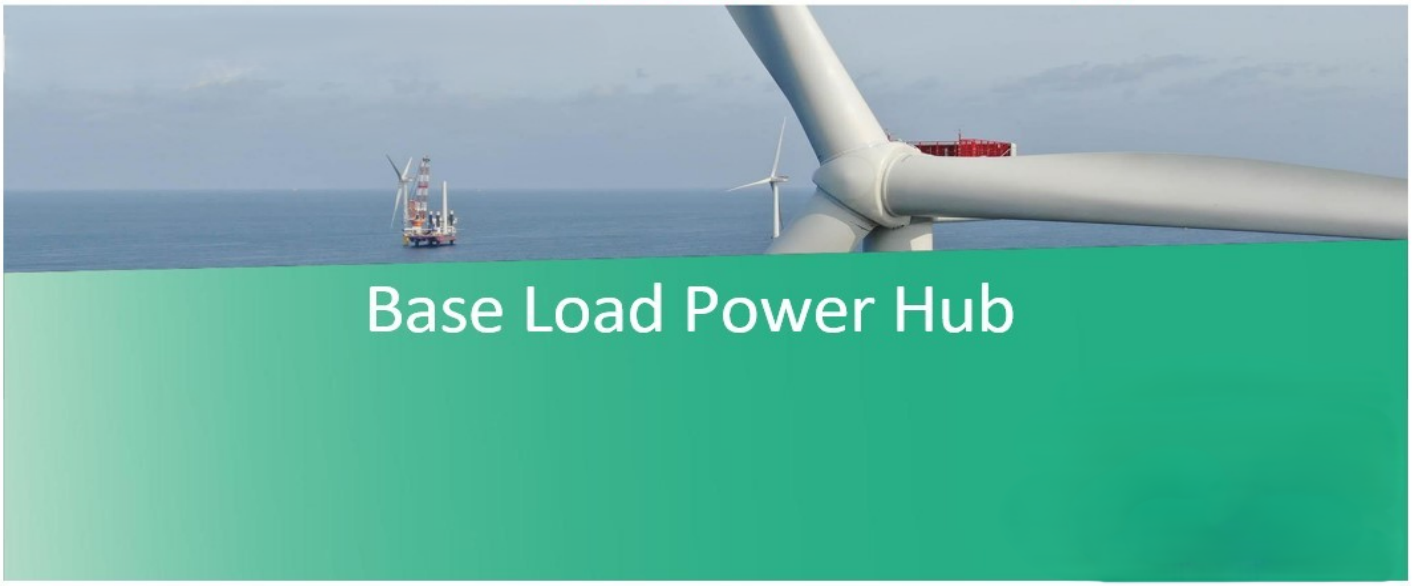
CROSSWIND

ROSETTI MARINO

PROVERLIS

PROJECT **123A90 - HOLLANDSE KUST NOORD WIND PARK**
BLPH Project



MECHANICAL COMPLETION DOSSIER (ONSHORE)

SYSTEM	50 Fresh Water Systems
SUBSYSTEM	50-00 Seawater Intake System (Lifting Pumps)

CROSSWIND	123A90 - HOLLANDSE KUST NOORD WIND PARK BLPH Project MECHANICAL COMPLETION DOSSIER INDEX	ROSETTI MARINO

Sub System N°:	50-00	Tick as appropriate	ONSHORE	O
Description:	Seawater Intake System (Lifting Pumps)		OFFSHORE	NA

1.	***READY FOR COMMISSIONING CERTIFICATE*** *Ready For Commissioning Certificate (RFC)*	O
2.	***CONSOLIDATED PUNCH LISTS*** *Cleared and Residual Items*	O
3.	***SYSTEM/SUB-SYSTEM LIMIT DRAWINGS*** *Mark-up drawings showing the limits of the relevant System/Sub-System*	O
4.	***MECHANICAL COMPLETION STATUS INDEX – BUILDING DISCIPLINE*** *Building Sub-System Status Index (Print out) and Check/Test sheets*	NA
5.	***MECHANICAL COMPLETION STATUS INDEX – ELECTRICAL DISCIPLINE*** *Electrical Sub-System Status Index (Print out) and Check/Test Sheets* *Hazardous Area Equipment Detailed Inspection*	O
6.	***MECHANICAL COMPLETION STATUS INDEX - INSTRUMENTAL DISCIPLINE*** *Instrumental Sub-System Status Index (Print out) and Check/Test Sheets*	O
7.	***MECHANICAL COMPLETION STATUS INDEX - MECHANICAL DISCIPLINE*** *Mechanical SubSystem Status Index (Print out) and Check/Test Sheets*	O
8.	***MECHANICAL COMPLETION STATUS INDEX - TELECOMMUNICATION DISCIPLINE*** *Telecommunication Sub-System Status Index (Print out) and Check/Test Sheets*	NA
9.	***MECHANICAL COMPLETION STATUS INDEX - HVAC DISCIPLINE*** *HVAC Sub-System Status Index (Print out) and Check/Test Sheets*	NA
10.	***MECHANICAL COMPLETION STATUS INDEX - PIPING DISCIPLINE*** *Piping Sub-System Status Index and Check/Test Sheets*	O
11.	***MECHANICAL COMPLETION INDEX - SAFETY DISCIPLINE*** *Safety Sub-System Status Index (Print out) and Check/Test Sheets*	NA
12.	***FAT / VENDOR REPORTS*** *Fat reports issued by vendors and/or vendor reports*	OK
13.	***MECHANICAL COMPLETION CHANGES / MARK-UPS*** *A copy of the changes initiated during the Mechanical Completion process pertaining to the relevant Sub-System will be incorporated in this section*	NA

Note: Under the generic terminology “Building” are also covered the following disciplines: **Structural, Painting**

Under the generic terminology “Instrumental” is also covered the following discipline: **Fire & Gas**

ROSETTI MARINO

123A90 - HOLLANDSE KUST NOORD WIND PARK
BLPH Project

CROSSWIND

Ready For Commissioning (RFC) Certificate

COMPLETE		PARTIAL	●

Revision:	1		Issued on:	2025-05-05	
System:	50	/	Fresh Water Systems		
SubSystem:	50-00	/	Seawater Intake System (Lifting Pumps)		

1	COMPANY has, at its option and if required, reviewed the mechanical completion associated with the above-named system/sub-system of the SCOPE and observed that such functional sub-system has been brought into readiness for commencement of the associated pre-commissioning and commissioning activities, but for the outstanding punch list items, if any, attached and referred in this Certificate.
2	Issuance of this Certificate shall not release CONTRACTOR from any of his obligations, responsibilities or liabilities under the CONTRACT.
3	Mechanical Completion Status Index attached (per Discipline) Punch List report attached (Outstanding and Cleared)

PUNCH LIST	PENDING POINTS	
Note: All Category "A" Items must be cleared prior to issue a Ready For Commissioning (RFC) Certificate	A: 1	B: 9

REMARKS: Partial RFC, see attached list of task and inspection to be completed

	CONTRACTOR Construction Manager	**CONTRACTOR** Commissioning Manager	**COMPANY** Construction Lead (if required)	**COMPANY** Commissioning Lead (if required)
Name	Wolmer Borghi	Anthony Iveson	CPY NOT PRESENT	CPY NOT PRESENT
Date	2025-05-06	2025-05-12	2025-05-12	2025-05-12
Signature	PROVERLIS Digitaly signed by Wolmer Borghi 2025-05-06T09:50:26.356Z	PROVERLIS Digitaly signed by Anthony Iveson 2025-05-12T08:12:21.870Z	PROVERLIS Digitaly signed by CPY NOT PRESEN 2025-05-12T09:16:32.874Z	PROVERLIS Digitaly signed by CPY NOT PRESEN 2025-05-12T09:16:38.297Z

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 50-00 & process: MC

Building	50-00 Seawater Intake System (Lifting Pumps)						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
B-50013A	Sea Water Lift Pumps Caisson	ONSHORE	C10004525	CQX01	100	2025-01-09	RFC 1
B-50013B	Sea Water Lift Pumps Caisson	ONSHORE	C10004524	CQX01	100	2025-01-09	RFC 1

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 50-00 & process: MC

Electrical	50-00 Seawater Intake System (Lifting Pumps)						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
83018-CEL	LV Switchgear / Sea water intake pump A	ONSHORE	C10000539	CPX09	100	2025-02-27	-
		OFFSHORE	C10004919	CPX09	0	-	-
83019-CEL	LV Switchgear / Sea water intake pump B	ONSHORE	C10000540	CPX09	100	2025-02-27	-
		OFFSHORE	C10004920	CPX09	0	-	-
PM-50001A	Electric Motor for sea water pump	OFFSHORE	C10001846	CPX13	0	-	-
PM-50001B	Electric Motor for sea water pump	OFFSHORE	C10001847	CPX13	0	-	-

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 50-00 & process: MC

Instrumental	50-00 Seawater Intake System (Lifting Pumps)						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
50-PSV-006	Pressure Safety Valve	ONSHORE	C10004536	CJX03	100	2025-02-28	RFC 1
50-PSV-007	Pressure Safety Valve	ONSHORE	C10004537	CJX03	100	2025-02-28	RFC 1
50-PSV-011	Pressure Safety Valve	ONSHORE	C10004480	CJX03	100	2025-02-28	RFC 1
50-PT-001	Pressure Transmitter - Sea Water from Pump P-50001A	ONSHORE	C10000901	CJX08	100	2025-02-07	RFC 1
		ONSHORE	C10000941	TJX04	100	2024-10-02	RFC 1
50-PT-002	Pressure Transmitter - Sea Water from Pump P-50001B	ONSHORE	C10000902	CJX08	100	2025-02-07	RFC 1
		ONSHORE	C10000942	TJX04	100	2024-10-02	RFC 1
50-RO-001	Restriction Orifice - Sea water recirculation from pump P-50001A	ONSHORE	C10001216	CJX11	100	2025-02-21	RFC 1
		ONSHORE	C10001444	TJX11	100	2025-02-21	RFC 1
50-RO-002	Restriction Orifice - Sea water recirculation from pump P-50001B	ONSHORE	C10001217	CJX11	100	2025-02-21	RFC 1
		ONSHORE	C10001445	TJX11	100	2025-02-21	RFC 1
50-TT-001	Temperature Transmitter - Sea Water from Lift Pump P-50001A/B	ONSHORE	C10000904	CJX08	100	2025-02-21	RFC 1
		ONSHORE	C10000944	TJX04	100	2024-10-02	RFC 1
50-TW-001	Thermowell - Sea Water from Lift Pump P-50001A/B	ONSHORE	C10000906	CJX13	100	2025-02-21	RFC 1
		ONSHORE	C10001434	TJX13	100	2025-02-13	RFC 1
50-XV-001	On/Off Valve - Sea Water from Pump P-50001A	ONSHORE	C10001187	CJX23	100	2025-02-10	RFC 1
50-XV-002	On/Off Valve - Sea Water Recirculation from Pump P-50001A	ONSHORE	C10001188	CJX23	100	2025-02-10	RFC 1
50-XV-003	On/Off Valve - Sea Water from Pump P-50001B	ONSHORE	C10001189	CJX23	100	2025-02-08	RFC 1
50-XV-004	On/Off Valve - Sea Water Recirculation from Pump P-50001B	ONSHORE	C10001190	CJX23	100	2025-02-10	RFC 1
50-XY-001	Solenoid Valve - Sea Water from Pump P-50001A	ONSHORE	C10002015	CJX00	100	2025-02-10	RFC 1
50-XY-002	Solenoid Valve - Sea Water Recirculation from Pump P-50001A	ONSHORE	C10002016	CJX00	100	2025-02-10	RFC 1
50-XY-003	Solenoid Valve - Sea Water from Pump P-50001B	ONSHORE	C10002017	CJX00	100	2025-02-08	RFC 1
50-XY-004	Solenoid Valve - Sea Water Recirculation from Pump P-50001B	ONSHORE	C10002018	CJX00	100	2025-02-10	RFC 1
50-ZSHL-001	Limit Switch box - Sea Water from Pump P-50001A	ONSHORE	C10002019	CJX00	100	2025-02-10	RFC 1
50-ZSHL-002	Limit Switch box - Sea Water Recirculation from Pump P-50001A	ONSHORE	C10002020	CJX00	100	2025-02-10	RFC 1
50-ZSHL-003	Limit Switch box - Sea Water from Pump P-50001B	ONSHORE	C10002021	CJX00	100	2025-02-08	RFC 1
50-ZSHL-004	Limit Switch box - Sea Water Recirculation from Pump P-50001B	ONSHORE	C10002022	CJX00	100	2025-02-10	RFC 1
AV-63008/50-XV-001	Pneumatic Connection Air Supply - 50-XV-001	ONSHORE	C10001969	CJX06	100	2025-02-06	RFC 1
AV-63008/50-XV-002	Pneumatic Connection Air Supply - 50-XV-002	ONSHORE	C10001970	CJX06	100	2025-02-06	RFC 1

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 50-00 & process: MC

Instrumental	50-00 Seawater Intake System (Lifting Pumps)						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
AV-63008/50-XV-003	Pneumatic Connection Air Supply - 50-XV-003	ONSHORE	C10001971	CJX06	100	2025-02-06	RFC 1
AV-63008/50-XV-004	Pneumatic Connection Air Supply - 50-XV-004	ONSHORE	C10001972	CJX06	100	2025-02-06	RFC 1
C-50-PT-001/00-JE-11004	PRESSURE TRANSMITTER / MARSHALLING PCS	ONSHORE	C10000049	CJX10	100	2025-02-07	RFC 1
C-50-PT-002/00-JE-11004	PRESSURE TRANSMITTER / MARSHALLING PCS	ONSHORE	C10000050	CJX10	100	2025-02-07	RFC 1
C-50-TT-001/00-JE-11004	FLOW TRANSMITTER / MARSHALLING PCS	ONSHORE	C10000051	CJX10	100	2025-02-21	RFC 1
C-50-XV-001/00-JE-12006	PROXIMITY SWITCH / MARSHALLING PCS	ONSHORE	C10000103	CJX10	100	2025-02-10	RFC 1
C-50-XV-002/00-JE-12006	PROXIMITY SWITCH / MARSHALLING PCS	ONSHORE	C10000104	CJX10	100	2025-02-10	RFC 1
C-50-XV-003/00-JE-12006	PROXIMITY SWITCH / MARSHALLING PCS	ONSHORE	C10000105	CJX10	100	2025-02-08	RFC 1
C-50-XV-004/00-JE-12006	PROXIMITY SWITCH / MARSHALLING PCS	ONSHORE	C10000106	CJX10	100	2025-02-10	RFC 1
C-50-XY-001/00-JE-13003	SOLENOID VALVE / MARSHALLING PCS	ONSHORE	C10000125	CJX10	100	2025-02-10	RFC 1
C-50-XY-002/00-JE-13003	SOLENOID VALVE / MARSHALLING PCS	ONSHORE	C10000126	CJX10	100	2025-02-10	RFC 1
C-50-XY-003/00-JE-13003	SOLENOID VALVE / MARSHALLING PCS	ONSHORE	C10000127	CJX10	100	2025-02-08	RFC 1
C-50-XY-004/00-JE-13003	SOLENOID VALVE / MARSHALLING PCS	ONSHORE	C10000128	CJX10	100	2025-02-10	RFC 1

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 50-00 & process: MC

Mechanical	50-00 Seawater Intake System (Lifting Pumps)						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
P-50001A	Sea Water Pump A	ONSHORE	C10002365	CGX01	100	2025-03-12	-
		OFFSHORE	C10004930	CGX01	0	-	-
P-50001B	Sea Water Pump B	ONSHORE	C10002366	CGX01	100	2025-03-01	-
		OFFSHORE	C10004931	CGX01	0	-	-
V-50000A	Vessel - pump A	OFFSHORE	C10004853	CDX01	0	-	-
V-50000B	Vessel - pump B	OFFSHORE	C10004854	CDX01	0	-	-

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 50-00 & process: MC

Piping	50-00 Seawater Intake System (Lifting Pumps)						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
023-1-J1	Joint 023-1-J1	OFFSHORE	C10004181	TMX27	0	-	-
023-1-J10	Joint 023-1-J10	ONSHORE	C10004182	TMX27	100	2025-01-28	RFC 1
023-1-J11	Joint 023-1-J11	ONSHORE	C10004183	TMX27	100	2025-01-28	RFC 1
023-1-J2	Joint 023-1-J2	ONSHORE	C10004184	TMX27	100	2025-01-29	RFC 1
023-1-J3	Joint 023-1-J3	ONSHORE	C10004185	TMX27	100	2025-01-28	RFC 1
023-1-J4	Joint 023-1-J4	ONSHORE	C10004186	TMX27	100	2025-01-29	RFC 1
023-1-J5	Joint 023-1-J5	ONSHORE	C10004187	TMX27	100	2025-01-28	RFC 1
023-1-J6	Joint 023-1-J6	ONSHORE	C10004188	TMX27	100	2025-01-28	RFC 1
023-1-J7	Joint 023-1-J7	ONSHORE	C10004189	TMX27	100	2025-01-29	RFC 1
023-1-J8	Joint 023-1-J8	ONSHORE	C10004190	TMX27	100	2025-01-29	RFC 1
023-1-J9	Joint 023-1-J9	ONSHORE	C10004191	TMX27	100	2025-01-28	RFC 1
025-1-J1	Joint 025-1-J1	OFFSHORE	C10004192	TMX27	0	-	-
025-1-J10	Joint 025-1-J10	ONSHORE	C10004193	TMX27	100	2025-01-29	RFC 1
025-1-J11	Joint 025-1-J11	ONSHORE	C10004194	TMX27	100	2025-01-29	RFC 1
025-1-J2	Joint 025-1-J2	ONSHORE	C10004195	TMX27	100	2025-01-29	RFC 1
025-1-J3	Joint 025-1-J3	ONSHORE	C10004196	TMX27	100	2025-01-29	RFC 1
025-1-J4	Joint 025-1-J4	ONSHORE	C10004197	TMX27	100	2025-01-29	RFC 1
025-1-J5	Joint 025-1-J5	ONSHORE	C10004198	TMX27	100	2025-01-29	RFC 1
025-1-J6	Joint 025-1-J6	ONSHORE	C10004199	TMX27	100	2025-01-29	RFC 1
025-1-J7	Joint 025-1-J7	ONSHORE	C10004200	TMX27	100	2025-01-29	RFC 1
025-1-J8	Joint 025-1-J8	ONSHORE	C10004201	TMX27	100	2025-01-29	RFC 1
025-1-J9	Joint 025-1-J9	ONSHORE	C10004202	TMX27	100	2025-01-29	RFC 1
026-1-J1	Joint 026-1-J1	ONSHORE	C10004203	TMX27	100	2025-01-29	RFC 1
026-1-J2	Joint 026-1-J2	ONSHORE	C10004204	TMX27	100	2025-01-29	RFC 1
026-2-J3	Joint 026-2-J3	ONSHORE	C10004205	TMX27	100	2025-01-15	RFC 1
026-2-J4	Joint 026-2-J4	ONSHORE	C10004206	TMX27	100	2025-01-15	RFC 1
026-2-J5	Joint 026-2-J5	ONSHORE	C10004207	TMX27	0	-	-
026-2-J6	Joint 026-2-J6	ONSHORE	C10004208	TMX27	100	2025-03-14	RFC 1
059-1-J1	Joint 059-1-J1	ONSHORE	C10004236	TMX27	100	2025-02-21	RFC 1

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 50-00 & process: MC

Piping	50-00 Seawater Intake System (Lifting Pumps)						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
059-1-J2	Joint 059-1-J2	ONSHORE	C10004237	TMX27	100	2025-02-21	RFC 1
059-1-J3	Joint 059-1-J3	ONSHORE	C10004238	TMX27	100	2025-02-21	RFC 1
060-1-J1	Joint 060-1-J1	ONSHORE	C10004239	TMX27	100	2025-02-21	RFC 1
060-1-J2	Joint 060-1-J2	ONSHORE	C10004240	TMX27	100	2025-02-21	RFC 1
060-1-J3	Joint 060-1-J3	ONSHORE	C10004241	TMX27	100	2025-02-21	RFC 1
117-1-J1	Joint 117-1-J1	ONSHORE	C10004284	TMX27	100	2025-01-29	RFC 1
117-1-J2	Joint 117-1-J2	ONSHORE	C10004285	TMX27	100	2025-01-29	RFC 1
118-1-J1	Joint 118-1-J1	ONSHORE	C10004286	TMX27	100	2025-01-29	RFC 1
118-1-J2	Joint 118-1-J2	ONSHORE	C10004287	TMX27	100	2025-01-29	RFC 1
150-1-J1	Joint 150-1-J1	ONSHORE	C10004303	TMX27	100	2025-01-30	RFC 1
150-1-J2	Joint 150-1-J2	ONSHORE	C10004304	TMX27	100	2025-01-30	RFC 1
150-1-J3	Joint 150-1-J3	ONSHORE	C10004305	TMX27	100	2025-02-14	RFC 1
151-1-J1	Joint 151-1-J1	ONSHORE	C10004306	TMX27	100	2025-02-14	RFC 1
152-1-J1	Joint 152-1-J1	ONSHORE	C10004307	TMX27	100	2025-01-30	RFC 1
152-1-J2	Joint 152-1-J2	ONSHORE	C10004308	TMX27	100	2025-01-30	RFC 1
152-1-J3	Joint 152-1-J3	ONSHORE	C10004309	TMX27	100	2025-02-14	RFC 1
153-1-J1	Joint 153-1-J1	ONSHORE	C10004310	TMX27	100	2025-02-14	RFC 1
154-1-J1	Joint 154-1-J1	ONSHORE	C10004311	TMX27	100	2025-01-15	RFC 1
154-1-J2	Joint 154-1-J2	ONSHORE	C10004312	TMX27	100	2025-01-15	RFC 1
154-1-J3	Joint 154-1-J3	ONSHORE	C10004313	TMX27	100	2025-02-21	RFC 1
155-1-J1	Joint 155-1-J1	ONSHORE	C10004314	TMX27	100	2025-02-21	RFC 1
50-00-TP-001	Test Pack 50-00-TP-001	ONSHORE	C10003233	CLX02A	100	2025-01-21	RFC 1
		ONSHORE	C10003234	CLX02B	100	2025-02-25	RFC 1
		ONSHORE	C10003235	CXX01	100	2025-04-02	RFC 1
		ONSHORE	C10003236	TMX03	100	2025-01-25	RFC 1
		ONSHORE	C10003237	TMX05	100	2025-01-25	RFC 1
		ONSHORE	C10003239	TPLX05	100	2025-01-25	RFC 1

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 50-00 & process: MC

Piping	50-00 Seawater Intake System (Lifting Pumps)						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
50-00-TP-028	Test Pack 50-00-TP-028	ONSHORE	C10003443	CLX02A	100	2025-01-15	RFC 1
		ONSHORE	C10003444	CLX02B	100	2025-03-10	RFC 1
		ONSHORE	C10003445	CXX01	100	2025-04-02	RFC 1
		ONSHORE	C10003446	TMX03	100	2025-01-15	RFC 1
		ONSHORE	C10003447	TMX05	100	2025-01-15	RFC 1
		ONSHORE	C10003449	TPLX05	100	2025-01-15	RFC 1
50-00-TP-045	Test Pack 50-00-TP-045	ONSHORE	C10003577	CLX02A	100	2024-12-18	RFC 1
		ONSHORE	C10003578	CLX02B	100	2025-03-06	RFC 1
		ONSHORE	C10003579	CXX01	100	2025-03-25	RFC 1

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 50 Fresh Water Systems

SUBSYSTEM 50-00 Seawater Intake System (Lifting Pumps)

Building

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30002547	A	B-50013B C10004524	There is no nozzle 1" #150 FF facing south differently ffrom the drawing. The structural pipe OD406 mm has not been even drilled.	.		KAlbonetti 2025-01-09	2025-03-01	KAlbonetti 2025-03-01	2025-03-01
C30002548	A	B-50013A C10004525	There is no nozzle 1" #150 FF facing south differently ffrom the drawing. The structural pipe OD406 mm has not been even drilled.	.		KAlbonetti 2025-01-09	2025-03-01	KAlbonetti 2025-03-01	2025-03-01
C30002550	A	B-50013B C10004524	The flange phonography has damages due incorrect welding on the internal side.	.		KAlbonetti 2025-01-09	2025-03-01	KAlbonetti 2025-03-01	2025-03-01
C30002639	A	B-50013B C10004524	Interaxis distance between B-50013B and B-50013A is 1190 mm instead of 1200 mm.	.		KAlbonetti 2025-01-10	2025-03-01	KAlbonetti 2025-03-01	2025-03-01
C30002640	A	B-50013A C10004525	Interaxis distance between B-50013B and B-50013A is 1190 mm instead of 1200 mm.	.		KAlbonetti 2025-01-10	2025-03-01	KAlbonetti 2025-03-01	2025-03-01
C30002549	B	B-50013A C10004525	The flange phonography on the internal side has been ground by grinding disc.	.		KAlbonetti 2025-01-09	2025-01-09	KAlbonetti 2025-01-09	2025-01-09

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 50 Fresh Water Systems
SUBSYSTEM 50-00 Seawater Intake System (Lifting Pumps)

Instrumental

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30003616	A	C-50-XV-003/00 -JE-12006 C10000105	The core "OS" (overall shield terminal) is not connected.	.		APolo 2025-02-08	2025-02-21	AAndreani 2025-02-21	2025-02-21
C30003634	A	50-XY-004 C10002018	the earth cable is not fixed	.		APolo 2025-02-10	2025-02-25	APolo 2025-02-25	2025-02-25
C30004081	A	50-TT-001 C10000904	Missing the earth connection on the instrument.	.		APolo 2025-02-21	2025-02-25	JKrizanic 2025-02-25	2025-02-25
C30003594	B	50-PT-002 C10000902	Missing tag SS , on the instrument.	.		APolo 2025-02-07	2025-02-21	AAndreani 2025-02-21	2025-02-21
C30003595	B	50-PT-002 C10000902	Missing PLANE WASHER	.		APolo 2025-02-07	2025-02-25	AAndreani 2025-02-25	2025-02-25
C30003596	B	50-PT-001 C10000901	Missing tag SS , on the instrument.	.		APolo 2025-02-07	2025-02-21	AAndreani 2025-02-21	2025-02-21
C30003597	B	50-PT-001 C10000901	Missing the plane washers on the u-bolt fitting	.		APolo 2025-02-07	2025-02-27	JKrizanic 2025-02-27	2025-02-27
C30003611	B	C-50-XY-003/00 -JE-13003 C10000127	Wrong cores identification tag. side J.B. 00-JE-13003 . (see document 123A90-DDL-IN-DG-40016 sh.3)	.		APolo 2025-02-08	2025-02-13	AAndreani 2025-02-13	2025-02-13
C30003612	B	C-50-XY-003/00 -JE-13003 C10000127	The cable (between external cable tray and instrument) to be dressed/fixed properly.	.		APolo 2025-02-08	2025-02-21	AAndreani 2025-02-21	2025-02-21

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 50 Fresh Water Systems
SUBSYSTEM 50-00 Seawater Intake System (Lifting Pumps)

Instrumental

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30003613	B	50-XY-003 C10002017	Missing tag SS , on Solenoid Valve.	.		APolo 2025-02-08	2025-02-21	AAndreani 2025-02-21	2025-02-21
C30003614	B	C-50-XV-003/00 -JE-12006 C10000105	Wrong cores identification tag. side J.B. 00-JE-12006 . (see document 123A90-DDL-IN-DG-40016 sh.3)	.		APolo 2025-02-08	2025-02-21	AAndreani 2025-02-21	2025-02-21
C30003617	B	C-50-XV-003/00 -JE-12006 C10000105	Missing n°1 terminal block for connection The core "OS" (overall shield terminal)	.		APolo 2025-02-08	2025-02-21	JKrizanic 2025-02-21	2025-02-21
C30003618	B	C-50-XV-003/00 -JE-12006 C10000105	Missing core identification The core "OS" (overall shield terminal) inside Limit switch (ZSHL))	.		APolo 2025-02-08	2025-02-22	JKrizanic 2025-02-22	2025-02-22
C30003619	B	50-XY-001 C10002015	Missing tag SS , on Solenoid Valve.	.		APolo 2025-02-10	2025-02-21	AAndreani 2025-02-21	2025-02-21
C30003620	B	C-50-XY-001/00 -JE-13003 C10000125	Wrong cores identification tag. side J.B. 00-JE-13003 . (see document 123A90-DDL-IN-DG-40016 sh.3)	.		APolo 2025-02-10	2025-02-22	JKrizanic 2025-02-22	2025-02-22
C30003621	B	C-50-XY-001/00 -JE-13003 C10000125	The cable is laid outside the secondary cable tray. must be dressed/fixed properly.	.		APolo 2025-02-10	2025-03-05	JKrizanic 2025-03-05	2025-03-05
C30003622	B	C-50-XV-001/00 -JE-12006 C10000103	The cable is not support .	.		APolo 2025-02-10	2025-02-26	APolo 2025-02-26	2025-02-26
C30003623	B	C-50-XV-001/00 -JE-12006 C10000103	Missing core identification ("OS"overall shield terminal) inside Limit switch (ZSHL)	.		APolo 2025-02-10	2025-02-22	JKrizanic 2025-02-22	2025-02-22

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PUNCH LIST REPORT

SYSTEM 50 Fresh Water Systems

SUBSYSTEM 50-00 Seawater Intake System (Lifting Pumps)

Instrumental

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30003624	B	C-50-XY-002/00 -JE-13003 C10000126	Wrong cores identification tag. side J.B. 00-JE-13003 . (see document 123A90-DDL-IN-DG-40016 sh.3)	.		APolo 2025-02-10	2025-02-22	JKrizanic 2025-02-22	2025-02-22
C30003626	B	C-50-XY-002/00 -JE-13003 C10000126	The cable (between external cable tray and instrument). must be dressed/fixed properly.	.		APolo 2025-02-10	2025-02-21	AAndreani 2025-02-21	2025-02-21
C30003627	B	50-XY-002 C10002016	Missing tag SS , on Solenoid Valve.	.		APolo 2025-02-10	2025-02-21	AAndreani 2025-02-21	2025-02-21
C30003628	B	C-50-XV-002/00 -JE-12006 C10000104	The cable (between external cable tray and instrument). must be dressed/fixed properly.	The cable is not support .		APolo 2025-02-10	2025-02-21	AAndreani 2025-02-21	2025-02-21
C30003629	B	C-50-XV-002/00 -JE-12006 C10000104	Missing core identification ("OS"overall shield terminal) inside Limit switch (ZSHL)	.		APolo 2025-02-10	2025-02-22	JKrizanic 2025-02-22	2025-02-22
C30003632	B	C-50-XY-004/00 -JE-13003 C10000128	Wrong cores identification tag. side J.B. 00-JE-13003 . (see document 123A90-DDL-IN-DG-40016 sh.3)	.		APolo 2025-02-10	2025-02-22	JKrizanic 2025-02-22	2025-02-22
C30003633	B	C-50-XY-004/00 -JE-13003 C10000128	The cable (between external cable tray and instrument). must be dressed/fixed properly.	.		APolo 2025-02-10	2025-02-21	AAndreani 2025-02-21	2025-02-21
C30003635	B	50-XY-004 C10002018	Missing tag SS , on Solenoid Valve.	.		APolo 2025-02-10	2025-02-21	AAndreani 2025-02-21	2025-02-21
C30003636	B	50-XV-004 C10001190	Missing data plate SS , on the valve.	.		APolo 2025-02-10	2025-02-27	JKrizanic 2025-02-27	2025-02-27

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PUNCH LIST REPORT

SYSTEM 50 Fresh Water Systems

SUBSYSTEM 50-00 Seawater Intake System (Lifting Pumps)

Instrumental

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30003637	B	C-50-XV-004/00 -JE-12006 C10000106	Missing core identification ("OS"overall shield terminal) inside Limit switch (ZSHL)	.		APolo 2025-02-10	2025-02-22	JKrizanic 2025-02-22	2025-02-22
C30003638	B	C-50-XV-004/00 -JE-12006 C10000106	The cable (between external cable tray and instrument). must be dressed/fixed properly.	.		APolo 2025-02-10	2025-02-26	APolo 2025-02-26	2025-02-26
C30004080	B	C-50-TT-001/00- JE-11004 C10000051	The cable is not support .	.		APolo 2025-02-21	2025-02-27	JKrizanic 2025-02-27	2025-02-27
C30004082	B	50-TT-001 C10000904	Missing tag SS , on the instrument.	.		APolo 2025-02-21	2025-02-24	APolo 2025-02-24	2025-02-24
C30004158	B	50-PSV-006 C10004536	Scratches on painting, general touch-up to be performed.	.		Lmussi 2025-02-26			
C30004183	B	50-PSV-007 C10004537	Scratches on painting, general touch-up to be performed	.		Lmussi 2025-02-28			

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PUNCH LIST REPORT

SYSTEM 50 Fresh Water Systems
SUBSYSTEM 50-00 Seawater Intake System (Lifting Pumps)

Mechanical

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30004187	A	P-50001B C10002366	Suction nozzle to be installed offshore.	.		KAlbonetti 2025-03-01	2025-04-15	LNovaga 2025-04-15	2025-04-15
C30004188	A	P-50001B C10002366	Seal system made by Flowserve has not been installed. To be installed offshore.	.		KAlbonetti 2025-03-01	2025-04-15	LNovaga 2025-04-15	2025-04-15
C30004189	A	P-50001B C10002366	Lubrication system to be checked before commissioning. Not possible to be checked now.	.		KAlbonetti 2025-03-01	2025-04-15	LNovaga 2025-04-15	2025-04-15
C30004240	A	P-50001A C10002365	Suction nozzle to be installed offshore.	.		LNovaga 2025-03-12	2025-04-15	LNovaga 2025-04-15	2025-04-15
C30004241	A	P-50001A C10002365	Seal system made by Flowserve has not been installed. To be installed offshore.	.		LNovaga 2025-03-12	2025-04-15	LNovaga 2025-04-15	2025-04-15
C30004242	A	P-50001A C10002365	Lubrication system to be checked before commissioning. Not possible to be checked now.	.		LNovaga 2025-03-12	2025-04-15	LNovaga 2025-04-15	2025-04-15
C30004185	B	P-50001B C10002366	Nameplate of Motor from ABB has Item tag wrong. Equipment number as for Vendor asset register is 3G1F2433998069. On the nameplate	.		KAlbonetti 2025-03-01	2025-03-18	LNovaga 2025-03-18	2025-03-18
C30004186	B	P-50001B C10002366	Pump has not been fixed to structure. To be dismantled and reassembled after transportation. Final fixing to structure to be done offshore after	.		KAlbonetti 2025-03-01	2025-04-15	LNovaga 2025-04-15	2025-04-15
C30004239	B	P-50001A C10002365	Pump has not been fixed to structure. To be dismantled and reassembled after transportation. Final fixing to structure to be done offshore after	.		LNovaga 2025-03-12	2025-04-15	LNovaga 2025-04-15	2025-04-15

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PUNCH LIST REPORT

SYSTEM 50 Fresh Water Systems
SUBSYSTEM 50-00 Seawater Intake System (Lifting Pumps)

Mechanical

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30004243	B	P-50001B C10002366	Compared to the pump A, there is no label with the arrow above the pump tag, in the annex the example of the pump A.	.		LNovaga 2025-03-12	2025-04-15	LNovaga 2025-04-15	2025-04-15

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PUNCH LIST REPORT

SYSTEM 50 Fresh Water Systems
SUBSYSTEM 50-00 Seawater Intake System (Lifting Pumps)

Piping

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30004234	A	50-00-TP-028 C10003444	Flange management activity on joint 026-2-J5 is not done. (SK 026 2/2).	.		LNovaga 2025-03-10			
C30001983	B	50-00-TP-045 C10003577	Spool not assembled in erection. Inspection points from 3 to 6 of the ITR "Inspection before testing" to be checked during reinstatement.	.		KAlbonetti 2024-12-18	2025-03-07	LNovaga 2025-03-07	2025-03-07
C30002841	B	50-00-TP-028 C10003443	Sk.154 (Sh.1/1): On support PS-01049.1 position R1 has not been fitted at all.	.		KAlbonetti 2025-01-14	2025-03-10	LNovaga 2025-03-10	2025-03-10
C30002842	B	50-00-TP-028 C10003443	Sk.26 (Sh.2/2): For supports PS-01028.1 and 01028.3 STD C-33 and S-64 have not been assembled correctly.	.		KAlbonetti 2025-01-14	2025-03-10	LNovaga 2025-03-10	2025-03-10
C30002843	B	50-00-TP-028 C10003443	Sk.26 (Sh.2/2): For supports PS-01027.1 and 01027.3 STD C-33 and S-64 have not been assembled correctly.	.		KAlbonetti 2025-01-14	2025-03-10	LNovaga 2025-03-10	2025-03-10
C30002844	B	50-00-TP-028 C10003443	Sk.26 (Sh.1/2): For supports PS-01014.1 and 01014.5 STD C-33 and S-64 have not been assembled correctly.	.		KAlbonetti 2025-01-14	2025-03-10	LNovaga 2025-03-10	2025-03-10
C30002845	B	50-00-TP-028 C10003443	Sk.26 (Sh.1/2): For supports PS-01015.1 and 01015.5 STD C-33 and S-64 have not been assembled correctly.	.		KAlbonetti 2025-01-14	2025-03-10	LNovaga 2025-03-10	2025-03-10
C30002846	B	50-00-TP-028 C10003443	Flanges have not been torqued for final but only for testing. Connection points have not been checked before testing. All flange management	.		KAlbonetti 2025-01-14	2025-03-01	KAlbonetti 2025-03-01	2025-03-01
C30002847	B	50-00-TP-028 C10003443	Piping not aligned vertically at the connection point of package A-50000.	.		KAlbonetti 2025-01-14			

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PUNCH LIST REPORT

SYSTEM 50 Fresh Water Systems

SUBSYSTEM 50-00 Seawater Intake System (Lifting Pumps)

Piping

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30003137	B	50-00-TP-001 C10003233	All supports S-64 still to be assembled.	.		KAlbonetti 2025-01-21	2025-02-25	LNovaga 2025-02-25	2025-02-25
C30004131	B	50-00-TP-001 C10003234	BLPH-MV-043 has stem direction north and gear down. The valve was rotated because it was hard to maneuver.	.		LNovaga 2025-02-25	2025-02-25	LNovaga 2025-02-25	2025-02-25
C30004132	B	50-00-TP-001 C10003234	BLPH-MV-050 has stem direction north and gear down. The valve was rotated because it was hard to maneuver.	.		LNovaga 2025-02-25	2025-02-25	LNovaga 2025-02-25	2025-02-25
C30004135	B	50-00-TP-001 C10003234	All standard's supports are S-64 - 1-1/2" - 90 - 200, documents must be correct. Pipe is aligned to battery limit (pumps)	.		LNovaga 2025-02-25			
C30004216	B	50-00-TP-028 C10003444	.	.		LNovaga 2025-03-10	2025-03-10	LNovaga 2025-03-10	2025-03-10
C30004230	B	50-00-TP-028 C10003444	In the SK 026 1/2 supports PS-01015.1 (S-64) and PS-01015.5 (C-33) are not installed correctly.	.		LNovaga 2025-03-10			
C30004231	B	50-00-TP-028 C10003444	In the SK 026 1/2 correct the gap in the PS-01014.1 (S-64) and installed correctly PS-01014.5 (C-33).	.		LNovaga 2025-03-10			
C30004232	B	50-00-TP-028 C10003444	In the SK 026 2/2 correct the gap of the support PS-01027.3 (C-33)	.		LNovaga 2025-03-10			
C30004233	B	50-00-TP-028 C10003444	In the SK 026 2/2 PS-01028.3 (C-33) is missing.	.		LNovaga 2025-03-10			

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PUNCH LIST REPORT

SYSTEM 50 Fresh Water Systems
SUBSYSTEM 50-00 Seawater Intake System (Lifting Pumps)

Piping

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30004235	B	50-00-TP-028 C10003444	On SK 154 support PS-01049.1 (S-64) there is a nut to be tightened N-E side.	.		LNovaga 2025-03-10	2025-04-07	LNovaga 2025-04-07	2025-04-07
C30004278	B	50-00-TP-045 C10003579	Missing the insulation pillow around the valve BLPH-MV-051 and BLPH-MV-048.	.		LNovaga 2025-03-25	2025-04-04	LNovaga 2025-04-04	2025-04-04
C30004307	B	50-00-TP-028 C10003445	On isometric 026 are missing the insulation around the nipple (pos. 5 sheet 1/2), insulation pillows around joints 026-2-J6, 026-2-J5 and	.		LNovaga 2025-04-02			
C30004308	B	50-00-TP-028 C10003445	On isometric 154 are missing the insulation pillows around BLPH-MV-471 and joint 154-1-J3.	.		LNovaga 2025-04-02	2025-04-04	LNovaga 2025-04-04	2025-04-04
C30004309	B	50-00-TP-028 C10003445	The joint and the overlap of the sheets are not sealed.	.		LNovaga 2025-04-02	2025-04-04	LNovaga 2025-04-04	2025-04-04
C30004310	B	50-00-TP-001 C10003235	Missing the insulation pillows around all joints and all valves of test pack.	.		LNovaga 2025-04-02	2025-04-04	LNovaga 2025-04-04	2025-04-04
C30004311	B	50-00-TP-001 C10003235	The joints and the overlap of the sheets are not sealed.	.		LNovaga 2025-04-02	2025-04-04	LNovaga 2025-04-04	2025-04-04

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PUNCH LIST REPORT

SYSTEM 50 Fresh Water Systems

SUBSYSTEM 50-00 Seawater Intake System (Lifting Pumps)

Electrical

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30004163	B	83019-CEL C10000540	Missing the SS cable tag side the coiled (PM-50001A).	.		Gtangianu 2025-02-27	2025-03-10	JKrizanic 2025-03-10	2025-03-10
C30004164	B	83018-CEL C10000539	Missing the SS cable tag side the coiled (PM-50001A).	.		Gtangianu 2025-02-27	2025-03-10	JKrizanic 2025-03-10	2025-03-10

Section 2 CONSOLIDATED PUNCH LISTS

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM	50	Fresh Water Systems
SUBSYSTEM	50-00	Seawater Intake System (Lifting Pumps)

Building

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30002547	A	B-50013B C10004524	There is no nozzle 1" #150 FF facing south differently ffrom the drawing. The structural pipe OD406 mm has not been even drilled.	.		KAlbonetti 2025-01-09	2025-03-01	KAlbonetti 2025-03-01	2025-03-01
C30002548	A	B-50013A C10004525	There is no nozzle 1" #150 FF facing south differently ffrom the drawing. The structural pipe OD406 mm has not been even drilled.	.		KAlbonetti 2025-01-09	2025-03-01	KAlbonetti 2025-03-01	2025-03-01
C30002550	A	B-50013B C10004524	The flange phonography has damages due incorrect welding on the internal side.	.		KAlbonetti 2025-01-09	2025-03-01	KAlbonetti 2025-03-01	2025-03-01
C30002639	A	B-50013B C10004524	Interaxis distance between B-50013B and B-50013A is 1190 mm instead of 1200 mm.	.		KAlbonetti 2025-01-10	2025-03-01	KAlbonetti 2025-03-01	2025-03-01
C30002640	A	B-50013A C10004525	Interaxis distance between B-50013B and B-50013A is 1190 mm instead of 1200 mm.	.		KAlbonetti 2025-01-10	2025-03-01	KAlbonetti 2025-03-01	2025-03-01
C30002549	B	B-50013A C10004525	The flange phonography on the internal side has been ground by grinding disc.	.		KAlbonetti 2025-01-09	2025-01-09	KAlbonetti 2025-01-09	2025-01-09

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SYSTEM 50 Fresh Water Systems
SUBSYSTEM 50-00 Seawater Intake System (Lifting Pumps)

Instrumental

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30003616	A	C-50-XV-003/00 -JE-12006 C10000105	The core "OS" (overall shield terminal) is not connected.	.		APolo 2025-02-08	2025-02-21	AAndreani 2025-02-21	2025-02-21
C30003634	A	50-XY-004 C10002018	the earth cable is not fixed	.		APolo 2025-02-10	2025-02-25	APolo 2025-02-25	2025-02-25
C30004081	A	50-TT-001 C10000904	Missing the earth connection on the instrument.	.		APolo 2025-02-21	2025-02-25	JKrizanic 2025-02-25	2025-02-25
C30003594	B	50-PT-002 C10000902	Missing tag SS , on the instrument.	.		APolo 2025-02-07	2025-02-21	AAndreani 2025-02-21	2025-02-21
C30003595	B	50-PT-002 C10000902	Missing PLANE WASHER	.		APolo 2025-02-07	2025-02-25	AAndreani 2025-02-25	2025-02-25
C30003596	B	50-PT-001 C10000901	Missing tag SS , on the instrument.	.		APolo 2025-02-07	2025-02-21	AAndreani 2025-02-21	2025-02-21
C30003597	B	50-PT-001 C10000901	Missing the plane washers on the u-bolt fitting	.		APolo 2025-02-07	2025-02-27	JKrizanic 2025-02-27	2025-02-27
C30003611	B	C-50-XY-003/00 -JE-13003 C10000127	Wrong cores identification tag. side J.B. 00-JE-13003 . (see document 123A90-DDL-IN-DG-40016 sh.3)	.		APolo 2025-02-08	2025-02-13	AAndreani 2025-02-13	2025-02-13
C30003612	B	C-50-XY-003/00 -JE-13003 C10000127	The cable (between external cable tray and instrument) to be dressed/fixed properly.	.		APolo 2025-02-08	2025-02-21	AAndreani 2025-02-21	2025-02-21

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PUNCH LIST REPORT

SYSTEM 50 Fresh Water Systems
SUBSYSTEM 50-00 Seawater Intake System (Lifting Pumps)

Instrumental

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30003613	B	50-XY-003 C10002017	Missing tag SS , on Solenoid Valve.	.		APolo 2025-02-08	2025-02-21	AAndreani 2025-02-21	2025-02-21
C30003614	B	C-50-XV-003/00 -JE-12006 C10000105	Wrong cores identification tag. side J.B. 00-JE-12006 . (see document 123A90-DDL-IN-DG-40016 sh.3)	.		APolo 2025-02-08	2025-02-21	AAndreani 2025-02-21	2025-02-21
C30003617	B	C-50-XV-003/00 -JE-12006 C10000105	Missing n°1 terminal block for connection The core "OS" (overall shield terminal)	.		APolo 2025-02-08	2025-02-21	JKrizanic 2025-02-21	2025-02-21
C30003618	B	C-50-XV-003/00 -JE-12006 C10000105	Missing core identification The core "OS" (overall shield terminal) inside Limit switch (ZSHL))	.		APolo 2025-02-08	2025-02-22	JKrizanic 2025-02-22	2025-02-22
C30003619	B	50-XY-001 C10002015	Missing tag SS , on Solenoid Valve.	.		APolo 2025-02-10	2025-02-21	AAndreani 2025-02-21	2025-02-21
C30003620	B	C-50-XY-001/00 -JE-13003 C10000125	Wrong cores identification tag. side J.B. 00-JE-13003 . (see document 123A90-DDL-IN-DG-40016 sh.3)	.		APolo 2025-02-10	2025-02-22	JKrizanic 2025-02-22	2025-02-22
C30003621	B	C-50-XY-001/00 -JE-13003 C10000125	The cable is laid outside the secondary cable tray. must be dressed/fixed properly.	.		APolo 2025-02-10	2025-03-05	JKrizanic 2025-03-05	2025-03-05
C30003622	B	C-50-XV-001/00 -JE-12006 C10000103	The cable is not support .	.		APolo 2025-02-10	2025-02-26	APolo 2025-02-26	2025-02-26
C30003623	B	C-50-XV-001/00 -JE-12006 C10000103	Missing core identification ("OS"overall shield terminal) inside Limit switch (ZSHL)	.		APolo 2025-02-10	2025-02-22	JKrizanic 2025-02-22	2025-02-22

