0,5*
Arsenico / Arsenic (As_{tot}) [µg/l]	*< 1*	*10*
Bicarbonato / Bicarbonate (HCO_3^-) [mg/l]	*317*	*Non previsto / Not expected*
Calcio / Calcium (Ca^{2+}) [mg/l]	*87*	*Non previsto / Not expected*
Cloruri / Chlorides (Cl^-) [mg/l]	*12*	*250*
Composti organoalogenati / Organohalogen compounds [µg/l]	*<1*	*30*
Conducibilità / Conductivity (µS/cm)	*501*	*2500*
Cromo / Chromium [µg/l]	*<5*	*50*
Durezza Totale / Total hardness [°f]	*30*	*Non previsto / Not expected*
Fluoruri / Fluorides (F^-) [mg/l]	*<0,2*	*1,5*
Magnesio / Magnesium (Mg^{2+}) [mg/l]	*20*	*Non previsto / Not expected*
Manganese / Manganese (Mn_{tot}) [µg/l]	*< 5*	*50*
Microinquinanti tot / Micropollutants tot [µg/l]	*<0,01*	*0,5*
Nitrati / Nitrates (NO_3^-) [mg/l]	*31*	*50*
Nitriti / Nitrites (NO_2^-) [mg/l]	*<0,02*	*0,5*
Potassio / Potassium (K^+) [mg/l]	*1*	*Non previsto / Not expected*
Residuo secco a 180°C / Dry residue at 180°C [mg/l]	*361*	*1500*
Sodio / Sodium (NA^+) [mg/l]	*5*	*200*
Solfati / Sulfates (SO_4^{2-}) [mg/l]	*31*	*250*
pH / pH	*7*	*6,5 - 9,5*

* I dati corrispondono ai valori pubblicati dal laboratorio Amiacque dell'acquedotto del comune di Magenta (MI) - Italia.

* All the data correspond to the values published by the laboratory Amiacque of the Magenta's municipality aqueduct (MI) - Italy.

x CROSSWIND

2/10/24 R

☑ REVIEWED ☐ WITNESSED

DATE: - 2 OTT 2024

NAME: MASSIMILIANO BERGHENTI
ON BEHALF OF :
SIGNATURE:
ROSETTI MARINO

indra VALVES - ITALY	**RAPPORTO DI COLLAUDO A GAS** **GAS TEST REPORT** **- INDRA VALVES -**	**MD-02-13-IT-UK / P** **Rev. 2** **Data: 24-Oct-16**

Nr. Certificato / *Certificate No.*	10068/AC-GT	**Data** / *Date :*	30-Sep-24 *Rev. 0*
Cliente / *Customer :*	ROSETTI MARINO SPA		
Ordine Nr. / *Order Nr.*	1724000798 REV.2	**Data** / *Date :*	26-Jun-24
Ns. commessa Nr. / *Our job Nr.*	24 01216	**Data** / *Date :*	03-Jul-24
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*	

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST according to API 598 , BS EN 12266-1	*FLUIDO (Fluid)*	*DURATA (Duration)*	*PRESSIONE (Pressure)*	*MAX. PERDITA AMMISSIBILE (BS EN 12266-1) (Max allowable leakage)*	*MANOMETRO N° (Gauge ID)*	*DATA SCADENZA (Due Date)*
Shell test	*Elio / Helium*	*15 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*
High pressure closure test	*Elio / Helium*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY)		VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi)		High pressure closure test bar (psi)				Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
					PRODUCED	TESTED						Pressure	Result	Pressure	Result	Duration					
40	40	00.VSF.2693/V	SB-598-HR-20-E150RF3-E (105960)	VBC0NN24343Q00	2	1	Ball	¾"	RF	150	AISI 316/316L NACE MR01.75	21 (305)	N.L	21 (305)	N.L	2 min.		YES	A	24F06-1334-01--13	03-Dec-24
150	150	00.VSF.2680/V	DBB-898-HR-25-F300RF3-F-D (105982)	VLBBNN07190100	28	1	Ball+Needle	1"	RF	300	AISI 316/316L NACE MR01.75	55 (798)	N.L	55 (798)	N.L	2 min.		YES	A	24F06-1334-01--13	03-Dec-24
322	400	00.VSF.2680/V	DBB-898-HR-25-F300RF3-F-D (106899)	VLBBNN07190100	1	1	Ball+Needle	1"	RF	300	AISI 316/316L NACE MR01.75	55 (798)	N.L	55 (798)	N.L	2 min.		YES	A	24F06-1334-01--13	03-Dec-24

Note / Remarks:

- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno
  (Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)
- *N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE*

Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector	*Si / Yes* / *No / No*	
Nominativo / Name	☐ / ☑	*Timbro e Firma / Stamp and Signature*
.....		CROSSWIND 16/10/24
Data / Date		

PROCEDURA DI COLLAUDO
(Test procedure)

PGT/VSP-VSF
(24-01216)

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** **TESTING OPERATOR**	DATA / DATE:	30-Sep-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** **PRODUCTION MANAGER**	DATA / DATE:	30-Sep-24

indra VALVES - ITALY	**RAPPORTO DI COLLAUDO** ***TEST REPORT*** ***- INDRA VALVES -***	**MD-02-05-IT-UK / P** **Rev. 24** **Data: 24-Mar-23**

Nr. Certificato / *Certificate No.*	10068/AC	**Data** / *Date :*	30-Sep-24 *Rev. 0*
Cliente / *Customer :*	ROSETTI MARINO SPA		
Ordine Nr. / *Order Nr.*	1724000798 REV.2	**Data** / *Date :*	26-Jun-24
Ns. commessa Nr. / *Our job Nr.*	24 01216	**Data** / *Date :*	03-Jul-24
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*	

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST (according to API 598 & API 6D)	*FLUIDO (Fluid)*	*DURATA (Duration)*	*PRESSIONE (Pressure)*	*MAX. PERDITA AMMISSIBILE (ISO 5208) (Max allowable leakage)*	*MANOMETRO N° (Gauge ID)*	*DATA SCADENZA (Due Date)*
Shell test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*
High pressure closure test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*
Low pressure closure test (only for ball valves)	*Aria / Air*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*24F06-1334-01--13*	*03-Dec-24*
Back seat test (only for needle valves)	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY)		VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi)		High pressure closure test bar (psi)		Low pressure closure test bar (psi)		Back seat test bar (psi)		Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
					PRODUCED	TESTED						Pressure	Result	Pressure	Result	Pressure	Result	Pressure	Result				
10	*10*	*00.VSF.2684/V*	*SB-598-20-E150RF3-E (105942)*	*VBC0NN06943Q00*	*1*	*100%*	*Ball*	*¾"*	*RF*	*150*	*AISI 316/316L NACE MR01.75*	29 (421)	N.L	21 (305)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
20	*20*	*00.VSF.2687/V*	*SB-598-25-F150RF3-F (From 105943 To 105957)*	*VBC0NN06950100*	*15*	*100%*	*Ball*	*1"*	*RF*	*150*	*AISI 316/316L NACE MR01.75*	29 (421)	N.L	21 (305)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
40	*40*	*00.VSF.2693/V*	*SB-598-HR-20-E150RF3-E (From 105960 To 105961)*	*VBC0NN24343Q00*	*2*	*100%*	*Ball*	*¾"*	*RF*	*150*	*AISI 316/316L NACE MR01.75*	29 (421)	N.L	21 (305)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
150	*150*	*00.VSF.2680/V*	*DBB-898-HR-25-F300RF3-F-D (From 105982 To 106009)*	*VLBBNN07190100*	*28*	*100%*	*Ball+Needle*	*1"*	*RF*	*300*	*AISI 316/316L NACE MR01.75*	75 (1088)	N.L	55 (798)	N.L	6 (87)	N.L	55 (798)	N.L	YES	A	24F06-1334-01--13	03-Dec-24
322	*400*	*00.VSF.2680/V*	*DBB-898-HR-25-F300RF3-F-D (106899)*	*VLBBNN07190100*	*1*	*100%*	*Ball+Needle*	*1"*	*RF*	*300*	*AISI 316/316L NACE MR01.75*	75 (1088)	N.L	55 (798)	N.L	6 (87)	N.L	55 (798)	N.L	YES	A	24F06-1334-01--13	03-Dec-24

Note / Remarks:

- CAVITY SEAT RELIEF TEST PERFORMED ON 100% RESULT:OK
- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno

(Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)

- *N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE*

Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector — *Si / Yes* ☐ *No / No* ☑

Nominativo / Name .....

Data / Date .....

Timbro e Firma / Stamp and Signature A CROSSWIND 16/10/24

PROCEDURA DI COLLAUDO
(Test procedure)

PT VSP-VSF-ITA/ENG
(24-01216)

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** TESTING OPERATOR	DATA / DATE:	30-Sep-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** PRODUCTION MANAGER	DATA / DATE:	30-Sep-24

ROSETTI MARINO ITEM 50

COD. VBC0NN24350100

TAG: BLPH-MV-172, BLPH-MV-404, BLPH-MV-405, BLPH-MV-462, BLPH-MV-463

INDRA ITEM 50

COD. 00.VSF.2694/V

indra VALVES - ITALY	**RAPPORTO DI COLLAUDO** ***TEST REPORT*** ***- INDRA VALVES -***	**MD-02-05-IT-UK / P** **Rev. 24** **Data: 24-Mar-23**

Nr. Certificato / *Certificate No.* **10044/AC** — **Data** / *Date :* **25-Sep-24** — *Rev. 0*

Cliente / *Customer :* **ROSETTI MARINO SPA**

Ordine Nr. / *Order Nr.* **1724000798 REV.2** — **Data** / *Date :* **26-Jun-24**

Ns. commessa Nr. / *Our job Nr.* **24 01216** — **Data** / *Date :* **03-Jul-24**

Ns. D.D.T. Nr. / *Our advise note Nr.* — **Data** / *Date :*

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST (according to API 598 & API 6D)	*FLUIDO (Fluid)*	*DURATA (Duration)*	*PRESSIONE (Pressure)*	*MAX. PERDITA AMMISSIBILE (ISO 5208) (Max allowable leakage)*	*MANOMETRO N° (Gauge ID)*	*DATA SCADENZA (Due Date)*
Shell test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*
High pressure closure test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*
Low pressure closure test (only for ball valves)	*Aria / Air*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*24F06-1334-01÷13*	*03-Dec-24*
Back seat test (only for needle valves)	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY)		VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi)		High pressure closure test bar (psi)		Low pressure closure test bar (psi)		Back seat test bar (psi)		Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
					PRODUCED	TESTED						Pressure	Result	Pressure	Result	Pressure	Result	Pressure	Result				
50	*50*	*00.VSF.2694/V*	*SB-598-HR-25-F150RF3-F (105966)*	*VBC0NN24350100*	*5*	*1*	*Ball*	*1"*	*RF*	*150*	*AISI 316/316L NACE MR01.75*	29 (421)	N.L	21 (305)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01÷13	03-Dec-24
220	*220*	*00.VSF.2701/V*	*SBB-798-HR-25-F150RF3-F-D (106028)*	*VLBLNN01320100*	*2*	*1*	*Ball+Needle*	*1"*	*RF*	*150*	*AISI 316/316L NACE MR01.75*	29 (421)	N.L	21 (305)	N.L	6 (87)	N.L	21 (305)	N.L	YES	A	24F06-1334-01÷13	03-Dec-24
240	*240*	*00.VSF.2696/V*	*SBB-798-25-F150RF3-F-D (106032)*	*VLBLNN01410100*	*1*	*1*	*Ball+Needle*	*1"*	*RF*	*150*	*AISI 316/316L NACE MR01.75*	29 (421)	N.L	21 (305)	N.L	6 (87)	N.L	21 (305)	N.L	YES	A	24F06-1334-01÷13	03-Dec-24

DATE: 25 SET 2024

NAME: MARINO BASILE

ON BEHALF OF: ROSETTI MARINO

SIGNATURE:

Note / Remarks:

- CAVITY SEAT RELIEF TEST PERFORMED ON 100% RESULT:OK
- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno
  (Products signed with "O" and delivered in sealed bag have been degreased for oxygen service) .
- *N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE*

Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector	*SI / Yes* ☑ *No / No* ☐
Nominativo / Name W. GOBBI	*Timbro e Firma / Stamp and Signature* CROSSWIND 25/9/24 W
Data / Date 25/9/24	

PROCEDURA DI COLLAUDO
(Test procedure)
PT VSP-VSF-ITA/ENG
(24-01216)

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** **TESTING OPERATOR**	DATA / DATE:	25-Sep-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** **PRODUCTION MANAGER**	DATA / DATE:	25-Sep-24

20013 Magenta (MI) Italy - Via Novara, 10/B-C
Tel. +39 02 97298663 r.a. - Fax +39 02 97291855
E-mail: indra@indra.it - http://www.indra.it

WATER QUALITY ANALYSIS UP TO 27-Aug-2024
EN 10204-2.1 ed. 2004

Parametri / Parameters	*Valore rilevato / Detected value*	*Valori di legge / Legal limit*
Ammonio / Ammonium (NH_4^+) [mg/l]	*< 0,1*	*0,5*
Arsenico / Arsenic (As_{tot}) [µg/l]	*< 1*	*10*
Bicarbonato / Bicarbonate (HCO_3^-) [mg/l]	*317*	*Non previsto / Not expected*
Calcio / Calcium (Ca^{2+}) [mg/l]	*87*	*Non previsto / Not expected*
Cloruri / Chlorides (Cl^-) [mg/l]	*12*	*250*
Composti organoalogenati / Organohalogen compounds [µg/l]	*<1*	*30*
Conducibilità / Conductivity (µS/cm)	*501*	*2500*
Cromo / Chromium [µg/l]	*<5*	*50*
Durezza Totale / Total hardness [°f]	*30*	*Non previsto / Not expected*
Fluoruri / Fluorides (F^-) [mg/l]	*<0,2*	*1,5*
Magnesio / Magnesium (Mg^{2+}) [mg/l]	*20*	*Non previsto / Not expected*
Manganese / Manganese (Mn_{tot}) [µg/l]	*< 5*	*50*
Microinquinanti tot / Micropollutants tot [µg/l]	*<0,01*	*0,5*
Nitrati / Nitrates (NO_3^-) [mg/l]	*31*	*50*
Nitriti / Nitrites (NO_2^-) [mg/l]	*<0,02*	*0,5*
Potassio / Potassium (K^+) [mg/l]	*1*	*Non previsto / Not expected*
Residuo secco a 180°C / Dry residue at 180°C [mg/l]	*361*	*1500*
Sodio / Sodium (NA^+) [mg/l]	*5*	*200*
Solfati / Sulfates (SO_4^{2-}) [mg/l]	*31*	*250*
pH / pH	*7*	*6,5 - 9,5*

* I dati corrispondono ai valori pubblicati dal laboratorio Amiacque dell'acquedotto del comune di Magenta (MI) - Italia.

* All the data correspond to the values published by the laboratory Amiacque of the Magenta's municipality aqueduct (MI) - Italy.

x Crosswind
25/9/24

DATE: 25 SET 2024
NAME: MARTINO BASILE
ON BEHALF OF: ROSETTI MARINO
SIGNATURE:

ROSETTI MARINO ITEM 60

COD. VBC0NN24433Q00

TAG: BLPH-MV-044, BLPH-MV-054, BLPH-MV-241

INDRA ITEM 60

COD. 00.VSF.2685(T)

indra VALVES - ITALY	**RAPPORTO DI COLLAUDO** ***TEST REPORT*** ***- INDRA VALVES -***	**MD-02-05-IT-UK / P** **Rev. 24** **Data: 24-Mar-23**

Nr. Certificato / *Certificate No.* 10133/AC — **Data /** *Date :* 16-Oct-24 — *Rev. 0*

Cliente / *Customer :* ROSETTI MARINO SPA

Ordine Nr. / *Order Nr.* 1724000798 REV.2 — **Data /** *Date :* 26-Jun-24

Ns. commessa Nr. / *Our job Nr.* 24 01216 — **Data /** *Date :* 03-Jul-24

Ns. D.D.T. Nr. / *Our advise note Nr.* — **Data /** *Date :*

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST (according to API 598 & API 6D)	*FLUIDO (Fluid)*	*DURATA (Duration)*	*PRESSIONE (Pressure)*	*MAX. PERDITA AMMISSIBILE (ISO 5208) (Max allowable leakage)*	*MANOMETRO N° (Gauge ID)*	*DATA SCADENZA (Due Date)*
Shell test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*
High pressure closure test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*
Low pressure closure test (only for ball valves)	*Aria / Air*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*24F06-1334-01--13*	*03-Dec-24*
Back seat test (only for needle valves)	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY) PRODUCED	QTA' (QTY) TESTED	VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi) Pressure	Shell test Result	High pressure closure test bar (psi) Pressure	High pressure closure test Result	Low pressure closure test bar (psi) Pressure	Low pressure closure test Result	Back seat test bar (psi) Pressure	Back seat test Result	Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
60	*60*	*00.VSF.2685(T)*	*SB-598-20-E150RF3-E (105969)*	*VBC0NN24433Q00*	*3*	*1*	*Ball*	*¾"*	*RF*	*150*	*F55 NACE*	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
70	*70*	*00.VSF.2688(T)*	*SB-598-25-F150RF3-F (105970)*	*VBC0NN24440100*	*2*	*1*	*Ball*	*1"*	*RF*	*150*	*F55 NACE*	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
90	*90*	*00.VSF.2686/V*	*SB-598-20-E150RF3-E (105974)*	*VBC0NN24703Q00*	*1*	*1*	*Ball*	*¾"*	*RF*	*150*	*A350 LF2 NACE*	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
100	*100*	*00.VSF.2770/V*	*SB-598-25-F150RF3-F (105975)*	*VBC0NN24710100*	*2*	*1*	*Ball*	*1"*	*RF*	*150*	*A350 LF2 NACE*	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
110	*110*	*00.VSF.2689/V*	*SB-598-25-F150RF3-F (105977)*	*VBC0NN24710100*	*1*	*1*	*Ball*	*1"*	*RF*	*150*	*A350 LF2 NACE*	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
200	*200*	*00.VSF.2697/V*	*SBB-798-25-F150RF3-F-D (106026)*	*VLBLNN01280100*	*3*	*1*	*Ball+Needle*	*1"*	*RF*	*150*	*A350 LF2 NACE*	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	22 (319)	N.L	YES	A	24F06-1334-01--13	03-Dec-24
324	*430*	*00.VSF.2784(T)*	*SBB-798-25-F150RF3-F-D (106900)*	*VLBLNN01370100*	*3*	*1*	*Ball+Needle*	*1"*	*RF*	*150*	*F55 NACE*	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	22 (319)	N.L	YES	A	24F06-1334-01--13	03-Dec-24

Note / Remarks:
- CAVITY SEAT RELIEF TEST PERFORMED ON 100% RESULT:OK
- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno
(Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)
- *N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE*

Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector — *Si / Yes* ☑ *No / No* ☐

Nominativo / Name .....

Data / Date .....

Timbro e Firma / Stamp and Signature x CROSSWIND 16/10/24

PROCEDURA DI COLLAUDO
(Test procedure)
PT VSP-VSF-ITA/ENG
(24-01216)

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** **TESTING OPERATOR**	DATA / DATE:	16-Oct-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** **PRODUCTION MANAGER**	DATA / DATE:	16-Oct-24

20013 Magenta (MI) Italy - Via Novara, 10/B-C
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WATER QUALITY ANALYSIS UP TO 27-Aug-2024
EN 10204-2.1 ed. 2004

Parametri / Parameters	*Valore rilevato / Detected value*	*Valori di legge / Legal limit*
Ammonio / Ammonium (NH_4^+) [mg/l]	*< 0,1*	*0,5*
Arsenico / Arsenic (As_{tot}) [µg/l]	*< 1*	*10*
Bicarbonato / Bicarbonate (HCO_3^-) [mg/l]	*317*	*Non previsto / Not expected*
Calcio / Calcium (Ca^{2+}) [mg/l]	*87*	*Non previsto / Not expected*
Cloruri / Chlorides (Cl^-) [mg/l]	*12*	*250*
Composti organoalogenati / Organohalogen compounds [µg/l]	*<1*	*30*
Conducibilità / Conductivity (µS/cm)	*501*	*2500*
Cromo / Chromium [µg/l]	*<5*	*50*
Durezza Totale / Total hardness [°f]	*30*	*Non previsto / Not expected*
Fluoruri / Fluorides (F^-) [mg/l]	*<0,2*	*1,5*
Magnesio / Magnesium (Mg^{2+}) [mg/l]	*20*	*Non previsto / Not expected*
Manganese / Manganese (Mn_{tot}) [µg/l]	*< 5*	*50*
Microinquinanti tot / Micropollutants tot [µg/l]	*<0,01*	*0,5*
Nitrati / Nitrates (NO_3^-) [mg/l]	*31*	*50*
Nitriti / Nitrites (NO_2^-) [mg/l]	*<0,02*	*0,5*
Potassio / Potassium (K^+) [mg/l]	*1*	*Non previsto / Not expected*
Residuo secco a 180°C / Dry residue at 180°C [mg/l]	*361*	*1500*
Sodio / Sodium (NA^+) [mg/l]	*5*	*200*
Solfati / Sulfates (SO_4^{2-}) [mg/l]	*31*	*250*
pH / pH	*7*	*6,5 - 9,5*

* I dati corrispondono ai valori pubblicati dal laboratorio Amiacque dell'acquedotto del comune di Magenta (MI) - Italia.

* All the data correspond to the values published by the laboratory Amiacque of the Magenta's municipality aqueduct (MI) - Italy.



indra VALVES - ITALY	**RAPPORTO DI COLLAUDO** ***TEST REPORT*** ***- INDRA VALVES -***	**MD-02-05-IT-UK / P** **Rev. 24** **Data: 24-Mar-23**

Nr. Certificato / *Certificate No.*	10123/AC	**Data** / *Date :*	14-Oct-24 *Rev. 0*
Cliente / *Customer :*	ROSETTI MARINO SPA		
Ordine Nr. / *Order Nr.*	1724000798 REV.2	**Data** / *Date :*	26-Jun-24
Ns. commessa Nr. / *Our job Nr.*	24 01216	**Data** / *Date :*	03-Jul-24
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*	

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST (according to API 598 & API 6D)	*FLUIDO (Fluid)*	*DURATA (Duration)*	*PRESSIONE (Pressure)*	*MAX. PERDITA AMMISSIBILE (ISO 5208) (Max allowable leakage)*	*MANOMETRO N° (Gauge ID)*	*DATA SCADENZA (Due Date)*
Shell test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*
High pressure closure test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*
Low pressure closure test (only for ball valves)	*Aria / Air*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*24F06-1334-01-13*	*03-Dec-24*
Back seat test (only for needle valves)	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY)		VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi)		High pressure closure test bar (psi)		Low pressure closure test bar (psi)		Back seat test bar (psi)		Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
					PRODUCED	TESTED						Pressure	Result	Pressure	Result	Pressure	Result	Pressure	Result				
60	60	00.VSF.2685(T)	SB-598-20-E150RF3-E (From 105967 To 105969)	VBC0NN24433Q00	3	100%	Ball	¾"	RF	150	F55 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01-13	03-Dec-24
70	70	00.VSF.2688(T)	SB-598-25-F150RF3-F (From 105970 To 105971)	VBC0NN24440100	2	100%	Ball	1"	RF	150	F55 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01-13	03-Dec-24
90	90	00.VSF.2686/V	SB-598-20-E150RF3-E (105974)	VBC0NN24703Q00	1	100%	Ball	¾"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01-13	03-Dec-24
100	100	00.VSF.2770/V	SB-598-25-F150RF3-F (From 105975 To 105976)	VBC0NN24710100	2	100%	Ball	1"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01-13	03-Dec-24
110	110	00.VSF.2689/V	SB-598-25-F150RF3-F (105977)	VBC0NN24710100	1	100%	Ball	1"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01-13	03-Dec-24
200	200	00.VSF.2697/V	SBB-798-25-F150RF3-F-D (From 106024 To 106026)	VLBLNN01280100	3	100%	Ball+Needle	1"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	22 (319)	N.L	YES	A	24F06-1334-01-13	03-Dec-24
324	430	00.VSF.2784(T)	SBB-798-25-F150RF3-F-D (From 106900 To 106902)	VLBLNN01370100	3	100%	Ball+Needle	1"	RF	150	F55 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	22 (319)	N.L	YES	A	24F06-1334-01-13	03-Dec-24

Note / Remarks:
- CAVITY SEAT RELIEF TEST PERFORMED ON 100% RESULT:OK
- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno
(Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)
- *N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE*
Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector	*Si / Yes* ☐ *No / No* ☑
Nominativo / Name	*Timbro e Firma / Stamp and Signature*
Data / Date	CROSSWIND R/W

PROCEDURA DI COLLAUDO
(Test procedure)
PT VSP-VSF-ITA/ENG
(24-01216)

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** TESTING OPERATOR	DATA / DATE:	14-Oct-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** PRODUCTION MANAGER	DATA / DATE:	14-Oct-24

indra VALVES - ITALY	**RAPPORTO DI COLLAUDO COPPIA DI MANOVRA E RESISTENZA ELETTRICA** ***TORQUE AND ELECTRICAL RESISTANCE REPORT*** ***- INDRA VALVES -***	**MD-02-14-IT-UK / P** **Rev. 0** **Data: 01-Jul-14**

Nr. Certificato / *Certificate No.*	**10123/AC-TET-A**	**Data** / *Date :*	**14-Oct-24** *Rev. 0*
Cliente / *Customer :*	**ROSETTI MARINO SPA**		
Ordine Nr. / *Order Nr.*	**1724000798 REV.2**	**Data** / *Date :*	**26-Jun-24**
Ns. commessa Nr. / *Our job Nr.*	**24 01216**	**Data** / *Date :*	**03-Jul-24**
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*	

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST ***according to API 598 , API 6D, BS EN 12266-1***	***VALORE MASSIMO*** *(Limit)*	***STRUMENTO DI MISURA*** *(Gauge Instrument)*	***SCADENZA*** ***(Due Date)***
Torque test			
Electrical resistance test	*10 Ohm*	*Digital Multimeter DMM249 13290*	*31-May-25*

POS. (ITEM)	**CODICE** (CODE)	**DESCRIZIONE** (DESCRIPTION)	**CODICE CLIENTE** (CUSTOMER CODE)	**QTA'** (QTY) PRODUCED	TESTED
60	***00.VSF.2685(T)***	***SB-598-20-E150RF3-E***	***VBC0NN24433Q00***	***3***	***1***

n° SERIALE (Serial n°)	**LATO** (Side)	*Torque test* Nm		*Electrical resistance Body-stem* Ohm		*Electrical resistance Body-ball* Ohm	
		Value	Result	Value	Result	Value	Result
105967	***A***			0,6	OK	0,7	OK

n° SERIALE (Serial n°)	**LATO** (Side)	*Torque test* Nm		*Electrical resistance Body-stem* Ohm		*Electrical resistance Body-ball* Ohm	
		Value	Result	Value	Result	Value	Result

n° SERIALE (Serial n°)	**LATO** (Side)	*Torque test* Nm					
		Value	Result	Value	Result	Value	Result

Note / ***Remarks:***
- Test Antistatico eseguito su 1 pz. per posizione (Antistatic test executed on 1 pc. per item)

Fabbio CROSSNINO R/W

PROCEDURA DI COLLAUDO
(Test procedure)
PT/VSP-VSF-HP / ATP_00

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** TESTING OPERATOR	DATA / DATE: 14-Oct-24		APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** PRODUCTION MANAGER	DATA / DATE: 14-Oct-24

ROSETTI MARINO ITEM 70

COD. VBC0NN24440100

TAG: BLPH-MV-048, BLPH-MV-051

INDRA ITEM 70

COD. 00.VSF.2688(T)

indra VALVES - ITALY	**RAPPORTO DI COLLAUDO** ***TEST REPORT*** ***- INDRA VALVES -***	**MD-02-05-IT-UK / P** **Rev. 24** **Data: 24-Mar-23**

Nr. Certificato / *Certificate No.* 10133/AC — **Data /** *Date :* 16-Oct-24 — *Rev. 0*

Cliente / *Customer :* ROSETTI MARINO SPA

Ordine Nr. / *Order Nr.* 1724000798 REV.2 — **Data /** *Date :* 26-Jun-24

Ns. commessa Nr. / *Our job Nr.* 24 01216 — **Data /** *Date :* 03-Jul-24

Ns. D.D.T. Nr. / *Our advise note Nr.* — **Data /** *Date :*

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST (according to API 598 & API 6D)	*FLUIDO (Fluid)*	*DURATA (Duration)*	*PRESSIONE (Pressure)*	*MAX. PERDITA AMMISSIBILE (ISO 5208) (Max allowable leakage)*	*MANOMETRO N° (Gauge ID)*	*DATA SCADENZA (Due Date)*
Shell test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*
High pressure closure test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*
Low pressure closure test (only for ball valves)	*Aria / Air*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*24F06-1334-01--13*	*03-Dec-24*
Back seat test (only for needle valves)	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY) PRODUCED	QTA' (QTY) TESTED	VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi) Pressure	Shell test Result	High pressure closure test bar (psi) Pressure	High pressure closure test Result	Low pressure closure test bar (psi) Pressure	Low pressure closure test Result	Back seat test bar (psi) Pressure	Back seat test Result	Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
60	60	00.VSF.2685(T)	SB-598-20-E150RF3-E (105969)	VBC0NN24433Q00	3	1	Ball	¾"	RF	150	F55 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
70	70	00.VSF.2688(T)	SB-598-25-F150RF3-F (105970)	VBC0NN24440100	2	1	Ball	1"	RF	150	F55 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
90	90	00.VSF.2686/V	SB-598-20-E150RF3-E (105974)	VBC0NN24703Q00	1	1	Ball	¾"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
100	100	00.VSF.2770/V	SB-598-25-F150RF3-F (105975)	VBC0NN24710100	2	1	Ball	1"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
110	110	00.VSF.2689/V	SB-598-25-F150RF3-F (105977)	VBC0NN24710100	1	1	Ball	1"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
200	200	00.VSF.2697/V	SBB-798-25-F150RF3-F-D (106026)	VLBLNN01280100	3	1	Ball+Needle	1"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	22 (319)	N.L	YES	A	24F06-1334-01--13	03-Dec-24
324	430	00.VSF.2784(T)	SBB-798-25-F150RF3-F-D (106900)	VLBLNN01370100	3	1	Ball+Needle	1"	RF	150	F55 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	22 (319)	N.L	YES	A	24F06-1334-01--13	03-Dec-24

Note / Remarks:
- CAVITY SEAT RELIEF TEST PERFORMED ON 100% RESULT:OK
- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno
(Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)
- *N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE*

Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector — *Si / Yes* ☑ *No / No* ☐

Nominativo / Name .....

Data / Date .....

Timbro e Firma / Stamp and Signature CROSSWIND 16/10/24

PROCEDURA DI COLLAUDO
(Test procedure)
PT VSP-VSF-ITA/ENG
(24-01216)

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** **TESTING OPERATOR**	DATA / DATE:	16-Oct-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** **PRODUCTION MANAGER**	DATA / DATE:	16-Oct-24

20013 Magenta (MI) Italy - Via Novara, 10/B-C
Tel. +39 02 97298663 r.a. - Fax +39 02 97291855
E-mail: indra@indra.it - http://www.indra.it

REV. 1 - 30-May-2018

WATER QUALITY ANALYSIS UP TO 27-Aug-2024
EN 10204-2.1 ed. 2004

Parametri / Parameters	*Valore rilevato / Detected value*	*Valori di legge / Legal limit*
Ammonio / Ammonium (NH_4^+) [mg/l]	*< 0,1*	*0,5*
Arsenico / Arsenic (As_{tot}) [µg/l]	*< 1*	*10*
Bicarbonato / Bicarbonate (HCO_3^-) [mg/l]	*317*	*Non previsto / Not expected*
Calcio / Calcium (Ca^{2+}) [mg/l]	*87*	*Non previsto / Not expected*
Cloruri / Chlorides (Cl^-) [mg/l]	*12*	*250*
Composti organoalogenati / Organohalogen compounds [µg/l]	*<1*	*30*
Conducibilità / Conductivity (µS/cm)	*501*	*2500*
Cromo / Chromium [µg/l]	*<5*	*50*
Durezza Totale / Total hardness [°f]	*30*	*Non previsto / Not expected*
Fluoruri / Fluorides (F^-) [mg/l]	*<0,2*	*1,5*
Magnesio / Magnesium (Mg^{2+}) [mg/l]	*20*	*Non previsto / Not expected*
Manganese / Manganese (Mn_{tot}) [µg/l]	*< 5*	*50*
Microinquinanti tot / Micropollutants tot [µg/l]	*<0,01*	*0,5*
Nitrati / Nitrates (NO_3^-) [mg/l]	*31*	*50*
Nitriti / Nitrites (NO_2^-) [mg/l]	*<0,02*	*0,5*
Potassio / Potassium (K^+) [mg/l]	*1*	*Non previsto / Not expected*
Residuo secco a 180°C / Dry residue at 180°C [mg/l]	*361*	*1500*
Sodio / Sodium (NA^+) [mg/l]	*5*	*200*
Solfati / Sulfates (SO_4^{2-}) [mg/l]	*31*	*250*
pH / pH	*7*	*6,5 - 9,5*

* I dati corrispondono ai valori pubblicati dal laboratorio Amiacque dell'acquedotto del comune di Magenta (MI) - Italia.

* All the data correspond to the values published by the laboratory Amiacque of the Magenta's municipality aqueduct (MI) - Italy.

indra VALVES - ITALY	**RAPPORTO DI COLLAUDO** ***TEST REPORT*** ***- INDRA VALVES -***	**MD-02-05-IT-UK / P** **Rev. 24** **Data: 24-Mar-23**

Nr. Certificato / *Certificate No.* 10123/AC — **Data** / *Date :* 14-Oct-24 — *Rev. 0*

Cliente / *Customer :* ROSETTI MARINO SPA

Ordine Nr. / *Order Nr.* 1724000798 REV.2 — **Data** / *Date :* 26-Jun-24

Ns. commessa Nr. / *Our job Nr.* 24 01216 — **Data** / *Date :* 03-Jul-24

Ns. D.D.T. Nr. / *Our advise note Nr.* — **Data** / *Date :*

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST (according to API 598 & API 6D)	*FLUIDO (Fluid)*	*DURATA (Duration)*	*PRESSIONE (Pressure)*	*MAX. PERDITA AMMISSIBILE (ISO 5208) (Max allowable leakage)*	*MANOMETRO N° (Gauge ID)*	*DATA SCADENZA (Due Date)*
Shell test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*
High pressure closure test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*
Low pressure closure test (only for ball valves)	*Aria / Air*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*24F06-1334-01-13*	*03-Dec-24*
Back seat test (only for needle valves)	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY)		VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi)		High pressure closure test bar (psi)		Low pressure closure test bar (psi)		Back seat test bar (psi)		Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
					PRODUCED	TESTED						Pressure	Result	Pressure	Result	Pressure	Result	Pressure	Result				
60	60	00.VSF.2685(T)	SB-598-20-E150RF3-E (From 105967 To 105969)	VBC0NN24433Q00	3	100%	Ball	¾"	RF	150	F55 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01-13	03-Dec-24
70	70	00.VSF.2688(T)	SB-598-25-F150RF3-F (From 105970 To 105971)	VBC0NN24440100	2	100%	Ball	1"	RF	150	F55 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01-13	03-Dec-24
90	90	00.VSF.2686/V	SB-598-20-E150RF3-E (105974)	VBC0NN24703Q00	1	100%	Ball	¾"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01-13	03-Dec-24
100	100	00.VSF.2770/V	SB-598-25-F150RF3-F (From 105975 To 105976)	VBC0NN24710100	2	100%	Ball	1"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01-13	03-Dec-24
110	110	00.VSF.2689/V	SB-598-25-F150RF3-F (105977)	VBC0NN24710100	1	100%	Ball	1"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01-13	03-Dec-24
200	200	00.VSF.2697/V	SBB-798-25-F150RF3-F-D (From 106024 To 106026)	VLBLNN01280100	3	100%	Ball+Needle	1"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	22 (319)	N.L	YES	A	24F06-1334-01-13	03-Dec-24
324	430	00.VSF.2784(T)	SBB-798-25-F150RF3-F-D (From 106900 To 106902)	VLBLNN01370100	3	100%	Ball+Needle	1"	RF	150	F55 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	22 (319)	N.L	YES	A	24F06-1334-01-13	03-Dec-24

Note / Remarks:

- CAVITY SEAT RELIEF TEST PERFORMED ON 100% RESULT:OK
- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno

(Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)

- *N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE*

Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector — *Si / Yes* ☐ *No / No* ☑

Nominativo / Name — *Timbro e Firma / Stamp and Signature*

Data / Date

CROSSWIND R/W

PROCEDURA DI COLLAUDO
(Test procedure)

PT VSP-VSF-ITA/ENG
(24-01216)

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** TESTING OPERATOR	DATA / DATE:	14-Oct-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** PRODUCTION MANAGER	DATA / DATE:	14-Oct-24

indra VALVES - ITALY

RAPPORTO DI COLLAUDO COPPIA DI MANOVRA E RESISTENZA ELETTRICA
TORQUE AND ELECTRICAL RESISTANCE REPORT
- INDRA VALVES -

MD-02-14-IT-UK / P
Rev. 0
Data: 01-Jul-14

Nr. Certificato / *Certificate No.*	10123/AC-TET-B	**Data** / *Date :*	14-Oct-24	*Rev. 0*
Cliente / *Customer :*	ROSETTI MARINO SPA			
Ordine Nr. / *Order Nr.*	1724000798 REV.2	**Data** / *Date :*	26-Jun-24	
Ns. commessa Nr. / *Our job Nr.*	24 01216	**Data** / *Date :*	03-Jul-24	
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*		

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST according to API 598 , API 6D, BS EN 12266-1	*VALORE MASSIMO (Limit)*	*STRUMENTO DI MISURA (Gauge Instrument)*	*SCADENZA (Due Date)*
Torque test			
Electrical resistance test	*10 Ohm*	*Digital Multimeter DMM249 13290*	*31-May-25*

POS. (ITEM)	CODICE (CODE)	DESCRIZIONE (DESCRIPTION)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY) PRODUCED	TESTED
70	*00.VSF.2688(T)*	*SB-598-25-F150RF3-F*	*VBC0NN24440100*	*2*	*1*

n° SERIALE (Serial n°)	LATO (Side)	Torque test Nm Value	Torque test Nm Result	Electrical resistance Body-stem Ohm Value	Electrical resistance Body-stem Ohm Result	Electrical resistance Body-ball Ohm Value	Electrical resistance Body-ball Ohm Result
105970	*A*			0,4	OK	0,6	OK

n° SERIALE (Serial n°)	LATO (Side)	Torque test Nm Value	Torque test Nm Result	Electrical resistance Body-stem Ohm Value	Electrical resistance Body-stem Ohm Result	Electrical resistance Body-ball Ohm Value	Electrical resistance Body-ball Ohm Result

n° SERIALE (Serial n°)	LATO (Side)	Torque test Nm Value	Torque test Nm Result				

Note / ***Remarks:***
- Test Antistatico eseguito su 1 pz. per posizione (Antistatic test executed on 1 pc. per item)

CROSSWIND C/W

PROCEDURA DI COLLAUDO
(Test procedure)
PT/VSP-VSF-HP / ATP_00

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** TESTING OPERATOR	DATA / DATE:	14-Oct-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** PRODUCTION MANAGER	DATA / DATE: 14-Oct-24

ROSETTI MARINO ITEM 80

COD. VBC0NN24460200

TAG: BLPH-MV-464, BLPH-MV-465

INDRA ITEM 80

COD. 00.VSF.2692(T)

indra VALVES - ITALY	**RAPPORTO DI COLLAUDO "PED"** **"PED" TEST REPORT** **- INDRA VALVES -**	**MD-02-09-IT-UK** **Rev. 8** **Data: 24-Mar-23**

Nr. Certificato / *Certificate No.* 10134/AC — **Data** / *Date :* 16-Oct-24 — *Rev. 0*

Cliente / *Customer :* ROSETTI MARINO SPA

Ordine Nr. / *Order Nr.* 1724000798 REV.2 — **Data** / *Date :* 26-Jun-24

Ns. commessa Nr. / *Our job Nr.* 24 01216 — **Data** / *Date :* 03-Jul-24

Ns. D.D.T. Nr. / *Our advise note Nr.* — **Data** / *Date :*

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST (according to API 598, API 6D & 2014/68/UE PED)	FLUIDO (Fluid)	DURATA (Duration)	PRESSIONE (Pressure)	MAX. PERDITA AMMISSIBILE (ISO 5208) (Max allowable leakage)	MANOMETRO N° (Gauge ID)	DATA SCADENZA (Due Date)
Shell test	Acqua / Water	2 min.	vedi sotto / see below	nessuna perdita / no leakage	vedi sotto / see below	vedi sotto / see below
High pressure closure test	Acqua / Water	2 min.	vedi sotto / see below	vedi sotto / see below	vedi sotto / see below	vedi sotto / see below
Low pressure closure test (only for ball valves)	Aria / Air	2 min.	vedi sotto / see below	vedi sotto / see below	24F06-1334-01-13	03-Dec-24
Back seat test (only for needle valves)	Acqua / Water	2 min.	vedi sotto / see below	nessuna perdita / no leakage	vedi sotto / see below	vedi sotto / see below

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY) PRODUCED	QTA' (QTY) TESTED	VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi) Pressure	Shell test Result	High pressure closure test bar (psi) Pressure	High pressure closure test Result	Low pressure closure test bar (psi) Pressure	Low pressure closure test Result	Back seat test bar (psi) Pressure	Back seat test Result	Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
80	80	00.VSF.2692(T)	SB-598-50-J150RF3-J (105973)	VBC0NN24460200	2	1	Ball	2"	RF	150	F55 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
120	120	00.VSF.2691/V	SB-598-40-H150RF3-H (105978)	VBC0NN24721H00	1	1	Ball	1 ½"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
210	210	00.VSF.2699/V	SBB-798-40-H150RF3-H-D (106027)	VLBLNN01291H00	1	1	Ball+Needle	1 ½"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	22 (319)	N.L	YES	A	24F06-1334-01--13	03-Dec-24
230	230	00.VSF.2698(T)	SBB-798-40-H150RF3-H-D (106031)	VLBLNN01381H00	2	1	Ball+Needle	1 ½"	RF	150	F55 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	22 (319)	N.L	YES	A	24F06-1334-01--13	03-Dec-24
321	390	00.VSF.2716/V	SB-598-50-L150RF3-L (106898)	VBD0NN16610300	1	1	Ball	3"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24

INDRA SRL dichiara che le valvole fornite sono conformi ai requisiti stabiliti dalla API 598 - ASME B16.34 - 2014/68/UE PED Cert. Modulo H emesso da TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948
INDRA SRL declares that the supplied valves are in conformity with the requirements of API 598 - ASME B16.34 - 2014/68/UE PED Cert. Module H issued by TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948

Note / Remarks:
- CAVITY SEAT RELIEF TEST PERFORMED ON 100% RESULT:OK
- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno
(Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)
- *N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE*
Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector — *Si / Yes* ☑ *No / No* ☐

Nominativo / Name ..... *Timbro e Firma / Stamp and Signature*

Data / Date .....

x CROSSWIND 16/10/24

PROCEDURA DI COLLAUDO
(Test procedure)
PT VSP-VSF-ITA/ENG
(24-01216)

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** **TESTING OPERATOR**	DATA / DATE: 16-Oct-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** **PRODUCTION MANAGER**	DATA / DATE: 16-Oct-24

20013 Magenta (MI) Italy - Via Novara, 10/B-C
Tel. +39 02 97298663 r.a. - Fax +39 02 97291855
E-mail: indra@indra.it - http://www.indra.it

REV. 1 - 30-May-2018

WATER QUALITY ANALYSIS UP TO 27-Aug-2024
EN 10204-2.1 ed. 2004

Parametri / Parameters	*Valore rilevato / Detected value*	*Valori di legge / Legal limit*
Ammonio / Ammonium (NH_4^+) [mg/l]	*< 0,1*	*0,5*
Arsenico / Arsenic (As_{tot}) [µg/l]	*< 1*	*10*
Bicarbonato / Bicarbonate (HCO_3^-) [mg/l]	*317*	*Non previsto / Not expected*
Calcio / Calcium (Ca^{2+}) [mg/l]	*87*	*Non previsto / Not expected*
Cloruri / Chlorides (Cl^-) [mg/l]	*12*	*250*
Composti organoalogenati / Organohalogen compounds [µg/l]	*<1*	*30*
Conducibilità / Conductivity (µS/cm)	*501*	*2500*
Cromo / Chromium [µg/l]	*<5*	*50*
Durezza Totale / Total hardness [°f]	*30*	*Non previsto / Not expected*
Fluoruri / Fluorides (F^-) [mg/l]	*<0,2*	*1,5*
Magnesio / Magnesium (Mg^{2+}) [mg/l]	*20*	*Non previsto / Not expected*
Manganese / Manganese (Mn_{tot}) [µg/l]	*< 5*	*50*
Microinquinanti tot / Micropollutants tot [µg/l]	*<0,01*	*0,5*
Nitrati / Nitrates (NO_3^-) [mg/l]	*31*	*50*
Nitriti / Nitrites (NO_2^-) [mg/l]	*<0,02*	*0,5*
Potassio / Potassium (K^+) [mg/l]	*1*	*Non previsto / Not expected*
Residuo secco a 180°C / Dry residue at 180°C [mg/l]	*361*	*1500*
Sodio / Sodium (NA^+) [mg/l]	*5*	*200*
Solfati / Sulfates (SO_4^{2-}) [mg/l]	*31*	*250*
pH / pH	*7*	*6,5 - 9,5*

* I dati corrispondono ai valori pubblicati dal laboratorio Amiacque dell'acquedotto del comune di Magenta (MI) - Italia.

* All the data correspond to the values published by the laboratory Amiacque of the Magenta's municipality aqueduct (MI) - Italy.

indra VALVES - ITALY	**RAPPORTO DI COLLAUDO "PED"** **"PED" TEST REPORT** **- INDRA VALVES -**	**MD-02-09-IT-UK** **Rev. 8** **Data: 24-Mar-23**

Nr. Certificato / *Certificate No.*	10124/AC	**Data** / *Date :*	14-Oct-24
Cliente / *Customer :*	ROSETTI MARINO SPA		
Ordine Nr. / *Order Nr.*	1724000798 REV.2	**Data** / *Date :*	26-Jun-24
Ns. commessa Nr. / *Our job Nr.*	24 01216	**Data** / *Date :*	03-Jul-24
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*	

Rev. 0

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST (according to API 598, API 6D & 2014/68/UE PED)	FLUIDO (Fluid)	DURATA (Duration)	PRESSIONE (Pressure)	MAX. PERDITA AMMISSIBILE (ISO 5208) (Max allowable leakage)	MANOMETRO N° (Gauge ID)	DATA SCADENZA (Due Date)
Shell test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*
High pressure closure test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*
Low pressure closure test (only for ball valves)	*Aria / Air*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*24F06-1334-01-13*	*03-Dec-24*
Back seat test (only for needle valves)	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY)		VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi)		High pressure closure test bar (psi)		Low pressure closure test bar (psi)		Back seat test bar (psi)		Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
					PRODUCED	TESTED						Pressure	Result	Pressure	Result	Pressure	Result	Pressure	Result				
80	*80*	*00.VSF.2692(T)*	*SB-598-50-J150RF3-J (From 105972 To 105973)*	*VBC0NN24460200*	*2*	*100%*	*Ball*	*2"*	*RF*	*150*	*F55 NACE*	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
120	*120*	*00.VSF.2691/V*	*SB-598-40-H150RF3-H (105978)*	*VBC0NN24721H00*	*1*	*100%*	*Ball*	*1 ½"*	*RF*	*150*	*A350 LF2 NACE*	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
210	*210*	*00.VSF.2699/V*	*SBB-798-40-H150RF3-H-D (106027)*	*VLBLNN01291H00*	*1*	*100%*	*Ball+Needle*	*1 ½"*	*RF*	*150*	*A350 LF2 NACE*	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	22 (319)	N.L	YES	A	24F06-1334-01--13	03-Dec-24
230	*230*	*00.VSF.2698(T)*	*SBB-798-40-H150RF3-H-D (From 106030 To 106031)*	*VLBLNN01381H00*	*2*	*100%*	*Ball+Needle*	*1 ½"*	*RF*	*150*	*F55 NACE*	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	22 (319)	N.L	YES	A	24F06-1334-01--13	03-Dec-24
321	*390*	*00.VSF.2716/V*	*SB-598-50-L150RF3-L (106898)*	*VBD0NN16610300*	*1*	*100%*	*Ball*	*3"*	*RF*	*150*	*A350 LF2 NACE*	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24

INDRA SRL dichiara che le valvole fornite sono conformi ai requisiti stabiliti dalla API 598 - ASME B16.34 - 2014/68/UE PED Cert. Modulo H emesso da TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948

INDRA SRL declares that the supplied valves are in conformity with the requirements of API 598 - ASME B16.34 - 2014/68/UE PED Cert. Module H issued by TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948

Note / Remarks:

- CAVITY SEAT RELIEF TEST PERFORMED ON 100% RESULT:OK
- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno

(Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)

- *N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE*

Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector	*SI / Yes* ☐ *No / No* ☑
Nominativo / Name	*Timbro e Firma / Stamp and Signature* Pietro CROSSWIND P/W
Data / Date	

PROCEDURA DI COLLAUDO
(Test procedure)

PT VSP-VSF-ITA/ENG
(24-01216)

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** **TESTING OPERATOR**	DATA / DATE:	14-Oct-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** **PRODUCTION MANAGER**	DATA / DATE:	14-Oct-24

indra VALVES - ITALY

RAPPORTO DI COLLAUDO "PED"
"PED" TEST REPORT
- INDRA VALVES -

MD-02-09-IT-UK
Rev. 8
Data: 24-Mar-23

Nr. Certificato / *Certificate No.*	10124/AC	**Data** / *Date :*	14-Oct-24
Cliente / *Customer :*	ROSETTI MARINO SPA		
Ordine Nr. / *Order Nr.*	1724000798 REV.2	**Data** / *Date :*	26-Jun-24
Ns. commessa Nr. / *Our job Nr.*	24 01216	**Data** / *Date :*	03-Jul-24
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*	

Rev. 0

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST (according to API 598, API 6D & 2014/68/UE PED)	FLUIDO (Fluid)	DURATA (Duration)	PRESSIONE (Pressure)	MAX. PERDITA AMMISSIBILE (ISO 5208) (Max allowable leakage)	MANOMETRO N° (Gauge ID)	DATA SCADENZA (Due Date)
Shell test	Acqua / Water	2 min.	vedi sotto / see below	nessuna perdita / no leakage	vedi sotto / see below	vedi sotto / see below
High pressure closure test	Acqua / Water	2 min.	vedi sotto / see below	vedi sotto / see below	vedi sotto / see below	vedi sotto / see below
Low pressure closure test (only for ball valves)	Aria / Air	2 min.	vedi sotto / see below	vedi sotto / see below	24F06-1334-01-13	03-Dec-24
Back seat test (only for needle valves)	Acqua / Water	2 min.	vedi sotto / see below	nessuna perdita / no leakage	vedi sotto / see below	vedi sotto / see below

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY)		VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi)		High pressure closure test bar (psi)		Low pressure closure test bar (psi)		Back seat test bar (psi)		Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
					PRODUCED	TESTED						Pressure	Result	Pressure	Result	Pressure	Result	Pressure	Result				
80	80	00.VSF.2692(T)	SB-598-50-J150RF3-J (From 105972 To 105973)	VBC0NN24460200	2	100%	Ball	2"	RF	150	F55 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
120	120	00.VSF.2691/V	SB-598-40-H150RF3-H (105978)	VBC0NN24721H00	1	100%	Ball	1 ½"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
210	210	00.VSF.2699/V	SBB-798-40-H150RF3-H-D (106027)	VLBLNN01291H00	1	100%	Ball+Needle	1 ½"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	22 (319)	N.L	YES	A	24F06-1334-01--13	03-Dec-24
230	230	00.VSF.2698(T)	SBB-798-40-H150RF3-H-D (From 106030 To 106031)	VLBLNN01381H00	2	100%	Ball+Needle	1 ½"	RF	150	F55 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	22 (319)	N.L	YES	A	24F06-1334-01--13	03-Dec-24
321	390	00.VSF.2716/V	SB-598-50-L150RF3-L (106898)	VBD0NN16610300	1	100%	Ball	3"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24

INDRA SRL dichiara che le valvole fornite sono conformi ai requisiti stabiliti dalla API 598 - ASME B16.34 - 2014/68/UE PED Cert. Modulo H emesso da TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948
INDRA SRL declares that the supplied valves are in conformity with the requirements of API 598 - ASME B16.34 - 2014/68/UE PED Cert. Module H issued by TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948

Note / Remarks:
- CAVITY SEAT RELIEF TEST PERFORMED ON 100% RESULT:OK
- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno
(Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)
- *N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE*
Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector

SI / Yes ☐
No / No ☑

Nominativo / Name .....
Data / Date .....

Timbro e Firma / Stamp and Signature

PROCEDURA DI COLLAUDO
(Test procedure)
PT VSP-VSF-ITA/ENG
(24-01216)

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** TESTING OPERATOR	DATA / DATE:	14-Oct-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** PRODUCTION MANAGER	DATA / DATE:	14-Oct-24

indra VALVES - ITALY

RAPPORTO DI COLLAUDO COPPIA DI MANOVRA E RESISTENZA ELETTRICA
TORQUE AND ELECTRICAL RESISTANCE REPORT
- INDRA VALVES -

MD-02-14-IT-UK / P
Rev. 0
Data: 01-Jul-14

Nr. Certificato / *Certificate No.* 10124/AC-TET-A — **Data** / *Date :* 14-Oct-24 — *Rev. 0*

Cliente / *Customer :* ROSETTI MARINO SPA

Ordine Nr. / *Order Nr.* 1724000798 REV.2 — **Data** / *Date :* 26-Jun-24

Ns. commessa Nr. / *Our job Nr.* 24 01216 — **Data** / *Date :* 03-Jul-24

Ns. D.D.T. Nr. / *Our advise note Nr.* — **Data** / *Date :*

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST according to API 598 , API 6D, BS EN 12266-1	*VALORE MASSIMO (Limit)*	*STRUMENTO DI MISURA (Gauge Instrument)*	*SCADENZA (Due Date)*
Torque test			
Electrical resistance test	*10 Ohm*	*Digital Multimeter DMM249 13290*	*31-May-25*

POS. (ITEM)	CODICE (CODE)	DESCRIZIONE (DESCRIPTION)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY) PRODUCED	TESTED
80	*00.VSF.2692(T)*	*SB-598-50-J150RF3-J*	*VBC0NN24460200*	*2*	*1*

n° SERIALE (Serial n°)	LATO (Side)	Torque test Nm Value	Torque test Nm Result	Electrical resistance Body-stem Ohm Value	Electrical resistance Body-stem Ohm Result	Electrical resistance Body-ball Ohm Value	Electrical resistance Body-ball Ohm Result
105972	*A*			0,6	OK	0,7	OK

n° SERIALE (Serial n°)	LATO (Side)	Torque test Nm Value	Torque test Nm Result	Electrical resistance Body-stem Ohm Value	Electrical resistance Body-stem Ohm Result	Electrical resistance Body-ball Ohm Value	Electrical resistance Body-ball Ohm Result

n° SERIALE (Serial n°)	LATO (Side)	Torque test Nm Value	Torque test Nm Result				

Note / ***Remarks:***
- Test Antistatico eseguito su 1 pz. per posizione (Antistatic test executed on 1 pc. per item)

PROCEDURA DI COLLAUDO
(Test procedure)
PT/VSP-VSF-HP / ATP_00

COLLAUDATO DA: / TESTED BY: **MARCO FALDUTO** **TESTING OPERATOR** DATA / DATE: 14-Oct-24

APPROVATO DA: / APPROVED BY: **PIETRO FAGNANI** **PRODUCTION MANAGER** DATA / DATE: 14-Oct-24

ROSETTI MARINO ITEM 90

COD. VBC0NN24703Q00

TAG: BLPH-MV-275

INDRA ITEM 90

COD. 00.VSF.2686/V

indra VALVES - ITALY	**RAPPORTO DI COLLAUDO** ***TEST REPORT*** ***- INDRA VALVES -***	**MD-02-05-IT-UK / P** **Rev. 24** **Data: 24-Mar-23**

Nr. Certificato / *Certificate No.* 10133/AC — **Data** / *Date :* 16-Oct-24 — *Rev. 0*

Cliente / *Customer :* ROSETTI MARINO SPA

Ordine Nr. / *Order Nr.* 1724000798 REV.2 — **Data** / *Date :* 26-Jun-24

Ns. commessa Nr. / *Our job Nr.* 24 01216 — **Data** / *Date :* 03-Jul-24

Ns. D.D.T. Nr. / *Our advise note Nr.* — **Data** / *Date :*

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST (according to API 598 & API 6D)	*FLUIDO (Fluid)*	*DURATA (Duration)*	*PRESSIONE (Pressure)*	*MAX. PERDITA AMMISSIBILE (ISO 5208) (Max allowable leakage)*	*MANOMETRO N° (Gauge ID)*	*DATA SCADENZA (Due Date)*
Shell test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*
High pressure closure test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*
Low pressure closure test (only for ball valves)	*Aria / Air*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*24F06-1334-01--13*	*03-Dec-24*
Back seat test (only for needle valves)	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY) PRODUCED	QTA' (QTY) TESTED	VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi) Pressure	Shell test Result	High pressure closure test bar (psi) Pressure	High pressure closure test Result	Low pressure closure test bar (psi) Pressure	Low pressure closure test Result	Back seat test bar (psi) Pressure	Back seat test Result	Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
60	60	00.VSF.2685(T)	SB-598-20-E150RF3-E (105969)	VBC0NN24433Q00	3	1	Ball	¾"	RF	150	F55 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
70	70	00.VSF.2688(T)	SB-598-25-F150RF3-F (105970)	VBC0NN24440100	2	1	Ball	1"	RF	150	F55 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
90	90	00.VSF.2686/V	SB-598-20-E150RF3-E (105974)	VBC0NN24703Q00	1	1	Ball	¾"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
100	100	00.VSF.2770/V	SB-598-25-F150RF3-F (105975)	VBC0NN24710100	2	1	Ball	1"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
110	110	00.VSF.2689/V	SB-598-25-F150RF3-F (105977)	VBC0NN24710100	1	1	Ball	1"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
200	200	00.VSF.2697/V	SBB-798-25-F150RF3-F-D (106026)	VLBLNN01280100	3	1	Ball+Needle	1"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	22 (319)	N.L	YES	A	24F06-1334-01--13	03-Dec-24
324	430	00.VSF.2784(T)	SBB-798-25-F150RF3-F-D (106900)	VLBLNN01370100	3	1	Ball+Needle	1"	RF	150	F55 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	22 (319)	N.L	YES	A	24F06-1334-01--13	03-Dec-24

Note / Remarks:
- CAVITY SEAT RELIEF TEST PERFORMED ON 100% RESULT:OK
- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno
(Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)
- *N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE*

Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector — *Si / Yes* ☑ *No / No* ☐

Nominativo / Name .....

Data / Date .....

Timbro e Firma / Stamp and Signature CROSSWIND 16/10/24

PROCEDURA DI COLLAUDO
(Test procedure)
PT VSP-VSF-ITA/ENG
(24-01216)

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** **TESTING OPERATOR**	DATA / DATE:	16-Oct-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** **PRODUCTION MANAGER**	DATA / DATE:	16-Oct-24

indra VALVES - ITALY

RAPPORTO DI COLLAUDO "PED"
"PED" TEST REPORT
- INDRA VALVES -

MD-02-09-IT-UK
Rev. 8
Data: 24-Mar-23

Nr. Certificato / *Certificate No.*	10134/AC	**Data** / *Date :*	16-Oct-24
Cliente / *Customer :*	ROSETTI MARINO SPA		
Ordine Nr. / *Order Nr.*	1724000798 REV.2	**Data** / *Date :*	26-Jun-24
Ns. commessa Nr. / *Our job Nr.*	24 01216	**Data** / *Date :*	03-Jul-24
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*	

Rev. 0

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST (according to API 598, API 6D & 2014/68/UE PED)	FLUIDO (Fluid)	DURATA (Duration)	PRESSIONE (Pressure)	MAX. PERDITA AMMISSIBILE (ISO 5208) (Max allowable leakage)	MANOMETRO N° (Gauge ID)	DATA SCADENZA (Due Date)
Shell test	Acqua / Water	2 min.	vedi sotto / see below	nessuna perdita / no leakage	vedi sotto / see below	vedi sotto / see below
High pressure closure test	Acqua / Water	2 min.	vedi sotto / see below	vedi sotto / see below	vedi sotto / see below	vedi sotto / see below
Low pressure closure test (only for ball valves)	Aria / Air	2 min.	vedi sotto / see below	vedi sotto / see below	24F06-1334-01-13	03-Dec-24
Back seat test (only for needle valves)	Acqua / Water	2 min.	vedi sotto / see below	nessuna perdita / no leakage	vedi sotto / see below	vedi sotto / see below

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY) PRODUCED	QTA' (QTY) TESTED	VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi) Pressure	Shell test Result	High pressure closure test bar (psi) Pressure	High pressure closure test Result	Low pressure closure test bar (psi) Pressure	Low pressure closure test Result	Back seat test bar (psi) Pressure	Back seat test Result	Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
80	80	00.VSF.2692(T)	SB-598-50-J150RF3-J (105973)	VBC0NN24460200	2	1	Ball	2"	RF	150	F55 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
120	120	00.VSF.2691/V	SB-598-40-H150RF3-H (105978)	VBC0NN24721H00	1	1	Ball	1 ½"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
210	210	00.VSF.2699/V	SBB-798-40-H150RF3-H-D (106027)	VLBLNN01291H00	1	1	Ball+Needle	1 ½"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	22 (319)	N.L	YES	A	24F06-1334-01--13	03-Dec-24
230	230	00.VSF.2698(T)	SBB-798-40-H150RF3-H-D (106031)	VLBLNN01381H00	2	1	Ball+Needle	1 ½"	RF	150	F55 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	22 (319)	N.L	YES	A	24F06-1334-01--13	03-Dec-24
321	390	00.VSF.2716/V	SB-598-50-L150RF3-L (106898)	VBD0NN16610300	1	1	Ball	3"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24

INDRA SRL dichiara che le valvole fornite sono conformi ai requisiti stabiliti dalla API 598 - ASME B16.34 - 2014/68/UE PED Cert. Modulo H emesso da TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948
INDRA SRL declares that the supplied valves are in conformity with the requirements of API 598 - ASME B16.34 - 2014/68/UE PED Cert. Module H issued by TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948

Note / Remarks:
- CAVITY SEAT RELIEF TEST PERFORMED ON 100% RESULT:OK
- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno
(Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)
- *N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE*
Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector	*Si / Yes* ☑ *No / No* ☐
Nominativo / Name	*Timbro e Firma / Stamp and Signature*
Data / Date	x CROSSWIND 16/10/24

PROCEDURA DI COLLAUDO
(Test procedure)
PT VSP-VSF-ITA/ENG
(24-01216)

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** TESTING OPERATOR	DATA / DATE:	16-Oct-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** PRODUCTION MANAGER	DATA / DATE:	16-Oct-24

indra VALVES - ITALY	**RAPPORTO DI COLLAUDO "PED"** **"PED" TEST REPORT** **- INDRA VALVES -**	**MD-02-09-IT-UK** **Rev. 8** **Data: 24-Mar-23**

Nr. Certificato / *Certificate No.* 10135/AC — **Data** / *Date :* 16-Oct-24 — *Rev. 0*

Cliente / *Customer :* ROSETTI MARINO SPA

Ordine Nr. / *Order Nr.* 1724000798 REV.2 — **Data** / *Date :* 26-Jun-24

Ns. commessa Nr. / *Our job Nr.* 24 01216 — **Data** / *Date :* 03-Jul-24

Ns. D.D.T. Nr. / *Our advise note Nr.* — **Data** / *Date :*

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST (according to API 598, API 6D & 2014/68/UE PED)	FLUIDO (Fluid)	DURATA (Duration)	PRESSIONE (Pressure)	MAX. PERDITA AMMISSIBILE (ISO 5208) (Max allowable leakage)	MANOMETRO N° (Gauge ID)	DATA SCADENZA (Due Date)
Shell test	Acqua / Water	5 min.	vedi sotto / see below	nessuna perdita / no leakage	vedi sotto / see below	vedi sotto / see below
High pressure closure test	Acqua / Water	5 min.	vedi sotto / see below	vedi sotto / see below	vedi sotto / see below	vedi sotto / see below
Low pressure closure test (only for ball valves)	Aria / Air	5 min.	vedi sotto / see below	vedi sotto / see below	24F06-1334-01--13	03-Dec-24
Back seat test (only for needle valves)	Acqua / Water	5 min.	vedi sotto / see below	nessuna perdita / no leakage	vedi sotto / see below	vedi sotto / see below

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY) PRODUCED	QTA' (QTY) TESTED	VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi) Pressure	Shell test Result	High pressure closure test bar (psi) Pressure	High pressure closure test Result	Low pressure closure test bar (psi) Pressure	Low pressure closure test Result	Back seat test bar (psi) Pressure	Back seat test Result	Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
270	270	00.VSFT.0224/V	SB-598-TRU-HR-150-Q150RF3-Q (106048)	VLBLNN01460600	1	1	Ball	6"	RF	150	AISI 316/316L NACE MR01.75	29 (421)	N.L	21 (305)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24

INDRA SRL dichiara che le valvole fornite sono conformi ai requisiti stabiliti dalla API 598 - ASME B16.34 - 2014/68/UE PED Cert. Modulo H emesso da TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948

INDRA SRL declares that the supplied valves are in conformity with the requirements of API 598 - ASME B16.34 - 2014/68/UE PED Cert. Module H issued by TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948

Note / Remarks:

- CAVITY SEAT RELIEF TEST PERFORMED ON 100% RESULT:OK
- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno

(Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)

- *N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE*

Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector — *Si / Yes* ☑ *No / No* ☐

Nominativo / Name .....

Timbro e Firma / Stamp and Signature 16/10/24 x CROSSWIND

Data / Date .....

PROCEDURA DI COLLAUDO
(Test procedure)
PT VSP-VSF-ITA/ENG
(24-01216)

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** **TESTING OPERATOR**	DATA / DATE: 16-Oct-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** **PRODUCTION MANAGER**	DATA / DATE: 16-Oct-24

20013 Magenta (MI) Italy - Via Novara, 10/B-C
Tel. +39 02 97298663 r.a. - Fax +39 02 97291855
E-mail: indra@indra.it - http://www.indra.it

REV. 1 - 30-May-2018

WATER QUALITY ANALYSIS UP TO 27-Aug-2024
EN 10204-2.1 ed. 2004

Parametri / Parameters	*Valore rilevato / Detected value*	*Valori di legge / Legal limit*
Ammonio / Ammonium (NH_4^+) [mg/l]	*< 0,1*	*0,5*
Arsenico / Arsenic (As_{tot}) [µg/l]	*< 1*	*10*
Bicarbonato / Bicarbonate (HCO_3^-) [mg/l]	*317*	*Non previsto / Not expected*
Calcio / Calcium (Ca^{2+}) [mg/l]	*87*	*Non previsto / Not expected*
Cloruri / Chlorides (Cl^-) [mg/l]	*12*	*250*
Composti organoalogenati / Organohalogen compounds [µg/l]	*<1*	*30*
Conducibilità / Conductivity (µS/cm)	*501*	*2500*
Cromo / Chromium [µg/l]	*<5*	*50*
Durezza Totale / Total hardness [°f]	*30*	*Non previsto / Not expected*
Fluoruri / Fluorides (F^-) [mg/l]	*<0,2*	*1,5*
Magnesio / Magnesium (Mg^{2+}) [mg/l]	*20*	*Non previsto / Not expected*
Manganese / Manganese (Mn_{tot}) [µg/l]	*< 5*	*50*
Microinquinanti tot / Micropollutants tot [µg/l]	*<0,01*	*0,5*
Nitrati / Nitrates (NO_3^-) [mg/l]	*31*	*50*
Nitriti / Nitrites (NO_2^-) [mg/l]	*<0,02*	*0,5*
Potassio / Potassium (K^+) [mg/l]	*1*	*Non previsto / Not expected*
Residuo secco a 180°C / Dry residue at 180°C [mg/l]	*361*	*1500*
Sodio / Sodium (NA^+) [mg/l]	*5*	*200*
Solfati / Sulfates (SO_4^{2-}) [mg/l]	*31*	*250*
pH / pH	*7*	*6,5 - 9,5*

* I dati corrispondono ai valori pubblicati dal laboratorio Amiacque dell'acquedotto del comune di Magenta (MI) - Italia.

* All the data correspond to the values published by the laboratory Amiacque of the Magenta's municipality aqueduct (MI) - Italy.

indra VALVES - ITALY	**RAPPORTO DI COLLAUDO** ***TEST REPORT*** ***- INDRA VALVES -***	**MD-02-05-IT-UK / P** **Rev. 24** **Data: 24-Mar-23**

Nr. Certificato / *Certificate No.* 10123/AC — **Data** / *Date :* 14-Oct-24 — *Rev. 0*

Cliente / *Customer :* ROSETTI MARINO SPA

Ordine Nr. / *Order Nr.* 1724000798 REV.2 — **Data** / *Date :* 26-Jun-24

Ns. commessa Nr. / *Our job Nr.* 24 01216 — **Data** / *Date :* 03-Jul-24

Ns. D.D.T. Nr. / *Our advise note Nr.* — **Data** / *Date :*

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST (according to API 598 & API 6D)	*FLUIDO (Fluid)*	*DURATA (Duration)*	*PRESSIONE (Pressure)*	*MAX. PERDITA AMMISSIBILE (ISO 5208) (Max allowable leakage)*	*MANOMETRO N° (Gauge ID)*	*DATA SCADENZA (Due Date)*
Shell test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*
High pressure closure test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*
Low pressure closure test (only for ball valves)	*Aria / Air*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*24F06-1334-01-13*	*03-Dec-24*
Back seat test (only for needle valves)	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY)		VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi)		High pressure closure test bar (psi)		Low pressure closure test bar (psi)		Back seat test bar (psi)		Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
					PRODUCED	TESTED						Pressure	Result	Pressure	Result	Pressure	Result	Pressure	Result				
60	60	00.VSF.2685(T)	SB-598-20-E150RF3-E (From 105967 To 105969)	VBC0NN24433Q00	3	100%	Ball	¾"	RF	150	F55 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01-13	03-Dec-24
70	70	00.VSF.2688(T)	SB-598-25-F150RF3-F (From 105970 To 105971)	VBC0NN24440100	2	100%	Ball	1"	RF	150	F55 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01-13	03-Dec-24
90	90	00.VSF.2686/V	SB-598-20-E150RF3-E (105974)	VBC0NN24703Q00	1	100%	Ball	¾"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01-13	03-Dec-24
100	100	00.VSF.2770/V	SB-598-25-F150RF3-F (From 105975 To 105976)	VBC0NN24710100	2	100%	Ball	1"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01-13	03-Dec-24
110	110	00.VSF.2689/V	SB-598-25-F150RF3-F (105977)	VBC0NN24710100	1	100%	Ball	1"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01-13	03-Dec-24
200	200	00.VSF.2697/V	SBB-798-25-F150RF3-F-D (From 106024 To 106026)	VLBLNN01280100	3	100%	Ball+Needle	1"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	22 (319)	N.L	YES	A	24F06-1334-01-13	03-Dec-24
324	430	00.VSF.2784(T)	SBB-798-25-F150RF3-F-D (From 106900 To 106902)	VLBLNN01370100	3	100%	Ball+Needle	1"	RF	150	F55 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	22 (319)	N.L	YES	A	24F06-1334-01-13	03-Dec-24

Note / Remarks:
- CAVITY SEAT RELIEF TEST PERFORMED ON 100% RESULT:OK
- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno
(Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)
- *N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE*
Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector — *Si / Yes* ☐ *No / No* ☑

Nominativo / Name — *Timbro e Firma / Stamp and Signature*

Data / Date

PROCEDURA DI COLLAUDO
(Test procedure)
PT VSP-VSF-ITA/ENG
(24-01216)

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** TESTING OPERATOR	DATA / DATE:	14-Oct-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** PRODUCTION MANAGER	DATA / DATE:	14-Oct-24

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indra VALVES - ITALY

RAPPORTO DI COLLAUDO COPPIA DI MANOVRA E RESISTENZA ELETTRICA
TORQUE AND ELECTRICAL RESISTANCE REPORT
- INDRA VALVES -

MD-02-14-IT-UK / P
Rev. 0
Data: 01-Jul-14

Nr. Certificato / *Certificate No.*	10123/AC-TET-C	**Data** / *Date :*	14-Oct-24	*Rev. 0*
Cliente / *Customer :*	ROSETTI MARINO SPA			
Ordine Nr. / *Order Nr.*	1724000798 REV.2	**Data** / *Date :*	26-Jun-24	
Ns. commessa Nr. / *Our job Nr.*	24 01216	**Data** / *Date :*	03-Jul-24	
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*		

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST according to API 598 , API 6D, BS EN 12266-1	*VALORE MASSIMO (Limit)*	*STRUMENTO DI MISURA (Gauge Instrument)*	*SCADENZA (Due Date)*
Torque test			
Electrical resistance test	*10 Ohm*	*Digital Multimeter DMM249 13290*	*31-May-25*

POS. (ITEM)	CODICE (CODE)	DESCRIZIONE (DESCRIPTION)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY) PRODUCED	TESTED
90	*00.VSF.2686/V*	*SB-598-20-E150RF3-E*	*VBC0NN24703Q00*	*1*	*1*

n° SERIALE (Serial n°)	LATO (Side)	Torque test Nm Value	Torque test Nm Result	Electrical resistance Body-stem Ohm Value	Electrical resistance Body-stem Ohm Result	Electrical resistance Body-ball Ohm Value	Electrical resistance Body-ball Ohm Result
105974	*A*			0,5	OK	0,6	OK

n° SERIALE (Serial n°)	LATO (Side)	Torque test Nm Value	Torque test Nm Result	Electrical resistance Body-stem Ohm Value	Electrical resistance Body-stem Ohm Result	Electrical resistance Body-ball Ohm Value	Electrical resistance Body-ball Ohm Result

n° SERIALE (Serial n°)	LATO (Side)	Torque test Nm Value	Torque test Nm Result				

Note / ***Remarks:***
- Test Antistatico eseguito su 1 pz. per posizione (Antistatic test executed on 1 pc. per item)

Fdd x crossword M/W

PROCEDURA DI COLLAUDO
(Test procedure)
PT/VSP-VSF-HP / ATP_00

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** TESTING OPERATOR	DATA / DATE:	14-Oct-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** PRODUCTION MANAGER	DATA / DATE: 14-Oct-24

ROSETTI MARINO ITEM 100

COD. BC0NN24710100

TAG: BLPH-MV-263, BLPH-MV-419

INDRA ITEM 100

COD. 00.VSF.2770/V

indra VALVES - ITALY	**RAPPORTO DI COLLAUDO** ***TEST REPORT*** ***- INDRA VALVES -***	**MD-02-05-IT-UK / P** **Rev. 24** **Data: 24-Mar-23**

Nr. Certificato / *Certificate No.* 10133/AC — **Data /** *Date :* 16-Oct-24 — *Rev. 0*

Cliente / *Customer :* ROSETTI MARINO SPA

Ordine Nr. / *Order Nr.* 1724000798 REV.2 — **Data /** *Date :* 26-Jun-24

Ns. commessa Nr. / *Our job Nr.* 24 01216 — **Data /** *Date :* 03-Jul-24

Ns. D.D.T. Nr. / *Our advise note Nr.* — **Data /** *Date :*

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST (according to API 598 & API 6D)	*FLUIDO (Fluid)*	*DURATA (Duration)*	*PRESSIONE (Pressure)*	*MAX. PERDITA AMMISSIBILE (ISO 5208) (Max allowable leakage)*	*MANOMETRO N° (Gauge ID)*	*DATA SCADENZA (Due Date)*
Shell test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*
High pressure closure test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*
Low pressure closure test (only for ball valves)	*Aria / Air*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*24F06-1334-01--13*	*03-Dec-24*
Back seat test (only for needle valves)	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY) PRODUCED	QTA' (QTY) TESTED	VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi) Pressure	Shell test Result	High pressure closure test bar (psi) Pressure	High pressure closure test Result	Low pressure closure test bar (psi) Pressure	Low pressure closure test Result	Back seat test bar (psi) Pressure	Back seat test Result	Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
60	60	00.VSF.2685(T)	SB-598-20-E150RF3-E (105969)	VBC0NN24433Q00	3	1	Ball	¾"	RF	150	F55 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
70	70	00.VSF.2688(T)	SB-598-25-F150RF3-F (105970)	VBC0NN24440100	2	1	Ball	1"	RF	150	F55 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
90	90	00.VSF.2686/V	SB-598-20-E150RF3-E (105974)	VBC0NN24703Q00	1	1	Ball	¾"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
100	100	00.VSF.2770/V	SB-598-25-F150RF3-F (105975)	VBC0NN24710100	2	1	Ball	1"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
110	110	00.VSF.2689/V	SB-598-25-F150RF3-F (105977)	VBC0NN24710100	1	1	Ball	1"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
200	200	00.VSF.2697/V	SBB-798-25-F150RF3-F-D (106026)	VLBLNN01280100	3	1	Ball+Needle	1"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	22 (319)	N.L	YES	A	24F06-1334-01--13	03-Dec-24
324	430	00.VSF.2784(T)	SBB-798-25-F150RF3-F-D (106900)	VLBLNN01370100	3	1	Ball+Needle	1"	RF	150	F55 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	22 (319)	N.L	YES	A	24F06-1334-01--13	03-Dec-24

Note / Remarks:
- CAVITY SEAT RELIEF TEST PERFORMED ON 100% RESULT:OK
- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno
(Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)
- *N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE*

Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector — *Si / Yes* ☑ *No / No* ☐

Nominativo / Name .....

Data / Date .....

Timbro e Firma / Stamp and Signature CROSSWIND 16/10/24

PROCEDURA DI COLLAUDO
(Test procedure)
PT VSP-VSF-ITA/ENG
(24-01216)

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** **TESTING OPERATOR**	DATA / DATE: 16-Oct-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** **PRODUCTION MANAGER**	DATA / DATE: 16-Oct-24

20013 Magenta (MI) Italy - Via Novara, 10/B-C
Tel. +39 02 97298663 r.a. - Fax +39 02 97291855
E-mail: indra@indra.it - http://www.indra.it

REV. 1 - 30-May-2018

WATER QUALITY ANALYSIS UP TO 27-Aug-2024
EN 10204-2.1 ed. 2004

Parametri / Parameters	*Valore rilevato / Detected value*	*Valori di legge / Legal limit*
Ammonio / Ammonium (NH_4^+) [mg/l]	*< 0,1*	*0,5*
Arsenico / Arsenic (As_{tot}) [µg/l]	*< 1*	*10*
Bicarbonato / Bicarbonate (HCO_3^-) [mg/l]	*317*	*Non previsto / Not expected*
Calcio / Calcium (Ca^{2+}) [mg/l]	*87*	*Non previsto / Not expected*
Cloruri / Chlorides (Cl^-) [mg/l]	*12*	*250*
Composti organoalogenati / Organohalogen compounds [µg/l]	*<1*	*30*
Conducibilità / Conductivity (µS/cm)	*501*	*2500*
Cromo / Chromium [µg/l]	*<5*	*50*
Durezza Totale / Total hardness [°f]	*30*	*Non previsto / Not expected*
Fluoruri / Fluorides (F^-) [mg/l]	*<0,2*	*1,5*
Magnesio / Magnesium (Mg^{2+}) [mg/l]	*20*	*Non previsto / Not expected*
Manganese / Manganese (Mn_{tot}) [µg/l]	*< 5*	*50*
Microinquinanti tot / Micropollutants tot [µg/l]	*<0,01*	*0,5*
Nitrati / Nitrates (NO_3^-) [mg/l]	*31*	*50*
Nitriti / Nitrites (NO_2^-) [mg/l]	*<0,02*	*0,5*
Potassio / Potassium (K^+) [mg/l]	*1*	*Non previsto / Not expected*
Residuo secco a 180°C / Dry residue at 180°C [mg/l]	*361*	*1500*
Sodio / Sodium (NA^+) [mg/l]	*5*	*200*
Solfati / Sulfates (SO_4^{2-}) [mg/l]	*31*	*250*
pH / pH	*7*	*6,5 - 9,5*

* I dati corrispondono ai valori pubblicati dal laboratorio Amiacque dell'acquedotto del comune di Magenta (MI) - Italia.

* All the data correspond to the values published by the laboratory Amiacque of the Magenta's municipality aqueduct (MI) - Italy.

indra VALVES - ITALY

RAPPORTO DI COLLAUDO
TEST REPORT
- INDRA VALVES -

MD-02-05-IT-UK / P
Rev. 24
Data: 24-Mar-23

Nr. Certificato / *Certificate No.*	10123/AC	**Data** / *Date :*	14-Oct-24 *Rev. 0*
Cliente / *Customer :*	ROSETTI MARINO SPA		
Ordine Nr. / *Order Nr.*	1724000798 REV.2	**Data** / *Date :*	26-Jun-24
Ns. commessa Nr. / *Our job Nr.*	24 01216	**Data** / *Date :*	03-Jul-24
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*	

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST (according to API 598 & API 6D)	*FLUIDO (Fluid)*	*DURATA (Duration)*	*PRESSIONE (Pressure)*	*MAX. PERDITA AMMISSIBILE (ISO 5208) (Max allowable leakage)*	*MANOMETRO N° (Gauge ID)*	*DATA SCADENZA (Due Date)*
Shell test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*
High pressure closure test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*
Low pressure closure test (only for ball valves)	*Aria / Air*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*24F06-1334-01-13*	*03-Dec-24*
Back seat test (only for needle valves)	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY)		VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi)		High pressure closure test bar (psi)		Low pressure closure test bar (psi)		Back seat test bar (psi)		Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
					PRODUCED	TESTED						Pressure	Result	Pressure	Result	Pressure	Result	Pressure	Result				
60	60	00.VSF.2685(T)	SB-598-20-E150RF3-E (From 105967 To 105969)	VBC0NN24433Q00	3	100%	Ball	¾"	RF	150	F55 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01-13	03-Dec-24
70	70	00.VSF.2688(T)	SB-598-25-F150RF3-F (From 105970 To 105971)	VBC0NN24440100	2	100%	Ball	1"	RF	150	F55 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01-13	03-Dec-24
90	90	00.VSF.2686/V	SB-598-20-E150RF3-E (105974)	VBC0NN24703Q00	1	100%	Ball	¾"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01-13	03-Dec-24
100	100	00.VSF.2770/V	SB-598-25-F150RF3-F (From 105975 To 105976)	VBC0NN24710100	2	100%	Ball	1"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01-13	03-Dec-24
110	110	00.VSF.2689/V	SB-598-25-F150RF3-F (105977)	VBC0NN24710100	1	100%	Ball	1"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01-13	03-Dec-24
200	200	00.VSF.2697/V	SBB-798-25-F150RF3-F-D (From 106024 To 106026)	VLBLNN01280100	3	100%	Ball+Needle	1"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	22 (319)	N.L	YES	A	24F06-1334-01-13	03-Dec-24
324	430	00.VSF.2784(T)	SBB-798-25-F150RF3-F-D (From 106900 To 106902)	VLBLNN01370100	3	100%	Ball+Needle	1"	RF	150	F55 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	22 (319)	N.L	YES	A	24F06-1334-01-13	03-Dec-24

Note / Remarks:
- CAVITY SEAT RELIEF TEST PERFORMED ON 100% RESULT:OK
- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno
(Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)
- *N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE*
Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector	*Si / Yes* ☐ *No / No* ☑
Nominativo / Name	*Timbro e Firma / Stamp and Signature*
Data / Date	CROSSWIND R/W

PROCEDURA DI COLLAUDO
(Test procedure)
PT VSP-VSF-ITA/ENG
(24-01216)

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** TESTING OPERATOR	DATA / DATE:	14-Oct-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** PRODUCTION MANAGER	DATA / DATE:	14-Oct-24

indra VALVES - ITALY	**RAPPORTO DI COLLAUDO COPPIA DI MANOVRA E RESISTENZA ELETTRICA** ***TORQUE AND ELECTRICAL RESISTANCE REPORT*** ***- INDRA VALVES -***	**MD-02-14-IT-UK / P** **Rev. 0** **Data: 01-Jul-14**

Nr. Certificato / *Certificate No.*	**10123/AC-TET-D**	**Data** / *Date :*	**14-Oct-24** *Rev. 0*
Cliente / *Customer :*	**ROSETTI MARINO SPA**		
Ordine Nr. / *Order Nr.*	**1724000798 REV.2**	**Data** / *Date :*	**26-Jun-24**
Ns. commessa Nr. / *Our job Nr.*	**24 01216**	**Data** / *Date :*	**03-Jul-24**
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*	

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST *according to API 598 , API 6D, BS EN 12266-1*	***VALORE MASSIMO*** *(Limit)*	***STRUMENTO DI MISURA*** *(Gauge Instrument)*	***SCADENZA*** ***(Due Date)***
Torque test			
Electrical resistance test	*10 Ohm*	*Digital Multimeter DMM249 13290*	*31-May-25*

POS. (ITEM)	**CODICE** (CODE)	**DESCRIZIONE** (DESCRIPTION)	**CODICE CLIENTE** (CUSTOMER CODE)	**QTA'** (QTY) PRODUCED	TESTED
100	***00.VSF.2770/V***	***SB-598-25-F150RF3-F***	***VBC0NN24710100***	***2***	***1***

n° SERIALE (Serial n°)	**LATO** (Side)	*Torque test* *Nm*		*Electrical resistance Body-stem* *Ohm*		*Electrical resistance Body-ball* *Ohm*	
		Value	Result	Value	Result	Value	Result
105975	***A***			0,4	OK	0,7	OK

n° SERIALE (Serial n°)	**LATO** (Side)	*Torque test* *Nm*		*Electrical resistance Body-stem* *Ohm*		*Electrical resistance Body-ball* *Ohm*	
		Value	Result	Value	Result	Value	Result

n° SERIALE (Serial n°)	**LATO** (Side)	*Torque test* *Nm*					
		Value	Result	Value	Result	Value	Result

Note / ***Remarks:***
- Test Antistatico eseguito su 1 pz. per posizione (Antistatic test executed on 1 pc. per item)

x crosswords R/W

PROCEDURA DI COLLAUDO
(Test procedure)
PT/VSP-VSF-HP / ATP_00

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** **TESTING OPERATOR**	DATA / DATE: 14-Oct-24		APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** **PRODUCTION MANAGER**	DATA / DATE: 14-Oct-24

ROSETTI MARINO ITEM 110

COD. VBC0NN24710100

TAG: BLPH-MV-417

INDRA ITEM 110

COD. 00.VSF.2689/V

indra VALVES - ITALY

RAPPORTO DI COLLAUDO
TEST REPORT
- INDRA VALVES -

MD-02-05-IT-UK / P
Rev. 24
Data: 24-Mar-23

Nr. Certificato / *Certificate No.*	10123/AC	**Data** / *Date :*	14-Oct-24 *Rev. 0*
Cliente / *Customer :*	ROSETTI MARINO SPA		
Ordine Nr. / *Order Nr.*	1724000798 REV.2	**Data** / *Date :*	26-Jun-24
Ns. commessa Nr. / *Our job Nr.*	24 01216	**Data** / *Date :*	03-Jul-24
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*	

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST (according to API 598 & API 6D)	*FLUIDO (Fluid)*	*DURATA (Duration)*	*PRESSIONE (Pressure)*	*MAX. PERDITA AMMISSIBILE (ISO 5208) (Max allowable leakage)*	*MANOMETRO N° (Gauge ID)*	*DATA SCADENZA (Due Date)*
Shell test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*
High pressure closure test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*
Low pressure closure test (only for ball valves)	*Aria / Air*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*24F06-1334-01-13*	*03-Dec-24*
Back seat test (only for needle valves)	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY)		VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi)		High pressure closure test bar (psi)		Low pressure closure test bar (psi)		Back seat test bar (psi)		Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
					PRODUCED	TESTED						Pressure	Result	Pressure	Result	Pressure	Result	Pressure	Result				
60	60	00.VSF.2685(T)	SB-598-20-E150RF3-E (From 105967 To 105969)	VBC0NN24433Q00	3	100%	Ball	¾"	RF	150	F55 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01-13	03-Dec-24
70	70	00.VSF.2688(T)	SB-598-25-F150RF3-F (From 105970 To 105971)	VBC0NN24440100	2	100%	Ball	1"	RF	150	F55 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01-13	03-Dec-24
90	90	00.VSF.2686/V	SB-598-20-E150RF3-E (105974)	VBC0NN24703Q00	1	100%	Ball	¾"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01-13	03-Dec-24
100	100	00.VSF.2770/V	SB-598-25-F150RF3-F (From 105975 To 105976)	VBC0NN24710100	2	100%	Ball	1"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01-13	03-Dec-24
110	110	00.VSF.2689/V	SB-598-25-F150RF3-F (105977)	VBC0NN24710100	1	100%	Ball	1"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01-13	03-Dec-24
200	200	00.VSF.2697/V	SBB-798-25-F150RF3-F-D (From 106024 To 106026)	VLBLNN01280100	3	100%	Ball+Needle	1"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	22 (319)	N.L	YES	A	24F06-1334-01-13	03-Dec-24
324	430	00.VSF.2784(T)	SBB-798-25-F150RF3-F-D (From 106900 To 106902)	VLBLNN01370100	3	100%	Ball+Needle	1"	RF	150	F55 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	22 (319)	N.L	YES	A	24F06-1334-01-13	03-Dec-24

Note / Remarks:
- CAVITY SEAT RELIEF TEST PERFORMED ON 100% RESULT:OK
- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno
(Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)
- *N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE*
Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector — *Si / Yes* ☐ *No / No* ☑

Nominativo / Name — *Timbro e Firma / Stamp and Signature*

Data / Date

CROSSWIND R/W

PROCEDURA DI COLLAUDO
(Test procedure)
PT VSP-VSF-ITA/ENG
(24-01216)

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** TESTING OPERATOR	DATA / DATE:	14-Oct-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** PRODUCTION MANAGER	DATA / DATE:	14-Oct-24

20013 Magenta (MI) Italy - Via Novara, 10/B-C
Tel. +39 02 97298663 r.a. - Fax +39 02 97291855
E-mail: indra@indra.it - http://www.indra.it

WATER QUALITY ANALYSIS UP TO 27-Aug-2024
EN 10204-2.1 ed. 2004

Parametri / Parameters	*Valore rilevato / Detected value*	*Valori di legge / Legal limit*
Ammonio / Ammonium (NH_4^+) [mg/l]	*< 0,1*	*0,5*
Arsenico / Arsenic (As_{tot}) [µg/l]	*< 1*	*10*
Bicarbonato / Bicarbonate (HCO_3^-) [mg/l]	*317*	*Non previsto / Not expected*
Calcio / Calcium (Ca^{2+}) [mg/l]	*87*	*Non previsto / Not expected*
Cloruri / Chlorides (Cl^-) [mg/l]	*12*	*250*
Composti organoalogenati / Organohalogen compounds [µg/l]	*<1*	*30*
Conducibilità / Conductivity (µS/cm)	*501*	*2500*
Cromo / Chromium [µg/l]	*<5*	*50*
Durezza Totale / Total hardness [°f]	*30*	*Non previsto / Not expected*
Fluoruri / Fluorides (F^-) [mg/l]	*<0,2*	*1,5*
Magnesio / Magnesium (Mg^{2+}) [mg/l]	*20*	*Non previsto / Not expected*
Manganese / Manganese (Mn_{tot}) [µg/l]	*< 5*	*50*
Microinquinanti tot / Micropollutants tot [µg/l]	*<0,01*	*0,5*
Nitrati / Nitrates (NO_3^-) [mg/l]	*31*	*50*
Nitriti / Nitrites (NO_2^-) [mg/l]	*<0,02*	*0,5*
Potassio / Potassium (K^+) [mg/l]	*1*	*Non previsto / Not expected*
Residuo secco a 180°C / Dry residue at 180°C [mg/l]	*361*	*1500*
Sodio / Sodium (NA^+) [mg/l]	*5*	*200*
Solfati / Sulfates (SO_4^{2-}) [mg/l]	*31*	*250*
pH / pH	*7*	*6,5 - 9,5*

* I dati corrispondono ai valori pubblicati dal laboratorio Amiacque dell'acquedotto del comune di Magenta (MI) - Italia.

* All the data correspond to the values published by the laboratory Amiacque of the Magenta's municipality aqueduct (MI) - Italy.



indra VALVES - ITALY

RAPPORTO DI COLLAUDO COPPIA DI MANOVRA E RESISTENZA ELETTRICA
TORQUE AND ELECTRICAL RESISTANCE REPORT
- INDRA VALVES -

MD-02-14-IT-UK / P
Rev. 0
Data: 01-Jul-14

Nr. Certificato / *Certificate No.*	10123/AC-TET-E	**Data** / *Date :*	14-Oct-24 *Rev. 0*
Cliente / *Customer :*	ROSETTI MARINO SPA		
Ordine Nr. / *Order Nr.*	1724000798 REV.2	**Data** / *Date :*	26-Jun-24
Ns. commessa Nr. / *Our job Nr.*	24 01216	**Data** / *Date :*	03-Jul-24
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*	

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST according to API 598 , API 6D, BS EN 12266-1	VALORE MASSIMO (Limit)	STRUMENTO DI MISURA (Gauge Instrument)	SCADENZA (Due Date)
Torque test			
Electrical resistance test	*10 Ohm*	*Digital Multimeter DMM249 13290*	*31-May-25*

POS. (ITEM)	CODICE (CODE)	DESCRIZIONE (DESCRIPTION)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY) PRODUCED	QTA' (QTY) TESTED
110	*00.VSF.2689/V*	*SB-598-25-F150RF3-F*	*VBC0NN24710100*	*1*	*1*

n° SERIALE (Serial n°)	LATO (Side)	Torque test Nm Value	Torque test Nm Result	Electrical resistance Body-stem Ohm Value	Electrical resistance Body-stem Ohm Result	Electrical resistance Body-ball Ohm Value	Electrical resistance Body-ball Ohm Result
105977	*A*			0,6	OK	0,7	OK

n° SERIALE (Serial n°)	LATO (Side)	Torque test Nm Value	Torque test Nm Result	Electrical resistance Body-stem Ohm Value	Electrical resistance Body-stem Ohm Result	Electrical resistance Body-ball Ohm Value	Electrical resistance Body-ball Ohm Result

n° SERIALE (Serial n°)	LATO (Side)	Torque test Nm Value	Torque test Nm Result				

Note / ***Remarks:***
- Test Antistatico eseguito su 1 pz. per posizione (Antistatic test executed on 1 pc. per item)

Matti + CROSSWIND R/W

PROCEDURA DI COLLAUDO
(Test procedure)
PT/VSP-VSF-HP / ATP_00

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** TESTING OPERATOR	DATA / DATE:	14-Oct-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** PRODUCTION MANAGER	DATA / DATE: 14-Oct-24

ROSETTI MARINO ITEM 120

COD. VBC0NN24721H00

TAG: BLPH-MV-412

INDRA ITEM 120

COD. 00.VSF.2691/V

indra VALVES - ITALY

RAPPORTO DI COLLAUDO "PED"
"PED" TEST REPORT
- INDRA VALVES -

MD-02-09-IT-UK
Rev. 8
Data: 24-Mar-23

Nr. Certificato / *Certificate No.*	10134/AC	**Data** / *Date :*	16-Oct-24
Cliente / *Customer :*	ROSETTI MARINO SPA		
Ordine Nr. / *Order Nr.*	1724000798 REV.2	**Data** / *Date :*	26-Jun-24
Ns. commessa Nr. / *Our job Nr.*	24 01216	**Data** / *Date :*	03-Jul-24
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*	

Rev. 0

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST (according to API 598, API 6D & 2014/68/UE PED)	FLUIDO (Fluid)	DURATA (Duration)	PRESSIONE (Pressure)	MAX. PERDITA AMMISSIBILE (ISO 5208) (Max allowable leakage)	MANOMETRO N° (Gauge ID)	DATA SCADENZA (Due Date)
Shell test	Acqua / Water	2 min.	vedi sotto / see below	nessuna perdita / no leakage	vedi sotto / see below	vedi sotto / see below
High pressure closure test	Acqua / Water	2 min.	vedi sotto / see below	vedi sotto / see below	vedi sotto / see below	vedi sotto / see below
Low pressure closure test (only for ball valves)	Aria / Air	2 min.	vedi sotto / see below	vedi sotto / see below	24F06-1334-01-13	03-Dec-24
Back seat test (only for needle valves)	Acqua / Water	2 min.	vedi sotto / see below	nessuna perdita / no leakage	vedi sotto / see below	vedi sotto / see below

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY) PRODUCED	QTA' (QTY) TESTED	VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi) Pressure	Shell test Result	High pressure closure test bar (psi) Pressure	High pressure closure test Result	Low pressure closure test bar (psi) Pressure	Low pressure closure test Result	Back seat test bar (psi) Pressure	Back seat test Result	Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
80	80	00.VSF.2692(T)	SB-598-50-J150RF3-J (105973)	VBC0NN24460200	2	1	Ball	2"	RF	150	F55 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
120	120	00.VSF.2691/V	SB-598-40-H150RF3-H (105978)	VBC0NN24721H00	1	1	Ball	1 ½"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
210	210	00.VSF.2699/V	SBB-798-40-H150RF3-H-D (106027)	VLBLNN01291H00	1	1	Ball+Needle	1 ½"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	22 (319)	N.L	YES	A	24F06-1334-01--13	03-Dec-24
230	230	00.VSF.2698(T)	SBB-798-40-H150RF3-H-D (106031)	VLBLNN01381H00	2	1	Ball+Needle	1 ½"	RF	150	F55 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	22 (319)	N.L	YES	A	24F06-1334-01--13	03-Dec-24
321	390	00.VSF.2716/V	SB-598-50-L150RF3-L (106898)	VBD0NN16610300	1	1	Ball	3"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24

INDRA SRL dichiara che le valvole fornite sono conformi ai requisiti stabiliti dalla API 598 - ASME B16.34 - 2014/68/UE PED Cert. Modulo H emesso da TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948
INDRA SRL declares that the supplied valves are in conformity with the requirements of API 598 - ASME B16.34 - 2014/68/UE PED Cert. Module H issued by TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948

Note / Remarks:
- CAVITY SEAT RELIEF TEST PERFORMED ON 100% RESULT:OK
- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno
(Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)
- *N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE*
Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector
Si / Yes ☑
No / No ☐
Nominativo / Name .....
Data / Date .....
Timbro e Firma / Stamp and Signature x CROSSWIND 16/10/24

PROCEDURA DI COLLAUDO
(Test procedure)
PT VSP-VSF-ITA/ENG
(24-01216)

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** TESTING OPERATOR	DATA / DATE:	16-Oct-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** PRODUCTION MANAGER	DATA / DATE:	16-Oct-24

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E-mail: indra@indra.it - http://www.indra.it

WATER QUALITY ANALYSIS UP TO 27-Aug-2024
EN 10204-2.1 ed. 2004

Parametri / Parameters	*Valore rilevato / Detected value*	*Valori di legge / Legal limit*
Ammonio / Ammonium (NH_4^+) [mg/l]	*< 0,1*	*0,5*
Arsenico / Arsenic (As_{tot}) [µg/l]	*< 1*	*10*
Bicarbonato / Bicarbonate (HCO_3^-) [mg/l]	*317*	*Non previsto / Not expected*
Calcio / Calcium (Ca^{2+}) [mg/l]	*87*	*Non previsto / Not expected*
Cloruri / Chlorides (Cl^-) [mg/l]	*12*	*250*
Composti organoalogenati / Organohalogen compounds [µg/l]	*<1*	*30*
Conducibilità / Conductivity (µS/cm)	*501*	*2500*
Cromo / Chromium [µg/l]	*<5*	*50*
Durezza Totale / Total hardness [°f]	*30*	*Non previsto / Not expected*
Fluoruri / Fluorides (F^-) [mg/l]	*<0,2*	*1,5*
Magnesio / Magnesium (Mg^{2+}) [mg/l]	*20*	*Non previsto / Not expected*
Manganese / Manganese (Mn_{tot}) [µg/l]	*< 5*	*50*
Microinquinanti tot / Micropollutants tot [µg/l]	*<0,01*	*0,5*
Nitrati / Nitrates (NO_3^-) [mg/l]	*31*	*50*
Nitriti / Nitrites (NO_2^-) [mg/l]	*<0,02*	*0,5*
Potassio / Potassium (K^+) [mg/l]	*1*	*Non previsto / Not expected*
Residuo secco a 180°C / Dry residue at 180°C [mg/l]	*361*	*1500*
Sodio / Sodium (NA^+) [mg/l]	*5*	*200*
Solfati / Sulfates (SO_4^{2-}) [mg/l]	*31*	*250*
pH / pH	*7*	*6,5 - 9,5*

* I dati corrispondono ai valori pubblicati dal laboratorio Amiacque dell'acquedotto del comune di Magenta (MI) - Italia.