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PUNCH LIST REPORT

SYSTEM 50 Fresh Water Systems
SUBSYSTEM 50-00 Seawater Intake System (Lifting Pumps)

Instrumental

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30003624	B	C-50-XY-002/00 -JE-13003 C10000126	Wrong cores identification tag. side J.B. 00-JE-13003 . (see document 123A90-DDL-IN-DG-40016 sh.3)	.		APolo 2025-02-10	2025-02-22	JKrizanic 2025-02-22	2025-02-22
C30003626	B	C-50-XY-002/00 -JE-13003 C10000126	The cable (between external cable tray and instrument). must be dressed/fixed properly.	.		APolo 2025-02-10	2025-02-21	AAndreani 2025-02-21	2025-02-21
C30003627	B	50-XY-002 C10002016	Missing tag SS , on Solenoid Valve.	.		APolo 2025-02-10	2025-02-21	AAndreani 2025-02-21	2025-02-21
C30003628	B	C-50-XV-002/00 -JE-12006 C10000104	The cable (between external cable tray and instrument). must be dressed/fixed properly.	The cable is not support .		APolo 2025-02-10	2025-02-21	AAndreani 2025-02-21	2025-02-21
C30003629	B	C-50-XV-002/00 -JE-12006 C10000104	Missing core identification ("OS"overall shield terminal) inside Limit switch (ZSHL)	.		APolo 2025-02-10	2025-02-22	JKrizanic 2025-02-22	2025-02-22
C30003632	B	C-50-XY-004/00 -JE-13003 C10000128	Wrong cores identification tag. side J.B. 00-JE-13003 . (see document 123A90-DDL-IN-DG-40016 sh.3)	.		APolo 2025-02-10	2025-02-22	JKrizanic 2025-02-22	2025-02-22
C30003633	B	C-50-XY-004/00 -JE-13003 C10000128	The cable (between external cable tray and instrument). must be dressed/fixed properly.	.		APolo 2025-02-10	2025-02-21	AAndreani 2025-02-21	2025-02-21
C30003635	B	50-XY-004 C10002018	Missing tag SS , on Solenoid Valve.	.		APolo 2025-02-10	2025-02-21	AAndreani 2025-02-21	2025-02-21
C30003636	B	50-XV-004 C10001190	Missing data plate SS , on the valve.	.		APolo 2025-02-10	2025-02-27	JKrizanic 2025-02-27	2025-02-27

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 50 Fresh Water Systems

SUBSYSTEM 50-00 Seawater Intake System (Lifting Pumps)

Instrumental

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30003637	B	C-50-XV-004/00 -JE-12006 C10000106	Missing core identification ("OS"overall shield terminal) inside Limit switch (ZSHL)	.		APolo 2025-02-10	2025-02-22	JKrizanic 2025-02-22	2025-02-22
C30003638	B	C-50-XV-004/00 -JE-12006 C10000106	The cable (between external cable tray and instrument). must be dressed/fixed properly.	.		APolo 2025-02-10	2025-02-26	APolo 2025-02-26	2025-02-26
C30004080	B	C-50-TT-001/00- JE-11004 C10000051	The cable is not support .	.		APolo 2025-02-21	2025-02-27	JKrizanic 2025-02-27	2025-02-27
C30004082	B	50-TT-001 C10000904	Missing tag SS , on the instrument.	.		APolo 2025-02-21	2025-02-24	APolo 2025-02-24	2025-02-24
C30004158	B	50-PSV-006 C10004536	Scratches on painting, general touch-up to be performed.	.		Lmussi 2025-02-26	2025-05-06	LNovaga 2025-05-06	2025-05-06
C30004183	B	50-PSV-007 C10004537	Scratches on painting, general touch-up to be performed	.		Lmussi 2025-02-28	2025-05-06	LNovaga 2025-05-06	2025-05-06

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 50 Fresh Water Systems

SUBSYSTEM 50-00 Seawater Intake System (Lifting Pumps)

Mechanical

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30004187	A	P-50001B C10002366	Suction nozzle to be installed offshore.	.		KAlbonetti 2025-03-01	2025-04-15	LNovaga 2025-04-15	2025-04-15
C30004188	A	P-50001B C10002366	Seal system made by Flowserve has not been installed. To be installed offshore.	.		KAlbonetti 2025-03-01	2025-04-15	LNovaga 2025-04-15	2025-04-15
C30004189	A	P-50001B C10002366	Lubrication system to be checked before commissioning. Not possible to be checked now.	.		KAlbonetti 2025-03-01	2025-04-15	LNovaga 2025-04-15	2025-04-15
C30004240	A	P-50001A C10002365	Suction nozzle to be installed offshore.	.		LNovaga 2025-03-12	2025-04-15	LNovaga 2025-04-15	2025-04-15
C30004241	A	P-50001A C10002365	Seal system made by Flowserve has not been installed. To be installed offshore.	.		LNovaga 2025-03-12	2025-04-15	LNovaga 2025-04-15	2025-04-15
C30004242	A	P-50001A C10002365	Lubrication system to be checked before commissioning. Not possible to be checked now.	.		LNovaga 2025-03-12	2025-04-15	LNovaga 2025-04-15	2025-04-15
C30004185	B	P-50001B C10002366	Nameplate of Motor from ABB has Item tag wrong. Equipment number as for Vendor asset register is 3G1F2433998069. On the nameplate	.		KAlbonetti 2025-03-01	2025-03-18	LNovaga 2025-03-18	2025-03-18
C30004186	B	P-50001B C10002366	Pump has not been fixed to structure. To be dismantled and reassembled after transportation. Final fixing to structure to be done offshore after	.		KAlbonetti 2025-03-01	2025-04-15	LNovaga 2025-04-15	2025-04-15
C30004239	B	P-50001A C10002365	Pump has not been fixed to structure. To be dismantled and reassembled after transportation. Final fixing to structure to be done offshore after	.		LNovaga 2025-03-12	2025-04-15	LNovaga 2025-04-15	2025-04-15

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM	50	Fresh Water Systems
SUBSYSTEM	50-00	Seawater Intake System (Lifting Pumps)

Mechanical

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30004243	B	P-50001B C10002366	Compared to the pump A, there is no label with the arrow above the pump tag, in the annex the example of the pump A.	.		LNovaga 2025-03-12	2025-04-15	LNovaga 2025-04-15	2025-04-15

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 50 Fresh Water Systems

SUBSYSTEM 50-00 Seawater Intake System (Lifting Pumps)

Piping

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30004234	A	50-00-TP-028 C10003444	Flange management activity on joint 026-2-J5 is not done. (SK 026 2/2).	.	Completed	LNovaga 2025-03-10	RDegliEsposti 2025-07-10	RDegliEsposti 2025-07-10	2025-07-10
C30004396	A	50-00-TP-028 C10003444	Flange management activity on joint 026-2-J5 is not done. (SK 026 2/2).		Activity completed.	LNovaga 2025-03-10	RDegliEsposti 2025-07-24	RDegliEsposti 2025-07-24	2025-07-24
C30001983	B	50-00-TP-045 C10003577	Spool not assembled in erection. Inspection points from 3 to 6 of the ITR "Inspection before testing" to be checked during reinstatement.	.		KAlbonetti 2024-12-18	2025-03-07	LNovaga 2025-03-07	2025-03-07
C30002841	B	50-00-TP-028 C10003443	Sk.154 (Sh.1/1): On support PS-01049.1 position R1 has not been fitted at all.	.		KAlbonetti 2025-01-14	2025-03-10	LNovaga 2025-03-10	2025-03-10
C30002842	B	50-00-TP-028 C10003443	Sk.26 (Sh.2/2): For supports PS-01028.1 and 01028.3 STD C-33 and S-64 have not been assembled correctly.	.		KAlbonetti 2025-01-14	2025-03-10	LNovaga 2025-03-10	2025-03-10
C30002843	B	50-00-TP-028 C10003443	Sk.26 (Sh.2/2): For supports PS-01027.1 and 01027.3 STD C-33 and S-64 have not been assembled correctly.	.		KAlbonetti 2025-01-14	2025-03-10	LNovaga 2025-03-10	2025-03-10
C30002844	B	50-00-TP-028 C10003443	Sk.26 (Sh.1/2): For supports PS-01014.1 and 01014.5 STD C-33 and S-64 have not been assembled correctly.	.		KAlbonetti 2025-01-14	2025-03-10	LNovaga 2025-03-10	2025-03-10
C30002845	B	50-00-TP-028 C10003443	Sk.26 (Sh.1/2): For supports PS-01015.1 and 01015.5 STD C-33 and S-64 have not been assembled correctly.	.		KAlbonetti 2025-01-14	2025-03-10	LNovaga 2025-03-10	2025-03-10
C30002846	B	50-00-TP-028 C10003443	Flanges have not been torqued for final but only for testing. Connection points have not been checked before testing. All flange management	.		KAlbonetti 2025-01-14	2025-03-01	KAlbonetti 2025-03-01	2025-03-01

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 50 Fresh Water Systems

SUBSYSTEM 50-00 Seawater Intake System (Lifting Pumps)

Piping

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30002847	B	50-00-TP-028 C10003443	Piping not aligned vertically at the connection point of package A-50000.	.	Alignment was checked during the reinstatement activities. No concerns were	KAlbonetti 2025-01-14	RDegliEsposti 2025-06-12	RDegliEsposti 2025-06-12	2025-06-12
C30003137	B	50-00-TP-001 C10003233	All supports S-64 still to be assembled.	.		KAlbonetti 2025-01-21	2025-02-25	LNovaga 2025-02-25	2025-02-25
C30004131	B	50-00-TP-001 C10003234	BLPH-MV-043 has stem direction north and gear down. The valve was rotated because it was hard to maneuver.	.		LNovaga 2025-02-25	2025-02-25	LNovaga 2025-02-25	2025-02-25
C30004132	B	50-00-TP-001 C10003234	BLPH-MV-050 has stem direction north and gear down. The valve was rotated because it was hard to maneuver.	.		LNovaga 2025-02-25	2025-02-25	LNovaga 2025-02-25	2025-02-25
C30004135	B	50-00-TP-001 C10003234	All standard's supports are S-64 - 1-1/2" - 90 - 200, documents must be correct. Pipe is aligned to battery limit (pumps)	.	Changes have been recorded on RLMUs	LNovaga 2025-02-25	RDegliEsposti 2025-06-25	RDegliEsposti 2025-06-25	2025-06-25
C30004216	B	50-00-TP-028 C10003444	.	.		LNovaga 2025-03-10	2025-03-10	LNovaga 2025-03-10	2025-03-10
C30004230	B	50-00-TP-028 C10003444	In the SK 026 1/2 supports PS-01015.1 (S-64) and PS-01015.5 (C-33) are not installed correctly.	.	Supports properly installed	LNovaga 2025-03-10	RDegliEsposti 2025-07-22	RDegliEsposti 2025-07-22	2025-07-22
C30004231	B	50-00-TP-028 C10003444	In the SK 026 1/2 correct the gap in the PS-01014.1 (S-64) and installed correctly PS-01014.5 (C-33).	.	Required actions have been completed.	LNovaga 2025-03-10	RDegliEsposti 2025-07-22	RDegliEsposti 2025-07-22	2025-07-22
C30004232	B	50-00-TP-028 C10003444	In the SK 026 2/2 correct the gap of the support PS-01027.3 (C-33)	.	Support installed	LNovaga 2025-03-10	RDegliEsposti 2025-07-22	RDegliEsposti 2025-07-22	2025-07-22

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 50 Fresh Water Systems

SUBSYSTEM 50-00 Seawater Intake System (Lifting Pumps)

Piping

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30004233	B	50-00-TP-028 C10003444	In the SK 026 2/2 PS-01028.3 (C-33) is missing.	.	Support installed	LNovaga 2025-03-10	RDegliEsposti 2025-07-22	RDegliEsposti 2025-07-22	2025-07-22
C30004235	B	50-00-TP-028 C10003444	On SK 154 support PS-01049.1 (S-64) there is a nut to be tightened N-E side.	.		LNovaga 2025-03-10	2025-04-07	LNovaga 2025-04-07	2025-04-07
C30004278	B	50-00-TP-045 C10003579	Missing the insulation pillow around the valve BLPH-MV-051 and BLPH-MV-048.	.		LNovaga 2025-03-25	2025-04-04	LNovaga 2025-04-04	2025-04-04
C30004307	B	50-00-TP-028 C10003445	On isometric 026 are missing the insulation around the nipple (pos. 5 sheet 1/2), insulation pillows around joints 026-2-J6, 026-2-J5 and	.	Insulation installed	LNovaga 2025-04-02	RDegliEsposti 2025-07-24	RDegliEsposti 2025-07-24	2025-07-24
C30004308	B	50-00-TP-028 C10003445	On isometric 154 are missing the insulation pillows around BLPH-MV-471 and joint 154-1-J3.	.		LNovaga 2025-04-02	2025-04-04	LNovaga 2025-04-04	2025-04-04
C30004309	B	50-00-TP-028 C10003445	The joint and the overlap of the sheets are not sealed.	.		LNovaga 2025-04-02	2025-04-04	LNovaga 2025-04-04	2025-04-04
C30004310	B	50-00-TP-001 C10003235	Missing the insulation pillows around all joints and all valves of test pack.	.		LNovaga 2025-04-02	2025-04-04	LNovaga 2025-04-04	2025-04-04
C30004311	B	50-00-TP-001 C10003235	The joints and the overlap of the sheets are not sealed.	.		LNovaga 2025-04-02	2025-04-04	LNovaga 2025-04-04	2025-04-04

Project CROSSWIND

PUNCH LIST REPORT

SYSTEM 50 Fresh Water Systems

SUBSYSTEM 50-00 Seawater Intake System (Lifting Pumps)

Electrical

CODE	CAT	ITEM	DEFECT DESCRIPTION	CORRECTIVE ACTION	PERFORMED ACTION	ISSUED	CARRIED	CHECKED	APPROVED
C30004163	B	83019-CEL C10000540	Missing the SS cable tag side the coiled (PM-50001A).	.		Gtangianu 2025-02-27	2025-03-10	JKrizanic 2025-03-10	2025-03-10
C30004164	B	83018-CEL C10000539	Missing the SS cable tag side the coiled (PM-50001A).	.		Gtangianu 2025-02-27	2025-03-10	JKrizanic 2025-03-10	2025-03-10
C30004401	B	A6/+01-QF1 C10002993	Remote start command not working.	Drawer removed and sent to Vendor's Workshop for maintenance	Installed.	FSirigu 2025-07-26	RDegliEsposti 2025-08-01	RDegliEsposti 2025-08-01	2025-08-01

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004231

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003444	1.4 Discipline	Piping
1.2 Item	50-00-TP-028	Test Pack 50-00-TP-028	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

In the SK 026 1/2 correct the gap in the PS-01014.1 (S-64) and installed correctly PS-01014.5 (C-33).

Name: Lorenzo Novaga
Date: 2025-03-10
Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-03-10
3.5 Action by	PRE-COMM	Signature	

4 - PERFORMED ACTION

Required actions have been completed.

Name: Raffaele Degli Esposti
Date: 2025-07-22
Signature:

5 - CLEARANCE CHECK

Done.

Name: Raffaele Degli Esposti
Date: 2025-07-22
Signature:

6- CLEARANCE APPROVAL

Name:
Date: 2025-07-22
Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004232

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003444	1.4 Discipline	Piping
1.2 Item	50-00-TP-028	Test Pack 50-00-TP-028	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

In the SK 026 2/2 correct the gap of the support PS-01027.3 (C-33)

Name: Lorenzo Novaga
Date: 2025-03-10
Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-03-10
3.5 Action by	PRE-COMM	Signature	

4 - PERFORMED ACTION

Gap corrected

Name: Raffaele Degli Esposti
Date: 2025-07-22
Signature:

5 - CLEARANCE CHECK

Done.

Name: Raffaele Degli Esposti
Date: 2025-07-22
Signature:

6- CLEARANCE APPROVAL

Name:
Date: 2025-07-22
Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004233

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003444	1.4 Discipline	Piping
1.2 Item	50-00-TP-028	Test Pack 50-00-TP-028	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

In the SK 026 2/2 PS-01028.3 (C-33) is missing.

Name: Lorenzo Novaga
Date: 2025-03-10
Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-03-10
3.5 Action by	PRE-COMM	Signature	

4 - PERFORMED ACTION

Support installed

Name: Raffaele Degli Esposti
Date: 2025-07-22
Signature:

5 - CLEARANCE CHECK

Done.

Name: Raffaele Degli Esposti
Date: 2025-07-22
Signature:

6- CLEARANCE APPROVAL

Name:
Date: 2025-07-22
Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004234

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003444	1.4 Discipline	Piping
1.2 Item	50-00-TP-028	Test Pack 50-00-TP-028	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

Flange management activity on joint 026-2-J5 is not done. (SK 026 2/2).

Name: Lorenzo Novaga
Date: 2025-03-10
Signature:

3 - DEFECT ASSESSMENT

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3.1 Corrective action proposal

3.2 Material required

3.3 Priority	A PL A	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-03-10
3.5 Action by	PRE-COMM	Signature	

4 - PERFORMED ACTION

Completed

Name: Raffaele Degli Esposti
Date: 2025-07-10
Signature:

5 - CLEARANCE CHECK

Name: Raffaele Degli Esposti
Date: 2025-07-10
Signature:

6- CLEARANCE APPROVAL

Name:
Date: 2025-07-10
Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004235

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003444	1.4 Discipline	Piping
1.2 Item	50-00-TP-028	Test Pack 50-00-TP-028	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

On SK 154 support PS-01049.1 (S-64) there is a nut to be tightened N-E side.

Name: Lorenzo Novaga

Date: 2025-03-10

Signature:

3 - DEFECT ASSESSMENT

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3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-03-10
3.5 Action by	PRE-COMM	Signature	

4 - PERFORMED ACTION

Name:

Date: 2025-04-07

Signature:

5 - CLEARANCE CHECK

Done.

Name: Lorenzo Novaga

Date: 2025-04-07

Signature:

6- CLEARANCE APPROVAL

Name:

Date: 2025-04-07

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004239

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002365	1.4 Discipline	Mechanical
1.2 Item	P-50001A	Sea Water Pump A	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

Pump has not been fixed to structure. To be dismantled and reassembled after transportation. Final fixing to structure to be done offshore after assembly with suction nozzle.

Name: Lorenzo Novaga
Date: 2025-03-12
Signature:

3 - DEFECT ASSESSMENT

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3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-03-12
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

The activity will be done / check during offshore phase. refer to task C10004930.

Name: Lorenzo Novaga
Date: 2025-04-15
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004240

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002365	1.4 Discipline	Mechanical
1.2 Item	P-50001A	Sea Water Pump A	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

Suction nozzle to be installed offshore.

Name: Lorenzo Novaga

Date: 2025-03-12

Signature:

3 - DEFECT ASSESSMENT

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3.1 Corrective action proposal

3.2 Material required

3.3 Priority	A PL A	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-03-12
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

The activity will be done / check during offshore phase. refer to task C10004930.

Name: Lorenzo Novaga

Date: 2025-04-15

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004241

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002365	1.4 Discipline	Mechanical
1.2 Item	P-50001A	Sea Water Pump A	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

Seal system made by Flowserve has not been installed. To be installed offshore.

Name: Lorenzo Novaga

Date: 2025-03-12

Signature:

3 - DEFECT ASSESSMENT

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3.1 Corrective action proposal

3.2 Material required

3.3 Priority	A PL A	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-03-12
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

The activity will be done / check during offshore phase. refer to task C10004930.

Name: Lorenzo Novaga

Date: 2025-04-15

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004242

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002365	1.4 Discipline	Mechanical
1.2 Item	P-50001A	Sea Water Pump A	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

Lubrication system to be checked before commissioning. Not possible to be checked now.

Name: Lorenzo Novaga
Date: 2025-03-12
Signature:

3 - DEFECT ASSESSMENT

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3.1 Corrective action proposal

3.2 Material required

3.3 Priority	A PL A	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-03-12
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

The activity will be done / check during offshore phase. refer to task C10004930.

Name: Lorenzo Novaga
Date: 2025-04-15
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004243

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002366	1.4 Discipline	Mechanical
1.2 Item	P-50001B	Sea Water Pump B	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

Compared to the pump A, there is no label with the arrow above the pump tag, in the annex the example of the pump A.

Name: Lorenzo Novaga

Date: 2025-03-12

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-03-12
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

The activity will be done / check during offshore phase. refer to task C10004931.

Name: Lorenzo Novaga

Date: 2025-04-15

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


PC
CE
N° 070P140016399
Item 317873
Cyl 462 cm3
Rpm 118
Bar 5.9
Mod 25A24
2024
Ref P-50001A

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004278

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003579	1.4 Discipline	Piping
1.2 Item	50-00-TP-045	Test Pack 50-00-TP-045	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

Missing the insulation pillow around the valve BLPH-MV-051 and BLPH-MV-048.

Name: Lorenzo Novaga

Date: 2025-03-25

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-03-25
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installed.

Name: Lorenzo Novaga

Date: 2025-04-04

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004307

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003445	1.4 Discipline	Piping
1.2 Item	50-00-TP-028	Test Pack 50-00-TP-028	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

On isometric 026 are missing the insulation around the nipple (pos. 5 sheet 1/2), insulation pillows around joints 026-2-J6, 026-2-J5 and valve BLPH-MV-241 (sheet 2/2).

Name: Lorenzo Novaga
Date: 2025-04-02
Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-04-02
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Insulation installed

Name: Raffaele Degli Esposti
Date: 2025-07-24
Signature:

5 - CLEARANCE CHECK

Done.

Name: Raffaele Degli Esposti
Date: 2025-07-24
Signature:

6- CLEARANCE APPROVAL

Name:
Date: 2025-07-24
Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004308

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003445	1.4 Discipline	Piping
1.2 Item	50-00-TP-028	Test Pack 50-00-TP-028	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

On isometric 154 are missing the insulation pillows around BLPH-MV-471 and joint 154-1-J3.

Name: Lorenzo Novaga

Date: 2025-04-02

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-04-02
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installed.

Name: Lorenzo Novaga

Date: 2025-04-04

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004309

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003445	1.4 Discipline	Piping
1.2 Item	50-00-TP-028	Test Pack 50-00-TP-028	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

The joint and the overlap of the sheets are not sealed.

Name: Lorenzo Novaga

Date: 2025-04-02

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-04-02
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installed.

Name: Lorenzo Novaga

Date: 2025-04-04

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004310

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003235	1.4 Discipline	Piping
1.2 Item	50-00-TP-001	Test Pack 50-00-TP-001	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

Missing the insulation pillows around all joints and all valves of test pack.

Name: Lorenzo Novaga
Date: 2025-04-02
Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-04-02
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

Installed.

Name: Lorenzo Novaga
Date: 2025-04-04
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004311

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003235	1.4 Discipline	Piping
1.2 Item	50-00-TP-001	Test Pack 50-00-TP-001	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

The joints and the overlap of the sheets are not sealed.

Name: Lorenzo Novaga

Date: 2025-04-02

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-04-02
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Installed.

Name: Lorenzo Novaga

Date: 2025-04-04

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004396

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003444	CLX02B	1.4 Discipline	Piping
1.2 Item	50-00-TP-028		Test Pack 50-00-TP-028	
1.3 Subsystem	50-00		Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

Flange management activity on joint 026-2-J5 is not done. (SK 026 2/2).

Name

Date 2025-07-24

Signature

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	A PL A	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-03-10
3.5 Action by		Signature	--- Proverlis --- Duplicata issued from database information Signature is on original form

4 - PERFORMED ACTION

Activity completed.

Name Raffaele Degli Esposti

Date 2025-07-24

Signature

5 - CLEARANCE CHECK

Refer to task C10003444 Report.

Name Raffaele Degli Esposti

Date 2025-07-24

Signature

6- CLEARANCE APPROVAL

Name

Date

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004401

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002993	1.4 Discipline	Electrical
1.2 Item	A6/+01-QF1	SEA WATER PUMP B - A6/+01-QF1	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

Remote start command not working.

Name: Fabio Sirigu
Date: 2025-07-26
Signature:

3 - DEFECT ASSESSMENT

3.1 Corrective action proposal: Drawer removed and sent to Vendor's Workshop for maintenance

3.2 Material required:

3.3 Priority	B PL B	Name	Fabio Sirigu
3.4 Activity code	COMM Commissioning	Date	2025-07-26
3.5 Action by	VND Vendor	Signature	

4 - PERFORMED ACTION

Installed.

Name: Raffaele Degli Esposti
Date: 2025-08-01
Signature:

5 - CLEARANCE CHECK

Done.

Name: Raffaele Degli Esposti
Date: 2025-08-01
Signature:

6- CLEARANCE APPROVAL

Name:
Date: 2025-08-01
Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003635

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002018	1.4 Discipline	Instrumental
1.2 Item	50-XY-004		Solenoid Valve - Sea Water Recirculation from Pump P-50001B
1.3 Subsystem	50-00		Seawater Intake System (Lifting Pumps)

2 - OBSERVATION

Missing tag SS , on Solenoid Valve.

Name: Alessio Polo

Date: 2025-02-10

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-02-10
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Andrea Andreani

Date: 2025-02-21

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003636

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10001190	1.4 Discipline	Instrumental
1.2 Item	50-XV-004		On/Off Valve - Sea Water Recirculation from Pump P-50001B
1.3 Subsystem	50-00		Seawater Intake System (Lifting Pumps)

2 - OBSERVATION

Missing data plate SS , on the valve.

Name: Alessio Polo
Date: 2025-02-10
Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-02-10
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

DONE

Name: Josip Krizanic
Date: 2025-02-27
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003637

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000106	1.4 Discipline	Instrumental
1.2 Item	C-50-XV-004/00-JE-12006	PROXIMITY SWITCH / MARSHALLING PCS	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

Missing core identification ("OS"overall shield terminal) inside Limit switch (ZSHL)

Name: Alessio Polo
Date: 2025-02-10
Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-02-10
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

DONE

Name: Josip Krizanic
Date: 2025-02-22
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003638

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000106	1.4 Discipline	Instrumental
1.2 Item	C-50-XV-004/00-JE-12006	PROXIMITY SWITCH / MARSHALLING PCS	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

The cable (between external cable tray and instrument). must be dressed/fixed properly.

Name: Alessio Polo
Date: 2025-02-10
Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-02-10
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

DONE

Name: Alessio Polo
Date: 2025-02-26
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:


FLANGE
TAG
50-00
J5

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004080

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000051	1.4 Discipline	Instrumental
1.2 Item	C-50-TT-001/00-JE-11004	FLOW TRANSMITTER / MARSHALLING PCS	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

The cable is not support .

Name: Alessio Polo
Date: 2025-02-21
Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-02-21
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

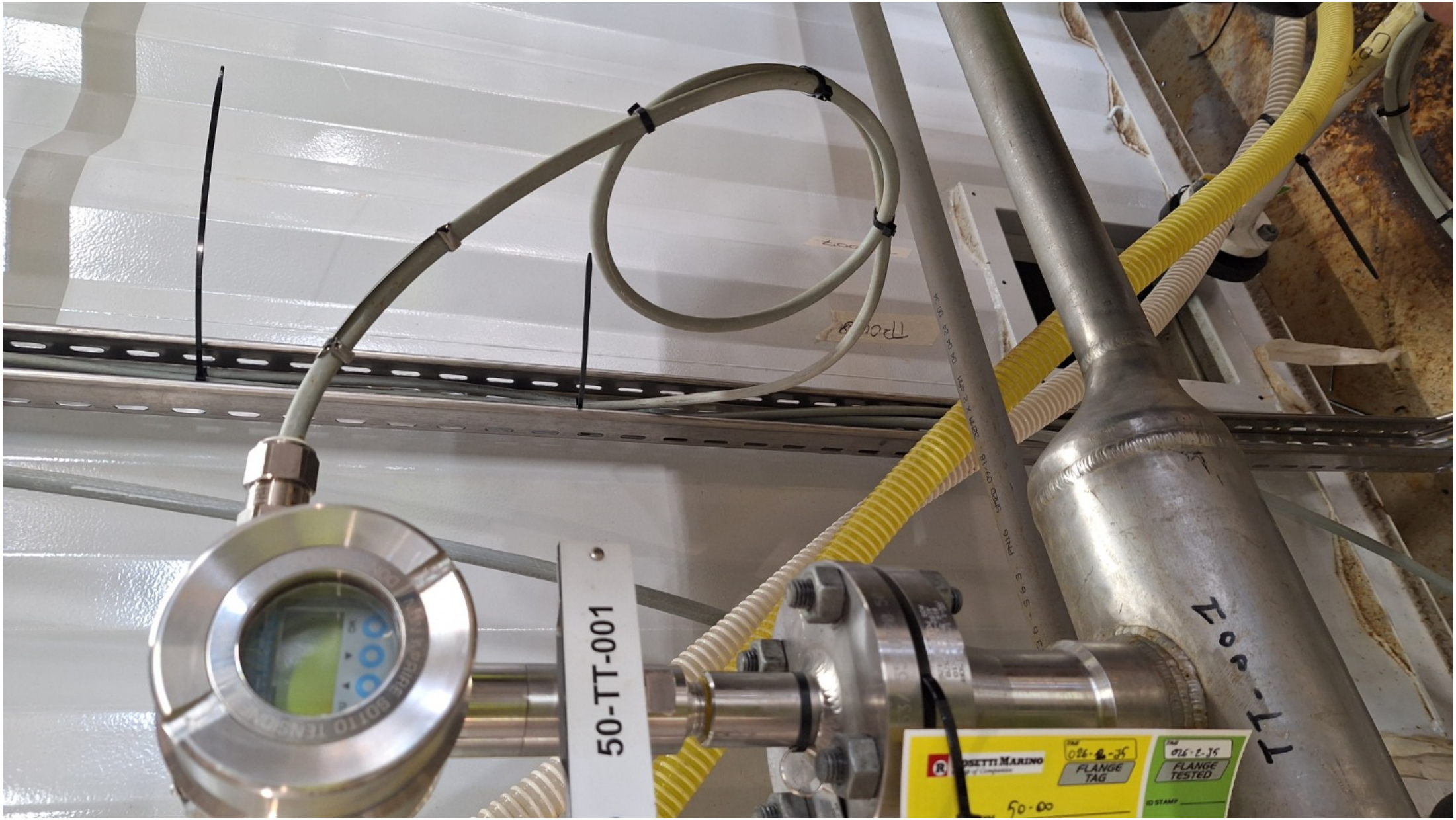
5 - CLEARANCE CHECK

DONE

Name: Josip Krizanic
Date: 2025-02-27
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:


50-TT-001
FLANGE TAG
FLANGE TESTED

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004081

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000904	1.4 Discipline	Instrumental
1.2 Item	50-TT-001		Temperature Transmitter - Sea Water from Lift Pump P-50001A/B
1.3 Subsystem	50-00		Seawater Intake System (Lifting Pumps)

2 - OBSERVATION

Missing the earth connection on the instrument.

Name: Alessio Polo
Date: 2025-02-21
Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	A PL A	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-02-21
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

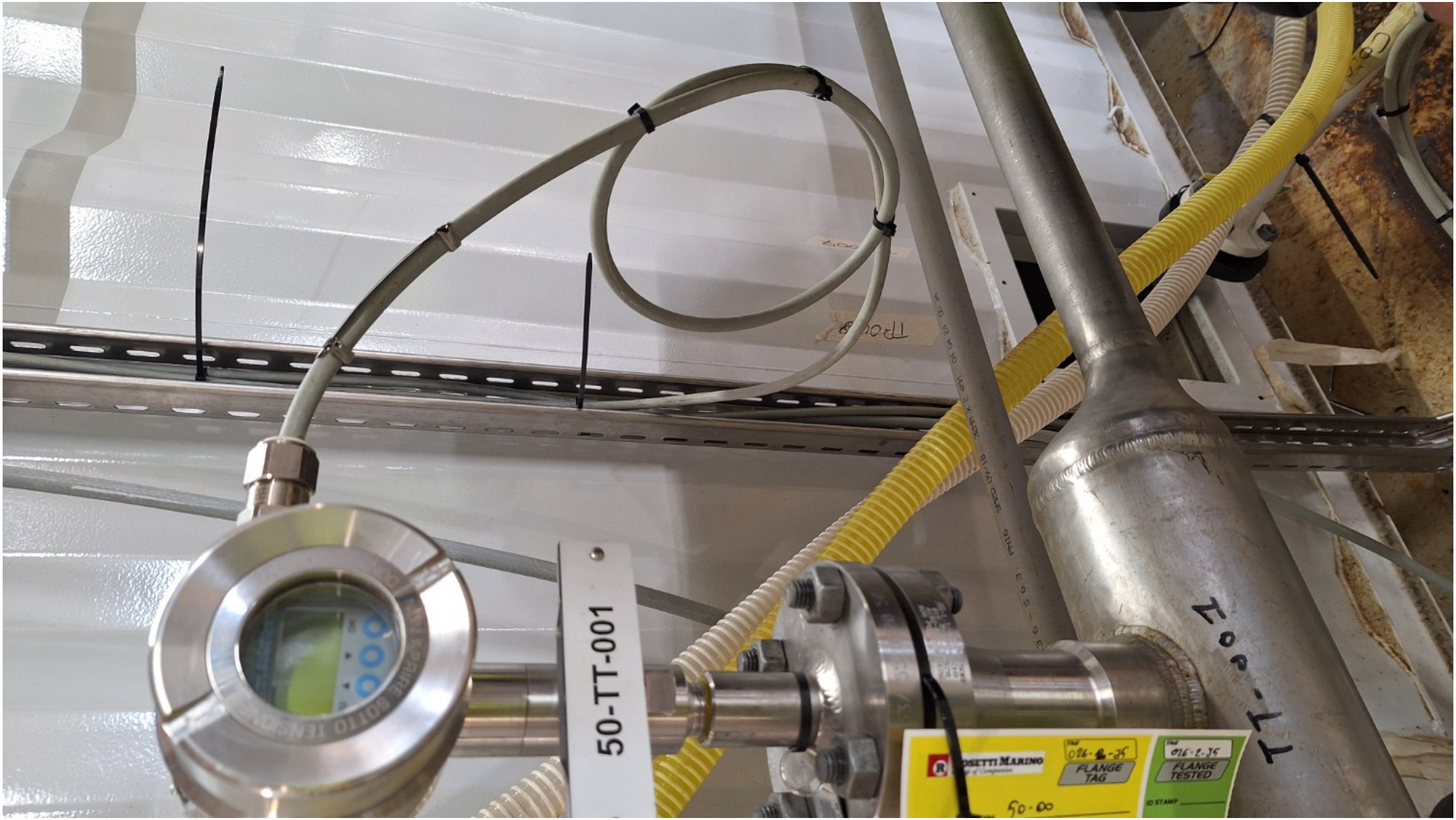
5 - CLEARANCE CHECK

DONE

Name: Josip Krizanic
Date: 2025-02-25
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:


50-TT-001
FLANGE TAG
FLANGE TESTED

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004082

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000904	1.4 Discipline	Instrumental
1.2 Item	50-TT-001		Temperature Transmitter - Sea Water from Lift Pump P-50001A/B
1.3 Subsystem	50-00		Seawater Intake System (Lifting Pumps)

2 - OBSERVATION

Missing tag SS , on the instrument.

Name: Alessio Polo
Date: 2025-02-21
Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-02-21
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

DONE

Name: Alessio Polo
Date: 2025-02-24
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004131

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003234	1.4 Discipline	Piping
1.2 Item	50-00-TP-001	Test Pack 50-00-TP-001	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

BLPH-MV-043 has stem direction north and gear down. The valve was rotated because it was hard to maneuver.

Name: Lorenzo Novaga

Date: 2025-02-25

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-02-25
3.5 Action by	ENG Engineering	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Accettable.

Name: Lorenzo Novaga

Date: 2025-02-25

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004132

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003234	1.4 Discipline	Piping
1.2 Item	50-00-TP-001	Test Pack 50-00-TP-001	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

BLPH-MV-050 has stem direction north and gear down. The valve was rotated because it was hard to maneuver.

Name: Lorenzo Novaga

Date: 2025-02-25

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-02-25
3.5 Action by	ENG Engineering	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Accettable.

Name: Lorenzo Novaga

Date: 2025-02-25

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004135

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003234	1.4 Discipline	Piping
1.2 Item	50-00-TP-001	Test Pack 50-00-TP-001	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

All standard's supports are S-64 - 1-1/2" - 90 - 200, documents must be correct. Pipe is aligned to battery limit (pumps)

Name: Lorenzo Novaga
Date: 2025-02-25
Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-02-25
3.5 Action by	ENG Engineering	Signature	

4 - PERFORMED ACTION

Changes have been recorded on RLMUs

Name: Raffaele Degli Esposti
Date: 2025-06-25
Signature:

5 - CLEARANCE CHECK

"Ref. to RLMU 123A90-DDL-PP-DD-72000-PS-01011_01_01A
+ RLMU 123A90-DDL-PP-DD-72000-PS-01013_01_01A
+ RLMU 123A90-DDL-PP-DD-72000-PS-01016_01_01A
+ LMU 123A90-DDL-PP-DD-72000-PS-01017_01_01A"

Name: Raffaele Degli Esposti
Date: 2025-06-25
Signature:

6- CLEARANCE APPROVAL

Name:
Date: 2025-06-25
Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004158

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10004536	1.4 Discipline	Instrumental
1.2 Item	50-PSV-006	Pressure Safety Valve	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

Scratches on painting, general touch-up to be performed.

Name: Luca Mussi

Date: 2025-02-26

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Luca Mussi
3.4 Activity code	MC Mechanical Completion	Date	2025-02-26
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done

Name: Lorenzo Novaga

Date: 2025-05-06

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004163

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000540	1.4 Discipline	Electrical
1.2 Item	83019-CEL	LV Switchgear / Sea water intake pump B	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

Missing the SS cable tag side the coiled (PM-50001A).

Name: Giovanni Tangianu

Date: 2025-02-27

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Giovanni Tangianu
3.4 Activity code	MC Mechanical Completion	Date	2025-02-27
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date: 2025-03-10

Signature:

5 - CLEARANCE CHECK

DONE

Name: Josip Krizanic

Date: 2025-03-10

Signature:

6- CLEARANCE APPROVAL

Name:

Date: 2025-03-10

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004164

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000539	1.4 Discipline	Electrical
1.2 Item	83018-CEL	LV Switchgear / Sea water intake pump A	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

Missing the SS cable tag side the coiled (PM-50001A).

Name: Giovanni Tangianu

Date: 2025-02-27

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Giovanni Tangianu
3.4 Activity code	MC Mechanical Completion	Date	2025-02-27
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date: 2025-03-10

Signature:

5 - CLEARANCE CHECK

DONE

Name: Josip Krizanic

Date: 2025-03-10

Signature:

6- CLEARANCE APPROVAL

Name:

Date: 2025-03-10

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004183

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10004537	1.4 Discipline	Instrumental
1.2 Item	50-PSV-007	Pressure Safety Valve	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

Scratches on painting, general touch-up to be performed

Name: Luca Mussi

Date: 2025-02-28

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Luca Mussi
3.4 Activity code	MC Mechanical Completion	Date	2025-02-28
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

done

Name: Lorenzo Novaga

Date: 2025-05-06

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004185

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002366	1.4 Discipline	Mechanical
1.2 Item	P-50001B	Sea Water Pump B	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

Nameplate of Motor from ABB has Item tag wrong. Equipment number as for Vendor asset register is 3G1F2433998069. On the nameplate is 3G1F24343998069, with a 4 in place of 3 at the 8th digit.

Name: Kangi Albonetti

Date: 2025-03-01

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Kangi Albonetti
3.4 Activity code	MC Mechanical Completion	Date	2025-03-01
3.5 Action by	VND Vendor	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done.

Name: Lorenzo Novaga

Date: 2025-03-18

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004186

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002366	1.4 Discipline	Mechanical
1.2 Item	P-50001B	Sea Water Pump B	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

Pump has not been fixed to structure. To be dismantled and reassembled after transportation. Final fixing to structure to be done offshore after assembly with suction nozzle.

Name: Kangi Albonetti

Date: 2025-03-01

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	A PL A	Name	Kangi Albonetti
3.4 Activity code	MC Mechanical Completion	Date	2025-03-01
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

The activity will be done / check during offshore phase. refer to task C10004931.

Name: Lorenzo Novaga

Date: 2025-04-15

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004187

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002366	1.4 Discipline	Mechanical
1.2 Item	P-50001B	Sea Water Pump B	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

Suction nozzle to be installed offshore.

Name: Kangi Albonetti

Date: 2025-03-01

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	A PL A	Name	Kangi Albonetti
3.4 Activity code	MC Mechanical Completion	Date	2025-03-01
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

The activity will be done / check during offshore phase. refer to task C10004931.

Name: Lorenzo Novaga

Date: 2025-04-15

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004188

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002366	1.4 Discipline	Mechanical
1.2 Item	P-50001B	Sea Water Pump B	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

Seal system made by Flowserve has not been installed. To be installed offshore.

Name: Kangi Albonetti

Date: 2025-03-01

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	A PL A	Name	Kangi Albonetti
3.4 Activity code	MC Mechanical Completion	Date	2025-03-01
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

The activity will be done / check during offshore phase. refer to task C10004931.

Name: Lorenzo Novaga

Date: 2025-04-15

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004189

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002366	1.4 Discipline	Mechanical
1.2 Item	P-50001B	Sea Water Pump B	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

Lubrication system to be checked before commissioning. Not possible to be checked now.

Name: Kangi Albonetti
Date: 2025-03-01
Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	A PL A	Name	Kangi Albonetti
3.4 Activity code	MC Mechanical Completion	Date	2025-03-01
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

The activity will be done / check during offshore phase. refer to task C10004931.

Name: Lorenzo Novaga
Date: 2025-04-15
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004216

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003444	1.4 Discipline	Piping
1.2 Item	50-00-TP-028	Test Pack 50-00-TP-028	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

.

Name Lorenzo Novaga

Date 2025-03-10

Signature

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-03-10
3.5 Action by	ENG Engineering	Signature	

4 - PERFORMED ACTION

Name

Date 2025-03-10

Signature

5 - CLEARANCE CHECK

Done.

Name Lorenzo Novaga

Date 2025-03-10

Signature

6- CLEARANCE APPROVAL

Name

Date 2025-03-10

Signature

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30004230

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003444	1.4 Discipline	Piping
1.2 Item	50-00-TP-028	Test Pack 50-00-TP-028	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

In the SK 026 1/2 supports PS-01015.1 (S-64) and PS-01015.5 (C-33) are not installed correctly.

Name: Lorenzo Novaga
Date: 2025-03-10
Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Lorenzo Novaga
3.4 Activity code	MC Mechanical Completion	Date	2025-03-10
3.5 Action by	PRE-COMM	Signature	

4 - PERFORMED ACTION

Supports properly installed

Name: Raffaele Degli Esposti
Date: 2025-07-22
Signature:

5 - CLEARANCE CHECK

Done.

Name: Raffaele Degli Esposti
Date: 2025-07-22
Signature:

6- CLEARANCE APPROVAL

Name:
Date: 2025-07-22
Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003612

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000127	1.4 Discipline	Instrumental
1.2 Item	C-50-XY-003/00-JE-13003	SOLENOID VALVE / MARSHALLING PCS	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

The cable (between external cable tray and instrument) to be dressed/fixed properly.

Name: Alessio Polo

Date: 2025-02-08

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-02-08
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Andrea Andreani

Date: 2025-02-21

Signature:

6- CLEARANCE APPROVAL

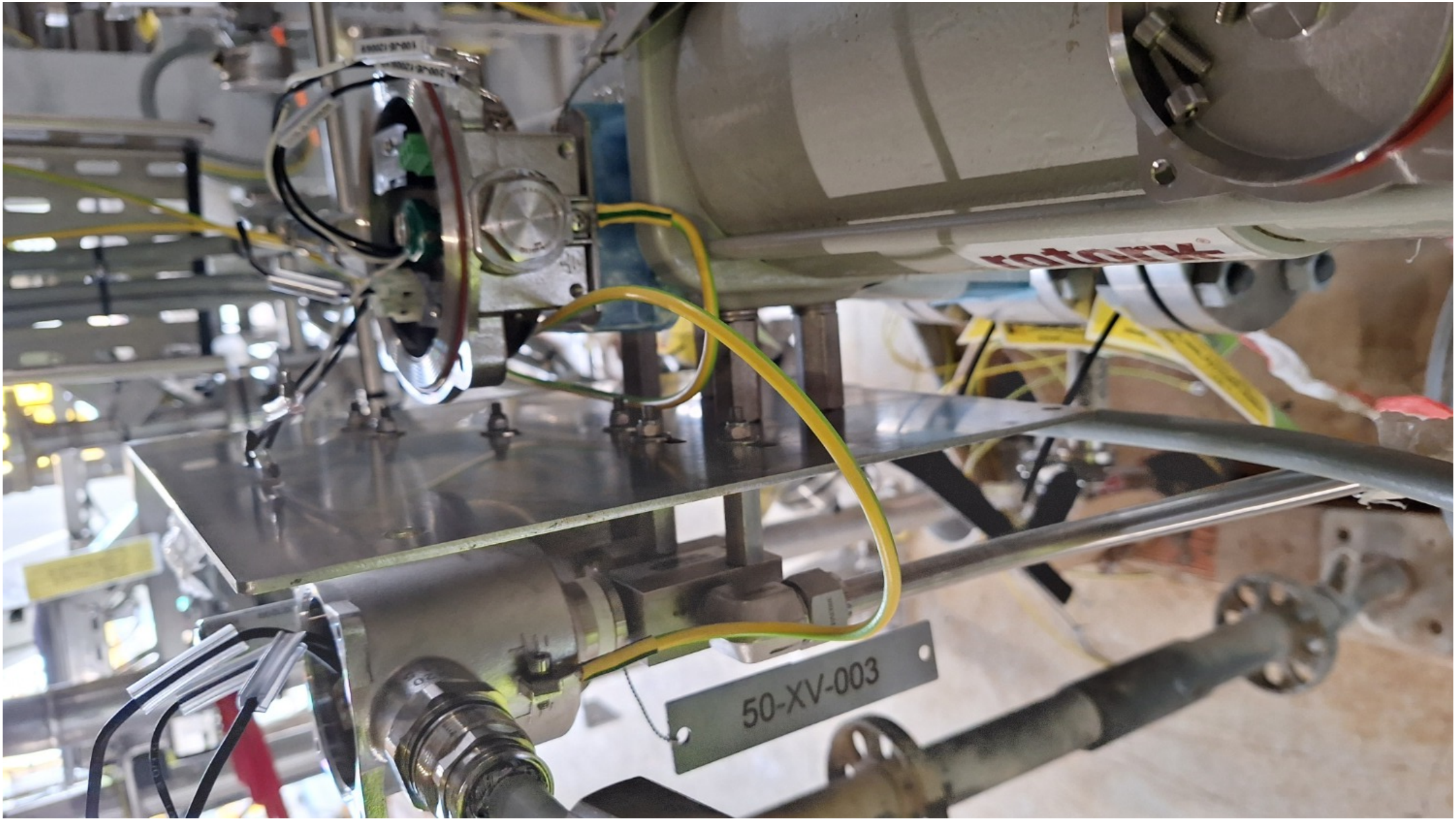
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Date:

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50-XV-003

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003613

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002017	1.4 Discipline	Instrumental
1.2 Item	50-XY-003		Solenoid Valve - Sea Water from Pump P-50001B
1.3 Subsystem	50-00		Seawater Intake System (Lifting Pumps)

2 - OBSERVATION

Missing tag SS , on Solenoid Valve.

Name: Alessio Polo

Date: 2025-02-08

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-02-08
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Andrea Andreani

Date: 2025-02-21

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003614

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000105	1.4 Discipline	Instrumental
1.2 Item	C-50-XV-003/00-JE-12006	PROXIMITY SWITCH / MARSHALLING PCS	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

Wrong cores identification tag. side J.B. 00-JE-12006 . (see document 123A90-DDL-IN-DG-40016 sh.3)

Name: Alessio Polo
Date: 2025-02-08
Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-02-08
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

DONE

Name: Andrea Andreani
Date: 2025-02-21
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003616

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000105	1.4 Discipline	Instrumental
1.2 Item	C-50-XV-003/00-JE-12006	PROXIMITY SWITCH / MARSHALLING PCS	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

The core "OS" (overall shield terminal) is not connected.

Name: Alessio Polo

Date: 2025-02-08

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	A PL A	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-02-08
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Andrea Andreani

Date: 2025-02-21

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:



ROSETTI MARINO CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003617

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000105	1.4 Discipline	Instrumental
1.2 Item	C-50-XV-003/00-JE-12006	PROXIMITY SWITCH / MARSHALLING PCS	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

Missing n°1 terminal block for connection The core "OS" (overall shield terminal)

Name: Alessio Polo

Date: 2025-02-08

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-02-08
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Josip Krizanic

Date: 2025-02-21

Signature:

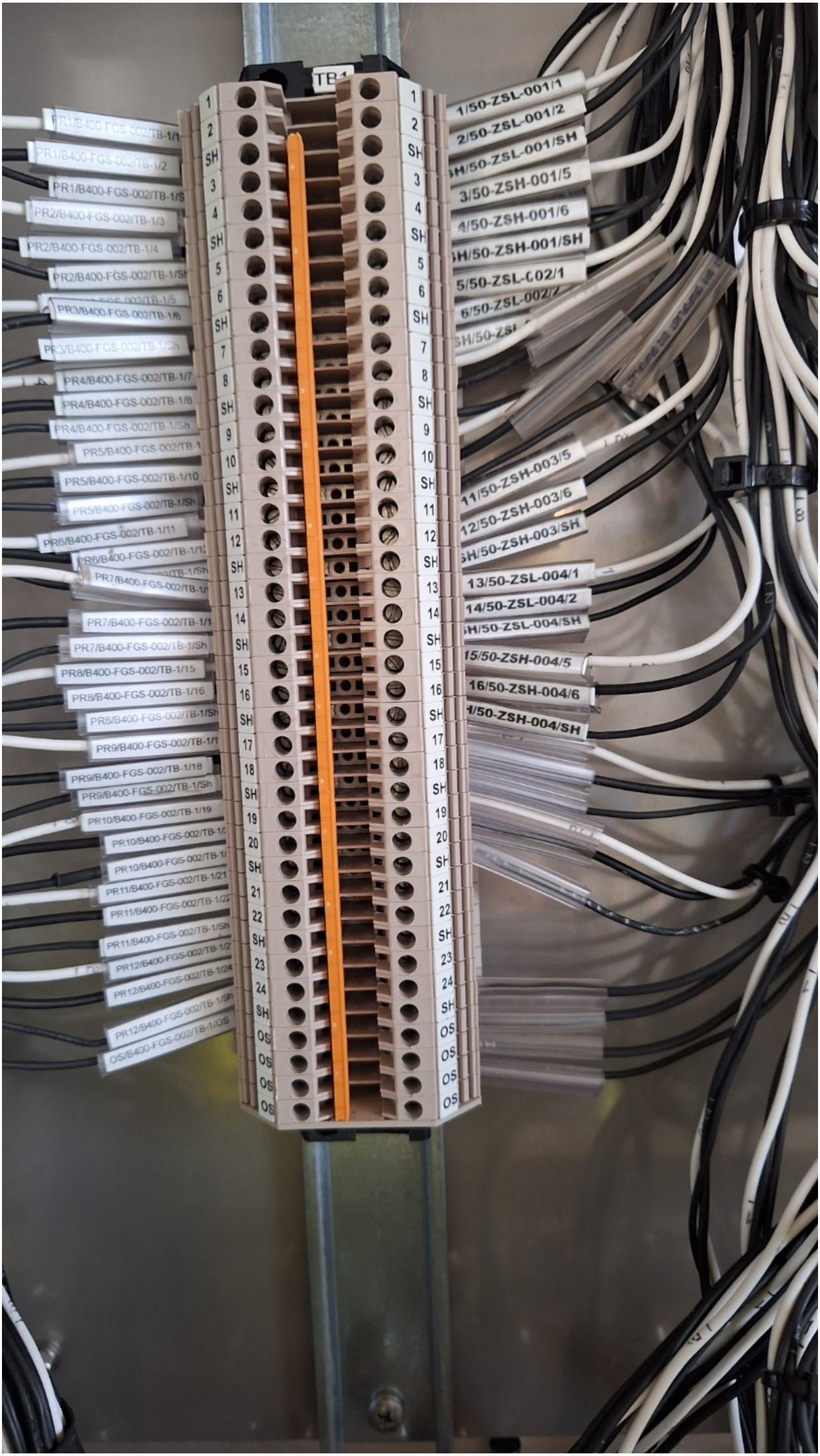
6- CLEARANCE APPROVAL

Name:

Date:

Signature:




TB1
PR1/B400-FGS-002/TB-1/1
PR1/B400-FGS-002/TB-1/2
PR1/B400-FGS-002/TB-1/S
PR2/B400-FGS-002/TB-1/3
PR2/B400-FGS-002/TB-1/4
PR2/B400-FGS-002/TB-1/Sh
PR3/B400-FGS-002/TB-1/6
PR3/B400-FGS-002/TB-1/Sh
PR4/B400-FGS-002/TB-1/7
PR4/B400-FGS-002/TB-1/8
PR4/B400-FGS-002/TB-1/Sh
PR5/B400-FGS-002/TB-1
PR5/B400-FGS-002/TB-1/10
PR5/B400-FGS-002/TB-1/Sh
PR6/B400-FGS-002/TB-1/11
PR6/B400-FGS-002/TB-1/1
PR7/B400-FGS-002/TB-1/1
PR7/B400-FGS-002/TB-1/Sh
PR8/B400-FGS-002/TB-1/15
PR8/B400-FGS-002/TB-1/16
PR8/B400-FGS-002/TB-1/Sh
PR9/B400-FGS-002/TB-1/1
PR9/B400-FGS-002/TB-1/18
PR9/B400-FGS-002/TB-1/Sh
PR10/B400-FGS-002/TB-1/19
PR10/B400-FGS-002/TB-1/2
PR10/B400-FGS-002/TB-1/
PR11/B400-FGS-002/TB-1/21
PR11/B400-FGS-002/TB-1/22
PR11/B400-FGS-002/TB-1/Sh
PR12/B400-FGS-002/TB-1/2
PR12/B400-FGS-002/TB-1/24
PR12/B400-FGS-002/TB-1/Sh
OS/B400-FGS-002/TB-1/OS
1/50-ZSL-001/1
2/50-ZSL-001/2
3/50-ZSH-001/5
4/50-ZSH-001/6
5/50-ZSL-002/1
11/50-ZSH-003/5
12/50-ZSH-003/6
13/50-ZSL-004/1
14/50-ZSL-004/2
15/50-ZSH-004/5
16/50-ZSH-004/6

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003618

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000105	1.4 Discipline	Instrumental
1.2 Item	C-50-XV-003/00-JE-12006	PROXIMITY SWITCH / MARSHALLING PCS	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

Missing core identification The core "OS" (overall shield terminal) inside Limit switch (ZSHL))

Name: Alessio Polo

Date: 2025-02-08

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-02-08
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Josip Krizanic

Date: 2025-02-22

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003619

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002015	1.4 Discipline	Instrumental
1.2 Item	50-XY-001		Solenoid Valve - Sea Water from Pump P-50001A
1.3 Subsystem	50-00		Seawater Intake System (Lifting Pumps)

2 - OBSERVATION

Missing tag SS , on Solenoid Valve.

Name: Alessio Polo

Date: 2025-02-10

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-02-10
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Andrea Andreani

Date: 2025-02-21

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003620

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000125	1.4 Discipline	Instrumental
1.2 Item	C-50-XY-001/00-JE-13003	SOLENOID VALVE / MARSHALLING PCS	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

Wrong cores identification tag. side J.B. 00-JE-13003 . (see document 123A90-DDL-IN-DG-40016 sh.3)

Name: Alessio Polo
Date: 2025-02-10
Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-02-10
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

DONE

Name: Josip Krizanic
Date: 2025-02-22
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003621

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000125	1.4 Discipline	Instrumental
1.2 Item	C-50-XY-001/00-JE-13003	SOLENOID VALVE / MARSHALLING PCS	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

The cable is laid outside the secondary cable tray. must be dressed/fixed properly.

Name: Alessio Polo
Date: 2025-02-10
Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-02-10
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

DONE

Name: Josip Krizanic
Date: 2025-03-05
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:

50-XV-001

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003622

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000103	1.4 Discipline	Instrumental
1.2 Item	C-50-XV-001/00-JE-12006	PROXIMITY SWITCH / MARSHALLING PCS	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

The cable is not support .

Name: Alessio Polo
Date: 2025-02-10
Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-02-10
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

DONE

Name: Alessio Polo
Date: 2025-02-26
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:


50-XV-002

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003623

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000103	1.4 Discipline	Instrumental
1.2 Item	C-50-XV-001/00-JE-12006	PROXIMITY SWITCH / MARSHALLING PCS	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

Missing core identification ("OS"overall shield terminal) inside Limit switch (ZSHL)

Name: Alessio Polo
Date: 2025-02-10
Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-02-10
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

DONE

Name: Josip Krizanic
Date: 2025-02-22
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003624

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000126	1.4 Discipline	Instrumental
1.2 Item	C-50-XY-002/00-JE-13003	SOLENOID VALVE / MARSHALLING PCS	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

Wrong cores identification tag. side J.B. 00-JE-13003 . (see document 123A90-DDL-IN-DG-40016 sh.3)

Name: Alessio Polo
Date: 2025-02-10
Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-02-10
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

DONE

Name: Josip Krizanic
Date: 2025-02-22
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003626

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000126	1.4 Discipline	Instrumental
1.2 Item	C-50-XY-002/00-JE-13003	SOLENOID VALVE / MARSHALLING PCS	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

The cable (between external cable tray and instrument). must be dressed/fixed properly.

Name: Alessio Polo

Date: 2025-02-10

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-02-10
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Andrea Andreani

Date: 2025-02-21

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

rotork
fluid systems
www.rotork.com
50-XV-002


FRQ-533
50-XV-002
rotork
fluid system

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003627

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002016	1.4 Discipline	Instrumental
1.2 Item	50-XY-002		Solenoid Valve - Sea Water Recirculation from Pump P-50001A
1.3 Subsystem	50-00		Seawater Intake System (Lifting Pumps)

2 - OBSERVATION

Missing tag SS , on Solenoid Valve.

Name: Alessio Polo

Date: 2025-02-10

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-02-10
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Andrea Andreani

Date: 2025-02-21

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003628

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000104	1.4 Discipline	Instrumental
1.2 Item	C-50-XV-002/00-JE-12006	PROXIMITY SWITCH / MARSHALLING PCS	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

The cable (between external cable tray and instrument). must be dressed/fixed properly.

Name: Alessio Polo
Date: 2025-02-10
Signature:

3 - DEFECT ASSESSMENT

The cable is not support .

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-02-10
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

DONE

Name: Andrea Andreani
Date: 2025-02-21
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003629

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000104	1.4 Discipline	Instrumental
1.2 Item	C-50-XV-002/00-JE-12006	PROXIMITY SWITCH / MARSHALLING PCS	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

Missing core identification ("OS"overall shield terminal) inside Limit switch (ZSHL)

Name: Alessio Polo
Date: 2025-02-10
Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-02-10
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

DONE

Name: Josip Krizanic
Date: 2025-02-22
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003632

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000128	1.4 Discipline	Instrumental
1.2 Item	C-50-XY-004/00-JE-13003	SOLENOID VALVE / MARSHALLING PCS	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

Wrong cores identification tag. side J.B. 00-JE-13003 . (see document 123A90-DDL-IN-DG-40016 sh.3)

Name: Alessio Polo
Date: 2025-02-10
Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-02-10
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

DONE

Name: Josip Krizanic
Date: 2025-02-22
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003633

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000128	1.4 Discipline	Instrumental
1.2 Item	C-50-XY-004/00-JE-13003	SOLENOID VALVE / MARSHALLING PCS	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

The cable (between external cable tray and instrument). must be dressed/fixed properly.

Name: Alessio Polo
Date: 2025-02-10
Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-02-10
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

DONE

Name: Andrea Andreani
Date: 2025-02-21
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:




FLANGE
TAG
50-00
J5


rotork

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003634

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10002018	1.4 Discipline	Instrumental
1.2 Item	50-XY-004		Solenoid Valve - Sea Water Recirculation from Pump P-50001B
1.3 Subsystem	50-00		Seawater Intake System (Lifting Pumps)

2 - OBSERVATION

the earth cable is not fixed

Name: Alessio Polo

Date: 2025-02-10

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	A PL A	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-02-10
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Alessio Polo

Date: 2025-02-25

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:


C-50-XY-00400-JE

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002547

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10004524	1.4 Discipline	Building
1.2 Item	B-50013B	Sea Water Lift Pumps Caisson	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

There is no nozzle 1" #150 FF facing south differently ffrom the drawing. The structural pipe OD406 mm has not been even drilled.

Name: Kangi Albonetti
Date: 2025-01-09
Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	A PL A	Name	Kangi Albonetti
3.4 Activity code	MC Mechanical Completion	Date	2025-01-09
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

Nozzle added.

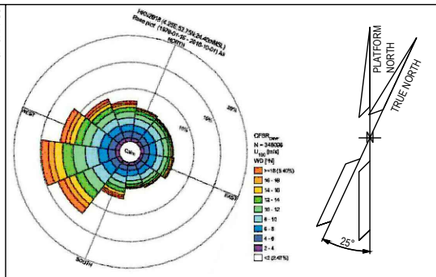
Name: Kangi Albonetti
Date: 2025-03-01
Signature:

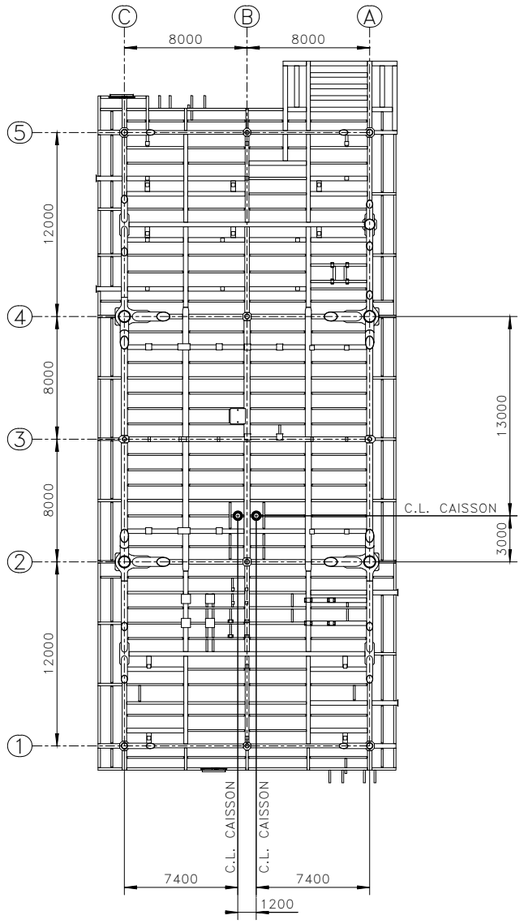
6- CLEARANCE APPROVAL

Name:
Date:
Signature:

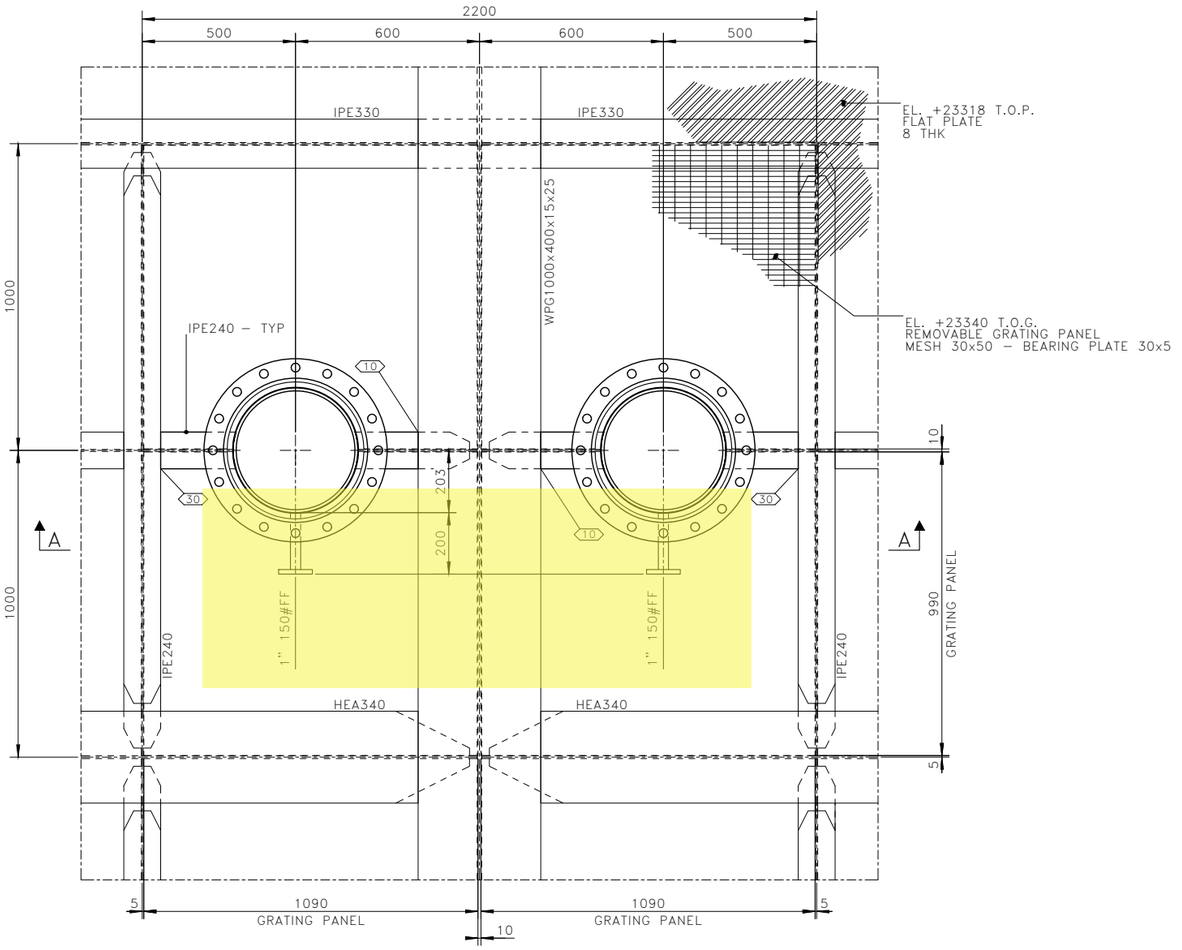
DRAWING NO. 123A90-DDL-ST-DD-90124

REV. 01

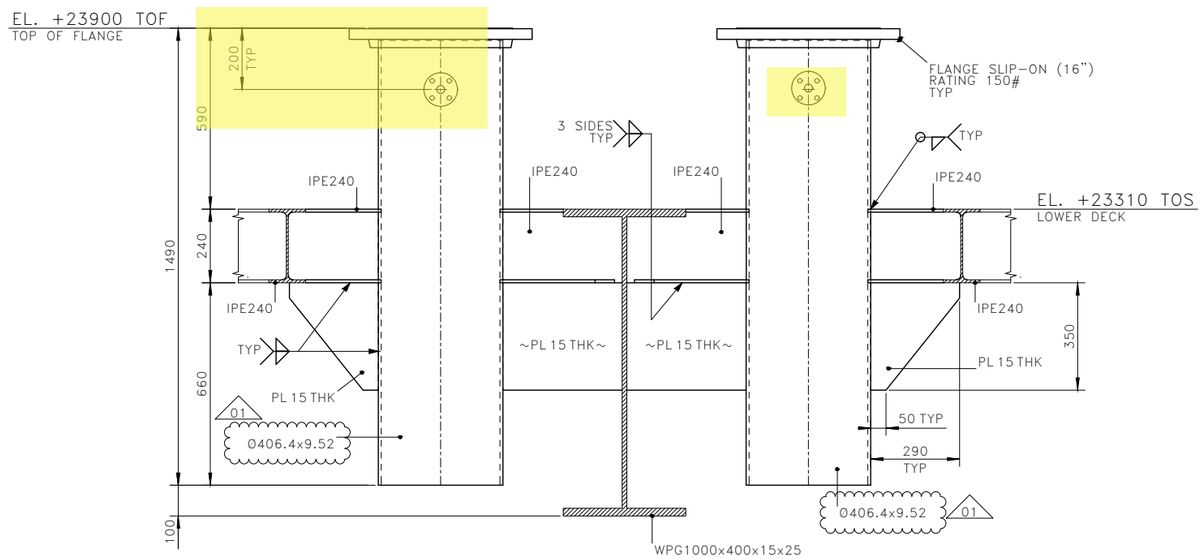




TOPSIDE – LOWER DECK
KEY PLAN
SCALE 1:200



CAISSON HATCH – PLAN VIEW
SCALE 1:10



SECTION A – A
SCALE 1:10

NOTES

1 – ALL DIMENSIONS AND ELEVATIONS ARE IN MILLIMETERS U.N.O.
2 – ALL ELEVATIONS ARE REFERED TO C.D.
3 – ALL WELDS ARE FULL PENETRATION WELDS U.N.O.
4 – ALL FILLET WELDS SHALL BE CONTINUOUS AND THE LEG SIZE SHALL BE EQUAL 0.7 THE MINIMUM THICKNESS TO BE JOINTED U.N.O.

MATERIALS

ITEM IDENTIFICATION	MATERIAL DESIGNATION
IPE240	DC4-III-355-0
PL 15 THK	DC4-III-355-0
Ø406.4x9.52	DC4-III-X52-0

HOLDS

REFERENCE DRAWINGS

DWG No.	DESCRIPTION
123A90-DDL-ST-DD-90025	DRAWING LIST
123A90-DDL-ST-DD-90026	GENERAL NOTES
123A90-DDL-ST-DD-90027	WELDING GENERAL NOTES
123A90-DDL-ST-DD-90032	PLATES – DOUBLE SIDED WELDS
123A90-DDL-ST-DD-90033	PLATES – SINGLE SIDED WELDS
123A90-DDL-ST-DD-90034	TYPICAL BEAM CONNECTIONS
123A90-DDL-ST-DD-90049	PRIMARY STEEL – PLAN AT EL. +23310 TOS
123A90-DDL-ST-DD-90057	SEC. STEEL – PLAN AT EL. +23310 TOS – SH.1
123A90-DDL-ST-DD-90104	SEC. STEEL – PLAN AT EL. +23310 TOS – SH.2

TECON

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	19/08/24	SGR	AB	DLS	ACCEPTED FOR CONSTRUCTION (AFC)
00	26/06/24	SGR	AB	DLS	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
TOPSIDE – LOWER DECK
CAISSON HATCH – ASSEMBLY AND DETAILS

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK . | SCALE 1:10

DRAWN S.GRIFFINI | CHECKED A.BALZAROTTI | APPROVED D.LO STERZO | DATE 19/08/24

A1 | DRAWING NO. 123A90-DDL-ST-DD-90124 | SHEET 001 | REV. 01

File Name : 123A90-DDL-ST-DD-90124_01.dwg



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002548

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10004525	1.4 Discipline	Building
1.2 Item	B-50013A	Sea Water Lift Pumps Caisson	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

There is no nozzle 1" #150 FF facing south differently ffrom the drawing. The structural pipe OD406 mm has not been even drilled.

Name: Kangi Albonetti
Date: 2025-01-09
Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	A PL A	Name	Kangi Albonetti
3.4 Activity code	MC Mechanical Completion	Date	2025-01-09
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

Nozzle added.

Name: Kangi Albonetti
Date: 2025-03-01
Signature:

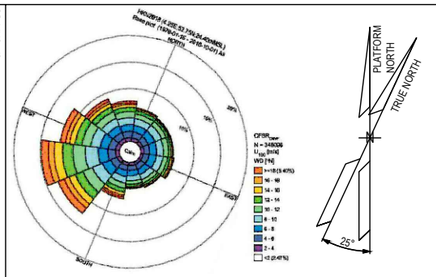
6- CLEARANCE APPROVAL

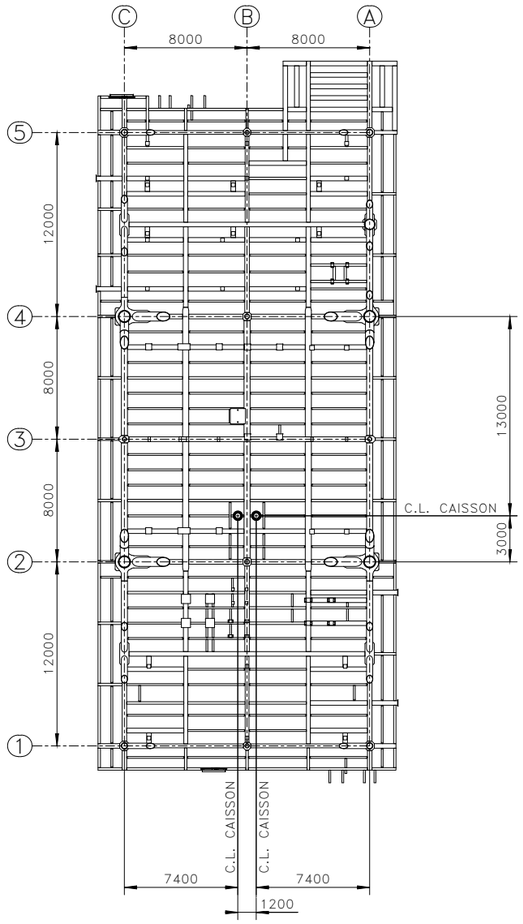
Name:
Date:
Signature:



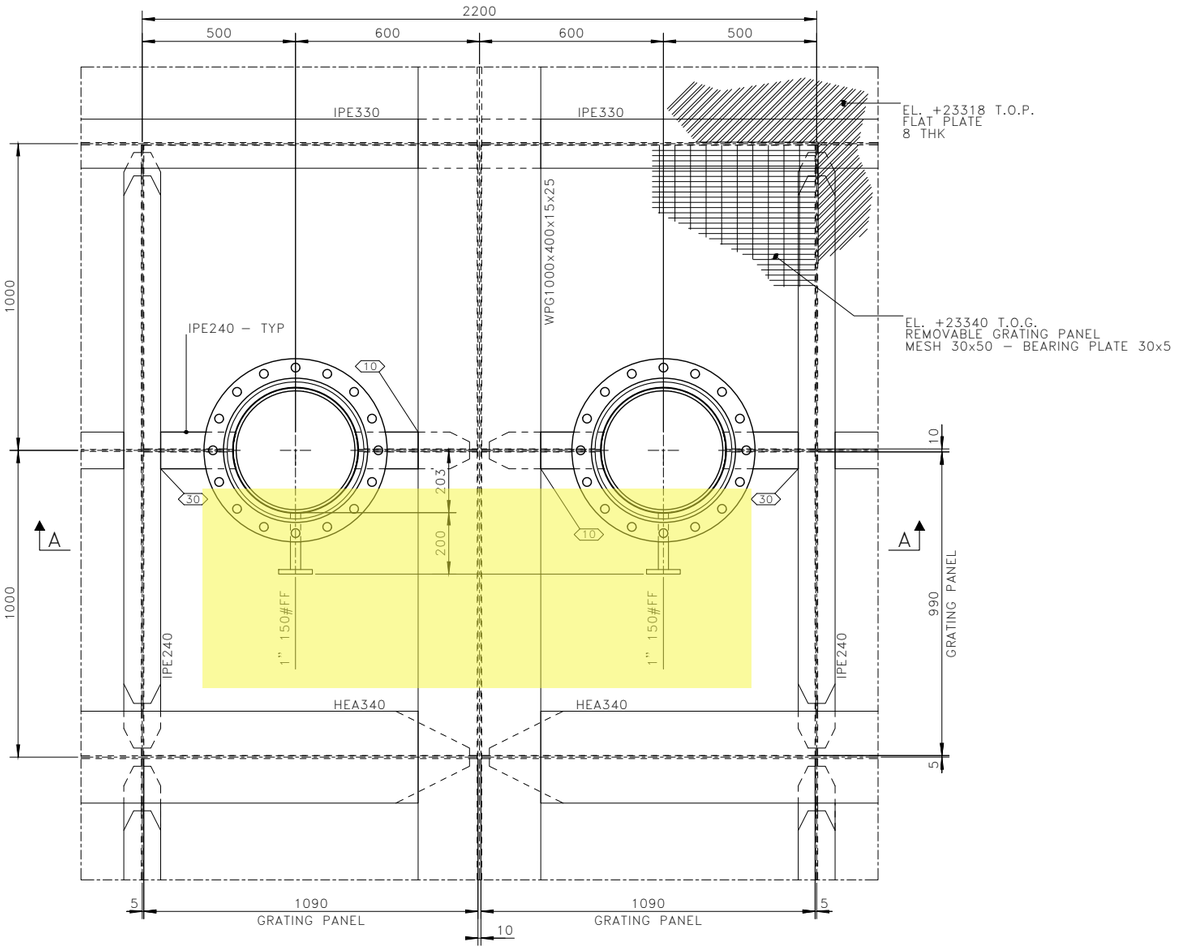
DRAWING NO. 123A90-DDL-ST-DD-90124

REV. 01

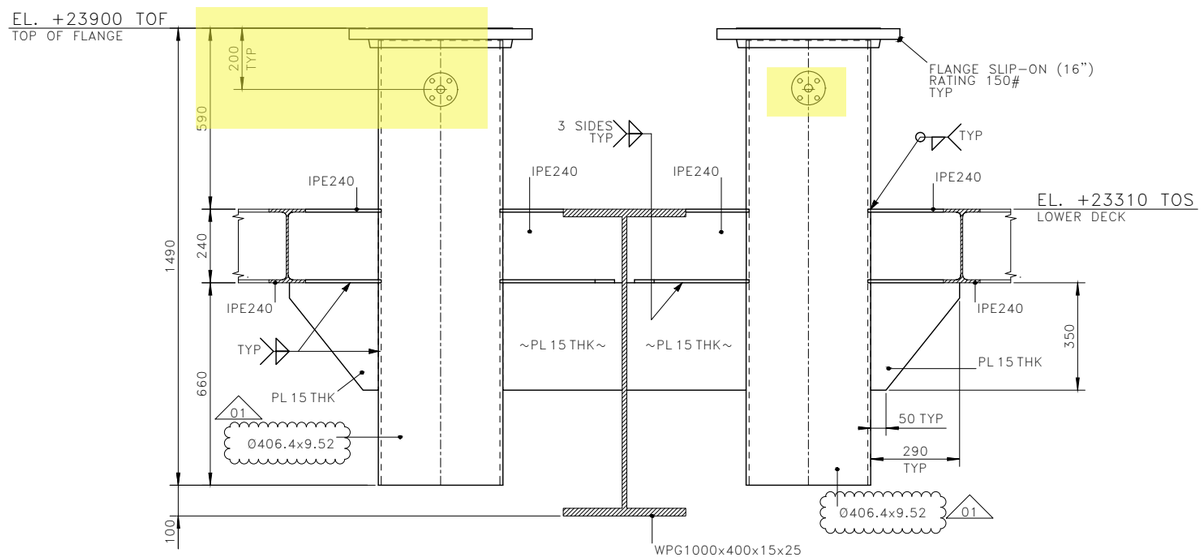




TOPSIDE – LOWER DECK
KEY PLAN
SCALE 1:200



CAISSON HATCH – PLAN VIEW
SCALE 1:10



SECTION A – A
SCALE 1:10

NOTES

1 – ALL DIMENSIONS AND ELEVATIONS ARE IN MILLIMETERS U.N.O.
2 – ALL ELEVATIONS ARE REFERED TO C.D.
3 – ALL WELDS ARE FULL PENETRATION WELDS U.N.O.
4 – ALL FILLET WELDS SHALL BE CONTINUOUS AND THE LEG SIZE SHALL BE EQUAL 0.7 THE MINIMUM THICKNESS TO BE JOINTED U.N.O.

MATERIALS

ITEM IDENTIFICATION	MATERIAL DESIGNATION
IPE240	DC4-III-355-0
PL 15 THK	DC4-III-355-0
Ø406.4x9.52	DC4-III-X52-0

HOLDS

REFERENCE DRAWINGS

DWG No.	DESCRIPTION
123A90-DDL-ST-DD-90025	DRAWING LIST
123A90-DDL-ST-DD-90026	GENERAL NOTES
123A90-DDL-ST-DD-90027	WELDING GENERAL NOTES
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123A90-DDL-ST-DD-90033	PLATES – SINGLE SIDED WELDS
123A90-DDL-ST-DD-90034	TYPICAL BEAM CONNECTIONS
123A90-DDL-ST-DD-90049	PRIMARY STEEL – PLAN AT EL. +23310 TOS
123A90-DDL-ST-DD-90057	SEC. STEEL – PLAN AT EL. +23310 TOS – SH.1
123A90-DDL-ST-DD-90104	SEC. STEEL – PLAN AT EL. +23310 TOS – SH.2

TECON

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	19/08/24	SGR	AB	DLS	ACCEPTED FOR CONSTRUCTION (AFC)
00	26/06/24	SGR	AB	DLS	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
TOPSIDE – LOWER DECK
CAISSON HATCH – ASSEMBLY AND DETAILS

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK . | SCALE 1:10

DRAWN S.GRIFFINI | CHECKED A.BALZAROTTI | APPROVED D.LO STERZO | DATE 19/08/24

A1 | DRAWING NO. 123A90-DDL-ST-DD-90124 | SHEET 001 | REV. 01

File Name : 123A90-DDL-ST-DD-90124_01.dwg

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002549

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10004525	1.4 Discipline	Building
1.2 Item	B-50013A	Sea Water Lift Pumps Caisson	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

The flange phonography on the internal side has been ground by grinding disc.

Name: Kangi Albonetti
Date: 2025-01-09
Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Kangi Albonetti
3.4 Activity code	MC Mechanical Completion	Date	2025-01-09
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

Not applicable because after discussing it with construction it has been clarified the bolted joint is only for supporting and fastening and has not retaining scope.

Name: Kangi Albonetti
Date: 2025-01-09
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002550

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10004524	1.4 Discipline	Building
1.2 Item	B-50013B	Sea Water Lift Pumps Caisson	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

The flange phonography has damages due incorrect welding on the internal side.

Name: Kangi Albonetti

Date: 2025-01-09

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	A PL A	Name	Kangi Albonetti
3.4 Activity code	MC Mechanical Completion	Date	2025-01-09
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Grinded.

Name: Kangi Albonetti

Date: 2025-03-01

Signature:

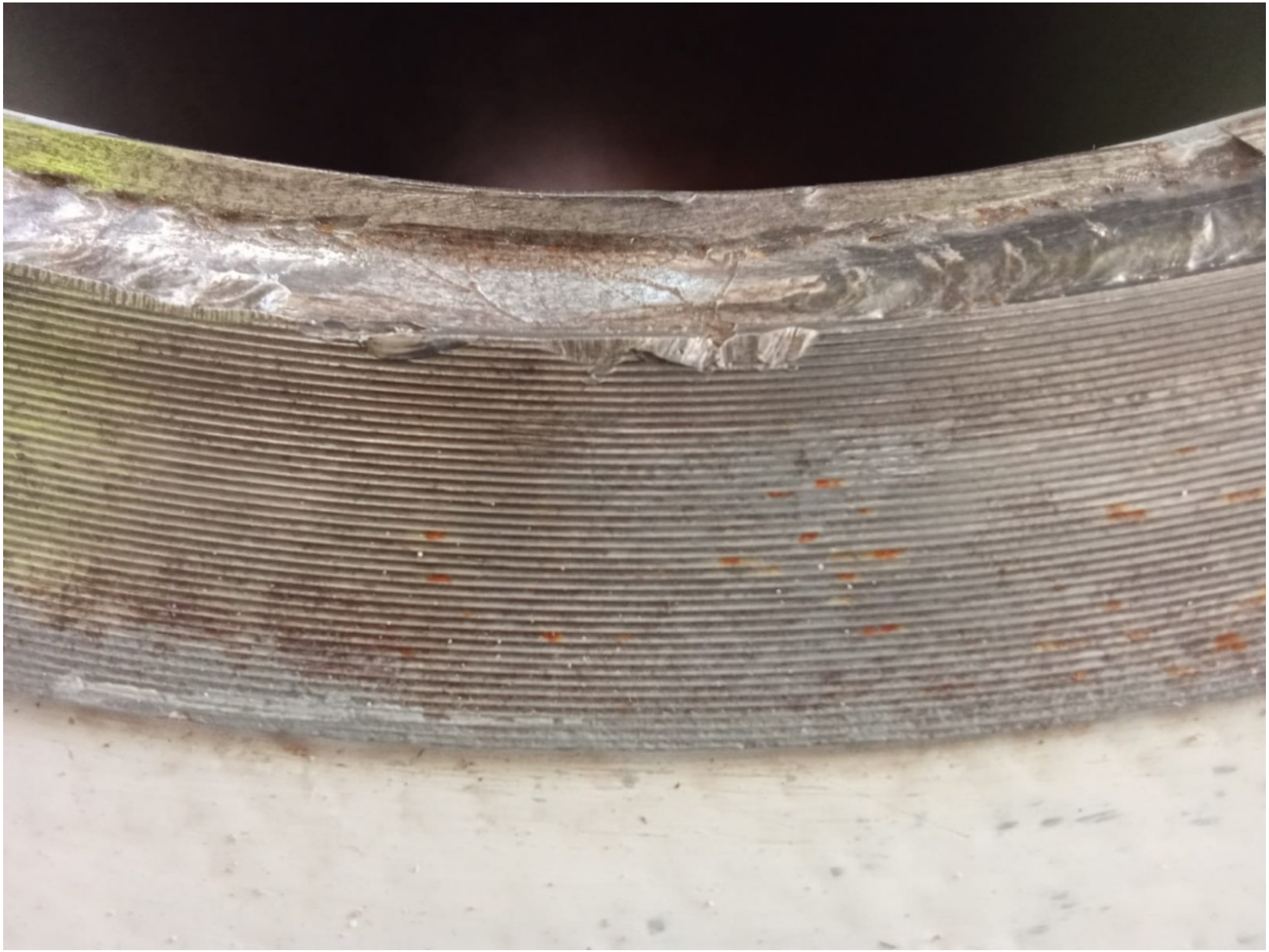
6- CLEARANCE APPROVAL

Name:

Date:

Signature:





ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002639

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10004524	1.4 Discipline	Building
1.2 Item	B-50013B	Sea Water Lift Pumps Caisson	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

Interaxis distance between B-50013B and B-50013A is 1190 mm instead of 1200 mm.

Name: Kangi Albonetti

Date: 2025-01-10

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	A PL A	Name	Kangi Albonetti
3.4 Activity code	MC Mechanical Completion	Date	2025-01-10
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

The distance has been accepted after installation of TP-001.

Name: Kangi Albonetti

Date: 2025-03-01

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002640

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10004525	1.4 Discipline	Building
1.2 Item	B-50013A	Sea Water Lift Pumps Caisson	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

Interaxis distance between B-50013B and B-50013A is 1190 mm instead of 1200 mm.

Name: Kangi Albonetti

Date: 2025-01-10

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	A PL A	Name	Kangi Albonetti
3.4 Activity code	MC Mechanical Completion	Date	2025-01-10
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

The distance has been accepted after installation of TP-001.

Name: Kangi Albonetti

Date: 2025-03-01

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002841

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003443	1.4 Discipline	Piping
1.2 Item	50-00-TP-028	Test Pack 50-00-TP-028	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

Sk.154 (Sh.1/1): On support PS-01049.1 position R1 has not been fitted at all.

Name: Kangi Albonetti

Date: 2025-01-14

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Kangi Albonetti
3.4 Activity code	MC Mechanical Completion	Date	2025-01-14
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date: 2025-03-10

Signature:

5 - CLEARANCE CHECK

See reinstatement's punch list.

Name: Lorenzo Novaga

Date: 2025-03-10

Signature:

6- CLEARANCE APPROVAL

Name:

Date: 2025-03-10

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002842

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003443	1.4 Discipline	Piping
1.2 Item	50-00-TP-028	Test Pack 50-00-TP-028	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

Sk.26 (Sh.2/2): For supports PS-01028.1 and 01028.3 STD C-33 and S-64 have not been assembled correctly.

Name: Kangi Albonetti

Date: 2025-01-14

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Kangi Albonetti
3.4 Activity code	MC Mechanical Completion	Date	2025-01-14
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date: 2025-03-10

Signature:

5 - CLEARANCE CHECK

See reinstatement's punch list.

Name: Lorenzo Novaga

Date: 2025-03-10

Signature:

6- CLEARANCE APPROVAL

Name:

Date: 2025-03-10

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002843

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003443	1.4 Discipline	Piping
1.2 Item	50-00-TP-028	Test Pack 50-00-TP-028	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

Sk.26 (Sh.2/2): For supports PS-01027.1 and 01027.3 STD C-33 and S-64 have not been assembled correctly.

Name: Kangi Albonetti

Date: 2025-01-14

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Kangi Albonetti
3.4 Activity code	MC Mechanical Completion	Date	2025-01-14
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date: 2025-03-10

Signature:

5 - CLEARANCE CHECK

See reinstatement's punch list.

Name: Lorenzo Novaga

Date: 2025-03-10

Signature:

6- CLEARANCE APPROVAL

Name:

Date: 2025-03-10

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002844

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003443	1.4 Discipline	Piping
1.2 Item	50-00-TP-028	Test Pack 50-00-TP-028	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

Sk.26 (Sh.1/2): For supports PS-01014.1 and 01014.5 STD C-33 and S-64 have not been assembled correctly.

Name: Kangi Albonetti

Date: 2025-01-14

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Kangi Albonetti
3.4 Activity code	MC Mechanical Completion	Date	2025-01-14
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date: 2025-03-10

Signature:

5 - CLEARANCE CHECK

See reinstatement's punch list.

Name: Lorenzo Novaga

Date: 2025-03-10

Signature:

6- CLEARANCE APPROVAL

Name:

Date: 2025-03-10

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002845

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003443	1.4 Discipline	Piping
1.2 Item	50-00-TP-028	Test Pack 50-00-TP-028	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

Sk.26 (Sh.1/2): For supports PS-01015.1 and 01015.5 STD C-33 and S-64 have not been assembled correctly.

Name: Kangi Albonetti

Date: 2025-01-14

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Kangi Albonetti
3.4 Activity code	MC Mechanical Completion	Date	2025-01-14
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date: 2025-03-10

Signature:

5 - CLEARANCE CHECK

See reinstatement's punch list.

Name: Lorenzo Novaga

Date: 2025-03-10

Signature:

6- CLEARANCE APPROVAL

Name:

Date: 2025-03-10

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002846

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003443	1.4 Discipline	Piping
1.2 Item	50-00-TP-028	Test Pack 50-00-TP-028	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

Flanges have not been torqued for final but only for testing. Connection points have not been checked before testing. All flange management related points, Inspection points from 4 to 6 of the ITR, to be checked during flange management and reinstatement.

Name: Kangi Albonetti
Date: 2025-01-14
Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Kangi Albonetti
3.4 Activity code	MC Mechanical Completion	Date	2025-01-14
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

Flange management performed.

Name: Kangi Albonetti
Date: 2025-03-01
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30002847

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003443	1.4 Discipline	Piping
1.2 Item	50-00-TP-028	Test Pack 50-00-TP-028	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

Piping not aligned vertically at the connection point of package A-50000.

Name: Kangi Albonetti
Date: 2025-01-14
Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Kangi Albonetti
3.4 Activity code	MC Mechanical Completion	Date	2025-01-14
3.5 Action by	PRE-COMM	Signature	

4 - PERFORMED ACTION

Alignment was checked during the reinstatement activities. No concerns were raised about alignment. Reference to Task C10003444 - CLX- PIPEWORK AFTER TEST

Name: Raffaele Degli Esposti
Date: 2025-06-12
Signature:

5 - CLEARANCE CHECK

Done.

Name: Raffaele Degli Esposti
Date: 2025-06-12
Signature:

6- CLEARANCE APPROVAL

Name:
Date: 2025-06-12
Signature:

ROSETTI MARINO CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003137

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003233	1.4 Discipline	Piping
1.2 Item	50-00-TP-001	Test Pack 50-00-TP-001	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

All supports S-64 still to be assembled.

Name: Kangi Albonetti

Date: 2025-01-21

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Kangi Albonetti
3.4 Activity code	MC Mechanical Completion	Date	2025-01-21
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

Done

Name: Lorenzo Novaga

Date: 2025-02-25

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003594

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000902	1.4 Discipline	Instrumental
1.2 Item	50-PT-002	Pressure Transmitter - Sea Water from Pump P-50001B	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

Missing tag SS , on the instrument.

Name: Alessio Polo

Date: 2025-02-07

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-02-07
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Andrea Andreani

Date: 2025-02-21

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003595

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000902	1.4 Discipline	Instrumental
1.2 Item	50-PT-002		Pressure Transmitter - Sea Water from Pump P-50001B
1.3 Subsystem	50-00		Seawater Intake System (Lifting Pumps)

2 - OBSERVATION

Missing PLANE WASHER

Name: Alessio Polo

Date: 2025-02-07

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-02-07
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Andrea Andreani

Date: 2025-02-25

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003596

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000901	1.4 Discipline	Instrumental
1.2 Item	50-PT-001		Pressure Transmitter - Sea Water from Pump P-50001A
1.3 Subsystem	50-00		Seawater Intake System (Lifting Pumps)

2 - OBSERVATION

Missing tag SS , on the instrument.

Name: Alessio Polo

Date: 2025-02-07

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-02-07
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Andrea Andreani

Date: 2025-02-21

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003597

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000901	1.4 Discipline	Instrumental
1.2 Item	50-PT-001		Pressure Transmitter - Sea Water from Pump P-50001A
1.3 Subsystem	50-00		Seawater Intake System (Lifting Pumps)

2 - OBSERVATION

Missing the plane washers on the u-bolt fitting

Name: Alessio Polo

Date: 2025-02-07

Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-02-07
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:

Date:

Signature:

5 - CLEARANCE CHECK

DONE

Name: Josip Krizanic

Date: 2025-02-27

Signature:

6- CLEARANCE APPROVAL

Name:

Date:

Signature:



ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30003611

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10000127	1.4 Discipline	Instrumental
1.2 Item	C-50-XY-003/00-JE-13003	SOLENOID VALVE / MARSHALLING PCS	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

Wrong cores identification tag. side J.B. 00-JE-13003 . (see document 123A90-DDL-IN-DG-40016 sh.3)

Name: Alessio Polo
Date: 2025-02-08
Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Alessio Polo
3.4 Activity code	MC Mechanical Completion	Date	2025-02-08
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

DONE

Name: Andrea Andreani
Date: 2025-02-13
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:

ROSETTI MARINO
CROSSWIND

PUNCH ITEM ENTRY / CLEARANCE FORM

C30001983

PROVERLIS

1 -ELEMENT IDENTIFICATION

1.1 Task	C10003577	1.4 Discipline	Piping
1.2 Item	50-00-TP-045	Test Pack 50-00-TP-045	
1.3 Subsystem	50-00	Seawater Intake System (Lifting Pumps)	

2 - OBSERVATION

Spool not assembled in erection. Inspection points from 3 to 6 of the ITR "Inspection before testing" to be checked during reinstatement.

Name: Kangi Albonetti
Date: 2024-12-18
Signature:

3 - DEFECT ASSESSMENT

.