* All the data correspond to the values published by the laboratory Amiacque of the Magenta's municipality aqueduct (MI) - Italy.



indra VALVES - ITALY	**RAPPORTO DI COLLAUDO "PED"** **"PED" TEST REPORT** **- INDRA VALVES -**	**MD-02-09-IT-UK** **Rev. 8** **Data: 24-Mar-23**

Nr. Certificato / *Certificate No.*	10124/AC	**Data** / *Date :*	14-Oct-24
Cliente / *Customer :*	ROSETTI MARINO SPA		
Ordine Nr. / *Order Nr.*	1724000798 REV.2	**Data** / *Date :*	26-Jun-24
Ns. commessa Nr. / *Our job Nr.*	24 01216	**Data** / *Date :*	03-Jul-24
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*	

Rev. 0

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST (according to API 598, API 6D & 2014/68/UE PED)	FLUIDO (Fluid)	DURATA (Duration)	PRESSIONE (Pressure)	MAX. PERDITA AMMISSIBILE (ISO 5208) (Max allowable leakage)	MANOMETRO N° (Gauge ID)	DATA SCADENZA (Due Date)
Shell test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*
High pressure closure test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*
Low pressure closure test (only for ball valves)	*Aria / Air*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*24F06-1334-01-13*	*03-Dec-24*
Back seat test (only for needle valves)	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY)		VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi)		High pressure closure test bar (psi)		Low pressure closure test bar (psi)		Back seat test bar (psi)		Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
					PRODUCED	TESTED						Pressure	Result	Pressure	Result	Pressure	Result	Pressure	Result				
80	*80*	*00.VSF.2692(T)*	*SB-598-50-J150RF3-J (From 105972 To 105973)*	*VBC0NN24460200*	*2*	*100%*	*Ball*	*2"*	*RF*	*150*	*F55 NACE*	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
120	*120*	*00.VSF.2691/V*	*SB-598-40-H150RF3-H (105978)*	*VBC0NN24721H00*	*1*	*100%*	*Ball*	*1 ½"*	*RF*	*150*	*A350 LF2 NACE*	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
210	*210*	*00.VSF.2699/V*	*SBB-798-40-H150RF3-H-D (106027)*	*VLBLNN01291H00*	*1*	*100%*	*Ball+Needle*	*1 ½"*	*RF*	*150*	*A350 LF2 NACE*	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	22 (319)	N.L	YES	A	24F06-1334-01--13	03-Dec-24
230	*230*	*00.VSF.2698(T)*	*SBB-798-40-H150RF3-H-D (From 106030 To 106031)*	*VLBLNN01381H00*	*2*	*100%*	*Ball+Needle*	*1 ½"*	*RF*	*150*	*F55 NACE*	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	22 (319)	N.L	YES	A	24F06-1334-01--13	03-Dec-24
321	*390*	*00.VSF.2716/V*	*SB-598-50-L150RF3-L (106898)*	*VBD0NN16610300*	*1*	*100%*	*Ball*	*3"*	*RF*	*150*	*A350 LF2 NACE*	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24

INDRA SRL dichiara che le valvole fornite sono conformi ai requisiti stabiliti dalla API 598 - ASME B16.34 - 2014/68/UE PED Cert. Modulo H emesso da TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948

INDRA SRL declares that the supplied valves are in conformity with the requirements of API 598 - ASME B16.34 - 2014/68/UE PED Cert. Module H issued by TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948

Note / Remarks:

- CAVITY SEAT RELIEF TEST PERFORMED ON 100% RESULT:OK
- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno

(Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)

- *N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE*

Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector	*SI / Yes* ☐ *No / No* ☑
Nominativo / Name	*Timbro e Firma / Stamp and Signature* Fabrix CROSSWIND M/W
Data / Date	

PROCEDURA DI COLLAUDO
(Test procedure)

PT VSP-VSF-ITA/ENG
(24-01216)

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** **TESTING OPERATOR**	DATA / DATE:	14-Oct-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** **PRODUCTION MANAGER**	DATA / DATE:	14-Oct-24

indra VALVES - ITALY	**RAPPORTO DI COLLAUDO COPPIA DI MANOVRA E RESISTENZA ELETTRICA** ***TORQUE AND ELECTRICAL RESISTANCE REPORT*** ***- INDRA VALVES -***	**MD-02-14-IT-UK / P** **Rev. 0** **Data: 01-Jul-14**

Nr. Certificato / *Certificate No.* 10124/AC-TET-B — **Data** / *Date :* 14-Oct-24 — *Rev. 0*

Cliente / *Customer :* ROSETTI MARINO SPA

Ordine Nr. / *Order Nr.* 1724000798 REV.2 — **Data** / *Date :* 26-Jun-24

Ns. commessa Nr. / *Our job Nr.* 24 01216 — **Data** / *Date :* 03-Jul-24

Ns. D.D.T. Nr. / *Our advise note Nr.* — **Data** / *Date :*

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST according to API 598 , API 6D, BS EN 12266-1	*VALORE MASSIMO (Limit)*	*STRUMENTO DI MISURA (Gauge Instrument)*	*SCADENZA (Due Date)*
Torque test			
Electrical resistance test	*10 Ohm*	*Digital Multimeter DMM249 13290*	*31-May-25*

POS. (ITEM)	CODICE (CODE)	DESCRIZIONE (DESCRIPTION)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY) PRODUCED	TESTED
120	*00.VSF.2691/V*	*SB-598-40-H150RF3-H*	*VBC0NN24721H00*	*1*	*1*

n° SERIALE (Serial n°)	LATO (Side)	Torque test Nm Value	Torque test Nm Result	Electrical resistance Body-stem Ohm Value	Electrical resistance Body-stem Ohm Result	Electrical resistance Body-ball Ohm Value	Electrical resistance Body-ball Ohm Result
105978	*A*			0,8	OK	0,6	OK

n° SERIALE (Serial n°)	LATO (Side)	Torque test Nm Value	Torque test Nm Result	Electrical resistance Body-stem Ohm Value	Electrical resistance Body-stem Ohm Result	Electrical resistance Body-ball Ohm Value	Electrical resistance Body-ball Ohm Result

n° SERIALE (Serial n°)	LATO (Side)	Torque test Nm Value	Torque test Nm Result				

Note / ***Remarks:***
- Test Antistatico eseguito su 1 pz. per posizione (Antistatic test executed on 1 pc. per item)

Flatness = Crosswind R/W

PROCEDURA DI COLLAUDO *(Test procedure)*
PT/VSP-VSF-HP / ATP_00

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** TESTING OPERATOR	DATA / DATE:	14-Oct-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** PRODUCTION MANAGER	DATA / DATE: 14-Oct-24

ROSETTI MARINO ITEM 130

COD. VBC0NN24893Q00

TAG: BLPH-MV-214,

BLPH-MV-400

INDRA ITEM 130

COD. 00.VSF.2683(T)

indra VALVES - ITALY	**RAPPORTO DI COLLAUDO** ***TEST REPORT*** ***- INDRA VALVES -***	**MD-02-05-IT-UK / P** **Rev. 24** **Data: 24-Mar-23**

Nr. Certificato / *Certificate No.*	**10101/AC**	**Data** / *Date :*	**09-Oct-24** *Rev. 0*
Cliente / *Customer :*	**ROSETTI MARINO SPA**		
Ordine Nr. / *Order Nr.*	**1724000798 REV.2**	**Data** / *Date :*	**26-Jun-24**
Ns. commessa Nr. / *Our job Nr.*	**24 01216**	**Data** / *Date :*	**03-Jul-24**
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*	

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST (according to API 598 & API 6D)	*FLUIDO (Fluid)*	*DURATA (Duration)*	*PRESSIONE (Pressure)*	*MAX. PERDITA AMMISSIBILE (ISO 5208) (Max allowable leakage)*	*MANOMETRO N° (Gauge ID)*	*DATA SCADENZA (Due Date)*
Shell test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*
High pressure closure test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*
Low pressure closure test (only for ball valves)	*Aria / Air*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*24F06-1334-01-13*	*03-Dec-24*
Back seat test (only for needle valves)	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY)		VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi)		High pressure closure test bar (psi)		Low pressure closure test bar (psi)		Back seat test bar (psi)		Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
					PRODUCED	TESTED						Pressure	Result	Pressure	Result	Pressure	Result	Pressure	Result				
130	*130*	*00.VSF.2683(T)*	*SB-598-20-E150FF-E (105979)*	*VBC0NN24893Q00*	*2*	*1*	*Ball*	*¾"*	*FF*	*150*	*HASTELLOY C276 NACE*	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01-13	03-Dec-24

Note / Remarks:

- CAVITY SEAT RELIEF TEST PERFORMED ON 100% RESULT:OK
- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno
  (Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)
- *N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE*

Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector	*SI / Yes* ☑ *No / No* ☐
Nominativo / Name	*Timbro e Firma / Stamp and Signature*
Data / Date	x CROSSWIND 31/10/24 W

PROCEDURA DI COLLAUDO
(Test procedure)
PT VSP-VSF-ITA/ENG
(24-01216)

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** **TESTING OPERATOR**	DATA / DATE:	09-Oct-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** **PRODUCTION MANAGER**	DATA / DATE:	09-Oct-24

20013 Magenta (MI) Italy - Via Novara, 10/B-C
Tel. +39 02 97298663 r.a. - Fax +39 02 97291855
E-mail: indra@indra.it - http://www.indra.it

WATER QUALITY ANALYSIS UP TO 27-Aug-2024
EN 10204-2.1 ed. 2004

Parametri / Parameters	*Valore rilevato / Detected value*	*Valori di legge / Legal limit*
Ammonio / Ammonium (NH_4^+) [mg/l]	*< 0,1*	*0,5*
Arsenico / Arsenic (As_{tot}) [µg/l]	*< 1*	*10*
Bicarbonato / Bicarbonate (HCO_3^-) [mg/l]	*317*	*Non previsto / Not expected*
Calcio / Calcium (Ca^{2+}) [mg/l]	*87*	*Non previsto / Not expected*
Cloruri / Chlorides (Cl^-) [mg/l]	*12*	*250*
Composti organoalogenati / Organohalogen compounds [µg/l]	*<1*	*30*
Conducibilità / Conductivity (µS/cm)	*501*	*2500*
Cromo / Chromium [µg/l]	*<5*	*50*
Durezza Totale / Total hardness [°f]	*30*	*Non previsto / Not expected*
Fluoruri / Fluorides (F^-) [mg/l]	*<0,2*	*1,5*
Magnesio / Magnesium (Mg^{2+}) [mg/l]	*20*	*Non previsto / Not expected*
Manganese / Manganese (Mn_{tot}) [µg/l]	*< 5*	*50*
Microinquinanti tot / Micropollutants tot [µg/l]	*<0,01*	*0,5*
Nitrati / Nitrates (NO_3^-) [mg/l]	*31*	*50*
Nitriti / Nitrites (NO_2^-) [mg/l]	*<0,02*	*0,5*
Potassio / Potassium (K^+) [mg/l]	*1*	*Non previsto / Not expected*
Residuo secco a 180°C / Dry residue at 180°C [mg/l]	*361*	*1500*
Sodio / Sodium (NA^+) [mg/l]	*5*	*200*
Solfati / Sulfates (SO_4^{2-}) [mg/l]	*31*	*250*
pH / pH	*7*	*6,5 - 9,5*

* I dati corrispondono ai valori pubblicati dal laboratorio Amiacque dell'acquedotto del comune di Magenta (MI) - Italia.

* All the data correspond to the values published by the laboratory Amiacque of the Magenta's municipality aqueduct (MI) - Italy.

x CROSSWIND
9/10/24 R

indra VALVES - ITALY	**RAPPORTO DI COLLAUDO COPPIA DI MANOVRA E RESISTENZA ELETTRICA** ***TORQUE AND ELECTRICAL RESISTANCE REPORT*** ***- INDRA VALVES -***	**MD-02-14-IT-UK / P** **Rev. 0** **Data: 01-Jul-14**

Nr. Certificato / *Certificate No.*	**10094/AC-TET**	**Data** / *Date :*	**02-Oct-24** *Rev. 0*
Cliente / *Customer :*	**ROSETTI MARINO SPA**		
Ordine Nr. / *Order Nr.*	**1724000798 REV.2**	**Data** / *Date :*	**26-Jun-24**
Ns. commessa Nr. / *Our job Nr.*	**24 01216**	**Data** / *Date :*	**03-Jul-24**
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*	

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST *according to API 598 , API 6D, BS EN 12266-1*	***VALORE MASSIMO*** *(Limit)*	***STRUMENTO DI MISURA*** *(Gauge Instrument)*	***SCADENZA*** *(Due Date)*
Torque test			
Electrical resistance test	*10 Ohm*	*Digital Multimeter DMM249 13290*	*31-May-25*

POS. (ITEM)	**CODICE** (CODE)	**DESCRIZIONE** (DESCRIPTION)	**CODICE CLIENTE** (CUSTOMER CODE)	**QTA'** (QTY) PRODUCED	TESTED
130	***00.VSF.2683(T)***	***SB-598-20-E150FF-E***	***VBC0NN24893Q00***	***2***	***1***

n° SERIALE (Serial n°)	**LATO** (Side)	*Torque test Nm*		*Electrical resistance Body-stem Ohm*		*Electrical resistance Body-ball Ohm*	
		Value	Result	Value	Result	Value	Result
105979	***A***			0,5	OK	0,5	OK

n° SERIALE (Serial n°)	**LATO** (Side)	*Torque test Nm*		*Electrical resistance Body-stem Ohm*		*Electrical resistance Body-ball Ohm*	
		Value	Result	Value	Result	Value	Result

n° SERIALE (Serial n°)	**LATO** (Side)	*Torque test Nm*					
		Value	Result	Value	Result	Value	Result

Note / ***Remarks:***
- Test Antistatico eseguito su 1 pz. per posizione (Antistatic test executed on 1 pc. per item)

xCROSSWIND 16/10/24 R

PROCEDURA DI COLLAUDO *(Test procedure)*
PT/VSP-VSF-HP / ATP_00

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** **TESTING OPERATOR**	DATA / DATE: 02-Oct-24		APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** **PRODUCTION MANAGER**	DATA / DATE: 02-Oct-24

ROSETTI MARINO ITEM 140

COD. VBD0NN16460300

TAG: BLPH-MV-402

INDRA ITEM 140

COD. 00.VSF.2695/V

indra VALVES - ITALY	**RAPPORTO DI COLLAUDO "PED"** **"PED" TEST REPORT** **- INDRA VALVES -**	**MD-02-09-IT-UK** **Rev. 8** **Data: 24-Mar-23**

Nr. Certificato / *Certificate No.* 10071/AC — **Data** / *Date :* 02-Oct-24 — *Rev. 0*

Cliente / *Customer :* ROSETTI MARINO SPA

Ordine Nr. / *Order Nr.* 1724000798 REV.2 — **Data** / *Date :* 26-Jun-24

Ns. commessa Nr. / *Our job Nr.* 24 01216 — **Data** / *Date :* 03-Jul-24

Ns. D.D.T. Nr. / *Our advise note Nr.* — **Data** / *Date :*

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST (according to API 598, API 6D & 2014/68/UE PED)	*FLUIDO (Fluid)*	*DURATA (Duration)*	*PRESSIONE (Pressure)*	*MAX. PERDITA AMMISSIBILE (ISO 5208) (Mex allowable leakage)*	*MANOMETRO N° (Gauge ID)*	*DATA SCADENZA (Due Date)*
Shell test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*
High pressure closure test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*
Low pressure closure test (only for ball valves)	*Aria / Air*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*327268-79*	*15-Jan-25*
Back seat test (only for needle valves)	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY) PRODUCED	QTA' (QTY) TESTED	VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi) Pressure	Shell test Result	High pressure closure test bar (psi) Pressure	High pressure closure test Result	Low pressure closure test bar (psi) Pressure	Low pressure closure test Result	Back seat test bar (psi) Pressure	Back seat test Result	Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
30	30	00.VSF.2690/V	SB-598-40-H150RF3-H (105959)	VBC0NN06961H00	2	1	Ball	1 ½"	RF	150	AISI 316/316L NACE MR01.75	29 (421)	N.L	21 (305)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01–13	03-Dec-24
140	140	00.VSF.2695/V	SB-598-HR-50-L150RF3-L (105981)	VBD0NN16460300	1	1	Ball	3"	RF	150	AISI 316/316L NACE MR01.75	29 (421)	N.L	21 (305)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01–13	03-Dec-24

☐ REVIEWED ☑ WITNESSED

DATE: - 2 OTT 2024

NAME: MASSIMILIANO SERGHENTI

ON BEHALF OF : ROSETTI MARINO

SIGNATURE:

CROSSWIND 2/10/24

INDRA SRL dichiara che le valvole fornite sono conformi ai requisiti stabiliti dalla API 598 - ASME B16.34 - 2014/68/UE PED Cert. Modulo H emesso da TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948

INDRA SRL declares that the supplied valves are in conformity with the requirements of API 598 - ASME B16.34 - 2014/68/UE PED Cert. Module H issued by TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948

Note / Remarks:

- CAVITY SEAT RELIEF TEST PERFORMED ON 100% RESULT:OK
- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno
  (Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)
- *N.L. = NO LEAKAGE (NESSUNA PERDITA)* *OK = LEAKAGE < MAX ALLOWABLE*

Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector	*Si / Yes* ☑ *No / No* ☐
Nominativo / Name	*Timbro e Firma / Stamp and Signature*
.....	
Data / Date	
.....	

PROCEDURA DI COLLAUDO
(Test procedure)

PT VSP-VSF-ITA/ENG
(24-01216)

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** **TESTING OPERATOR**	DATA / DATE:	02-Oct-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** **PRODUCTION MANAGER**	DATA / DATE:	02-Oct-24

indra VALVES - ITALY
20013 Magenta (MI) Italy - Via Novara, 10/B-C
Tel. +39 02 97298663 r.a. - Fax +39 02 97291855
E-mail: indra@indra.it - http://www.indra.it

WATER QUALITY ANALYSIS UP TO 27-Aug-2024
EN 10204-2.1 ed. 2004

Parametri / Parameters	*Valore rilevato / Detected value*	*Valori di legge / Legal limit*
Ammonio / Ammonium (NH_4^+) [mg/l]	*< 0,1*	*0,5*
Arsenico / Arsenic (As_{tot}) [µg/l]	*< 1*	*10*
Bicarbonato / Bicarbonate (HCO_3^-) [mg/l]	*317*	*Non previsto / Not expected*
Calcio / Calcium (Ca^{2+}) [mg/l]	*87*	*Non previsto / Not expected*
Cloruri / Chlorides (Cl^-) [mg/l]	*12*	*250*
Composti organoalogenati / Organohalogen compounds [µg/l]	*<1*	*30*
Conducibilità / Conductivity (µS/cm)	*501*	*2500*
Cromo / Chromium [µg/l]	*<5*	*50*
Durezza Totale / Total hardness [°f]	*30*	*Non previsto / Not expected*
Fluoruri / Fluorides (F^-) [mg/l]	*<0,2*	*1,5*
Magnesio / Magnesium (Mg^{2+}) [mg/l]	*20*	*Non previsto / Not expected*
Manganese / Manganese (Mn_{tot}) [µg/l]	*< 5*	*50*
Microinquinanti tot / Micropollutants tot [µg/l]	*<0,01*	*0,5*
Nitrati / Nitrates (NO_3^-) [mg/l]	*31*	*50*
Nitriti / Nitrites (NO_2^-) [mg/l]	*<0,02*	*0,5*
Potassio / Potassium (K^+) [mg/l]	*1*	*Non previsto / Not expected*
Residuo secco a 180°C / Dry residue at 180°C [mg/l]	*361*	*1500*
Sodio / Sodium (NA^+) [mg/l]	*5*	*200*
Solfati / Sulfates (SO_4^{2-}) [mg/l]	*31*	*250*
pH / pH	*7*	*6,5 - 9,5*

* I dati corrispondono ai valori pubblicati dal laboratorio Amiacque dell'acquedotto del comune di Magenta (MI) - Italia.

* All the data correspond to the values published by the laboratory Amiacque of the Magenta's municipality aqueduct (MI) - Italy.

x CROSSWIND

2/10/24 R

☑ REVIEWED ☐ WITNESSED

DATE: - 2 OTT 2024

NAME: MASSIMILIANO BERGHENTI
ON BEHALF OF :
SIGNATURE:
ROSETTI MARINO

indra VALVES - ITALY	**RAPPORTO DI COLLAUDO A GAS** **GAS TEST REPORT** **- INDRA VALVES -**	**MD-02-13-IT-UK / P** **Rev. 2** **Data: 24-Oct-16**

Nr. Certificato / *Certificate No.*	**10069/AC-GT**	**Data** / *Date :*	**30-Sep-24** *Rev. 0*
Cliente / *Customer :*	**ROSETTI MARINO SPA**		
Ordine Nr. / *Order Nr.*	**1724000798 REV.2**	**Data** / *Date :*	**26-Jun-24**
Ns. commessa Nr. / *Our job Nr.*	**24 01216**	**Data** / *Date :*	**03-Jul-24**
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*	

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST according to API 598 , BS EN 12266-1	*FLUIDO (Fluid)*	*DURATA (Duration)*	*PRESSIONE (Pressure)*	*MAX. PERDITA AMMISSIBILE (BS EN 12266-1) (Max allowable leakage)*	*MANOMETRO N° (Gauge ID)*	*DATA SCADENZA (Due Date)*
Shell test	*Elio / Helium*	*15 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*
High pressure closure test	*Elio / Helium*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY)		VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	*Shell test bar (psi)*		*High pressure closure test bar (psi)*				*Bidirectional Test*	*Max. allowable leakage (rate)*	*Gauge ID*	*Due Date*
					PRODUCED	TESTED						Pressure	Result	Pressure	Result	Duration					
140	*140*	*00.VSF.2695/V*	*SB-598-HR-50-L150RF3-L (105981)*	*VBD0NN16460300*	*1*	*1*	*Ball*	*3"*	*RF*	*150*	*AISI 316/316L NACE MR01.75*	21 (305)	N.L	21 (305)	N.L	2 min.		YES	A	24F06-1334-01--13	03-Dec-24

Note / Remarks:

- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno

(Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)

- *N.L. = NO LEAKAGE (NESSUNA PERDITA)* *OK = LEAKAGE < MAX ALLOWABLE*

Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector	*Si / Yes* ☐ *No / No* ☑
Nominativo / Name	*Timbro e Firma / Stamp and Signature* CROSSWIND 16/10/24
Data / Date	

PROCEDURA DI COLLAUDO
(Test procedure)

PGT/VSP-VSF
(24-01216)

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** **TESTING OPERATOR**	DATA / DATE:	30-Sep-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** **PRODUCTION MANAGER**	DATA / DATE:	30-Sep-24

indra VALVES - ITALY	**RAPPORTO DI COLLAUDO "PED"** **"PED" TEST REPORT** **- INDRA VALVES -**	MD-02-09-IT-UK Rev. 8 Data: 24-Mar-23

Nr. Certificato / *Certificate No.* 10069/AC — **Data** / *Date :* 30-Sep-24 — *Rev. 0*

Cliente / *Customer :* ROSETTI MARINO SPA

Ordine Nr. / *Order Nr.* 1724000798 REV.2 — **Data** / *Date :* 26-Jun-24

Ns. commessa Nr. / *Our job Nr.* 24 01216 — **Data** / *Date :* 03-Jul-24

Ns. D.D.T. Nr. / *Our advise note Nr.* — **Data** / *Date :*

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST (according to API 598, API 6D & 2014/68/UE PED)	*FLUIDO (Fluid)*	*DURATA (Duration)*	*PRESSIONE (Pressure)*	*MAX. PERDITA AMMISSIBILE (ISO 5208) (Max allowable leakage)*	*MANOMETRO N° (Gauge ID)*	*DATA SCADENZA (Due Date)*
Shell test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*
High pressure closure test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*
Low pressure closure test (only for ball valves)	*Aria / Air*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*327268-79*	*15-Jan-25*
Back seat test (only for needle valves)	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY) PRODUCED	QTA' (QTY) TESTED	VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi) Pressure	Shell test Result	High pressure closure test bar (psi) Pressure	High pressure closure test Result	Low pressure closure test bar (psi) Pressure	Low pressure closure test Result	Back seat test bar (psi) Pressure	Back seat test Result	Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
30	*30*	*00.VSF.2690/V*	*SB-598-40-H150RF3-H (From 105958 To 105959)*	*VBC0NN06961H00*	*2*	*100%*	*Ball*	*1 ½"*	*RF*	*150*	*AISI 316/316L NACE MR01.75*	29 (421)	N.L	21 (305)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
140	*140*	*00.VSF.2695/V*	*SB-598-HR-50-L150RF3-L (105981)*	*VBD0NN16460300*	*1*	*100%*	*Ball*	*3"*	*RF*	*150*	*AISI 316/316L NACE MR01.75*	29 (421)	N.L	21 (305)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24

INDRA SRL dichiara che le valvole fornite sono conformi ai requisiti stabiliti dalla API 598 - ASME B16.34 - 2014/68/UE PED Cert. Modulo H emesso da TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948
INDRA SRL declares that the supplied valves are in conformity with the requirements of API 598 - ASME B16.34 - 2014/68/UE PED Cert. Module H issued by TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948

Note / Remarks:

- CAVITY SEAT RELIEF TEST PERFORMED ON 100% RESULT:OK
- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno
  (Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)
- *N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE*

Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector — *Si / Yes* ☐ *No / No* ☑

Nominativo / Name .....

Data / Date .....

Timbro, Firma / Stamp and Signature xCROSSWIND 16/10/24

PROCEDURA DI COLLAUDO
(Test procedure)
PT VSP-VSF-ITA/ENG
(24-01216)

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** TESTING OPERATOR		DATA / DATE:	30-Sep-24	
APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** PRODUCTION MANAGER		DATA / DATE:	30-Sep-24	

indra VALVES - ITALY	**RAPPORTO DI COLLAUDO COPPIA DI MANOVRA E RESISTENZA ELETTRICA** ***TORQUE AND ELECTRICAL RESISTANCE REPORT*** ***- INDRA VALVES -***	**MD-02-14-IT-UK / P** **Rev. 0** **Data: 01-Jul-14**

Nr. Certificato / *Certificate No.*	**10069/AC-TET-B**	**Data** / *Date :*	**30-Sep-24** *Rev. 0*
Cliente / *Customer :*	**ROSETTI MARINO SPA**		
Ordine Nr. / *Order Nr.*	**1724000798 REV.2**	**Data** / *Date :*	**26-Jun-24**
Ns. commessa Nr. / *Our job Nr.*	**24 01216**	**Data** / *Date :*	**03-Jul-24**
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*	

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST according to API 598 , API 6D, BS EN 12266-1	***VALORE MASSIMO*** *(Limit)*	***STRUMENTO DI MISURA*** *(Gauge Instrument)*	***SCADENZA*** *(Due Date)*
Torque test			
Electrical resistance test	*10 Ohm*	*Digital Multimeter DMM249 13290*	*31-May-25*

POS. (ITEM)	**CODICE** (CODE)	**DESCRIZIONE** (DESCRIPTION)	**CODICE CLIENTE** (CUSTOMER CODE)	**QTA'** (QTY) PRODUCED	TESTED
140	***00.VSF.2695/V***	***SB-598-HR-50-L150RF3-L***	***VBD0NN16460300***	***1***	***1***

n° SERIALE (Serial n°)	**LATO** (Side)	*Torque test Nm* Value	Result	*Electrical resistance Body-stem Ohm* Value	Result	*Electrical resistance Body-ball Ohm* Value	Result
105981	***A***			0,4	OK	0,6	OK

n° SERIALE (Serial n°)	**LATO** (Side)	*Torque test Nm* Value	Result	*Electrical resistance Body-stem Ohm* Value	Result	*Electrical resistance Body-ball Ohm* Value	Result

n° SERIALE (Serial n°)	**LATO** (Side)	*Torque test Nm* Value	Result	Value	Result	Value	Result

Note / ***Remarks:***

- Test Antistatico eseguito su 1 pz. per posizione (Antistatic test executed on 1 pc. per item)

xCROSSWIND 16/10/24

PROCEDURA DI COLLAUDO *(Test procedure)*

PT/VSP-VSF-HP / ATP_00

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** **TESTING OPERATOR**	DATA / DATE: 30-Sep-24		APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** **PRODUCTION MANAGER**	DATA / DATE: 30-Sep-24

ROSETTI MARINO ITEM 150

COD. VLBBNN07190100

TAG:

BLPH-MV-003, BLPH-MV-010, BLPH-MV-018, BLPH-MV-029, BLPH-MV-086, BLPH-MV-087, BLPH-MV-088, BLPH-MV-093, BLPH-MV-094, BLPH-MV-098, BLPH-MV-192, BLPH-MV-193, BLPH-MV-195, BLPH-MV-197, BLPH-MV-198, BLPH-MV-200, BLPH-MV-206, BLPH-MV-207, BLPH-MV-211,BLPH-MV-212 BLPH-MV-384, BLPH-MV-385, BLPH-MV-390,BLPH-MV-391, BLPH-MV-426, BLPH-MV-428, BLPH-MV-434, BLPH-MV-435

INDRA ITEM 150

COD. 00.VSF.2680/V

indra VALVES - ITALY	**RAPPORTO DI COLLAUDO** ***TEST REPORT*** ***- INDRA VALVES -***	**MD-02-05-IT-UK / P** **Rev. 24** **Data: 24-Mar-23**

Nr. Certificato / *Certificate No.*	**10070/AC**	**Data** / *Date :*	**02-Oct-24** *Rev. 0*
Cliente / *Customer :*	**ROSETTI MARINO SPA**		
Ordine Nr. / *Order Nr.*	**1724000798 REV.2**	**Data** / *Date :*	**26-Jun-24**
Ns. commessa Nr. / *Our job Nr.*	**24 01216**	**Data** / *Date :*	**03-Jul-24**
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*	

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST (according to API 598 & API 6D)	*FLUIDO (Fluid)*	*DURATA (Duration)*	*PRESSIONE (Pressure)*	*MAX. PERDITA AMMISSIBILE (ISO 5208) (Max allowable leakage)*	*MANOMETRO N° (Gauge ID)*	*DATA SCADENZA (Due Date)*
Shell test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*
High pressure closure test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*
Low pressure closure test (only for ball valves)	*Aria / Air*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*24F06-1334-01--13*	*03-Dec-24*
Back seat test (only for needle valves)	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY)		VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi)		High pressure closure test bar (psi)		Low pressure closure test bar (psi)		Back seat test bar (psi)		Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
					PRODUCED	TESTED						Pressure	Result	Pressure	Result	Pressure	Result	Pressure	Result				
10	*10*	*00.VSF.2684/V*	*SB-598-20-E150RF3-E (105942)*	*VBC0NN06943Q00*	*1*	*1*	*Ball*	*¾"*	*RF*	*150*	*AISI 316/316L NACE MR01.75*	29 (421)	N.L	21 (305)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
20	*20*	*00.VSF.2687/V*	*SB-598-25-F150RF3-F (105944, 105949)*	*VBC0NN06950100*	*15*	*2*	*Ball*	*1"*	*RF*	*150*	*AISI 316/316L NACE MR01.75*	29 (421)	N.L	21 (305)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
40	*40*	*00.VSF.2693/V*	*SB-598-HR-20-E150RF3-E (105960)*	*VBC0NN24343Q00*	*2*	*1*	*Ball*	*¾"*	*RF*	*150*	*AISI 316/316L NACE MR01.75*	29 (421)	N.L	21 (305)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
150	*150*	*00.VSF.2680/V*	*DBB-898-HR-25-F300RF3-F-D (105990, 105991, 106004)*	*VLBBNN07190100*	*28*	*3*	*Ball+Needle*	*1"*	*RF*	*300*	*AISI 316/316L NACE MR01.75*	75 (1088)	N.L	55 (798)	N.L	6 (87)	N.L	55 (798)	N.L	YES	A	24F06-1334-01--13	03-Dec-24
322	*400*	*00.VSF.2680/V*	*DBB-898-HR-25-F300RF3-F-D (106899)*	*VLBBNN07190100*	*1*	*1*	*Ball+Needle*	*1"*	*RF*	*300*	*AISI 316/316L NACE MR01.75*	75 (1088)	N.L	55 (798)	N.L	6 (87)	N.L	55 (798)	N.L	YES	A	24F06-1334-01--13	03-Dec-24

☐ REVIEWED ☑ WITNESSED

DATE: - 2 OTT 2024

NAME: MASSIMILIANO BERGHENTI ROSETTI MARINO

ON BEHALF OF :

SIGNATURE:

CROSSWIND 2/10/24

Note / Remarks:

- CAVITY SEAT RELIEF TEST PERFORMED ON 100% RESULT:OK
- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno

(Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)

- N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE

Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector	*Si / Yes* ☑ *No / No* ☐
Nominativo / Name	*Timbro e Firma / Stamp and Signature*
.....	
Data / Date	
.....	

PROCEDURA DI COLLAUDO
(Test procedure)

PT VSP-VSF-ITA/ENG
(24-01216)

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** **TESTING OPERATOR**	DATA / DATE: 02-Oct-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** **PRODUCTION MANAGER**	DATA / DATE: 02-Oct-24

indra VALVES - ITALY
20013 Magenta (MI) Italy - Via Novara, 10/B-C
Tel. +39 02 97298663 r.a. - Fax +39 02 97291855
E-mail: indra@indra.it - http://www.indra.it

WATER QUALITY ANALYSIS UP TO 27-Aug-2024
EN 10204-2.1 ed. 2004

Parametri / Parameters	*Valore rilevato / Detected value*	*Valori di legge / Legal limit*
Ammonio / Ammonium (NH_4^+) [mg/l]	*< 0,1*	*0,5*
Arsenico / Arsenic (As_{tot}) [µg/l]	*< 1*	*10*
Bicarbonato / Bicarbonate (HCO_3^-) [mg/l]	*317*	*Non previsto / Not expected*
Calcio / Calcium (Ca^{2+}) [mg/l]	*87*	*Non previsto / Not expected*
Cloruri / Chlorides (Cl^-) [mg/l]	*12*	*250*
Composti organoalogenati / Organohalogen compounds [µg/l]	*<1*	*30*
Conducibilità / Conductivity (µS/cm)	*501*	*2500*
Cromo / Chromium [µg/l]	*<5*	*50*
Durezza Totale / Total hardness [°f]	*30*	*Non previsto / Not expected*
Fluoruri / Fluorides (F^-) [mg/l]	*<0,2*	*1,5*
Magnesio / Magnesium (Mg^{2+}) [mg/l]	*20*	*Non previsto / Not expected*
Manganese / Manganese (Mn_{tot}) [µg/l]	*< 5*	*50*
Microinquinanti tot / Micropollutants tot [µg/l]	*<0,01*	*0,5*
Nitrati / Nitrates (NO_3^-) [mg/l]	*31*	*50*
Nitriti / Nitrites (NO_2^-) [mg/l]	*<0,02*	*0,5*
Potassio / Potassium (K^+) [mg/l]	*1*	*Non previsto / Not expected*
Residuo secco a 180°C / Dry residue at 180°C [mg/l]	*361*	*1500*
Sodio / Sodium (NA^+) [mg/l]	*5*	*200*
Solfati / Sulfates (SO_4^{2-}) [mg/l]	*31*	*250*
pH / pH	*7*	*6,5 - 9,5*

* I dati corrispondono ai valori pubblicati dal laboratorio Amiacque dell'acquedotto del comune di Magenta (MI) - Italia.

* All the data correspond to the values published by the laboratory Amiacque of the Magenta's municipality aqueduct (MI) - Italy.

x CROSSWIND

2/10/24 R

☑ REVIEWED ☐ WITNESSED

DATE: - 2 OTT 2024

NAME: MASSIMILIANO BERGHENTI
ON BEHALF OF :
SIGNATURE:
ROSETTI MARINO

indra VALVES - ITALY	**RAPPORTO DI COLLAUDO A GAS** **GAS TEST REPORT** **- INDRA VALVES -**	**MD-02-13-IT-UK / P** **Rev. 2** **Data: 24-Oct-16**

Nr. Certificato / *Certificate No.*	10068/AC-GT	**Data** / *Date :*	30-Sep-24 *Rev. 0*
Cliente / *Customer :*	ROSETTI MARINO SPA		
Ordine Nr. / *Order Nr.*	1724000798 REV.2	**Data** / *Date :*	26-Jun-24
Ns. commessa Nr. / *Our job Nr.*	24 01216	**Data** / *Date :*	03-Jul-24
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*	

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST according to API 598 , BS EN 12266-1	*FLUIDO (Fluid)*	*DURATA (Duration)*	*PRESSIONE (Pressure)*	*MAX. PERDITA AMMISSIBILE (BS EN 12266-1) (Max allowable leakage)*	*MANOMETRO N° (Gauge ID)*	*DATA SCADENZA (Due Date)*
Shell test	*Elio / Helium*	*15 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*
High pressure closure test	*Elio / Helium*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY)		VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi)		High pressure closure test bar (psi)				Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
					PRODUCED	TESTED						Pressure	Result	Pressure	Result	Duration					
40	40	00.VSF.2693/V	SB-598-HR-20-E150RF3-E (105960)	VBC0NN24343Q00	2	1	Ball	¾"	RF	150	AISI 316/316L NACE MR01.75	21 (305)	N.L	21 (305)	N.L	2 min.		YES	A	24F06-1334-01--13	03-Dec-24
150	150	00.VSF.2680/V	DBB-898-HR-25-F300RF3-F-D (105982)	VLBBNN07190100	28	1	Ball+Needle	1"	RF	300	AISI 316/316L NACE MR01.75	55 (798)	N.L	55 (798)	N.L	2 min.		YES	A	24F06-1334-01--13	03-Dec-24
322	400	00.VSF.2680/V	DBB-898-HR-25-F300RF3-F-D (106899)	VLBBNN07190100	1	1	Ball+Needle	1"	RF	300	AISI 316/316L NACE MR01.75	55 (798)	N.L	55 (798)	N.L	2 min.		YES	A	24F06-1334-01--13	03-Dec-24

Note / Remarks:

- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno

(Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)

- *N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE*

Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector	*Si / Yes* / *No / No*	
Nominativo / Name		*Timbro e Firma / Stamp and Signature*
Data / Date		CROSSWIND 16/10/24

PROCEDURA DI COLLAUDO
(Test procedure)

PGT/VSP-VSF
(24-01216)

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** **TESTING OPERATOR**	DATA / DATE:	30-Sep-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** **PRODUCTION MANAGER**	DATA / DATE:	30-Sep-24

indra VALVES - ITALY

RAPPORTO DI COLLAUDO
TEST REPORT
- INDRA VALVES -

MD-02-05-IT-UK / P
Rev. 24
Data: 24-Mar-23

Nr. Certificato / *Certificate No.*	10068/AC	**Data** / *Date :*	30-Sep-24 *Rev. 0*
Cliente / *Customer :*	ROSETTI MARINO SPA		
Ordine Nr. / *Order Nr.*	1724000798 REV.2	**Data** / *Date :*	26-Jun-24
Ns. commessa Nr. / *Our job Nr.*	24 01216	**Data** / *Date :*	03-Jul-24
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*	

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST (according to API 598 & API 6D)	*FLUIDO (Fluid)*	*DURATA (Duration)*	*PRESSIONE (Pressure)*	*MAX. PERDITA AMMISSIBILE (ISO 5208) (Max allowable leakage)*	*MANOMETRO N° (Gauge ID)*	*DATA SCADENZA (Due Date)*
Shell test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*
High pressure closure test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*
Low pressure closure test (only for ball valves)	*Aria / Air*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*24F06-1334-01--13*	*03-Dec-24*
Back seat test (only for needle valves)	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY)		VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi)		High pressure closure test bar (psi)		Low pressure closure test bar (psi)		Back seat test bar (psi)		Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
					PRODUCED	TESTED						Pressure	Result	Pressure	Result	Pressure	Result	Pressure	Result				
10	*10*	*00.VSF.2684/V*	*SB-598-20-E150RF3-E (105942)*	*VBC0NN06943Q00*	*1*	*100%*	*Ball*	*¾"*	*RF*	*150*	*AISI 316/316L NACE MR01.75*	29 (421)	N.L	21 (305)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
20	*20*	*00.VSF.2687/V*	*SB-598-25-F150RF3-F (From 105943 To 105957)*	*VBC0NN06950100*	*15*	*100%*	*Ball*	*1"*	*RF*	*150*	*AISI 316/316L NACE MR01.75*	29 (421)	N.L	21 (305)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
40	*40*	*00.VSF.2693/V*	*SB-598-HR-20-E150RF3-E (From 105960 To 105961)*	*VBC0NN24343Q00*	*2*	*100%*	*Ball*	*¾"*	*RF*	*150*	*AISI 316/316L NACE MR01.75*	29 (421)	N.L	21 (305)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
150	*150*	*00.VSF.2680/V*	*DBB-898-HR-25-F300RF3-F-D (From 105982 To 106009)*	*VLBBNN07190100*	*28*	*100%*	*Ball+Needle*	*1"*	*RF*	*300*	*AISI 316/316L NACE MR01.75*	75 (1088)	N.L	55 (798)	N.L	6 (87)	N.L	55 (798)	N.L	YES	A	24F06-1334-01--13	03-Dec-24
322	*400*	*00.VSF.2680/V*	*DBB-898-HR-25-F300RF3-F-D (106899)*	*VLBBNN07190100*	*1*	*100%*	*Ball+Needle*	*1"*	*RF*	*300*	*AISI 316/316L NACE MR01.75*	75 (1088)	N.L	55 (798)	N.L	6 (87)	N.L	55 (798)	N.L	YES	A	24F06-1334-01--13	03-Dec-24

Note / Remarks:
- CAVITY SEAT RELIEF TEST PERFORMED ON 100% RESULT:OK
- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno
(Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)
- *N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE*
Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector — *Si / Yes* ☐ *No / No* ☑

Nominativo / Name .....

Data / Date .....

Timbro e Firma / Stamp and Signature

A CROSSWIND 16/10/24

PROCEDURA DI COLLAUDO
(Test procedure)
PT VSP-VSF-ITA/ENG
(24-01216)

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** TESTING OPERATOR	DATA / DATE:	30-Sep-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** PRODUCTION MANAGER	DATA / DATE:	30-Sep-24

VALVES - ITALY

RAPPORTO DI COLLAUDO COPPIA DI MANOVRA E RESISTENZA ELETTRICA
TORQUE AND ELECTRICAL RESISTANCE REPORT
- INDRA VALVES -

MD-02-14-IT-UK / P
Rev. 0
Data: 01-Jul-14

Nr. Certificato / *Certificate No.*	10068/AC-TET-D	**Data** / *Date :*	30-Sep-24	*Rev. 0*
Cliente / *Customer :*	ROSETTI MARINO SPA			
Ordine Nr. / *Order Nr.*	1724000798 REV.2	**Data** / *Date :*	26-Jun-24	
Ns. commessa Nr. / *Our job Nr.*	24 01216	**Data** / *Date :*	03-Jul-24	
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*		

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST according to API 598 , API 6D, BS EN 12266-1	*VALORE MASSIMO (Limit)*	*STRUMENTO DI MISURA (Gauge Instrument)*	*SCADENZA (Due Date)*
Torque test			
Electrical resistance test	*10 Ohm*	*Digital Multimeter DMM249 13290*	*31-May-25*

POS. (ITEM)	CODICE (CODE)	DESCRIZIONE (DESCRIPTION)	CODICE CLIENTE (CUSTOMER CODE)	QTA° (QTY) PRODUCED	TESTED
150 / 322	*00.VSF.2680/V*	*DBB-898-HR-25-F300RF3-F-D*	*VLBBNN07190100*	*29*	*2*

n° SERIALE (Serial n°)	LATO (Side)	Torque test Nm Value	Torque test Nm Result	Electrical resistance Body-stem Ohm Value	Electrical resistance Body-stem Ohm Result	Electrical resistance Body-ball Ohm Value	Electrical resistance Body-ball Ohm Result
105982	*A*			0,3	OK	0,5	OK
	B			0,5	OK	0,7	OK
106899	*A*			0,5	OK	0,8	OK
	B			0,6	OK	0,6	OK

n° SERIALE (Serial n°)	LATO (Side)	Torque test Nm Value	Torque test Nm Result	Electrical resistance Body-stem Ohm Value	Electrical resistance Body-stem Ohm Result	Electrical resistance Body-ball Ohm Value	Electrical resistance Body-ball Ohm Result

n° SERIALE (Serial n°)	LATO (Side)	Torque test Nm Value	Torque test Nm Result	Value	Result	Value	Result

Note / ***Remarks:***
- Test Antistatico eseguito su 1 pz. per posizione (Antistatic test executed on 1 pc. per item)

xCROSSWIND 16/10/24

PROCEDURA DI COLLAUDO *(Test procedure)*
PT/VSP-VSF-HP / ATP_00

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** TESTING OPERATOR	DATA / DATE:	30-Sep-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** PRODUCTION MANAGER	DATA / DATE: 30-Sep-24

ROSETTI MARINO ITEM 160

COD. VLBBNN07201H00

TAG:

BLPH-MV-032, BLPH-MV-266, BLPH-MV-389, BLPH-MV-416, BLPH-MV-433, BLPH-MV-442

INDRA ITEM 160

COD. 00.VSF.2681/V

indra VALVES - ITALY	**RAPPORTO DI COLLAUDO "PED"** **"PED" TEST REPORT** **- INDRA VALVES -**	MD-02-09-IT-UK Rev. 8 Data: 24-Mar-23

Nr. Certificato / *Certificate No.* 10102/AC — **Data** / *Date* : 09-Oct-24 — *Rev. 0*

Cliente / *Customer* : ROSETTI MARINO SPA

Ordine Nr. / *Order Nr.* 1724000798 REV.2 — **Data** / *Date* : 26-Jun-24

Ns. commessa Nr. / *Our job Nr.* 24 01216 — **Data** / *Date* : 03-Jul-24

Ns. D.D.T. Nr. / *Our advise note Nr.* — **Data** / *Date* :

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST (according to API 598, API 6D & 2014/68/UE PED)	FLUIDO (Fluid)	DURATA (Duration)	PRESSIONE (Pressure)	MAX. PERDITA AMMISSIBILE (ISO 5208) (Max allowable leakage)	MANOMETRO N° (Gauge ID)	DATA SCADENZA (Due Date)
Shell test	Acqua / Water	2 min.	vedi sotto / see below	nessuna perdita / no leakage	vedi sotto / see below	vedi sotto / see below
High pressure closure test	Acqua / Water	2 min.	vedi sotto / see below	vedi sotto / see below	vedi sotto / see below	vedi sotto / see below
Low pressure closure test (only for ball valves)	Aria / Air	2 min.	vedi sotto / see below	vedi sotto / see below	327268-79	15-Jan-25
Back seat test (only for needle valves)	Acqua / Water	2 min.	vedi sotto / see below	nessuna perdita / no leakage	vedi sotto / see below	vedi sotto / see below

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY) PRODUCED	QTA' (QTY) TESTED	VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi) Pressure	Shell test bar (psi) Result	High pressure closure test bar (psi) Pressure	High pressure closure test bar (psi) Result	Low pressure closure test bar (psi) Pressure	Low pressure closure test bar (psi) Result	Back seat test bar (psi) Pressure	Back seat test bar (psi) Result	Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
160	160	00.VSF.2681/V	DBB-898-HR-40-H300RF3-H-D (106015)	VLBBNN07201H00	6	1	Ball+Needle	1 ½"	RF	300	AISI 316/316L NACE MR01.75	75 (1088)	N.L	55 (798)	N.L	6 (87)	N.L	55 (798)	N.L	YES	A	24F06-1334-01–13	03-Dec-24
260	260	00.VSF.2700/V	SBB-798-HR-100-N150RF3-N-D (106039)	VLBLNN01450400	7	1	Ball+Needle	4"	RF	150	AISI 316/316L NACE MR01.75	29 (421)	N.L	21 (305)	N.L	6 (87)	N.L	21 (305)	N.L	YES	A	24F06-1334-01–13	03-Dec-24
323	410	00.VSF.2681/V	DBB-898-HR-40-H300RF3-H-D (106016)	VLBBNN07201H00	1	1	Ball+Needle	1 ½"	RF	300	AISI 316/316L NACE MR01.75	75 (1088)	N.L	55 (798)	N.L	6 (87)	N.L	55 (798)	N.L	YES	A	24F06-1334-01–13	03-Dec-24

INDRA SRL dichiara che le valvole fornite sono conformi ai requisiti stabiliti dalla API 598 - ASME B16.34 - 2014/68/UE PED Cert. Modulo H emesso da TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948

INDRA SRL declares that the supplied valves are in conformity with the requirements of API 598 - ASME B16.34 - 2014/68/UE PED Cert. Module H issued by TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948

Note / Remarks:

- CAVITY SEAT RELIEF TEST PERFORMED ON 100% RESULT:OK
- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno
  (Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)
- *N.L. = NO LEAKAGE (NESSUNA PERDITA)* *OK = LEAKAGE < MAX ALLOWABLE*

Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector — *Si / Yes* ☑ *No / No* ☐

Nominativo / Name .....