3.1 Corrective action proposal

3.2 Material required

3.3 Priority	B PL B	Name	Kangi Albonetti
3.4 Activity code	MC Mechanical Completion	Date	2024-12-18
3.5 Action by	RM_CONSTR RM	Signature	

4 - PERFORMED ACTION

Name:
Date:
Signature:

5 - CLEARANCE CHECK

Done.

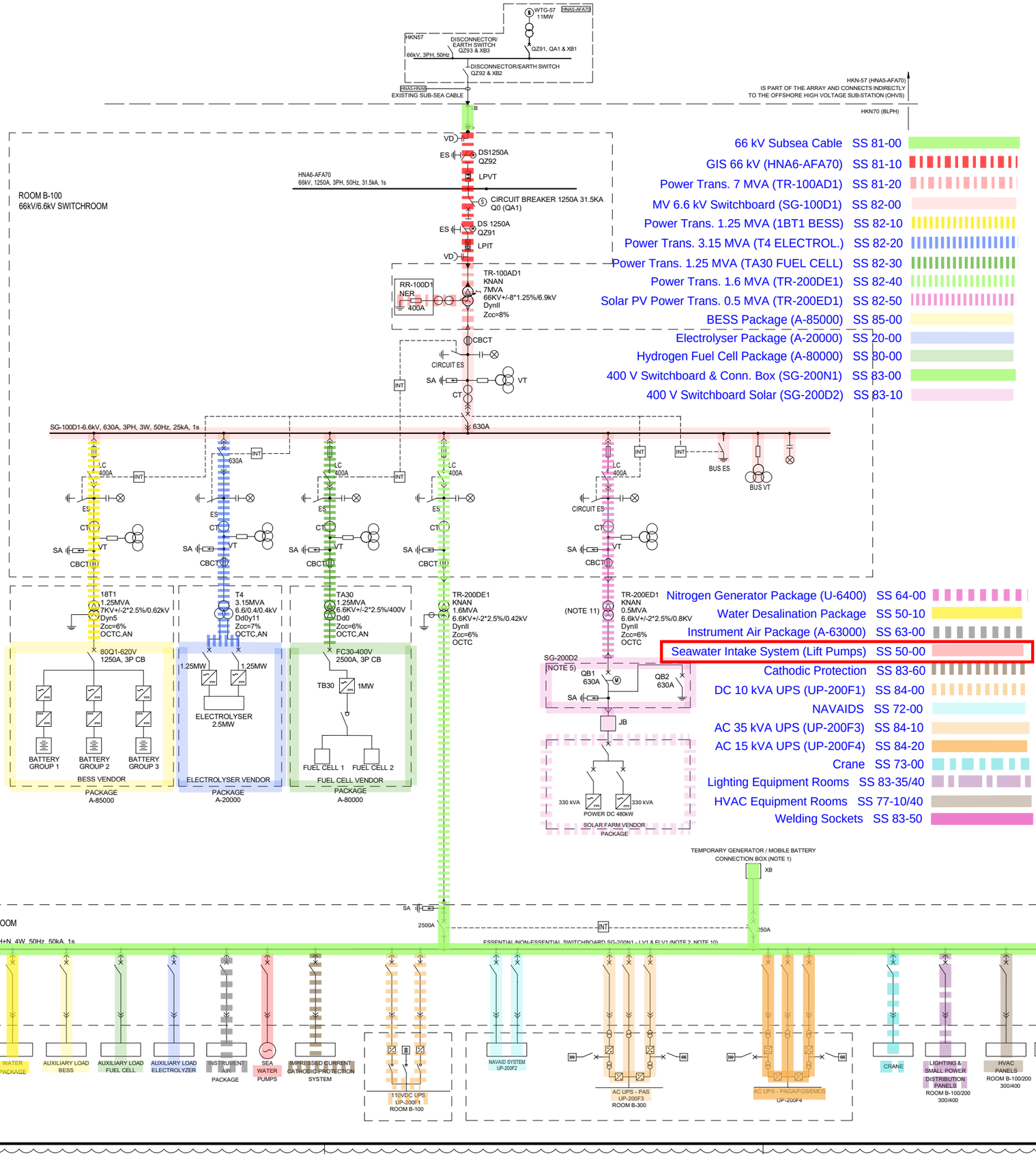
Name: Lorenzo Novaga
Date: 2025-03-07
Signature:

6- CLEARANCE APPROVAL

Name:
Date:
Signature:

Section 3 SYSTEM,SUB-SYSTEM LIMIT DRAWINGS

DRAWING NO. 123A90-DDL-EL-DG-20158 REV. 01



SYMBOL LEGEND:

- VOLTAGE DETECTOR
- EARTHING SWITCH DISCONNECTOR
- MOTORIZED EARTHING SWITCH
- CIRCUIT BREAKER
- FUSE
- CONTACTOR
- THREE-PHASE TRANSFORMER WITH TAP CHANGER
- THREE-PHASE TRANSFORMER
- CURRENT TRANSFORMER
- THREE-PHASE TRANSFORMER, WITH THREE WINDINGS
- NEUTRAL EARTHING RESISTOR
- SURGE ARRESTER
- CORE BALANCE CURRENT TRANSFORMER
- SURGE ARRESTOR FOR T-CONNECTOR (N.1 FOR EACH PHASE)
- VOLTAGE & CURRENT TRANSFORMER (3Ø X 2) (LPIT TYPE)
- VOLTAGE TRANSFORMER (3Ø X 2) (LPVT TYPE)
- VOLTAGE TRANSFORMER
- CABLE BOX
- T-CONNECTOR CABLE TERMINATION
- CABLE AIR TERMINATION

OLTC	= ON LOAD TAP CHANGER
OCTC	= OPEN CIRCUIT TAP CHANGER
KNAN	= NON-MINERAL OIL NATURAL AIR COOLED
AN	= AIR NATURAL
XB	= CABLE BOX
QZ	= DISCONNECT SWITCH & EARTH SWITCH
QA	= CIRCUIT BREAKER
LC	= LATCHED FUSED CONTACTOR (400A)
INT	= INTERLOCK SYSTEM
SA	= SURGE ARRESTER
CBCT	= CORE BALANCE CURRENT TRANSFORMER
ES	=EARTHING SWITCH
VD	=VOLTAGE DETECTOR
LCP	=LOCAL CONTROL PANEL
LPVT	=LOW POWER VOLTAGE TRANSFORMER
LPCT	=LOW POWER CURRENT TRANSFORMER
LPIT	=LOW POWER INSTRUMENT TRANSFORMER
JB	=JUNCTION BOX

NOTES:

1. TEMPORARY POWER SUPPLY CONNECTION BOX LOCATED ON OUTSIDE WALL OF LV SWITCHROOM / CONTAINER.
2. LOAD DEFINITION 'ESSENTIAL' / 'NON-ESSENTIAL' IS SHOWN IN THE LOAD LIST. THE CCS, EMCS AND 'SMART' SWITCHGEAR WILL OPEN / CLOSE CIRCUIT BREAKERS AS REQUIRED.
3. A COMBINED CCS/EMCS SYSTEM COMPRISES A MICROPROCESSOR BASED SYSTEM, ASSOCIATED SOFTWARE AND REQUIRED PERIPHERALS FOR MONITORING AND CONTROLLING OF ELECTRICAL POWER NETWORK. ALL ELECTRICAL EQUIPMENT AND PACKAGE UNITS SHALL BE CONNECTED TO THE CENTRAL CONTROL SYSTEM .
4. IMPRESSED CURRENT CATHODIC PROTECTION SYSTEM SUPPLIED BY COMPANY.
5. THE SOLAR FARM IN-FEED POWER CIRCUIT BREAKERS PANEL IS LOCATED INSIDE THE LV SWITCHGEAR ROOM B-200.
6. DELETED.
7. DELETED.
8. DELETED.
9. CROSSWIND SHALL BE ABLE TO CONTROL THE BLPH 66KV MOTORISED CIRCUIT BREAKER Q0 (QA1) & MOTORISED ELECTRICAL DISCONNECTOR / EARTH SWITCH (QZ92, TYPE B) USING THEIR 'HV-SCADA' SYSTEM. THIS BACK-UP / REDUNDANT CONTROL SHALL BE ADDITIONAL TO THAT PROVIDED BY THE CCS AND BE OF HIGHER PRIORITY OVER A SEPARATE FIBRE OPTIC CABLE (FOC). THE CCS OPERATOR AND 'HV-SCADA' SHALL BOTH BE KEPT FULLY AWARE OF EQUIPMENT STATUS AT ALL TIMES. INTERTRIPPING, INHIBITS & INTERLOCKING FOR BLPH 66KV EQUIPMENT SHALL BE AS PER THE WIND FARM.
10. THE LOADS IN THE LOW VOLTAGE SWITCHGEAR AND THE CURRENT VALUES OF THE CIRCUIT BREAKERS ARE ONLY INDICATIVE.
11. NEUTRAL POINT OF TR-200ED1 SHALL NOT BE GROUNDED AS REQUIRED BY SOLAR FARM SUPPLIER IN 123A90-PML-PM-TQ-00040.

REFERENCES:

1. 123A90-DDL-EL-DG-20014 ELECTRICAL CONTROL, PROTECTION AND METERING DIAGRAMS
2. 123A90-DDL-EL-DG-20015 ELECTRICAL SINGLE LINE DIAGRAM 6.6kV SYSTEMS
3. 123A90-DDL-EL-DG-20159 ELECTRICAL SINGLE LINE DIAGRAMS LV SYSTEM
4. 123A90-DDL-EL-DG-20160 ELECTRICAL SINGLE LINE DIAGRAMS AC UPS SYSTEMS
5. 123A90-DDL-EL-DG-20161 ELECTRICAL SINGLE LINE DIAGRAMS DC UPS SYSTEMS
6. 123A90-DDL-EL-DG-20185 ELECTRICAL SINGLE LINE DIAGRAM HV SYSTEMS
7. 123A90-DDL-EL-DL-20104 ELECTRICAL EQUIPMENT LAYOUT - HV SWITCHROOM
8. 123A90-DDL-EL-DL-20105 ELECTRICAL EQUIPMENT LAYOUT - LV SWITCHROOM
9. 123A90-DDL-EL-LIS-20016 ELECTRICAL LOAD LIST and BALANCE -CCS MODE CHARGING-
10. 123A90-DDL-EL-RE-20152 ELECTRICAL EQUIPMENT SIZING CCALCULATION REPORT
11. 123A90-DDL-EL-RE-20170 ELECTRICAL SYSTEM STUDY REPORT - LOAD FLOW
12. 123A90-DDL-EL-RE-20171 ELECTRICAL SYSTEM STUDY REPORT - SHORT CIRCUIT
13. 123A90-DDL-EL-RE-20172 ELECTRICAL SYSTEM STUDY REPORT - ARC FLASH ENERGY CALCULATION
14. 123A90-DDL-EL-RE-20173 ELECTRICAL SYSTEM STUDY REPORT - HARMONICS

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	26/03/2024	GPA	LMA/AMA	LMA/MDO	ISSUE FOR REVIEW (IFR)
00	02/11/2023	DSF	CB/AMA	OYFO/MDO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE :

OVERALL/KEY SINGLE LINE DIAGRAM

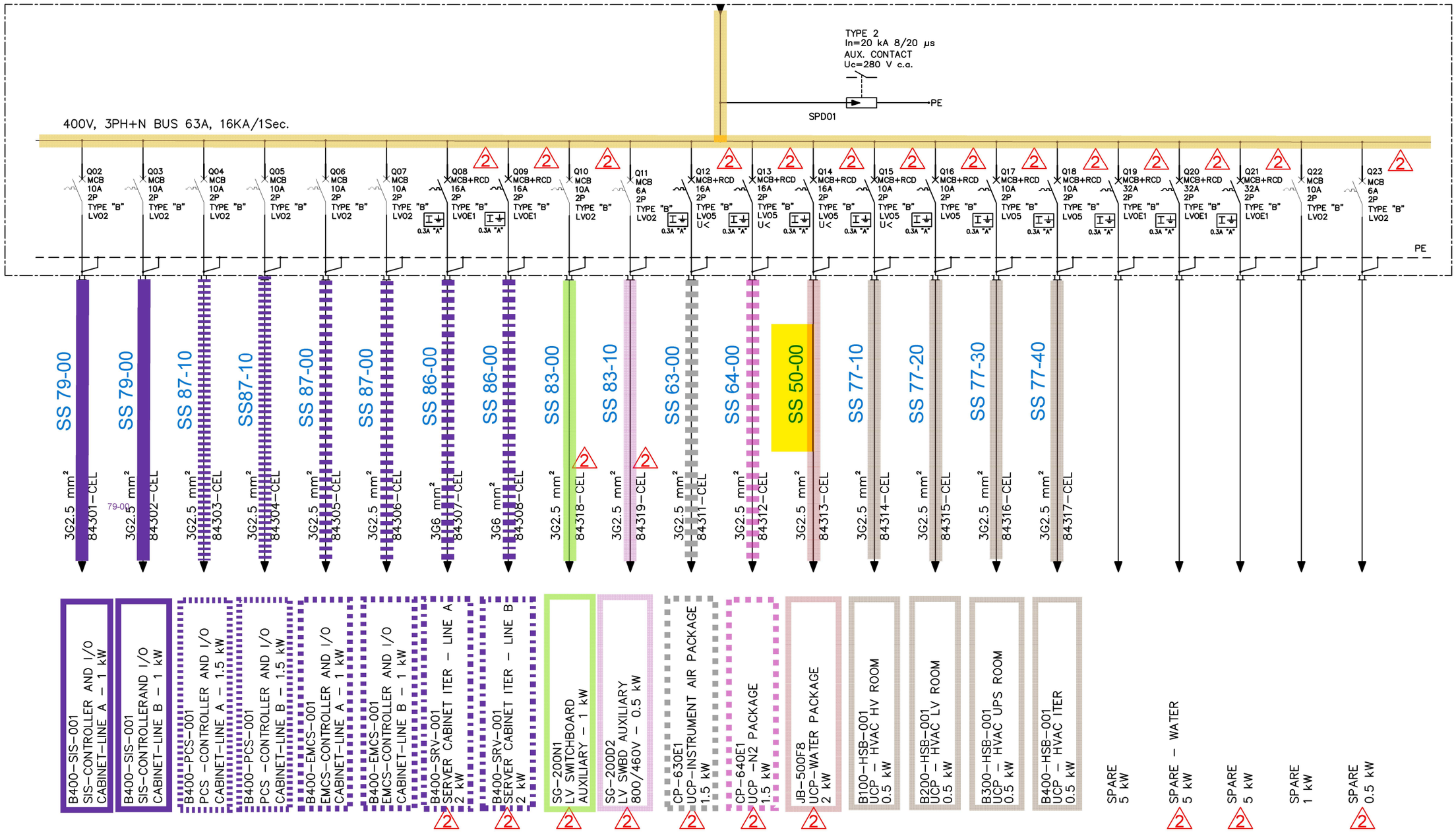
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE N/A
DRAWN GPA	CHECKED LMA/AMA	APPROVED LMA/MDO	DATE 26/03/2023
A1	DRAWING NO. 123A90-DDL-EL-DG-20158	SHEET 001	REV. 01

01

File Name : 123A90-DDL-EL-DG-20158_REV01.dwg

AC UPS – PAS SINGLE LINE DIAGRAM(UP–200F3) DISTRIBUTION BOARD DETAILS

AC UPS DISTRIBUTION BOARD–PAS
DP–200F3



REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	27/09/24	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	12/04/24	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	14/02/24	SAM	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL SINGLE LINE DIAGRAMS AC UPS SYSTEMS
AC UPS – PAS DISTRIBUTION BOARD SLD (UP–200F3)

CONTRACT NO./TITLE CW–I–WP4–2023–05/HOLLANDSE KUST NOORD WIND PARK

SCALE : 1:X

A3

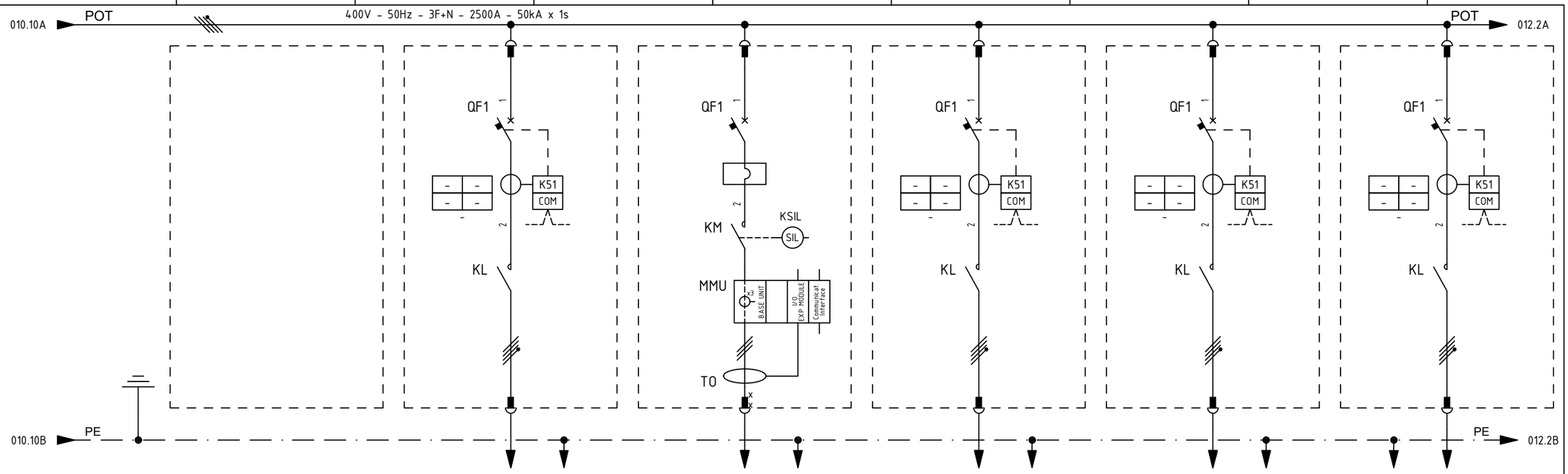
DRAWING NO. 123A90–DDL–EL–DG–20160

SHEET 005

REV. 02

File Name : 123A90–DDL–EL–DG–20160 Rev. 02

F.to UNI A3: 420mmx297mm



ITEM				K-63001-B		PM-50001 B		CP-850E1		CP-850E2		-	
UTILITY			2	INSTRUMENTS AIR PACKAGE 01B		SEA WATER PUMP B		BESS LV1 CABINET (+DISTR 1)		BESS LV2 CABINET (+DISTR 2)		SPARE	
COLUMN/CUBICLE			3	A5 / +08		A6 / +01		A6 / +02		A6 / +03		A6 / +04	
RATED POWER | RATED CURRENT			4/5	68.75 kW	111.24 A	6.1 kW	11.0 A	11.28 kW	18.09 A	11.28 kW	18.09 A	- kW	- A
TYPICAL FUNCTIONAL			6	LK2-160		M1-6		LK1-40		LK1-40		LK1-40	
CIRCUIT BREAKER (ABB)	TYPE		7	XT4S - 250		XT2S - 160		XT2S - 160		XT2S - 160		XT2S - 160	
	VERSION		8	4P - FIXED		3P - FIXED		4P - FIXED		4P - FIXED		4P - FIXED	
	TRIP UNITS		9	EKIP HI TOUCH LSIG (In = 160A)		MA (In = 20A)		EKIP HI TOUCH LSIG (In = 40A)		EKIP HI TOUCH LSIG (In = 40A)		EKIP HI TOUCH LSIG (In = 40A)	
	Icu	KA	10	50 kA		-		50 kA		50 kA		50 kA	
OVERLOAD	L	Range A	11	(0.4 - 1) x In		-		(0.4 - 1) x In		(0.4 - 1) x In		(0.4 - 1) x In	
		Range t	12	k/I^2		-		k/I^2		k/I^2		k/I^2	
SEL. SHORT-CIRCUIT	S	Range A	13	(0.6 - 10) x In		-		(0.6 - 10) x In		(0.6 - 10) x In		(0.6 - 10) x In	
		Range t	14	0.05 - 0.4 sec / k/I^2		-		0.05 - 0,4 sec / k/I^2		0.05 - 0,4 sec / k/I^2		0.05 - 0,4 sec / k/I^2	
INST. SHORT-CIRCUIT	I	Range A	15	(1.5 - 15) x In		(6 - 14) x I		(1.5 - 15) x In		(1.5 - 15) x In		(1.5 - 15) x In	
		Range t	16	instantaneous		<= 0.02 sec		instantaneous		instantaneous		instantaneous	
EARTH FAULT PROTECTION	G	Range A	17	(0.1 - 1) x In		-		(0.1 - 1) x In		(0.1 - 1) x In		(0.1 - 1) x In	
		Range t	18	t=k / t=k/I^2		-		t=k / t=k/I^2		t=k / t=k/I^2		t=k / t=k/I^2	
CONTACTOR (ABB)			19	AF190-40-11-13 (275A-AC1); 100-250 VAC/DC		AF38-30-00-13 (18.5 kW - AC3) - 100-250Vac/dc		AF40-40-00-13 (70A-AC1); 100-250VAC/DC		AF40-40-00-13 (70A-AC1); 100-250VAC/DC		AF40-40-00-13 (70A-AC1); 100-250VAC/DC	
THERMAL OVERLOAD RELAY (ABB)			20	-		UMC100.3 UC (0.24 - 63A)		-		-		-	
SURGE ARRESTER (DEHN)			21	-		-		-		-		-	
TOROIDAL CURRENT TRANSFORMER (FRER)			22	-		-		-		-		-	
FUSE HOLDER (ITALWEBER)			23	SUBSISTEM 63.00		SUBSISTEM 50.00		SUBSISTEM 85.00		SUBSISTEM 85.00		SUBSISTEM 83.00	
INDIRECT PROTECTION (ABB)			24										
VOLTMETER			25										
CURRENT TRANSFORMER FOR MEASURE (FRER)	TYPE		26	-		-		-		-		-	
	PERFORMANCE/CLASS		27	-		-		-		-		-	
VOLTAGE TRANSFORMER FOR MEASURE (FRER)	TYPE		28	-		-		-		-		-	
	PERFORMANCE/CLASS		29	-		-		-		-		-	
LOCK-OUT RELAY (-)			30	-		-		-		-		-	
POWER CONDUCTOR		mmq	31	5G70		4G4		4 x (1 x 10)		4 x (1 x 10)		-	

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
3	08/07/2024	Santinelli	Flamminio	Sigismondi	Accepted for Construction (AFC)
2	03/05/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)
1	28/03/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)
0	15/02/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)

DWG n° : 231298/SD/11
Item n° : PF1002983/26

IMESA ELECTRICAL ENGINEERING

CROSSWIND

ROSETTI MARINO

TITLE : "SG-200N1"

SINGLE LINE DIAGRAM

Single Line Drawing

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE : NTS

A3

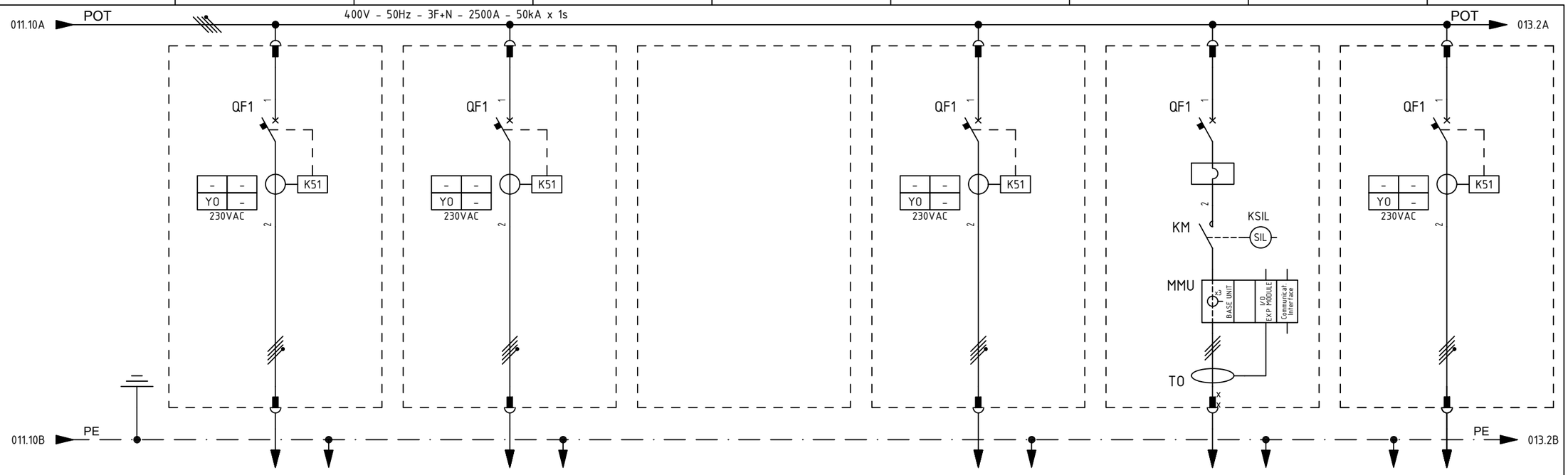
DRAWING NO. 1723002197-EL-DG-00011

SHEET 011

REV. 03

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DG-00011 Rev. 03



ITEM			1	UP-200F4	UP-200F4		ESW-200N1	PM-50001 A	UP-200F3
UTILITY			2	AC UPS F&G - 8 H UP-200F4 - LINE A	AC UPS F&G - 8h UP-200F4 - LINE B		WELDING SOCKETS (TOP DECK)	SEA WATER PUMP A	AC UPS PAS - 30 min. UP-200F3 - BYPASS
COLUMN/CUBICLE			3	A6 / +05	A6 / +06		A6 / +08	A7 / +01	A7 / +02
RATED POWER | RATED CURRENT			4/5	18 kW | 28.9 A	18 kW | 28.9 A		69.84 kW | 126.15 A	6.1 kW | 11.0 A	36 kW | 57.8 A
TYPICAL FUNCTIONAL			6	L1-63	L1-63		L2-160	M1-6	L1-100
CIRCUIT BREAKER (ABB)	TYPE		7	XT2S - 160	XT2S - 160		XT4S - 250	XT2S - 160	XT2S - 160
	VERSION		8	4P - FIXED	4P - FIXED		4P - FIXED	3P - FIXED	4P - FIXED
	TRIP UNITS		9	EKIP DIP LSIG (In = 63A)	EKIP DIP LSIG (In = 63A)		EKIP DIP LSIG (In = 160A)	MA (In = 20A)	EKIP DIP LSIG (In = 100A)
	Icu	KA	10	50 kA	50kA		50kA	-	50 kA
OVERLOAD	L	Range A	11	(0.4 - 1) x In	(0.4 - 1) x In		(0.4 - 1) x In	-	(0.4 - 1) x In
		Range t	12	k/I^2	k/I^2		k/I^2	-	k/I^2
SEL. SHORT-CIRCUIT	S	Range A	13	(1 - 10) x In	(1 - 10) x In		(1 - 10) x In	-	(1 - 10) x In
		Range t	14	0.05 - 0.4 sec / k/I^2	0.05 - 0.4 sec / k/I^2		0.05 - 0.4 sec / k/I^2	-	0.05 - 0.4 sec / k/I^2
INST. SHORT-CIRCUIT	I	Range A	15	(1 - 10) x In	(1 - 10) x In		(1 - 10) x In	(6 - 14) x I	(1 - 10) x In
		Range t	16	<= 0.02 sec	<= 0.02 sec		<= 0.02 sec	<= 0.02 sec	<= 0.02 sec
EARTH FAULT PROTECTION	G	Range A	17	(0.2 - 1) x In	(0.2 - 1) x In		(0.2 - 1) x In	-	(0.2 - 1) x In
		Range t	18	0.1 - 0.8 sec	0.1 - 0.8 sec		0.1 - 0.8 sec	-	0.1 - 0.8 sec
CONTACTOR (ABB)			19	-	-		-	AF38-30-00-13 (18.5 kW - AC3) - 100-250Vac/dc	-
THERMAL OVERLOAD RELAY (ABB)			20	-	-		-	UMC100.3 UC (0.24 - 63A)	-
SURGE ARRESTER (DEHN)			21	-	-		-	-	-
TOROIDAL CURRENT TRANSFORMER (FRER)			22	-	-		-	-	-
FUSE HOLDER (ITALWEBER)			23	SUBSISTEM 84.20	SUBSISTEM 84.20		SUBSISTEM 83.50	SUBSISTEM 50.00	SUBSISTEM 84.10
INDIRECT PROTECTION (ABB)			24						
VOLTMETER			25						
CURRENT TRANSFORMER FOR MEASURE (FRER)	TYPE		26	-	-		-	-	-
	PERFORMANCE/CLASS		27	-	-		-	-	-
VOLTAGE TRANSFORMER FOR MEASURE (FRER)	TYPE		28	-	-		-	-	-
	PERFORMANCE/CLASS		29	-	-		-	-	-
LOCK-OUT RELAY (-)			30	-	-		-	-	-
POWER CONDUCTOR		mmq	31	4G35	4G35		5G50	4G4	4G35

=
+

DWG n° : 231298/SD/11
Item n° : PF1002983/26

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
3	08/07/2024	Santinelli	Flamminio	Sigismondi	Accepted for Construction (AFC)
2	03/05/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)
1	28/03/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)
0	15/02/2024	Santinelli	Flamminio	Sigismondi	Issued for review (IFR)

IMESA ELECTRICAL ENGINEERING

CROSSWIND

ROSETTI MARINO

TITLE : "SG-200N1"

SINGLE LINE DIAGRAM

Single Line Drawing

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE : NTS

A3

DRAWING NO. 1723002197-EL-DG-00011

SHEET 012

REV. 03

F.to UNI A3: 420mmx297mm

File Name : 1723002197-EL-DG-00011 Rev. 03

DRAWING NO. DRAWING_NO.

REV. REV

P-50001 A/B
SEA WATER LIFT PUMPS

POWER : 1.6 KW
FLOW : 2.5 m³/h
DESIGN P/T : 7.6 barg / 80°C
DISCHARGE PRESSURE : 5.6 barg (NOTE 9)
MATERIAL : SDSS

02

B-50013 A/B
SEA WATER LIFT PUMPS CAISSONS

02

SIZE : 3432 mm (ID) x 27308 mm (H)
MATERIAL : CS + CA

123A90-DDL-PR-PID-80022
BIOCIDE DOSING UNIT

1"-CI-029-01CP-E

3/4" BLPH-MV-214

3/4"x1/2" CONC. RED. 1/2" BLPH-MV-215

Sea Water Intake System SS 50-00

Electrochlorinated Water SS 50-11

1-1/2"-SWS-035-01SD-E

123A90-DDL-PR-PID-80022
SEA WATER COARSE FILTER PACKAGE

BLPH-MV-043 1.1/2" 1-1/2"-SWS-031-01SD-E

BLPH-MV-050 1.1/2" 1-1/2"-SWS-033-01SD-E

50 RO 001 NOTE 7

50 XY 001 / 50 XV 001 IA NOTE 5 FC TYP.1

50 XY 002 / 50 XV 002 IA NOTE 3 FC TYP.1

50 RO 002 NOTE 7

50 XY 003 / 50 XV 003 I.A. NOTE 5 FC TYP.1

50 XY 004 / 50 XV 004 I.A. NOTE 3 FC TYP.1

3/4" BLPH-MV-044

3/4" BLPH-MV-054

INSTR. PIPING 1.1/2" BLPH-NRV-004

INSTR. PIPING 1.1/2" BLPH-NRV-008

50 PI 001 / 50 PT 001 H L 2" 2" x 1.5" BLPH-MV-464

50 PI 002 / 50 PT 002 H L 2" 2" x 1.5" BLPH-MV-465

1"-SWS-146-01SD-E

1"-SWS-147-01SD-E

BLPH-NRV-007 1" 1"-CI-030-01CP-E

BLPH-NRV-024 1" 1"-CI-032-01CP-E

START/STOP 50 HS 001
RUNNING/STOPPED 50 XI 001
AUTO START READY 50 XI 002
TRIPPED/FAULT 50 XA 001
SHUTDOWN ALARM 50 XA 002
ESD I

START/STOP 50 HS 002
RUNNING/STOPPED 50 XI 003
AUTO START READY 50 XI 004
TRIPPED/FAULT 50 XA 003
SHUTDOWN ALARM 50 XA 004
ESD I

SP 0043 MCC SP 0033 1"-SWS-222-01SD-E

SP 0044 MCC SP 0034 1"-SWS-221-01SD-E

50 PSV 006 1D2 BLOCKED OUTLET SET @ 7.6 barg 2"-SWR-289-01SD-N

50 PSV 007 1D2 BLOCKED OUTLET SET @ 7.6 barg 2"-SWR-287-01SD-N

PM-50001A M RS BLPH-MV-048 1" BLPH-MV-469 SB 1"-SWS-288-01SD-E

PM-50001B M RS BLPH-MV-051 1" BLPH-MV-470 SB 1"-SWS-286-01SD-E

LOWER DECK: +23.310 m

TOP OF CAISSON: +21.808 m

SUCTION NOTE 1, 8 P-50001A

SUCTION NOTE 1, 8 P-50001B

EL: 5.500 m PUMP RETENTION BARS B-50013A

EL: 5.500 m PUMP RETENTION BARS B-50013B

NOTES

1. SEAWATER LIFT PUMPS ARE RATED 2 X 100%
2. AUTO START OF DESIGNATED STANDBY PUMP ON LOSS OF RUNNING STATUS AND DISCHARGE LOW PRESSURE ALARM OF DUTY PUMP.
3. VALVE TO BE OPENED WHEN PUMP IS OFFLINE TO DOSE CAISSON WITH TREATED SEAWATER TO PREVENT BIOLOGICAL GROWTH.
4. DELETED. 02
5. SOFTWARE INTERLOCK PREVENTS PUMPS FROM STARTING UNLESS DISCHARGE XV IS FULLY CLOSED.
6. DELETED. 02
7. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "123A90-DDL-IN-DS-40054 - TECHNICAL DATASHEET FOR RESTRICTION ORIFICE".
8. LOGIC FOR CONTROL OF P-5001A/B THAT PREVENTS SIMULTANEOUS RUNNING OF A AND B PUMP IS PROVIDED.
9. DISCHARGE PRESSURE REFERS TO THE FLANGE DISCHARGE OF THE PUMP AT LOWER DECK.

02

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.
5. DELETED.

02

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
SEA-WATER INTAKE SYSTEM SHEET 1

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80021		SHEET 001 / REV. 02

File Name : FILE_NAME

DRAWING NO. DRAWING_NO.

REV. REV

Sea Water Intake System	SS 50-00
Electrochlorinated Water	SS 50-11
Waste Water Disposal System	SS 55-00
Waste Water Brine Disharge System	SS 55-01
Water Desalination & Distribution System	SS 50-10

A-50000
WATER TREATMENT PACKAGE
CAPACITY : 2.5 m³/hr
02

02

GAS CONFIRMED 50 XA 001 — F&G
SMOKE CONFIRMED 50 XA 002 — F&G
FAULT PACKAGE 50 XA 003 — ESD
50-XS-001 SHUT-DOWN — ESD
NOTE 6

CONTRACTOR | SUPPLIER

FOR CONTINUATION SEE DOC N. 123A90-DDL-PR-PID-80023

123A90-DDL-PR-PID-80025
TO 50-TDI-002
50 TI 001
BLOCKED OUTLET SET @ 6 barg
50 PSV 011 1D2
2"-SWR-291-01SD-N
02
BLPH-MV-471
SB
1"-SWS-290-01SD-E
50 TT 001
50 TE 001
1.1/2"
4"x1.1/2"
ECC. RED.
TP 017
E
123A90-DDL-PR-PID-80021
FROM SEA WATER LIFT PUMP
1-1/2"-SWS-035-01SD-E
BLPH-MV-241 3/4"

A-50000
WATER TREATMENT PACKAGE
SEE VENDOR DRAWING
DOC. N. 1724000448-PR-PID-00013

02
FOR CONTINUATION SEE DOC N. 123A90-DDL-PR-PID-80023

E
TP 005
123A90-DDL-PR-PID-80021
TO SEA WATER LIFT PUMP AND LIFT PUMP CAISSONS
1"-CI-029-01CP-E

1"-CI-043-01CP-E
TP 006
123A90-DDL-PR-PID-80026
TO WASTE WATER TANK
DECK HOOK-UP 003
02

SUPPLIER | CONTRACTOR

TP 003
1.1/2"x1"
3"x1.1/2"
1"-SWR-045-01CS-H
123A90-DDL-PR-PID-80025
TO BRINE DISCHARGE CAISSON

TP 007
1.1/2"x1"
1"-WW-038-01CS-H
123A90-DDL-PR-PID-80026
TO WASTE WATER TANK

NOTES

1. DELETED. 02
2. DELETED.
3. DELETED.
4. DELETED.
5. DELETED. 02
6. SERIAL COMMUNICATION WITH CONTROL SYSTEM.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED. 02
5. DELETED.
6. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
SEA-WATER INTAKE SYSTEM SHEET 2

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE NTS	
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80022	SHEET 001	REV. 02

File Name : FILE_NAME

DRAWING NO. DRAWING_NO.

REV. REV

Sea Water Intake System	SS 50-00
Electrochlorinated Water	SS 50-11
Waste Water Disposal System	SS 55-00
Waste Water Brine Disharge System	SS 55-01
Water Desalination & Distribution System	SS 50-10

A-50000
WATER TREATMENT PACKAGE
CAPACITY : 2.5 m³/hr
02

02

GAS CONFIRMED 50 XA 001 — F&G
SMOKE CONFIRMED 50 XA 002 — F&G
FAULT PACKAGE 50 XA 003 — ESD
50-XS-001 SHUT-DOWN — ESD
NOTE 6

CONTRACTOR | SUPPLIER

FOR CONTINUATION SEE DOC N. 123A90-DDL-PR-PID-80023

123A90-DDL-PR-PID-80025
TO 50-TDI-002
50 TI 001
BLOCKED OUTLET SET @ 6 barg
50 PSV 011 1D2
2"-SWR-291-01SD-N
02
BLPH-MV-471
SB
1"-SWS-290-01SD-E
50 TT 001
50 TE 001
1.1/2"
4"x1.1/2"
4"x1.1/2"
TP 017
E
ECC. RED.
ECC. RED.
123A90-DDL-PR-PID-80021
FROM SEA WATER LIFT PUMP
1-1/2"-SWS-035-01SD-E
BLPH-MV-241 3/4"

A-50000
WATER TREATMENT PACKAGE
SEE VENDOR DRAWING
DOC. N. 1724000448-PR-PID-00013

02
FOR CONTINUATION SEE DOC N. 123A90-DDL-PR-PID-80023

E
TP 005
123A90-DDL-PR-PID-80021
TO SEA WATER LIFT PUMP AND LIFT PUMP CAISSONS
1"-CI-029-01CP-E

1"-CI-043-01CP-E
TP 006
123A90-DDL-PR-PID-80026
TO WASTE WATER TANK
DECK HOOK-UP 003
02

SUPPLIER | CONTRACTOR

TP 003
1.1/2"x1"
3"x1.1/2"
1"-SWR-045-01CS-H
123A90-DDL-PR-PID-80025
TO BRINE DISCHARGE CAISSON

TP 007
1.1/2"x1"
1"-WW-038-01CS-H
123A90-DDL-PR-PID-80026
TO WASTE WATER TANK

NOTES

1. DELETED. 02
2. DELETED.
3. DELETED.
4. DELETED.
5. DELETED. 02
6. SERIAL COMMUNICATION WITH CONTROL SYSTEM.

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED. 02
5. DELETED.
6. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
SEA-WATER INTAKE SYSTEM SHEET 2

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE NTS	
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80022	SHEET 001	REV. 02

File Name : FILE_NAME

Section 4 MECHANICAL COMPLETION STATUS INDEX - BUILDING DISCIPLINE

NOT APPLICABLE

Section 5 MECHANICAL COMPLETION STATUS INDEX - ELECTRICAL DISCIPLINE

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 50-00 & process: MC & discipline : E

Electrical	50-00 Seawater Intake System (Lifting Pumps)						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
83018-CEL	LV Switchgear / Sea water intake pump A	ONSHORE	C10000539	CPX09	100	2025-02-27	-
		OFFSHORE	C10004919	CPX09	0	-	-
83019-CEL	LV Switchgear / Sea water intake pump B	ONSHORE	C10000540	CPX09	100	2025-02-27	-
		OFFSHORE	C10004920	CPX09	0	-	-
PM-50001A	Electric Motor for sea water pump	OFFSHORE	C10001846	CPX13	0	-	-
PM-50001B	Electric Motor for sea water pump	OFFSHORE	C10001847	CPX13	0	-	-

ITEM	Tag	83018-CEL	: LV Switchgear / Sea water intake pump A	Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)	Module	LD_B-200/LD
TASK	code	C10000539	Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity	CCK	Discipline	Electrical	Form	CPX09		LV Power Cable

CABLE DATA

Type: Cu Cl.2/EPR/LSZH Cores/Size mm²: 4G4 mm2 Color: GREY

From: SG-200N1 To: PM-50001A

1	Confirm cable is as specified in project cable schedule	OK
2	Visual Check cable physical integrity.	OK
3	Check is installed in accordance with layout drawing (segregation, distance…).	OK
4	Check cable is supported and fixed to rack according to project specification.	Note
5	Check bending radius is within the specified limits.	OK
6	Confirm cable glands suit for cable type, correctly mounted and tightened.	OK
7	Check gland plate for single core cables is non ferrous (non -magnetic).	NA
8	Confirm cable labelling is in accordance with specifications.	PL
9	Check cable is correctly loomed and segregated in accordance with specification.	OK
10	Check cable earthing against lastest drawings.	OK
11	Check cores marking are in accordance with termination diagram	OK
12	Check terminations are in accordance with latest termination diagram	OK
13	If required produce Red Line Mark Up for "AS BUILT"	

ROSETTI MARINO PROVERLIS CROSSWIND

ITEM	Tag	83018-CEL	: LV Switchgear / Sea water intake pump A			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD_B-200/LD
TASK	code	C10000539		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX09 LV Power Cable

	CONTINUITY			
5	CORE CONTINUITY Ω	PH 1	0.6	
6		PH 2	0.6	
7		PH 3	0.6	
8	ARMOUR CONTINUITY Ω		NA	
9	PROTECTIVE CONDUCTOR CONTINUITY Ω		0.6	
	INSULATION			
10	CORES / ARMOUR+EARTH MΩ	PH1 / PH2-PH3-A-E	>999	
11		PH2 / PH1-PH3-A-E	>999	
12		PH3 / PH1-PH2-A-E	>999	
13	CABLE IS CORRECTLY RE-CONNECTED.		Yes	

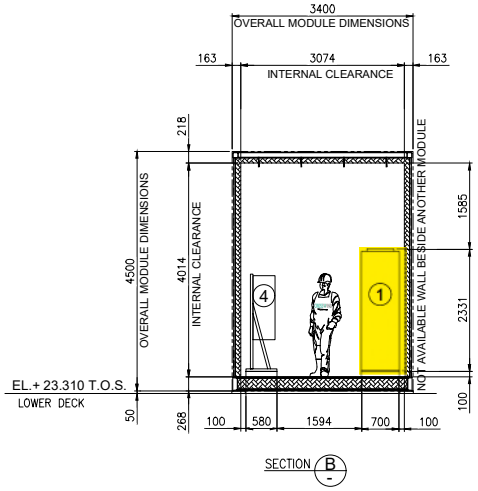
TESTING INSTRUMENTS USED

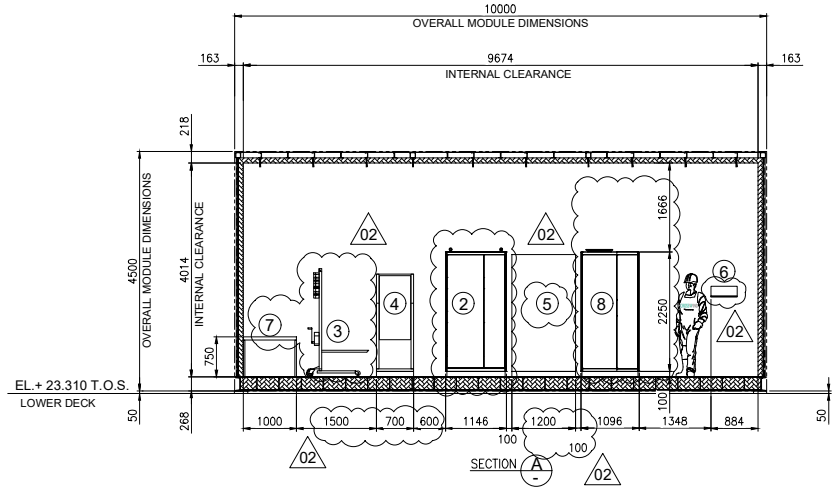
TYPE / SERIAL N° :	VOLCRAFT 1000V - ET-200 S/N:H240103023	TYPE / SERIAL N° :	MEGGER : KEW3125A SERIAL: W8330207
Calibration certificate N° and date:	N°LAT 042 00768/24 _ 12/10/2024	Calibration certificate N° and date:	N°7722/24 _ 10/07/2024

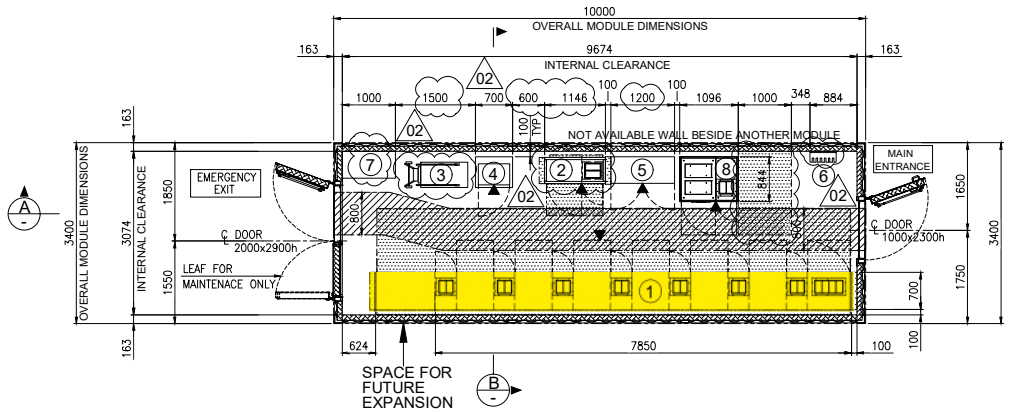
Comments: Nota 4: refer to PL C30000679
Cable installation and connection both sides will be completed during OFFSHORE phase (See Ref. task C10004919)

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Giovanni Tangianu	
Date	2025-02-18	2025-02-27	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-18T09:36:40.996Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-02-27T13:18:30.994Z	

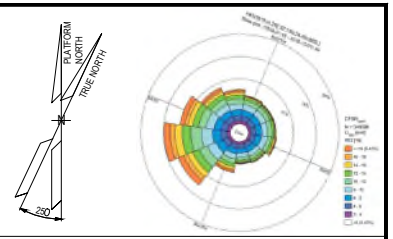
DRAWING NO. 123A90-DDL-EL-DL-20105 REV. 02







EQUIPMENT LAYOUT
"B-200" LV (400V) SWITCHGEAR ROOM
BOTTOM PLAN



NOTES

1. U.N.O. ALL DIMENSIONS ARE IN MILLIMETERS.
2. DELETED.
3. DOCUMENT VALID ONLY FOR ELECTRICAL COMPONENT, FOR OTHER SCOPE LOCATION AND INFORMATION, PLEASE REFER TO VENDORS AND PROJECT DOCUMENTS.
4. FOR OTHER ITEMS, CORRECT LOCATION AND INFORMATION, PLEASE REFER TO VENDORS AND DEDICATED PROJECT DOCUMENTATION.
5. HEIGHT OF ALL PANELS IN THE EQUIPMENT LIST TABLE IS WITHOUT THE BASE FRAME (100mm)

02

LEGEND

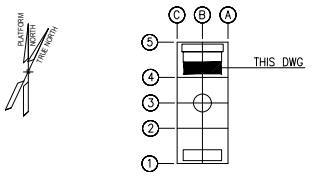
U.N.O. _____ UNLESS NOTED OTHERWISE
T.O.S. _____ TOP OF STEEL
_____ ESCAPE CORRIDOR - WIDTH 800mm.
_____ MAINTENANCE AREA - VENDOR REQUIREMENT
_____ SWITCHGEAR ROOM ENCLOUSURE
_____ FRONT OF EQUIPMENT

REFERENCES

DOCUMENT TITLE	DOCUMENT NUMBER
SG-200N1 GENERAL ARRANGEMENT DRAWING	1723002197-EL-DA-00007
SG-200D2 GENERAL ARRANGEMENT DRAWING	1723002197-EL-DA-00008
DP-200N1 GENERAL ARRANGEMENT DRAWING	1723002197-EL-DA-00009
AC UPS – GENERAL ARRANGEMENT AND DIMENSIONAL DRAWINGS	1724000372-EL-DA-00004
AC UPS – BATTERY LAYOUT INTERCONNECTING DIAGRAM	1724000372-EL-DG-00011
B-200 -GENERAL ARRANGEMENT DRAWINGS - E&I SHELTER	1724000049-AR-DA-00015
ICCC PANEL GENERAL ARRANGEMENT DRAWING	144671-CORR-TF-FAB-DWG-0003

02

KEY PLAN



1 EQUIPMENT LIST

REF.	TAG No.	DESCRIPTION	LENGTH (mm)	WIDTH (mm)	HEIGHT (mm)	NOTE
1	SG-200N1	400V SWITCHGEAR	7850	700	2331	
2	DP-200N1	DISTRIBUTION BOARD FOR LIGHTING AND SMALL POWER B.O.P.	1146	520	2250	
3	-	SERVICE TROLLEY FOR 400V SWITCHGEAR	1034	490	2030	
4	CN-200N1	ICCP PANEL	700	500	1638	
5	B200-HSB-001	DISTRIBUTION & HVAC PANEL - LV ROOM	1200	600	1900	02
6	-	TOOL BOX	495	200	200	
7	-	TABLE	1000	500	750	
8	SG-200D2	ACB PANEL FOR SOLAR PACKAGE	1096	844	2294	

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-EL-DL-20105
REV.: 2_A | DATE: 08/08/24 | SIGNATURE: G.Randi
ROSETTI MARINO SpA

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	27/05/2024	FMO	LMA/AMA	LMA/MDO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/03/2024	GPA	LMA/AMA	LMA/MDO	ISSUE FOR REVIEW (IFR)
00	08/11/2023	DSF	CB/AMA	DYFO/MDO	ISSUE FOR REVIEW (IFR)

CROSSWIND
ROSETTI MARINO

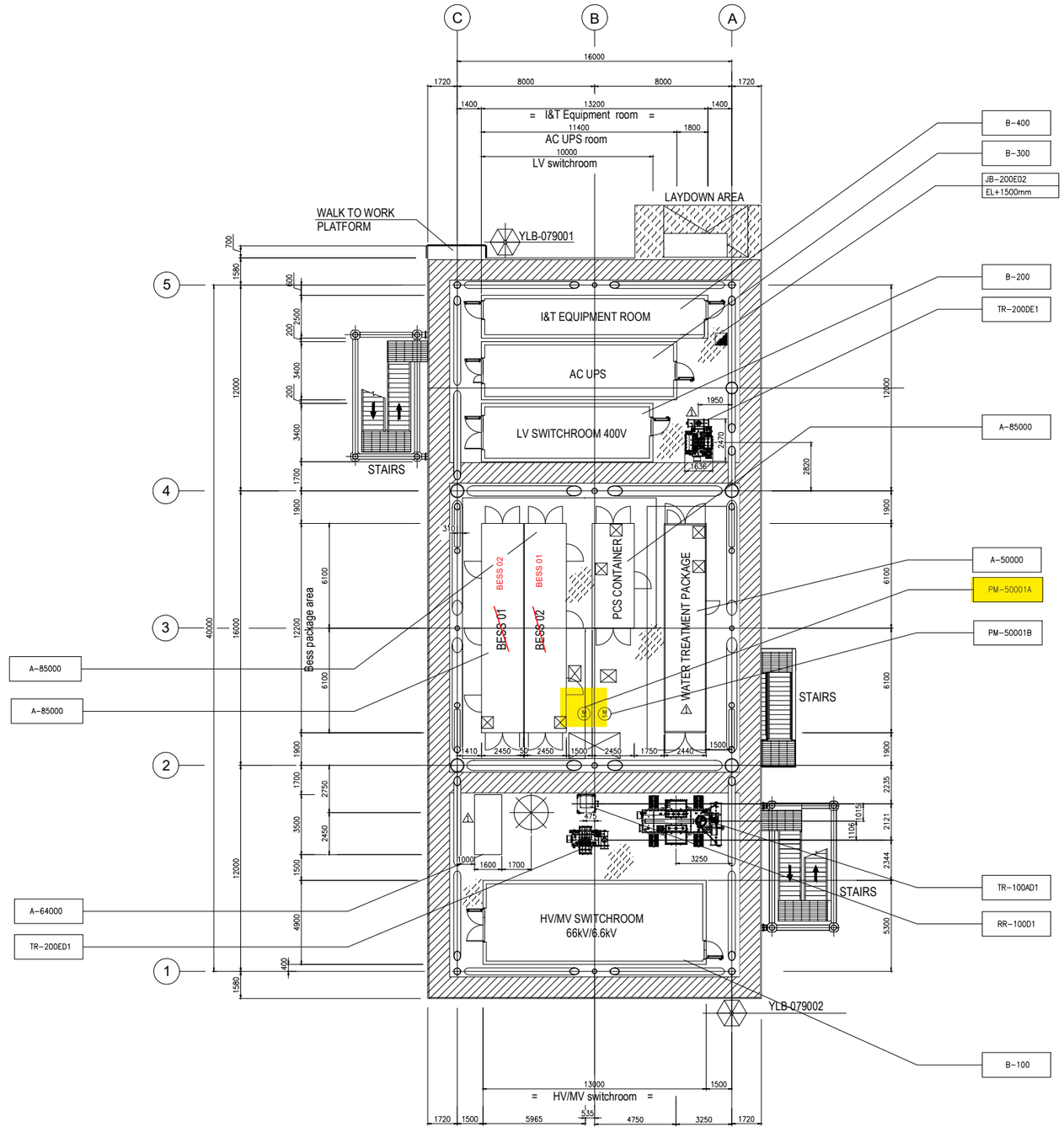
TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL EQUIPMENT LAYOUT
LV SWITCHROOM

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:50
DRAWN FMO	CHECKED LMA/AMA	APPROVED LMA/MDO	DATE 27/05/2024
A1	DRAWING NO. 123A90-DDL-EL-DL-20105	SHEET 001	REV. 02

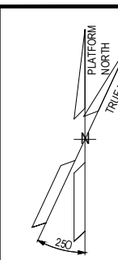
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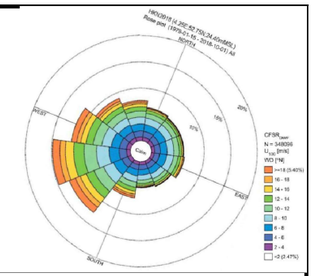
DRAWING NO. 123A90-DDL-EL-DL-20101

REV. 01



PLAN ON LOWER DECK
EL+23.310 T.O.S.





NOTES

1. ALL DIMENSIONS IN MM UNLESS NOTED OTHERWISE.
2. ALL ELEVATIONS IN METERS. UNLESS NOTED OTHERWISE.
3. ELEVATIONS REFER TO T.O.S.
4. FOR ELECTRICAL EQUIPMENT LAYOUT OF CONTAINERS B-100, B-200, B-300, B-400 REFER TO THE RESPECTIVE LAYOUTS.

LEGEND

(M)	ELECTRIC MOTOR – LOW VOLTAGE
⊠	INTERFACE PANEL
◪	JUNCTION BOX
JB-200E2 / EL+500mm	TAG ITEM / REFERED ELEVATION TO T.O.S. (TOP OF STEEL)

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-EL-DL-20106	ELECTRICAL EQUIPMENT LAYOUT UPSs & BATTERIES SWITCHROOM
⚠ 123A90-DDL-IN-DL-40012	ITER EQUIPMENT LAYOUT
123A90-DDL-EL-DL-20104	ELECTRICAL EQUIPMENT LAYOUT HV & MV SWITCHROOM
123A90-DDL-EL-DL-20105	LV SWITCHGEAR ROOM EQUIPMENT LAYOUT

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	06/05/24	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	04/03/24	SAM	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

VALID FOR CONSTRUCTION

REV.:	DATE:	SIGNATURE:
1_B	12/12/24	C.Pilato

ROSETTI MARINO SpA

TITLE :
BASE LOAD POWER HUB (BLPH)
ELECTRICAL EQUIPMENT LAYOUT
LOWER DECK

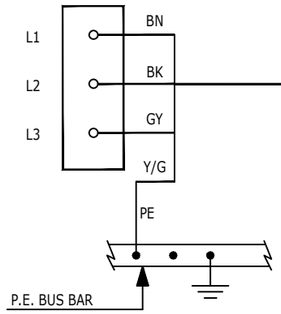
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN SAM	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 04/03/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20101	SHEET 001	REV. 01

File Name : 123A90-DDL-EL-DL-20101-Electrical Equipment Layout - Lower Deck

FROM	TO

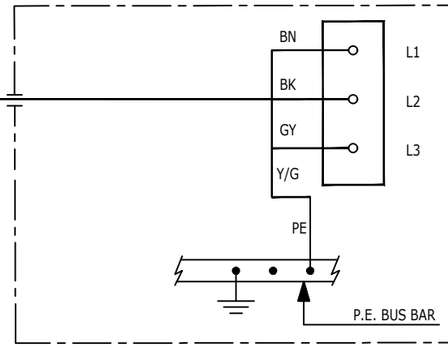
DESCRIPTION: LV SWITCHGEAR
TAG NUMBER: SG-200N1

COLUMN/CUBIC.: A7/+01

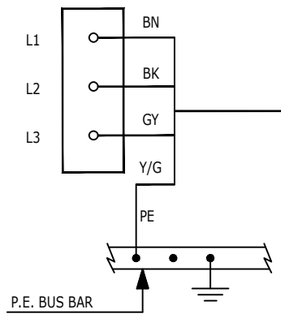


83018-CEL
4G4 mm²

DESCRIPTION: SEA WATER INTAKE PUMP A
TAG NUMBER: PM-50001 A

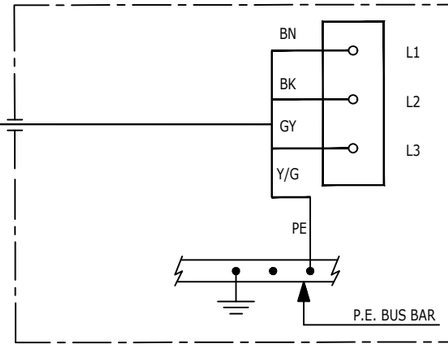


COLUMN/CUBIC.: A6/+01

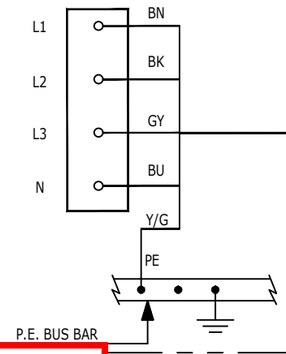


83019-CEL
4G4 mm²

DESCRIPTION: SEA WATER INTAKE PUMP B
TAG NUMBER: PM-50001 B



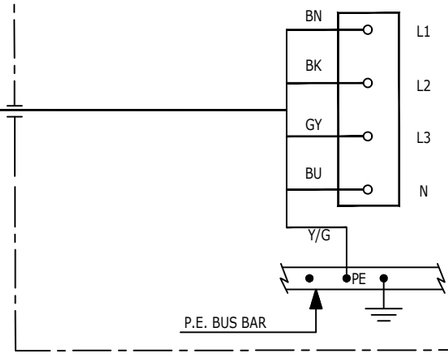
COLUMN/CUBIC.: A3/+04



83020-CEL
5G16 mm²

DESCRIPTION: CRANE
TAG NUMBER: JB-200E3

CB: 30Q1



VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DG-20149**

REV.:	DATE:	SIGNATURE:
2_K	12/02/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	19/11/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	16/10/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	SAI	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL INTERCONNECTING WIRING DIAGRAM
LV SWITCHGEAR SG-200N1

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE : 1:X

A3

DRAWING NO. 123A90-DDL-EL-DG-20149

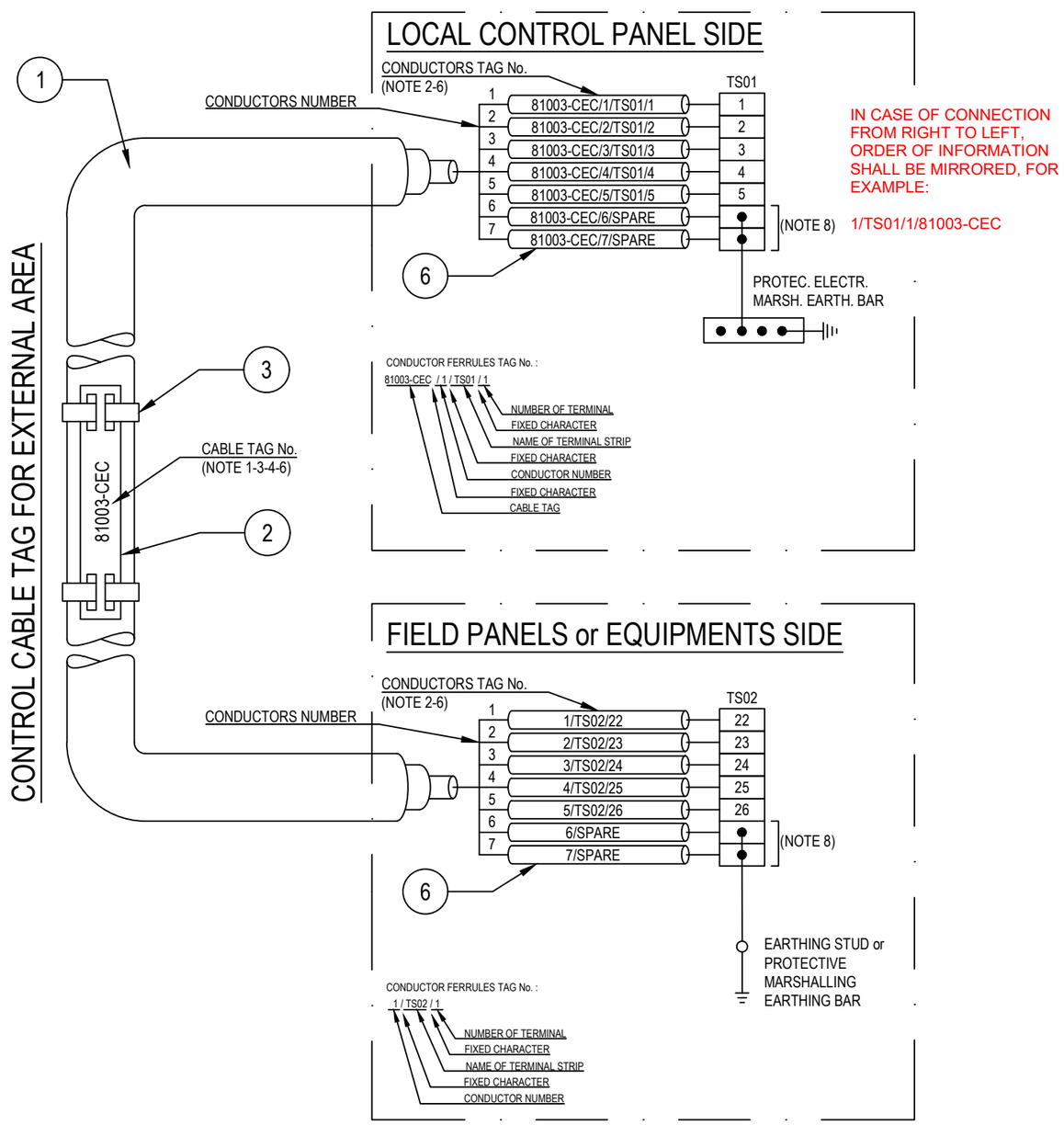
SHEET 024

REV. 02

File Name : 123A90-DDL-EL-DG-20149 Rev. 02

F.to UNI A3: 420mmx297mm

C04



IN CASE OF CONNECTION FROM RIGHT TO LEFT, ORDER OF INFORMATION SHALL BE MIRRORED, FOR EXAMPLE:

1/TS01/1/81003-CEC

POS.	DESCRIPTION	MATERIAL	SIZE	Q.TY	NOTE
1	UNARMOURED CABLE				
2	CABLE TAG FOR EXTERNAL AREA	HDG/SS			NOTE 1 NOTE 4
3	TIE FOR CABLE TAG IN EXTERNAL AREA	HDG/SS			
4	CABLE TAG FOR INTERNAL AREA	PVC			NOTE 1 NOTE 5
5	TIE FOR CABLE TAG IN INTERNAL AREA	NYLON 6.6			
6	CORE FERRULES	PVC			

NOTES:

1) ALL CABLES SHALL BE IDENTIFIED AT EACH TERMINATION AND EACH SIDE OF ANY OBSTACLE (E.G. CABLE TRANSIT ON WALLS INSIDE SHELTER AND FLOOR DECK CROSSING, BY THEIR RESPECTIVE TAGS/NUMBERS, AS INDICATED ON THE CABLE SCHEDULE.
CABLE IDENTIFICATION SHALL BE ALSO DONE BELOW AND IN THE SWITCHBOARD CABLE COMPARTMENT.

2) CABLE CORE FERRULES SHALL BE FITTED AT EVERY TERMINATION. THESE FERRULES SHALL BE OF ENGRAVED PLASTIC SLIP ON, INTERLOCKED AND SELF GRIP TYPE.

3) ON CABLE TRAYS OR LADDERS, CABLES SHALL BE IDENTIFIED AT EACH END, AND EVERY 50 METERS.

4) THE CABLE TAG FOR EXTERNAL AREA SHALL DONE BY 316L STAINLESS STEEL LABELS, TAG (H=5mm) SHALL BE LASER PRINTED PREFERABLY OR EMBOSSED, LABEL HELD BY TWO 316L STAINLESS STEEL TIES.

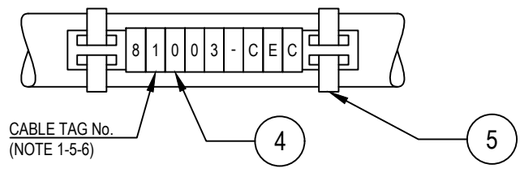
5) THE CABLE TAG FOR INTERNAL AREA SHAL BE DONE BY ENGRAVED PLASTIC SLIP ON CHARACTERS ONTO PLASTIC TIE, BLACK LETTER (H=5mm) ON WHITE.

6) CABLE AND CONDUCTOR TAG ARE INDICATIVE ONLY.

7) THE EARTHING CONNECTION OF THE ARMOUR CABLE IS NOT APPLICABILE IF THE ARMOUR IS CONNECTED TO EARTH WITH METALLIC CABLE GLAND.
WITHIN TECHNICAL BUILDING, PROTECTIVE CONDUCTOR SHALL BE TAGGED BETWEEN FOLLOWING ITEMS:
- PANEL (SWITCHBOARD, SWITCHGEAR, DISTRIBUTION BOARD, ETC) AND EARTH RING
- EARTHING BOSS AND EARTH RING
- EARTH BAR AND EARTH BAR (IF ANY).

8) ONLY IF NECESSARY, SHRINK TUBES OF THE APPROPRIATE COLOR WILL BE INSTALLED TO COVER THE WRONG CONDUCTOR COLOR, THIS WILL BE PERFORMED IN EACH SIDE OF THE CABLES WHERE NECESSARY.

CONTROL CABLE TAG FOR INTERNAL AREA



VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DD-20092**

REV.:	DATE:	SIGNATURE:
2_D	20/12/24	V.Ramponi

ROSETTI MARINO SpA

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ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	28/08/24	GRA	AMA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	04/07/24	NLK	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS-POWER SYSTEM & CABLE INSTALLATION
CABLES INSTALLATION SYSTEM IDENTIFICATION FOR CONTROL CABLES

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : NTS

A3 | DRAWING NO. 123A90-DDL-EL-DD-20092 | SHEET 008 | REV. 02

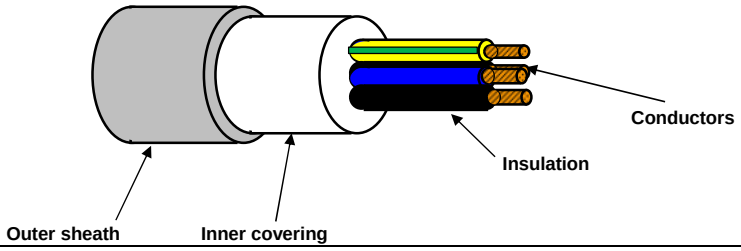
F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DD-20092 REV.02.DWG

Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	From Tag Section	To Tag	To Main Function	To Area	To Tag Section	Material ID	Material Desc.	Gland Standard	From Gland	From Entry	From Fitting	To Gland	To Entry	To Fitting	Routing	Routing Manual
83018-CEL	Cable	EL	VFC	123A90-DDL-EL-LIS-20148						SG-200N1	LV 0,4 kV MCC Switchgear	Lower Deck (B-200)	A7/01	PM-50001A	Sea Water Intake Pump A	Lower Deck	Power JB	ELECV10-4G4	Cable Cu Cl.2/EPR/LSZH 0,6/1kV 4G4mm² - Grey	M25	n.a.			T1_M25_Single	M32	RED_M32MxM25F		L-450-101-LVT-028 / L-600-101-LVT-016 / E-MCT-201 / L-750-101-LVT-011 / L-600-101-LVT-012 / L-300-101-LVT-069 / L-150-101-LVT-109

Cu Cl.2/EPR/LSZH 0,6/1 KV

4G4 - L.V. POWER CABLE - Flame Retardant



TECHNICAL FEATURES

Conductors :	**STRANDED** plain/bare annealed copper wires IEC 60228 Class 2
Insulation :	EPR compound, quality to IEC 60092.360, Nominal Thickness 1,0 mm
Cores colour code :	**Black - Brown - Grey - Yellow/Green**
Pair Assembling :	Not required
Pair Wrapping:	Not required
Drain wire :	Not required
Pair Shield :	Not required
Shield Insulation :	Not Required
Total Assembling :	Cores layed up with optimal lay length
Overall Wrapping:	Not required
Drain wire :	Not required
Overall Shield:	Not required
Inner covering :	Extruded LSZH compound, Average Thickness 1,0 mm
Inner covering color code:	**Black or Natural**
Armour :	Not required
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, Average Thickness 1,2 mm
Outer sheath color code:	**Grey**
Outer printing (INKJET) :	**FLEI - ELECTRIC CABLE - 1000V - 4G4 SQMM - EPR/LSZH - 0,6/1 KV - IEC 60332.1.2 - IEC 60332.3.22 - Year of Manufacture - CE + Meter Marking**
Outer diameter :	(15,5 ± 10%) mm
Bending radius :	cable outer diameter x 10 (in fixed installation)
Voltage test :	3,5 kV a.c. for 5' (Between Cores)
Conductors DC Resistance :	IEC 60228 Class 2
Insulation Resistance :	≥ 1100 MΩ x Km (@ 20°C)
Applicable Standards	
Design Guidelines :	**IEC 60092.353**
ON COMPLETE CABLE	
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22
Acid Gas generation :	IEC 60754.1/2
Smoke density/Light Transmittance	IEC 61034.2 (LT ≥ 60%)
Temperature Range :	
ON INSULATION	(max +90°C) (max continuous operation temperature of conductors)
	(max +250°C) (max conductors temperature during short-circuit for 5 seconds)
ON COMPLETE CABLE	
During Operation :	(-20°C up to +90°C) (in fixed installation)
During installation :	(- 5°C up to +50°C)
Note :	**To meet the requirements of installation and use in Zone 1 & Zone 2 (IEC 60079-14) and "Gas & Vapour Tight" the cable must be provided with Penetrating Inner covering together with correct ATEX approved equipment or accessories.**

Office	Date	Sign	Rev.	Date	Sign
Drawn by :	29/03/2024	Messa			
Checked :	29/03/2024	Spaccasassi			
Approved :	29/03/2024	Cucinotta			

The data provided, lending assent for the treatment, will be used to the sense of the article 13 of of the Regulation (UE) 2016/679, also through outsiders, in order to allow the realization of the fulfilments informatives, administrative, commercial and accounting related to the contractual relationship. Integral copy of the informative could be requested at our offices.

All proprietary rights reserved according to law. This document shall be not reproduced without written permission. FLEI reserves the right to change characteristics and technical data of product shown at any time.

ITEM	Tag	83019-CEL	: LV Switchgear / Sea water intake pump B		Dwg	123A90-DDL-EL-LIS-20148	
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)		Module	LD_B-200/LD	
TASK	code	C10000540	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline Electrical	Form CPX09	LV Power Cable	

CABLE DATA

Type Cu Cl.2/EPR/LSZH Cores/Size mm² 4G4 mm2 Color GREY

From SG-200N1 To PM-50001B

1	Confirm cable is as specified in project cable schedule	OK
2	Visual Check cable physical integrity.	OK
3	Check is installed in accordance with layout drawing (segregation, distance…).	OK
4	Check cable is supported and fixed to rack according to project specification.	Note
5	Check bending radius is within the specified limits.	OK
6	Confirm cable glands suit for cable type, correctly mounted and tightened.	OK
7	Check gland plate for single core cables is non ferrous (non -magnetic).	NA
8	Confirm cable labelling is in accordance with specifications.	PL
9	Check cable is correctly loomed and segregated in accordance with specification.	OK
10	Check cable earthing against lastest drawings.	OK
11	Check cores marking are in accordance with termination diagram	OK
12	Check terminations are in accordance with latest termination diagram	OK
13	If required produce Red Line Mark Up for "AS BUILT"	

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	83019-CEL	: LV Switchgear / Sea water intake pump B	Dwg	123A90-DDL-EL-LIS-20148		
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)	Module	LD_B-200/LD		
TASK	code	C10000540	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form CPX09	LV Power Cable

	CONTINUITY			
5	CORE CONTINUITY Ω	PH 1	0.5	
6		PH 2	0.5	
7		PH 3	0.5	
8	ARMOUR CONTINUITY Ω		NA	
9	PROTECTIVE CONDUCTOR CONTINUITY Ω		0.5	
	INSULATION			
10	CORES / ARMOUR+EARTH MΩ	PH1 / PH2-PH3-A-E	>999	
11		PH2 / PH1-PH3-A-E	>999	
12		PH3 / PH1-PH2-A-E	>999	
13	CABLE IS CORRECTLY RE-CONNECTED.		Yes	

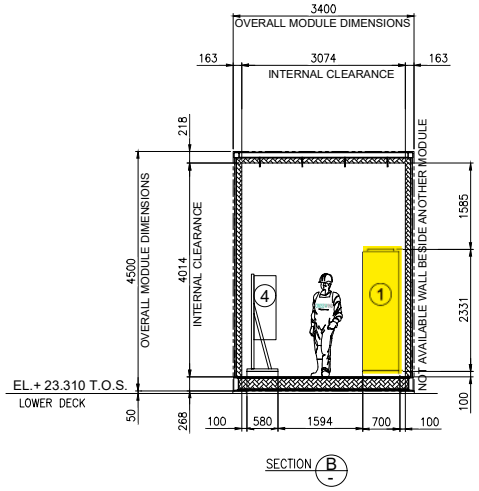
TESTING INSTRUMENTS USED			
TYPE / SERIAL N° :	VOLCRAFT 1000V - ET-200 S/N:H240103023	TYPE / SERIAL N° :	MEGGER : KEW3125A SERIAL: W8330207
Calibration certificate N° and date:	N°LAT 042 00768/24 _ 12/10/2024	Calibration certificate N° and date:	N°7722/24 _ 10/07/2024

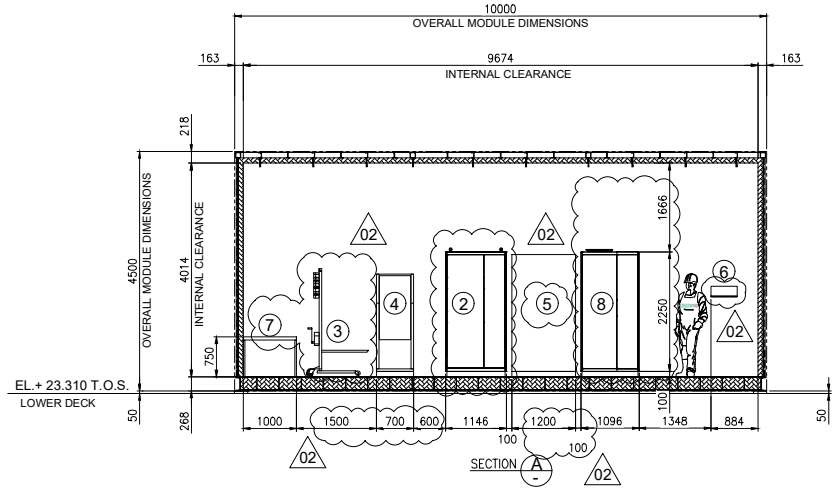
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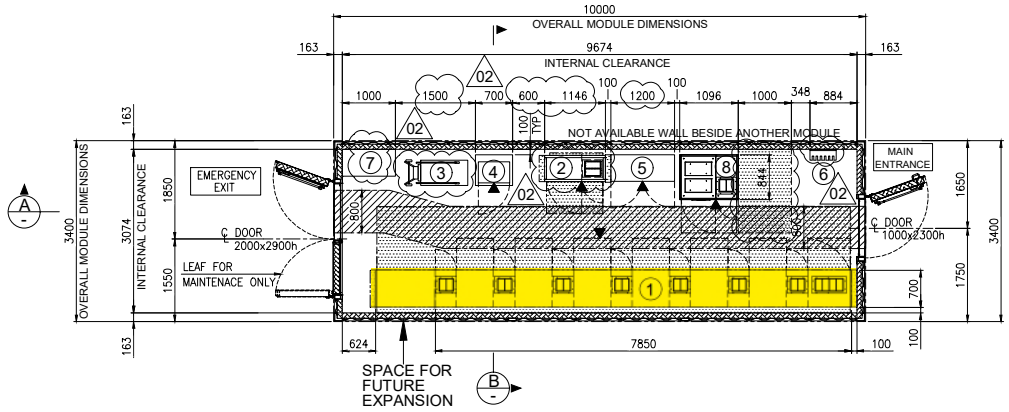
Nota 4: refer to PL C30000679
Cable installation and connection both sides will be completed during OFFSHORE phase (See Ref. task C10004920)

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Giovanni Tangianu	
Date	2025-02-18	2025-02-27	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-18T09:36:51.756Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2025-02-27T13:15:49.299Z	

DRAWING NO. 123A90-DDL-EL-DL-20105 REV. 02



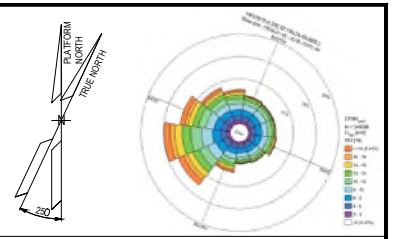




EQUIPMENT LAYOUT
"B-200" LV (400V) SWITCHGEAR ROOM
BOTTOM PLAN

1 EQUIPMENT LIST

REF.	TAG No.	DESCRIPTION	LENGTH (mm)	WIDTH (mm)	HEIGHT (mm)	NOTE
1	SG-200N1	400V SWITCHGEAR	7850	700	2331	
2	DP-200N1	DISTRIBUTION BOARD FOR LIGHTING AND SMALL POWER B.O.P.	1146	520	2250	
3	-	SERVICE TROLLEY FOR 400V SWITCHGEAR	1034	490	2030	
4	CN-200N1	ICCP PANEL	700	500	1638	
5	B200-HSB-001	DISTRIBUTION & HVAC PANEL - LV ROOM	1200	600	1900	02
6	-	TOOL BOX	495	200	200	
7	-	TABLE	1000	500	750	
8	SG-200D2	ACB PANEL FOR SOLAR PACKAGE	1096	844	2294	



NOTES

1. U.N.O. ALL DIMENSIONS ARE IN MILLIMETERS.
2. DELETED.
3. DOCUMENT VALID ONLY FOR ELECTRICAL COMPONENT, FOR OTHER SCOPE LOCATION AND INFORMATION, PLEASE REFER TO VENDORS AND PROJECT DOCUMENTS.
4. FOR OTHER ITEMS, CORRECT LOCATION AND INFORMATION, PLEASE REFER TO VENDORS AND DEDICATED PROJECT DOCUMENTATION.
5. HEIGHT OF ALL PANELS IN THE EQUIPMENT LIST TABLE IS WITHOUT THE BASE FRAME (100mm) 02

LEGEND

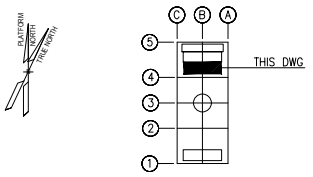
U.N.O. _____ UNLESS NOTED OTHERWISE
T.O.S. _____ TOP OF STEEL
_____ ESCAPE CORRIDOR - WIDTH 800mm.
_____ MAINTENANCE AREA - VENDOR REQUIREMENT
_____ SWITCHGEAR ROOM ENCLOUSURE
_____ FRONT OF EQUIPMENT

REFERENCES

DOCUMENT TITLE	DOCUMENT NUMBER
SG-200N1 GENERAL ARRANGEMENT DRAWING	1723002197-EL-DA-00007
SG-200D2 GENERAL ARRANGEMENT DRAWING	1723002197-EL-DA-00008
DP-200N1 GENERAL ARRANGEMENT DRAWING	1723002197-EL-DA-00009
AC UPS – GENERAL ARRANGEMENT AND DIMENSIONAL DRAWINGS	1724000372-EL-DA-00004
AC UPS – BATTERY LAYOUT INTERCONNECTING DIAGRAM	1724000372-EL-DG-00011
B-200 -GENERAL ARRANGEMENT DRAWINGS - E&I SHELTER	1724000049-AR-DA-00015
ICCC PANEL GENERAL ARRANGEMENT DRAWING	144671-CORR-TF-FAB-DWG-0003

02

KEY PLAN



REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	27/05/2024	FMO	LMA/AMA	LMA/MDO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/03/2024	GPA	LMA/AMA	LMA/MDO	ISSUE FOR REVIEW (IFR)
00	08/11/2023	DSF	CB/AMA	DYFO/MDO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-EL-DL-20105
REV.: 2_A | DATE: 08/08/24 | SIGNATURE: G.Randi
ROSETTI MARINO SpA

CROSSWIND | ROSETTI MARINO

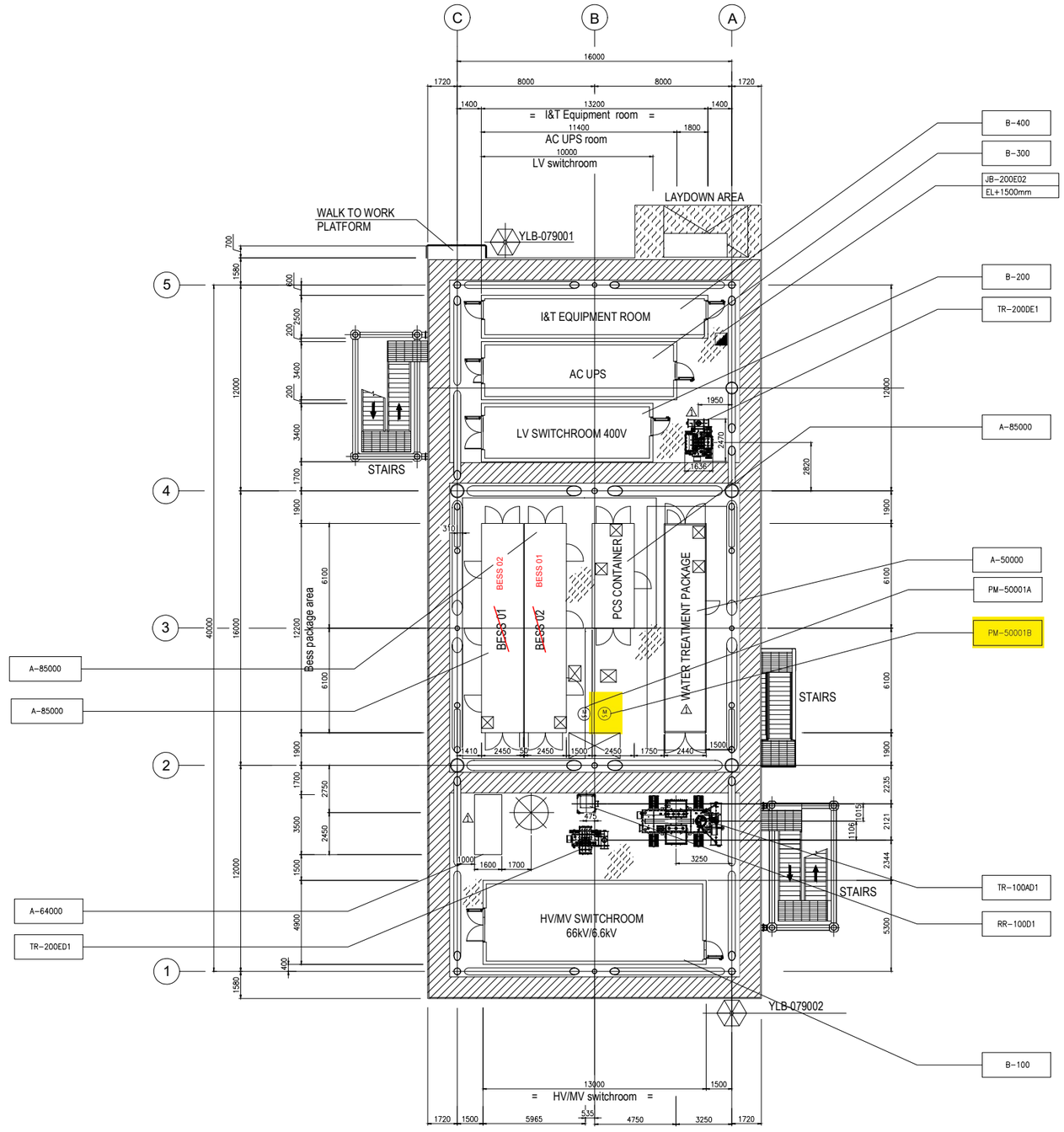
TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL EQUIPMENT LAYOUT
LV SWITCHROOM

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE 1:50
DRAWN FMO | CHECKED LMA/AMA | APPROVED LMA/MDO | DATE 27/05/2024
A1 | DRAWING NO. 123A90-DDL-EL-DL-20105 | SHEET 001 | REV. 02

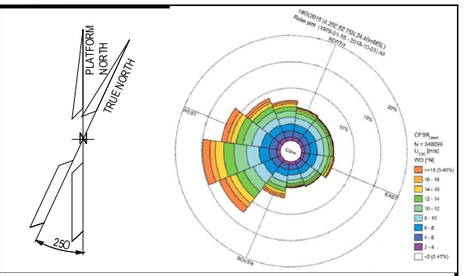
File Name : 123A90-DDL-EL-DL-20105_REV02.dwg

DRAWING NO. 123A90-DDL-EL-DL-20101

REV. 01



PLAN ON LOWER DECK
EL+23.310 T.O.S.



NOTES

1. ALL DIMENSIONS IN MM UNLESS NOTED OTHERWISE.
2. ALL ELEVATIONS IN METERS. UNLESS NOTED OTHERWISE.
3. ELEVATIONS REFER TO T.O.S.
4. FOR ELECTRICAL EQUIPMENT LAYOUT OF CONTAINERS B-100, B-200, B-300, B-400 REFER TO THE RESPECTIVE LAYOUTS.

LEGEND

(M)	ELECTRIC MOTOR – LOW VOLTAGE
⊠	INTERFACE PANEL
◪	JUNCTION BOX
JB-200E2 / EL+500mm	TAG ITEM / REFERED ELEVATION TO T.O.S. (TOP OF STEEL)

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-EL-DL-20106	ELECTRICAL EQUIPMENT LAYOUT UPSs & BATTERIES SWITCHROOM
⚠ 123A90-DDL-IN-DL-40012	ITER EQUIPMENT LAYOUT
123A90-DDL-EL-DL-20104	ELECTRICAL EQUIPMENT LAYOUT HV & MV SWITCHROOM
123A90-DDL-EL-DL-20105	LV SWITCHGEAR ROOM EQUIPMENT LAYOUT

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	06/05/24	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	04/03/24	SAM	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

VALID FOR CONSTRUCTION

REV.:	DATE:	SIGNATURE:
1_B	12/12/24	C.Pilato

ROSETTI MARINO SpA

TITLE :
BASE LOAD POWER HUB (BLPH)
ELECTRICAL EQUIPMENT LAYOUT
LOWER DECK

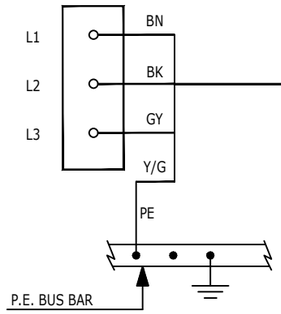
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN SAM	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 04/03/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20101	SHEET 001	REV. 01

File Name : 123A90-DDL-EL-DL-20101-Electrical Equipment Layout - Lower Deck

FROM	TO

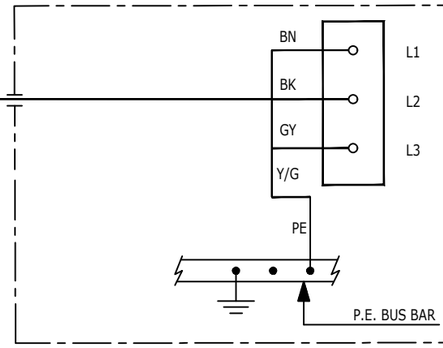
DESCRIPTION: LV SWITCHGEAR
TAG NUMBER: SG-200N1

COLUMN/CUBIC.: A7/+01

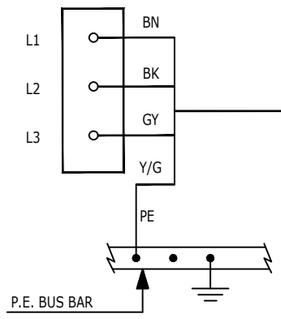


83018-CEL
4G4 mm²

DESCRIPTION: SEA WATER INTAKE PUMP A
TAG NUMBER: PM-50001 A

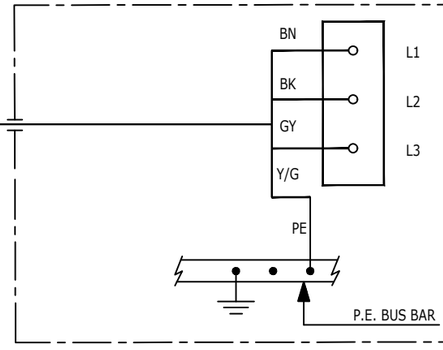


COLUMN/CUBIC.: A6/+01

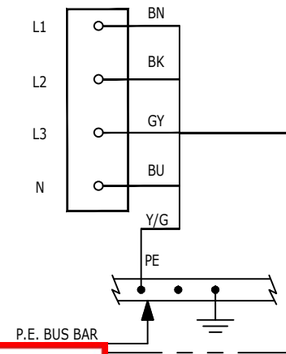


83019-CEL
4G4 mm²

DESCRIPTION: SEA WATER INTAKE PUMP B
TAG NUMBER: PM-50001 B



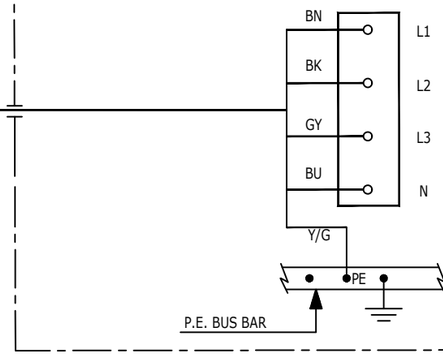
COLUMN/CUBIC.: A3/+04



83020-CEL
5G16 mm²

DESCRIPTION: CRANE
TAG NUMBER: JB-200E3

CB: 30Q1



VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DG-20149**

REV.:	DATE:	SIGNATURE:
2_K	12/02/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	19/11/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	16/10/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	SAI	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL INTERCONNECTING WIRING DIAGRAM
LV SWITCHGEAR SG-200N1

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE : 1:X

A3

DRAWING NO. 123A90-DDL-EL-DG-20149

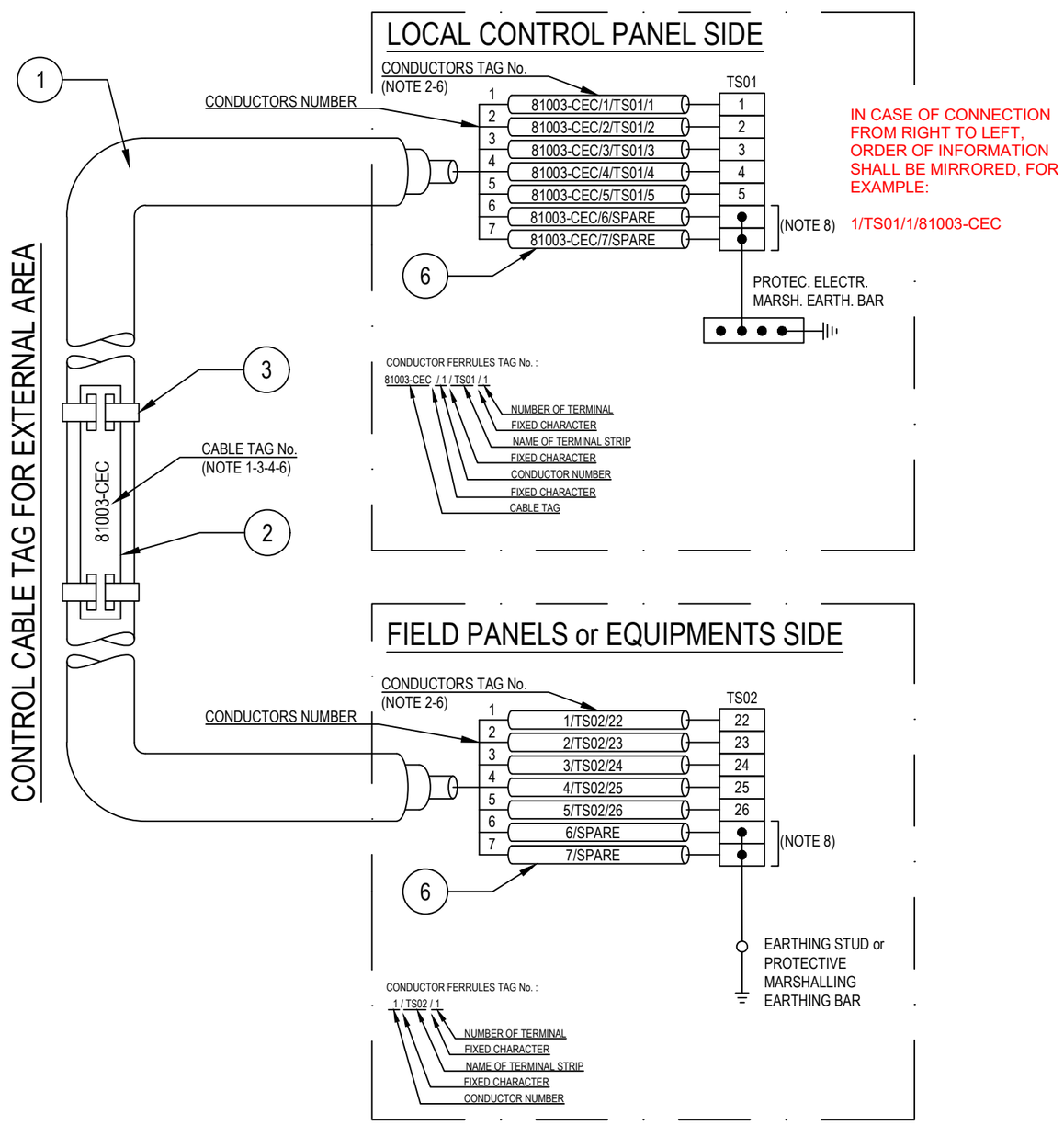
SHEET 024

REV. 02

File Name : 123A90-DDL-EL-DG-20149 Rev. 02

F.to UNI A3: 420mmx297mm

C04



IN CASE OF CONNECTION FROM RIGHT TO LEFT, ORDER OF INFORMATION SHALL BE MIRRORED, FOR EXAMPLE:

1/TS01/1/81003-CEC

POS.	DESCRIPTION	MATERIAL	SIZE	Q.TY	NOTE
1	UNARMOURED CABLE				
2	CABLE TAG FOR EXTERNAL AREA	HDG/SS			NOTE 1 NOTE 4
3	TIE FOR CABLE TAG IN EXTERNAL AREA	HDG/SS			
4	CABLE TAG FOR INTERNAL AREA	PVC			NOTE 1 NOTE 5
5	TIE FOR CABLE TAG IN INTERNAL AREA	NYLON 6.6			
6	CORE FERRULES	PVC			

NOTES:

1) ALL CABLES SHALL BE IDENTIFIED AT EACH TERMINATION AND EACH SIDE OF ANY OBSTACLE (E.G. CABLE TRANSIT ON WALLS INSIDE SHELTER AND FLOOR DECK CROSSING, BY THEIR RESPECTIVE TAGS/NUMBERS, AS INDICATED ON THE CABLE SCHEDULE.
CABLE IDENTIFICATION SHALL BE ALSO DONE BELOW AND IN THE SWITCHBOARD CABLE COMPARTMENT.