Timbro e Firma / Stamp and Signature x CROSSWIND 31/10/24

Data / Date .....

PROCEDURA DI COLLAUDO
(Test procedure)
PT VSP-VSF-ITA/ENG
(24-01216)

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** TESTING OPERATOR	DATA / DATE:	09-Oct-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** PRODUCTION MANAGER	DATA / DATE:	09-Oct-24

20013 Magenta (MI) Italy - Via Novara, 10/B-C
Tel. +39 02 97298663 r.a. - Fax +39 02 97291855
E-mail: indra@indra.it - http://www.indra.it

WATER QUALITY ANALYSIS UP TO 27-Aug-2024
EN 10204-2.1 ed. 2004

Parametri / Parameters	*Valore rilevato / Detected value*	*Valori di legge / Legal limit*
Ammonio / Ammonium (NH_4^+) [mg/l]	*< 0,1*	*0,5*
Arsenico / Arsenic (As_{tot}) [µg/l]	*< 1*	*10*
Bicarbonato / Bicarbonate (HCO_3^-) [mg/l]	*317*	*Non previsto / Not expected*
Calcio / Calcium (Ca^{2+}) [mg/l]	*87*	*Non previsto / Not expected*
Cloruri / Chlorides (Cl^-) [mg/l]	*12*	*250*
Composti organoalogenati / Organohalogen compounds [µg/l]	*<1*	*30*
Conducibilità / Conductivity (µS/cm)	*501*	*2500*
Cromo / Chromium [µg/l]	*<5*	*50*
Durezza Totale / Total hardness [°f]	*30*	*Non previsto / Not expected*
Fluoruri / Fluorides (F^-) [mg/l]	*<0,2*	*1,5*
Magnesio / Magnesium (Mg^{2+}) [mg/l]	*20*	*Non previsto / Not expected*
Manganese / Manganese (Mn_{tot}) [µg/l]	*< 5*	*50*
Microinquinanti tot / Micropollutants tot [µg/l]	*<0,01*	*0,5*
Nitrati / Nitrates (NO_3^-) [mg/l]	*31*	*50*
Nitriti / Nitrites (NO_2^-) [mg/l]	*<0,02*	*0,5*
Potassio / Potassium (K^+) [mg/l]	*1*	*Non previsto / Not expected*
Residuo secco a 180°C / Dry residue at 180°C [mg/l]	*361*	*1500*
Sodio / Sodium (NA^+) [mg/l]	*5*	*200*
Solfati / Sulfates (SO_4^{2-}) [mg/l]	*31*	*250*
pH / pH	*7*	*6,5 - 9,5*

* I dati corrispondono ai valori pubblicati dal laboratorio Amiacque dell'acquedotto del comune di Magenta (MI) - Italia.

* All the data correspond to the values published by the laboratory Amiacque of the Magenta's municipality aqueduct (MI) - Italy.

x CROSSWIND
9/10/24 R

	RAPPORTO DI COLLAUDO A GAS GAS TEST REPORT - INDRA VALVES -	MD-02-13-IT-UK / P Rev. 2 Data: 24-Oct-16

Nr. Certificato / *Certificate No.* 10095/AC-GT — **Data** / *Date :* 07-Oct-24 — *Rev. 0*

Cliente / *Customer :* ROSETTI MARINO SPA

Ordine Nr. / *Order Nr.* 1724000798 REV.2 — **Data** / *Date :* 26-Jun-24

Ns. commessa Nr. / *Our job Nr.* 24 01216 — **Data** / *Date :* 03-Jul-24

Ns. D.D.T. Nr. / *Our advise note Nr.* — **Data** / *Date :*

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST according to API 598 , BS EN 12266-1	FLUIDO (Fluid)	DURATA (Duration)	PRESSIONE (Pressure)	MAX. PERDITA AMMISSIBILE (BS EN 12266-1) (Max allowable leakage)	MANOMETRO N° (Gauge ID)	DATA SCADENZA (Due Date)
Shell test	Elio / Helium	15 min.	vedi sotto / see below	nessuna perdita / no leakage	vedi sotto / see below	vedi sotto / see below
High pressure closure test	Elio / Helium	vedi sotto / see below	vedi sotto / see below	vedi sotto / see below	vedi sotto / see below	vedi sotto / see below

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY) PRODUCED	QTA' (QTY) TESTED	VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi) Pressure	Shell test bar (psi) Result	High pressure closure test bar (psi) Pressure	High pressure closure test bar (psi) Result	High pressure closure test bar (psi) Duration		Bidirectional Test	Max allowable leakage (rate)	Gauge ID	Due Date
160	160	00.VSF.2681/V	DBB-898-HR-40-H300RF3-H-D (From 106010 To 106015)	VLBBNN07201H00	6	1	Ball+Needle	1" ½	RF	300	AISI 316/316L NACE MR01.75	55 (798)	N.L	55 (798)	N.L	2 min.		YES	A	24F06-1334-01--13	03-Dec-24
260	260	00.VSF.2700/V	SBB-798-HR-100-N150RF3-N-D (From 106035 To 106041)	VLBLNN01450400	7	1	Ball+Needle	4"	RF	150	AISI 316/316L NACE MR01.75	21 (305)	N.L	21 (305)	N.L	2 min.		YES	A	24F06-1334-01--13	03-Dec-24
323	410	00.VSF.2681/V	DBB-898-HR-40-H300RF3-H-D (106016)	VLBBNN07201H00	1	1	Ball+Needle	1" ½	RF	300	AISI 316/316L NACE MR01.75	55 (798)	N.L	55 (798)	N.L	2 min.		YES	A	24F06-1334-01--13	03-Dec-24

Note / Remarks:

- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno
  (Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)
- *N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE*

Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector — *Si / Yes* ☐ *No / No* ☑

Nominativo / Name .....

Data / Date .....

Timbro e Firma / Stamp and Signature CROSSWIND 23/10/24

PROCEDURA DI COLLAUDO
(Test procedure)
PGT/VSP-VSF
(24-01216)

COLLAUDATO DA: TESTED BY:	MARCO FALDUTO TESTING OPERATOR	DATA / DATE:	07-Oct-24	APPROVATO DA: APPROVED BY:	PIETRO FAGNANI PRODUCTION MANAGER	DATA / DATE:	07-Oct-24

indra VALVES - ITALY	**RAPPORTO DI COLLAUDO "PED"** **"PED" TEST REPORT** **- INDRA VALVES -**	**MD-02-09-IT-UK** **Rev. 8** **Data: 24-Mar-23**

Nr. Certificato / *Certificate No.*	10095/AC	**Data** / *Date :*	07-Oct-24 *Rev. 0*
Cliente / *Customer :*	ROSETTI MARINO SPA		
Ordine Nr. / *Order Nr.*	1724000798 REV.2	**Data** / *Date :*	26-Jun-24
Ns. commessa Nr. / *Our job Nr.*	24 01216	**Data** / *Date :*	03-Jul-24
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*	

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST (according to API 598, API 6D & 2014/68/UE PED)	*FLUIDO (Fluid)*	*DURATA (Duration)*	*PRESSIONE (Pressure)*	*MAX. PERDITA AMMISSIBILE (ISO 5208) (Max allowable leakage)*	*MANOMETRO N° (Gauge ID)*	*DATA SCADENZA (Due Date)*
Shell test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*
High pressure closure test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*
Low pressure closure test (only for ball valves)	*Aria / Air*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*327268-79*	*15-Jan-25*
Back seat test (only for needle valves)	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY) PRODUCED	QTA' (QTY) TESTED	VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi) Pressure	Shell test Result	High pressure closure test bar (psi) Pressure	High pressure closure test Result	Low pressure closure test bar (psi) Pressure	Low pressure closure test Result	Back seat test bar (psi) Pressure	Back seat test Result	Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
160	*160*	*00.VSF.2681/V*	*DBB-898-HR-40-H300RF3-H-D (From 106010 To 106015)*	*VLBBNN07201H00*	*6*	*100%*	*Ball+Needle*	*1 ½"*	*RF*	*300*	*AISI 316/316L NACE MR01.75*	75 (1088)	N.L	55 (798)	N.L	6 (87)	N.L	55 (798)	N.L	YES	A	24F06-1334-01--13	03-Dec-24
260	*260*	*00.VSF.2700/V*	*SBB-798-HR-100-N150RF3-N-D (From 106035 To 106041)*	*VLBLNN01450400*	*7*	*100%*	*Ball+Needle*	*4"*	*RF*	*150*	*AISI 316/316L NACE MR01.75*	29 (421)	N.L	21 (305)	N.L	6 (87)	N.L	21 (305)	N.L	YES	A	24F06-1334-01--13	03-Dec-24
323	*410*	*00.VSF.2681/V*	*DBB-898-HR-40-H300RF3-H-D (106016)*	*VLBBNN07201H00*	*1*	*100%*	*Ball+Needle*	*1 ½"*	*RF*	*300*	*AISI 316/316L NACE MR01.75*	75 (1088)	N.L	55 (798)	N.L	6 (87)	N.L	55 (798)	N.L	YES	A	24F06-1334-01--13	03-Dec-24

INDRA SRL dichiara che le valvole fornite sono conformi ai requisiti stabiliti dalla API 598 - ASME B16.34 - 2014/68/UE PED Cert. Modulo H emesso da TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948

INDRA SRL declares that the supplied valves are in conformity with the requirements of API 598 - ASME B16.34 - 2014/68/UE PED Cert. Module H issued by TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948

Note / Remarks:

- CAVITY SEAT RELIEF TEST PERFORMED ON 100% RESULT:OK
- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno
  (Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)
- *N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE*

Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector	*Si / Yes* ☐ *No / No* ☑
Nominativo / Name	*Timbro e Firma / Stamp and Signature*
Data / Date	CROSSWIND 23/10/24

PROCEDURA DI COLLAUDO
(Test procedure)

PT VSP-VSF-ITA/ENG
(24-01216)

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** **TESTING OPERATOR**	DATA / DATE: 07-Oct-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** **PRODUCTION MANAGER**	DATA / DATE: 07-Oct-24

indra VALVES - ITALY

RAPPORTO DI COLLAUDO COPPIA DI MANOVRA E RESISTENZA ELETTRICA
TORQUE AND ELECTRICAL RESISTANCE REPORT
- INDRA VALVES -

MD-02-14-IT-UK / P
Rev. 0
Data: 01-Jul-14

Nr. Certificato / *Certificate No.*	10095/AC-TET-A	**Data** / *Date :*	07-Oct-24	*Rev. 0*
Cliente / *Customer :*	ROSETTI MARINO SPA			
Ordine Nr. / *Order Nr.*	1724000798 REV.2	**Data** / *Date :*	26-Jun-24	
Ns. commessa Nr. / *Our job Nr.*	24 01216	**Data** / *Date :*	03-Jul-24	
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*		

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST according to API 598 , API 6D, BS EN 12266-1	*VALORE MASSIMO (Limit)*	*STRUMENTO DI MISURA (Gauge Instrument)*	*SCADENZA (Due Date)*
Torque test			
Electrical resistance test	*10 Ohm*	*Digital Multimeter DMM249 13290*	*31-May-25*

POS. (ITEM)	CODICE (CODE)	DESCRIZIONE (DESCRIPTION)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY) PRODUCED	TESTED
160, 323	*00.VSF.2681/V*	*DBB-898-HR-40-H300RF3-H-D*	*VLBBNN07201H00*	*7*	*2*

n° SERIALE (Serial n°)	LATO (Side)	Torque test Nm Value	Torque test Nm Result	Electrical resistance Body-stem Ohm Value	Electrical resistance Body-stem Ohm Result	Electrical resistance Body-ball Ohm Value	Electrical resistance Body-ball Ohm Result
106010	*A*			0,3	OK	0,4	OK
	B			0,4	OK	0,5	OK
106016	*A*			0,4	OK	0,5	OK
	B			0,5	OK	0,5	OK

n° SERIALE (Serial n°)	LATO (Side)	Torque test Nm Value	Torque test Nm Result	Electrical resistance Body-stem Ohm Value	Electrical resistance Body-stem Ohm Result	Electrical resistance Body-ball Ohm Value	Electrical resistance Body-ball Ohm Result

n° SERIALE (Serial n°)	LATO (Side)	Torque test Nm Value	Torque test Nm Result	Value	Result	Value	Result

Note / ***Remarks:***
- Test Antistatico eseguito su 1 pz. per posizione (Antistatic test executed on 1 pc. per item)

x CROSSWIND 23/10/24

PROCEDURA DI COLLAUDO *(Test procedure)*
PT/VSP-VSF-HP / ATP_00

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** TESTING OPERATOR	DATA / DATE:	07-Oct-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** PRODUCTION MANAGER	DATA / DATE: 07-Oct-24

ROSETTI MARINO ITEM 170

COD. VLBBNN07210200

TAG:

BLPH-MV-019

INDRA ITEM 170

COD. 00.VSF.2682/V

indra VALVES - ITALY	**RAPPORTO DI COLLAUDO "PED"** **"PED" TEST REPORT** **- INDRA VALVES -**	MD-02-09-IT-UK Rev. 8 Data: 24-Mar-23

Nr. Certificato / *Certificate No.* 10046/AC — **Data** / *Date :* 25-Sep-24 — *Rev. 0*

Cliente / *Customer :* ROSETTI MARINO SPA

Ordine Nr. / *Order Nr.* 1724000798 REV.2 — **Data** / *Date :* 26-Jun-24

Ns. commessa Nr. / *Our job Nr.* 24 01216 — **Data** / *Date :* 03-Jul-24

Ns. D.D.T. Nr. / *Our advise note Nr.* — **Data** / *Date :*

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST (according to API 598, API 6D & 2014/68/UE PED)	FLUIDO (Fluid)	DURATA (Duration)	PRESSIONE (Pressure)	MAX. PERDITA AMMISSIBILE (ISO 5208) (Max allowable leakage)	MANOMETRO N° (Gauge ID)	DATA SCADENZA (Due Date)
Shell test	Acqua / Water	2 min.	vedi sotto / see below	nessuna perdita / no leakage	vedi sotto / see below	vedi sotto / see below
High pressure closure test	Acqua / Water	2 min.	vedi sotto / see below	vedi sotto / see below	vedi sotto / see below	vedi sotto / see below
Low pressure closure test (only for ball valves)	Aria / Air	2 min.	vedi sotto / see below	vedi sotto / see below	24F06-1334-01--13	03-Dec-24
Back seat test (only for needle valves)	Acqua / Water	2 min.	vedi sotto / see below	nessuna perdita / no leakage	vedi sotto / see below	vedi sotto / see below

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY) PRODUCED	QTA' (QTY) TESTED	VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi) Pressure	Shell test Result	High pressure closure test bar (psi) Pressure	High pressure closure test Result	Low pressure closure test bar (psi) Pressure	Low pressure closure test Result	Back seat test bar (psi) Pressure	Back seat test Result	Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
170	170	00.VSF.2682/V	DBB-898-HR-50-J300RF3-J-D (106017)	VLBBNN07210200	1	1	Ball+Needle	2"	RF	300	AISI 316/316L NACE MR01.75	75 (1088)	N.L	55 (798)	N.L	6 (87)	N.L	55 (798)	N.L	YES	A	24F06-1334-01--13	03-Dec-24
250	250	00.VSF.2702/V	SBB-798-HR-50-J150RF3-J-D (106033)	VLBLNN0143020	2	1	Ball+Needle	2"	RF	150	AISI 316/316L NACE MR01.75	29 (421)	N.L	21 (305)	N.L	6 (87)	N.L	21 (305)	N.L	YES	A	24F06-1334-01--13	03-Dec-24

DATE: 25 SET 2024

NAME: MARTINO BASILE

ON BEHALF OF: ROSETTI MARINO

SIGNATURE:

INDRA SRL dichiara che le valvole fornite sono conformi ai requisiti stabiliti dalla API 598 - ASME B16.34 - 2014/68/UE PED Cert. Modulo H emesso da TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948

INDRA SRL declares that the supplied valves are in conformity with the requirements of API 598 - ASME B16.34 - 2014/68/UE PED Cert. Module H issued by TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948

Note / Remarks:

- CAVITY SEAT RELIEF TEST PERFORMED ON 100% RESULT:OK
- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno
  (Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)
- *N.L. = NO LEAKAGE (NESSUNA PERDITA)* *OK = LEAKAGE < MAX ALLOWABLE*

Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector — *Si / Yes* ☑ *No / No* ☐

Nominativo / Name W. GABBI

Timbro e Firma / Stamp and Signature CROSSWIND 25/9/24

Data / Date 25/9/24

PROCEDURA DI COLLAUDO
(Test procedure)

PT VSP-VSF-ITA/ENG
(24-01216)

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** TESTING OPERATOR	DATA / DATE: 25-Sep-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** PRODUCTION MANAGER	DATA / DATE: 25-Sep-24

20013 Magenta (MI) Italy - Via Novara, 10/B-C
Tel. +39 02 97298663 r.a. - Fax +39 02 97291855
E-mail: indra@indra.it - http://www.indra.it

WATER QUALITY ANALYSIS UP TO 27-Aug-2024
EN 10204-2.1 ed. 2004

Parametri / Parameters	*Valore rilevato / Detected value*	*Valori di legge / Legal limit*
Ammonio / Ammonium (NH_4^+) [mg/l]	*< 0,1*	*0,5*
Arsenico / Arsenic (As_{tot}) [µg/l]	*< 1*	*10*
Bicarbonato / Bicarbonate (HCO_3^-) [mg/l]	*317*	*Non previsto / Not expected*
Calcio / Calcium (Ca^{2+}) [mg/l]	*87*	*Non previsto / Not expected*
Cloruri / Chlorides (Cl^-) [mg/l]	*12*	*250*
Composti organoalogenati / Organohalogen compounds [µg/l]	*<1*	*30*
Conducibilità / Conductivity (µS/cm)	*501*	*2500*
Cromo / Chromium [µg/l]	*<5*	*50*
Durezza Totale / Total hardness [°f]	*30*	*Non previsto / Not expected*
Fluoruri / Fluorides (F^-) [mg/l]	*<0,2*	*1,5*
Magnesio / Magnesium (Mg^{2+}) [mg/l]	*20*	*Non previsto / Not expected*
Manganese / Manganese (Mn_{tot}) [µg/l]	*< 5*	*50*
Microinquinanti tot / Micropollutants tot [µg/l]	*<0,01*	*0,5*
Nitrati / Nitrates (NO_3^-) [mg/l]	*31*	*50*
Nitriti / Nitrites (NO_2^-) [mg/l]	*<0,02*	*0,5*
Potassio / Potassium (K^+) [mg/l]	*1*	*Non previsto / Not expected*
Residuo secco a 180°C / Dry residue at 180°C [mg/l]	*361*	*1500*
Sodio / Sodium (NA^+) [mg/l]	*5*	*200*
Solfati / Sulfates (SO_4^{2-}) [mg/l]	*31*	*250*
pH / pH	*7*	*6,5 - 9,5*

* I dati corrispondono ai valori pubblicati dal laboratorio Amiacque dell'acquedotto del comune di Magenta (MI) - Italia.

* All the data correspond to the values published by the laboratory Amiacque of the Magenta's municipality aqueduct (MI) - Italy.

x Crossmind
25/9/24

DATE: 25 SET 2024
NAME: MARTINO BASILE
ON BEHALF OF: ROSETTI MARINO
SIGNATURE:

ROSETTI MARINO ITEM 180

COD. VLBBNN07230400

TAG:

BLPH-MV-034, BLPH-MV-222, BLPH-MV-387, BLPH-MV-423, BLPH-MV-431, BLPH-MV-440

INDRA ITEM 180

COD. 00.VSF.2679/V

indra VALVES - ITALY	**RAPPORTO DI COLLAUDO "PED"** **"PED" TEST REPORT** **- INDRA VALVES -**	**MD-02-09-IT-UK** **Rev. 8** **Data: 24-Mar-23**

Nr. Certificato / *Certificate No.* 10155/AC — **Data** / *Date :* 23-Oct-24 — *Rev. 0*

Cliente / *Customer :* ROSETTI MARINO SPA

Ordine Nr. / *Order Nr.* 1724000798 REV.2 — **Data** / *Date :* 26-Jun-24

Ns. commessa Nr. / *Our job Nr.* 24 01216 — **Data** / *Date :* 03-Jul-24

Ns. D.D.T. Nr. / *Our advise note Nr.* — **Data** / *Date :*

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST (according to API 598, API 6D & 2014/68/UE PED)	FLUIDO (Fluid)	DURATA (Duration)	PRESSIONE (Pressure)	MAX. PERDITA AMMISSIBILE (ISO 5208) (Max allowable leakage)	MANOMETRO N° (Gauge ID)	DATA SCADENZA (Due Date)
Shell test	Acqua / Water	2 min.	vedi sotto / see below	nessuna perdita / no leakage	vedi sotto / see below	vedi sotto / see below
High pressure closure test	Acqua / Water	2 min.	vedi sotto / see below	vedi sotto / see below	vedi sotto / see below	vedi sotto / see below
Low pressure closure test (only for ball valves)	Aria / Air	2 min.	vedi sotto / see below	vedi sotto / see below	24F06-1334-01--13	03-Dec-24
Back seat test (only for needle valves)	Acqua / Water	2 min.	vedi sotto / see below	nessuna perdita / no leakage	vedi sotto / see below	vedi sotto / see below

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY)		VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi)		High pressure closure test bar (psi)		Low pressure closure test bar (psi)		Back seat test bar (psi)		Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
					PRODUCED	TESTED						Pressure	Result	Pressure	Result	Pressure	Result	Pressure	Result				
180	180	00.VSF.2679/V	DBB-898-HR-100-N300RF3-N-D (106019)	VLBBNN07230400	6	1	Ball+Needle	4"	RF	300	AISI 316/316L NACE MR01.75	75 (1088)	N.L	55 (798)	N.L	6 (87)	N.L	55 (798)	N.L	YES	A	24F06-1334-01--13	03-Dec-24

INDRA SRL dichiara che le valvole fornite sono conformi ai requisiti stabiliti dalla API 598 - ASME B16.34 - 2014/68/UE PED Cert. Modulo H emesso da TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948
INDRA SRL declares that the supplied valves are in conformity with the requirements of API 598 - ASME B16.34 - 2014/68/UE PED Cert. Module H issued by TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948

Note / Remarks:
- CAVITY SEAT RELIEF TEST PERFORMED ON 100% RESULT:OK
- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno
(Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)
- *N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE*
Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector	*Si / Yes* ☑ *No / No* ☐	
Nominativo / Name	*Timbro e Firma / Stamp and Signature*	*PROCEDURA DI COLLAUDO (Test procedure)*
.....	xCROSSWIND 23/10/24	PT VSP-VSF-ITA/ENG (24-01216)
Data / Date		

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** **TESTING OPERATOR**	DATA / DATE: 23-Oct-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** **PRODUCTION MANAGER**	DATA / DATE: 23-Oct-24

20013 Magenta (MI) Italy - Via Novara, 10/B-C
Tel. +39 02 97298663 r.a. - Fax +39 02 97291855
E-mail: indra@indra.it - http://www.indra.it

REV. 1 - 30-May-2018

WATER QUALITY ANALYSIS UP TO 27-Aug-2024
EN 10204-2.1 ed. 2004

Parametri / Parameters	*Valore rilevato / Detected value*	*Valori di legge / Legal limit*
Ammonio / Ammonium (NH_4^+) [mg/l]	*< 0,1*	*0,5*
Arsenico / Arsenic (As_{tot}) [µg/l]	*< 1*	*10*
Bicarbonato / Bicarbonate (HCO_3^-) [mg/l]	*317*	*Non previsto / Not expected*
Calcio / Calcium (Ca^{2+}) [mg/l]	*87*	*Non previsto / Not expected*
Cloruri / Chlorides (Cl^-) [mg/l]	*12*	*250*
Composti organoalogenati / Organohalogen compounds [µg/l]	*<1*	*30*
Conducibilità / Conductivity (µS/cm)	*501*	*2500*
Cromo / Chromium [µg/l]	*<5*	*50*
Durezza Totale / Total hardness [°f]	*30*	*Non previsto / Not expected*
Fluoruri / Fluorides (F^-) [mg/l]	*<0,2*	*1,5*
Magnesio / Magnesium (Mg^{2+}) [mg/l]	*20*	*Non previsto / Not expected*
Manganese / Manganese (Mn_{tot}) [µg/l]	*< 5*	*50*
Microinquinanti tot / Micropollutants tot [µg/l]	*<0,01*	*0,5*
Nitrati / Nitrates (NO_3^-) [mg/l]	*31*	*50*
Nitriti / Nitrites (NO_2^-) [mg/l]	*<0,02*	*0,5*
Potassio / Potassium (K^+) [mg/l]	*1*	*Non previsto / Not expected*
Residuo secco a 180°C / Dry residue at 180°C [mg/l]	*361*	*1500*
Sodio / Sodium (NA^+) [mg/l]	*5*	*200*
Solfati / Sulfates (SO_4^{2-}) [mg/l]	*31*	*250*
pH / pH	*7*	*6,5 - 9,5*

* I dati corrispondono ai valori pubblicati dal laboratorio Amiacque dell'acquedotto del comune di Magenta (MI) - Italia.

* All the data correspond to the values published by the laboratory Amiacque of the Magenta's municipality aqueduct (MI) - Italy.

x CROSSWOOD
23/10/24

	RAPPORTO DI COLLAUDO A GAS GAS TEST REPORT - INDRA VALVES -	MD-02-13-IT-UK / P Rev. 2 Data: 24-Oct-16

Nr. Certificato / *Certificate No.*	10153/AC-GT	**Data** / *Date :*	22-Oct-24	*Rev. 0*
Cliente / *Customer :*	ROSETTI MARINO SPA			
Ordine Nr. / *Order Nr.*	1724000798 REV.2	**Data** / *Date :*	26-Jun-24	
Ns. commessa Nr. / *Our job Nr.*	24 01216	**Data** / *Date :*	03-Jul-24	
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*		

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST according to API 598 , BS EN 12266-1	FLUIDO (Fluid)	DURATA (Duration)	PRESSIONE (Pressure)	MAX. PERDITA AMMISSIBILE (BS EN 12266-1) (Max allowable leakage)	MANOMETRO N° (Gauge ID)	DATA SCADENZA (Due Date)
Shell test	*Elio / Helium*	*15 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*
High pressure closure test	*Elio / Helium*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY)		VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi)		High pressure closure test bar (psi)				Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
					PRODUCED	TESTED						Pressure	Result	Pressure	Result	Duration					
180	*180*	*00.VSF.2679/V*	*DBB-898-HR-100-N300RF3-N-D (106018)*	*VLBBNN07230400*	*6*	*1*	*Ball*	*4"*	*RF*	*300*	*AISI 316/316L NACE MR01.75*	55 (798)	N.L	55 (798)	N.L	5 min.		YES	A	24F06-1334-01--13	03-Dec-24

Note / Remarks:

- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno

(Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)

- *N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE*

Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector	*Si / Yes* ☐ *No / No* ☑
Nominativo / Name	*Timbro e Firma / Stamp and Signature*
Data / Date	x CROSSWIND 13/11/24

PROCEDURA DI COLLAUDO
(Test procedure)

PGT/VSP-VSF
(24-01216)

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** **TESTING OPERATOR**	DATA / DATE:	22-Oct-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** **PRODUCTION MANAGER**	DATA / DATE:	22-Oct-24

indra VALVES - ITALY	**RAPPORTO DI COLLAUDO "PED"** **"PED" TEST REPORT** **- INDRA VALVES -**	**MD-02-09-IT-UK** **Rev. 8** **Data: 24-Mar-23**

Nr. Certificato / *Certificate No.* 10153/AC — **Data** / *Date :* 22-Oct-24 — *Rev. 0*

Cliente / *Customer :* ROSETTI MARINO SPA

Ordine Nr. / *Order Nr.* 1724000798 REV.2 — **Data** / *Date :* 26-Jun-24

Ns. commessa Nr. / *Our job Nr.* 24 01216 — **Data** / *Date :* 03-Jul-24

Ns. D.D.T. Nr. / *Our advise note Nr.* — **Data** / *Date :*

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST (according to API 598, API 6D & 2014/68/UE PED)	FLUIDO (Fluid)	DURATA (Duration)	PRESSIONE (Pressure)	MAX. PERDITA AMMISSIBILE (ISO 5208) (Max allowable leakage)	MANOMETRO N° (Gauge ID)	DATA SCADENZA (Due Date)
Shell test	Acqua / Water	2 min.	vedi sotto / see below	nessuna perdita / no leakage	vedi sotto / see below	vedi sotto / see below
High pressure closure test	Acqua / Water	2 min.	vedi sotto / see below	vedi sotto / see below	vedi sotto / see below	vedi sotto / see below
Low pressure closure test (only for ball valves)	Aria / Air	2 min.	vedi sotto / see below	vedi sotto / see below	24F06-1334-01-13	03-Dec-24
Back seat test (only for needle valves)	Acqua / Water	2 min.	vedi sotto / see below	nessuna perdita / no leakage	vedi sotto / see below	vedi sotto / see below

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY) PRODUCED	QTA' (QTY) TESTED	VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi) Pressure	Shell test Result	High pressure closure test bar (psi) Pressure	High pressure closure test Result	Low pressure closure test bar (psi) Pressure	Low pressure closure test Result	Back seat test bar (psi) Pressure	Back seat test Result	Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
180	180	00.VSF.2679/V	DBB-898-HR-100-N300RF3-N-D (From 106018 To 106023)	VLBBNN07230400	6	100%	Ball+Needle	4"	RF	300	AISI 316/316L NACE MR01.75	75 (1088)	N.L	55 (798)	N.L	6 (87)	N.L	55 (798)	N.L	YES	A	24F06-1334-01-13	03-Dec-24

INDRA SRL dichiara che le valvole fornite sono conformi ai requisiti stabiliti dalla API 598 - ASME B16.34 - 2014/68/UE PED Cert. Modulo H emesso da TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948
INDRA SRL declares that the supplied valves are in conformity with the requirements of API 598 - ASME B16.34 - 2014/68/UE PED Cert. Module H issued by TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948

Note / Remarks:
- CAVITY SEAT RELIEF TEST PERFORMED ON 100% RESULT:OK
- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno
(Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)
- *N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE*

Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector — *Si / Yes* ☐ *No / No* ☑

Nominativo / Name — *Timbro e Firma / Stamp and Signature*

Data / Date .....

x CROSSWIND 13/11/24

PROCEDURA DI COLLAUDO
(Test procedure)
PT VSP-VSF-ITA/ENG
(24-01216)

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** TESTING OPERATOR	DATA / DATE: 22-Oct-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** PRODUCTION MANAGER	DATA / DATE: 22-Oct-24

indra VALVES - ITALY

RAPPORTO DI COLLAUDO COPPIA DI MANOVRA E RESISTENZA ELETTRICA
TORQUE AND ELECTRICAL RESISTANCE REPORT
- INDRA VALVES -

MD-02-14-IT-UK / P
Rev. 0
Data: 01-Jul-14

Nr. Certificato / *Certificate No.*	10153/AC-TET	**Data** / *Date :*	22-Oct-24	*Rev. 0*
Cliente / *Customer :*	ROSETTI MARINO SPA			
Ordine Nr. / *Order Nr.*	1724000798 REV.2	**Data** / *Date :*	26-Jun-24	
Ns. commessa Nr. / *Our job Nr.*	24 01216	**Data** / *Date :*	03-Jul-24	
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*		

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST according to API 598 , API 6D, BS EN 12266-1	*VALORE MASSIMO (Limit)*	*STRUMENTO DI MISURA (Gauge Instrument)*	*SCADENZA (Due Date)*
Torque test			
Electrical resistance test	*10 Ohm*	*Digital Multimeter DMM249 13290*	*31-May-25*

POS. (ITEM)	CODICE (CODE)	DESCRIZIONE (DESCRIPTION)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY) PRODUCED	TESTED
180	*00.VSF.2679/V*	*DBB-898-HR-100-N300RF3-N-D*	*VLBBNN07230400*	*6*	*1*

n° SERIALE (Serial n°)	LATO (Side)	Torque test Nm Value	Torque test Nm Result	Electrical resistance Body-stem Ohm Value	Electrical resistance Body-stem Ohm Result	Electrical resistance Body-ball Ohm Value	Electrical resistance Body-ball Ohm Result
106018	*A*			0,7	OK	0,9	OK
	B			0,6	OK	0,8	OK

n° SERIALE (Serial n°)	LATO (Side)	Torque test Nm Value	Torque test Nm Result	Electrical resistance Body-stem Ohm Value	Electrical resistance Body-stem Ohm Result	Electrical resistance Body-ball Ohm Value	Electrical resistance Body-ball Ohm Result

n° SERIALE (Serial n°)	LATO (Side)	Torque test Nm Value	Torque test Nm Result				

Note / ***Remarks:***
- Test Antistatico eseguito su 1 pz. per posizione (Antistatic test executed on 1 pc. per item)

CROSSWIND 13/11/24

PROCEDURA DI COLLAUDO *(Test procedure)*
PT/VSP-VSF-HP / ATP_00

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** TESTING OPERATOR	DATA / DATE:	22-Oct-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** PRODUCTION MANAGER	DATA / DATE: 22-Oct-24

ROSETTI MARINO ITEM 190

COD. VLBBNN07240600

TAG:

BLPH-MV-035, BLPH-MV-264, BLPH-MV-388, BLPH-MV-424, BLPH-MV-432, BLPH-MV-441

INDRA ITEM 190

COD. 00.VSFT.0223/V

	RAPPORTO DI COLLAUDO "PED" "PED" TEST REPORT - INDRA VALVES -	MD-02-09-IT-UK Rev. 8 Data: 24-Mar-23

Nr. Certificato / *Certificate No.*	10156/AC	**Data** / *Date :*	23-Oct-24	*Rev. 0*
Cliente / *Customer :*	ROSETTI MARINO SPA			
Ordine Nr. / *Order Nr.*	1724000798 REV.2	**Data** / *Date :*	26-Jun-24	
Ns. commessa Nr. / *Our job Nr.*	24 01216	**Data** / *Date :*	03-Jul-24	
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*		

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST (according to API 598, API 6D & 2014/68/UE PED)	FLUIDO (Fluid)	DURATA (Duration)	PRESSIONE (Pressure)	MAX. PERDITA AMMISSIBILE (ISO 5208) (Max allowable leakage)	MANOMETRO N° (Gauge ID)	DATA SCADENZA (Due Date)
Shell test	*Acqua / Water*	*5 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*
High pressure closure test	*Acqua / Water*	*5 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*
Low pressure closure test (only for ball valves)	*Aria / Air*	*5 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*24F06-1334-01–13*	*03-Dec-24*
Back seat test (only for needle valves)	*Acqua / Water*	*5 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY)		VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi)		High pressure closure test bar (psi)		Low pressure closure test bar (psi)		Back seat test bar (psi)		Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
					PRODUCED	TESTED						Pressure	Result	Pressure	Result	Pressure	Result	Pressure	Result				
190	*190*	*00.VSFT.0223/V*	*DBB-898-TRU-HR-150-Q300RF3-Q-D (106042)*	*VLBBNN07240600*	*6*	*1*	*Ball*	*6"*	*RF*	*300*	*AISI 316/316L NACE MR01.75*	75 (1088)	N.L	55 (798)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01–13	03-Dec-24

INDRA SRL dichiara che le valvole fornite sono conformi ai requisiti stabiliti dalla API 598 - ASME B16.34 - 2014/68/UE PED Cert. Modulo H emesso da TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948
INDRA SRL declares that the supplied valves are in conformity with the requirements of API 598 - ASME B16.34 - 2014/68/UE PED Cert. Module H issued by TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948

Note / Remarks:
- CAVITY SEAT RELIEF TEST PERFORMED ON 100% RESULT:OK
- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno
(Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)
- *N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE*
Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector — *Si / Yes* ☑ *No* ☐
Nominativo / Name ..... *Timbro e Firma / Stamp and Signature*
Data / Date ..... CROSSWIND W 23/10/24

PROCEDURA DI COLLAUDO
(Test procedure)
PT VSP-VSF-ITA/ENG
(24-01216)

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** **TESTING OPERATOR**	DATA / DATE:	23-Oct-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** **PRODUCTION MANAGER**	DATA / DATE:	23-Oct-24

20013 Magenta (MI) Italy - Via Novara, 10/B-C
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E-mail: indra@indra.it - http://www.indra.it

WATER QUALITY ANALYSIS UP TO 27-Aug-2024
EN 10204-2.1 ed. 2004

Parametri / Parameters	*Valore rilevato / Detected value*	*Valori di legge / Legal limit*
Ammonio / Ammonium (NH_4^+) [mg/l]	*< 0,1*	*0,5*
Arsenico / Arsenic (As_{tot}) [µg/l]	*< 1*	*10*
Bicarbonato / Bicarbonate (HCO_3^-) [mg/l]	*317*	*Non previsto / Not expected*
Calcio / Calcium (Ca^{2+}) [mg/l]	*87*	*Non previsto / Not expected*
Cloruri / Chlorides (Cl^-) [mg/l]	*12*	*250*
Composti organoalogenati / Organohalogen compounds [µg/l]	*<1*	*30*
Conducibilità / Conductivity (µS/cm)	*501*	*2500*
Cromo / Chromium [µg/l]	*<5*	*50*
Durezza Totale / Total hardness [°f]	*30*	*Non previsto / Not expected*
Fluoruri / Fluorides (F^-) [mg/l]	*<0,2*	*1,5*
Magnesio / Magnesium (Mg^{2+}) [mg/l]	*20*	*Non previsto / Not expected*
Manganese / Manganese (Mn_{tot}) [µg/l]	*< 5*	*50*
Microinquinanti tot / Micropollutants tot [µg/l]	*<0,01*	*0,5*
Nitrati / Nitrates (NO_3^-) [mg/l]	*31*	*50*
Nitriti / Nitrites (NO_2^-) [mg/l]	*<0,02*	*0,5*
Potassio / Potassium (K^+) [mg/l]	*1*	*Non previsto / Not expected*
Residuo secco a 180°C / Dry residue at 180°C [mg/l]	*361*	*1500*
Sodio / Sodium (NA^+) [mg/l]	*5*	*200*
Solfati / Sulfates (SO_4^{2-}) [mg/l]	*31*	*250*
pH / pH	*7*	*6,5 - 9,5*

* I dati corrispondono ai valori pubblicati dal laboratorio Amiacque dell'acquedotto del comune di Magenta (MI) - Italia.

* All the data correspond to the values published by the laboratory Amiacque of the Magenta's municipality aqueduct (MI) - Italy.

x CROSSMIND
23/10/24

	RAPPORTO DI COLLAUDO A GAS GAS TEST REPORT - INDRA VALVES -	MD-02-13-IT-UK / P Rev. 2 Data: 24-Oct-16

Nr. Certificato / *Certificate No.*	10154/AC-GT	**Data** / *Date :*	22-Oct-24	*Rev. 0*
Cliente / *Customer :*	ROSETTI MARINO SPA			
Ordine Nr. / *Order Nr.*	1724000798 REV.2	**Data** / *Date :*	26-Jun-24	
Ns. commessa Nr. / *Our job Nr.*	24 01216	**Data** / *Date :*	03-Jul-24	
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*		

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST according to API 598 , BS EN 12266-1	FLUIDO (Fluid)	DURATA (Duration)	PRESSIONE (Pressure)	MAX. PERDITA AMMISSIBILE (BS EN 12266-1) (Max allowable leakage)	MANOMETRO N° (Gauge ID)	DATA SCADENZA (Due Date)
Shell test	*Elio / Helium*	*15 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*
High pressure closure test	*Elio / Helium*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY)		VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi)		High pressure closure test bar (psi)				Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
					PRODUCED	TESTED						Pressure	Result	Pressure	Result	Duration					
190	*190*	*00.VSFT.0223/V*	*DBB-898-TRU-HR-150-Q300RF3-Q-D (106042)*	*VLBBNN07240600*	*6*	*1*	*Ball*	*6"*	*RF*	*300*	*AISI 316/316L NACE MR01.75*	55 (798)	N.L	55 (798)	N.L	5 min.		YES	A	24F06-1334-01--13	03-Dec-24

Note / Remarks:

- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno

(Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)

- *N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE*

Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector	*Si / Yes* ☐ *No / No* ☑
Nominativo / Name	*Timbro e Firma / Stamp and Signature*
.....	2 CROSSWIND 13/11/24
Data / Date	
.....	

PROCEDURA DI COLLAUDO
(Test procedure)

PGT/VSP-VSF
(24-01216)

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** **TESTING OPERATOR**	DATA / DATE:	22-Oct-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** **PRODUCTION MANAGER**	DATA / DATE:	22-Oct-24

indra VALVES - ITALY	**RAPPORTO DI COLLAUDO "PED"** **"PED" TEST REPORT** **- INDRA VALVES -**	**MD-02-09-IT-UK** **Rev. 8** **Data: 24-Mar-23**

Nr. Certificato / *Certificate No.*	10154/AC	**Data** / *Date :*	22-Oct-24 *Rev. 0*
Cliente / *Customer :*	ROSETTI MARINO SPA		
Ordine Nr. / *Order Nr.*	1724000798 REV.2	**Data** / *Date :*	26-Jun-24
Ns. commessa Nr. / *Our job Nr.*	24 01216	**Data** / *Date :*	03-Jul-24
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*	

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST (according to API 598, API 6D & 2014/68/UE PED)	FLUIDO (Fluid)	DURATA (Duration)	PRESSIONE (Pressure)	MAX. PERDITA AMMISSIBILE (ISO 5208) (Max allowable leakage)	MANOMETRO N° (Gauge ID)	DATA SCADENZA (Due Date)
Shell test	*Acqua / Water*	*5 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*
High pressure closure test	*Acqua / Water*	*5 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*
Low pressure closure test (only for ball valves)	*Aria / Air*	*5 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*24F06-1334-01--13*	*03-Dec-24*
Back seat test (only for needle valves)	*Acqua / Water*	*5 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY)		VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi)		High pressure closure test bar (psi)		Low pressure closure test bar (psi)		Back seat test bar (psi)		Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
					PRODUCED	TESTED						Pressure	Result	Pressure	Result	Pressure	Result	Pressure	Result				
190	*190*	*00.VSFT.0223/V*	*DBB-898-TRU-HR-150-Q300RF3-Q-D (From 106042 To 106047)*	*VLBBNN07240600*	*6*	*100%*	*Ball*	*6"*	*RF*	*300*	*AISI 316/316L NACE MR01.75*	75 (1088)	N.L	55 (798)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24

INDRA SRL dichiara che le valvole fornite sono conformi ai requisiti stabiliti dalla API 598 - ASME B16.34 - 2014/68/UE PED Cert. Modulo H emesso da TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948
INDRA SRL declares that the supplied valves are in conformity with the requirements of API 598 - ASME B16.34 - 2014/68/UE PED Cert. Module H issued by TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948

Note / Remarks:
- CAVITY SEAT RELIEF TEST PERFORMED ON 100% RESULT:OK
- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno
(Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)
- *N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE*

Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector — *Si / Yes* ☐ *No / No* ☑

Nominativo / Name .....

Data / Date .....

Timbro e Firma / Stamp and Signature x CROSSWIND 13/11/24

PROCEDURA DI COLLAUDO
(Test procedure)
PT VSP-VSF-ITA/ENG
(24-01216)

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** **TESTING OPERATOR**	DATA / DATE: 22-Oct-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** **PRODUCTION MANAGER**	DATA / DATE: 22-Oct-24

indra VALVES - ITALY	**RAPPORTO DI COLLAUDO COPPIA DI MANOVRA E RESISTENZA ELETTRICA** ***TORQUE AND ELECTRICAL RESISTANCE REPORT*** ***- INDRA VALVES -***	**MD-02-14-IT-UK / P** **Rev. 0** **Data: 01-Jul-14**

Nr. Certificato / *Certificate No.*	**10154/AC-TET**	**Data** / *Date :*	**22-Oct-24** *Rev. 0*
Cliente / *Customer :*	**ROSETTI MARINO SPA**		
Ordine Nr. / *Order Nr.*	**1724000798 REV.2**	**Data** / *Date :*	**26-Jun-24**
Ns. commessa Nr. / *Our job Nr.*	**24 01216**	**Data** / *Date :*	**03-Jul-24**
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*	

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST *according to API 598 , API 6D, BS EN 12266-1*	***VALORE MASSIMO*** *(Limit)*	***STRUMENTO DI MISURA*** *(Gauge Instrument)*	***SCADENZA*** ***(Due Date)***
Torque test			
Electrical resistance test	*10 Ohm*	*Digital Multimeter DMM249 13290*	*31-May-25*

POS. (ITEM)	**CODICE** (CODE)	**DESCRIZIONE** (DESCRIPTION)	**CODICE CLIENTE** (CUSTOMER CODE)	**QTA'** (QTY) PRODUCED	TESTED
190	***00.VSFT.0223/V***	***DBB-898-TRU-HR-150-Q300RF3-Q-D***	***VLBBNN07240600***	***6***	***1***

n° SERIALE (Serial n°)	**LATO** (Side)	*Torque test* *Nm*		*Electrical resistance Body-stem* *Ohm*		*Electrical resistance Body-ball* *Ohm*	
		Value	Result	Value	Result	Value	Result
106042	***A***			0,3	OK	0,4	OK

n° SERIALE (Serial n°)	**LATO** (Side)	*Torque test* *Nm*		*Electrical resistance Body-stem* *Ohm*		*Electrical resistance Body-ball* *Ohm*	
		Value	Result	Value	Result	Value	Result

n° SERIALE (Serial n°)	**LATO** (Side)	*Torque test* *Nm*					
		Value	Result	Value	Result	Value	Result

Note / ***Remarks:***
- Test Antistatico eseguito su 1 pz. per posizione (Antistatic test executed on 1 pc. per item)

+ CROSSWIND 13/11/24

PROCEDURA DI COLLAUDO
(Test procedure)
PT/VSP-VSF-HP / ATP_00

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** **TESTING OPERATOR**	DATA / DATE: 22-Oct-24		APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** **PRODUCTION MANAGER**	DATA / DATE: 22-Oct-24

ROSETTI MARINO ITEM 200

COD. VLBLNN01280100

TAG:

BLPH-MV-269, BLPH-MV-271,

BLPH-MV-409

INDRA ITEM 200

COD. 00.VSF.2697/V

indra VALVES - ITALY	**RAPPORTO DI COLLAUDO** ***TEST REPORT*** ***- INDRA VALVES -***	**MD-02-05-IT-UK / P** **Rev. 24** **Data: 24-Mar-23**

Nr. Certificato / *Certificate No.* 10133/AC — **Data /** *Date :* 16-Oct-24 — *Rev. 0*

Cliente / *Customer :* ROSETTI MARINO SPA

Ordine Nr. / *Order Nr.* 1724000798 REV.2 — **Data /** *Date :* 26-Jun-24

Ns. commessa Nr. / *Our job Nr.* 24 01216 — **Data /** *Date :* 03-Jul-24

Ns. D.D.T. Nr. / *Our advise note Nr.* — **Data /** *Date :*

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST (according to API 598 & API 6D)	*FLUIDO (Fluid)*	*DURATA (Duration)*	*PRESSIONE (Pressure)*	*MAX. PERDITA AMMISSIBILE (ISO 5208) (Max allowable leakage)*	*MANOMETRO N° (Gauge ID)*	*DATA SCADENZA (Due Date)*
Shell test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*
High pressure closure test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*
Low pressure closure test (only for ball valves)	*Aria / Air*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*24F06-1334-01--13*	*03-Dec-24*
Back seat test (only for needle valves)	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY) PRODUCED	QTA' (QTY) TESTED	VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi) Pressure	Shell test Result	High pressure closure test bar (psi) Pressure	High pressure closure test Result	Low pressure closure test bar (psi) Pressure	Low pressure closure test Result	Back seat test bar (psi) Pressure	Back seat test Result	Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
60	60	00.VSF.2685(T)	SB-598-20-E150RF3-E (105969)	VBC0NN24433Q00	3	1	Ball	¾"	RF	150	F55 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
70	70	00.VSF.2688(T)	SB-598-25-F150RF3-F (105970)	VBC0NN24440100	2	1	Ball	1"	RF	150	F55 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
90	90	00.VSF.2686/V	SB-598-20-E150RF3-E (105974)	VBC0NN24703Q00	1	1	Ball	¾"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
100	100	00.VSF.2770/V	SB-598-25-F150RF3-F (105975)	VBC0NN24710100	2	1	Ball	1"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
110	110	00.VSF.2689/V	SB-598-25-F150RF3-F (105977)	VBC0NN24710100	1	1	Ball	1"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
200	200	00.VSF.2697/V	SBB-798-25-F150RF3-F-D (106026)	VLBLNN01280100	3	1	Ball+Needle	1"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	22 (319)	N.L	YES	A	24F06-1334-01--13	03-Dec-24
324	430	00.VSF.2784(T)	SBB-798-25-F150RF3-F-D (106900)	VLBLNN01370100	3	1	Ball+Needle	1"	RF	150	F55 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	22 (319)	N.L	YES	A	24F06-1334-01--13	03-Dec-24

Note / Remarks:
- CAVITY SEAT RELIEF TEST PERFORMED ON 100% RESULT:OK
- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno
(Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)
- *N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE*

Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector — *Si / Yes* ☑ *No / No* ☐

Nominativo / Name .....

Data / Date .....

Timbro e Firma / Stamp and Signature CROSSWIND 16/10/24

PROCEDURA DI COLLAUDO
(Test procedure)
PT VSP-VSF-ITA/ENG
(24-01216)

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** **TESTING OPERATOR**	DATA / DATE:	16-Oct-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** **PRODUCTION MANAGER**	DATA / DATE:	16-Oct-24

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REV. 1 - 30-May-2018

WATER QUALITY ANALYSIS UP TO 27-Aug-2024
EN 10204-2.1 ed. 2004

Parametri / Parameters	*Valore rilevato / Detected value*	*Valori di legge / Legal limit*
Ammonio / Ammonium (NH_4^+) [mg/l]	*< 0,1*	*0,5*
Arsenico / Arsenic (As_{tot}) [µg/l]	*< 1*	*10*
Bicarbonato / Bicarbonate (HCO_3^-) [mg/l]	*317*	*Non previsto / Not expected*
Calcio / Calcium (Ca^{2+}) [mg/l]	*87*	*Non previsto / Not expected*
Cloruri / Chlorides (Cl^-) [mg/l]	*12*	*250*
Composti organoalogenati / Organohalogen compounds [µg/l]	*<1*	*30*
Conducibilità / Conductivity (µS/cm)	*501*	*2500*
Cromo / Chromium [µg/l]	*<5*	*50*
Durezza Totale / Total hardness [°f]	*30*	*Non previsto / Not expected*
Fluoruri / Fluorides (F^-) [mg/l]	*<0,2*	*1,5*
Magnesio / Magnesium (Mg^{2+}) [mg/l]	*20*	*Non previsto / Not expected*
Manganese / Manganese (Mn_{tot}) [µg/l]	*< 5*	*50*
Microinquinanti tot / Micropollutants tot [µg/l]	*<0,01*	*0,5*
Nitrati / Nitrates (NO_3^-) [mg/l]	*31*	*50*
Nitriti / Nitrites (NO_2^-) [mg/l]	*<0,02*	*0,5*
Potassio / Potassium (K^+) [mg/l]	*1*	*Non previsto / Not expected*
Residuo secco a 180°C / Dry residue at 180°C [mg/l]	*361*	*1500*
Sodio / Sodium (NA^+) [mg/l]	*5*	*200*
Solfati / Sulfates (SO_4^{2-}) [mg/l]	*31*	*250*
pH / pH	*7*	*6,5 - 9,5*

* I dati corrispondono ai valori pubblicati dal laboratorio Amiacque dell'acquedotto del comune di Magenta (MI) - Italia.

* All the data correspond to the values published by the laboratory Amiacque of the Magenta's municipality aqueduct (MI) - Italy.

indra VALVES - ITALY	**RAPPORTO DI COLLAUDO COPPIA DI MANOVRA E RESISTENZA ELETTRICA** ***TORQUE AND ELECTRICAL RESISTANCE REPORT*** ***- INDRA VALVES -***	**MD-02-14-IT-UK / P** **Rev. 0** **Data: 01-Jul-14**

Nr. Certificato / *Certificate No.*	**10123/AC-TET-F**	**Data** / *Date :*	**14-Oct-24** *Rev. 0*
Cliente / *Customer :*	**ROSETTI MARINO SPA**		
Ordine Nr. / *Order Nr.*	**1724000798 REV.2**	**Data** / *Date :*	**26-Jun-24**
Ns. commessa Nr. / *Our job Nr.*	**24 01216**	**Data** / *Date :*	**03-Jul-24**
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*	

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST ***according to API 598 , API 6D, BS EN 12266-1***	***VALORE MASSIMO*** ***(Limit)***	***STRUMENTO DI MISURA*** ***(Gauge Instrument)***	***SCADENZA*** ***(Due Date)***
Torque test			
Electrical resistance test	*10 Ohm*	*Digital Multimeter DMM249 13290*	*31-May-25*

POS. (ITEM)	**CODICE** (CODE)	**DESCRIZIONE** (DESCRIPTION)	**CODICE CLIENTE** (CUSTOMER CODE)	**QTA'** (QTY) PRODUCED	TESTED
200	***00.VSF.2697/V***	***SBB-798-25-F150RF3-F-D***	***VLBLNN01280100***	***3***	***1***

n° SERIALE (Serial n°)	**LATO** (Side)	*Torque test* Nm		*Electrical resistance Body-stem* Ohm		*Electrical resistance Body-ball* Ohm	
		Value	Result	Value	Result	Value	Result
106024	***A***			0,5	OK	0,6	OK

n° SERIALE (Serial n°)	**LATO** (Side)	*Torque test* Nm		*Electrical resistance Body-stem* Ohm		*Electrical resistance Body-ball* Ohm	
		Value	Result	Value	Result	Value	Result

n° SERIALE (Serial n°)	**LATO** (Side)	*Torque test* Nm					
		Value	Result	Value	Result	Value	Result

Note / ***Remarks:***
- Test Antistatico eseguito su 1 pz. per posizione (Antistatic test executed on 1 pc. per item)

PROCEDURA DI COLLAUDO *(Test procedure)*
PT/VSP-VSF-HP / ATP_00

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** **TESTING OPERATOR**	DATA / DATE: 14-Oct-24		APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** **PRODUCTION MANAGER**	DATA / DATE: 14-Oct-24

indra VALVES - ITALY	**RAPPORTO DI COLLAUDO COPPIA DI MANOVRA E RESISTENZA ELETTRICA** ***TORQUE AND ELECTRICAL RESISTANCE REPORT*** ***- INDRA VALVES -***	**MD-02-14-IT-UK / P** **Rev. 0** **Data: 01-Jul-14**

Nr. Certificato / *Certificate No.*	**10123/AC-TET-F**	**Data** / *Date :*	**14-Oct-24** *Rev. 0*
Cliente / *Customer :*	**ROSETTI MARINO SPA**		
Ordine Nr. / *Order Nr.*	**1724000798 REV.2**	**Data** / *Date :*	**26-Jun-24**
Ns. commessa Nr. / *Our job Nr.*	**24 01216**	**Data** / *Date :*	**03-Jul-24**
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*	

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST according to API 598 , API 6D, BS EN 12266-1	***VALORE MASSIMO*** *(Limit)*	***STRUMENTO DI MISURA*** *(Gauge Instrument)*	***SCADENZA*** ***(Due Date)***
Torque test			
Electrical resistance test	*10 Ohm*	*Digital Multimeter DMM249 13290*	*31-May-25*

POS. (ITEM)	**CODICE** (CODE)	**DESCRIZIONE** (DESCRIPTION)	**CODICE CLIENTE** (CUSTOMER CODE)	**QTA'** (QTY) PRODUCED	TESTED
200	***00.VSF.2697/V***	***SBB-798-25-F150RF3-F-D***	***VLBLNN01280100***	***3***	***1***

n° SERIALE (Serial n°)	**LATO** (Side)	*Torque test Nm*		*Electrical resistance Body-stem Ohm*		*Electrical resistance Body-ball Ohm*	
		Value	Result	Value	Result	Value	Result
106024	***A***			0,5	OK	0,6	OK

n° SERIALE (Serial n°)	**LATO** (Side)	*Torque test Nm*		*Electrical resistance Body-stem Ohm*		*Electrical resistance Body-ball Ohm*	
		Value	Result	Value	Result	Value	Result

n° SERIALE (Serial n°)	**LATO** (Side)	*Torque test Nm*					
		Value	Result	Value	Result	Value	Result

Note / ***Remarks:***
- Test Antistatico eseguito su 1 pz. per posizione (Antistatic test executed on 1 pc. per item)

PROCEDURA DI COLLAUDO
(Test procedure)
PT/VSP-VSF-HP / ATP_00

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** **TESTING OPERATOR**	DATA / DATE: 14-Oct-24		APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** **PRODUCTION MANAGER**	DATA / DATE: 14-Oct-24

20013 Magenta (MI) Italy - Via Novara, 10/B-C
Tel. +39 02 97298663 r.a. - Fax +39 02 97291855
E-mail: indra@indra.it - http://www.indra.it

REV. 1 - 30-May-2018

WATER QUALITY ANALYSIS UP TO 27-Aug-2024
EN 10204-2.1 ed. 2004

Parametri / Parameters	*Valore rilevato / Detected value*	*Valori di legge / Legal limit*
Ammonio / Ammonium (NH_4^+) [mg/l]	*< 0,1*	*0,5*
Arsenico / Arsenic (As_{tot}) [µg/l]	*< 1*	*10*
Bicarbonato / Bicarbonate (HCO_3^-) [mg/l]	*317*	*Non previsto / Not expected*
Calcio / Calcium (Ca^{2+}) [mg/l]	*87*	*Non previsto / Not expected*
Cloruri / Chlorides (Cl^-) [mg/l]	*12*	*250*
Composti organoalogenati / Organohalogen compounds [µg/l]	*<1*	*30*
Conducibilità / Conductivity (µS/cm)	*501*	*2500*
Cromo / Chromium [µg/l]	*<5*	*50*
Durezza Totale / Total hardness [°f]	*30*	*Non previsto / Not expected*
Fluoruri / Fluorides (F^-) [mg/l]	*<0,2*	*1,5*
Magnesio / Magnesium (Mg^{2+}) [mg/l]	*20*	*Non previsto / Not expected*
Manganese / Manganese (Mn_{tot}) [µg/l]	*< 5*	*50*
Microinquinanti tot / Micropollutants tot [µg/l]	*<0,01*	*0,5*
Nitrati / Nitrates (NO_3^-) [mg/l]	*31*	*50*
Nitriti / Nitrites (NO_2^-) [mg/l]	*<0,02*	*0,5*
Potassio / Potassium (K^+) [mg/l]	*1*	*Non previsto / Not expected*
Residuo secco a 180°C / Dry residue at 180°C [mg/l]	*361*	*1500*
Sodio / Sodium (NA^+) [mg/l]	*5*	*200*
Solfati / Sulfates (SO_4^{2-}) [mg/l]	*31*	*250*
pH / pH	*7*	*6,5 - 9,5*

* I dati corrispondono ai valori pubblicati dal laboratorio Amiacque dell'acquedotto del comune di Magenta (MI) - Italia.

* All the data correspond to the values published by the laboratory Amiacque of the Magenta's municipality aqueduct (MI) - Italy.

ROSETTI MARINO ITEM 210

COD. VLBLNN01291H00

TAG:

BLPH-MV-278

INDRA ITEM 210

COD. 00.VSF.2699/V

indra VALVES - ITALY

RAPPORTO DI COLLAUDO "PED"
"PED" TEST REPORT
- INDRA VALVES -

MD-02-09-IT-UK
Rev. 8
Data: 24-Mar-23

Nr. Certificato / *Certificate No.* 10134/AC — **Data** / *Date :* 16-Oct-24 — *Rev. 0*

Cliente / *Customer :* ROSETTI MARINO SPA

Ordine Nr. / *Order Nr.* 1724000798 REV.2 — **Data** / *Date :* 26-Jun-24

Ns. commessa Nr. / *Our job Nr.* 24 01216 — **Data** / *Date :* 03-Jul-24

Ns. D.D.T. Nr. / *Our advise note Nr.* — **Data** / *Date :*

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST (according to API 598, API 6D & 2014/68/UE PED)	FLUIDO (Fluid)	DURATA (Duration)	PRESSIONE (Pressure)	MAX. PERDITA AMMISSIBILE (ISO 5208) (Max allowable leakage)	MANOMETRO N° (Gauge ID)	DATA SCADENZA (Due Date)
Shell test	Acqua / Water	2 min.	vedi sotto / see below	nessuna perdita / no leakage	vedi sotto / see below	vedi sotto / see below
High pressure closure test	Acqua / Water	2 min.	vedi sotto / see below	vedi sotto / see below	vedi sotto / see below	vedi sotto / see below
Low pressure closure test (only for ball valves)	Aria / Air	2 min.	vedi sotto / see below	vedi sotto / see below	24F06-1334-01-13	03-Dec-24
Back seat test (only for needle valves)	Acqua / Water	2 min.	vedi sotto / see below	nessuna perdita / no leakage	vedi sotto / see below	vedi sotto / see below

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY) PRODUCED	QTA' (QTY) TESTED	VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi) Pressure	Shell test Result	High pressure closure test bar (psi) Pressure	High pressure closure test Result	Low pressure closure test bar (psi) Pressure	Low pressure closure test Result	Back seat test bar (psi) Pressure	Back seat test Result	Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
80	80	00.VSF.2692(T)	SB-598-50-J150RF3-J (105973)	VBC0NN24460200	2	1	Ball	2"	RF	150	F55 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
120	120	00.VSF.2691/V	SB-598-40-H150RF3-H (105978)	VBC0NN24721H00	1	1	Ball	1 ½"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
210	210	00.VSF.2699/V	SBB-798-40-H150RF3-H-D (106027)	VLBLNN01291H00	1	1	Ball+Needle	1 ½"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	22 (319)	N.L	YES	A	24F06-1334-01--13	03-Dec-24
230	230	00.VSF.2698(T)	SBB-798-40-H150RF3-H-D (106031)	VLBLNN01381H00	2	1	Ball+Needle	1 ½"	RF	150	F55 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	22 (319)	N.L	YES	A	24F06-1334-01--13	03-Dec-24
321	390	00.VSF.2716/V	SB-598-50-L150RF3-L (106898)	VBD0NN16610300	1	1	Ball	3"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24

INDRA SRL dichiara che le valvole fornite sono conformi ai requisiti stabiliti dalla API 598 - ASME B16.34 - 2014/68/UE PED Cert. Modulo H emesso da TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948
INDRA SRL declares that the supplied valves are in conformity with the requirements of API 598 - ASME B16.34 - 2014/68/UE PED Cert. Module H issued by TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948

Note / Remarks:
- CAVITY SEAT RELIEF TEST PERFORMED ON 100% RESULT:OK
- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno
(Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)
- *N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE*
Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector — *Si / Yes* ☑ *No / No* ☐
Nominativo / Name .....
Timbro e Firma / Stamp and Signature x CROSSWIND 16/10/24
Data / Date .....

PROCEDURA DI COLLAUDO
(Test procedure)
PT VSP-VSF-ITA/ENG
(24-01216)

COLLAUDATO DA: / TESTED BY: **MARCO FALDUTO** **TESTING OPERATOR** — DATA / DATE: 16-Oct-24

APPROVATO DA: / APPROVED BY: **PIETRO FAGNANI** **PRODUCTION MANAGER** — DATA / DATE: 16-Oct-24

20013 Magenta (MI) Italy - Via Novara, 10/B-C
Tel. +39 02 97298663 r.a. - Fax +39 02 97291855
E-mail: indra@indra.it - http://www.indra.it

WATER QUALITY ANALYSIS UP TO 27-Aug-2024
EN 10204-2.1 ed. 2004

Parametri / Parameters	*Valore rilevato / Detected value*	*Valori di legge / Legal limit*
Ammonio / Ammonium (NH_4^+) [mg/l]	*< 0,1*	*0,5*
Arsenico / Arsenic (As_{tot}) [µg/l]	*< 1*	*10*
Bicarbonato / Bicarbonate (HCO_3^-) [mg/l]	*317*	*Non previsto / Not expected*
Calcio / Calcium (Ca^{2+}) [mg/l]	*87*	*Non previsto / Not expected*
Cloruri / Chlorides (Cl^-) [mg/l]	*12*	*250*
Composti organoalogenati / Organohalogen compounds [µg/l]	*<1*	*30*
Conducibilità / Conductivity (µS/cm)	*501*	*2500*
Cromo / Chromium [µg/l]	*<5*	*50*
Durezza Totale / Total hardness [°f]	*30*	*Non previsto / Not expected*
Fluoruri / Fluorides (F^-) [mg/l]	*<0,2*	*1,5*
Magnesio / Magnesium (Mg^{2+}) [mg/l]	*20*	*Non previsto / Not expected*
Manganese / Manganese (Mn_{tot}) [µg/l]	*< 5*	*50*
Microinquinanti tot / Micropollutants tot [µg/l]	*<0,01*	*0,5*
Nitrati / Nitrates (NO_3^-) [mg/l]	*31*	*50*
Nitriti / Nitrites (NO_2^-) [mg/l]	*<0,02*	*0,5*
Potassio / Potassium (K^+) [mg/l]	*1*	*Non previsto / Not expected*
Residuo secco a 180°C / Dry residue at 180°C [mg/l]	*361*	*1500*
Sodio / Sodium (NA^+) [mg/l]	*5*	*200*
Solfati / Sulfates (SO_4^{2-}) [mg/l]	*31*	*250*
pH / pH	*7*	*6,5 - 9,5*

* I dati corrispondono ai valori pubblicati dal laboratorio Amiacque dell'acquedotto del comune di Magenta (MI) - Italia.

* All the data correspond to the values published by the laboratory Amiacque of the Magenta's municipality aqueduct (MI) - Italy.



indra VALVES - ITALY

RAPPORTO DI COLLAUDO "PED"
"PED" TEST REPORT
- INDRA VALVES -

MD-02-09-IT-UK
Rev. 8
Data: 24-Mar-23

Nr. Certificato / *Certificate No.*	10124/AC	**Data** / *Date :*	14-Oct-24
Cliente / *Customer :*	ROSETTI MARINO SPA		
Ordine Nr. / *Order Nr.*	1724000798 REV.2	**Data** / *Date :*	26-Jun-24
Ns. commessa Nr. / *Our job Nr.*	24 01216	**Data** / *Date :*	03-Jul-24
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*	

Rev. 0

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST (according to API 598, API 6D & 2014/68/UE PED)	FLUIDO (Fluid)	DURATA (Duration)	PRESSIONE (Pressure)	MAX. PERDITA AMMISSIBILE (ISO 5208) (Max allowable leakage)	MANOMETRO N° (Gauge ID)	DATA SCADENZA (Due Date)
Shell test	Acqua / Water	2 min.	vedi sotto / see below	nessuna perdita / no leakage	vedi sotto / see below	vedi sotto / see below
High pressure closure test	Acqua / Water	2 min.	vedi sotto / see below	vedi sotto / see below	vedi sotto / see below	vedi sotto / see below
Low pressure closure test (only for ball valves)	Aria / Air	2 min.	vedi sotto / see below	vedi sotto / see below	24F06-1334-01-13	03-Dec-24
Back seat test (only for needle valves)	Acqua / Water	2 min.	vedi sotto / see below	nessuna perdita / no leakage	vedi sotto / see below	vedi sotto / see below

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY)		VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi)		High pressure closure test bar (psi)		Low pressure closure test bar (psi)		Back seat test bar (psi)		Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
					PRODUCED	TESTED						Pressure	Result	Pressure	Result	Pressure	Result	Pressure	Result				
80	80	00.VSF.2692(T)	SB-598-50-J150RF3-J (From 105972 To 105973)	VBC0NN24460200	2	100%	Ball	2"	RF	150	F55 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
120	120	00.VSF.2691/V	SB-598-40-H150RF3-H (105978)	VBC0NN24721H00	1	100%	Ball	1 ½"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
210	210	00.VSF.2699/V	SBB-798-40-H150RF3-H-D (106027)	VLBLNN01291H00	1	100%	Ball+Needle	1 ½"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	22 (319)	N.L	YES	A	24F06-1334-01--13	03-Dec-24
230	230	00.VSF.2698(T)	SBB-798-40-H150RF3-H-D (From 106030 To 106031)	VLBLNN01381H00	2	100%	Ball+Needle	1 ½"	RF	150	F55 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	22 (319)	N.L	YES	A	24F06-1334-01--13	03-Dec-24
321	390	00.VSF.2716/V	SB-598-50-L150RF3-L (106898)	VBD0NN16610300	1	100%	Ball	3"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24

INDRA SRL dichiara che le valvole fornite sono conformi ai requisiti stabiliti dalla API 598 - ASME B16.34 - 2014/68/UE PED Cert. Modulo H emesso da TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948
INDRA SRL declares that the supplied valves are in conformity with the requirements of API 598 - ASME B16.34 - 2014/68/UE PED Cert. Module H issued by TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948

Note / Remarks:
- CAVITY SEAT RELIEF TEST PERFORMED ON 100% RESULT:OK
- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno
(Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)
- *N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE*
Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector

SI / Yes ☐
No / No ☑

Nominativo / Name .....

Timbro e Firma / Stamp and Signature

Data / Date .....

PROCEDURA DI COLLAUDO
(Test procedure)
PT VSP-VSF-ITA/ENG
(24-01216)

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** TESTING OPERATOR	DATA / DATE:	14-Oct-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** PRODUCTION MANAGER	DATA / DATE:	14-Oct-24

indra VALVES - ITALY	**RAPPORTO DI COLLAUDO "PED"** **"PED" TEST REPORT** **- INDRA VALVES -**	**MD-02-09-IT-UK** **Rev. 8** **Data: 24-Mar-23**

Nr. Certificato / *Certificate No.* 10124/AC — **Data** / *Date :* 14-Oct-24 — *Rev. 0*

Cliente / *Customer :* ROSETTI MARINO SPA

Ordine Nr. / *Order Nr.* 1724000798 REV.2 — **Data** / *Date :* 26-Jun-24

Ns. commessa Nr. / *Our job Nr.* 24 01216 — **Data** / *Date :* 03-Jul-24

Ns. D.D.T. Nr. / *Our advise note Nr.* — **Data** / *Date :*

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST (according to API 598, API 6D & 2014/68/UE PED)	FLUIDO (Fluid)	DURATA (Duration)	PRESSIONE (Pressure)	MAX. PERDITA AMMISSIBILE (ISO 5208) (Max allowable leakage)	MANOMETRO N° (Gauge ID)	DATA SCADENZA (Due Date)
Shell test	Acqua / Water	2 min.	vedi sotto / see below	nessuna perdita / no leakage	vedi sotto / see below	vedi sotto / see below
High pressure closure test	Acqua / Water	2 min.	vedi sotto / see below	vedi sotto / see below	vedi sotto / see below	vedi sotto / see below
Low pressure closure test (only for ball valves)	Aria / Air	2 min.	vedi sotto / see below	vedi sotto / see below	24F06-1334-01--13	03-Dec-24
Back seat test (only for needle valves)	Acqua / Water	2 min.	vedi sotto / see below	nessuna perdita / no leakage	vedi sotto / see below	vedi sotto / see below

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY)		VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi)		High pressure closure test bar (psi)		Low pressure closure test bar (psi)		Back seat test bar (psi)		Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
					PRODUCED	TESTED						Pressure	Result	Pressure	Result	Pressure	Result	Pressure	Result				
80	80	00.VSF.2692(T)	SB-598-50-J150RF3-J (From 105972 To 105973)	VBC0NN24460200	2	100%	Ball	2"	RF	150	F55 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
120	120	00.VSF.2691/V	SB-598-40-H150RF3-H (105978)	VBC0NN24721H00	1	100%	Ball	1 ½"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
210	210	00.VSF.2699/V	SBB-798-40-H150RF3-H-D (106027)	VLBLNN01291H00	1	100%	Ball+Needle	1 ½"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	22 (319)	N.L	YES	A	24F06-1334-01--13	03-Dec-24
230	230	00.VSF.2698(T)	SBB-798-40-H150RF3-H-D (From 106030 To 106031)	VLBLNN01381H00	2	100%	Ball+Needle	1 ½"	RF	150	F55 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	22 (319)	N.L	YES	A	24F06-1334-01--13	03-Dec-24
321	390	00.VSF.2716/V	SB-598-50-L150RF3-L (106898)	VBD0NN16610300	1	100%	Ball	3"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24

INDRA SRL dichiara che le valvole fornite sono conformi ai requisiti stabiliti dalla API 598 - ASME B16.34 - 2014/68/UE PED Cert. Modulo H emesso da TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948

INDRA SRL declares that the supplied valves are in conformity with the requirements of API 598 - ASME B16.34 - 2014/68/UE PED Cert. Module H issued by TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948

Note / Remarks:

- CAVITY SEAT RELIEF TEST PERFORMED ON 100% RESULT:OK
- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno

(Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)

- *N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE*

Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector — *Si / Yes* ☐ *No / No* ☑

Nominativo / Name ..... — *Timbro e Firma / Stamp and Signature*

Data / Date .....

PROCEDURA DI COLLAUDO
(Test procedure)

PT VSP-VSF-ITA/ENG
(24-01216)

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** **TESTING OPERATOR**	DATA / DATE: 14-Oct-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** **PRODUCTION MANAGER**	DATA / DATE: 14-Oct-24

indra VALVES - ITALY	**RAPPORTO DI COLLAUDO COPPIA DI MANOVRA E RESISTENZA ELETTRICA** ***TORQUE AND ELECTRICAL RESISTANCE REPORT*** ***- INDRA VALVES -***	**MD-02-14-IT-UK / P** **Rev. 0** **Data: 01-Jul-14**

Nr. Certificato / *Certificate No.*	**10124/AC-TET-C**	**Data** / *Date :*	**14-Oct-24** *Rev. 0*
Cliente / *Customer :*	**ROSETTI MARINO SPA**		
Ordine Nr. / *Order Nr.*	**1724000798 REV.2**	**Data** / *Date :*	**26-Jun-24**
Ns. commessa Nr. / *Our job Nr.*	**24 01216**	**Data** / *Date :*	**03-Jul-24**
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*	

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST *according to API 598 , API 6D, BS EN 12266-1*	***VALORE MASSIMO*** *(Limit)*	***STRUMENTO DI MISURA*** *(Gauge Instrument)*	***SCADENZA*** *(Due Date)*
Torque test			
Electrical resistance test	*10 Ohm*	*Digital Multimeter DMM249 13290*	*31-May-25*

POS. (ITEM)	**CODICE** (CODE)	**DESCRIZIONE** (DESCRIPTION)	**CODICE CLIENTE** (CUSTOMER CODE)	**QTA'** (QTY) PRODUCED	TESTED
210	***00.VSF.2699/V***	***SBB-798-40-H150RF3-H-D***	***VLBLNN01291H00***	***1***	***1***

n° SERIALE (Serial n°)	**LATO** (Side)	*Torque test* Nm		*Electrical resistance Body-stem* Ohm		*Electrical resistance Body-ball* Ohm	
		Value	Result	Value	Result	Value	Result
106027	***A***			0,7	OK	0,7	OK

n° SERIALE (Serial n°)	**LATO** (Side)	*Torque test* Nm		*Electrical resistance Body-stem* Ohm		*Electrical resistance Body-ball* Ohm	
		Value	Result	Value	Result	Value	Result

n° SERIALE (Serial n°)	**LATO** (Side)	*Torque test* Nm					
		Value	Result	Value	Result	Value	Result

Note / ***Remarks:***
- Test Antistatico eseguito su 1 pz. per posizione (Antistatic test executed on 1 pc. per item)

PROCEDURA DI COLLAUDO *(Test procedure)*
PT/VSP-VSF-HP / ATP_00

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** **TESTING OPERATOR**	DATA / DATE: 14-Oct-24		APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** **PRODUCTION MANAGER**	DATA / DATE: 14-Oct-24

indra VALVES - ITALY	**RAPPORTO DI COLLAUDO COPPIA DI MANOVRA E RESISTENZA ELETTRICA** ***TORQUE AND ELECTRICAL RESISTANCE REPORT*** ***- INDRA VALVES -***	**MD-02-14-IT-UK / P** **Rev. 0** **Data: 01-Jul-14**

Nr. Certificato / *Certificate No.*	**10124/AC-TET-C**	**Data** / *Date :*	**14-Oct-24** *Rev. 0*
Cliente / *Customer :*	**ROSETTI MARINO SPA**		
Ordine Nr. / *Order Nr.*	**1724000798 REV.2**	**Data** / *Date :*	**26-Jun-24**
Ns. commessa Nr. / *Our job Nr.*	**24 01216**	**Data** / *Date :*	**03-Jul-24**
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*	

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST *according to API 598 , API 6D, BS EN 12266-1*	***VALORE MASSIMO*** *(Limit)*	***STRUMENTO DI MISURA*** *(Gauge Instrument)*	***SCADENZA*** *(Due Date)*
Torque test			
Electrical resistance test	*10 Ohm*	*Digital Multimeter DMM249 13290*	*31-May-25*

POS. (ITEM)	**CODICE** (CODE)	**DESCRIZIONE** (DESCRIPTION)	**CODICE CLIENTE** (CUSTOMER CODE)	**QTA'** (QTY) PRODUCED	TESTED
210	***00.VSF.2699/V***	***SBB-798-40-H150RF3-H-D***	***VLBLNN01291H00***	***1***	***1***

n° SERIALE (Serial n°)	**LATO** (Side)	*Torque test* Nm		*Electrical resistance Body-stem* Ohm		*Electrical resistance Body-ball* Ohm	
		Value	Result	Value	Result	Value	Result
106027	***A***			0,7	OK	0,7	OK

n° SERIALE (Serial n°)	**LATO** (Side)	*Torque test* Nm		*Electrical resistance Body-stem* Ohm		*Electrical resistance Body-ball* Ohm	
		Value	Result	Value	Result	Value	Result

n° SERIALE (Serial n°)	**LATO** (Side)	*Torque test* Nm					
		Value	Result	Value	Result	Value	Result

Note / ***Remarks:***
- Test Antistatico eseguito su 1 pz. per posizione (Antistatic test executed on 1 pc. per item)

Addura CROSSWIND a/w

PROCEDURA DI COLLAUDO *(Test procedure)*
PT/VSP-VSF-HP / ATP_00

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** **TESTING OPERATOR**	DATA / DATE: 14-Oct-24		APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** **PRODUCTION MANAGER**	DATA / DATE: 14-Oct-24

ROSETTI MARINO ITEM 220

COD. VLBLNN01320100

TAG:

BLPH-MV-007, BLPH-MV-009

INDRA ITEM 220

COD. 00.VSF.2701/V

indra VALVES - ITALY

RAPPORTO DI COLLAUDO
TEST REPORT
- INDRA VALVES -

MD-02-05-IT-UK / P
Rev. 24
Data: 24-Mar-23

Nr. Certificato / *Certificate No.* 10044/AC — **Data** / *Date :* 25-Sep-24 — *Rev. 0*

Cliente / *Customer :* ROSETTI MARINO SPA

Ordine Nr. / *Order Nr.* 1724000798 REV.2 — **Data** / *Date :* 26-Jun-24

Ns. commessa Nr. / *Our job Nr.* 24 01216 — **Data** / *Date :* 03-Jul-24

Ns. D.D.T. Nr. / *Our advise note Nr.* — **Data** / *Date :*

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST (according to API 598 & API 6D)	FLUIDO (Fluid)	DURATA (Duration)	PRESSIONE (Pressure)	MAX. PERDITA AMMISSIBILE (ISO 5208) (Max allowable leakage)	MANOMETRO N° (Gauge ID)	DATA SCADENZA (Due Date)
Shell test	Acqua / Water	2 min.	vedi sotto / see below	nessuna perdita / no leakage	vedi sotto / see below	vedi sotto / see below
High pressure closure test	Acqua / Water	2 min.	vedi sotto / see below	vedi sotto / see below	vedi sotto / see below	vedi sotto / see below
Low pressure closure test (only for ball valves)	Aria / Air	2 min.	vedi sotto / see below	vedi sotto / see below	24F06-1334-01--13	03-Dec-24
Back seat test (only for needle valves)	Acqua / Water	2 min.	vedi sotto / see below	nessuna perdita / no leakage	vedi sotto / see below	vedi sotto / see below

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY) PRODUCED	QTA' (QTY) TESTED	VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi) Pressure	Shell test Result	High pressure closure test bar (psi) Pressure	High pressure closure test Result	Low pressure closure test bar (psi) Pressure	Low pressure closure test Result	Back seat test bar (psi) Pressure	Back seat test Result	Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
50	50	00.VSF.2694/V	SB-598-HR-25-F150RF3-F (105966)	VBC0NN24350100	5	1	Ball	1"	RF	150	AISI 316/316L NACE MR01.75	29 (421)	N.L	21 (305)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
220	220	00.VSF.2701/V	SBB-798-HR-25-F150RF3-F-D (106028)	VLBLNN01320100	2	1	Ball+Needle	1"	RF	150	AISI 316/316L NACE MR01.75	29 (421)	N.L	21 (305)	N.L	6 (87)	N.L	21 (305)	N.L	YES	A	24F06-1334-01--13	03-Dec-24
240	240	00.VSF.2696/V	SBB-798-25-F150RF3-F-D (106032)	VLBLNN01410100	1	1	Ball+Needle	1"	RF	150	AISI 316/316L NACE MR01.75	29 (421)	N.L	21 (305)	N.L	6 (87)	N.L	21 (305)	N.L	YES	A	24F06-1334-01--13	03-Dec-24

DATE: 25 SET 2024
NAME: MARINO BASILE
ON BEHALF OF: ROSETTI MARINO
SIGNATURE:

Note / Remarks:
- CAVITY SEAT RELIEF TEST PERFORMED ON 100% RESULT:OK
- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno
(Products signed with "O" and delivered in sealed bag have been degreased for oxygen service) .
- *N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE*

Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector — *Si / Yes* ☑ *No / No* ☐

Nominativo / Name W. GOBBI — *Timbro e Firma / Stamp and Signature* CROSSWIND 25/9/24

Data / Date 25/9/24

PROCEDURA DI COLLAUDO
(Test procedure)
PT VSP-VSF-ITA/ENG
(24-01216)

COLLAUDATO DA: / TESTED BY: **MARCO FALDUTO** **TESTING OPERATOR** — DATA / DATE: 25-Sep-24

APPROVATO DA: / APPROVED BY: **PIETRO FAGNANI** **PRODUCTION MANAGER** — DATA / DATE: 25-Sep-24

20013 Magenta (MI) Italy - Via Novara, 10/B-C
Tel. +39 02 97298663 r.a. - Fax +39 02 97291855
E-mail: indra@indra.it - http://www.indra.it

WATER QUALITY ANALYSIS UP TO 27-Aug-2024
EN 10204-2.1 ed. 2004

Parametri / Parameters	*Valore rilevato / Detected value*	*Valori di legge / Legal limit*
Ammonio / Ammonium (NH_4^+) [mg/l]	*< 0,1*	*0,5*
Arsenico / Arsenic (As_{tot}) [µg/l]	*< 1*	*10*
Bicarbonato / Bicarbonate (HCO_3^-) [mg/l]	*317*	*Non previsto / Not expected*
Calcio / Calcium (Ca^{2+}) [mg/l]	*87*	*Non previsto / Not expected*
Cloruri / Chlorides (Cl^-) [mg/l]	*12*	*250*
Composti organoalogenati / Organohalogen compounds [µg/l]	*<1*	*30*
Conducibilità / Conductivity (µS/cm)	*501*	*2500*
Cromo / Chromium [µg/l]	*<5*	*50*
Durezza Totale / Total hardness [°f]	*30*	*Non previsto / Not expected*
Fluoruri / Fluorides (F^-) [mg/l]	*<0,2*	*1,5*
Magnesio / Magnesium (Mg^{2+}) [mg/l]	*20*	*Non previsto / Not expected*
Manganese / Manganese (Mn_{tot}) [µg/l]	*< 5*	*50*
Microinquinanti tot / Micropollutants tot [µg/l]	*<0,01*	*0,5*
Nitrati / Nitrates (NO_3^-) [mg/l]	*31*	*50*
Nitriti / Nitrites (NO_2^-) [mg/l]	*<0,02*	*0,5*
Potassio / Potassium (K^+) [mg/l]	*1*	*Non previsto / Not expected*
Residuo secco a 180°C / Dry residue at 180°C [mg/l]	*361*	*1500*
Sodio / Sodium (NA^+) [mg/l]	*5*	*200*
Solfati / Sulfates (SO_4^{2-}) [mg/l]	*31*	*250*
pH / pH	*7*	*6,5 - 9,5*

* I dati corrispondono ai valori pubblicati dal laboratorio Amiacque dell'acquedotto del comune di Magenta (MI) - Italia.

* All the data correspond to the values published by the laboratory Amiacque of the Magenta's municipality aqueduct (MI) - Italy.

x CROSSWIND
25/9/24

DATE: 25 SET 2024
NAME: MARTINO BASILE
ON BEHALF OF: ROSETTI MARINO
SIGNATURE:

ROSETTI MARINO ITEM 230

COD. VLBLNN01381H00

TAG:

BLPH-MV-043, BLPH-MV-050

INDRA ITEM 230

COD. 00.VSF.2698(T)

indra VALVES - ITALY	**RAPPORTO DI COLLAUDO COPPIA DI MANOVRA E RESISTENZA ELETTRICA** ***TORQUE AND ELECTRICAL RESISTANCE REPORT*** ***- INDRA VALVES -***	**MD-02-14-IT-UK / P** **Rev. 0** **Data: 01-Jul-14**

Nr. Certificato / *Certificate No.* 10124/AC-TET-D — **Data** / *Date :* 14-Oct-24 — *Rev. 0*

Cliente / *Customer :* ROSETTI MARINO SPA

Ordine Nr. / *Order Nr.* 1724000798 REV.2 — **Data** / *Date :* 26-Jun-24

Ns. commessa Nr. / *Our job Nr.* 24 01216 — **Data** / *Date :* 03-Jul-24

Ns. D.D.T. Nr. / *Our advise note Nr.* — **Data** / *Date :*

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST according to API 598 , API 6D, BS EN 12266-1	***VALORE MASSIMO*** *(Limit)*	***STRUMENTO DI MISURA*** *(Gauge Instrument)*	***SCADENZA*** ***(Due Date)***
Torque test			
Electrical resistance test	*10 Ohm*	*Digital Multimeter DMM249 13290*	*31-May-25*

POS. (ITEM)	CODICE (CODE)	DESCRIZIONE (DESCRIPTION)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY) PRODUCED	TESTED
230	*00.VSF.2698(T)*	*SBB-798-40-H150RF3-H-D*	*VLBLNN01381H00*	*2*	*1*

n° SERIALE (Serial n°)	LATO (Side)	Torque test Nm		Electrical resistance Body-stem Ohm		Electrical resistance Body-ball Ohm	
		Value	Result	Value	Result	Value	Result
106030	*A*			0,6	OK	0,5	OK

n° SERIALE (Serial n°)	LATO (Side)	Torque test Nm		Electrical resistance Body-stem Ohm		Electrical resistance Body-ball Ohm	
		Value	Result	Value	Result	Value	Result

n° SERIALE (Serial n°)	LATO (Side)	Torque test Nm					
		Value	Result	Value	Result	Value	Result

Note / ***Remarks:***
- Test Antistatico eseguito su 1 pz. per posizione (Antistatic test executed on 1 pc. per item)

PROCEDURA DI COLLAUDO *(Test procedure)*
PT/VSP-VSF-HP / ATP_00

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** **TESTING OPERATOR**	DATA / DATE:	14-Oct-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** **PRODUCTION MANAGER**	DATA / DATE: 14-Oct-24

indra VALVES - ITALY	**RAPPORTO DI COLLAUDO COPPIA DI MANOVRA E RESISTENZA ELETTRICA** ***TORQUE AND ELECTRICAL RESISTANCE REPORT*** ***- INDRA VALVES -***	**MD-02-14-IT-UK / P** **Rev. 0** **Data: 01-Jul-14**

Nr. Certificato / *Certificate No.*	**10124/AC-TET-D**	**Data** / *Date :*	**14-Oct-24** *Rev. 0*
Cliente / *Customer :*	**ROSETTI MARINO SPA**		
Ordine Nr. / *Order Nr.*	**1724000798 REV.2**	**Data** / *Date :*	**26-Jun-24**
Ns. commessa Nr. / *Our job Nr.*	**24 01216**	**Data** / *Date :*	**03-Jul-24**
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*	

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST according to API 598 , API 6D, BS EN 12266-1	VALORE MASSIMO (Limit)	STRUMENTO DI MISURA (Gauge Instrument)	SCADENZA (Due Date)
Torque test			
Electrical resistance test	*10 Ohm*	*Digital Multimeter DMM249 13290*	*31-May-25*

POS. (ITEM)	CODICE (CODE)	DESCRIZIONE (DESCRIPTION)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY) PRODUCED	TESTED
230	*00.VSF.2698(T)*	*SBB-798-40-H150RF3-H-D*	*VLBLNN01381H00*	*2*	*1*

n° SERIALE (Serial n°)	LATO (Side)	Torque test Nm		Electrical resistance Body-stem Ohm		Electrical resistance Body-ball Ohm	
		Value	Result	Value	Result	Value	Result
106030	*A*			0,6	OK	0,5	OK

n° SERIALE (Serial n°)	LATO (Side)	Torque test Nm		Electrical resistance Body-stem Ohm		Electrical resistance Body-ball Ohm	
		Value	Result	Value	Result	Value	Result

n° SERIALE (Serial n°)	LATO (Side)	Torque test Nm					
		Value	Result	Value	Result	Value	Result

Note / ***Remarks:***
- Test Antistatico eseguito su 1 pz. per posizione (Antistatic test executed on 1 pc. per item)

PROCEDURA DI COLLAUDO
(Test procedure)
PT/VSP-VSF-HP / ATP_00

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** TESTING OPERATOR	DATA / DATE:	14-Oct-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** PRODUCTION MANAGER	DATA / DATE: 14-Oct-24

ROSETTI MARINO ITEM 240

COD. VLBLNN01410100

TAG:

BLPH-MV-001

INDRA ITEM 240

COD. 00.VSF.2696/V

indra VALVES - ITALY

RAPPORTO DI COLLAUDO
TEST REPORT
- INDRA VALVES -

MD-02-05-IT-UK / P
Rev. 24
Data: 24-Mar-23

Nr. Certificato / *Certificate No.* 10044/AC — **Data** / *Date :* 25-Sep-24 — *Rev. 0*

Cliente / *Customer :* ROSETTI MARINO SPA

Ordine Nr. / *Order Nr.* 1724000798 REV.2 — **Data** / *Date :* 26-Jun-24

Ns. commessa Nr. / *Our job Nr.* 24 01216 — **Data** / *Date :* 03-Jul-24

Ns. D.D.T. Nr. / *Our advise note Nr.* — **Data** / *Date :*

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST (according to API 598 & API 6D)	*FLUIDO (Fluid)*	*DURATA (Duration)*	*PRESSIONE (Pressure)*	*MAX. PERDITA AMMISSIBILE (ISO 5208) (Max allowable leakage)*	*MANOMETRO N° (Gauge ID)*	*DATA SCADENZA (Due Date)*
Shell test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*
High pressure closure test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*
Low pressure closure test (only for ball valves)	*Aria / Air*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*24F06-1334-01÷13*	*03-Dec-24*
Back seat test (only for needle valves)	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY)		VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi)		High pressure closure test bar (psi)		Low pressure closure test bar (psi)		Back seat test bar (psi)		Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
					PRODUCED	TESTED						Pressure	Result	Pressure	Result	Pressure	Result	Pressure	Result				
50	50	00.VSF.2694/V	SB-598-HR-25-F150RF3-F (105966)	VBC0NN24350100	5	1	Ball	1"	RF	150	AISI 316/316L NACE MR01.75	29 (421)	N.L	21 (305)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01÷13	03-Dec-24
220	220	00.VSF.2701/V	SBB-798-HR-25-F150RF3-F-D (106028)	VLBLNN01320100	2	1	Ball+Needle	1"	RF	150	AISI 316/316L NACE MR01.75	29 (421)	N.L	21 (305)	N.L	6 (87)	N.L	21 (305)	N.L	YES	A	24F06-1334-01÷13	03-Dec-24
240	240	00.VSF.2696/V	SBB-798-25-F150RF3-F-D (106032)	VLBLNN01410100	1	1	Ball+Needle	1"	RF	150	AISI 316/316L NACE MR01.75	29 (421)	N.L	21 (305)	N.L	6 (87)	N.L	21 (305)	N.L	YES	A	24F06-1334-01÷13	03-Dec-24

DATE: 25 SET 2024
NAME: MARINO BASILE
ON BEHALF OF: ROSETTI MARINO
SIGNATURE:

Note / Remarks:
- CAVITY SEAT RELIEF TEST PERFORMED ON 100% RESULT:OK
- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno
(Products signed with "O" and delivered in sealed bag have been degreased for oxygen service) .
- *N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE*

Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector — *SI / Yes* ☑ *No / No* ☐

Nominativo / Name: W. GOBBI — *Timbro e Firma / Stamp and Signature*: CROSSWIND

Data / Date: 25/9/24 — 25/9/24

PROCEDURA DI COLLAUDO
(Test procedure)
PT VSP-VSF-ITA/ENG
(24-01216)

COLLAUDATO DA: / TESTED BY: **MARCO FALDUTO** **TESTING OPERATOR** — DATA / DATE: 25-Sep-24

APPROVATO DA: / APPROVED BY: **PIETRO FAGNANI** **PRODUCTION MANAGER** — DATA / DATE: 25-Sep-24

20013 Magenta (MI) Italy - Via Novara, 10/B-C
Tel. +39 02 97298663 r.a. - Fax +39 02 97291855
E-mail: indra@indra.it - http://www.indra.it

WATER QUALITY ANALYSIS UP TO 27-Aug-2024
EN 10204-2.1 ed. 2004

Parametri / Parameters	*Valore rilevato / Detected value*	*Valori di legge / Legal limit*
Ammonio / Ammonium (NH_4^+) [mg/l]	*< 0,1*	*0,5*
Arsenico / Arsenic (As_{tot}) [µg/l]	*< 1*	*10*
Bicarbonato / Bicarbonate (HCO_3^-) [mg/l]	*317*	*Non previsto / Not expected*
Calcio / Calcium (Ca^{2+}) [mg/l]	*87*	*Non previsto / Not expected*
Cloruri / Chlorides (Cl^-) [mg/l]	*12*	*250*
Composti organoalogenati / Organohalogen compounds [µg/l]	*<1*	*30*
Conducibilità / Conductivity (µS/cm)	*501*	*2500*
Cromo / Chromium [µg/l]	*<5*	*50*
Durezza Totale / Total hardness [°f]	*30*	*Non previsto / Not expected*
Fluoruri / Fluorides (F^-) [mg/l]	*<0,2*	*1,5*
Magnesio / Magnesium (Mg^{2+}) [mg/l]	*20*	*Non previsto / Not expected*
Manganese / Manganese (Mn_{tot}) [µg/l]	*< 5*	*50*
Microinquinanti tot / Micropollutants tot [µg/l]	*<0,01*	*0,5*
Nitrati / Nitrates (NO_3^-) [mg/l]	*31*	*50*
Nitriti / Nitrites (NO_2^-) [mg/l]	*<0,02*	*0,5*
Potassio / Potassium (K^+) [mg/l]	*1*	*Non previsto / Not expected*
Residuo secco a 180°C / Dry residue at 180°C [mg/l]	*361*	*1500*
Sodio / Sodium (NA^+) [mg/l]	*5*	*200*
Solfati / Sulfates (SO_4^{2-}) [mg/l]	*31*	*250*
pH / pH	*7*	*6,5 - 9,5*

* I dati corrispondono ai valori pubblicati dal laboratorio Amiacque dell'acquedotto del comune di Magenta (MI) - Italia.