2) CABLE CORE FERRULES SHALL BE FITTED AT EVERY TERMINATION. THESE FERRULES SHALL BE OF ENGRAVED PLASTIC SLIP ON, INTERLOCKED AND SELF GRIP TYPE.

3) ON CABLE TRAYS OR LADDERS, CABLES SHALL BE IDENTIFIED AT EACH END, AND EVERY 50 METERS.

4) THE CABLE TAG FOR EXTERNAL AREA SHALL DONE BY 316L STAINLESS STEEL LABELS, TAG (H=5mm) SHALL BE LASER PRINTED PREFERABLY OR EMBOSSED, LABEL HELD BY TWO 316L STAINLESS STEEL TIES.

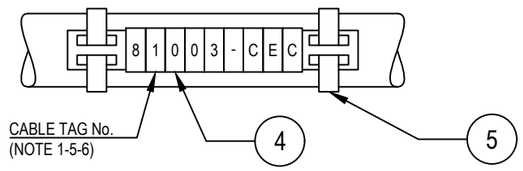
5) THE CABLE TAG FOR INTERNAL AREA SHAL BE DONE BY ENGRAVED PLASTIC SLIP ON CHARACTERS ONTO PLASTIC TIE, BLACK LETTER (H=5mm) ON WHITE.

6) CABLE AND CONDUCTOR TAG ARE INDICATIVE ONLY.

7) THE EARTHING CONNECTION OF THE ARMOUR CABLE IS NOT APPLICABILE IF THE ARMOUR IS CONNECTED TO EARTH WITH METALLIC CABLE GLAND.
WITHIN TECHNICAL BUILDING, PROTECTIVE CONDUCTOR SHALL BE TAGGED BETWEEN FOLLOWING ITEMS:
- PANEL (SWITCHBOARD, SWITCHGEAR, DISTRIBUTION BOARD, ETC) AND EARTH RING
- EARTHING BOSS AND EARTH RING
- EARTH BAR AND EARTH BAR (IF ANY).

8) ONLY IF NECESSARY, SHRINK TUBES OF THE APPROPRIATE COLOR WILL BE INSTALLED TO COVER THE WRONG CONDUCTOR COLOR, THIS WILL BE PERFORMED IN EACH SIDE OF THE CABLES WHERE NECESSARY.

CONTROL CABLE TAG FOR INTERNAL AREA



VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DD-20092**

REV.:	DATE:	SIGNATURE:
2_D	20/12/24	V.Ramponi

ROSETTI MARINO SpA

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ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	28/08/24	GRA	AMA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	04/07/24	NLK	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS-POWER SYSTEM & CABLE INSTALLATION
CABLES INSTALLATION SYSTEM IDENTIFICATION FOR CONTROL CABLES

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : NTS

A3 | DRAWING NO. 123A90-DDL-EL-DD-20092 | SHEET 008 | REV. 02

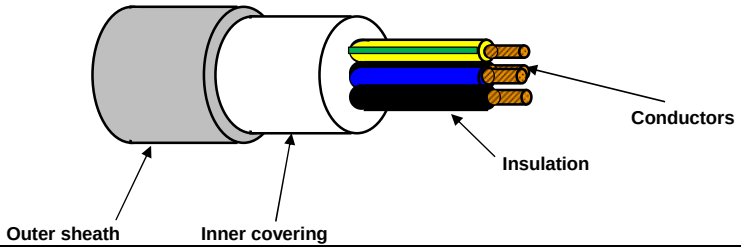
F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DD-20092 REV.02.DWG

Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	From Tag Section	To Tag	To Main Function	To Area	To Tag Section	Material ID	Material Desc.	Gland Standard	From Gland	From Entry	From Fitting	To Gland	To Entry	To Fitting	Routing	Routing Manual
83019-CEL	Cable	EL	VFC	123A90-DDL-EL-LIS-20148						SG-200N1	LV 0,4 kV MCC Switchgear	Lower Deck (B-200)	A6/01	PM-50001B	Sea Water Intake Pump B	Lower Deck	Power JB	ELECV10-4G4	Cable Cu Cl.2/EPR/LSZH 0,6/1kV 4G4mm² - Grey	M25	n.a.			T1_M25_Single	M32	RED_M32MxM 25F		L-450-101-LVT-027 / L-600-101-LVT-016 / E-MCT-201 / L-750-101-LVT-011 / L-600-101-LVT-012 / L-300-101-LVT-069 / L-150-101-LVT-109

Cu Cl.2/EPR/LSZH 0,6/1 KV

4G4 - L.V. POWER CABLE - Flame Retardant



TECHNICAL FEATURES

Conductors :	**STRANDED** plain/bare annealed copper wires IEC 60228 Class 2
Insulation :	EPR compound, quality to IEC 60092.360, Nominal Thickness 1,0 mm
Cores colour code :	**Black - Brown - Grey - Yellow/Green**
Pair Assembling :	Not required
Pair Wrapping:	Not required
Drain wire :	Not required
Pair Shield :	Not required
Shield Insulation :	Not Required
Total Assembling :	Cores layed up with optimal lay length
Overall Wrapping:	Not required
Drain wire :	Not required
Overall Shield:	Not required
Inner covering :	Extruded LSZH compound, Average Thickness 1,0 mm
Inner covering color code:	**Black or Natural**
Armour :	Not required
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, Average Thickness 1,2 mm
Outer sheath color code:	**Grey**
Outer printing (INKJET) :	**FLEI - ELECTRIC CABLE - 1000V - 4G4 SQMM - EPR/LSZH - 0,6/1 KV - IEC 60332.1.2 - IEC 60332.3.22 - Year of Manufacture - CE + Meter Marking**
Outer diameter :	(15,5 ± 10%) mm
Bending radius :	cable outer diameter x 10 (in fixed installation)
Voltage test :	3,5 kV a.c. for 5' (Between Cores)
Conductors DC Resistance :	IEC 60228 Class 2
Insulation Resistance :	≥ 1100 MΩ x Km (@ 20°C)
Applicable Standards	
Design Guidelines :	**IEC 60092.353**
ON COMPLETE CABLE	
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22
Acid Gas generation :	IEC 60754.1/2
Smoke density/Light Transmittance	IEC 61034.2 (LT ≥ 60%)
Temperature Range :	
ON INSULATION	(max +90°C) (max continuous operation temperature of conductors)
	(max +250°C) (max conductors temperature during short-circuit for 5 seconds)
ON COMPLETE CABLE	
During Operation :	(-20°C up to +90°C) (in fixed installation)
During installation :	(- 5°C up to +50°C)
Note :	**To meet the requirements of installation and use in Zone 1 & Zone 2 (IEC 60079-14) and "Gas & Vapour Tight" the cable must be provided with Penetrating Inner covering together with correct ATEX approved equipment or accessories.**

Office	Date	Sign	Rev.	Date	Sign
Drawn by :	29/03/2024	Messa			
Checked :	29/03/2024	Spaccasassi			
Approved :	29/03/2024	Cucinotta			

The data provided, lending assent for the treatment, will be used to the sense of the article 13 of of the Regulation (UE) 2016/679, also through outsiders, in order to allow the realization of the fulfilments informatives, administrative, commercial and accounting related to the contractual relationship. Integral copy of the informative could be requested at our offices.

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ITEM	Tag	PM-50001A	: Electric Motor for sea water pump			Dwg	123A90-DDL-PR-PID-80021
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10001846		Location	Offshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX13		LV Motor

1 Check motor is de-energized and safe.

2 Check that anti-condensation heater is ready to be energized.

3 Check motor is correclty tagged.

4 Check mechanical general arrangement.

5 Check shaft rotates free and quietly in both directions, motor uncoupled.

6 Check motor data conformity against latest data sheet/ project specification (rating plate).

7 Check motor earthing against latest drawings.

8 Visual check phase sequence connection.

9 Check motor terminal box is clean.

10 Check terminal boxes screws are tighted.

11 Check auxiliary devices (if any) for proper installation and connection.

12 Check painting integrity.

13 If required produce Red Line Mark Up for "AS BUILT"

MOTOR DATA

Manufacturer :		Serial N° :		Speed :	**rpm**
Voltage :	**V**	Frequency :	**Hz**	Rating :	**kW**
Full Load Current :	**A**	Type of protection :		IP Rating :	
SWBD & CUB ref :		Insulation class :		Data Sheet :	

Testing & measurement instruments used

Type	Serial n°	Calibration certificate	Validity

TEST RESULTS

Winding Resistance: U-V V-W W-U

	Test Voltage	Mini Req	Readings (MΩ)
Winding Insulation Resistance			
UVW-E			
Space heater insulation resistance phase / earth			
Bearing insulation resistance if applicable (motor with VSDS for instance)			

Star connection Delta connection

Comments:

Page 1/1	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company			
Name			
Date			
Signature			

ITEM	Tag	PM-50001B	: Electric Motor for sea water pump			Dwg	123A90-DDL-PR-PID-80021
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10001847		Location	Offshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX13		LV Motor

1 Check motor is de-energized and safe.

2 Check that anti-condensation heater is ready to be energized.

3 Check motor is correclty tagged.

4 Check mechanical general arrangement.

5 Check shaft rotates free and quietly in both directions, motor uncoupled.

6 Check motor data conformity against latest data sheet/ project specification (rating plate).

7 Check motor earthing against latest drawings.

8 Visual check phase sequence connection.

9 Check motor terminal box is clean.

10 Check terminal boxes screws are tighted.

11 Check auxiliary devices (if any) for proper installation and connection.

12 Check painting integrity.

13 If required produce Red Line Mark Up for "AS BUILT"

MOTOR DATA

Manufacturer :		Serial N° :		Speed :	**rpm**
Voltage :	**V**	Frequency :	**Hz**	Rating :	**kW**
Full Load Current :	**A**	Type of protection :		IP Rating :	
SWBD & CUB ref :		Insulation class :		Data Sheet :	

Testing & measurement instruments used

Type	Serial n°	Calibration certificate	Validity

TEST RESULTS

Winding Resistance: U-V V-W W-U

	Test Voltage	Mini Req	Readings (MΩ)
Winding Insulation Resistance			
UVW-E			
Space heater insulation resistance phase / earth			
Bearing insulation resistance if applicable (motor with VSDS for instance)			

Star connection Delta connection

Comments:

Page 1/1	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company			
Name			
Date			
Signature			

ITEM	Tag	83018-CEL	: LV Switchgear / Sea water intake pump A	Dwg	123A90-DDL-EL-LIS-20148		
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)	Module	LD_B-200/LD		
TASK	code	C10004919	Location	Offshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form CPX09	LV Power Cable

CABLE DATA

Type Cu Cl.2/EPR/LSZH Cores/Size mm² 4G4 mm2 Color GREY

From SG-200N1 To PM-50001A

1	Confirm cable is as specified in project cable schedule
2	Visual Check cable physical integrity.
3	Check is installed in accordance with layout drawing (segregation, distance…).
4	Check cable is supported and fixed to rack according to project specification.
5	Check bending radius is within the specified limits.
6	Confirm cable glands suit for cable type, correctly mounted and tightened.
7	Check gland plate for single core cables is non ferrous (non -magnetic).
8	Confirm cable labelling is in accordance with specifications.
9	Check cable is correctly loomed and segregated in accordance with specification.
10	Check cable earthing against lastest drawings.
11	Check cores marking are in accordance with termination diagram
12	Check terminations are in accordance with latest termination diagram
13	If required produce Red Line Mark Up for "AS BUILT"

ITEM	Tag	83018-CEL	: LV Switchgear / Sea water intake pump A			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD_B-200/LD
TASK	code	C10004919		Location	Offshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX09 LV Power Cable

CONTINUITY				
5	CORE CONTINUITY Ω	PH 1		
6		PH 2		
7		PH 3		
8	ARMOUR CONTINUITY Ω			
9	PROTECTIVE CONDUCTOR CONTINUITY Ω			
INSULATION				
10	CORES / ARMOUR+EARTH MΩ	PH1 / PH2-PH3-A-E		
11		PH2 / PH1-PH3-A-E		
12		PH3 / PH1-PH2-A-E		
13	CABLE IS CORRECTLY RE-CONNECTED.			

TESTING INSTRUMENTS USED	
TYPE / SERIAL N° : Calibration certificate N° and date:	TYPE / SERIAL N° : Calibration certificate N° and date:

Comments:

	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company			
Name			
Date			
Signature			

ITEM	Tag	83019-CEL	: LV Switchgear / Sea water intake pump B			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD_B-200/LD
TASK	code	C10004920		Location	Offshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX09 LV Power Cable

CABLE DATA

Type: Cu Cl.2/EPR/LSZH | Cores/Size mm²: 4G4 mm2 | Color: GREY

From: SG-200N1 | To: PM-50001B

1	Confirm cable is as specified in project cable schedule
2	Visual Check cable physical integrity.
3	Check is installed in accordance with layout drawing (segregation, distance…).
4	Check cable is supported and fixed to rack according to project specification.
5	Check bending radius is within the specified limits.
6	Confirm cable glands suit for cable type, correctly mounted and tightened.
7	Check gland plate for single core cables is non ferrous (non -magnetic).
8	Confirm cable labelling is in accordance with specifications.
9	Check cable is correctly loomed and segregated in accordance with specification.
10	Check cable earthing against lastest drawings.
11	Check cores marking are in accordance with termination diagram
12	Check terminations are in accordance with latest termination diagram
13	If required produce Red Line Mark Up for "AS BUILT"

REFER TO FINAL SHEET FOR ACCEPTANCE

ITEM	Tag	83019-CEL	: LV Switchgear / Sea water intake pump B			Dwg	123A90-DDL-EL-LIS-20148
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD_B-200/LD
TASK	code	C10004920		Location	Offshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Electrical	Form	CPX09 LV Power Cable

CONTINUITY				
5	CORE CONTINUITY Ω	PH 1		
6		PH 2		
7		PH 3		
8	ARMOUR CONTINUITY Ω			
9	PROTECTIVE CONDUCTOR CONTINUITY Ω			
INSULATION				
10	CORES / ARMOUR+EARTH MΩ	PH1 / PH2-PH3-A-E		
11		PH2 / PH1-PH3-A-E		
12		PH3 / PH1-PH2-A-E		
13	CABLE IS CORRECTLY RE-CONNECTED.			

TESTING INSTRUMENTS USED	
TYPE / SERIAL N° : Calibration certificate N° and date:	TYPE / SERIAL N° : Calibration certificate N° and date:

Comments:

	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company			
Name			
Date			
Signature			

Section 6 MECHANICAL COMPLETION STATUS INDEX - INSTRUMENTAL DISCIPLINE

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 50-00 & process: MC & discipline : I

Instrumental	50-00 Seawater Intake System (Lifting Pumps)						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
50-PSV-006	Pressure Safety Valve	ONSHORE	C10004536	CJX03	100	2025-02-28	RFC 1
50-PSV-007	Pressure Safety Valve	ONSHORE	C10004537	CJX03	100	2025-02-28	RFC 1
50-PSV-011	Pressure Safety Valve	ONSHORE	C10004480	CJX03	100	2025-02-28	RFC 1
50-PT-001	Pressure Transmitter - Sea Water from Pump P-50001A	ONSHORE	C10000901	CJX08	100	2025-02-07	RFC 1
		ONSHORE	C10000941	TJX04	100	2024-10-02	RFC 1
50-PT-002	Pressure Transmitter - Sea Water from Pump P-50001B	ONSHORE	C10000902	CJX08	100	2025-02-07	RFC 1
		ONSHORE	C10000942	TJX04	100	2024-10-02	RFC 1
50-RO-001	Restriction Orifice - Sea water recirculation from pump P-50001A	ONSHORE	C10001216	CJX11	100	2025-02-21	RFC 1
		ONSHORE	C10001444	TJX11	100	2025-02-21	RFC 1
50-RO-002	Restriction Orifice - Sea water recirculation from pump P-50001B	ONSHORE	C10001217	CJX11	100	2025-02-21	RFC 1
		ONSHORE	C10001445	TJX11	100	2025-02-21	RFC 1
50-TT-001	Temperature Transmitter - Sea Water from Lift Pump P-50001A/B	ONSHORE	C10000904	CJX08	100	2025-02-21	RFC 1
		ONSHORE	C10000944	TJX04	100	2024-10-02	RFC 1
50-TW-001	Thermowell - Sea Water from Lift Pump P-50001A/B	ONSHORE	C10000906	CJX13	100	2025-02-21	RFC 1
		ONSHORE	C10001434	TJX13	100	2025-02-13	RFC 1
50-XV-001	On/Off Valve - Sea Water from Pump P-50001A	ONSHORE	C10001187	CJX23	100	2025-02-10	RFC 1
50-XV-002	On/Off Valve - Sea Water Recirculation from Pump P-50001A	ONSHORE	C10001188	CJX23	100	2025-02-10	RFC 1
50-XV-003	On/Off Valve - Sea Water from Pump P-50001B	ONSHORE	C10001189	CJX23	100	2025-02-08	RFC 1
50-XV-004	On/Off Valve - Sea Water Recirculation from Pump P-50001B	ONSHORE	C10001190	CJX23	100	2025-02-10	RFC 1
50-XY-001	Solenoid Valve - Sea Water from Pump P-50001A	ONSHORE	C10002015	CJX00	100	2025-02-10	RFC 1
50-XY-002	Solenoid Valve - Sea Water Recirculation from Pump P-50001A	ONSHORE	C10002016	CJX00	100	2025-02-10	RFC 1
50-XY-003	Solenoid Valve - Sea Water from Pump P-50001B	ONSHORE	C10002017	CJX00	100	2025-02-08	RFC 1
50-XY-004	Solenoid Valve - Sea Water Recirculation from Pump P-50001B	ONSHORE	C10002018	CJX00	100	2025-02-10	RFC 1
50-ZSHL-001	Limit Switch box - Sea Water from Pump P-50001A	ONSHORE	C10002019	CJX00	100	2025-02-10	RFC 1
50-ZSHL-002	Limit Switch box - Sea Water Recirculation from Pump P-50001A	ONSHORE	C10002020	CJX00	100	2025-02-10	RFC 1
50-ZSHL-003	Limit Switch box - Sea Water from Pump P-50001B	ONSHORE	C10002021	CJX00	100	2025-02-08	RFC 1
50-ZSHL-004	Limit Switch box - Sea Water Recirculation from Pump P-50001B	ONSHORE	C10002022	CJX00	100	2025-02-10	RFC 1
AV-63008/50-XV-001	Pneumatic Connection Air Supply - 50-XV-001	ONSHORE	C10001969	CJX06	100	2025-02-06	RFC 1
AV-63008/50-XV-002	Pneumatic Connection Air Supply - 50-XV-002	ONSHORE	C10001970	CJX06	100	2025-02-06	RFC 1

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 50-00 & process: MC & discipline : I

Instrumental	50-00 Seawater Intake System (Lifting Pumps)

ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
AV-63008/50-XV-003	Pneumatic Connection Air Supply - 50-XV-003	ONSHORE	C10001971	CJX06	100	2025-02-06	RFC 1
AV-63008/50-XV-004	Pneumatic Connection Air Supply - 50-XV-004	ONSHORE	C10001972	CJX06	100	2025-02-06	RFC 1
C-50-PT-001/00-JE-11004	PRESSURE TRANSMITTER / MARSHALLING PCS	ONSHORE	C10000049	CJX10	100	2025-02-07	RFC 1
C-50-PT-002/00-JE-11004	PRESSURE TRANSMITTER / MARSHALLING PCS	ONSHORE	C10000050	CJX10	100	2025-02-07	RFC 1
C-50-TT-001/00-JE-11004	FLOW TRANSMITTER / MARSHALLING PCS	ONSHORE	C10000051	CJX10	100	2025-02-21	RFC 1
C-50-XV-001/00-JE-12006	PROXIMITY SWITCH / MARSHALLING PCS	ONSHORE	C10000103	CJX10	100	2025-02-10	RFC 1
C-50-XV-002/00-JE-12006	PROXIMITY SWITCH / MARSHALLING PCS	ONSHORE	C10000104	CJX10	100	2025-02-10	RFC 1
C-50-XV-003/00-JE-12006	PROXIMITY SWITCH / MARSHALLING PCS	ONSHORE	C10000105	CJX10	100	2025-02-08	RFC 1
C-50-XV-004/00-JE-12006	PROXIMITY SWITCH / MARSHALLING PCS	ONSHORE	C10000106	CJX10	100	2025-02-10	RFC 1
C-50-XY-001/00-JE-13003	SOLENOID VALVE / MARSHALLING PCS	ONSHORE	C10000125	CJX10	100	2025-02-10	RFC 1
C-50-XY-002/00-JE-13003	SOLENOID VALVE / MARSHALLING PCS	ONSHORE	C10000126	CJX10	100	2025-02-10	RFC 1
C-50-XY-003/00-JE-13003	SOLENOID VALVE / MARSHALLING PCS	ONSHORE	C10000127	CJX10	100	2025-02-08	RFC 1
C-50-XY-004/00-JE-13003	SOLENOID VALVE / MARSHALLING PCS	ONSHORE	C10000128	CJX10	100	2025-02-10	RFC 1

ROSETTI MARINO — CROSSWIND

ITEM	Tag	C-50-PT-001/00-JE-11004	: PRESSURE TRANSMITTER / MARSHALLING PCS	Dwg	123A90-DDL-IN-LIS-40091		
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)	Module	LD/LD_B-100_Ext		
TASK	code	C10000049	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline	Instrumental	Form	CJX10

Multi/Single-Core Instrument Control Cable

CABLE DATA

Type: Cu-XLPE-OS-LSZH-SWB-LSZH — Cores/Size mm²: 1X2X0,75 mm2 — Color: GREY

From: 50-PT-001 — To: 00-JE-11004

1	Check cable is as specified in project cable schedule.	OK
2	Check relevant documents are at the latest revision.	OK
3	Check cable is routed in accordance with cable layout drawings.	OK
4	Check cable for any physical damage.	OK
5	Check cable is adequately supported and correctly fixed to rack according to Project specification.	Note
6	Check bending radius is within the specified limits.	OK
7	Check cable is correctly loomed and segregated in accordance with specification.	OK
8	Check cable and core marking are in accordance with specification.	OK
9	Check cable labelling is in accordance with specification.	OK
10	Check that glands, shrouds and earthing are in accordance with specification.	OK
11	Check terminations are in accordance with termination diagram	OK
12	Check gland plate for single core cables is non-ferrous.	NA
13	If required produce Red Line Mark Up for "AS BUILT"	

INSULATION	CORE to EARTH		>999	MΩ
	CORE to CORE		>999	MΩ
	CORE to SCREEN		>999	MΩ
	CORE to ARMr		>999	MΩ
	SCREEN to EARTH		>999	MΩ
	SCREEN to ARMr		>999	MΩ
CONTINUITY	CORES		1,1	Ω
	SCREEN		1,1	Ω
	EARTH		NA	Ω
	ARMr		1,1	Ω
	TEST VOLTS		500	V

TEST ALL CORES AND RECORD LOWEST VALUE

Notes: The lowest value is recorded and must be within project specifications

TESTING INSTRUMENTS USED

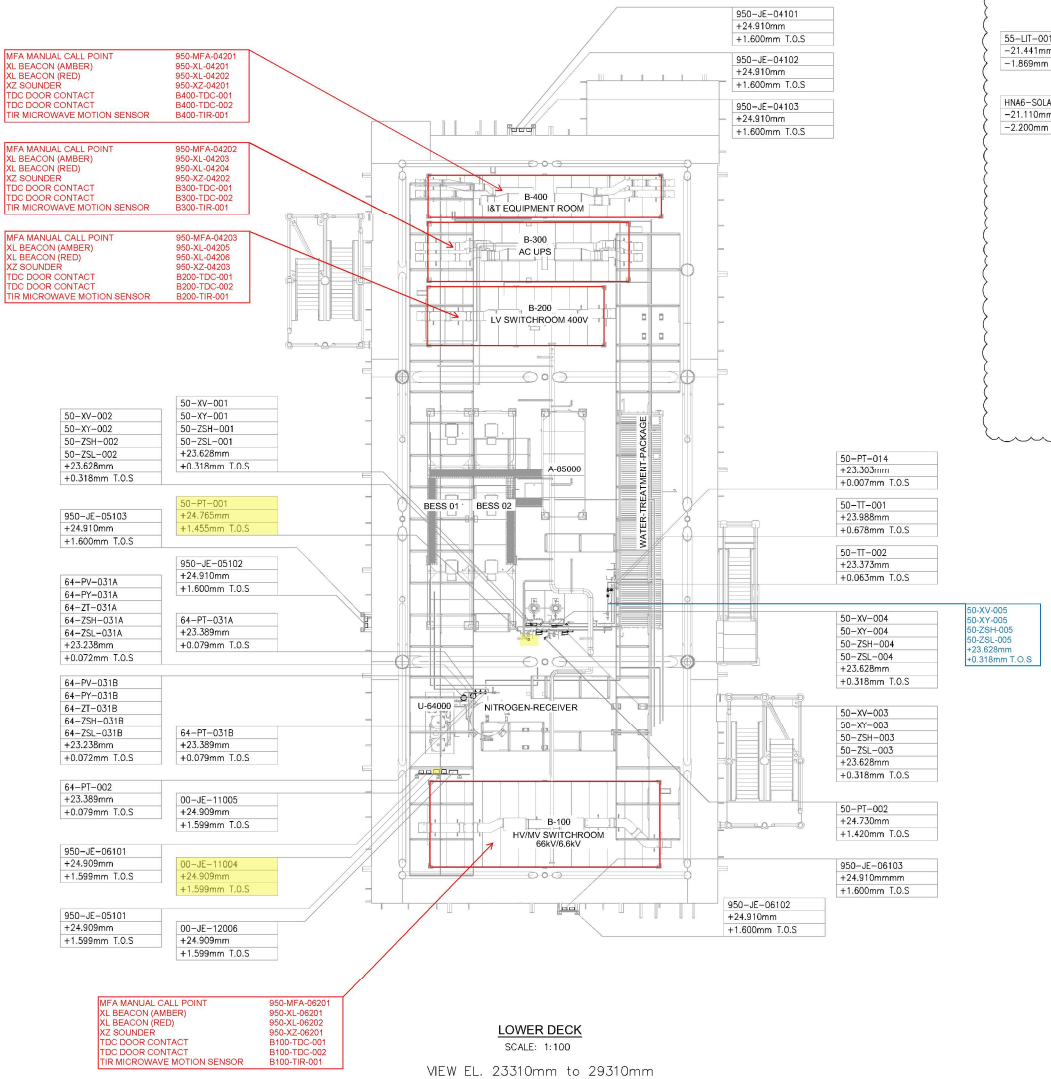
TYPE / SERIAL N°: VOLCRAFT 1000V - ET-200 S/N:H240103023 — Calibration date: N°LAT 042 00768/24 12/10/2024

Comments: Nota 5: refer to PL C30000680

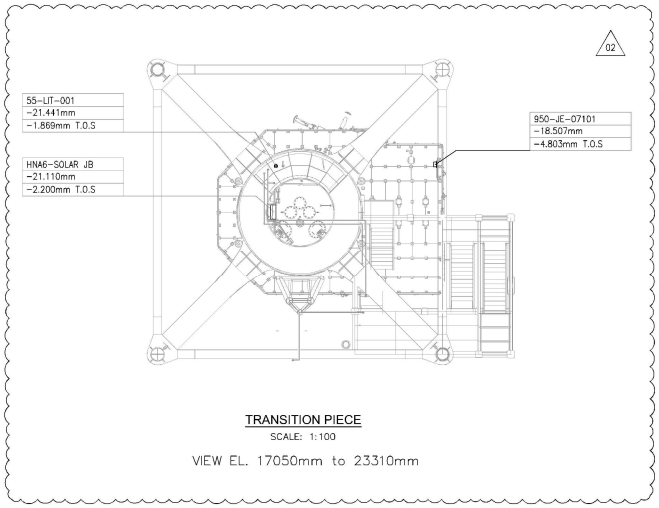
Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO	
Name	Michele Tartaglia	Alessio Polo	
Date	2025-02-07	2025-02-07	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-07T13:23:53.147Z	PROVERLIS Digitaly signed by Alessio Polo 2025-02-07T16:48:29.848Z	

DRAWING NO.: 123A90-DDL-IN-DL-40080

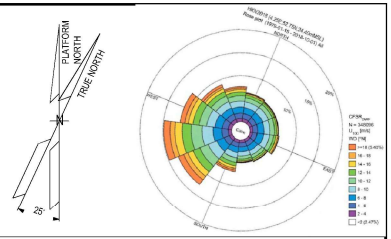
REV. 02



LOWER DECK
SCALE: 1:100
VIEW EL. 23310mm to 29310mm



TRANSITION PIECE
SCALE: 1:100
VIEW EL. 17050mm to 23310mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40081	INSTRUMENT LAYOUT - UPPER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-UPPER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-IN-DL-40080

REV.:	DATE:	SIGNATURE:
2_C	06/11/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND | ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–LOWER DECK
TOS EL. 23.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO.: 123A90–DDL–IN–DL–40080		SHEET 001 / REV. 02

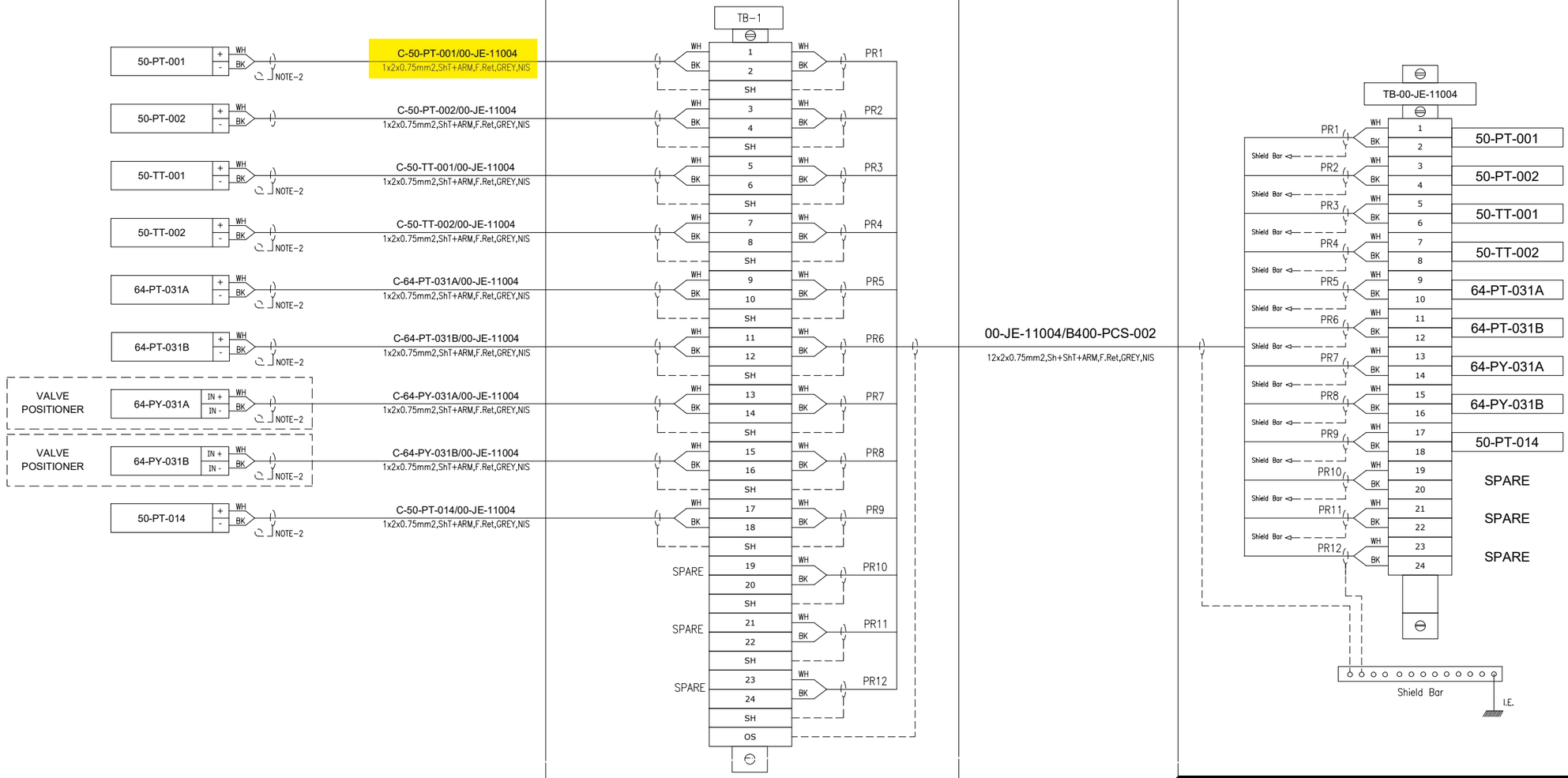
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DRAWING NO. 123A90-DDL-IN-DG-40015

REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 00-JE-11004	No.	MARSHALLING CABINET B400-PCS-002

<01>



VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_I	29/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
00-JE-11004-SH.1 OF 2

CONTRACT NO./TITLE			SCALE 1:1
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024
A3	DRAWING NO. 123A90-DDL-IN-DG-40015	SHEET 009	REV. 01

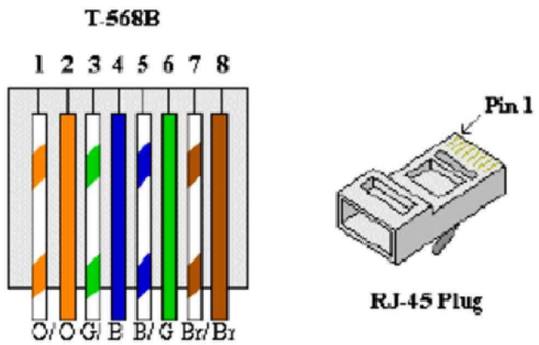
File Name : 123A90-DDL-IN-DG-40015_Rev.01

DRAWING NO. 123A90-DDL-IN-DG-40015

REV. 01

NOTES:

1. ALL SPARE ENTRIES SHALL BE PROVIDED WITH CERTIFIED EX PROOF PLUGS.
2. CABLE SCREENS / DRAIN WIRE SHALL BE SECURELY INSULATED AND TIED BACK IN THE INSTRUMENT SIDE AND SHAL BE TERMINATED IN THE MARSHALLING SIDE OF THE PANEL.
3. SPARE PAIRS / TRIADS SHALL BE CONNECTED TO TERMINALS IN JUNCTION BOX AND PANEL / MARSHALLING CABINETS.
4. ALL CABLE SCREENS TO BE TERMINATED AT THE INSTRUMENT EARTH BAR IN THE RESPECTIVE EARTH BARS (IS OR NIS) AS APPLICABLE IN THE MARSHALLING CABINET.
5. SWITCH TAG NAME AND PORT WILL BE DEFINED DURING THE CONSTRUCTION PHASE
6. FOR OPTICAL FIBERS, USE THE FOLLOWING COLOR CODING:
   - 01- RED
   - 02- GREEN
   - 03- BLUE
   - 04- YELLOW
   - 05- GREY
   - 06- PURPLE
   - 07- BROWN
   - 08- ORANGE
   - 09- WHITE
   - 10- PINK
   - 11- BLACK
   - 12- TURQUOISE
7. CAT.6A CABLE SHALL BE TERMINATED MEETING REQUIREMENTS OF STANDARD EIA/TIA 568B:



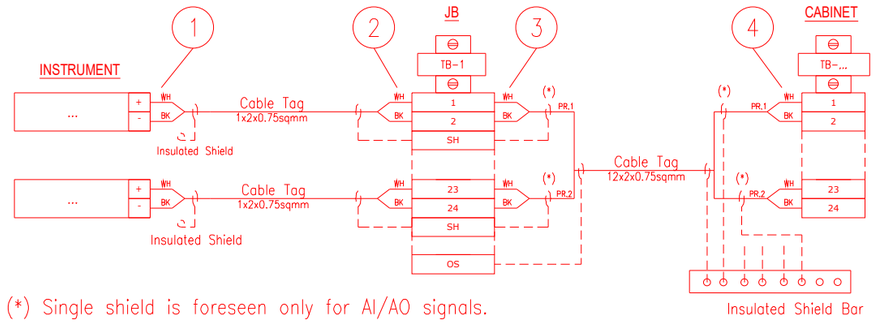
8. FOR INTRISICALLY SAFE CIRCUIT USE LIGHT BLUE CABLE OR ALTERNATIVELY ORANGE CABLE WITH HEAT SHRINKABLE SLEEVE BLUE AT BOTH END (SEE DOC. 123A90-FDL-IN-DD-40017).

LEGENDS & SYMBOLS:

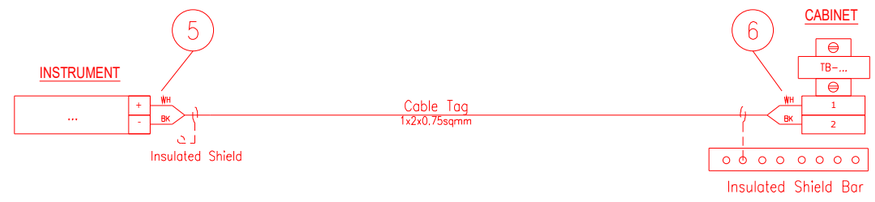
I.E.	- GREEN ⟶ INSTRUMENT SIGNAL EARTH
P.E.	- GREEN / YELLOW ⟶ P.E. EARTH / BONDING
	- TERMINAL BLOCK (TB)
WH	- WHITE
BK	- BLACK
RD	- RED
S	- SHIELD TERMINAL
OS	- OVERALL SHIELD TERMINAL
O/A Shld	- OVERALL SHIELD
I&O/A Shld	- INDIVIDUAL & OVERALL SHIELD
NIS	- NON INTRINSICALLY SAFE
IS	- INTRINSICALLY SAFE
P.E.	- PLANT EARTH
PCS	- PROCESS CONTROL SYSTEM
ESD	- EMERGENCY SHUTDOWN SYSTEM
SIS	- SAFETY INSTRUMENT SYSTEM
FGS	- FIRE & GAS SYSTEM
MC	- MARSHALLING CABINET
AI	- ANALOGUE INPUT
AO	- ANALOGUE OUTPUT
DI	- DIGITAL INPUT
DO	- DIGITAL OUTPUT
JE	- JUNCTION BOX FOR ELECTRICAL SIGNALS

PHILOSOPHY OF CROSS-FERRULING:

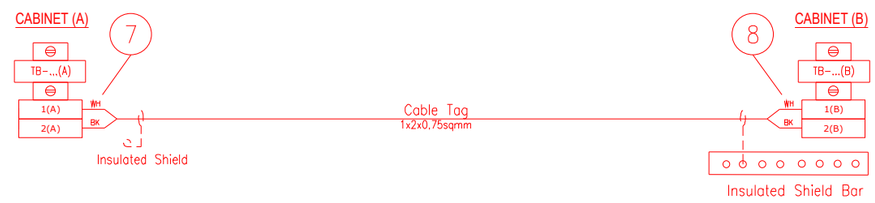
INSTRUMENT CONNECTION THROUGH MARSHALLING JB TO CABINET



INSTRUMENT CONNECTION STRAIGHT TO CABINET



CABINET CONNECTION TO CABINET



1 - INSTR. TERMINAL NO. OR POLARITY / JB TAG / JB TERMINAL NO.
2 - INSTR. TERMINAL NO. OR POLARITY / INSTR. TAG / JB TERMINAL NO.
3 - JB TERMINAL NO. / JB TERMINAL STRIP / CABINET TERMINAL STRIP / PAIR OR CORE NO.
4 - PAIR OR CORE NO. / JB TAG / JB TERMINAL NO. / CABINET TERMINAL STRIP / CABINET TERMINAL NO.
5 - INSTR. TERMINAL NO. OR POLARITY / CABINET TAG / CABINET TERMINAL STRIP / CABINET TERMINAL NO.
6 - INSTR. TERMINAL NO. OR POLARITY / INSTR. TAG / CABINET TERMINAL STRIP/ CABINET TERMINAL NO.
7 - TERMINAL NO. (A) / TERMINAL STRIP (A) / CABINET TAG (B) / CABINET TERMINAL NO. (B) / PAIR OR CORE NO.
8 - PAIR OR CORE NO. / CABINET TERMINAL NO. (A) / CABINET TAG (A) / TERMINAL STRIP (B) / TERMINAL NO. (B)

NOTES: A - HEAT SHRINKABLE BLACK FOR SHIELD OF NIS INSTRUMENT CABLE.
HEAT SHRINKABLE BLUE FOR SHIELD OF IS INSTRUMENT CABLE.
B - ABOVE DESCRIBED PHILOSOPHY IS INTENDED FOR CONNECTION AS REPRESENTED:
IN CASE OF CONNECTION FROM THE OPPOSITE SIDE, ORDER OF FERULE TAG SHALL BE MIRRORED.
C - SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO SHIELDS TERMINATED ON TERMINAL STRIP.

REFERENCE DRAWINGS:

PIPING AND INSTRUMENT DIAGRAM 123A90-DDL-PR-PID-80009
INSTRUMENT INDEX 123A90-DDL-IN-LIS-40088
F&G DETECTORS LAYOUT 123A90-DDL-SAF-DL-30027

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_I	29/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
GENERAL NOTES/LEGENDS

CONTRACT NO./TITLE			SCALE N/A
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

A3	DRAWING NO.	SHEET	REV.
	123A90-DDL-IN-DG-40015	003	01

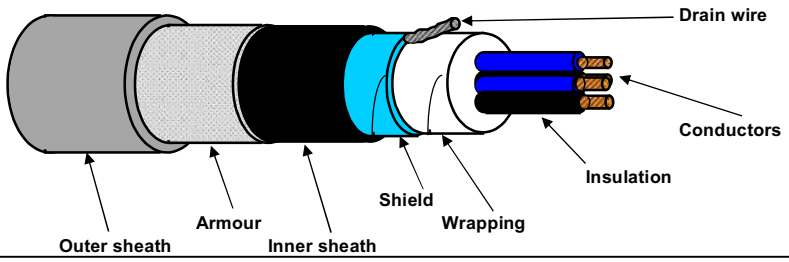
File Name : 123A90-DDL-IN-DG-40015_Rev.01

Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	From Tag Section	To Tag	To Main Function	To Area	To Tag Section	Material ID	Material Desc.	Gland Standard	From Gland	From Entry	From Fitting	To Gland	To Entry	To Fitting	Routing	Routing Manual
C-50-PT-001/00-JE-11004	Cable	IN	VFC	123A90-DDL-IN-LIS-40091						50-PT-001	Pressure Transmitter	Lower Deck		00-JE-11004	AI/AO JB to PCS	Lower Deck (B-100) Ext.	Junction Box	SMICV01-1X2X0,75	Cable Cu Cl.2/XLPE/OS/LSZH/SWB/LSZH 150/250V (300V) 1x2x0,75mm² - Grey	M20S	T2_M20S_Double			T2_M20S_Double				L-SEC-10 / L-SEC-1H / L-SEC-1I / L-SEC-1J / L-SEC-1L / L-SEC-1M / L-SEC-16

FLEI s.r.l.

Cu Cl.2/XLPE/OS/LSZH/SWB/LSZH 150/250 V (300 V)

1X2X0,75 - INSTRUMENT CABLE - Flame Retardant - Not I.S.



TECHNICAL FEATURES

Conductors :	**7-STRANDED** plain/bare soft annealed copper wires	**IEC 60228 Class 2**
Insulation :	XLPE, Nominal Thickness 0,5 mm	
Cores colour code :	**White - Black**	
Pair Assembling :	Not required	
Pair Wrapping:	Not required	
Drain wire :	Not required	
Pair Shield :	Not required	
Shield Insulation :	Not required	
Total Assembling :	13/1mt	
Overall Wrapping:	by polyester-PET Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Drain wire :	7-Stranded **TINNED** annealed copper drain wire, **size 0,5 sqmm**, in continuous contact with the shield	
Overall Shield :	by Aluminium-**Al** Minimum Thickness 0,008 mm / polyester-**PET** Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Inner sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, Average Thickness 1,0 mm	
Inner sheath color code:	**Black**	
Armour :	Galvanized Steel Wire Braid Armour (coverage ≥ 90%)	
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, moisture/abrasion/UV Resistant,	
	Average Thickness 1,1 mm	
Outer sheath color code:	**Grey**	
Outer printing (INKJET) :	**FLEI - 1X2X0,75 SQMM - XLPE/OS/LSZH/SWB/LSZH - 150/250 V - IEC 60332.1.2 - IEC 60332.3.22 -**	
(every 1000 mm)	**Year of Manufacture - CE + Meter Marking**	
Under armour diameter :	(6,5 ± 10%) mm	
Over armour diameter :	(7,3 ± 10%) mm	
Outer diameter :	(9,5 ± 10%) mm	
Bending radius :	cable outer diameter x 10 (in fixed installation)	
Voltage Test :	1,5 kV a.c. for 5' (Between Cores) / 1,5 kV a.c. for 5' (Between Cores - Shield)	
Conductors DC Resistance :	≤ 26 Ω/km (@ 20°C)	
Insulation Resistance :	≥ 1000 MΩ x Km (@ 20°C)	
Mutual Capacitance :	≤ 150 nF/km	
L/R ratio :	≤ 25 µH/Ω	
Inductance :	≤ 0,9 mH/km	
Applicable Standards		
Design Guidelines :	**IEC 60092.376**	
ON COMPLETE CABLE		
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22	
Acid Gas generation :	IEC 60754.1/2	
Smoke density/Light Transmittance :	IEC 61034.2 (LT ≥ 60%)	
Hazardous Areas :	IEC 60079.14 par.9.3.2a	
Temperature Range :		
ON INSULATION	(max +90°C) (max continuous operation temperature of conductors)	
	(max +250°C) (max conductors temperature during short-circuit for 5 seconds)	
ON COMPLETE CABLE		
During Operation :	(-20°C up to +90°C) (in fixed installation)	
During installation :	(- 5°C up to +50°C)	
Note :	**To meet the requirements of installation and use in Zone 1 & Zone 2 (IEC 60079-14) and "Gas & Vapour Tight" the cable must be provided with Penetrating Inner sheath together with correct ATEX approved equipment or accessories.**	

Office	Date	Sign	Rev.	Date	Sign
Drawn by :	04/04/2024	Messa			
Checked :	04/04/2024	Spaccasassi			
Approved :	04/04/2024	Cucinotta			

The data provided, lending assent for the treatment, will be used to the sense of the article 13 of of the Regulation (UE) 2016/679, also through outsiders, in order to allow the realization of the fulfilments informatives, administrative, commercial and accounting related to the contractual relationship. Integral copy of the informative could be requested at our offices.