* All the data correspond to the values published by the laboratory Amiacque of the Magenta's municipality aqueduct (MI) - Italy.

x CROSSWIND
25/9/24

DATE: 25 SET 2024
NAME: MARTINO BASILE
ON BEHALF OF: ROSETTI MARINO
SIGNATURE:

ROSETTI MARINO ITEM 250

COD. VLBLNN0143020

TAG:

BLPH-MV-002M, BLPH-MV-016

INDRA ITEM 250

COD. 00.VSF.2702/V

indra VALVES - ITALY	RAPPORTO DI COLLAUDO "PED" "PED" TEST REPORT - INDRA VALVES -	MD-02-09-IT-UK Rev. 8 Data: 24-Mar-23

Nr. Certificato / *Certificate No.* 10046/AC — **Data** / *Date :* 25-Sep-24 — *Rev. 0*

Cliente / *Customer :* ROSETTI MARINO SPA

Ordine Nr. / *Order Nr.* 1724000798 REV.2 — **Data** / *Date :* 26-Jun-24

Ns. commessa Nr. / *Our job Nr.* 24 01216 — **Data** / *Date :* 03-Jul-24

Ns. D.D.T. Nr. / *Our advise note Nr.* — **Data** / *Date :*

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST (according to API 598, API 6D & 2014/68/UE PED)	FLUIDO (Fluid)	DURATA (Duration)	PRESSIONE (Pressure)	MAX. PERDITA AMMISSIBILE (ISO 5208) (Max allowable leakage)	MANOMETRO N° (Gauge ID)	DATA SCADENZA (Due Date)
Shell test	Acqua / Water	2 min.	vedi sotto / see below	nessuna perdita / no leakage	vedi sotto / see below	vedi sotto / see below
High pressure closure test	Acqua / Water	2 min.	vedi sotto / see below	vedi sotto / see below	vedi sotto / see below	vedi sotto / see below
Low pressure closure test (only for ball valves)	Aria / Air	2 min.	vedi sotto / see below	vedi sotto / see below	24F06-1334-01--13	03-Dec-24
Back seat test (only for needle valves)	Acqua / Water	2 min.	vedi sotto / see below	nessuna perdita / no leakage	vedi sotto / see below	vedi sotto / see below

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY) PRODUCED	QTA' (QTY) TESTED	VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi) Pressure	Shell test Result	High pressure closure test bar (psi) Pressure	High pressure closure test Result	Low pressure closure test bar (psi) Pressure	Low pressure closure test Result	Back seat test bar (psi) Pressure	Back seat test Result	Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
170	170	00.VSF.2682/V	DBB-898-HR-50-J300RF3-J-D (106017)	VLBBNN07210200	1	1	Ball+Needle	2"	RF	300	AISI 316/316L NACE MR01.75	75 (1088)	N.L	55 (798)	N.L	6 (87)	N.L	55 (798)	N.L	YES	A	24F06-1334-01--13	03-Dec-24
250	250	00.VSF.2702/V	SBB-798-HR-50-J150RF3-J-D (106033)	VLBLNN0143020	2	1	Ball+Needle	2"	RF	150	AISI 316/316L NACE MR01.75	29 (421)	N.L	21 (305)	N.L	6 (87)	N.L	21 (305)	N.L	YES	A	24F06-1334-01--13	03-Dec-24

DATE: 25 SET 2024

NAME: MARTINO BASILE

ON BEHALF OF: ROSETTI MARINO

SIGNATURE:

INDRA SRL dichiara che le valvole fornite sono conformi ai requisiti stabiliti dalla API 598 - ASME B16.34 - 2014/68/UE PED Cert. Modulo H emesso da TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948

INDRA SRL declares that the supplied valves are in conformity with the requirements of API 598 - ASME B16.34 - 2014/68/UE PED Cert. Module H issued by TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948

Note / Remarks:

- CAVITY SEAT RELIEF TEST PERFORMED ON 100% RESULT:OK
- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno
  (Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)
- *N.L. = NO LEAKAGE (NESSUNA PERDITA)* *OK = LEAKAGE < MAX ALLOWABLE*

Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector — *Si / Yes* ☑ *No / No* ☐

Nominativo / Name W. GABBI

Timbro e Firma / Stamp and Signature CROSSWIND 25/9/24

Data / Date 25/9/24

PROCEDURA DI COLLAUDO
(Test procedure)

PT VSP-VSF-ITA/ENG
(24-01216)

COLLAUDATO DA: TESTED BY:	MARCO FALDUTO TESTING OPERATOR	DATA / DATE:	25-Sep-24	APPROVATO DA: APPROVED BY:	PIETRO FAGNANI PRODUCTION MANAGER	DATA / DATE:	25-Sep-24

20013 Magenta (MI) Italy - Via Novara, 10/B-C
Tel. +39 02 97298663 r.a. - Fax +39 02 97291855
E-mail: indra@indra.it - http://www.indra.it

WATER QUALITY ANALYSIS UP TO 27-Aug-2024
EN 10204-2.1 ed. 2004

Parametri / Parameters	*Valore rilevato / Detected value*	*Valori di legge / Legal limit*
Ammonio / Ammonium (NH_4^+) [mg/l]	*< 0,1*	*0,5*
Arsenico / Arsenic (As_{tot}) [µg/l]	*< 1*	*10*
Bicarbonato / Bicarbonate (HCO_3^-) [mg/l]	*317*	*Non previsto / Not expected*
Calcio / Calcium (Ca^{2+}) [mg/l]	*87*	*Non previsto / Not expected*
Cloruri / Chlorides (Cl^-) [mg/l]	*12*	*250*
Composti organoalogenati / Organohalogen compounds [µg/l]	*<1*	*30*
Conducibilità / Conductivity (µS/cm)	*501*	*2500*
Cromo / Chromium [µg/l]	*<5*	*50*
Durezza Totale / Total hardness [°f]	*30*	*Non previsto / Not expected*
Fluoruri / Fluorides (F^-) [mg/l]	*<0,2*	*1,5*
Magnesio / Magnesium (Mg^{2+}) [mg/l]	*20*	*Non previsto / Not expected*
Manganese / Manganese (Mn_{tot}) [µg/l]	*< 5*	*50*
Microinquinanti tot / Micropollutants tot [µg/l]	*<0,01*	*0,5*
Nitrati / Nitrates (NO_3^-) [mg/l]	*31*	*50*
Nitriti / Nitrites (NO_2^-) [mg/l]	*<0,02*	*0,5*
Potassio / Potassium (K^+) [mg/l]	*1*	*Non previsto / Not expected*
Residuo secco a 180°C / Dry residue at 180°C [mg/l]	*361*	*1500*
Sodio / Sodium (NA^+) [mg/l]	*5*	*200*
Solfati / Sulfates (SO_4^{2-}) [mg/l]	*31*	*250*
pH / pH	*7*	*6,5 - 9,5*

* I dati corrispondono ai valori pubblicati dal laboratorio Amiacque dell'acquedotto del comune di Magenta (MI) - Italia.

* All the data correspond to the values published by the laboratory Amiacque of the Magenta's municipality aqueduct (MI) - Italy.

x Crosswind
25/9/24

DATE: 25 SET 2024
NAME: MARTINO BASILE
ON BEHALF OF: ROSETTI MARINO
SIGNATURE:

ROSETTI MARINO ITEM 260

COD. VLBLNN01450400

TAG:

BLPH-MV-006, BLPH-MV-033, BLPH-MV-191, BLPH-MV-194 BLPH-MV-196, BLPH-MV-199, BLPH-MV-201

INDRA ITEM 260

COD. 00.VSF.2700/V

indra VALVES - ITALY	**RAPPORTO DI COLLAUDO "PED"** **"PED" TEST REPORT** **- INDRA VALVES -**	MD-02-09-IT-UK Rev. 8 Data: 24-Mar-23

Nr. Certificato / *Certificate No.* 10102/AC — **Data** / *Date* : 09-Oct-24 — *Rev. 0*

Cliente / *Customer* : ROSETTI MARINO SPA

Ordine Nr. / *Order Nr.* 1724000798 REV.2 — **Data** / *Date* : 26-Jun-24

Ns. commessa Nr. / *Our job Nr.* 24 01216 — **Data** / *Date* : 03-Jul-24

Ns. D.D.T. Nr. / *Our advise note Nr.* — **Data** / *Date* :

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST (according to API 598, API 6D & 2014/68/UE PED)	FLUIDO (Fluid)	DURATA (Duration)	PRESSIONE (Pressure)	MAX. PERDITA AMMISSIBILE (ISO 5208) (Max allowable leakage)	MANOMETRO N° (Gauge ID)	DATA SCADENZA (Due Date)
Shell test	Acqua / Water	2 min.	vedi sotto / see below	nessuna perdita / no leakage	vedi sotto / see below	vedi sotto / see below
High pressure closure test	Acqua / Water	2 min.	vedi sotto / see below	vedi sotto / see below	vedi sotto / see below	vedi sotto / see below
Low pressure closure test (only for ball valves)	Aria / Air	2 min.	vedi sotto / see below	vedi sotto / see below	327268-79	15-Jan-25
Back seat test (only for needle valves)	Acqua / Water	2 min.	vedi sotto / see below	nessuna perdita / no leakage	vedi sotto / see below	vedi sotto / see below

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY)		VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi)		High pressure closure test bar (psi)		Low pressure closure test bar (psi)		Back seat test bar (psi)		Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
					PRODUCED	TESTED						Pressure	Result	Pressure	Result	Pressure	Result	Pressure	Result				
160	160	00.VSF.2681/V	DBB-898-HR-40-H300RF3-H-D (106015)	VLBBNN07201H00	6	1	Ball+Needle	1 ½"	RF	300	AISI 316/316L NACE MR01.75	75 (1088)	N.L	55 (798)	N.L	6 (87)	N.L	55 (798)	N.L	YES	A	24F06-1334-01-13	03-Dec-24
260	260	00.VSF.2700/V	SBB-798-HR-100-N150RF3-N-D (106039)	VLBLNN01450400	7	1	Ball+Needle	4"	RF	150	AISI 316/316L NACE MR01.75	29 (421)	N.L	21 (305)	N.L	6 (87)	N.L	21 (305)	N.L	YES	A	24F06-1334-01-13	03-Dec-24
323	410	00.VSF.2681/V	DBB-898-HR-40-H300RF3-H-D (106016)	VLBBNN07201H00	1	1	Ball+Needle	1 ½"	RF	300	AISI 316/316L NACE MR01.75	75 (1088)	N.L	55 (798)	N.L	6 (87)	N.L	55 (798)	N.L	YES	A	24F06-1334-01-13	03-Dec-24

INDRA SRL dichiara che le valvole fornite sono conformi ai requisiti stabiliti dalla API 598 - ASME B16.34 - 2014/68/UE PED Cert. Modulo H emesso da TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948

INDRA SRL declares that the supplied valves are in conformity with the requirements of API 598 - ASME B16.34 - 2014/68/UE PED Cert. Module H issued by TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948

Note / Remarks:

- CAVITY SEAT RELIEF TEST PERFORMED ON 100% RESULT:OK
- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno
  (Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)

- N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE

Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector — *Si / Yes* ☑ *No / No* ☐

Nominativo / Name .....

Timbro e Firma / Stamp and Signature x CROSSWIND 31/10/24

Data / Date .....

PROCEDURA DI COLLAUDO
(Test procedure)
PT VSP-VSF-ITA/ENG
(24-01216)

COLLAUDATO DA: TESTED BY:	MARCO FALDUTO TESTING OPERATOR	DATA / DATE: 09-Oct-24	APPROVATO DA: APPROVED BY:	PIETRO FAGNANI PRODUCTION MANAGER	DATA / DATE: 09-Oct-24

20013 Magenta (MI) Italy - Via Novara, 10/B-C
Tel. +39 02 97298663 r.a. - Fax +39 02 97291855
E-mail: indra@indra.it - http://www.indra.it

WATER QUALITY ANALYSIS UP TO 27-Aug-2024
EN 10204-2.1 ed. 2004

Parametri / Parameters	*Valore rilevato / Detected value*	*Valori di legge / Legal limit*
Ammonio / Ammonium (NH_4^+) [mg/l]	*< 0,1*	*0,5*
Arsenico / Arsenic (As_{tot}) [µg/l]	*< 1*	*10*
Bicarbonato / Bicarbonate (HCO_3^-) [mg/l]	*317*	*Non previsto / Not expected*
Calcio / Calcium (Ca^{2+}) [mg/l]	*87*	*Non previsto / Not expected*
Cloruri / Chlorides (Cl^-) [mg/l]	*12*	*250*
Composti organoalogenati / Organohalogen compounds [µg/l]	*<1*	*30*
Conducibilità / Conductivity (µS/cm)	*501*	*2500*
Cromo / Chromium [µg/l]	*<5*	*50*
Durezza Totale / Total hardness [°f]	*30*	*Non previsto / Not expected*
Fluoruri / Fluorides (F^-) [mg/l]	*<0,2*	*1,5*
Magnesio / Magnesium (Mg^{2+}) [mg/l]	*20*	*Non previsto / Not expected*
Manganese / Manganese (Mn_{tot}) [µg/l]	*< 5*	*50*
Microinquinanti tot / Micropollutants tot [µg/l]	*<0,01*	*0,5*
Nitrati / Nitrates (NO_3^-) [mg/l]	*31*	*50*
Nitriti / Nitrites (NO_2^-) [mg/l]	*<0,02*	*0,5*
Potassio / Potassium (K^+) [mg/l]	*1*	*Non previsto / Not expected*
Residuo secco a 180°C / Dry residue at 180°C [mg/l]	*361*	*1500*
Sodio / Sodium (NA^+) [mg/l]	*5*	*200*
Solfati / Sulfates (SO_4^{2-}) [mg/l]	*31*	*250*
pH / pH	*7*	*6,5 - 9,5*

* I dati corrispondono ai valori pubblicati dal laboratorio Amiacque dell'acquedotto del comune di Magenta (MI) - Italia.

* All the data correspond to the values published by the laboratory Amiacque of the Magenta's municipality aqueduct (MI) - Italy.

x CROSSWIND
9/10/24 R

	RAPPORTO DI COLLAUDO A GAS GAS TEST REPORT - INDRA VALVES -	MD-02-13-IT-UK / P Rev. 2 Data: 24-Oct-16

Nr. Certificato / *Certificate No.*	10095/AC-GT	**Data** / *Date :*	07-Oct-24	*Rev. 0*
Cliente / *Customer :*	ROSETTI MARINO SPA			
Ordine Nr. / *Order Nr.*	1724000798 REV.2	**Data** / *Date :*	26-Jun-24	
Ns. commessa Nr. / *Our job Nr.*	24 01216	**Data** / *Date :*	03-Jul-24	
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*		

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST according to API 598 , BS EN 12266-1	FLUIDO (Fluid)	DURATA (Duration)	PRESSIONE (Pressure)	MAX. PERDITA AMMISSIBILE (BS EN 12266-1) (Max allowable leakage)	MANOMETRO N° (Gauge ID)	DATA SCADENZA (Due Date)
Shell test	Elio / Helium	15 min.	vedi sotto / see below	nessuna perdita / no leakage	vedi sotto / see below	vedi sotto / see below
High pressure closure test	Elio / Helium	vedi sotto / see below	vedi sotto / see below	vedi sotto / see below	vedi sotto / see below	vedi sotto / see below

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY)		VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi)		High pressure closure test bar (psi)				Bidirectional Test	Max allowable leakage (rate)	Gauge ID	Due Date
					PRODUCED	TESTED						Pressure	Result	Pressure	Result	Duration					
160	160	00.VSF.2681/V	DBB-898-HR-40-H300RF3-H-D (From 106010 To 106015)	VLBBNN07201H00	6	1	Ball+Needle	1" ½	RF	300	AISI 316/316L NACE MR01.75	55 (798)	N.L	55 (798)	N.L	2 min.		YES	A	24F06-1334-01--13	03-Dec-24
260	260	00.VSF.2700/V	SBB-798-HR-100-N150RF3-N-D (From 106035 To 106041)	VLBLNN01450400	7	1	Ball+Needle	4"	RF	150	AISI 316/316L NACE MR01.75	21 (305)	N.L	21 (305)	N.L	2 min.		YES	A	24F06-1334-01--13	03-Dec-24
323	410	00.VSF.2681/V	DBB-898-HR-40-H300RF3-H-D (106016)	VLBBNN07201H00	1	1	Ball+Needle	1" ½	RF	300	AISI 316/316L NACE MR01.75	55 (798)	N.L	55 (798)	N.L	2 min.		YES	A	24F06-1334-01--13	03-Dec-24

Note / Remarks:

- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno
  (Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)
- *N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE*

Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector	*Si / Yes* ☐ *No / No* ☑
Nominativo / Name	*Timbro e Firma / Stamp and Signature* CROSSWIND 23/10/24
Data / Date	

PROCEDURA DI COLLAUDO
(Test procedure)
PGT/VSP-VSF
(24-01216)

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** **TESTING OPERATOR**	DATA / DATE:	07-Oct-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** **PRODUCTION MANAGER**	DATA / DATE:	07-Oct-24

indra VALVES - ITALY	**RAPPORTO DI COLLAUDO "PED"** **"PED" TEST REPORT** **- INDRA VALVES -**	**MD-02-09-IT-UK** **Rev. 8** **Data: 24-Mar-23**

Nr. Certificato / *Certificate No.* 10095/AC — **Data** / *Date :* 07-Oct-24 — *Rev. 0*

Cliente / *Customer :* ROSETTI MARINO SPA

Ordine Nr. / *Order Nr.* 1724000798 REV.2 — **Data** / *Date :* 26-Jun-24

Ns. commessa Nr. / *Our job Nr.* 24 01216 — **Data** / *Date :* 03-Jul-24

Ns. D.D.T. Nr. / *Our advise note Nr.* — **Data** / *Date :*

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST (according to API 598, API 6D & 2014/68/UE PED)	*FLUIDO (Fluid)*	*DURATA (Duration)*	*PRESSIONE (Pressure)*	*MAX. PERDITA AMMISSIBILE (ISO 5208) (Max allowable leakage)*	*MANOMETRO N° (Gauge ID)*	*DATA SCADENZA (Due Date)*
Shell test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*
High pressure closure test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*
Low pressure closure test (only for ball valves)	*Aria / Air*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*327268-79*	*15-Jan-25*
Back seat test (only for needle valves)	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY)		VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi)		High pressure closure test bar (psi)		Low pressure closure test bar (psi)		Back seat test bar (psi)		Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
					PRODUCED	TESTED						Pressure	Result	Pressure	Result	Pressure	Result	Pressure	Result				
160	160	00.VSF.2681/V	DBB-898-HR-40-H300RF3-H-D (From 106010 To 106015)	VLBBNN07201H00	6	100%	Ball+Needle	1 ½"	RF	300	AISI 316/316L NACE MR01.75	75 (1088)	N.L	55 (798)	N.L	6 (87)	N.L	55 (798)	N.L	YES	A	24F06-1334-01--13	03-Dec-24
260	260	00.VSF.2700/V	SBB-798-HR-100-N150RF3-N-D (From 106035 To 106041)	VLBLNN01450400	7	100%	Ball+Needle	4"	RF	150	AISI 316/316L NACE MR01.75	29 (421)	N.L	21 (305)	N.L	6 (87)	N.L	21 (305)	N.L	YES	A	24F06-1334-01--13	03-Dec-24
323	410	00.VSF.2681/V	DBB-898-HR-40-H300RF3-H-D (106016)	VLBBNN07201H00	1	100%	Ball+Needle	1 ½"	RF	300	AISI 316/316L NACE MR01.75	75 (1088)	N.L	55 (798)	N.L	6 (87)	N.L	55 (798)	N.L	YES	A	24F06-1334-01--13	03-Dec-24

INDRA SRL dichiara che le valvole fornite sono conformi ai requisiti stabiliti dalla API 598 - ASME B16.34 - 2014/68/UE PED Cert. Modulo H emesso da TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948

INDRA SRL declares that the supplied valves are in conformity with the requirements of API 598 - ASME B16.34 - 2014/68/UE PED Cert. Module H issued by TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948

Note / Remarks:

- CAVITY SEAT RELIEF TEST PERFORMED ON 100% RESULT:OK
- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno
  (Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)
- *N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE*

Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector — *Si / Yes* ☐ *No / No* ☑

Nominativo / Name .....

Data / Date .....

Timbro e Firma / Stamp and Signature CROSSWIND 23/10/24

PROCEDURA DI COLLAUDO
(Test procedure)

PT VSP-VSF-ITA/ENG
(24-01216)

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** TESTING OPERATOR	DATA / DATE: 07-Oct-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** PRODUCTION MANAGER	DATA / DATE: 07-Oct-24

RAPPORTO DI COLLAUDO COPPIA DI MANOVRA E RESISTENZA ELETTRICA
TORQUE AND ELECTRICAL RESISTANCE REPORT
- INDRA VALVES -

MD-02-14-IT-UK / P
Rev. 0
Data: 01-Jul-14

Nr. Certificato / *Certificate No.*	10095/AC-TET-B	**Data** / *Date :*	07-Oct-24	*Rev. 0*
Cliente / *Customer :*	ROSETTI MARINO SPA			
Ordine Nr. / *Order Nr.*	1724000798 REV.2	**Data** / *Date :*	26-Jun-24	
Ns. commessa Nr. / *Our job Nr.*	24 01216	**Data** / *Date :*	03-Jul-24	
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*		

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST according to API 598 , API 6D, BS EN 12266-1	*VALORE MASSIMO (Limit)*	*STRUMENTO DI MISURA (Gauge Instrument)*	*SCADENZA (Due Date)*
Torque test			
Electrical resistance test	*10 Ohm*	*Digital Multimeter DMM249 13290*	*31-May-25*

POS. (ITEM)	CODICE (CODE)	DESCRIZIONE (DESCRIPTION)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY) PRODUCED	QTA' (QTY) TESTED
260	*00.VSF.2700/V*	*SBB-798-HR-100-N150RF3-N-D*	*VLBLNN01450400*	*7*	*1*

n° SERIALE (Serial n°)	LATO (Side)	Torque test Nm Value	Torque test Nm Result	Electrical resistance Body-stem Ohm Value	Electrical resistance Body-stem Ohm Result	Electrical resistance Body-ball Ohm Value	Electrical resistance Body-ball Ohm Result
106035	*A*			0,6	OK	0,6	OK

n° SERIALE (Serial n°)	LATO (Side)	Torque test Nm Value	Torque test Nm Result	Electrical resistance Body-stem Ohm Value	Electrical resistance Body-stem Ohm Result	Electrical resistance Body-ball Ohm Value	Electrical resistance Body-ball Ohm Result

n° SERIALE (Serial n°)	LATO (Side)	Torque test Nm Value	Torque test Nm Result				

Note / ***Remarks:***
- Test Antistatico eseguito su 1 pz. per posizione (Antistatic test executed on 1 pc. per item)

CROSS WIND 23/10/24

PROCEDURA DI COLLAUDO
(Test procedure)
PT/VSP-VSF-HP / ATP_00

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** TESTING OPERATOR	DATA / DATE:	07-Oct-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** PRODUCTION MANAGER	DATA / DATE: 07-Oct-24

ROSETTI MARINO ITEM 270

COD. VLBLNN01460600

TAG:

BLPH-MV-005

INDRA ITEM 270

COD. 00.VSFT.0224/V

indra VALVES - ITALY	**RAPPORTO DI COLLAUDO "PED"** **"PED" TEST REPORT** **- INDRA VALVES -**	**MD-02-09-IT-UK** **Rev. 8** **Data: 24-Mar-23**

Nr. Certificato / *Certificate No.* 10135/AC — **Data** / *Date :* 16-Oct-24 — *Rev. 0*

Cliente / *Customer :* ROSETTI MARINO SPA

Ordine Nr. / *Order Nr.* 1724000798 REV.2 — **Data** / *Date :* 26-Jun-24

Ns. commessa Nr. / *Our job Nr.* 24 01216 — **Data** / *Date :* 03-Jul-24

Ns. D.D.T. Nr. / *Our advise note Nr.* — **Data** / *Date :*

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST (according to API 598, API 6D & 2014/68/UE PED)	FLUIDO (Fluid)	DURATA (Duration)	PRESSIONE (Pressure)	MAX. PERDITA AMMISSIBILE (ISO 5208) (Max allowable leakage)	MANOMETRO N° (Gauge ID)	DATA SCADENZA (Due Date)
Shell test	Acqua / Water	5 min.	vedi sotto / see below	nessuna perdita / no leakage	vedi sotto / see below	vedi sotto / see below
High pressure closure test	Acqua / Water	5 min.	vedi sotto / see below	vedi sotto / see below	vedi sotto / see below	vedi sotto / see below
Low pressure closure test (only for ball valves)	Aria / Air	5 min.	vedi sotto / see below	vedi sotto / see below	24F06-1334-01--13	03-Dec-24
Back seat test (only for needle valves)	Acqua / Water	5 min.	vedi sotto / see below	nessuna perdita / no leakage	vedi sotto / see below	vedi sotto / see below

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY) PRODUCED	QTA' (QTY) TESTED	VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi) Pressure	Shell test Result	High pressure closure test bar (psi) Pressure	High pressure closure test Result	Low pressure closure test bar (psi) Pressure	Low pressure closure test Result	Back seat test bar (psi) Pressure	Back seat test Result	Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
270	270	00.VSFT.0224/V	SB-598-TRU-HR-150-Q150RF3-Q (106048)	VLBLNN01460600	1	1	Ball	6"	RF	150	AISI 316/316L NACE MR01.75	29 (421)	N.L	21 (305)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24

INDRA SRL dichiara che le valvole fornite sono conformi ai requisiti stabiliti dalla API 598 - ASME B16.34 - 2014/68/UE PED Cert. Modulo H emesso da TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948
INDRA SRL declares that the supplied valves are in conformity with the requirements of API 598 - ASME B16.34 - 2014/68/UE PED Cert. Module H issued by TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948

Note / Remarks:
- CAVITY SEAT RELIEF TEST PERFORMED ON 100% RESULT:OK
- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno
(Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)
- *N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE*
Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector — *Si / Yes* ☑ *No / No* ☐

Nominativo / Name .....

Timbro e Firma / Stamp and Signature 16/10/24 x CROSSWIND

Data / Date .....

PROCEDURA DI COLLAUDO
(Test procedure)
PT VSP-VSF-ITA/ENG
(24-01216)

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** **TESTING OPERATOR**	DATA / DATE: 16-Oct-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** **PRODUCTION MANAGER**	DATA / DATE: 16-Oct-24

20013 Magenta (MI) Italy - Via Novara, 10/B-C
Tel. +39 02 97298663 r.a. - Fax +39 02 97291855
E-mail: indra@indra.it - http://www.indra.it

REV. 1 - 30-May-2018

WATER QUALITY ANALYSIS UP TO 27-Aug-2024
EN 10204-2.1 ed. 2004

Parametri / Parameters	*Valore rilevato / Detected value*	*Valori di legge / Legal limit*
Ammonio / Ammonium (NH_4^+) [mg/l]	*< 0,1*	*0,5*
Arsenico / Arsenic (As_{tot}) [µg/l]	*< 1*	*10*
Bicarbonato / Bicarbonate (HCO_3^-) [mg/l]	*317*	*Non previsto / Not expected*
Calcio / Calcium (Ca^{2+}) [mg/l]	*87*	*Non previsto / Not expected*
Cloruri / Chlorides (Cl^-) [mg/l]	*12*	*250*
Composti organoalogenati / Organohalogen compounds [µg/l]	*<1*	*30*
Conducibilità / Conductivity (µS/cm)	*501*	*2500*
Cromo / Chromium [µg/l]	*<5*	*50*
Durezza Totale / Total hardness [°f]	*30*	*Non previsto / Not expected*
Fluoruri / Fluorides (F^-) [mg/l]	*<0,2*	*1,5*
Magnesio / Magnesium (Mg^{2+}) [mg/l]	*20*	*Non previsto / Not expected*
Manganese / Manganese (Mn_{tot}) [µg/l]	*< 5*	*50*
Microinquinanti tot / Micropollutants tot [µg/l]	*<0,01*	*0,5*
Nitrati / Nitrates (NO_3^-) [mg/l]	*31*	*50*
Nitriti / Nitrites (NO_2^-) [mg/l]	*<0,02*	*0,5*
Potassio / Potassium (K^+) [mg/l]	*1*	*Non previsto / Not expected*
Residuo secco a 180°C / Dry residue at 180°C [mg/l]	*361*	*1500*
Sodio / Sodium (NA^+) [mg/l]	*5*	*200*
Solfati / Sulfates (SO_4^{2-}) [mg/l]	*31*	*250*
pH / pH	*7*	*6,5 - 9,5*

* I dati corrispondono ai valori pubblicati dal laboratorio Amiacque dell'acquedotto del comune di Magenta (MI) - Italia.

* All the data correspond to the values published by the laboratory Amiacque of the Magenta's municipality aqueduct (MI) - Italy.

indra VALVES - ITALY	**RAPPORTO DI COLLAUDO A GAS** **GAS TEST REPORT** **- INDRA VALVES -**	**MD-02-13-IT-UK / P** **Rev. 2** **Data: 24-Oct-16**

Nr. Certificato / *Certificate No.*	10125/AC-GT	**Data** / *Date :*	14-Oct-24 *Rev. 0*
Cliente / *Customer :*	ROSETTI MARINO SPA		
Ordine Nr. / *Order Nr.*	1724000798 REV.2	**Data** / *Date :*	26-Jun-24
Ns. commessa Nr. / *Our job Nr.*	24 01216	**Data** / *Date :*	03-Jul-24
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*	

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST according to API 598 , BS EN 12266-1	*FLUIDO (Fluid)*	*DURATA (Duration)*	*PRESSIONE (Pressure)*	*MAX. PERDITA AMMISSIBILE (BS EN 12266-1) (Max allowable leakage)*	*MANOMETRO N° (Gauge ID)*	*DATA SCADENZA (Due Date)*
Shell test	*Elio / Helium*	*15 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*
High pressure closure test	*Elio / Helium*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY)		VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi)		High pressure closure test bar (psi)				Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
					PRODUCED	TESTED						Pressure	Result	Pressure	Result	Duration					
270	270	00.VSFT.0224/V	SB-598-TRU-HR-150-Q150RF3-Q (106048)	VLBLNN01460600	1	100%	Ball	6"	RF	150	AISI 316/316L NACE MR01.75	21 (305)	N.L	21 (305)	N.L	5 min.		YES	A	24F08-1334-01--13	03-Dec-24

Note / Remarks:

- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno
  (Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)
- *N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE*

Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector	*Si / Yes* ☐ *No / No* ☑
Nominativo / Name	*Timbro e Firma / Stamp and Signature*
Data / Date	

PROCEDURA DI COLLAUDO
(Test procedure)
PGT/VSP-VSF
(24-01216)

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** **TESTING OPERATOR**	DATA / DATE:	14-Oct-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** **PRODUCTION MANAGER**	DATA / DATE:	14-Oct-24

indra VALVES - ITALY	**RAPPORTO DI COLLAUDO A GAS** **GAS TEST REPORT** **- INDRA VALVES -**	**MD-02-13-IT-UK / P** **Rev. 2** **Data: 24-Oct-16**

Nr. Certificato / *Certificate No.*	10125/AC-GT	**Data** / *Date :*	14-Oct-24 *Rev. 0*
Cliente / *Customer :*	ROSETTI MARINO SPA		
Ordine Nr. / *Order Nr.*	1724000798 REV.2	**Data** / *Date :*	26-Jun-24
Ns. commessa Nr. / *Our job Nr.*	24 01216	**Data** / *Date :*	03-Jul-24
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*	

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST according to API 598 , BS EN 12266-1	*FLUIDO (Fluid)*	*DURATA (Duration)*	*PRESSIONE (Pressure)*	*MAX. PERDITA AMMISSIBILE (BS EN 12266-1) (Max allowable leakage)*	*MANOMETRO N° (Gauge ID)*	*DATA SCADENZA (Due Date)*
Shell test	*Elio / Helium*	*15 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*
High pressure closure test	*Elio / Helium*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY)		VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi)		High pressure closure test bar (psi)				Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
					PRODUCED	TESTED						Pressure	Result	Pressure	Result	Duration					
270	270	00.VSFT.0224/V	SB-598-TRU-HR-150-Q150RF3-Q (106048)	VLBLNN01460600	1	100%	Ball	6"	RF	150	AISI 316/316L NACE MR01.75	21 (305)	N.L	21 (305)	N.L	5 min.		YES	A	24F08-1334-01--13	03-Dec-24

Note / Remarks:

- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno
  (Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)
- *N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE*

Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector	*Si / Yes* ☐ *No / No* ☑
Nominativo / Name	*Timbro e Firma / Stamp and Signature*
Data / Date	

PROCEDURA DI COLLAUDO
(Test procedure)
PGT/VSP-VSF
(24-01216)

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** **TESTING OPERATOR**	DATA / DATE:	14-Oct-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** **PRODUCTION MANAGER**	DATA / DATE:	14-Oct-24

indra VALVES - ITALY	**RAPPORTO DI COLLAUDO "PED"** **"PED" TEST REPORT** **- INDRA VALVES -**	**MD-02-09-IT-UK** **Rev. 8** **Data: 24-Mar-23**

Nr. Certificato / *Certificate No.*	10125/AC	**Data** / *Date :*	14-Oct-24 *Rev. 0*
Cliente / *Customer :*	ROSETTI MARINO SPA		
Ordine Nr. / *Order Nr.*	1724000798 REV.2	**Data** / *Date :*	26-Jun-24
Ns. commessa Nr. / *Our job Nr.*	24 01216	**Data** / *Date :*	03-Jul-24
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*	

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST (according to API 598, API 6D & 2014/68/UE PED)	FLUIDO (Fluid)	DURATA (Duration)	PRESSIONE (Pressure)	MAX. PERDITA AMMISSIBILE (ISO 5208) (Max allowable leakage)	MANOMETRO N° (Gauge ID)	DATA SCADENZA (Due Date)
Shell test	*Acqua / Water*	*5 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*
High pressure closure test	*Acqua / Water*	*5 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*
Low pressure closure test (only for ball valves)	*Aria / Air*	*5 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*24F06-1334-01--13*	*03-Dec-24*
Back seat test (only for needle valves)	*Acqua / Water*	*5 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY)		VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi)		High pressure closure test bar (psi)		Low pressure closure test bar (psi)		Back seat test bar (psi)		Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
					PRODUCED	TESTED						Pressure	Result	Pressure	Result	Pressure	Result	Pressure	Result				
270	*270*	*00.VSFT.0224/V*	*SB-598-TRU-HR-150-Q150RF3-Q (106048)*	*VLBLNN01460600*	*1*	*100%*	*Ball*	*6"*	*RF*	*150*	*AISI 316/316L NACE MR01.75*	29 (421)	N.L	21 (305)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24

INDRA SRL dichiara che le valvole fornite sono conformi ai requisiti stabiliti dalla API 598 - ASME B16.34 - 2014/68/UE PED Cert. Modulo H emesso da TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948
INDRA SRL declares that the supplied valves are in conformity with the requirements of API 598 - ASME B16.34 - 2014/68/UE PED Cert. Module H issued by TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948

Note / Remarks:
- CAVITY SEAT RELIEF TEST PERFORMED ON 100% RESULT:OK
- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno
(Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)
- *N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE*
Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector	*Si / Yes* ☐ *No / No* ☑	***PROCEDURA DI COLLAUDO*** *(Test procedure)*
Nominativo / Name ..... Data / Date	*Timbro e Firma / Stamp and Signature*	PT VSP-VSF-ITA/ENG (24-01216)

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** **TESTING OPERATOR**	DATA / DATE: 14-Oct-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** **PRODUCTION MANAGER**	DATA / DATE: 14-Oct-24

RAPPORTO DI COLLAUDO COPPIA DI MANOVRA E RESISTENZA ELETTRICA
TORQUE AND ELECTRICAL RESISTANCE REPORT
- INDRA VALVES -

MD-02-14-IT-UK / P
Rev. 0
Data: 01-Jul-14

Nr. Certificato / *Certificate No.*	10125/AC-TET	**Data** / *Date :*	14-Oct-24	*Rev. 0*
Cliente / *Customer :*	ROSETTI MARINO SPA			
Ordine Nr. / *Order Nr.*	1724000798 REV.2	**Data** / *Date :*	26-Jun-24	
Ns. commessa Nr. / *Our job Nr.*	24 01216	**Data** / *Date :*	03-Jul-24	
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*		

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST according to API 598 , API 6D, BS EN 12266-1	*VALORE MASSIMO (Limit)*	*STRUMENTO DI MISURA (Gauge Instrument)*	*SCADENZA (Due Date)*
Torque test			
Electrical resistance test	*10 Ohm*	*Digital Multimeter DMM249 13290*	*31-May-25*

POS. (ITEM)	CODICE (CODE)	DESCRIZIONE (DESCRIPTION)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY) PRODUCED	TESTED
270	*00.VSFT.0224/V*	*SB-598-TRU-HR-150-Q150RF3-Q*	*VLBLNN01460600*	*1*	*1*

n° SERIALE (Serial n°)	LATO (Side)	Torque test Nm		Electrical resistance Body-stem Ohm		Electrical resistance Body-ball Ohm	
		Value	Result	Value	Result	Value	Result
106048	*A*			0,8	OK	0,9	OK

n° SERIALE (Serial n°)	LATO (Side)	Torque test Nm		Electrical resistance Body-stem Ohm		Electrical resistance Body-ball Ohm	
		Value	Result	Value	Result	Value	Result

n° SERIALE (Serial n°)	LATO (Side)	Torque test Nm					
		Value	Result	Value	Result	Value	Result

Note / ***Remarks:***
- Test Antistatico eseguito su 1 pz. per posizione (Antistatic test executed on 1 pc. per item)

CROSS WIND

PROCEDURA DI COLLAUDO
(Test procedure)
PT/VSP-VSF-HP / ATP_00

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** TESTING OPERATOR	DATA / DATE:	14-Oct-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** PRODUCTION MANAGER	DATA / DATE: 14-Oct-24

indra VALVES - ITALY	**RAPPORTO DI COLLAUDO COPPIA DI MANOVRA E RESISTENZA ELETTRICA** ***TORQUE AND ELECTRICAL RESISTANCE REPORT*** ***- INDRA VALVES -***	**MD-02-14-IT-UK / P** **Rev. 0** **Data: 01-Jul-14**

Nr. Certificato / *Certificate No.*	**10125/AC-TET**	**Data** / *Date :*	**14-Oct-24** *Rev. 0*
Cliente / *Customer :*	**ROSETTI MARINO SPA**		
Ordine Nr. / *Order Nr.*	**1724000798 REV.2**	**Data** / *Date :*	**26-Jun-24**
Ns. commessa Nr. / *Our job Nr.*	**24 01216**	**Data** / *Date :*	**03-Jul-24**
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*	

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST ***according to API 598 , API 6D, BS EN 12266-1***	***VALORE MASSIMO*** ***(Limit)***	***STRUMENTO DI MISURA*** ***(Gauge Instrument)***	***SCADENZA*** ***(Due Date)***
Torque test			
Electrical resistance test	*10 Ohm*	*Digital Multimeter DMM249 13290*	*31-May-25*

POS. (ITEM)	**CODICE** (CODE)	**DESCRIZIONE** (DESCRIPTION)	**CODICE CLIENTE** (CUSTOMER CODE)	**QTA'** (QTY) PRODUCED	TESTED
270	***00.VSFT.0224/V***	***SB-598-TRU-HR-150-Q150RF3-Q***	***VLBLNN01460600***	***1***	***1***

n° SERIALE (Serial n°)	**LATO** (Side)	*Torque test* Nm		*Electrical resistance Body-stem* Ohm		*Electrical resistance Body-ball* Ohm	
		Value	Result	Value	Result	Value	Result
106048	***A***			0,8	OK	0,9	OK

n° SERIALE (Serial n°)	**LATO** (Side)	*Torque test* Nm		*Electrical resistance Body-stem* Ohm		*Electrical resistance Body-ball* Ohm	
		Value	Result	Value	Result	Value	Result

n° SERIALE (Serial n°)	**LATO** (Side)	*Torque test* Nm					
		Value	Result	Value	Result	Value	Result

Note / ***Remarks:***
- Test Antistatico eseguito su 1 pz. per posizione (Antistatic test executed on 1 pc. per item)

CROSS WIND

PROCEDURA DI COLLAUDO
(Test procedure)
PT/VSP-VSF-HP / ATP_00

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** **TESTING OPERATOR**	DATA / DATE:	14-Oct-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** **PRODUCTION MANAGER**

DATA / DATE: 14-Oct-24

ROSETTI MARINO ITEM 280

COD. VLBMNN00013Q0H

TAG:

BLPH-MV-013, BLPH-MV-014,

BLPH-MV-091, BLPH-MV-092

BLPH-MV-096, BLPH-MV-097,

BLPH-MV-204, BLPH-MV-205

BLPH-MV-282, BLPH-MV-283,

BLPH-MV-421, BLPH-MV-422

BLPH-MV-438, BLPH-MV-439

INDRA ITEM 280

COD. 00.MNF.0604/V

indra VALVES - ITALY

RAPPORTO DI COLLAUDO
TEST REPORT
- INDRA VALVES -

MD-02-05-IT-UK / P
Rev. 24
Data: 24-Mar-23

Nr. Certificato / *Certificate No.*	10045/AC	**Data /** *Date :*	25-Sep-24 *Rev. 0*
Cliente / *Customer :*	ROSETTI MARINO SPA		
Ordine Nr. / *Order Nr.*	1724000798 REV.2	**Data /** *Date :*	26-Jun-24
Ns. commessa Nr. / *Our job Nr.*	24 01216	**Data /** *Date :*	03-Jul-24
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data /** *Date :*	

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST (according to API 598 & API 6D)	*FLUIDO (Fluid)*	*DURATA (Duration)*	*PRESSIONE (Pressure)*	*MAX. PERDITA AMMISSIBILE (ISO 5208) (Max allowable leakage)*	*MANOMETRO N° (Gauge ID)*	*DATA SCADENZA (Due Date)*
Shell test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*
High pressure closure test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*
Low pressure closure test (only for ball valves)	*Aria / Air*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*327268-79*	*15-Jan-25*
Back seat test (only for needle valves)	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY)		VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi)		High pressure closure test bar (psi)		Low pressure closure test bar (psi)		Back seat test bar (psi)		Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
					PRODUCED	TESTED						Pressure	Result	Pressure	Result	Pressure	Result	Pressure	Result				
280	280	00.MNF.0604/V	DBB-737-HR-E300RF3-D-D (106049, 106057)	VLBMNN00013Q0H	14	2	Monofl.	¾"	RF	300	AISI 316/316L NACE MR01.75	75 (1088)	N.L	55 (798)	N.L	N/A		55 (798)	N.L	NO	A	327268-79	15-Jan-25
290	290	00.MNF.0608/V	SBB-727-HR-E150RF3-D-D (106066)	VLBNNN00023Q0H	4	1	Monofl.	¾"	RF	150	AISI 316/316L NACE MR01.75	29 (421)	N.L	21 (305)	N.L	N/A		21 (305)	N.L	NO	A	2-78474	06-Dec-24
300	300	00.MNF.0605/V	SBB-727-E150RF3-D-D (106068)	VLBNNN00033Q0H	2	1	Monofl.	¾"	RF	150	AISI 316/316L NACE MR01.75	29 (421)	N.L	21 (305)	N.L	N/A		21 (305)	N.L	NO	A	2-78474	06-Dec-24
310	310	00.MNF.0612/V	SBB-727-E150RF3-D-D (106069)	VLBNNN00063Q0H	3	1	Monofl.	¾"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	N/A		22 (319)	N.L	NO	A	2-78474	06-Dec-24
320	320	00.MNF.0606/V	SBB-727-E150RF3-D-D (106072)	VLBNNN00063Q0H	1	1	Monofl.	¾"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	N/A		22 (319)	N.L	NO	A	2-78474	06-Dec-24

DATE: 25 SET 2024
NAME: MARTINO BASILE
ON BEHALF OF: ROSETTI MARINO
SIGNATURE:

Note / Remarks:

- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno
  (Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)
- *N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE*

Equipment Used MTS4-200A S/N 19_929

Ispettore / Inspector	*Si / Yes* ☑ *No / No* ☐
Nominativo / Name W. GOI3B1	*Timbro e Firma / Stamp and Signature*
Data / Date 25/9/24	

PROCEDURA DI COLLAUDO
(Test procedure)
PT VSP-VSF-ITA/ENG
(24-01216)

COLLAUDATO DA: TESTED BY:	**FRANCESCO LIGORIO** **TESTING OPERATOR**	DATA / DATE:	25-Sep-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** **PRODUCTION MANAGER**	DATA / DATE:	25-Sep-24

20013 Magenta (MI) Italy - Via Novara, 10/B-C
Tel. +39 02 97298663 r.a. - Fax +39 02 97291855
E-mail: indra@indra.it - http://www.indra.it

WATER QUALITY ANALYSIS UP TO 27-Aug-2024
EN 10204-2.1 ed. 2004

Parametri / Parameters	*Valore rilevato / Detected value*	*Valori di legge / Legal limit*
Ammonio / Ammonium (NH_4^+) [mg/l]	*< 0,1*	*0,5*
Arsenico / Arsenic (As_{tot}) [µg/l]	*< 1*	*10*
Bicarbonato / Bicarbonate (HCO_3^-) [mg/l]	*317*	*Non previsto / Not expected*
Calcio / Calcium (Ca^{2+}) [mg/l]	*87*	*Non previsto / Not expected*
Cloruri / Chlorides (Cl^-) [mg/l]	*12*	*250*
Composti organoalogenati / Organohalogen compounds [µg/l]	*<1*	*30*
Conducibilità / Conductivity (µS/cm)	*501*	*2500*
Cromo / Chromium [µg/l]	*<5*	*50*
Durezza Totale / Total hardness [°f]	*30*	*Non previsto / Not expected*
Fluoruri / Fluorides (F^-) [mg/l]	*<0,2*	*1,5*
Magnesio / Magnesium (Mg^{2+}) [mg/l]	*20*	*Non previsto / Not expected*
Manganese / Manganese (Mn_{tot}) [µg/l]	*< 5*	*50*
Microinquinanti tot / Micropollutants tot [µg/l]	*<0,01*	*0,5*
Nitrati / Nitrates (NO_3^-) [mg/l]	*31*	*50*
Nitriti / Nitrites (NO_2^-) [mg/l]	*<0,02*	*0,5*
Potassio / Potassium (K^+) [mg/l]	*1*	*Non previsto / Not expected*
Residuo secco a 180°C / Dry residue at 180°C [mg/l]	*361*	*1500*
Sodio / Sodium (NA^+) [mg/l]	*5*	*200*
Solfati / Sulfates (SO_4^{2-}) [mg/l]	*31*	*250*
pH / pH	*7*	*6,5 - 9,5*

* I dati corrispondono ai valori pubblicati dal laboratorio Amiacque dell'acquedotto del comune di Magenta (MI) - Italia.

* All the data correspond to the values published by the laboratory Amiacque of the Magenta's municipality aqueduct (MI) - Italy.

x Crossavino
25/9/24

DATE: 25 SET 2024
NAME: MARTINO BASILE
ON BEHALF OF: ROSETTI MARINO
SIGNATURE:

ROSETTI MARINO ITEM 290

COD. VLBNNN00023Q0H

TAG:

BLPH-MV-025, BLPH-MV-038,

BLPH-MV-213, BLPH-MV-407

INDRA ITEM 290

COD. 00.MNF.0608/V

indra VALVES - ITALY	**RAPPORTO DI COLLAUDO** ***TEST REPORT*** ***- INDRA VALVES -***	**MD-02-05-IT-UK / P** **Rev. 24** **Data: 24-Mar-23**

Nr. Certificato / *Certificate No.*	10045/AC	**Data /** *Date :*	25-Sep-24 *Rev. 0*
Cliente / *Customer :*	ROSETTI MARINO SPA		
Ordine Nr. / *Order Nr.*	1724000798 REV.2	**Data /** *Date :*	26-Jun-24
Ns. commessa Nr. / *Our job Nr.*	24 01216	**Data /** *Date :*	03-Jul-24
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data /** *Date :*	

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST (according to API 598 & API 6D)	*FLUIDO (Fluid)*	*DURATA (Duration)*	*PRESSIONE (Pressure)*	*MAX. PERDITA AMMISSIBILE (ISO 5208) (Max allowable leakage)*	*MANOMETRO N° (Gauge ID)*	*DATA SCADENZA (Due Date)*
Shell test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*
High pressure closure test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*
Low pressure closure test (only for ball valves)	*Aria / Air*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*327268-79*	*15-Jan-25*
Back seat test (only for needle valves)	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY)		VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi)		High pressure closure test bar (psi)		Low pressure closure test bar (psi)		Back seat test bar (psi)		Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
					PRODUCED	TESTED						Pressure	Result	Pressure	Result	Pressure	Result	Pressure	Result				
280	280	00.MNF.0604/V	DBB-737-HR-E300RF3-D-D (106049, 106057)	VLBMNN00013Q0H	14	2	Monofl.	¾"	RF	300	AISI 316/316L NACE MR01.75	75 (1088)	N.L	55 (798)	N.L	N/A		55 (798)	N.L	NO	A	327268-79	15-Jan-25
290	290	00.MNF.0608/V	SBB-727-HR-E150RF3-D-D (106066)	VLBNNN00023Q0H	4	1	Monofl.	¾"	RF	150	AISI 316/316L NACE MR01.75	29 (421)	N.L	21 (305)	N.L	N/A		21 (305)	N.L	NO	A	2-78474	06-Dec-24
300	300	00.MNF.0605/V	SBB-727-E150RF3-D-D (106068)	VLBNNN00033Q0H	2	1	Monofl.	¾"	RF	150	AISI 316/316L NACE MR01.75	29 (421)	N.L	21 (305)	N.L	N/A		21 (305)	N.L	NO	A	2-78474	06-Dec-24
310	310	00.MNF.0612/V	SBB-727-E150RF3-D-D (106069)	VLBNNN00063Q0H	3	1	Monofl.	¾"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	N/A		22 (319)	N.L	NO	A	2-78474	06-Dec-24
320	320	00.MNF.0606/V	SBB-727-E150RF3-D-D (106072)	VLBNNN00063Q0H	1	1	Monofl.	¾"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	N/A		22 (319)	N.L	NO	A	2-78474	06-Dec-24

DATE: 25 SET 2024
NAME: MARTINO BASILE
ON BEHALF OF: ROSETTI MARINO
SIGNATURE:

Note / Remarks:

- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno
  (Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)
- *N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE*

Equipment Used MTS4-200A S/N 19_929

Ispettore / Inspector	*Si / Yes* ☑ *No / No* ☐
Nominativo / Name W. GOI3B1	*Timbro e Firma / Stamp and Signature*
Data / Date 25/9/24	

PROCEDURA DI COLLAUDO
(Test procedure)
PT VSP-VSF-ITA/ENG
(24-01216)

COLLAUDATO DA: TESTED BY:	**FRANCESCO LIGORIO** **TESTING OPERATOR**	DATA / DATE:	25-Sep-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** **PRODUCTION MANAGER**	DATA / DATE:	25-Sep-24

20013 Magenta (MI) Italy - Via Novara, 10/B-C
Tel. +39 02 97298663 r.a. - Fax +39 02 97291855
E-mail: indra@indra.it - http://www.indra.it

WATER QUALITY ANALYSIS UP TO 27-Aug-2024
EN 10204-2.1 ed. 2004

Parametri / Parameters	*Valore rilevato / Detected value*	*Valori di legge / Legal limit*
Ammonio / Ammonium (NH_4^+) [mg/l]	*< 0,1*	*0,5*
Arsenico / Arsenic (As_{tot}) [µg/l]	*< 1*	*10*
Bicarbonato / Bicarbonate (HCO_3^-) [mg/l]	*317*	*Non previsto / Not expected*
Calcio / Calcium (Ca^{2+}) [mg/l]	*87*	*Non previsto / Not expected*
Cloruri / Chlorides (Cl^-) [mg/l]	*12*	*250*
Composti organoalogenati / Organohalogen compounds [µg/l]	*<1*	*30*
Conducibilità / Conductivity (µS/cm)	*501*	*2500*
Cromo / Chromium [µg/l]	*<5*	*50*
Durezza Totale / Total hardness [°f]	*30*	*Non previsto / Not expected*
Fluoruri / Fluorides (F^-) [mg/l]	*<0,2*	*1,5*
Magnesio / Magnesium (Mg^{2+}) [mg/l]	*20*	*Non previsto / Not expected*
Manganese / Manganese (Mn_{tot}) [µg/l]	*< 5*	*50*
Microinquinanti tot / Micropollutants tot [µg/l]	*<0,01*	*0,5*
Nitrati / Nitrates (NO_3^-) [mg/l]	*31*	*50*
Nitriti / Nitrites (NO_2^-) [mg/l]	*<0,02*	*0,5*
Potassio / Potassium (K^+) [mg/l]	*1*	*Non previsto / Not expected*
Residuo secco a 180°C / Dry residue at 180°C [mg/l]	*361*	*1500*
Sodio / Sodium (NA^+) [mg/l]	*5*	*200*
Solfati / Sulfates (SO_4^{2-}) [mg/l]	*31*	*250*
pH / pH	*7*	*6,5 - 9,5*

* I dati corrispondono ai valori pubblicati dal laboratorio Amiacque dell'acquedotto del comune di Magenta (MI) - Italia.