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ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	C-50-PT-002/00-JE-11004	: PRESSURE TRANSMITTER / MARSHALLING PCS		Dwg	123A90-DDL-IN-LIS-40091	
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)		Module	LD/LD_B-100_Ext	
TASK	code	C10000050	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline Instrumental	Form	CJX10	Multi/Single-Core Instrument Control Cable

CABLE DATA

Type	Cu-XLPE-OS-LSZH-SWB-LSZH	Cores/Size mm²	1X2X0,75 mm2	Color	GREY
From	50-PT-002	To	00-JE-11004		

1	Check cable is as specified in project cable schedule.	OK
2	Check relevant documents are at the latest revision.	OK
3	Check cable is routed in accordance with cable layout drawings.	OK
4	Check cable for any physical damage.	OK
5	Check cable is adequately supported and correctly fixed to rack according to Project specification.	Note
6	Check bending radius is within the specified limits.	OK
7	Check cable is correctly loomed and segregated in accordance with specification.	OK
8	Check cable and core marking are in accordance with specification.	OK
9	Check cable labelling is in accordance with specification.	OK
10	Check that glands, shrouds and earthing are in accordance with specification.	OK
11	Check terminations are in accordance with termination diagram	OK
12	Check gland plate for single core cables is non-ferrous.	NA
13	If required produce Red Line Mark Up for "AS BUILT"	

INSULATION	CORE to EARTH	>999	MΩ
	CORE to CORE	>999	MΩ
	CORE to SCREEN	>999	MΩ
	CORE to ARMr	>999	MΩ
	SCREEN to EARTH	>999	MΩ
	SCREEN to ARMr	>999	MΩ
CONTINUITY	CORES	1,1	Ω
	SCREEN	1,1	Ω
	EARTH	NA	Ω
	ARMr	1,1	Ω
	TEST VOLTS	500	V

TEST ALL CORES AND RECORD LOWEST VALUE

Notes: The lowest value is recorded and must be within project specifications

TESTING INSTRUMENTS USED

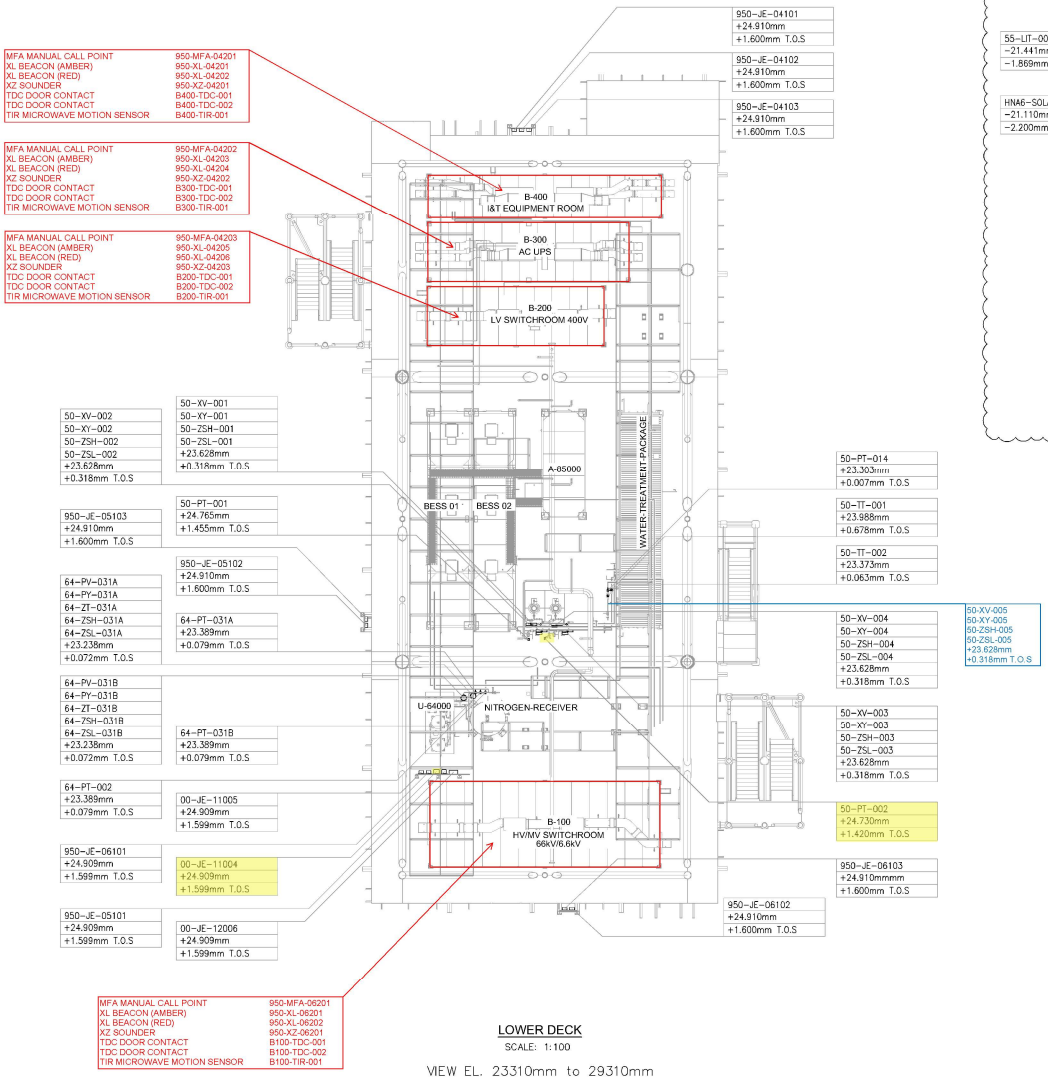
TYPE / SERIAL N°: VOLCRAFT 1000V - ET-200 S/N:H240103023 Calibration date: N°LAT 042 00768/24 12/10/2024

Comments Nota 5: refer to PL C30000680

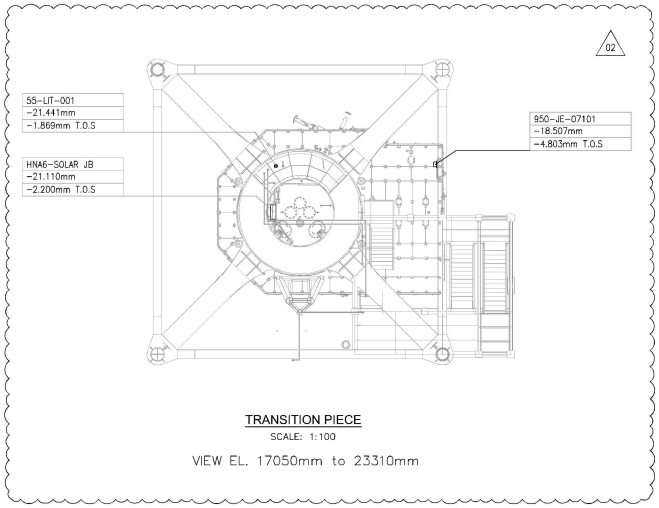
Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Alessio Polo	
Date	2025-02-07	2025-02-07	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-07T13:24:10.466Z	PROVERLIS Digitaly signed by Alessio Polo 2025-02-07T16:39:50.697Z	

DRAWING NO.: 123A90-DDL-IN-DL-40080

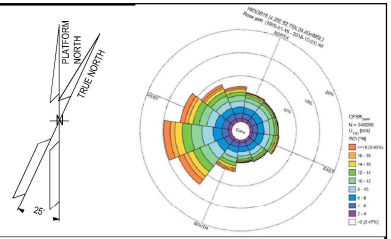
REV. 02



LOWER DECK
SCALE: 1:100
VIEW EL. 23310mm to 29310mm



TRANSITION PIECE
SCALE: 1:100
VIEW EL. 17050mm to 23310mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40081	INSTRUMENT LAYOUT - UPPER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-UPPER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-IN-DL-40080

REV.:	DATE:	SIGNATURE:
2_C	06/11/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND | ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–LOWER DECK
TOS EL. 23.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO.: 123A90–DDL–IN–DL–40080	SHEET 001	REV. 02

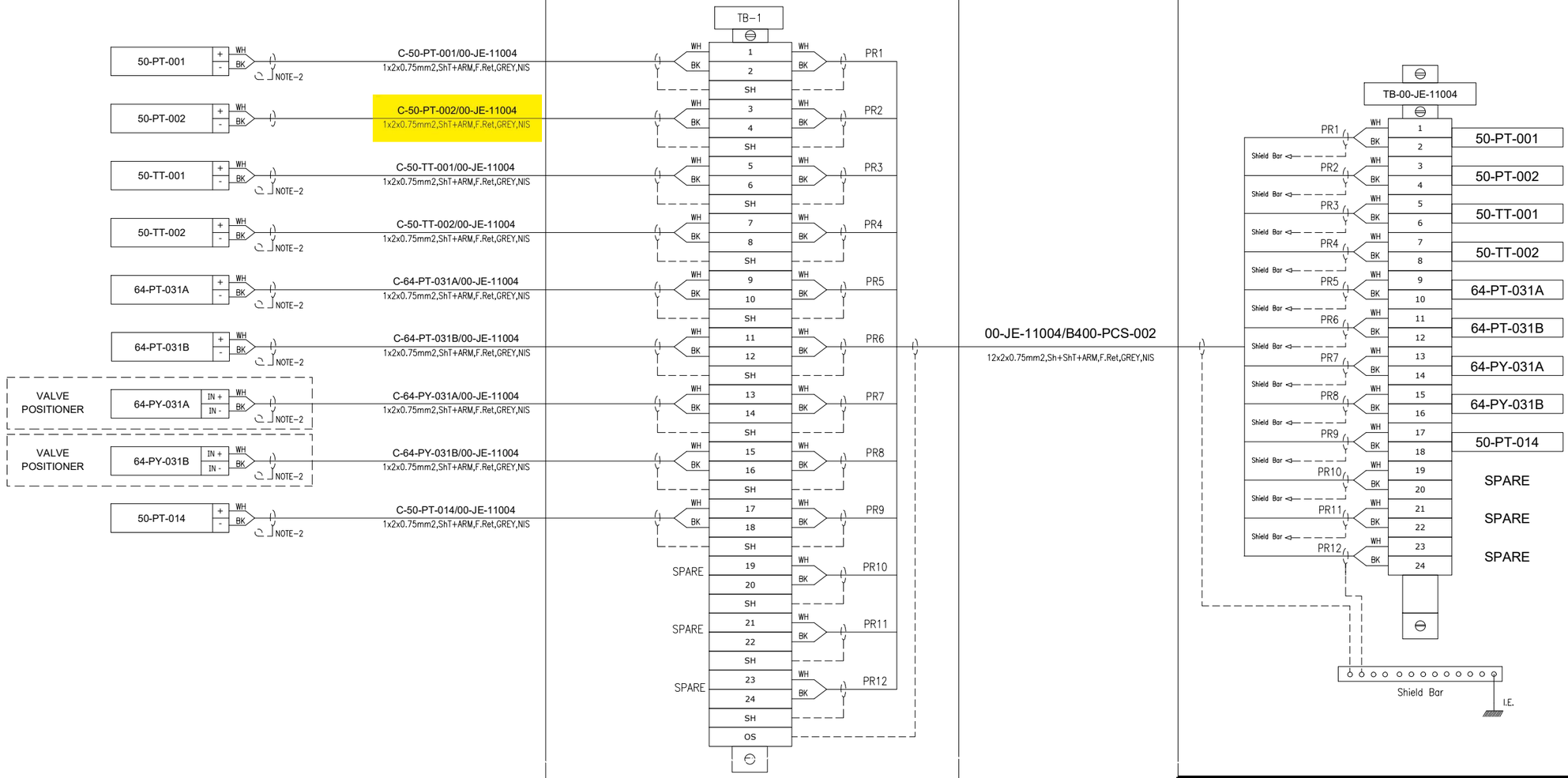
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DRAWING NO. 123A90-DDL-IN-DG-40015

REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 00-JE-11004	No.	MARSHALLING CABINET B400-PCS-002

<01>



VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_I	29/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
00-JE-11004-SH.1 OF 2

CONTRACT NO./TITLE			SCALE 1:1
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024
A3	DRAWING NO. 123A90-DDL-IN-DG-40015	SHEET 009	REV. 01

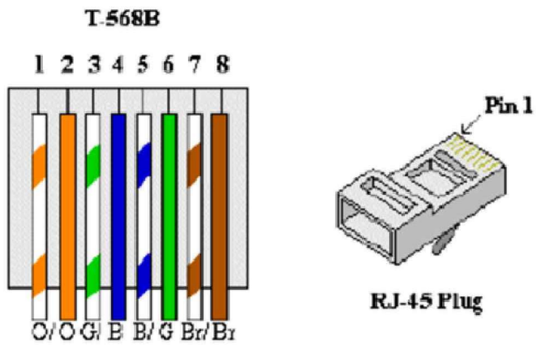
File Name : 123A90-DDL-IN-DG-40015_Rev.01

DRAWING NO. 123A90-DDL-IN-DG-40015

REV. 01

NOTES:

1. ALL SPARE ENTRIES SHALL BE PROVIDED WITH CERTIFIED EX PROOF PLUGS.
2. CABLE SCREENS / DRAIN WIRE SHALL BE SECURELY INSULATED AND TIED BACK IN THE INSTRUMENT SIDE AND SHAL BE TERMINATED IN THE MARSHALLING SIDE OF THE PANEL.
3. SPARE PAIRS / TRIADS SHALL BE CONNECTED TO TERMINALS IN JUNCTION BOX AND PANEL / MARSHALLING CABINETS.
4. ALL CABLE SCREENS TO BE TERMINATED AT THE INSTRUMENT EARTH BAR IN THE RESPECTIVE EARTH BARS (IS OR NIS) AS APPLICABLE IN THE MARSHALLING CABINET.
5. SWITCH TAG NAME AND PORT WILL BE DEFINED DURING THE CONSTRUCTION PHASE
6. FOR OPTICAL FIBERS, USE THE FOLLOWING COLOR CODING:
   - 01- RED
   - 02- GREEN
   - 03- BLUE
   - 04- YELLOW
   - 05- GREY
   - 06- PURPLE
   - 07- BROWN
   - 08- ORANGE
   - 09- WHITE
   - 10- PINK
   - 11- BLACK
   - 12- TURQUOISE
7. CAT.6A CABLE SHALL BE TERMINATED MEETING REQUIREMENTS OF STANDARD EIA/TIA 568B:



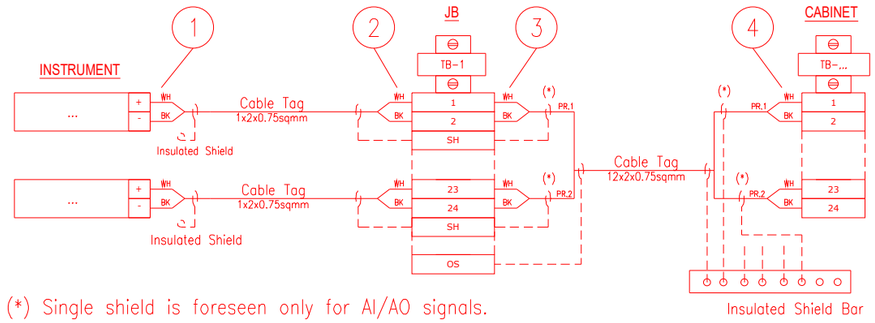
8. FOR INTRISICALLY SAFE CIRCUIT USE LIGHT BLUE CABLE OR ALTERNATIVELY ORANGE CABLE WITH HEAT SHRINKABLE SLEEVE BLUE AT BOTH END (SEE DOC. 123A90-FDL-IN-DD-40017).

LEGENDS & SYMBOLS:

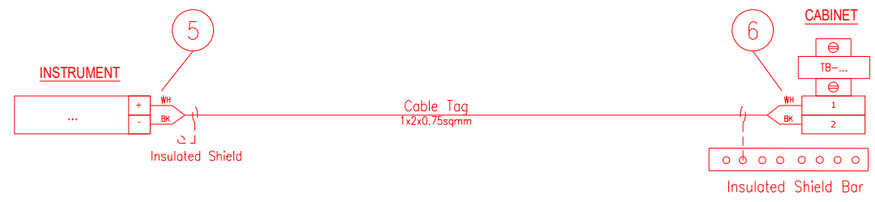
I.E.	- GREEN ⟶ INSTRUMENT SIGNAL EARTH
P.E.	- GREEN / YELLOW ⟶ P.E. EARTH / BONDING
	- TERMINAL BLOCK (TB)
WH	- WHITE
BK	- BLACK
RD	- RED
S	- SHIELD TERMINAL
OS	- OVERALL SHIELD TERMINAL
O/A Shld	- OVERALL SHIELD
I&O/A Shld	- INDIVIDUAL & OVERALL SHIELD
NIS	- NON INTRINSICALLY SAFE
IS	- INTRINSICALLY SAFE
P.E.	- PLANT EARTH
PCS	- PROCESS CONTROL SYSTEM
ESD	- EMERGENCY SHUTDOWN SYSTEM
SIS	- SAFETY INSTRUMENT SYSTEM
FGS	- FIRE & GAS SYSTEM
MC	- MARSHALLING CABINET
AI	- ANALOGUE INPUT
AO	- ANALOGUE OUTPUT
DI	- DIGITAL INPUT
DO	- DIGITAL OUTPUT
JE	- JUNCTION BOX FOR ELECTRICAL SIGNALS

PHILOSOPHY OF CROSS-FERRULING:

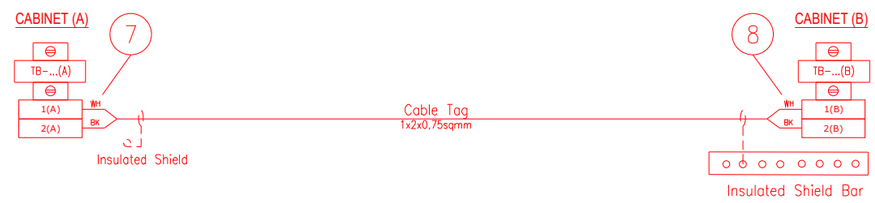
INSTRUMENT CONNECTION THROUGH MARSHALLING JB TO CABINET



INSTRUMENT CONNECTION STRAIGHT TO CABINET



CABINET CONNECTION TO CABINET



1 - INSTR. TERMINAL NO. OR POLARITY / JB TAG / JB TERMINAL NO.
2 - INSTR. TERMINAL NO. OR POLARITY / INSTR. TAG / JB TERMINAL NO.
3 - JB TERMINAL NO. / JB TERMINAL STRIP / CABINET TERMINAL STRIP / PAIR OR CORE NO.
4 - PAIR OR CORE NO. / JB TAG / JB TERMINAL NO. / CABINET TERMINAL STRIP / CABINET TERMINAL NO.
5 - INSTR. TERMINAL NO. OR POLARITY / CABINET TAG / CABINET TERMINAL STRIP / CABINET TERMINAL NO.
6 - INSTR. TERMINAL NO. OR POLARITY / INSTR. TAG / CABINET TERMINAL STRIP/ CABINET TERMINAL NO.
7 - TERMINAL NO. (A) / TERMINAL STRIP (A) / CABINET TAG (B) / CABINET TERMINAL NO. (B) / PAIR OR CORE NO.
8 - PAIR OR CORE NO. / CABINET TERMINAL NO. (A) / CABINET TAG (A) / TERMINAL STRIP (B) / TERMINAL NO. (B)

NOTES: A - HEAT SHRINKABLE BLACK FOR SHIELD OF NIS INSTRUMENT CABLE.
HEAT SHRINKABLE BLUE FOR SHIELD OF IS INSTRUMENT CABLE.
B - ABOVE DESCRIBED PHILOSOPHY IS INTENDED FOR CONNECTION AS REPRESENTED:
IN CASE OF CONNECTION FROM THE OPPOSITE SIDE, ORDER OF FERULE TAG SHALL BE MIRRORED.
C - SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO SHIELDS TERMINATED ON TERMINAL STRIP.

REFERENCE DRAWINGS:

PIPING AND INSTRUMENT DIAGRAM 123A90-DDL-PR-PID-80009
INSTRUMENT INDEX 123A90-DDL-IN-LIS-40088
F&G DETECTORS LAYOUT 123A90-DDL-SAF-DL-30027

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_I	29/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
GENERAL NOTES/LEGENDS

CONTRACT NO./TITLE			SCALE N/A
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

A3	DRAWING NO.	SHEET	REV.
	123A90-DDL-IN-DG-40015	003	01

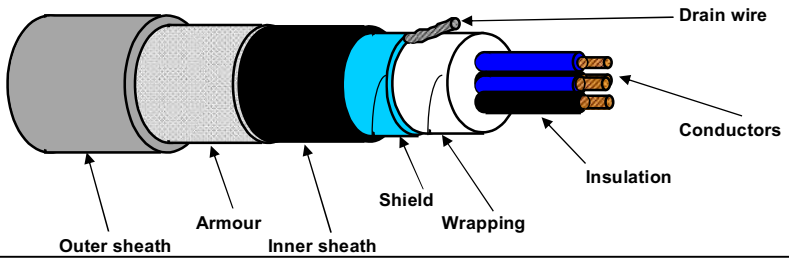
File Name : 123A90-DDL-IN-DG-40015_Rev.01

Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	From Tag Section	To Tag	To Main Function	To Area	To Tag Section	Material ID	Material Desc.	Gland Standard	From Gland	From Entry	From Fitting	To Gland	To Entry	To Fitting	Routing	Routing Manual
C-50-PT-002/00-JE-11004	Cable	IN	VFC	123A90-DDL-IN-LIS-40091						50-PT-002	Pressure Transmitter	Lower Deck		00-JE-11004	AI/AO JB to PCS	Lower Deck (B-100) Ext.	Junction Box	SMICV01-1X2X0,75	Cable Cu Cl.2/XLPE/OS/LSZH/SWB/LSZH 150/250V (300V) 1x2x0.75mm² - Grev	M20S	T2_M20S_Double			T2_M20S Double				L-SEC-10 / L-SEC-1H / L-SEC-1I / L-SEC-1J / L-SEC-1L / L-SEC-1M / L-SEC-16

FLEI s.r.l.

Cu Cl.2/XLPE/OS/LSZH/SWB/LSZH 150/250 V (300 V)

1X2X0,75 - INSTRUMENT CABLE - Flame Retardant - Not I.S.



TECHNICAL FEATURES

Conductors :	**7-STRANDED** plain/bare soft annealed copper wires	**IEC 60228 Class 2**
Insulation :	XLPE, Nominal Thickness 0,5 mm	
Cores colour code :	**White - Black**	
Pair Assembling :	Not required	
Pair Wrapping:	Not required	
Drain wire :	Not required	
Pair Shield :	Not required	
Shield Insulation :	Not required	
Total Assembling :	13/1mt	
Overall Wrapping:	by polyester-PET Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Drain wire :	7-Stranded **TINNED** annealed copper drain wire, **size 0,5 sqmm**, in continuous contact with the shield	
Overall Shield :	by Aluminium-**Al** Minimum Thickness 0,008 mm / polyester-**PET** Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Inner sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, Average Thickness 1,0 mm	
Inner sheath color code:	**Black**	
Armour :	Galvanized Steel Wire Braid Armour (coverage ≥ 90%)	
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, moisture/abrasion/UV Resistant,	
	Average Thickness 1,1 mm	
Outer sheath color code:	**Grey**	
Outer printing (INKJET) :	**FLEI - 1X2X0,75 SQMM - XLPE/OS/LSZH/SWB/LSZH - 150/250 V - IEC 60332.1.2 - IEC 60332.3.22 -**	
(every 1000 mm)	**Year of Manufacture - CE + Meter Marking**	
Under armour diameter :	(6,5 ± 10%) mm	
Over armour diameter :	(7,3 ± 10%) mm	
Outer diameter :	(9,5 ± 10%) mm	
Bending radius :	cable outer diameter x 10 (in fixed installation)	
Voltage Test :	1,5 kV a.c. for 5' (Between Cores) / 1,5 kV a.c. for 5' (Between Cores - Shield)	
Conductors DC Resistance :	≤ 26 Ω/km (@ 20°C)	
Insulation Resistance :	≥ 1000 MΩ x Km (@ 20°C)	
Mutual Capacitance :	≤ 150 nF/km	
L/R ratio :	≤ 25 µH/Ω	
Inductance :	≤ 0,9 mH/km	
Applicable Standards		
Design Guidelines :	**IEC 60092.376**	
ON COMPLETE CABLE		
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22	
Acid Gas generation :	IEC 60754.1/2	
Smoke density/Light Transmittance :	IEC 61034.2 (LT ≥ 60%)	
Hazardous Areas :	IEC 60079.14 par.9.3.2a	
Temperature Range :		
ON INSULATION	(max +90°C) (max continuous operation temperature of conductors)	
	(max +250°C) (max conductors temperature during short-circuit for 5 seconds)	
ON COMPLETE CABLE		
During Operation :	(-20°C up to +90°C) (in fixed installation)	
During installation :	(- 5°C up to +50°C)	
Note :	**To meet the requirements of installation and use in Zone 1 & Zone 2 (IEC 60079-14) and "Gas & Vapour Tight" the cable must be provided with Penetrating Inner sheath together with correct ATEX approved equipment or accessories.**	

Office	Date	Sign	Rev.	Date	Sign
Drawn by :	04/04/2024	Messa			
Checked :	04/04/2024	Spaccasassi			
Approved :	04/04/2024	Cucinotta			

The data provided, lending assent for the treatment, will be used to the sense of the article 13 of of the Regulation (UE) 2016/679, also through outsiders, in order to allow the realization of the fulfilments informatives, administrative, commercial and accounting related to the contractual relationship. Integral copy of the informative could be requested at our offices.

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ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	C-50-TT-001/00-JE-11004	: FLOW TRANSMITTER / MARSHALLING PCS		Dwg	123A90-DDL-IN-LIS-40091	
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)		Module	LD/LD_B-100_Ext	
TASK	code	C10000051	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline Instrumental	Form	CJX10	Multi/Single-Core Instrument Control Cable

CABLE DATA

Type	Cu-XLPE-OS-LSZH-SWB-LSZH	Cores/Size mm²	1X2X0,75 mm2	Color	GREY
From	50-TT-001	To	00-JE-11004		

1	Check cable is as specified in project cable schedule.	OK
2	Check relevant documents are at the latest revision.	OK
3	Check cable is routed in accordance with cable layout drawings.	OK
4	Check cable for any physical damage.	OK
5	Check cable is adequately supported and correctly fixed to rack according to Project specification.	PL
6	Check bending radius is within the specified limits.	OK
7	Check cable is correctly loomed and segregated in accordance with specification.	OK
8	Check cable and core marking are in accordance with specification.	OK
9	Check cable labelling is in accordance with specification.	OK
10	Check that glands, shrouds and earthing are in accordance with specification.	OK
11	Check terminations are in accordance with termination diagram	OK
12	Check gland plate for single core cables is non-ferrous.	NA
13	If required produce Red Line Mark Up for "AS BUILT"	

INSULATION	CORE to EARTH		>999	MΩ
	CORE to CORE		>999	MΩ
	CORE to SCREEN		>999	MΩ
	CORE to ARMr		>999	MΩ
	SCREEN to EARTH		>999	MΩ
	SCREEN to ARMr		>999	MΩ
CONTINUITY	CORES		1,2	Ω
	SCREEN		1,2	Ω
	EARTH		NA	Ω
	ARMr		1,2	Ω
	TEST VOLTS		500	V

TEST ALL CORES AND RECORD LOWEST VALUE

Notes: The lowest value is recorded and must be within project specifications

TESTING INSTRUMENTS USED

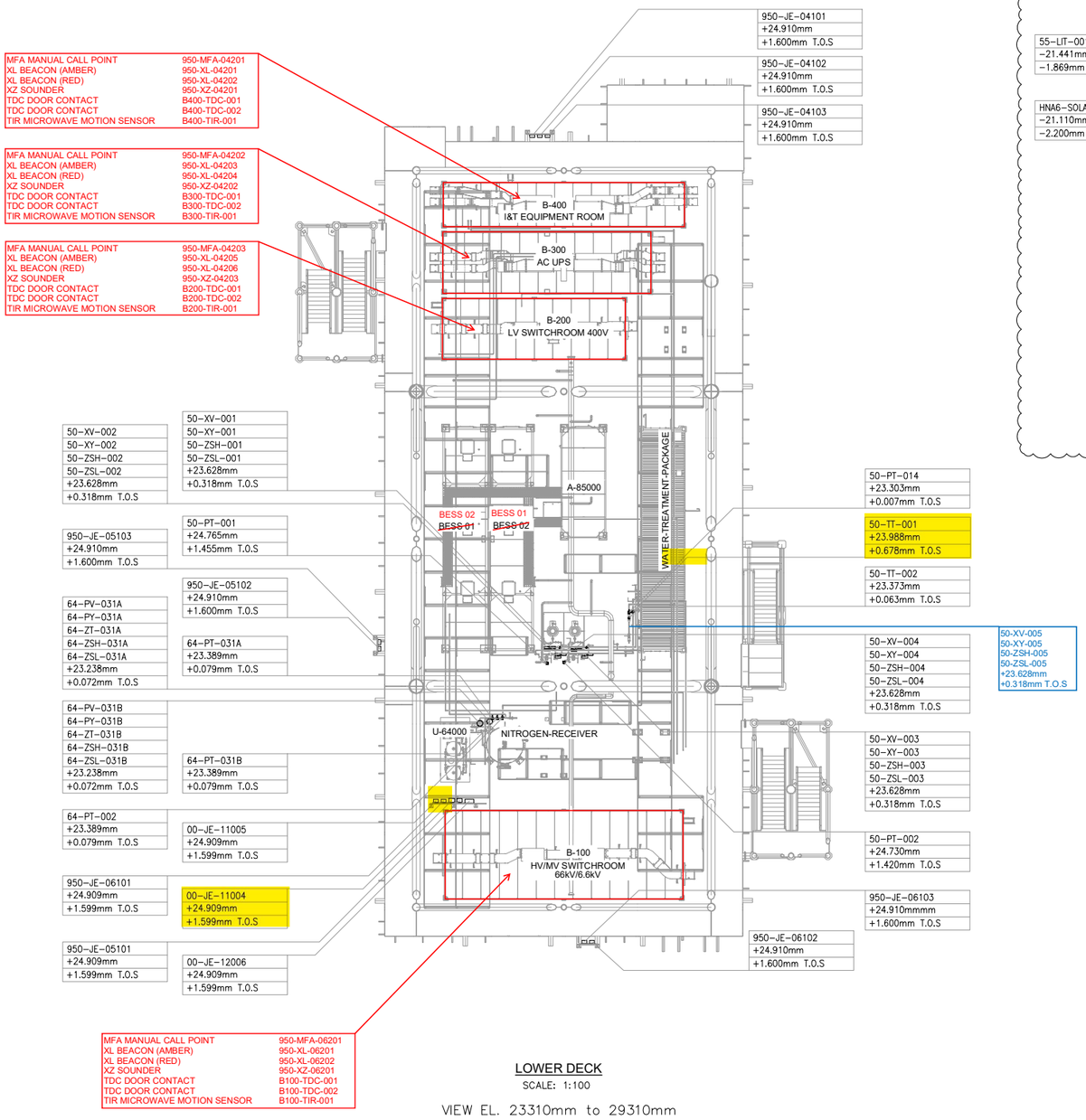
TYPE / SERIAL N°: VOLCRAFT 1000V - ET-200 S/N:H240103023 Calibration date: N°LAT 042 00768/24 12/10/2024

Comments Nota 5: refer to PL C30000680

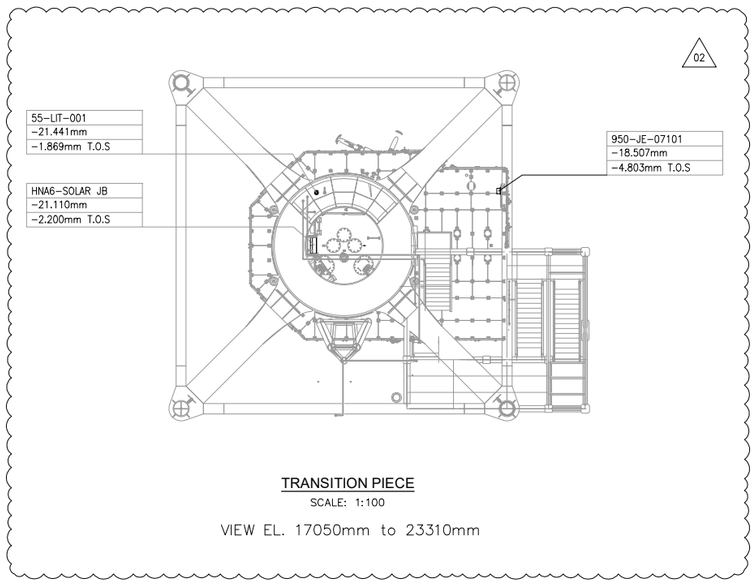
Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM (ROSETTI MARINO)	
Name	Michele Tartaglia	Alessio Polo	
Date	2025-02-07	2025-02-21	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-07T14:38:23.254Z	PROVERLIS Digitaly signed by Alessio Polo 2025-02-21T14:06:35.860Z	

DRAWING NO. 123A90-DDL-IN-DL-40080

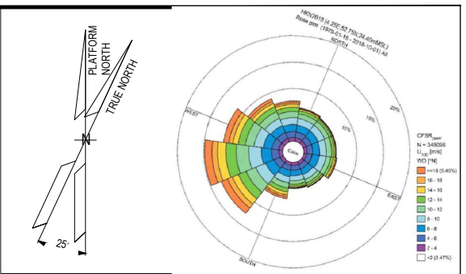
REV. 02



LOWER DECK
SCALE: 1:100
VIEW EL. 23310mm to 29310mm



TRANSITION PIECE
SCALE: 1:100
VIEW EL. 17050mm to 23310mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40081	INSTRUMENT LAYOUT - UPPER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-UPPER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DL-40080**

REV.:	DATE:	SIGNATURE:
2_C	06/11/24	G.Randi

ROSETTI MARINO SpA

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–LOWER DECK
TOS EL. 23.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90–DDL–IN–DL–40080	SHEET 001	REV. 02

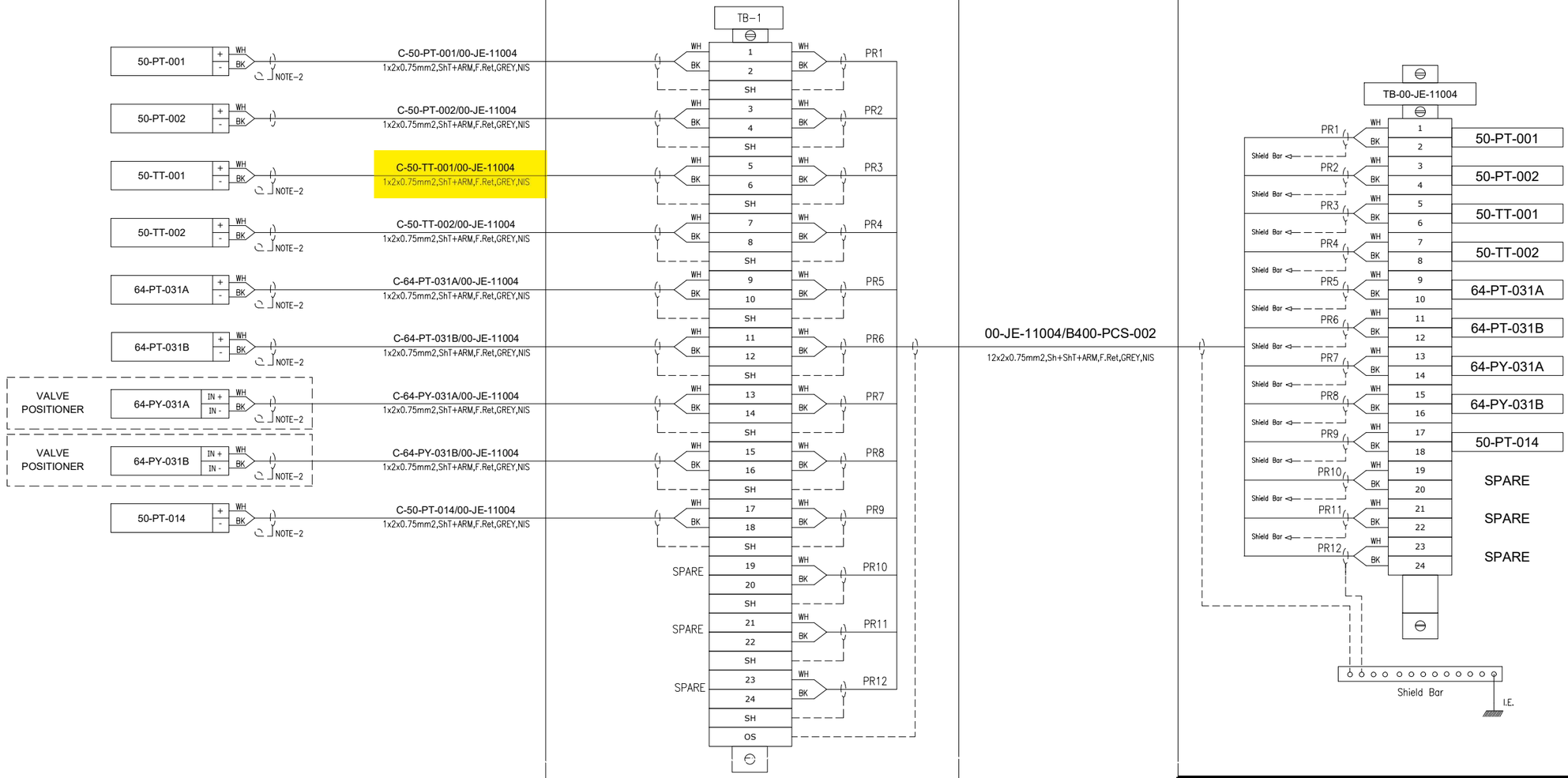
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DRAWING NO. 123A90-DDL-IN-DG-40015

REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 00-JE-11004	No.	MARSHALLING CABINET B400-PCS-002

<01>



VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_J	12/02/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
00-JE-11004-SH.1 OF 2

CONTRACT NO./TITLE			SCALE 1:1
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024
A3	DRAWING NO. 123A90-DDL-IN-DG-40015	SHEET 009	REV. 01

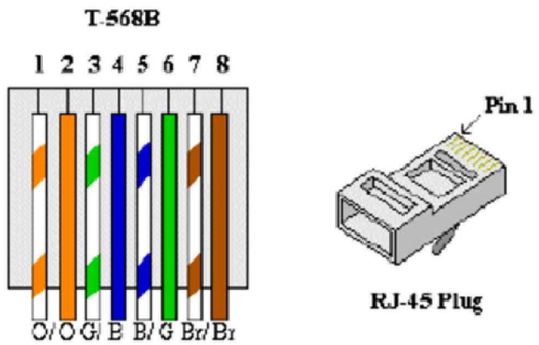
File Name : 123A90-DDL-IN-DG-40015_Rev.01

DRAWING NO. 123A90-DDL-IN-DG-40015

REV. 01

NOTES:

1. ALL SPARE ENTRIES SHALL BE PROVIDED WITH CERTIFIED EX PROOF PLUGS.
2. CABLE SCREENS / DRAIN WIRE SHALL BE SECURELY INSULATED AND TIED BACK IN THE INSTRUMENT SIDE AND SHAL BE TERMINATED IN THE MARSHALLING SIDE OF THE PANEL.
3. SPARE PAIRS / TRIADS SHALL BE CONNECTED TO TERMINALS IN JUNCTION BOX AND PANEL / MARSHALLING CABINETS.
4. ALL CABLE SCREENS TO BE TERMINATED AT THE INSTRUMENT EARTH BAR IN THE RESPECTIVE EARTH BARS (IS OR NIS) AS APPLICABLE IN THE MARSHALLING CABINET.
5. SWITCH TAG NAME AND PORT WILL BE DEFINED DURING THE CONSTRUCTION PHASE
6. FOR OPTICAL FIBERS, USE THE FOLLOWING COLOR CODING:
   - 01- RED
   - 02- GREEN
   - 03- BLUE
   - 04- YELLOW
   - 05- GREY
   - 06- PURPLE
   - 07- BROWN
   - 08- ORANGE
   - 09- WHITE
   - 10- PINK
   - 11- BLACK
   - 12- TURQUOISE
7. CAT.6A CABLE SHALL BE TERMINATED MEETING REQUIREMENTS OF STANDARD EIA/TIA 568B:



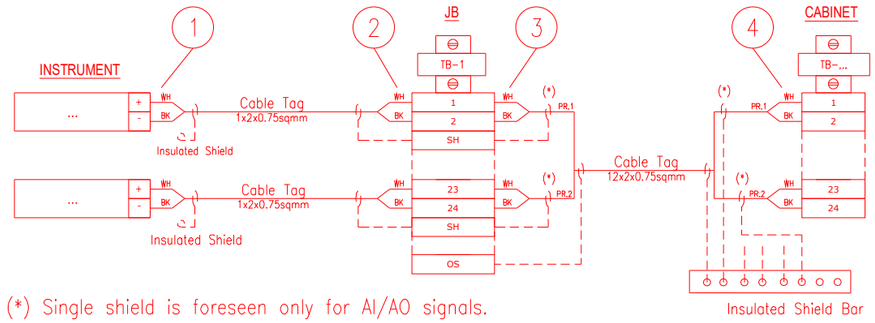
8. FOR INTRISICALLY SAFE CIRCUIT USE LIGHT BLUE CABLE OR ALTERNATIVELY ORANGE CABLE WITH HEAT SHRINKABLE SLEEVE BLUE AT BOTH END (SEE DOC. 123A90-FDL-IN-DD-40017).

LEGENDS & SYMBOLS:

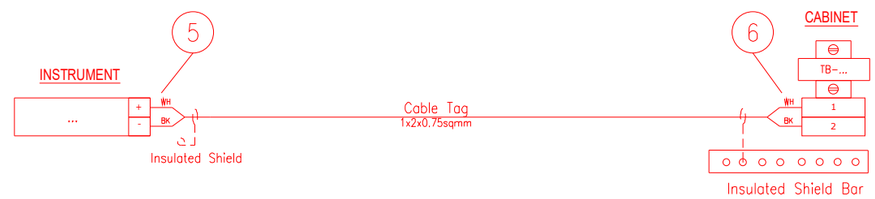
I.E.	- GREEN ⟶ INSTRUMENT SIGNAL EARTH
P.E.	- GREEN / YELLOW ⟶ P.E. EARTH / BONDING
	- TERMINAL BLOCK (TB)
WH	- WHITE
BK	- BLACK
RD	- RED
S	- SHIELD TERMINAL
OS	- OVERALL SHIELD TERMINAL
O/A Shld	- OVERALL SHIELD
I&O/A Shld	- INDIVIDUAL & OVERALL SHIELD
NIS	- NON INTRINSICALLY SAFE
IS	- INTRINSICALLY SAFE
P.E.	- PLANT EARTH
PCS	- PROCESS CONTROL SYSTEM
ESD	- EMERGENCY SHUTDOWN SYSTEM
SIS	- SAFETY INSTRUMENT SYSTEM
FGS	- FIRE & GAS SYSTEM
MC	- MARSHALLING CABINET
AI	- ANALOGUE INPUT
AO	- ANALOGUE OUTPUT
DI	- DIGITAL INPUT
DO	- DIGITAL OUTPUT
JE	- JUNCTION BOX FOR ELECTRICAL SIGNALS

PHILOSOPHY OF CROSS-FERRULING:

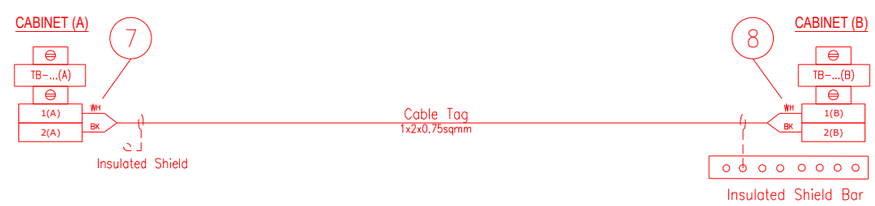
INSTRUMENT CONNECTION THROUGH MARSHALLING JB TO CABINET



INSTRUMENT CONNECTION STRAIGHT TO CABINET



CABINET CONNECTION TO CABINET



1 - INSTR. TERMINAL NO. OR POLARITY / JB TAG / JB TERMINAL NO.
2 - INSTR. TERMINAL NO. OR POLARITY / INSTR. TAG / JB TERMINAL NO.
3 - JB TERMINAL NO. / JB TERMINAL STRIP / CABINET TERMINAL STRIP / PAIR OR CORE NO.
4 - PAIR OR CORE NO. / JB TAG / JB TERMINAL NO. / CABINET TERMINAL STRIP / CABINET TERMINAL NO.
5 - INSTR. TERMINAL NO. OR POLARITY / CABINET TAG / CABINET TERMINAL STRIP / CABINET TERMINAL NO.
6 - INSTR. TERMINAL NO. OR POLARITY / INSTR. TAG / CABINET TERMINAL STRIP/ CABINET TERMINAL NO.
7 - TERMINAL NO. (A) / TERMINAL STRIP (A) / CABINET TAG (B) / CABINET TERMINAL NO. (B) / PAIR OR CORE NO.
8 - PAIR OR CORE NO. / CABINET TERMINAL NO. (A) / CABINET TAG (A) / TERMINAL STRIP (B) / TERMINAL NO. (B)

NOTES: A - HEAT SHRINKABLE BLACK FOR SHIELD OF NIS INSTRUMENT CABLE.
HEAT SHRINKABLE BLUE FOR SHIELD OF IS INSTRUMENT CABLE.
B - ABOVE DESCRIBED PHILOSOPHY IS INTENDED FOR CONNECTION AS REPRESENTED:
IN CASE OF CONNECTION FROM THE OPPOSITE SIDE, ORDER OF FERULE TAG SHALL BE MIRRORED.
C - SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO SHIELDS TERMINATED ON TERMINAL STRIP.