* All the data correspond to the values published by the laboratory Amiacque of the Magenta's municipality aqueduct (MI) - Italy.

x Crossmind
25/9/24

DATE: 25 SET 2024
NAME: MARTINO BASILE
ON BEHALF OF: ROSETTI MARINO
SIGNATURE:

ROSETTI MARINO ITEM 300
COD. VLBNNN00033Q0H
TAG:
BLPH-MV-150, BLPH-MV-151

INDRA ITEM 300
COD. 00.MNF.0605/V

indra VALVES - ITALY	**RAPPORTO DI COLLAUDO** ***TEST REPORT*** ***- INDRA VALVES -***	**MD-02-05-IT-UK / P** **Rev. 24** **Data: 24-Mar-23**

Nr. Certificato / *Certificate No.*	10045/AC	**Data /** *Date :*	25-Sep-24 *Rev. 0*
Cliente / *Customer :*	ROSETTI MARINO SPA		
Ordine Nr. / *Order Nr.*	1724000798 REV.2	**Data /** *Date :*	26-Jun-24
Ns. commessa Nr. / *Our job Nr.*	24 01216	**Data /** *Date :*	03-Jul-24
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data /** *Date :*	

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST (according to API 598 & API 6D)	*FLUIDO (Fluid)*	*DURATA (Duration)*	*PRESSIONE (Pressure)*	*MAX. PERDITA AMMISSIBILE (ISO 5208) (Max allowable leakage)*	*MANOMETRO N° (Gauge ID)*	*DATA SCADENZA (Due Date)*
Shell test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*
High pressure closure test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*
Low pressure closure test (only for ball valves)	*Aria / Air*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*327268-79*	*15-Jan-25*
Back seat test (only for needle valves)	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY)		VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi)		High pressure closure test bar (psi)		Low pressure closure test bar (psi)		Back seat test bar (psi)		Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
					PRODUCED	TESTED						Pressure	Result	Pressure	Result	Pressure	Result	Pressure	Result				
280	280	00.MNF.0604/V	DBB-737-HR-E300RF3-D-D (106049, 106057)	VLBMNN00013Q0H	14	2	Monofl.	¾"	RF	300	AISI 316/316L NACE MR01.75	75 (1088)	N.L	55 (798)	N.L	N/A		55 (798)	N.L	NO	A	327268-79	15-Jan-25
290	290	00.MNF.0608/V	SBB-727-HR-E150RF3-D-D (106066)	VLBNNN00023Q0H	4	1	Monofl.	¾"	RF	150	AISI 316/316L NACE MR01.75	29 (421)	N.L	21 (305)	N.L	N/A		21 (305)	N.L	NO	A	2-78474	06-Dec-24
300	300	00.MNF.0605/V	SBB-727-E150RF3-D-D (106068)	VLBNNN00033Q0H	2	1	Monofl.	¾"	RF	150	AISI 316/316L NACE MR01.75	29 (421)	N.L	21 (305)	N.L	N/A		21 (305)	N.L	NO	A	2-78474	06-Dec-24
310	310	00.MNF.0612/V	SBB-727-E150RF3-D-D (106069)	VLBNNN00063Q0H	3	1	Monofl.	¾"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	N/A		22 (319)	N.L	NO	A	2-78474	06-Dec-24
320	320	00.MNF.0606/V	SBB-727-E150RF3-D-D (106072)	VLBNNN00063Q0H	1	1	Monofl.	¾"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	N/A		22 (319)	N.L	NO	A	2-78474	06-Dec-24

DATE: 25 SET 2024
NAME: MARTINO BASILE
ON BEHALF OF: ROSETTI MARINO
SIGNATURE:

Note / Remarks:

- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno
  (Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)
- *N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE*

Equipment Used MTS4-200A S/N 19_929

Ispettore / Inspector	*Si / Yes* ☑ *No / No* ☐
Nominativo / Name W. GOI3B1	*Timbro e Firma / Stamp and Signature*
Data / Date 25/9/24	

PROCEDURA DI COLLAUDO
(Test procedure)
PT VSP-VSF-ITA/ENG
(24-01216)

COLLAUDATO DA: TESTED BY:	**FRANCESCO LIGORIO** **TESTING OPERATOR**	DATA / DATE:	25-Sep-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** **PRODUCTION MANAGER**	DATA / DATE:	25-Sep-24

20013 Magenta (MI) Italy - Via Novara, 10/B-C
Tel. +39 02 97298663 r.a. - Fax +39 02 97291855
E-mail: indra@indra.it - http://www.indra.it

WATER QUALITY ANALYSIS UP TO 27-Aug-2024
EN 10204-2.1 ed. 2004

Parametri / Parameters	*Valore rilevato / Detected value*	*Valori di legge / Legal limit*
Ammonio / Ammonium (NH_4^+) [mg/l]	*< 0,1*	*0,5*
Arsenico / Arsenic (As_{tot}) [µg/l]	*< 1*	*10*
Bicarbonato / Bicarbonate (HCO_3^-) [mg/l]	*317*	*Non previsto / Not expected*
Calcio / Calcium (Ca^{2+}) [mg/l]	*87*	*Non previsto / Not expected*
Cloruri / Chlorides (Cl^-) [mg/l]	*12*	*250*
Composti organoalogenati / Organohalogen compounds [µg/l]	*<1*	*30*
Conducibilità / Conductivity (µS/cm)	*501*	*2500*
Cromo / Chromium [µg/l]	*<5*	*50*
Durezza Totale / Total hardness [°f]	*30*	*Non previsto / Not expected*
Fluoruri / Fluorides (F^-) [mg/l]	*<0,2*	*1,5*
Magnesio / Magnesium (Mg^{2+}) [mg/l]	*20*	*Non previsto / Not expected*
Manganese / Manganese (Mn_{tot}) [µg/l]	*< 5*	*50*
Microinquinanti tot / Micropollutants tot [µg/l]	*<0,01*	*0,5*
Nitrati / Nitrates (NO_3^-) [mg/l]	*31*	*50*
Nitriti / Nitrites (NO_2^-) [mg/l]	*<0,02*	*0,5*
Potassio / Potassium (K^+) [mg/l]	*1*	*Non previsto / Not expected*
Residuo secco a 180°C / Dry residue at 180°C [mg/l]	*361*	*1500*
Sodio / Sodium (NA^+) [mg/l]	*5*	*200*
Solfati / Sulfates (SO_4^{2-}) [mg/l]	*31*	*250*
pH / pH	*7*	*6,5 - 9,5*

* I dati corrispondono ai valori pubblicati dal laboratorio Amiacque dell'acquedotto del comune di Magenta (MI) - Italia.

* All the data correspond to the values published by the laboratory Amiacque of the Magenta's municipality aqueduct (MI) - Italy.

x CROSSWIND
25/9/24

DATE: 25 SET 2024
NAME: MARTINO BASILE
ON BEHALF OF: ROSETTI MARINO
SIGNATURE:

ROSETTI MARINO ITEM 310

COD. VLBNNN00063Q0H

TAG:

BLPH-MV-166, BLPH-MV-167, BLPH-MV-386

INDRA ITEM 310

COD. 00.MNF.0612/V

indra VALVES - ITALY	**RAPPORTO DI COLLAUDO** ***TEST REPORT*** ***- INDRA VALVES -***	**MD-02-05-IT-UK / P** **Rev. 24** **Data: 24-Mar-23**

Nr. Certificato / *Certificate No.*	10045/AC	**Data /** *Date :*	25-Sep-24 *Rev. 0*
Cliente / *Customer :*	ROSETTI MARINO SPA		
Ordine Nr. / *Order Nr.*	1724000798 REV.2	**Data /** *Date :*	26-Jun-24
Ns. commessa Nr. / *Our job Nr.*	24 01216	**Data /** *Date :*	03-Jul-24
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data /** *Date :*	

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST (according to API 598 & API 6D)	*FLUIDO (Fluid)*	*DURATA (Duration)*	*PRESSIONE (Pressure)*	*MAX. PERDITA AMMISSIBILE (ISO 5208) (Max allowable leakage)*	*MANOMETRO N° (Gauge ID)*	*DATA SCADENZA (Due Date)*
Shell test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*
High pressure closure test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*
Low pressure closure test (only for ball valves)	*Aria / Air*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*327268-79*	*15-Jan-25*
Back seat test (only for needle valves)	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY)		VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi)		High pressure closure test bar (psi)		Low pressure closure test bar (psi)		Back seat test bar (psi)		Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
					PRODUCED	TESTED						Pressure	Result	Pressure	Result	Pressure	Result	Pressure	Result				
280	280	00.MNF.0604/V	DBB-737-HR-E300RF3-D-D (106049, 106057)	VLBMNN00013Q0H	14	2	Monofl.	¾"	RF	300	AISI 316/316L NACE MR01.75	75 (1088)	N.L	55 (798)	N.L	N/A		55 (798)	N.L	NO	A	327268-79	15-Jan-25
290	290	00.MNF.0608/V	SBB-727-HR-E150RF3-D-D (106066)	VLBNNN00023Q0H	4	1	Monofl.	¾"	RF	150	AISI 316/316L NACE MR01.75	29 (421)	N.L	21 (305)	N.L	N/A		21 (305)	N.L	NO	A	2-78474	06-Dec-24
300	300	00.MNF.0605/V	SBB-727-E150RF3-D-D (106068)	VLBNNN00033Q0H	2	1	Monofl.	¾"	RF	150	AISI 316/316L NACE MR01.75	29 (421)	N.L	21 (305)	N.L	N/A		21 (305)	N.L	NO	A	2-78474	06-Dec-24
310	310	00.MNF.0612/V	SBB-727-E150RF3-D-D (106069)	VLBNNN00063Q0H	3	1	Monofl.	¾"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	N/A		22 (319)	N.L	NO	A	2-78474	06-Dec-24
320	320	00.MNF.0606/V	SBB-727-E150RF3-D-D (106072)	VLBNNN00063Q0H	1	1	Monofl.	¾"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	N/A		22 (319)	N.L	NO	A	2-78474	06-Dec-24

DATE: 25 SET 2024
NAME: MARTINO BASILE
ON BEHALF OF: ROSETTI MARINO
SIGNATURE:

Note / Remarks:

- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno
  (Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)
- *N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE*

Equipment Used MTS4-200A S/N 19_929

Ispettore / Inspector	*Si / Yes* ☑ *No / No* ☐
Nominativo / Name W. GOI3B1	*Timbro e Firma / Stamp and Signature*
Data / Date 25/9/24	

PROCEDURA DI COLLAUDO
(Test procedure)
PT VSP-VSF-ITA/ENG
(24-01216)

COLLAUDATO DA: TESTED BY:	**FRANCESCO LIGORIO** **TESTING OPERATOR**	DATA / DATE:	25-Sep-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** **PRODUCTION MANAGER**	DATA / DATE:	25-Sep-24

20013 Magenta (MI) Italy - Via Novara, 10/B-C
Tel. +39 02 97298663 r.a. - Fax +39 02 97291855
E-mail: indra@indra.it - http://www.indra.it

WATER QUALITY ANALYSIS UP TO 27-Aug-2024
EN 10204-2.1 ed. 2004

Parametri / Parameters	*Valore rilevato / Detected value*	*Valori di legge / Legal limit*
Ammonio / Ammonium (NH_4^+) [mg/l]	*< 0,1*	*0,5*
Arsenico / Arsenic (As_{tot}) [µg/l]	*< 1*	*10*
Bicarbonato / Bicarbonate (HCO_3^-) [mg/l]	*317*	*Non previsto / Not expected*
Calcio / Calcium (Ca^{2+}) [mg/l]	*87*	*Non previsto / Not expected*
Cloruri / Chlorides (Cl^-) [mg/l]	*12*	*250*
Composti organoalogenati / Organohalogen compounds [µg/l]	*<1*	*30*
Conducibilità / Conductivity (µS/cm)	*501*	*2500*
Cromo / Chromium [µg/l]	*<5*	*50*
Durezza Totale / Total hardness [°f]	*30*	*Non previsto / Not expected*
Fluoruri / Fluorides (F^-) [mg/l]	*<0,2*	*1,5*
Magnesio / Magnesium (Mg^{2+}) [mg/l]	*20*	*Non previsto / Not expected*
Manganese / Manganese (Mn_{tot}) [µg/l]	*< 5*	*50*
Microinquinanti tot / Micropollutants tot [µg/l]	*<0,01*	*0,5*
Nitrati / Nitrates (NO_3^-) [mg/l]	*31*	*50*
Nitriti / Nitrites (NO_2^-) [mg/l]	*<0,02*	*0,5*
Potassio / Potassium (K^+) [mg/l]	*1*	*Non previsto / Not expected*
Residuo secco a 180°C / Dry residue at 180°C [mg/l]	*361*	*1500*
Sodio / Sodium (NA^+) [mg/l]	*5*	*200*
Solfati / Sulfates (SO_4^{2-}) [mg/l]	*31*	*250*
pH / pH	*7*	*6,5 - 9,5*

* I dati corrispondono ai valori pubblicati dal laboratorio Amiacque dell'acquedotto del comune di Magenta (MI) - Italia.

* All the data correspond to the values published by the laboratory Amiacque of the Magenta's municipality aqueduct (MI) - Italy.

x Crosswind
25/9/24

DATE: 25 SET 2024
NAME: MARTINO BASILE
ON BEHALF OF: ROSETTI MARINO
SIGNATURE:

ROSETTI MARINO ITEM 320

COD. VLBNNN00063Q0H

TAG:

BLPH-MV-411

INDRA ITEM 320

COD. 00.MNF.0606/V

indra VALVES - ITALY

RAPPORTO DI COLLAUDO
TEST REPORT
- INDRA VALVES -

MD-02-05-IT-UK / P
Rev. 24
Data: 24-Mar-23

Nr. Certificato / *Certificate No.* 10044/AC — **Data** / *Date :* 25-Sep-24 — *Rev. 0*

Cliente / *Customer :* ROSETTI MARINO SPA

Ordine Nr. / *Order Nr.* 1724000798 REV.2 — **Data** / *Date :* 26-Jun-24

Ns. commessa Nr. / *Our job Nr.* 24 01216 — **Data** / *Date :* 03-Jul-24

Ns. D.D.T. Nr. / *Our advise note Nr.* — **Data** / *Date :*

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST (according to API 598 & API 6D)	FLUIDO (Fluid)	DURATA (Duration)	PRESSIONE (Pressure)	MAX. PERDITA AMMISSIBILE (ISO 5208) (Max allowable leakage)	MANOMETRO N° (Gauge ID)	DATA SCADENZA (Due Date)
Shell test	Acqua / Water	2 min.	vedi sotto / see below	nessuna perdita / no leakage	vedi sotto / see below	vedi sotto / see below
High pressure closure test	Acqua / Water	2 min.	vedi sotto / see below	vedi sotto / see below	vedi sotto / see below	vedi sotto / see below
Low pressure closure test (only for ball valves)	Aria / Air	2 min.	vedi sotto / see below	vedi sotto / see below	24F06-1334-01--13	03-Dec-24
Back seat test (only for needle valves)	Acqua / Water	2 min.	vedi sotto / see below	nessuna perdita / no leakage	vedi sotto / see below	vedi sotto / see below

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY) PRODUCED	QTA' (QTY) TESTED	VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi) Pressure	Shell test Result	High pressure closure test bar (psi) Pressure	High pressure closure test Result	Low pressure closure test bar (psi) Pressure	Low pressure closure test Result	Back seat test bar (psi) Pressure	Back seat test Result	Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
50	50	00.VSF.2694/V	SB-598-HR-25-F150RF3-F (105966)	VBC0NN24350100	5	1	Ball	1"	RF	150	AISI 316/316L NACE MR01.75	29 (421)	N.L	21 (305)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
220	220	00.VSF.2701/V	SBB-798-HR-25-F150RF3-F-D (106028)	VLBLNN01320100	2	1	Ball+Needle	1"	RF	150	AISI 316/316L NACE MR01.75	29 (421)	N.L	21 (305)	N.L	6 (87)	N.L	21 (305)	N.L	YES	A	24F06-1334-01--13	03-Dec-24
240	240	00.VSF.2696/V	SBB-798-25-F150RF3-F-D (106032)	VLBLNN01410100	1	1	Ball+Needle	1"	RF	150	AISI 316/316L NACE MR01.75	29 (421)	N.L	21 (305)	N.L	6 (87)	N.L	21 (305)	N.L	YES	A	24F06-1334-01--13	03-Dec-24

DATE: 25 SET 2024
NAME: MARINO BASILE
ON BEHALF OF: ROSETTI MARINO
SIGNATURE:

Note / Remarks:
- CAVITY SEAT RELIEF TEST PERFORMED ON 100% RESULT:OK
- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno
(Products signed with "O" and delivered in sealed bag have been degreased for oxygen service) .
- *N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE*

Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector — *Si / Yes* ☑ *No / No* ☐

Nominativo / Name W. GOBBI — *Timbro e Firma / Stamp and Signature* CROSSWIND 25/9/24

Data / Date 25/9/24

PROCEDURA DI COLLAUDO
(Test procedure)
PT VSP-VSF-ITA/ENG
(24-01216)

COLLAUDATO DA: / TESTED BY: **MARCO FALDUTO** **TESTING OPERATOR** — DATA / DATE: 25-Sep-24

APPROVATO DA: / APPROVED BY: **PIETRO FAGNANI** **PRODUCTION MANAGER** — DATA / DATE: 25-Sep-24

indra VALVES - ITALY	**RAPPORTO DI COLLAUDO "PED"** **"PED" TEST REPORT** **- INDRA VALVES -**	MD-02-09-IT-UK Rev. 8 Data: 24-Mar-23

Nr. Certificato / *Certificate No.* 10046/AC — **Data** / *Date :* 25-Sep-24 — *Rev. 0*

Cliente / *Customer :* ROSETTI MARINO SPA

Ordine Nr. / *Order Nr.* 1724000798 REV.2 — **Data** / *Date :* 26-Jun-24

Ns. commessa Nr. / *Our job Nr.* 24 01216 — **Data** / *Date :* 03-Jul-24

Ns. D.D.T. Nr. / *Our advise note Nr.* — **Data** / *Date :*

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST (according to API 598, API 6D & 2014/68/UE PED)	FLUIDO (Fluid)	DURATA (Duration)	PRESSIONE (Pressure)	MAX. PERDITA AMMISSIBILE (ISO 5208) (Max allowable leakage)	MANOMETRO N° (Gauge ID)	DATA SCADENZA (Due Date)
Shell test	Acqua / Water	2 min.	vedi sotto / see below	nessuna perdita / no leakage	vedi sotto / see below	vedi sotto / see below
High pressure closure test	Acqua / Water	2 min.	vedi sotto / see below	vedi sotto / see below	vedi sotto / see below	vedi sotto / see below
Low pressure closure test (only for ball valves)	Aria / Air	2 min.	vedi sotto / see below	vedi sotto / see below	24F06-1334-01--13	03-Dec-24
Back seat test (only for needle valves)	Acqua / Water	2 min.	vedi sotto / see below	nessuna perdita / no leakage	vedi sotto / see below	vedi sotto / see below

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY) PRODUCED	QTA' (QTY) TESTED	VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi) Pressure	Shell test Result	High pressure closure test bar (psi) Pressure	High pressure closure test Result	Low pressure closure test bar (psi) Pressure	Low pressure closure test Result	Back seat test bar (psi) Pressure	Back seat test Result	Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
170	170	00.VSF.2682/V	DBB-898-HR-50-J300RF3-J-D (106017)	VLBBNN07210200	1	1	Ball+Needle	2"	RF	300	AISI 316/316L NACE MR01.75	75 (1088)	N.L	55 (798)	N.L	6 (87)	N.L	55 (798)	N.L	YES	A	24F06-1334-01--13	03-Dec-24
250	250	00.VSF.2702/V	SBB-798-HR-50-J150RF3-J-D (106033)	VLBLNN0143020	2	1	Ball+Needle	2"	RF	150	AISI 316/316L NACE MR01.75	29 (421)	N.L	21 (305)	N.L	6 (87)	N.L	21 (305)	N.L	YES	A	24F06-1334-01--13	03-Dec-24

DATE: 25 SET 2024

NAME: MARTINO BASILE

ON BEHALF OF: ROSETTI MARINO

SIGNATURE:

INDRA SRL dichiara che le valvole fornite sono conformi ai requisiti stabiliti dalla API 598 - ASME B16.34 - 2014/68/UE PED Cert. Modulo H emesso da TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948

INDRA SRL declares that the supplied valves are in conformity with the requirements of API 598 - ASME B16.34 - 2014/68/UE PED Cert. Module H issued by TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948

Note / Remarks:

- CAVITY SEAT RELIEF TEST PERFORMED ON 100% RESULT:OK
- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno
  (Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)
- *N.L. = NO LEAKAGE (NESSUNA PERDITA)* *OK = LEAKAGE < MAX ALLOWABLE*

Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector — *Si / Yes* ☑ *No / No* ☐

Nominativo / Name W. GABBI

Timbro e Firma / Stamp and Signature CROSSWIND 25/9/24

Data / Date 25/9/24

PROCEDURA DI COLLAUDO
(Test procedure)

PT VSP-VSF-ITA/ENG
(24-01216)

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** TESTING OPERATOR	DATA / DATE: 25-Sep-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** PRODUCTION MANAGER	DATA / DATE: 25-Sep-24

indra VALVES - ITALY	**RAPPORTO DI COLLAUDO** ***TEST REPORT*** ***- INDRA VALVES -***	**MD-02-05-IT-UK / P** **Rev. 24** **Data: 24-Mar-23**

Nr. Certificato / *Certificate No.*	10045/AC	**Data /** *Date :*	25-Sep-24 *Rev. 0*
Cliente / *Customer :*	ROSETTI MARINO SPA		
Ordine Nr. / *Order Nr.*	1724000798 REV.2	**Data /** *Date :*	26-Jun-24
Ns. commessa Nr. / *Our job Nr.*	24 01216	**Data /** *Date :*	03-Jul-24
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data /** *Date :*	

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST (according to API 598 & API 6D)	*FLUIDO (Fluid)*	*DURATA (Duration)*	*PRESSIONE (Pressure)*	*MAX. PERDITA AMMISSIBILE (ISO 5208) (Max allowable leakage)*	*MANOMETRO N° (Gauge ID)*	*DATA SCADENZA (Due Date)*
Shell test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*
High pressure closure test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*
Low pressure closure test (only for ball valves)	*Aria / Air*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*327268-79*	*15-Jan-25*
Back seat test (only for needle valves)	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY)		VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi)		High pressure closure test bar (psi)		Low pressure closure test bar (psi)		Back seat test bar (psi)		Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
					PRODUCED	TESTED						Pressure	Result	Pressure	Result	Pressure	Result	Pressure	Result				
280	280	00.MNF.0604/V	DBB-737-HR-E300RF3-D-D (106049, 106057)	VLBMNN00013Q0H	14	2	Monofl.	¾"	RF	300	AISI 316/316L NACE MR01.75	75 (1088)	N.L	55 (798)	N.L	N/A		55 (798)	N.L	NO	A	327268-79	15-Jan-25
290	290	00.MNF.0608/V	SBB-727-HR-E150RF3-D-D (106066)	VLBNNN00023Q0H	4	1	Monofl.	¾"	RF	150	AISI 316/316L NACE MR01.75	29 (421)	N.L	21 (305)	N.L	N/A		21 (305)	N.L	NO	A	2-78474	06-Dec-24
300	300	00.MNF.0605/V	SBB-727-E150RF3-D-D (106068)	VLBNNN00033Q0H	2	1	Monofl.	¾"	RF	150	AISI 316/316L NACE MR01.75	29 (421)	N.L	21 (305)	N.L	N/A		21 (305)	N.L	NO	A	2-78474	06-Dec-24
310	310	00.MNF.0612/V	SBB-727-E150RF3-D-D (106069)	VLBNNN00063Q0H	3	1	Monofl.	¾"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	N/A		22 (319)	N.L	NO	A	2-78474	06-Dec-24
320	320	00.MNF.0606/V	SBB-727-E150RF3-D-D (106072)	VLBNNN00063Q0H	1	1	Monofl.	¾"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	N/A		22 (319)	N.L	NO	A	2-78474	06-Dec-24

DATE: 25 SET 2024
NAME: MARTINO BASILE
ON BEHALF OF: ROSETTI MARINO
SIGNATURE:

Note / Remarks:

- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno
  (Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)
- *N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE*

Equipment Used MTS4-200A S/N 19_929

Ispettore / Inspector	*Si / Yes* ☑ *No / No* ☐
Nominativo / Name W. Goi3B1	*Timbro e Firma / Stamp and Signature*
Data / Date 25/9/24	

PROCEDURA DI COLLAUDO
(Test procedure)
PT VSP-VSF-ITA/ENG
(24-01216)

COLLAUDATO DA: TESTED BY:	**FRANCESCO LIGORIO** **TESTING OPERATOR**	DATA / DATE:	25-Sep-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** **PRODUCTION MANAGER**	DATA / DATE:	25-Sep-24

20013 Magenta (MI) Italy - Via Novara, 10/B-C
Tel. +39 02 97298663 r.a. - Fax +39 02 97291855
E-mail: indra@indra.it - http://www.indra.it

WATER QUALITY ANALYSIS UP TO 27-Aug-2024
EN 10204-2.1 ed. 2004

Parametri / Parameters	*Valore rilevato / Detected value*	*Valori di legge / Legal limit*
Ammonio / Ammonium (NH_4^+) [mg/l]	*< 0,1*	*0,5*
Arsenico / Arsenic (As_{tot}) [µg/l]	*< 1*	*10*
Bicarbonato / Bicarbonate (HCO_3^-) [mg/l]	*317*	*Non previsto / Not expected*
Calcio / Calcium (Ca^{2+}) [mg/l]	*87*	*Non previsto / Not expected*
Cloruri / Chlorides (Cl^-) [mg/l]	*12*	*250*
Composti organoalogenati / Organohalogen compounds [µg/l]	*<1*	*30*
Conducibilità / Conductivity (µS/cm)	*501*	*2500*
Cromo / Chromium [µg/l]	*<5*	*50*
Durezza Totale / Total hardness [°f]	*30*	*Non previsto / Not expected*
Fluoruri / Fluorides (F^-) [mg/l]	*<0,2*	*1,5*
Magnesio / Magnesium (Mg^{2+}) [mg/l]	*20*	*Non previsto / Not expected*
Manganese / Manganese (Mn_{tot}) [µg/l]	*< 5*	*50*
Microinquinanti tot / Micropollutants tot [µg/l]	*<0,01*	*0,5*
Nitrati / Nitrates (NO_3^-) [mg/l]	*31*	*50*
Nitriti / Nitrites (NO_2^-) [mg/l]	*<0,02*	*0,5*
Potassio / Potassium (K^+) [mg/l]	*1*	*Non previsto / Not expected*
Residuo secco a 180°C / Dry residue at 180°C [mg/l]	*361*	*1500*
Sodio / Sodium (NA^+) [mg/l]	*5*	*200*
Solfati / Sulfates (SO_4^{2-}) [mg/l]	*31*	*250*
pH / pH	*7*	*6,5 - 9,5*

* I dati corrispondono ai valori pubblicati dal laboratorio Amiacque dell'acquedotto del comune di Magenta (MI) - Italia.

* All the data correspond to the values published by the laboratory Amiacque of the Magenta's municipality aqueduct (MI) - Italy.

x Crossmind
25/9/24

DATE: 25 SET 2024
NAME: MARTINO BASILE
ON BEHALF OF: ROSETTI MARINO
SIGNATURE:

ROSETTI MARINO ITEM 390

COD. VBD0NN16610300

TAG:

BLPH-MV-467

INDRA ITEM 321

COD. 00.VSF.2716/V

indra VALVES - ITALY

RAPPORTO DI COLLAUDO "PED"
"PED" TEST REPORT
- INDRA VALVES -

MD-02-09-IT-UK
Rev. 8
Data: 24-Mar-23

Nr. Certificato / *Certificate No.* 10134/AC — **Data** / *Date :* 16-Oct-24 — *Rev. 0*

Cliente / *Customer :* ROSETTI MARINO SPA

Ordine Nr. / *Order Nr.* 1724000798 REV.2 — **Data** / *Date :* 26-Jun-24

Ns. commessa Nr. / *Our job Nr.* 24 01216 — **Data** / *Date :* 03-Jul-24

Ns. D.D.T. Nr. / *Our advise note Nr.* — **Data** / *Date :*

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST (according to API 598, API 6D & 2014/68/UE PED)	FLUIDO (Fluid)	DURATA (Duration)	PRESSIONE (Pressure)	MAX. PERDITA AMMISSIBILE (ISO 5208) (Max allowable leakage)	MANOMETRO N° (Gauge ID)	DATA SCADENZA (Due Date)
Shell test	Acqua / Water	2 min.	vedi sotto / see below	nessuna perdita / no leakage	vedi sotto / see below	vedi sotto / see below
High pressure closure test	Acqua / Water	2 min.	vedi sotto / see below	vedi sotto / see below	vedi sotto / see below	vedi sotto / see below
Low pressure closure test (only for ball valves)	Aria / Air	2 min.	vedi sotto / see below	vedi sotto / see below	24F06-1334-01-13	03-Dec-24
Back seat test (only for needle valves)	Acqua / Water	2 min.	vedi sotto / see below	nessuna perdita / no leakage	vedi sotto / see below	vedi sotto / see below

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY) PRODUCED	QTA' (QTY) TESTED	VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi) Pressure	Shell test Result	High pressure closure test bar (psi) Pressure	High pressure closure test Result	Low pressure closure test bar (psi) Pressure	Low pressure closure test Result	Back seat test bar (psi) Pressure	Back seat test Result	Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
80	80	00.VSF.2692(T)	SB-598-50-J150RF3-J (105973)	VBC0NN24460200	2	1	Ball	2"	RF	150	F55 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
120	120	00.VSF.2691/V	SB-598-40-H150RF3-H (105978)	VBC0NN24721H00	1	1	Ball	1 ½"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
210	210	00.VSF.2699/V	SBB-798-40-H150RF3-H-D (106027)	VLBLNN01291H00	1	1	Ball+Needle	1 ½"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	22 (319)	N.L	YES	A	24F06-1334-01--13	03-Dec-24
230	230	00.VSF.2698(T)	SBB-798-40-H150RF3-H-D (106031)	VLBLNN01381H00	2	1	Ball+Needle	1 ½"	RF	150	F55 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	22 (319)	N.L	YES	A	24F06-1334-01--13	03-Dec-24
321	390	00.VSF.2716/V	SB-598-50-L150RF3-L (106898)	VBD0NN16610300	1	1	Ball	3"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24

INDRA SRL dichiara che le valvole fornite sono conformi ai requisiti stabiliti dalla API 598 - ASME B16.34 - 2014/68/UE PED Cert. Modulo H emesso da TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948
INDRA SRL declares that the supplied valves are in conformity with the requirements of API 598 - ASME B16.34 - 2014/68/UE PED Cert. Module H issued by TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948

Note / Remarks:
- CAVITY SEAT RELIEF TEST PERFORMED ON 100% RESULT:OK
- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno
(Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)
- *N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE*
Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector — *Si / Yes* ☑ *No / No* ☐
Nominativo / Name .....
Timbro e Firma / Stamp and Signature x CROSSWIND 16/10/24
Data / Date .....

PROCEDURA DI COLLAUDO
(Test procedure)
PT VSP-VSF-ITA/ENG
(24-01216)

COLLAUDATO DA: / TESTED BY: **MARCO FALDUTO** **TESTING OPERATOR** — DATA / DATE: 16-Oct-24

APPROVATO DA: / APPROVED BY: **PIETRO FAGNANI** **PRODUCTION MANAGER** — DATA / DATE: 16-Oct-24

20013 Magenta (MI) Italy - Via Novara, 10/B-C
Tel. +39 02 97298663 r.a. - Fax +39 02 97291855
E-mail: indra@indra.it - http://www.indra.it

WATER QUALITY ANALYSIS UP TO 27-Aug-2024
EN 10204-2.1 ed. 2004

Parametri / Parameters	*Valore rilevato / Detected value*	*Valori di legge / Legal limit*
Ammonio / Ammonium (NH_4^+) [mg/l]	*< 0,1*	*0,5*
Arsenico / Arsenic (As_{tot}) [µg/l]	*< 1*	*10*
Bicarbonato / Bicarbonate (HCO_3^-) [mg/l]	*317*	*Non previsto / Not expected*
Calcio / Calcium (Ca^{2+}) [mg/l]	*87*	*Non previsto / Not expected*
Cloruri / Chlorides (Cl^-) [mg/l]	*12*	*250*
Composti organoalogenati / Organohalogen compounds [µg/l]	*<1*	*30*
Conducibilità / Conductivity (µS/cm)	*501*	*2500*
Cromo / Chromium [µg/l]	*<5*	*50*
Durezza Totale / Total hardness [°f]	*30*	*Non previsto / Not expected*
Fluoruri / Fluorides (F^-) [mg/l]	*<0,2*	*1,5*
Magnesio / Magnesium (Mg^{2+}) [mg/l]	*20*	*Non previsto / Not expected*
Manganese / Manganese (Mn_{tot}) [µg/l]	*< 5*	*50*
Microinquinanti tot / Micropollutants tot [µg/l]	*<0,01*	*0,5*
Nitrati / Nitrates (NO_3^-) [mg/l]	*31*	*50*
Nitriti / Nitrites (NO_2^-) [mg/l]	*<0,02*	*0,5*
Potassio / Potassium (K^+) [mg/l]	*1*	*Non previsto / Not expected*
Residuo secco a 180°C / Dry residue at 180°C [mg/l]	*361*	*1500*
Sodio / Sodium (NA^+) [mg/l]	*5*	*200*
Solfati / Sulfates (SO_4^{2-}) [mg/l]	*31*	*250*
pH / pH	*7*	*6,5 - 9,5*

* I dati corrispondono ai valori pubblicati dal laboratorio Amiacque dell'acquedotto del comune di Magenta (MI) - Italia.

* All the data correspond to the values published by the laboratory Amiacque of the Magenta's municipality aqueduct (MI) - Italy.



indra VALVES - ITALY

RAPPORTO DI COLLAUDO "PED"
"PED" TEST REPORT
- INDRA VALVES -

MD-02-09-IT-UK
Rev. 8
Data: 24-Mar-23

Nr. Certificato / *Certificate No.*	10124/AC	**Data** / *Date :*	14-Oct-24
Cliente / *Customer :*	ROSETTI MARINO SPA		
Ordine Nr. / *Order Nr.*	1724000798 REV.2	**Data** / *Date :*	26-Jun-24
Ns. commessa Nr. / *Our job Nr.*	24 01216	**Data** / *Date :*	03-Jul-24
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*	

Rev. 0

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST (according to API 598, API 6D & 2014/68/UE PED)	FLUIDO (Fluid)	DURATA (Duration)	PRESSIONE (Pressure)	MAX. PERDITA AMMISSIBILE (ISO 5208) (Max allowable leakage)	MANOMETRO N° (Gauge ID)	DATA SCADENZA (Due Date)
Shell test	Acqua / Water	2 min.	vedi sotto / see below	nessuna perdita / no leakage	vedi sotto / see below	vedi sotto / see below
High pressure closure test	Acqua / Water	2 min.	vedi sotto / see below	vedi sotto / see below	vedi sotto / see below	vedi sotto / see below
Low pressure closure test (only for ball valves)	Aria / Air	2 min.	vedi sotto / see below	vedi sotto / see below	24F06-1334-01-13	03-Dec-24
Back seat test (only for needle valves)	Acqua / Water	2 min.	vedi sotto / see below	nessuna perdita / no leakage	vedi sotto / see below	vedi sotto / see below

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY)		VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi)		High pressure closure test bar (psi)		Low pressure closure test bar (psi)		Back seat test bar (psi)		Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
					PRODUCED	TESTED						Pressure	Result	Pressure	Result	Pressure	Result	Pressure	Result				
80	80	00.VSF.2692(T)	SB-598-50-J150RF3-J (From 105972 To 105973)	VBC0NN24460200	2	100%	Ball	2"	RF	150	F55 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
120	120	00.VSF.2691/V	SB-598-40-H150RF3-H (105978)	VBC0NN24721H00	1	100%	Ball	1 ½"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
210	210	00.VSF.2699/V	SBB-798-40-H150RF3-H-D (106027)	VLBLNN01291H00	1	100%	Ball+Needle	1 ½"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	22 (319)	N.L	YES	A	24F06-1334-01--13	03-Dec-24
230	230	00.VSF.2698(T)	SBB-798-40-H150RF3-H-D (From 106030 To 106031)	VLBLNN01381H00	2	100%	Ball+Needle	1 ½"	RF	150	F55 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	22 (319)	N.L	YES	A	24F06-1334-01--13	03-Dec-24
321	390	00.VSF.2716/V	SB-598-50-L150RF3-L (106898)	VBD0NN16610300	1	100%	Ball	3"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24

INDRA SRL dichiara che le valvole fornite sono conformi ai requisiti stabiliti dalla API 598 - ASME B16.34 - 2014/68/UE PED Cert. Modulo H emesso da TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948
INDRA SRL declares that the supplied valves are in conformity with the requirements of API 598 - ASME B16.34 - 2014/68/UE PED Cert. Module H issued by TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948

Note / Remarks:
- CAVITY SEAT RELIEF TEST PERFORMED ON 100% RESULT:OK
- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno
(Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)
- *N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE*

Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector

SI / Yes ☐
No / No ☑

Nominativo / Name ..... *Timbro e Firma / Stamp and Signature*

Data / Date .....

PROCEDURA DI COLLAUDO
(Test procedure)
PT VSP-VSF-ITA/ENG
(24-01216)

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** TESTING OPERATOR	DATA / DATE:	14-Oct-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** PRODUCTION MANAGER	DATA / DATE:	14-Oct-24

indra VALVES - ITALY	**RAPPORTO DI COLLAUDO COPPIA DI MANOVRA E RESISTENZA ELETTRICA** ***TORQUE AND ELECTRICAL RESISTANCE REPORT*** ***- INDRA VALVES -***	**MD-02-14-IT-UK / P** **Rev. 0** **Data: 01-Jul-14**

Nr. Certificato / *Certificate No.*	**10124/AC-TET-E**	**Data** / *Date :*	**14-Oct-24**	*Rev. 0*
Cliente / *Customer :*	**ROSETTI MARINO SPA**			
Ordine Nr. / *Order Nr.*	**1724000798 REV.2**	**Data** / *Date :*	**26-Jun-24**	
Ns. commessa Nr. / *Our job Nr.*	**24 01216**	**Data** / *Date :*	**03-Jul-24**	
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*		

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST *according to API 598 , API 6D, BS EN 12266-1*	***VALORE MASSIMO*** *(Limit)*	***STRUMENTO DI MISURA*** *(Gauge Instrument)*	***SCADENZA*** *(Due Date)*
Torque test			
Electrical resistance test	*10 Ohm*	*Digital Multimeter DMM249 13290*	*31-May-25*

POS. (ITEM)	**CODICE** (CODE)	**DESCRIZIONE** (DESCRIPTION)	**CODICE CLIENTE** (CUSTOMER CODE)	**QTA'** (QTY) PRODUCED	TESTED
321	*00.VSF.2716/V*	*SB-598-50-L150RF3-L*	*VBD0NN16610300*	*1*	*1*

n° SERIALE (Serial n°)	**LATO** (Side)	*Torque test* *Nm*		*Electrical resistance Body-stem* *Ohm*		*Electrical resistance Body-ball* *Ohm*	
		Value	Result	Value	Result	Value	Result
106898	*A*			0,4	OK	0,6	OK

n° SERIALE (Serial n°)	**LATO** (Side)	*Torque test* *Nm*		*Electrical resistance Body-stem* *Ohm*		*Electrical resistance Body-ball* *Ohm*	
		Value	Result	Value	Result	Value	Result

n° SERIALE (Serial n°)	**LATO** (Side)	*Torque test* *Nm*					
		Value	Result	Value	Result	Value	Result

Note / ***Remarks:***
- Test Antistatico eseguito su 1 pz. per posizione (Antistatic test executed on 1 pc. per item)

Indra CROSSWIND R/W

PROCEDURA DI COLLAUDO
(Test procedure)
PT/VSP-VSF-HP / ATP_00

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** **TESTING OPERATOR**	DATA / DATE:	14-Oct-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** **PRODUCTION MANAGER**	DATA / DATE: 14-Oct-24

indra VALVES - ITALY	**RAPPORTO DI COLLAUDO COPPIA DI MANOVRA E RESISTENZA ELETTRICA** ***TORQUE AND ELECTRICAL RESISTANCE REPORT*** ***- INDRA VALVES -***	**MD-02-14-IT-UK / P** **Rev. 0** **Data: 01-Jul-14**

Nr. Certificato / *Certificate No.*	**10124/AC-TET-E**	**Data** / *Date :*	**14-Oct-24** *Rev. 0*
Cliente / *Customer :*	**ROSETTI MARINO SPA**		
Ordine Nr. / *Order Nr.*	**1724000798 REV.2**	**Data** / *Date :*	**26-Jun-24**
Ns. commessa Nr. / *Our job Nr.*	**24 01216**	**Data** / *Date :*	**03-Jul-24**
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*	

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST according to API 598 , API 6D, BS EN 12266-1	*VALORE MASSIMO (Limit)*	*STRUMENTO DI MISURA (Gauge Instrument)*	*SCADENZA (Due Date)*
Torque test			
Electrical resistance test	*10 Ohm*	*Digital Multimeter DMM249 13290*	*31-May-25*

POS. (ITEM)	CODICE (CODE)	DESCRIZIONE (DESCRIPTION)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY) PRODUCED	TESTED
321	*00.VSF.2716/V*	*SB-598-50-L150RF3-L*	*VBD0NN16610300*	*1*	*1*

n° SERIALE (Serial n°)	LATO (Side)	*Torque test Nm* Value	Result	*Electrical resistance Body-stem Ohm* Value	Result	*Electrical resistance Body-ball Ohm* Value	Result
106898	*A*			0,4	OK	0,6	OK

n° SERIALE (Serial n°)	LATO (Side)	*Torque test Nm* Value	Result	*Electrical resistance Body-stem Ohm* Value	Result	*Electrical resistance Body-ball Ohm* Value	Result

n° SERIALE (Serial n°)	LATO (Side)	*Torque test Nm* Value	Result	Value	Result	Value	Result

Note / ***Remarks:***
- Test Antistatico eseguito su 1 pz. per posizione (Antistatic test executed on 1 pc. per item)

CROSSWIND R/W

PROCEDURA DI COLLAUDO
(Test procedure)
PT/VSP-VSF-HP / ATP_00

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** **TESTING OPERATOR**	DATA / DATE:	14-Oct-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** **PRODUCTION MANAGER**	DATA / DATE: 14-Oct-24

ROSETTI MARINO ITEM 400

COD. VLBBNN07190100

TAG:

BLPH-MV-466

INDRA ITEM 322

COD. 00.VSF.2680/V

indra VALVES - ITALY	**RAPPORTO DI COLLAUDO** ***TEST REPORT*** ***- INDRA VALVES -***	**MD-02-05-IT-UK / P** **Rev. 24** **Data: 24-Mar-23**

Nr. Certificato / *Certificate No.*	**10070/AC**	**Data** / *Date :*	**02-Oct-24** *Rev. 0*
Cliente / *Customer :*	**ROSETTI MARINO SPA**		
Ordine Nr. / *Order Nr.*	**1724000798 REV.2**	**Data** / *Date :*	**26-Jun-24**
Ns. commessa Nr. / *Our job Nr.*	**24 01216**	**Data** / *Date :*	**03-Jul-24**
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*	

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST ***(according to API 598 & API 6D)***	***FLUIDO*** *(Fluid)*	***DURATA*** *(Duration)*	***PRESSIONE*** *(Pressure)*	***MAX. PERDITA AMMISSIBILE (ISO 5208)*** *(Max allowable leakage)*	***MANOMETRO N°*** *(Gauge ID)*	***DATA SCADENZA*** *(Due Date)*
Shell test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*
High pressure closure test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*
Low pressure closure test (only for ball valves)	*Aria / Air*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*24F06-1334-01--13*	*03-Dec-24*
Back seat test (only for needle valves)	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY)		VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi)		High pressure closure test bar (psi)		Low pressure closure test bar (psi)		Back seat test bar (psi)		Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
					PRODUCED	TESTED						Pressure	Result	Pressure	Result	Pressure	Result	Pressure	Result				
10	*10*	*00.VSF.2684/V*	*SB-598-20-E150RF3-E (105942)*	*VBC0NN06943Q00*	*1*	*1*	*Ball*	*¾"*	*RF*	*150*	*AISI 316/316L NACE MR01.75*	29 (421)	N.L	21 (305)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
20	*20*	*00.VSF.2687/V*	*SB-598-25-F150RF3-F (105944, 105949)*	*VBC0NN06950100*	*15*	*2*	*Ball*	*1"*	*RF*	*150*	*AISI 316/316L NACE MR01.75*	29 (421)	N.L	21 (305)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
40	*40*	*00.VSF.2693/V*	*SB-598-HR-20-E150RF3-E (105960)*	*VBC0NN24343Q00*	*2*	*1*	*Ball*	*¾"*	*RF*	*150*	*AISI 316/316L NACE MR01.75*	29 (421)	N.L	21 (305)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
150	*150*	*00.VSF.2680/V*	*DBB-898-HR-25-F300RF3-F-D (105990, 105991, 106004)*	*VLBBNN07190100*	*28*	*3*	*Ball+Needle*	*1"*	*RF*	*300*	*AISI 316/316L NACE MR01.75*	75 (1088)	N.L	55 (798)	N.L	6 (87)	N.L	55 (798)	N.L	YES	A	24F06-1334-01--13	03-Dec-24
322	*400*	*00.VSF.2680/V*	*DBB-898-HR-25-F300RF3-F-D (106899)*	*VLBBNN07190100*	*1*	*1*	*Ball+Needle*	*1"*	*RF*	*300*	*AISI 316/316L NACE MR01.75*	75 (1088)	N.L	55 (798)	N.L	6 (87)	N.L	55 (798)	N.L	YES	A	24F06-1334-01--13	03-Dec-24

☐ REVIEWED ☑ WITNESSED

DATE: - 2 OTT 2024

NAME: MASSIMILIANO BERGHENTI ROSETTI MARINO

ON BEHALF OF :

SIGNATURE:

CROSSWIND 2/10/24

Note / Remarks:

- CAVITY SEAT RELIEF TEST PERFORMED ON 100% RESULT:OK
- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno

(Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)

- N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE

Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector	*Si / Yes* ☑ *No / No* ☐
Nominativo / Name	*Timbro e Firma / Stamp and Signature*
.....	
Data / Date	
.....	

PROCEDURA DI COLLAUDO
(Test procedure)

PT VSP-VSF-ITA/ENG
(24-01216)

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** **TESTING OPERATOR**	DATA / DATE: 02-Oct-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** **PRODUCTION MANAGER**	DATA / DATE: 02-Oct-24

indra VALVES - ITALY
20013 Magenta (MI) Italy - Via Novara, 10/B-C
Tel. +39 02 97298663 r.a. - Fax +39 02 97291855
E-mail: indra@indra.it - http://www.indra.it

WATER QUALITY ANALYSIS UP TO 27-Aug-2024
EN 10204-2.1 ed. 2004

Parametri / Parameters	*Valore rilevato / Detected value*	*Valori di legge / Legal limit*
Ammonio / Ammonium (NH_4^+) [mg/l]	*< 0,1*	*0,5*
Arsenico / Arsenic (As_{tot}) [µg/l]	*< 1*	*10*
Bicarbonato / Bicarbonate (HCO_3^-) [mg/l]	*317*	*Non previsto / Not expected*
Calcio / Calcium (Ca^{2+}) [mg/l]	*87*	*Non previsto / Not expected*
Cloruri / Chlorides (Cl^-) [mg/l]	*12*	*250*
Composti organoalogenati / Organohalogen compounds [µg/l]	*<1*	*30*
Conducibilità / Conductivity (µS/cm)	*501*	*2500*
Cromo / Chromium [µg/l]	*<5*	*50*
Durezza Totale / Total hardness [°f]	*30*	*Non previsto / Not expected*
Fluoruri / Fluorides (F^-) [mg/l]	*<0,2*	*1,5*
Magnesio / Magnesium (Mg^{2+}) [mg/l]	*20*	*Non previsto / Not expected*
Manganese / Manganese (Mn_{tot}) [µg/l]	*< 5*	*50*
Microinquinanti tot / Micropollutants tot [µg/l]	*<0,01*	*0,5*
Nitrati / Nitrates (NO_3^-) [mg/l]	*31*	*50*
Nitriti / Nitrites (NO_2^-) [mg/l]	*<0,02*	*0,5*
Potassio / Potassium (K^+) [mg/l]	*1*	*Non previsto / Not expected*
Residuo secco a 180°C / Dry residue at 180°C [mg/l]	*361*	*1500*
Sodio / Sodium (NA^+) [mg/l]	*5*	*200*
Solfati / Sulfates (SO_4^{2-}) [mg/l]	*31*	*250*
pH / pH	*7*	*6,5 - 9,5*

* I dati corrispondono ai valori pubblicati dal laboratorio Amiacque dell'acquedotto del comune di Magenta (MI) - Italia.

* All the data correspond to the values published by the laboratory Amiacque of the Magenta's municipality aqueduct (MI) - Italy.

x CROSSWIND

2/10/24 R

☑ REVIEWED ☐ WITNESSED

DATE: - 2 OTT 2024

NAME: MASSIMILIANO BERGHENTI
ON BEHALF OF :
SIGNATURE:
ROSETTI MARINO

indra VALVES - ITALY	**RAPPORTO DI COLLAUDO A GAS** **GAS TEST REPORT** **- INDRA VALVES -**	**MD-02-13-IT-UK / P** **Rev. 2** **Data: 24-Oct-16**

Nr. Certificato / *Certificate No.*	10068/AC-GT	**Data** / *Date :*	30-Sep-24	*Rev. 0*
Cliente / *Customer :*	ROSETTI MARINO SPA			
Ordine Nr. / *Order Nr.*	1724000798 REV.2	**Data** / *Date :*	26-Jun-24	
Ns. commessa Nr. / *Our job Nr.*	24 01216	**Data** / *Date :*	03-Jul-24	
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*		

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST according to API 598 , BS EN 12266-1	*FLUIDO (Fluid)*	*DURATA (Duration)*	*PRESSIONE (Pressure)*	*MAX. PERDITA AMMISSIBILE (BS EN 12266-1) (Max allowable leakage)*	*MANOMETRO N° (Gauge ID)*	*DATA SCADENZA (Due Date)*
Shell test	*Elio / Helium*	*15 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*
High pressure closure test	*Elio / Helium*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY)		VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi)		High pressure closure test bar (psi)				Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
					PRODUCED	TESTED						Pressure	Result	Pressure	Result	Duration					
40	40	00.VSF.2693/V	SB-598-HR-20-E150RF3-E (105960)	VBC0NN24343Q00	2	1	Ball	¾"	RF	150	AISI 316/316L NACE MR01.75	21 (305)	N.L	21 (305)	N.L	2 min.		YES	A	24F06-1334-01--13	03-Dec-24
150	150	00.VSF.2680/V	DBB-898-HR-25-F300RF3-F-D (105982)	VLBBNN07190100	28	1	Ball+Needle	1"	RF	300	AISI 316/316L NACE MR01.75	55 (798)	N.L	55 (798)	N.L	2 min.		YES	A	24F06-1334-01--13	03-Dec-24
322	400	00.VSF.2680/V	DBB-898-HR-25-F300RF3-F-D (106899)	VLBBNN07190100	1	1	Ball+Needle	1"	RF	300	AISI 316/316L NACE MR01.75	55 (798)	N.L	55 (798)	N.L	2 min.		YES	A	24F06-1334-01--13	03-Dec-24

Note / Remarks:

- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno
  (Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)
- *N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE*

Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector	*Si / Yes* / *No / No*	
Nominativo / Name	☐	*Timbro e Firma / Stamp and Signature*
.....	☑	CROSSWIND 16/10/24
Data / Date		

PROCEDURA DI COLLAUDO
(Test procedure)

PGT/VSP-VSF
(24-01216)

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** **TESTING OPERATOR**	DATA / DATE:	30-Sep-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** **PRODUCTION MANAGER**	DATA / DATE:	30-Sep-24

indra VALVES - ITALY

RAPPORTO DI COLLAUDO
TEST REPORT
- INDRA VALVES -

MD-02-05-IT-UK / P
Rev. 24
Data: 24-Mar-23

Nr. Certificato / *Certificate No.*	10068/AC	**Data** / *Date :*	30-Sep-24 *Rev. 0*
Cliente / *Customer :*	ROSETTI MARINO SPA		
Ordine Nr. / *Order Nr.*	1724000798 REV.2	**Data** / *Date :*	26-Jun-24
Ns. commessa Nr. / *Our job Nr.*	24 01216	**Data** / *Date :*	03-Jul-24
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*	

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST (according to API 598 & API 6D)	*FLUIDO (Fluid)*	*DURATA (Duration)*	*PRESSIONE (Pressure)*	*MAX. PERDITA AMMISSIBILE (ISO 5208) (Max allowable leakage)*	*MANOMETRO N° (Gauge ID)*	*DATA SCADENZA (Due Date)*
Shell test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*
High pressure closure test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*
Low pressure closure test (only for ball valves)	*Aria / Air*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*24F06-1334-01--13*	*03-Dec-24*
Back seat test (only for needle valves)	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY)		VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi)		High pressure closure test bar (psi)		Low pressure closure test bar (psi)		Back seat test bar (psi)		Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
					PRODUCED	TESTED						Pressure	Result	Pressure	Result	Pressure	Result	Pressure	Result				
10	*10*	*00.VSF.2684/V*	*SB-598-20-E150RF3-E (105942)*	*VBC0NN06943Q00*	*1*	*100%*	*Ball*	*¾"*	*RF*	*150*	*AISI 316/316L NACE MR01.75*	29 (421)	N.L	21 (305)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
20	*20*	*00.VSF.2687/V*	*SB-598-25-F150RF3-F (From 105943 To 105957)*	*VBC0NN06950100*	*15*	*100%*	*Ball*	*1"*	*RF*	*150*	*AISI 316/316L NACE MR01.75*	29 (421)	N.L	21 (305)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
40	*40*	*00.VSF.2693/V*	*SB-598-HR-20-E150RF3-E (From 105960 To 105961)*	*VBC0NN24343Q00*	*2*	*100%*	*Ball*	*¾"*	*RF*	*150*	*AISI 316/316L NACE MR01.75*	29 (421)	N.L	21 (305)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
150	*150*	*00.VSF.2680/V*	*DBB-898-HR-25-F300RF3-F-D (From 105982 To 106009)*	*VLBBNN07190100*	*28*	*100%*	*Ball+Needle*	*1"*	*RF*	*300*	*AISI 316/316L NACE MR01.75*	75 (1088)	N.L	55 (798)	N.L	6 (87)	N.L	55 (798)	N.L	YES	A	24F06-1334-01--13	03-Dec-24
322	*400*	*00.VSF.2680/V*	*DBB-898-HR-25-F300RF3-F-D (106899)*	*VLBBNN07190100*	*1*	*100%*	*Ball+Needle*	*1"*	*RF*	*300*	*AISI 316/316L NACE MR01.75*	75 (1088)	N.L	55 (798)	N.L	6 (87)	N.L	55 (798)	N.L	YES	A	24F06-1334-01--13	03-Dec-24

Note / Remarks:
- CAVITY SEAT RELIEF TEST PERFORMED ON 100% RESULT:OK
- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno
(Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)
- *N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE*

Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector — *Si / Yes* ☐ *No / No* ☑

Nominativo / Name .....

Timbro e Firma / Stamp and Signature A CROSSWIND 16/10/24

Data / Date .....

PROCEDURA DI COLLAUDO
(Test procedure)
PT VSP-VSF-ITA/ENG
(24-01216)

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** TESTING OPERATOR	DATA / DATE:	30-Sep-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** PRODUCTION MANAGER	DATA / DATE:	30-Sep-24

indra VALVES - ITALY

RAPPORTO DI COLLAUDO COPPIA DI MANOVRA E RESISTENZA ELETTRICA
TORQUE AND ELECTRICAL RESISTANCE REPORT
- INDRA VALVES -

MD-02-14-IT-UK / P
Rev. 0
Data: 01-Jul-14

Nr. Certificato / *Certificate No.*	10068/AC-TET-D	**Data** / *Date :*	30-Sep-24	*Rev. 0*
Cliente / *Customer :*	ROSETTI MARINO SPA			
Ordine Nr. / *Order Nr.*	1724000798 REV.2	**Data** / *Date :*	26-Jun-24	
Ns. commessa Nr. / *Our job Nr.*	24 01216	**Data** / *Date :*	03-Jul-24	
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*		

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST according to API 598 , API 6D, BS EN 12266-1	*VALORE MASSIMO (Limit)*	*STRUMENTO DI MISURA (Gauge Instrument)*	*SCADENZA (Due Date)*
Torque test			
Electrical resistance test	*10 Ohm*	*Digital Multimeter DMM249 13290*	*31-May-25*

POS. (ITEM)	CODICE (CODE)	DESCRIZIONE (DESCRIPTION)	CODICE CLIENTE (CUSTOMER CODE)	QTA° (QTY) PRODUCED	TESTED
150 / 322	*00.VSF.2680/V*	*DBB-898-HR-25-F300RF3-F-D*	*VLBBNN07190100*	*29*	*2*

n° SERIALE (Serial n°)	LATO (Side)	Torque test Nm Value	Torque test Nm Result	Electrical resistance Body-stem Ohm Value	Electrical resistance Body-stem Ohm Result	Electrical resistance Body-ball Ohm Value	Electrical resistance Body-ball Ohm Result
105982	*A*			0,3	OK	0,5	OK
	B			0,5	OK	0,7	OK
106899	*A*			0,5	OK	0,8	OK
	B			0,6	OK	0,6	OK

n° SERIALE (Serial n°)	LATO (Side)	Torque test Nm Value	Torque test Nm Result	Electrical resistance Body-stem Ohm Value	Electrical resistance Body-stem Ohm Result	Electrical resistance Body-ball Ohm Value	Electrical resistance Body-ball Ohm Result

n° SERIALE (Serial n°)	LATO (Side)	Torque test Nm Value	Torque test Nm Result	Value	Result	Value	Result

Note / ***Remarks:***
- Test Antistatico eseguito su 1 pz. per posizione (Antistatic test executed on 1 pc. per item)

xCROSSWIND 16/10/24

PROCEDURA DI COLLAUDO *(Test procedure)*
PT/VSP-VSF-HP / ATP_00

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** TESTING OPERATOR	DATA / DATE:	30-Sep-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** PRODUCTION MANAGER	DATA / DATE: 30-Sep-24

ROSETTI MARINO ITEM 410

COD. VLBBNN07201H00

TAG:

BLPH-MV-468

INDRA ITEM 323

COD. 00.VSF.2681/V

indra VALVES - ITALY	**RAPPORTO DI COLLAUDO "PED"** **"PED" TEST REPORT** **- INDRA VALVES -**	MD-02-09-IT-UK Rev. 8 Data: 24-Mar-23

Nr. Certificato / *Certificate No.* 10102/AC — **Data** / *Date* : 09-Oct-24 — *Rev. 0*

Cliente / *Customer* : ROSETTI MARINO SPA

Ordine Nr. / *Order Nr.* 1724000798 REV.2 — **Data** / *Date* : 26-Jun-24

Ns. commessa Nr. / *Our job Nr.* 24 01216 — **Data** / *Date* : 03-Jul-24

Ns. D.D.T. Nr. / *Our advise note Nr.* — **Data** / *Date* :

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST (according to API 598, API 6D & 2014/68/UE PED)	FLUIDO (Fluid)	DURATA (Duration)	PRESSIONE (Pressure)	MAX. PERDITA AMMISSIBILE (ISO 5208) (Max allowable leakage)	MANOMETRO N° (Gauge ID)	DATA SCADENZA (Due Date)
Shell test	Acqua / Water	2 min.	vedi sotto / see below	nessuna perdita / no leakage	vedi sotto / see below	vedi sotto / see below
High pressure closure test	Acqua / Water	2 min.	vedi sotto / see below	vedi sotto / see below	vedi sotto / see below	vedi sotto / see below
Low pressure closure test (only for ball valves)	Aria / Air	2 min.	vedi sotto / see below	vedi sotto / see below	327268-79	15-Jan-25
Back seat test (only for needle valves)	Acqua / Water	2 min.	vedi sotto / see below	nessuna perdita / no leakage	vedi sotto / see below	vedi sotto / see below

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY)		VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi)		High pressure closure test bar (psi)		Low pressure closure test bar (psi)		Back seat test bar (psi)		Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
					PRODUCED	TESTED						Pressure	Result	Pressure	Result	Pressure	Result	Pressure	Result				
160	160	00.VSF.2681/V	DBB-898-HR-40-H300RF3-H-D (106015)	VLBBNN07201H00	6	1	Ball+Needle	1 ½"	RF	300	AISI 316/316L NACE MR01.75	75 (1088)	N.L	55 (798)	N.L	6 (87)	N.L	55 (798)	N.L	YES	A	24F06-1334-01-13	03-Dec-24
260	260	00.VSF.2700/V	SBB-798-HR-100-N150RF3-N-D (106039)	VLBLNN01450400	7	1	Ball+Needle	4"	RF	150	AISI 316/316L NACE MR01.75	29 (421)	N.L	21 (305)	N.L	6 (87)	N.L	21 (305)	N.L	YES	A	24F06-1334-01-13	03-Dec-24
323	410	00.VSF.2681/V	DBB-898-HR-40-H300RF3-H-D (106016)	VLBBNN07201H00	1	1	Ball+Needle	1 ½"	RF	300	AISI 316/316L NACE MR01.75	75 (1088)	N.L	55 (798)	N.L	6 (87)	N.L	55 (798)	N.L	YES	A	24F06-1334-01-13	03-Dec-24

INDRA SRL dichiara che le valvole fornite sono conformi ai requisiti stabiliti dalla API 598 - ASME B16.34 - 2014/68/UE PED Cert. Modulo H emesso da TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948

INDRA SRL declares that the supplied valves are in conformity with the requirements of API 598 - ASME B16.34 - 2014/68/UE PED Cert. Module H issued by TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948

Note / Remarks:

- CAVITY SEAT RELIEF TEST PERFORMED ON 100% RESULT:OK
- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno
  (Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)

- N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE

Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector — *Si / Yes* ☑ *No / No* ☐

Nominativo / Name .....

Timbro e Firma / Stamp and Signature x CROSSWIND 31/10/24

Data / Date .....

PROCEDURA DI COLLAUDO
(Test procedure)
PT VSP-VSF-ITA/ENG
(24-01216)

COLLAUDATO DA: TESTED BY:	MARCO FALDUTO TESTING OPERATOR	DATA / DATE: 09-Oct-24	APPROVATO DA: APPROVED BY:	PIETRO FAGNANI PRODUCTION MANAGER	DATA / DATE: 09-Oct-24

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Tel. +39 02 97298663 r.a. - Fax +39 02 97291855
E-mail: indra@indra.it - http://www.indra.it

WATER QUALITY ANALYSIS UP TO 27-Aug-2024
EN 10204-2.1 ed. 2004

Parametri / Parameters	*Valore rilevato / Detected value*	*Valori di legge / Legal limit*
Ammonio / Ammonium (NH_4^+) [mg/l]	*< 0,1*	*0,5*
Arsenico / Arsenic (As_{tot}) [µg/l]	*< 1*	*10*
Bicarbonato / Bicarbonate (HCO_3^-) [mg/l]	*317*	*Non previsto / Not expected*
Calcio / Calcium (Ca^{2+}) [mg/l]	*87*	*Non previsto / Not expected*
Cloruri / Chlorides (Cl^-) [mg/l]	*12*	*250*
Composti organoalogenati / Organohalogen compounds [µg/l]	*<1*	*30*
Conducibilità / Conductivity (µS/cm)	*501*	*2500*
Cromo / Chromium [µg/l]	*<5*	*50*
Durezza Totale / Total hardness [°f]	*30*	*Non previsto / Not expected*
Fluoruri / Fluorides (F^-) [mg/l]	*<0,2*	*1,5*
Magnesio / Magnesium (Mg^{2+}) [mg/l]	*20*	*Non previsto / Not expected*
Manganese / Manganese (Mn_{tot}) [µg/l]	*< 5*	*50*
Microinquinanti tot / Micropollutants tot [µg/l]	*<0,01*	*0,5*
Nitrati / Nitrates (NO_3^-) [mg/l]	*31*	*50*
Nitriti / Nitrites (NO_2^-) [mg/l]	*<0,02*	*0,5*
Potassio / Potassium (K^+) [mg/l]	*1*	*Non previsto / Not expected*
Residuo secco a 180°C / Dry residue at 180°C [mg/l]	*361*	*1500*
Sodio / Sodium (NA^+) [mg/l]	*5*	*200*
Solfati / Sulfates (SO_4^{2-}) [mg/l]	*31*	*250*
pH / pH	*7*	*6,5 - 9,5*

* I dati corrispondono ai valori pubblicati dal laboratorio Amiacque dell'acquedotto del comune di Magenta (MI) - Italia.

* All the data correspond to the values published by the laboratory Amiacque of the Magenta's municipality aqueduct (MI) - Italy.

x CROSSWIND
9/10/24 R

	RAPPORTO DI COLLAUDO A GAS GAS TEST REPORT - INDRA VALVES -	MD-02-13-IT-UK / P Rev. 2 Data: 24-Oct-16

Nr. Certificato / *Certificate No.* 10095/AC-GT — **Data** / *Date :* 07-Oct-24 — *Rev. 0*

Cliente / *Customer :* ROSETTI MARINO SPA

Ordine Nr. / *Order Nr.* 1724000798 REV.2 — **Data** / *Date :* 26-Jun-24

Ns. commessa Nr. / *Our job Nr.* 24 01216 — **Data** / *Date :* 03-Jul-24

Ns. D.D.T. Nr. / *Our advise note Nr.* — **Data** / *Date :*

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST according to API 598 , BS EN 12266-1	FLUIDO (Fluid)	DURATA (Duration)	PRESSIONE (Pressure)	MAX. PERDITA AMMISSIBILE (BS EN 12266-1) (Max allowable leakage)	MANOMETRO N° (Gauge ID)	DATA SCADENZA (Due Date)
Shell test	Elio / Helium	15 min.	vedi sotto / see below	nessuna perdita / no leakage	vedi sotto / see below	vedi sotto / see below
High pressure closure test	Elio / Helium	vedi sotto / see below	vedi sotto / see below	vedi sotto / see below	vedi sotto / see below	vedi sotto / see below

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY) PRODUCED	QTA' (QTY) TESTED	VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi) Pressure	Shell test bar (psi) Result	High pressure closure test bar (psi) Pressure	High pressure closure test bar (psi) Result	High pressure closure test bar (psi) Duration		Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
160	160	00.VSF.2681/V	DBB-898-HR-40-H300RF3-H-D (From 106010 To 106015)	VLBBNN07201H00	6	1	Ball+Needle	1" ½	RF	300	AISI 316/316L NACE MR01.75	55 (798)	N.L	55 (798)	N.L	2 min.		YES	A	24F06-1334-01--13	03-Dec-24
260	260	00.VSF.2700/V	SBB-798-HR-100-N150RF3-N-D (From 106035 To 106041)	VLBLNN01450400	7	1	Ball+Needle	4"	RF	150	AISI 316/316L NACE MR01.75	21 (305)	N.L	21 (305)	N.L	2 min.		YES	A	24F06-1334-01--13	03-Dec-24
323	410	00.VSF.2681/V	DBB-898-HR-40-H300RF3-H-D (106016)	VLBBNN07201H00	1	1	Ball+Needle	1" ½	RF	300	AISI 316/316L NACE MR01.75	55 (798)	N.L	55 (798)	N.L	2 min.		YES	A	24F06-1334-01--13	03-Dec-24

Note / Remarks:

- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno
  (Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)
- *N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE*

Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector — *Si / Yes* ☐ *No / No* ☑

Nominativo / Name .....

Data / Date .....

Timbro e Firma / Stamp and Signature CROSSWIND 23/10/24

PROCEDURA DI COLLAUDO
(Test procedure)
PGT/VSP-VSF
(24-01216)

COLLAUDATO DA: TESTED BY:	MARCO FALDUTO TESTING OPERATOR	DATA / DATE: 07-Oct-24	APPROVATO DA: APPROVED BY:	PIETRO FAGNANI PRODUCTION MANAGER	DATA / DATE: 07-Oct-24

indra VALVES - ITALY	**RAPPORTO DI COLLAUDO "PED"** **"PED" TEST REPORT** **- INDRA VALVES -**	**MD-02-09-IT-UK** **Rev. 8** **Data: 24-Mar-23**

Nr. Certificato / *Certificate No.* 10095/AC — **Data** / *Date :* 07-Oct-24 — *Rev. 0*

Cliente / *Customer :* ROSETTI MARINO SPA

Ordine Nr. / *Order Nr.* 1724000798 REV.2 — **Data** / *Date :* 26-Jun-24

Ns. commessa Nr. / *Our job Nr.* 24 01216 — **Data** / *Date :* 03-Jul-24

Ns. D.D.T. Nr. / *Our advise note Nr.* — **Data** / *Date :*

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST (according to API 598, API 6D & 2014/68/UE PED)	*FLUIDO (Fluid)*	*DURATA (Duration)*	*PRESSIONE (Pressure)*	*MAX. PERDITA AMMISSIBILE (ISO 5208) (Max allowable leakage)*	*MANOMETRO N° (Gauge ID)*	*DATA SCADENZA (Due Date)*
Shell test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*
High pressure closure test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*
Low pressure closure test (only for ball valves)	*Aria / Air*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*327268-79*	*15-Jan-25*
Back seat test (only for needle valves)	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY) PRODUCED	QTA' (QTY) TESTED	VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi) Pressure	Shell test Result	High pressure closure test bar (psi) Pressure	High pressure closure test Result	Low pressure closure test bar (psi) Pressure	Low pressure closure test Result	Back seat test bar (psi) Pressure	Back seat test Result	Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
160	*160*	*00.VSF.2681/V*	*DBB-898-HR-40-H300RF3-H-D (From 106010 To 106015)*	*VLBBNN07201H00*	*6*	*100%*	*Ball+Needle*	*1 ½"*	*RF*	*300*	*AISI 316/316L NACE MR01.75*	75 (1088)	N.L	55 (798)	N.L	6 (87)	N.L	55 (798)	N.L	YES	A	24F06-1334-01--13	03-Dec-24
260	*260*	*00.VSF.2700/V*	*SBB-798-HR-100-N150RF3-N-D (From 106035 To 106041)*	*VLBLNN01450400*	*7*	*100%*	*Ball+Needle*	*4"*	*RF*	*150*	*AISI 316/316L NACE MR01.75*	29 (421)	N.L	21 (305)	N.L	6 (87)	N.L	21 (305)	N.L	YES	A	24F06-1334-01--13	03-Dec-24
323	*410*	*00.VSF.2681/V*	*DBB-898-HR-40-H300RF3-H-D (106016)*	*VLBBNN07201H00*	*1*	*100%*	*Ball+Needle*	*1 ½"*	*RF*	*300*	*AISI 316/316L NACE MR01.75*	75 (1088)	N.L	55 (798)	N.L	6 (87)	N.L	55 (798)	N.L	YES	A	24F06-1334-01--13	03-Dec-24

INDRA SRL dichiara che le valvole fornite sono conformi ai requisiti stabiliti dalla API 598 - ASME B16.34 - 2014/68/UE PED Cert. Modulo H emesso da TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948

INDRA SRL declares that the supplied valves are in conformity with the requirements of API 598 - ASME B16.34 - 2014/68/UE PED Cert. Module H issued by TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948

Note / Remarks:

- CAVITY SEAT RELIEF TEST PERFORMED ON 100% RESULT:OK
- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno
  (Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)
- *N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE*

Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector — *Si / Yes* ☐ *No / No* ☑

Nominativo / Name .....

Data / Date .....

Timbro e Firma / Stamp and Signature

CROSSWIND 23/10/24

PROCEDURA DI COLLAUDO
(Test procedure)

PT VSP-VSF-ITA/ENG
(24-01216)

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** **TESTING OPERATOR**	DATA / DATE: 07-Oct-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** **PRODUCTION MANAGER**	DATA / DATE: 07-Oct-24

indra VALVES - ITALY

RAPPORTO DI COLLAUDO COPPIA DI MANOVRA E RESISTENZA ELETTRICA
TORQUE AND ELECTRICAL RESISTANCE REPORT
- INDRA VALVES -

MD-02-14-IT-UK / P
Rev. 0
Data: 01-Jul-14

Nr. Certificato / *Certificate No.*	10095/AC-TET-A	**Data** / *Date :*	07-Oct-24	*Rev. 0*
Cliente / *Customer :*	ROSETTI MARINO SPA			
Ordine Nr. / *Order Nr.*	1724000798 REV.2	**Data** / *Date :*	26-Jun-24	
Ns. commessa Nr. / *Our job Nr.*	24 01216	**Data** / *Date :*	03-Jul-24	
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*		

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST according to API 598 , API 6D, BS EN 12266-1	*VALORE MASSIMO (Limit)*	*STRUMENTO DI MISURA (Gauge Instrument)*	*SCADENZA (Due Date)*
Torque test			
Electrical resistance test	*10 Ohm*	*Digital Multimeter DMM249 13290*	*31-May-25*

POS. (ITEM)	CODICE (CODE)	DESCRIZIONE (DESCRIPTION)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY) PRODUCED	TESTED
160, 323	*00.VSF.2681/V*	*DBB-898-HR-40-H300RF3-H-D*	*VLBBNN07201H00*	*7*	*2*

n° SERIALE (Serial n°)	LATO (Side)	Torque test Nm Value	Torque test Nm Result	Electrical resistance Body-stem Ohm Value	Electrical resistance Body-stem Ohm Result	Electrical resistance Body-ball Ohm Value	Electrical resistance Body-ball Ohm Result
106010	*A*			0,3	OK	0,4	OK
	B			0,4	OK	0,5	OK
106016	*A*			0,4	OK	0,5	OK
	B			0,5	OK	0,5	OK

n° SERIALE (Serial n°)	LATO (Side)	Torque test Nm Value	Torque test Nm Result	Electrical resistance Body-stem Ohm Value	Electrical resistance Body-stem Ohm Result	Electrical resistance Body-ball Ohm Value	Electrical resistance Body-ball Ohm Result

n° SERIALE (Serial n°)	LATO (Side)	Torque test Nm Value	Torque test Nm Result	Value	Result	Value	Result

Note / ***Remarks:***
- Test Antistatico eseguito su 1 pz. per posizione (Antistatic test executed on 1 pc. per item)

x CROSSWIND 23/10/24

PROCEDURA DI COLLAUDO *(Test procedure)*
PT/VSP-VSF-HP / ATP_00

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** TESTING OPERATOR	DATA / DATE:	07-Oct-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** PRODUCTION MANAGER	DATA / DATE: 07-Oct-24

ROSETTI MARINO ITEM 430

COD. VLBLNN01370100

TAG:

BLPH-MV-469, BLPH-MV-470, BLPH-MV-471

INDRA ITEM 324

COD. 00.VSF.2784(T)

indra VALVES - ITALY	**RAPPORTO DI COLLAUDO** ***TEST REPORT*** ***- INDRA VALVES -***	**MD-02-05-IT-UK / P** **Rev. 24** **Data: 24-Mar-23**

Nr. Certificato / *Certificate No.* 10133/AC — **Data** / *Date :* 16-Oct-24 — *Rev. 0*

Cliente / *Customer :* ROSETTI MARINO SPA

Ordine Nr. / *Order Nr.* 1724000798 REV.2 — **Data** / *Date :* 26-Jun-24

Ns. commessa Nr. / *Our job Nr.* 24 01216 — **Data** / *Date :* 03-Jul-24

Ns. D.D.T. Nr. / *Our advise note Nr.* — **Data** / *Date :*

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST (according to API 598 & API 6D)	*FLUIDO (Fluid)*	*DURATA (Duration)*	*PRESSIONE (Pressure)*	*MAX. PERDITA AMMISSIBILE (ISO 5208) (Max allowable leakage)*	*MANOMETRO N° (Gauge ID)*	*DATA SCADENZA (Due Date)*
Shell test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*
High pressure closure test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*
Low pressure closure test (only for ball valves)	*Aria / Air*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*24F06-1334-01--13*	*03-Dec-24*
Back seat test (only for needle valves)	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY)		VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi)		High pressure closure test bar (psi)		Low pressure closure test bar (psi)		Back seat test bar (psi)		Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
					PRODUCED	TESTED						Pressure	Result	Pressure	Result	Pressure	Result	Pressure	Result				
60	60	00.VSF.2685(T)	SB-598-20-E150RF3-E (105969)	VBC0NN24433Q00	3	1	Ball	¾"	RF	150	F55 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
70	70	00.VSF.2688(T)	SB-598-25-F150RF3-F (105970)	VBC0NN24440100	2	1	Ball	1"	RF	150	F55 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
90	90	00.VSF.2686/V	SB-598-20-E150RF3-E (105974)	VBC0NN24703Q00	1	1	Ball	¾"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
100	100	00.VSF.2770/V	SB-598-25-F150RF3-F (105975)	VBC0NN24710100	2	1	Ball	1"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
110	110	00.VSF.2689/V	SB-598-25-F150RF3-F (105977)	VBC0NN24710100	1	1	Ball	1"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
200	200	00.VSF.2697/V	SBB-798-25-F150RF3-F-D (106026)	VLBLNN01280100	3	1	Ball+Needle	1"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	22 (319)	N.L	YES	A	24F06-1334-01--13	03-Dec-24
324	430	00.VSF.2784(T)	SBB-798-25-F150RF3-F-D (106900)	VLBLNN01370100	3	1	Ball+Needle	1"	RF	150	F55 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	22 (319)	N.L	YES	A	24F06-1334-01--13	03-Dec-24

Note / Remarks:
- CAVITY SEAT RELIEF TEST PERFORMED ON 100% RESULT:OK
- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno
(Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)
- *N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE*

Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector — *Si / Yes* ☑ *No / No* ☐

Nominativo / Name .....

Data / Date .....

Timbro e Firma / Stamp and Signature CROSSWIND 16/10/24

PROCEDURA DI COLLAUDO
(Test procedure)
PT VSP-VSF-ITA/ENG
(24-01216)

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** **TESTING OPERATOR**	DATA / DATE: 16-Oct-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** **PRODUCTION MANAGER**	DATA / DATE: 16-Oct-24

indra VALVES - ITALY

RAPPORTO DI COLLAUDO "PED"
"PED" TEST REPORT
- INDRA VALVES -

MD-02-09-IT-UK
Rev. 8
Data: 24-Mar-23

Nr. Certificato / *Certificate No.*	10134/AC	**Data** / *Date :*	16-Oct-24
Cliente / *Customer :*	ROSETTI MARINO SPA		
Ordine Nr. / *Order Nr.*	1724000798 REV.2	**Data** / *Date :*	26-Jun-24
Ns. commessa Nr. / *Our job Nr.*	24 01216	**Data** / *Date :*	03-Jul-24
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*	

Rev. 0

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST (according to API 598, API 6D & 2014/68/UE PED)	FLUIDO (Fluid)	DURATA (Duration)	PRESSIONE (Pressure)	MAX. PERDITA AMMISSIBILE (ISO 5208) (Max allowable leakage)	MANOMETRO N° (Gauge ID)	DATA SCADENZA (Due Date)
Shell test	Acqua / Water	2 min.	vedi sotto / see below	nessuna perdita / no leakage	vedi sotto / see below	vedi sotto / see below
High pressure closure test	Acqua / Water	2 min.	vedi sotto / see below	vedi sotto / see below	vedi sotto / see below	vedi sotto / see below
Low pressure closure test (only for ball valves)	Aria / Air	2 min.	vedi sotto / see below	vedi sotto / see below	24F06-1334-01-13	03-Dec-24
Back seat test (only for needle valves)	Acqua / Water	2 min.	vedi sotto / see below	nessuna perdita / no leakage	vedi sotto / see below	vedi sotto / see below

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY) PRODUCED	QTA' (QTY) TESTED	VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi) Pressure	Shell test Result	High pressure closure test bar (psi) Pressure	High pressure closure test Result	Low pressure closure test bar (psi) Pressure	Low pressure closure test Result	Back seat test bar (psi) Pressure	Back seat test Result	Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
80	80	00.VSF.2692(T)	SB-598-50-J150RF3-J (105973)	VBC0NN24460200	2	1	Ball	2"	RF	150	F55 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
120	120	00.VSF.2691/V	SB-598-40-H150RF3-H (105978)	VBC0NN24721H00	1	1	Ball	1 ½"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24
210	210	00.VSF.2699/V	SBB-798-40-H150RF3-H-D (106027)	VLBLNN01291H00	1	1	Ball+Needle	1 ½"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	22 (319)	N.L	YES	A	24F06-1334-01--13	03-Dec-24
230	230	00.VSF.2698(T)	SBB-798-40-H150RF3-H-D (106031)	VLBLNN01381H00	2	1	Ball+Needle	1 ½"	RF	150	F55 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	22 (319)	N.L	YES	A	24F06-1334-01--13	03-Dec-24
321	390	00.VSF.2716/V	SB-598-50-L150RF3-L (106898)	VBD0NN16610300	1	1	Ball	3"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24

INDRA SRL dichiara che le valvole fornite sono conformi ai requisiti stabiliti dalla API 598 - ASME B16.34 - 2014/68/UE PED Cert. Modulo H emesso da TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948
INDRA SRL declares that the supplied valves are in conformity with the requirements of API 598 - ASME B16.34 - 2014/68/UE PED Cert. Module H issued by TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948

Note / Remarks:
- CAVITY SEAT RELIEF TEST PERFORMED ON 100% RESULT:OK
- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno
(Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)
- *N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE*

Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector — *Si / Yes* ☑ *No / No* ☐

Nominativo / Name .....

Timbro e Firma / Stamp and Signature x CROSSWIND 16/10/24

Data / Date .....

PROCEDURA DI COLLAUDO
(Test procedure)
PT VSP-VSF-ITA/ENG
(24-01216)

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** TESTING OPERATOR	DATA / DATE:	16-Oct-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** PRODUCTION MANAGER	DATA / DATE:	16-Oct-24

indra VALVES - ITALY	**RAPPORTO DI COLLAUDO "PED"** **"PED" TEST REPORT** **- INDRA VALVES -**	**MD-02-09-IT-UK** **Rev. 8** **Data: 24-Mar-23**

Nr. Certificato / *Certificate No.* 10135/AC — **Data** / *Date :* 16-Oct-24 — *Rev. 0*

Cliente / *Customer :* ROSETTI MARINO SPA

Ordine Nr. / *Order Nr.* 1724000798 REV.2 — **Data** / *Date :* 26-Jun-24

Ns. commessa Nr. / *Our job Nr.* 24 01216 — **Data** / *Date :* 03-Jul-24

Ns. D.D.T. Nr. / *Our advise note Nr.* — **Data** / *Date :*

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST (according to API 598, API 6D & 2014/68/UE PED)	FLUIDO (Fluid)	DURATA (Duration)	PRESSIONE (Pressure)	MAX. PERDITA AMMISSIBILE (ISO 5208) (Max allowable leakage)	MANOMETRO N° (Gauge ID)	DATA SCADENZA (Due Date)
Shell test	Acqua / Water	5 min.	vedi sotto / see below	nessuna perdita / no leakage	vedi sotto / see below	vedi sotto / see below
High pressure closure test	Acqua / Water	5 min.	vedi sotto / see below	vedi sotto / see below	vedi sotto / see below	vedi sotto / see below
Low pressure closure test (only for ball valves)	Aria / Air	5 min.	vedi sotto / see below	vedi sotto / see below	24F06-1334-01--13	03-Dec-24
Back seat test (only for needle valves)	Acqua / Water	5 min.	vedi sotto / see below	nessuna perdita / no leakage	vedi sotto / see below	vedi sotto / see below

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY) PRODUCED	QTA' (QTY) TESTED	VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi) Pressure	Shell test Result	High pressure closure test bar (psi) Pressure	High pressure closure test Result	Low pressure closure test bar (psi) Pressure	Low pressure closure test Result	Back seat test bar (psi) Pressure	Back seat test Result	Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
270	270	00.VSFT.0224/V	SB-598-TRU-HR-150-Q150RF3-Q (106048)	VLBLNN01460600	1	1	Ball	6"	RF	150	AISI 316/316L NACE MR01.75	29 (421)	N.L	21 (305)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01--13	03-Dec-24

INDRA SRL dichiara che le valvole fornite sono conformi ai requisiti stabiliti dalla API 598 - ASME B16.34 - 2014/68/UE PED Cert. Modulo H emesso da TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948

INDRA SRL declares that the supplied valves are in conformity with the requirements of API 598 - ASME B16.34 - 2014/68/UE PED Cert. Module H issued by TUV Italia srl Via G.Carducci,125 - Sesto S.Giovanni (MI) CE0948

Note / Remarks:

- CAVITY SEAT RELIEF TEST PERFORMED ON 100% RESULT:OK
- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno

(Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)

- *N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE*

Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector — *Si / Yes* ☑ *No / No* ☐

Nominativo / Name .....

Timbro e Firma / Stamp and Signature 16/10/24 x CROSSWIND

Data / Date .....

PROCEDURA DI COLLAUDO
(Test procedure)
PT VSP-VSF-ITA/ENG
(24-01216)

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** **TESTING OPERATOR**	DATA / DATE: 16-Oct-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** **PRODUCTION MANAGER**	DATA / DATE: 16-Oct-24

20013 Magenta (MI) Italy - Via Novara, 10/B-C
Tel. +39 02 97298663 r.a. - Fax +39 02 97291855
E-mail: indra@indra.it - http://www.indra.it

REV. 1 - 30-May-2018

WATER QUALITY ANALYSIS UP TO 27-Aug-2024
EN 10204-2.1 ed. 2004

Parametri / Parameters	*Valore rilevato / Detected value*	*Valori di legge / Legal limit*
Ammonio / Ammonium (NH_4^+) [mg/l]	*< 0,1*	*0,5*
Arsenico / Arsenic (As_{tot}) [µg/l]	*< 1*	*10*
Bicarbonato / Bicarbonate (HCO_3^-) [mg/l]	*317*	*Non previsto / Not expected*
Calcio / Calcium (Ca^{2+}) [mg/l]	*87*	*Non previsto / Not expected*
Cloruri / Chlorides (Cl^-) [mg/l]	*12*	*250*
Composti organoalogenati / Organohalogen compounds [µg/l]	*<1*	*30*
Conducibilità / Conductivity (µS/cm)	*501*	*2500*
Cromo / Chromium [µg/l]	*<5*	*50*
Durezza Totale / Total hardness [°f]	*30*	*Non previsto / Not expected*
Fluoruri / Fluorides (F^-) [mg/l]	*<0,2*	*1,5*
Magnesio / Magnesium (Mg^{2+}) [mg/l]	*20*	*Non previsto / Not expected*
Manganese / Manganese (Mn_{tot}) [µg/l]	*< 5*	*50*
Microinquinanti tot / Micropollutants tot [µg/l]	*<0,01*	*0,5*
Nitrati / Nitrates (NO_3^-) [mg/l]	*31*	*50*
Nitriti / Nitrites (NO_2^-) [mg/l]	*<0,02*	*0,5*
Potassio / Potassium (K^+) [mg/l]	*1*	*Non previsto / Not expected*
Residuo secco a 180°C / Dry residue at 180°C [mg/l]	*361*	*1500*
Sodio / Sodium (NA^+) [mg/l]	*5*	*200*
Solfati / Sulfates (SO_4^{2-}) [mg/l]	*31*	*250*
pH / pH	*7*	*6,5 - 9,5*

* I dati corrispondono ai valori pubblicati dal laboratorio Amiacque dell'acquedotto del comune di Magenta (MI) - Italia.

* All the data correspond to the values published by the laboratory Amiacque of the Magenta's municipality aqueduct (MI) - Italy.

indra VALVES - ITALY	**RAPPORTO DI COLLAUDO** ***TEST REPORT*** ***- INDRA VALVES -***	**MD-02-05-IT-UK / P** **Rev. 24** **Data: 24-Mar-23**

Nr. Certificato / *Certificate No.* 10123/AC — **Data** / *Date :* 14-Oct-24 — *Rev. 0*

Cliente / *Customer :* ROSETTI MARINO SPA

Ordine Nr. / *Order Nr.* 1724000798 REV.2 — **Data** / *Date :* 26-Jun-24

Ns. commessa Nr. / *Our job Nr.* 24 01216 — **Data** / *Date :* 03-Jul-24

Ns. D.D.T. Nr. / *Our advise note Nr.* — **Data** / *Date :*

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST (according to API 598 & API 6D)	*FLUIDO (Fluid)*	*DURATA (Duration)*	*PRESSIONE (Pressure)*	*MAX. PERDITA AMMISSIBILE (ISO 5208) (Max allowable leakage)*	*MANOMETRO N° (Gauge ID)*	*DATA SCADENZA (Due Date)*
Shell test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*
High pressure closure test	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*	*vedi sotto / see below*
Low pressure closure test (only for ball valves)	*Aria / Air*	*2 min.*	*vedi sotto / see below*	*vedi sotto / see below*	*24F06-1334-01-13*	*03-Dec-24*
Back seat test (only for needle valves)	*Acqua / Water*	*2 min.*	*vedi sotto / see below*	*nessuna perdita / no leakage*	*vedi sotto / see below*	*vedi sotto / see below*

INDRA POS. (ITEM)	CUSTOMER POS. (ITEM)	CODICE INDRA (INDRA CODE)	MODELLO INDRA / NR. DI SERIE (INDRA MODEL / SERIAL NUMBER)	CODICE CLIENTE (CUSTOMER CODE)	QTA' (QTY)		VALVE TYPE	NPS	FLANGE TYPE	RATING	BODY MATERIAL	Shell test bar (psi)		High pressure closure test bar (psi)		Low pressure closure test bar (psi)		Back seat test bar (psi)		Bidirectional Test	Max. allowable leakage (rate)	Gauge ID	Due Date
					PRODUCED	TESTED						Pressure	Result	Pressure	Result	Pressure	Result	Pressure	Result				
60	60	00.VSF.2685(T)	SB-598-20-E150RF3-E (From 105967 To 105969)	VBC0NN24433Q00	3	100%	Ball	¾"	RF	150	F55 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01-13	03-Dec-24
70	70	00.VSF.2688(T)	SB-598-25-F150RF3-F (From 105970 To 105971)	VBC0NN24440100	2	100%	Ball	1"	RF	150	F55 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01-13	03-Dec-24
90	90	00.VSF.2686/V	SB-598-20-E150RF3-E (105974)	VBC0NN24703Q00	1	100%	Ball	¾"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01-13	03-Dec-24
100	100	00.VSF.2770/V	SB-598-25-F150RF3-F (From 105975 To 105976)	VBC0NN24710100	2	100%	Ball	1"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01-13	03-Dec-24
110	110	00.VSF.2689/V	SB-598-25-F150RF3-F (105977)	VBC0NN24710100	1	100%	Ball	1"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	N/A		YES	A	24F06-1334-01-13	03-Dec-24
200	200	00.VSF.2697/V	SBB-798-25-F150RF3-F-D (From 106024 To 106026)	VLBLNN01280100	3	100%	Ball+Needle	1"	RF	150	A350 LF2 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	22 (319)	N.L	YES	A	24F06-1334-01-13	03-Dec-24
324	430	00.VSF.2784(T)	SBB-798-25-F150RF3-F-D (From 106900 To 106902)	VLBLNN01370100	3	100%	Ball+Needle	1"	RF	150	F55 NACE	30 (435)	N.L	22 (319)	N.L	6 (87)	N.L	22 (319)	N.L	YES	A	24F06-1334-01-13	03-Dec-24

Note / Remarks:
- CAVITY SEAT RELIEF TEST PERFORMED ON 100% RESULT:OK
- I prodotti contrassegnati con "O" e confezionati in busta sigillata sono stati sgrassati per impiego su ossigeno
(Products signed with "O" and delivered in sealed bag have been degreased for oxygen service)
- *N.L. = NO LEAKAGE (NESSUNA PERDITA) OK = LEAKAGE < MAX ALLOWABLE*
Equipment Used MTS4-240A S/N 35-1334

Ispettore / Inspector — *Si / Yes* ☐ *No / No* ☑

Nominativo / Name — *Timbro e Firma / Stamp and Signature*

Data / Date

PROCEDURA DI COLLAUDO
(Test procedure)
PT VSP-VSF-ITA/ENG
(24-01216)

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** TESTING OPERATOR	DATA / DATE:	14-Oct-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** PRODUCTION MANAGER	DATA / DATE:	14-Oct-24

indra VALVES - ITALY	**RAPPORTO DI COLLAUDO COPPIA DI MANOVRA E RESISTENZA ELETTRICA** ***TORQUE AND ELECTRICAL RESISTANCE REPORT*** ***- INDRA VALVES -***	**MD-02-14-IT-UK / P** **Rev. 0** **Data: 01-Jul-14**

Nr. Certificato / *Certificate No.*	**10123/AC-TET-G**	**Data** / *Date :*	**14-Oct-24** *Rev. 0*
Cliente / *Customer :*	**ROSETTI MARINO SPA**		
Ordine Nr. / *Order Nr.*	**1724000798 REV.2**	**Data** / *Date :*	**26-Jun-24**
Ns. commessa Nr. / *Our job Nr.*	**24 01216**	**Data** / *Date :*	**03-Jul-24**
Ns. D.D.T. Nr. / *Our advise note Nr.*		**Data** / *Date :*	

CONDIZIONI DI PROVA / CONDITIONS TEST

TEST ***according to API 598 , API 6D, BS EN 12266-1***	***VALORE MASSIMO*** ***(Limit)***	***STRUMENTO DI MISURA*** ***(Gauge Instrument)***	***SCADENZA*** ***(Due Date)***
Torque test			
Electrical resistance test	*10 Ohm*	*Digital Multimeter DMM249 13290*	*31-May-25*

POS. (ITEM)	**CODICE** (CODE)	**DESCRIZIONE** (DESCRIPTION)	**CODICE CLIENTE** (CUSTOMER CODE)	**QTA'** (QTY) PRODUCED	TESTED
324	***00.VSF.2784(T)***	***SBB-798-25-F150RF3-F-D***	***VLBLNN01370100***	***3***	***1***

n° SERIALE (Serial n°)	**LATO** (Side)	*Torque test Nm*		*Electrical resistance Body-stem Ohm*		*Electrical resistance Body-ball Ohm*	
		Value	Result	Value	Result	Value	Result
106900	***A***			0,4	OK	0,8	OK

n° SERIALE (Serial n°)	**LATO** (Side)	*Torque test Nm*		*Electrical resistance Body-stem Ohm*		*Electrical resistance Body-ball Ohm*	
		Value	Result	Value	Result	Value	Result

n° SERIALE (Serial n°)	**LATO** (Side)	*Torque test Nm*					
		Value	Result	Value	Result	Value	Result

Note / ***Remarks:***
- Test Antistatico eseguito su 1 pz. per posizione (Antistatic test executed on 1 pc. per item)

Indax CROSSWIND A/W

PROCEDURA DI COLLAUDO *(Test procedure)*
PT/VSP-VSF-HP / ATP_00

COLLAUDATO DA: TESTED BY:	**MARCO FALDUTO** **TESTING OPERATOR**	DATA / DATE:	14-Oct-24	APPROVATO DA: APPROVED BY:	**PIETRO FAGNANI** **PRODUCTION MANAGER**
					DATA / DATE: 14-Oct-24