REFERENCE DRAWINGS:

PIPING AND INSTRUMENT DIAGRAM 123A90-DDL-PR-PID-80009
INSTRUMENT INDEX 123A90-DDL-IN-LIS-40088
F&G DETECTORS LAYOUT 123A90-DDL-SAF-DL-30027

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_J	12/02/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
GENERAL NOTES/LEGENDS

CONTRACT NO./TITLE			SCALE N/A
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024
A3	DRAWING NO. 123A90-DDL-IN-DG-40015	SHEET 003	REV. 01

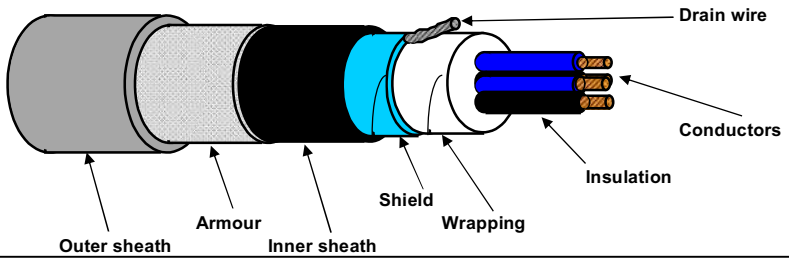
File Name : 123A90-DDL-IN-DG-40015_Rev.01

Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	From Tag Section	To Tag	To Main Function	To Area	To Tag Section	Material ID	Material Desc.	Gland Standard	From Gland	From Entry	From Fitting	To Gland	To Entry	To Fitting	Routing	Routing Manual
C-50-TT-001/00-JE-11004	Cable	IN	VFC	123A90-DDL-IN-LIS-40091						50-TT-001	Flow Transmitter	Lower Deck		00-JE-11004	AI/AO JB to PCS	Lower Deck (B-100) Ext.	Junction Box	SMICV01-1X2X0,75	Cable Cu Cl2/XLPE/OS/LSZH/SWB/LSZH 150/250V (300V) 1x2x0.75mm² - Grev	M20S	T2_M20S_Double			T2_M20S Double				L-SEC-18E / L-SEC-13 / L-SEC-1L / L-SEC-1M / L-SEC-16

FLEI s.r.l.

Cu Cl.2/XLPE/OS/LSZH/SWB/LSZH 150/250 V (300 V)

1X2X0,75 - INSTRUMENT CABLE - Flame Retardant - Not I.S.



TECHNICAL FEATURES

Conductors :	**7-STRANDED** plain/bare soft annealed copper wires	**IEC 60228 Class 2**
Insulation :	XLPE, Nominal Thickness 0,5 mm	
Cores colour code :	**White - Black**	
Pair Assembling :	Not required	
Pair Wrapping:	Not required	
Drain wire :	Not required	
Pair Shield :	Not required	
Shield Insulation :	Not required	
Total Assembling :	13/1mt	
Overall Wrapping:	by polyester-PET Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Drain wire :	7-Stranded **TINNED** annealed copper drain wire, **size 0,5 sqmm**, in continuous contact with the shield	
Overall Shield :	by Aluminium-**Al** Minimum Thickness 0,008 mm / polyester-**PET** Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Inner sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, Average Thickness 1,0 mm	
Inner sheath color code:	**Black**	
Armour :	Galvanized Steel Wire Braid Armour (coverage ≥ 90%)	
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, moisture/abrasion/UV Resistant,	
	Average Thickness 1,1 mm	
Outer sheath color code:	**Grey**	
Outer printing (INKJET) :	**FLEI - 1X2X0,75 SQMM - XLPE/OS/LSZH/SWB/LSZH - 150/250 V - IEC 60332.1.2 - IEC 60332.3.22 -**	
(every 1000 mm)	**Year of Manufacture - CE + Meter Marking**	
Under armour diameter :	(6,5 ± 10%) mm	
Over armour diameter :	(7,3 ± 10%) mm	
Outer diameter :	(9,5 ± 10%) mm	
Bending radius :	cable outer diameter x 10 (in fixed installation)	
Voltage Test :	1,5 kV a.c. for 5' (Between Cores) / 1,5 kV a.c. for 5' (Between Cores - Shield)	
Conductors DC Resistance :	≤ 26 Ω/km (@ 20°C)	
Insulation Resistance :	≥ 1000 MΩ x Km (@ 20°C)	
Mutual Capacitance :	≤ 150 nF/km	
L/R ratio :	≤ 25 µH/Ω	
Inductance :	≤ 0,9 mH/km	
Applicable Standards		
Design Guidelines :	**IEC 60092.376**	
ON COMPLETE CABLE		
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22	
Acid Gas generation :	IEC 60754.1/2	
Smoke density/Light Transmittance :	IEC 61034.2 (LT ≥ 60%)	
Hazardous Areas :	IEC 60079.14 par.9.3.2a	
Temperature Range :		
ON INSULATION	(max +90°C) (max continuous operation temperature of conductors)	
	(max +250°C) (max conductors temperature during short-circuit for 5 seconds)	
ON COMPLETE CABLE		
During Operation :	(-20°C up to +90°C) (in fixed installation)	
During installation :	(- 5°C up to +50°C)	
Note :	**To meet the requirements of installation and use in Zone 1 & Zone 2 (IEC 60079-14) and "Gas & Vapour Tight" the cable must be provided with Penetrating Inner sheath together with correct ATEX approved equipment or accessories.**	

Office	Date	Sign	Rev.	Date	Sign
Drawn by :	04/04/2024	Messa			
Checked :	04/04/2024	Spaccasassi			
Approved :	04/04/2024	Cucinotta			

The data provided, lending assent for the treatment, will be used to the sense of the article 13 of of the Regulation (UE) 2016/679, also through outsiders, in order to allow the realization of the fulfilments informatives, administrative, commercial and accounting related to the contractual relationship. Integral copy of the informative could be requested at our offices.

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ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	C-50-XV-001/00-JE-12006	: PROXIMITY SWITCH / MARSHALLING PCS		Dwg	123A90-DDL-IN-LIS-40091	
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)		Module	LD/LD_B-100_Ext	
TASK	code	C10000103	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline Instrumental	Form	CJX10	Multi/Single-Core Instrument Control Cable

CABLE DATA

Type	Cu-XLPE-IS-OS-LSZH-SWB-LSZH	Cores/Size mm²	2X2X0,75 mm2	Color	GREY
From	50-XV-001	To	00-JE-12006		

1	Check cable is as specified in project cable schedule.	OK
2	Check relevant documents are at the latest revision.	OK
3	Check cable is routed in accordance with cable layout drawings.	OK
4	Check cable for any physical damage.	OK
5	Check cable is adequately supported and correctly fixed to rack according to Project specification.	PL
6	Check bending radius is within the specified limits.	OK
7	Check cable is correctly loomed and segregated in accordance with specification.	OK
8	Check cable and core marking are in accordance with specification.	OK
9	Check cable labelling is in accordance with specification.	OK
10	Check that glands, shrouds and earthing are in accordance with specification.	OK
11	Check terminations are in accordance with termination diagram	PL
12	Check gland plate for single core cables is non-ferrous.	NA
13	If required produce Red Line Mark Up for "AS BUILT"	

INSULATION	CORE to EARTH	>999	MΩ
	CORE to CORE	>999	MΩ
	CORE to SCREEN	>999	MΩ
	CORE to ARMr	>999	MΩ
	SCREEN to EARTH	>999	MΩ
	SCREEN to ARMr	>999	MΩ
CONTINUITY	CORES	1,1	Ω
	SCREEN	1,1	Ω
	EARTH	NA	Ω
	ARMr	1,1	Ω
	TEST VOLTS	500	V

TEST ALL CORES AND RECORD LOWEST VALUE

Notes: The lowest value is recorded and must be within project specifications

TESTING INSTRUMENTS USED

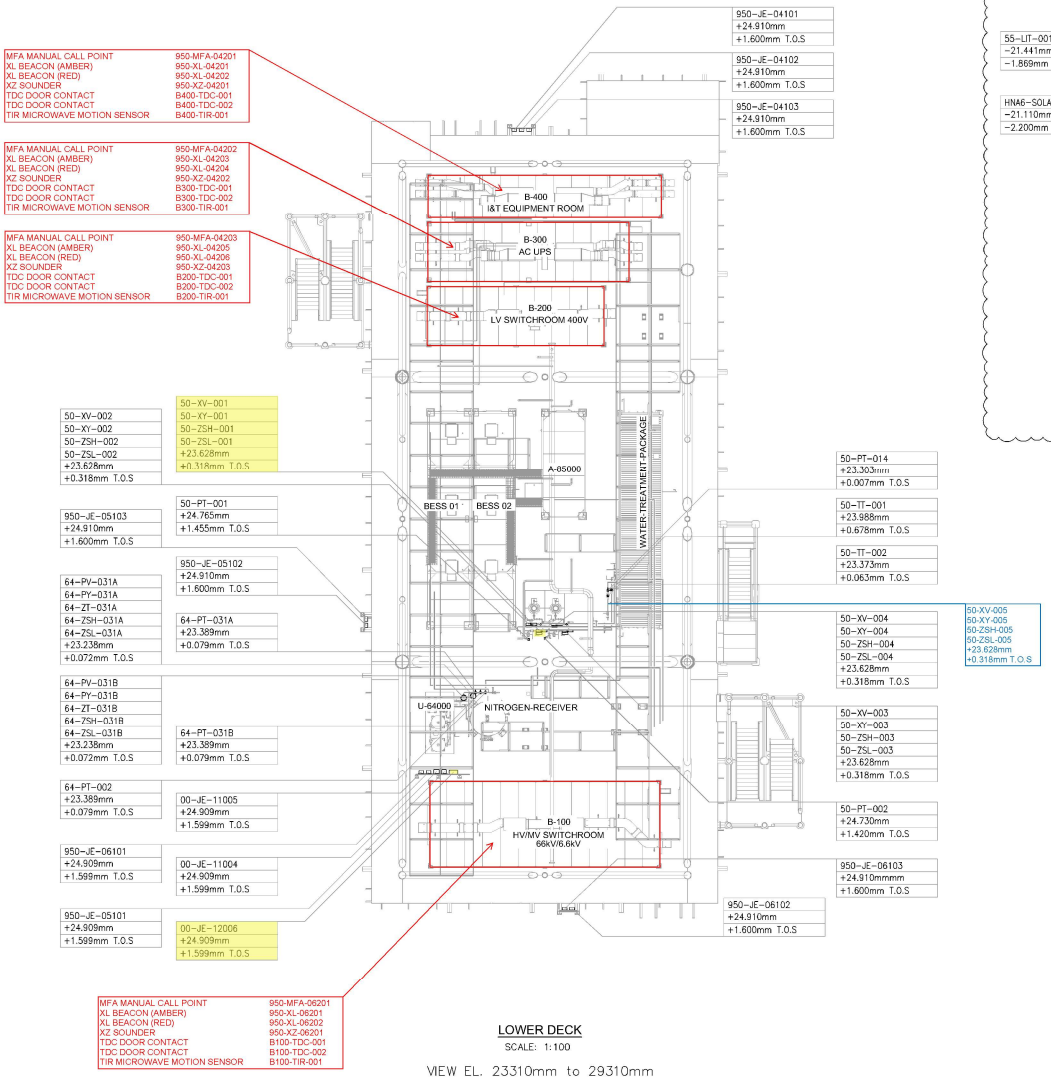
TYPE / SERIAL N°: VOLCRAFT 1000V - ET-200 S/N:H240103023 Calibration date: N°LAT 042 00768/24 12/10/2024

Comments Nota 5: refer to PL C30000680

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Alessio Polo	
Date	2025-02-05	2025-02-10	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-05T10:10:44.888Z	PROVERLIS Digitaly signed by Alessio Polo 2025-02-10T10:00:03.454Z	

DRAWING NO.: 123A90-DDL-IN-DL-40080

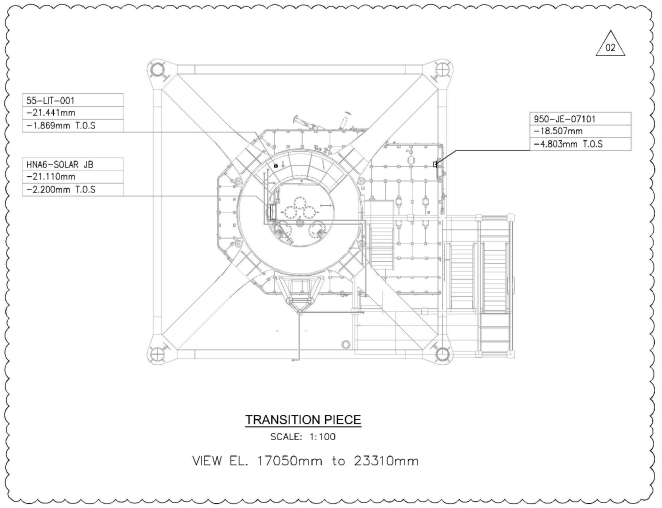
REV. 02



LOWER DECK

SCALE: 1:100

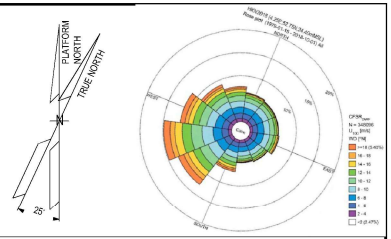
VIEW EL. 23310mm to 29310mm



TRANSITION PIECE

SCALE: 1:100

VIEW EL. 17050mm to 23310mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40081	INSTRUMENT LAYOUT - UPPER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-UPPER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION

FDL DWG: 123A90-FDL-IN-DL-40080

REV.:	DATE:	SIGNATURE:
2_C	06/11/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND | ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–LOWER DECK
TOS EL. 23.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO.: 123A90–DDL–IN–DL–40080	SHEET 001	REV. 02

File Name : 123A90-DDL-IN-DL-40080 REV02.dwg

DRAWING NO. 123A90-DDL-IN-DG-40015

REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 00-JE-12006	No.	MARSHALLING CABINET B400-PCS-002

<01>

ON-OFF VALVE LIMIT SWITCHES BOX (SOLDO)
- 50-ZSL-001 (1, 2) WH BK → PR1
- 50-ZSH-001 (5, 6) WH BK → PR2
- NOTE-2
- C-50-XV-001/00-JE-12006
  2x2x0.75mm2,Sh+ShT+ARM,F.Ret,GREY,NIS

ON-OFF VALVE LIMIT SWITCHES BOX (SOLDO)
- 50-ZSL-002 (1, 2) WH BK → PR1
- 50-ZSH-002 (5, 6) WH BK → PR2
- NOTE-2
- C-50-XV-002/00-JE-12006
  2x2x0.75mm2,Sh+ShT+ARM,F.Ret,GREY,NIS

ON-OFF VALVE LIMIT SWITCHES BOX (SOLDO)
- 50-ZSL-003 (1, 2) WH BK → PR1
- 50-ZSH-003 (5, 6) WH BK → PR2
- NOTE-2
- C-50-XV-003/00-JE-12006
  2x2x0.75mm2,Sh+ShT+ARM,F.Ret,GREY,NIS

ON-OFF VALVE LIMIT SWITCHES BOX (SOLDO)
- 50-ZSL-004 (1, 2) WH BK → PR1
- 50-ZSH-004 (5, 6) WH BK → PR2
- NOTE-2
- C-50-XV-004/00-JE-12006
  2x2x0.75mm2,Sh+ShT+ARM,F.Ret,GREY,NIS

ON-OFF VALVE LIMIT SWITCHES BOX (SOLDO)
- 50-ZSL-005 (1, 2) WH BK → PR1
- 50-ZSH-005 (5, 6) WH BK → PR2
- NOTE-2
- C-50-XV-005/00-JE-12006
  2x2x0.75mm2,Sh+ShT+ARM,F.Ret,GREY,NIS

TB-1

WH BK	1	WH BK	PR1
	2		
	SH		
WH BK	3	WH BK	PR2
	4		
	SH		
WH BK	5	WH BK	PR3
	6		
	SH		
WH BK	7	WH BK	PR4
	8		
	SH		
WH BK	9	WH BK	PR5
	10		
	SH		
WH BK	11	WH BK	PR6
	12		
	SH		
WH BK	13	WH BK	PR7
	14		
	SH		
WH BK	15	WH BK	PR8
	16		
	SH		
WH BK	17	WH BK	PR9
	18		
	SH		
WH BK	19	WH BK	PR10
	20		
	SH		
SPARE	21	WH BK	PR11
	22		
	SH		
SPARE	23	WH BK	PR12
	24		
	SH		
	OS		

00-JE-12006_1/B400-PCS-002
12x2x0.75mm2,Sh+ShT+ARM,F.Ret,GREY,NIS

TB-00-JE-12006

PR1 WH BK	1	50-ZSL-001
Shield Bar	2	
PR2 WH BK	3	50-ZSH-001
	4	
Shield Bar		
PR3 WH BK	5	50-ZSL-002
	6	
Shield Bar		
PR4 WH BK	7	50-ZSH-002
	8	
Shield Bar		
PR5 WH BK	9	50-ZSL-003
	10	
Shield Bar		
PR6 WH BK	11	50-ZSH-003
	12	
Shield Bar		
PR7 WH BK	13	50-ZSL-004
	14	
Shield Bar		
PR8 WH BK	15	50-ZSH-004
	16	
Shield Bar		
PR9 WH BK	17	50-ZSL-005
	18	
Shield Bar		
PR10 WH BK	19	50-ZSH-005
	20	
Shield Bar		
PR11 WH BK	21	SPARE
	22	
Shield Bar		
PR12 WH BK	23	SPARE
	24	

Shield Bar
I.E.

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_I	29/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
00–JE–12006–SH.1 OF 2

CONTRACT NO./TITLE			SCALE N/A
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

A3	DRAWING NO.	SHEET	REV.
	123A90–DDL–IN–DG–40015	022	01

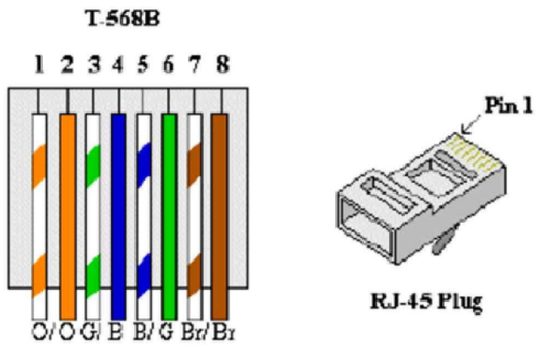
File Name : 123A90-DDL-IN-DG-40015_Rev.01

DRAWING NO. 123A90-DDL-IN-DG-40015

REV. 01

NOTES:

1. ALL SPARE ENTRIES SHALL BE PROVIDED WITH CERTIFIED EX PROOF PLUGS.
2. CABLE SCREENS / DRAIN WIRE SHALL BE SECURELY INSULATED AND TIED BACK IN THE INSTRUMENT SIDE AND SHAL BE TERMINATED IN THE MARSHALLING SIDE OF THE PANEL.
3. SPARE PAIRS / TRIADS SHALL BE CONNECTED TO TERMINALS IN JUNCTION BOX AND PANEL / MARSHALLING CABINETS.
4. ALL CABLE SCREENS TO BE TERMINATED AT THE INSTRUMENT EARTH BAR IN THE RESPECTIVE EARTH BARS (IS OR NIS) AS APPLICABLE IN THE MARSHALLING CABINET.
5. SWITCH TAG NAME AND PORT WILL BE DEFINED DURING THE CONSTRUCTION PHASE
6. FOR OPTICAL FIBERS, USE THE FOLLOWING COLOR CODING:
   - 01- RED
   - 02- GREEN
   - 03- BLUE
   - 04- YELLOW
   - 05- GREY
   - 06- PURPLE
   - 07- BROWN
   - 08- ORANGE
   - 09- WHITE
   - 10- PINK
   - 11- BLACK
   - 12- TURQUOISE
7. CAT.6A CABLE SHALL BE TERMINATED MEETING REQUIREMENTS OF STANDARD EIA/TIA 568B:



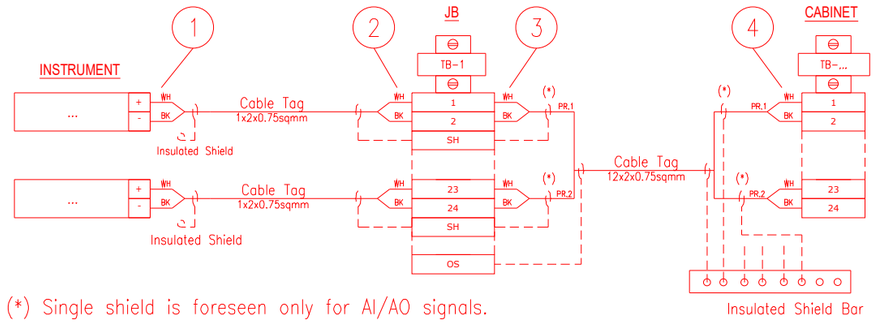
8. FOR INTRISICALLY SAFE CIRCUIT USE LIGHT BLUE CABLE OR ALTERNATIVELY ORANGE CABLE WITH HEAT SHRINKABLE SLEEVE BLUE AT BOTH END (SEE DOC. 123A90-FDL-IN-DD-40017).

LEGENDS & SYMBOLS:

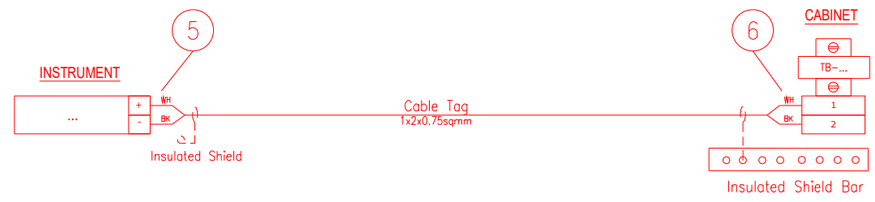
I.E.	- GREEN ⟶ INSTRUMENT SIGNAL EARTH
P.E.	- GREEN / YELLOW ⟶ P.E. EARTH / BONDING
	- TERMINAL BLOCK (TB)
WH	- WHITE
BK	- BLACK
RD	- RED
S	- SHIELD TERMINAL
OS	- OVERALL SHIELD TERMINAL
O/A Shld	- OVERALL SHIELD
I&O/A Shld	- INDIVIDUAL & OVERALL SHIELD
NIS	- NON INTRINSICALLY SAFE
IS	- INTRINSICALLY SAFE
P.E.	- PLANT EARTH
PCS	- PROCESS CONTROL SYSTEM
ESD	- EMERGENCY SHUTDOWN SYSTEM
SIS	- SAFETY INSTRUMENT SYSTEM
FGS	- FIRE & GAS SYSTEM
MC	- MARSHALLING CABINET
AI	- ANALOGUE INPUT
AO	- ANALOGUE OUTPUT
DI	- DIGITAL INPUT
DO	- DIGITAL OUTPUT
JE	- JUNCTION BOX FOR ELECTRICAL SIGNALS

PHILOSOPHY OF CROSS-FERRULING:

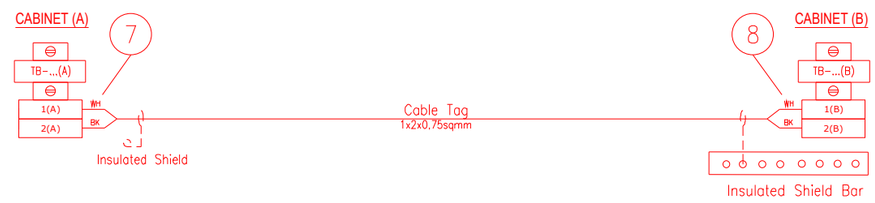
INSTRUMENT CONNECTION THROUGH MARSHALLING JB TO CABINET



INSTRUMENT CONNECTION STRAIGHT TO CABINET



CABINET CONNECTION TO CABINET



1 - INSTR. TERMINAL NO. OR POLARITY / JB TAG / JB TERMINAL NO.
2 - INSTR. TERMINAL NO. OR POLARITY / INSTR. TAG / JB TERMINAL NO.
3 - JB TERMINAL NO. / JB TERMINAL STRIP / CABINET TERMINAL STRIP / PAIR OR CORE NO.
4 - PAIR OR CORE NO. / JB TAG / JB TERMINAL NO. / CABINET TERMINAL STRIP / CABINET TERMINAL NO.
5 - INSTR. TERMINAL NO. OR POLARITY / CABINET TAG / CABINET TERMINAL STRIP / CABINET TERMINAL NO.
6 - INSTR. TERMINAL NO. OR POLARITY / INSTR. TAG / CABINET TERMINAL STRIP/ CABINET TERMINAL NO.
7 - TERMINAL NO. (A) / TERMINAL STRIP (A) / CABINET TAG (B) / CABINET TERMINAL NO. (B) / PAIR OR CORE NO.
8 - PAIR OR CORE NO. / CABINET TERMINAL NO. (A) / CABINET TAG (A) / TERMINAL STRIP (B) / TERMINAL NO. (B)

NOTES: A - HEAT SHRINKABLE BLACK FOR SHIELD OF NIS INSTRUMENT CABLE.
HEAT SHRINKABLE BLUE FOR SHIELD OF IS INSTRUMENT CABLE.
B - ABOVE DESCRIBED PHILOSOPHY IS INTENDED FOR CONNECTION AS REPRESENTED:
IN CASE OF CONNECTION FROM THE OPPOSITE SIDE, ORDER OF FERULE TAG SHALL BE MIRRORED.
C - SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO SHIELDS TERMINATED ON TERMINAL STRIP.

REFERENCE DRAWINGS:

PIPING AND INSTRUMENT DIAGRAM 123A90-DDL-PR-PID-80009
INSTRUMENT INDEX 123A90-DDL-IN-LIS-40088
F&G DETECTORS LAYOUT 123A90-DDL-SAF-DL-30027

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_I	29/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
GENERAL NOTES/LEGENDS

CONTRACT NO./TITLE			SCALE N/A
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

A3	DRAWING NO.	SHEET	REV.
	123A90-DDL-IN-DG-40015	003	01

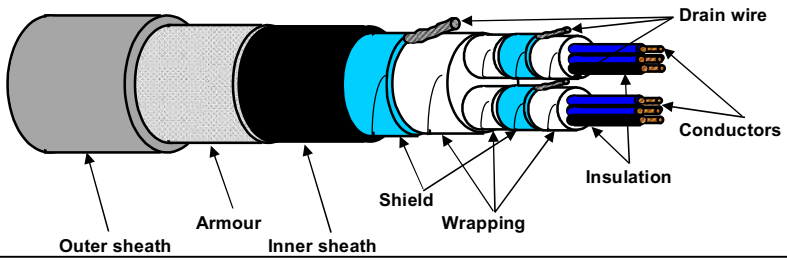
File Name : 123A90-DDL-IN-DG-40015_Rev.01

Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	From Tag Section	To Tag	To Main Function	To Area	To Tag Section	Material ID	Material Desc.	Gland Standard	From Gland	From Entry	From Fitting	To Gland	To Entry	To Fitting	Routing	Routing Manual
C-50-XV-001/00-JE-12006	Cable	IN	VFC	123A90-DDL-IN-LIS-40091						50-XV-001	On-Off Actuated Ball Valve	Lower Deck		00-JE-12006	DI JB to PCS	Lower Deck (B-100) Ext.	Junction Box	SMICV02-2X2X0,75	Cable Cu Cl2/XLPE/IS/OS/LSZH/SWB/LSZH 150/250V (300V) 2x2x0,75mm² - Grey	M20	T2_M20_Double			T2_M20_ Double				L-SEC-10 / L-SEC-1H / L-SEC-1I / L-SEC-1J / L-SEC-1L / L-SEC-1M / L-SEC-16

FLEI s.r.l.

Cu Cl.2/XLPE/IS/OS/LSZH/SWB/LSZH 150/250 V (300 V)

2X2X0,75 - INSTRUMENT CABLE - Flame Retardant - Not I.S.



TECHNICAL FEATURES

Conductors :	**7-STRANDED** plain/bare soft annealed copper wires	**IEC 60228 Class 2**
Insulation :	XLPE, Nominal Thickness 0,5 mm	
Cores colour code :	**White - Black (each core NUMBERED for PAIR identification)**	
Pair Assembling :	13/1mt	
Pair Wrapping:	by polyester-PET Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Drain wire :	7-Stranded **TINNED** annealed copper drain wire, **size 0,5 sqmm**, in continuous contact with the shield	
Pair Shield :	by Aluminium-**Al** Minimum Thickness 0,008 mm / polyester-**PET** Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Shield Insulation :	by polyester-PET Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Total Assembling :	7/1mt	
Overall Wrapping:	by polyester-PET Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Drain wire :	7-Stranded **TINNED** annealed copper drain wire, **size 0,5 sqmm**, in continuous contact with the shield	
Overall Shield :	by Aluminium-**Al** Minimum Thickness 0,008 mm / polyester-**PET** Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Inner sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, Average Thickness 1,2 mm	
Inner sheath color code:	**Black**	
Armour :	Galvanized Steel Wire Braid Armour (coverage ≥ 90%)	
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, moisture/abrasion/UV Resistant, Average Thickness 1,3 mm	
Outer sheath color code:	**Grey**	
Outer printing (INKJET) :	**FLEI - 2X2X0,75 SQMM - XLPE/IS/OS/LSZH/SWB/LSZH - 150/250 V - IEC 60332.1.2 - IEC 60332.3.22 -**	
(every 1000 mm)	**Year of Manufacture - CE + Meter Marking**	
Under armour diameter :	(11,4 ± 10%) mm	
Over armour diameter :	(12,6 ± 10%) mm	
Outer diameter :	(15,2 ± 10%) mm	
Bending radius :	cable outer diameter x 10 (in fixed installation)	
Voltage Test :	1,5 kV a.c. for 5' (Between Cores) / 1,5 kV a.c. for 5' (Between Cores - Shield)	
Conductors DC Resistance :	≤ 26 Ω/km (@ 20°C)	
Insulation Resistance :	≥ 1000 MΩ x Km (@ 20°C)	
Mutual Capacitance :	≤ 150 nF/km	
L/R ratio :	≤ 25 µH/Ω	
Inductance :	≤ 0,9 mH/km	
Applicable Standards		
Design Guidelines :	**IEC 60092.376**	
ON COMPLETE CABLE		
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22	
Acid Gas generation :	IEC 60754.1/2	
Smoke density/Light Transmittance :	IEC 61034.2 (LT ≥ 60%)	
Hazardous Areas :	IEC 60079.14 par.9.3.2a	
Temperature Range :		
ON INSULATION	(max +90°C) (max continuous operation temperature of conductors)	
	(max +250°C) (max conductors temperature during short-circuit for 5 seconds)	
ON COMPLETE CABLE		
During Operation :	(-20°C up to +90°C) (in fixed installation)	
During installation :	(- 5°C up to +50°C)	
Note :	**To meet the requirements of installation and use in Zone 1 & Zone 2 (IEC 60079-14) and "Gas & Vapour Tight" the cable must be provided with Penetrating Inner sheath together with correct ATEX approved equipment or accessories.**	

Office	Date	Sign	Rev.	Date	Sign
Drawn by :	04/04/2024	Messa			
Checked :	04/04/2024	Spaccasassi			
Approved :	04/04/2024	Cucinotta			

The data provided, lending assent for the treatment, will be used to the sense of the article 13 of of the Regulation (UE) 2016/679, also through outsiders, in order to allow the realization of the fulfilments informatives, administrative, commercial and accounting related to the contractual relationship. Integral copy of the informative could be requested at our offices.

All proprietary rights reserved according to law. This document shall be not reproduced without written permission. FLEI reserves the right to change characteristics and technical data of product shown at any time.

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	C-50-XV-002/00-JE-12006	: PROXIMITY SWITCH / MARSHALLING PCS	Dwg	123A90-DDL-IN-LIS-40091		
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)	Module	LD/LD_B-100_Ext		
TASK	code	C10000104	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline	Instrumental	Form	CJX10

Multi/Single-Core Instrument Control Cable

CABLE DATA

Type	Cu-XLPE-IS-OS-LSZH-SWB-LSZH	Cores/Size mm²	2X2X0,75 mm2	Color	GREY
From	50-XV-002	To	00-JE-12006		

1	Check cable is as specified in project cable schedule.	OK
2	Check relevant documents are at the latest revision.	OK
3	Check cable is routed in accordance with cable layout drawings.	OK
4	Check cable for any physical damage.	OK
5	Check cable is adequately supported and correctly fixed to rack according to Project specification.	PL
6	Check bending radius is within the specified limits.	OK
7	Check cable is correctly loomed and segregated in accordance with specification.	OK
8	Check cable and core marking are in accordance with specification.	OK
9	Check cable labelling is in accordance with specification.	OK
10	Check that glands, shrouds and earthing are in accordance with specification.	OK
11	Check terminations are in accordance with termination diagram	PL
12	Check gland plate for single core cables is non-ferrous.	NA
13	If required produce Red Line Mark Up for "AS BUILT"	

INSULATION	CORE to EARTH	>999	MΩ
	CORE to CORE	>999	MΩ
	CORE to SCREEN	>999	MΩ
	CORE to ARMr	>999	MΩ
	SCREEN to EARTH	>999	MΩ
	SCREEN to ARMr	>999	MΩ
CONTINUITY	CORES	1,1	Ω
	SCREEN	1,1	Ω
	EARTH	NA	Ω
	ARMr	1,1	Ω
	TEST VOLTS	500	V

TEST ALL CORES AND RECORD LOWEST VALUE

Notes: The lowest value is recorded and must be within project specifications

TESTING INSTRUMENTS USED

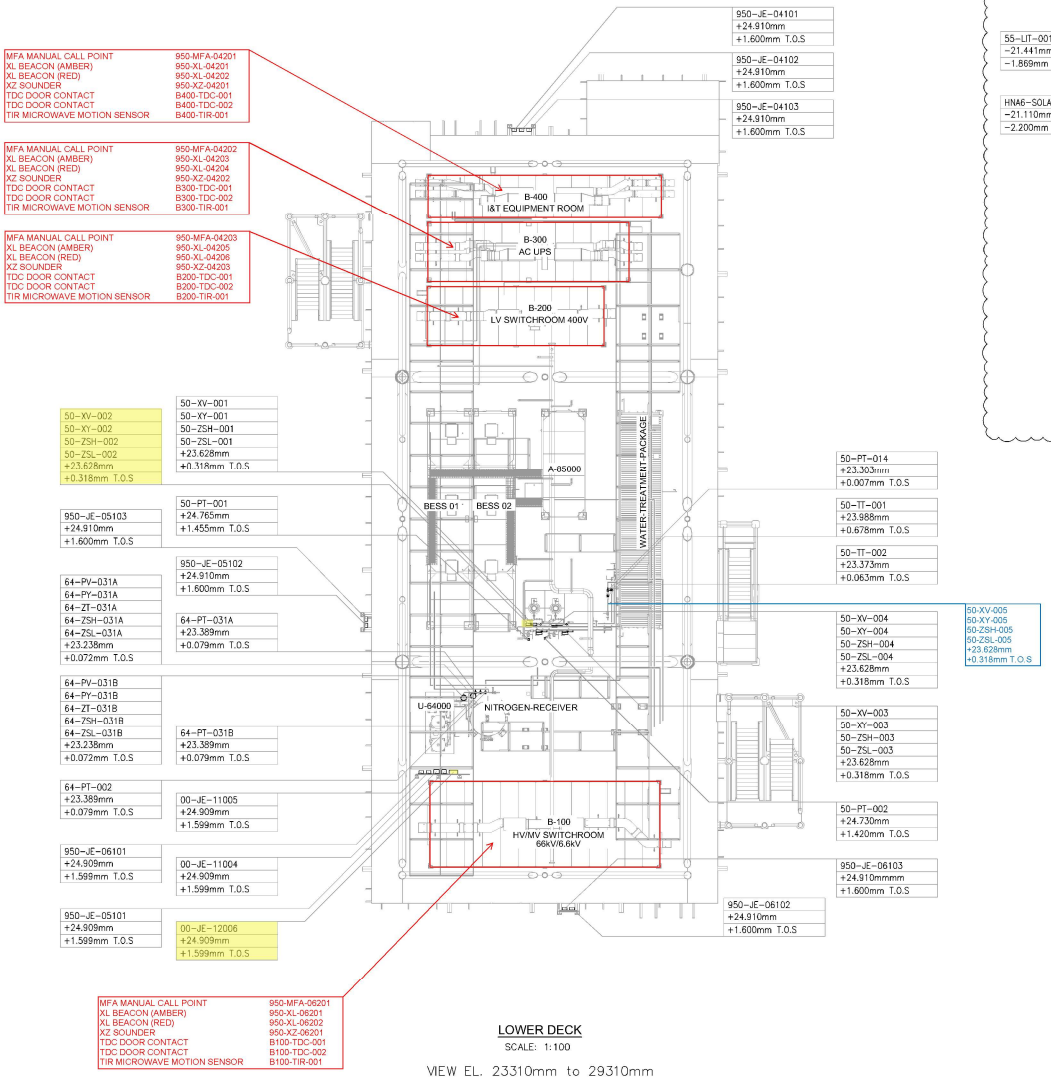
TYPE / SERIAL N°: VOLCRAFT 1000V - ET-200 S/N:H240103023 Calibration date: N°LAT 042 00768/24 12/10/2024

Comments Nota 5: refer to PL C30000680

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Alessio Polo	
Date	2025-02-05	2025-02-10	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-05T10:15:46.646Z	PROVERLIS Digitaly signed by Alessio Polo 2025-02-10T10:18:50.230Z	

DRAWING NO.: 123A90-DDL-IN-DL-40080

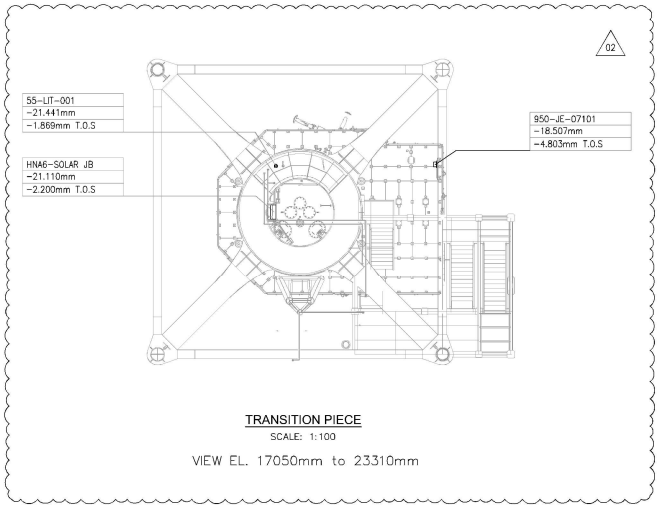
REV. 02



LOWER DECK

SCALE: 1:100

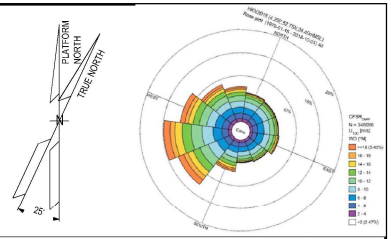
VIEW EL. 23310mm to 29310mm



TRANSITION PIECE

SCALE: 1:100

VIEW EL. 17050mm to 23310mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40081	INSTRUMENT LAYOUT - UPPER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-UPPER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION

FDL DWG: 123A90-FDL-IN-DL-40080

REV.:	DATE:	SIGNATURE:
2_C	06/11/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–LOWER DECK
TOS EL. 23.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90–DDL–IN–DL–40080		SHEET 001 / REV. 02

File Name : 123A90-DDL-IN-DL-40080 REV02.dwg

DRAWING NO. 123A90-DDL-IN-DG-40015

REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 00-JE-12006	No.	MARSHALLING CABINET B400-PCS-002

<01>

ON-OFF VALVE LIMIT SWITCHES BOX (SOLDO)
- 50-ZSL-001 (1, 2) PR1
- 50-ZSH-001 (5, 6) PR2
- NOTE-2
- C-50-XV-001/00-JE-12006
  2x2x0.75mm2,Sh+ShT+ARM,F.Ret,GREY,NIS

ON-OFF VALVE LIMIT SWITCHES BOX (SOLDO)
- 50-ZSL-002 (1, 2) PR1
- 50-ZSH-002 (5, 6) PR2
- NOTE-2
- C-50-XV-002/00-JE-12006
  2x2x0.75mm2,Sh+ShT+ARM,F.Ret,GREY,NIS

ON-OFF VALVE LIMIT SWITCHES BOX (SOLDO)
- 50-ZSL-003 (1, 2) PR1
- 50-ZSH-003 (5, 6) PR2
- NOTE-2
- C-50-XV-003/00-JE-12006
  2x2x0.75mm2,Sh+ShT+ARM,F.Ret,GREY,NIS

ON-OFF VALVE LIMIT SWITCHES BOX (SOLDO)
- 50-ZSL-004 (1, 2) PR1
- 50-ZSH-004 (5, 6) PR2
- NOTE-2
- C-50-XV-004/00-JE-12006
  2x2x0.75mm2,Sh+ShT+ARM,F.Ret,GREY,NIS

ON-OFF VALVE LIMIT SWITCHES BOX (SOLDO)
- 50-ZSL-005 (1, 2) PR1
- 50-ZSH-005 (5, 6) PR2
- NOTE-2
- C-50-XV-005/00-JE-12006
  2x2x0.75mm2,Sh+ShT+ARM,F.Ret,GREY,NIS

TB-1

WH/BK	1	WH/BK	PR1
	2		
	SH		
WH/BK	3	WH/BK	PR2
	4		
	SH		
WH/BK	5	WH/BK	PR3
	6		
	SH		
WH/BK	7	WH/BK	PR4
	8		
	SH		
WH/BK	9	WH/BK	PR5
	10		
	SH		
WH/BK	11	WH/BK	PR6
	12		
	SH		
WH/BK	13	WH/BK	PR7
	14		
	SH		
WH/BK	15	WH/BK	PR8
	16		
	SH		
WH/BK	17	WH/BK	PR9
	18		
	SH		
WH/BK	19	WH/BK	PR10
	20		
	SH		
SPARE	21	WH/BK	PR11
	22		
	SH		
SPARE	23	WH/BK	PR12
	24		
	SH		
	OS		

00-JE-12006_1/B400-PCS-002
12x2x0.75mm2,Sh+ShT+ARM,F.Ret,GREY,NIS

TB-00-JE-12006

PR1	WH/BK	1	50-ZSL-001
Shield Bar		2	
PR2	WH/BK	3	50-ZSH-001
Shield Bar		4	
PR3	WH/BK	5	50-ZSL-002
Shield Bar		6	
PR4	WH/BK	7	50-ZSH-002
Shield Bar		8	
PR5	WH/BK	9	50-ZSL-003
Shield Bar		10	
PR6	WH/BK	11	50-ZSH-003
Shield Bar		12	
PR7	WH/BK	13	50-ZSL-004
Shield Bar		14	
PR8	WH/BK	15	50-ZSH-004
Shield Bar		16	
PR9	WH/BK	17	50-ZSL-005
Shield Bar		18	
PR10	WH/BK	19	50-ZSH-005
Shield Bar		20	
PR11	WH/BK	21	SPARE
Shield Bar		22	
PR12	WH/BK	23	SPARE
		24	

Shield Bar
I.E.

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_I	29/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
00–JE–12006–SH.1 OF 2

CONTRACT NO./TITLE			SCALE N/A
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

A3	DRAWING NO.	SHEET	REV.
	123A90–DDL–IN–DG–40015	022	01

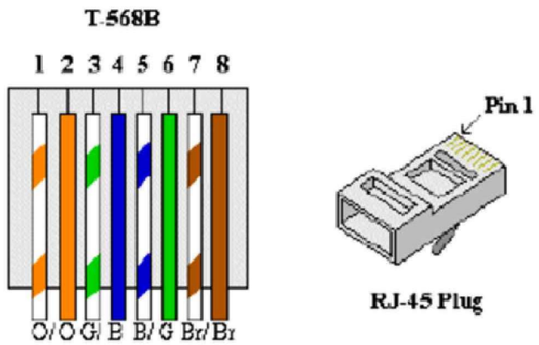
File Name : 123A90-DDL-IN-DG-40015_Rev.01

DRAWING NO. 123A90-DDL-IN-DG-40015

REV. 01

NOTES:

1. ALL SPARE ENTRIES SHALL BE PROVIDED WITH CERTIFIED EX PROOF PLUGS.
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7. CAT.6A CABLE SHALL BE TERMINATED MEETING REQUIREMENTS OF STANDARD EIA/TIA 568B:



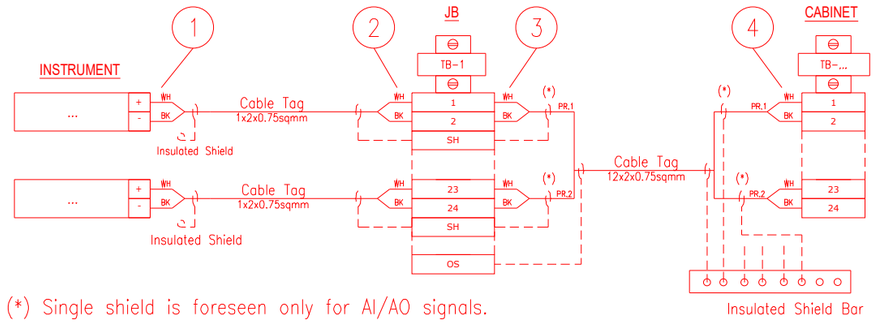
8. FOR INTRISICALLY SAFE CIRCUIT USE LIGHT BLUE CABLE OR ALTERNATIVELY ORANGE CABLE WITH HEAT SHRINKABLE SLEEVE BLUE AT BOTH END (SEE DOC. 123A90-FDL-IN-DD-40017).

LEGENDS & SYMBOLS:

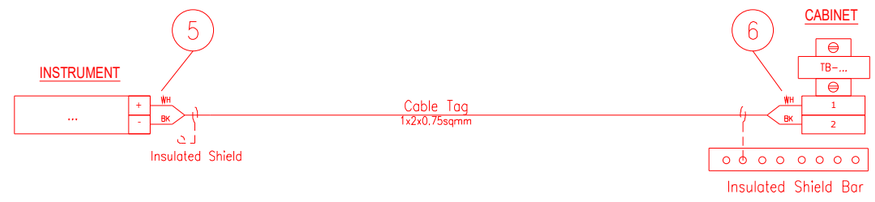
I.E.	- GREEN ⟶ INSTRUMENT SIGNAL EARTH
P.E.	- GREEN / YELLOW ⟶ P.E. EARTH / BONDING
	- TERMINAL BLOCK (TB)
WH	- WHITE
BK	- BLACK
RD	- RED
S	- SHIELD TERMINAL
OS	- OVERALL SHIELD TERMINAL
O/A Shld	- OVERALL SHIELD
I&O/A Shld	- INDIVIDUAL & OVERALL SHIELD
NIS	- NON INTRINSICALLY SAFE
IS	- INTRINSICALLY SAFE
P.E.	- PLANT EARTH
PCS	- PROCESS CONTROL SYSTEM
ESD	- EMERGENCY SHUTDOWN SYSTEM
SIS	- SAFETY INSTRUMENT SYSTEM
FGS	- FIRE & GAS SYSTEM
MC	- MARSHALLING CABINET
AI	- ANALOGUE INPUT
AO	- ANALOGUE OUTPUT
DI	- DIGITAL INPUT
DO	- DIGITAL OUTPUT
JE	- JUNCTION BOX FOR ELECTRICAL SIGNALS

PHILOSOPHY OF CROSS-FERRULING:

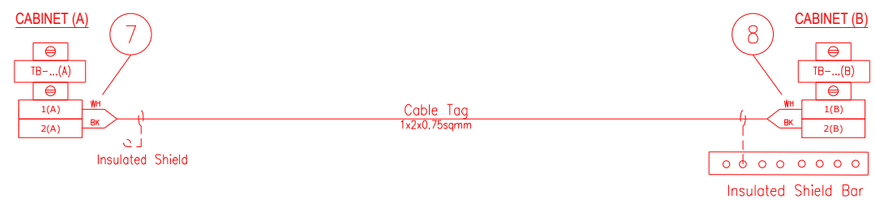
INSTRUMENT CONNECTION THROUGH MARSHALLING JB TO CABINET



INSTRUMENT CONNECTION STRAIGHT TO CABINET



CABINET CONNECTION TO CABINET



1 - INSTR. TERMINAL NO. OR POLARITY / JB TAG / JB TERMINAL NO.
2 - INSTR. TERMINAL NO. OR POLARITY / INSTR. TAG / JB TERMINAL NO.
3 - JB TERMINAL NO. / JB TERMINAL STRIP / CABINET TERMINAL STRIP / PAIR OR CORE NO.
4 - PAIR OR CORE NO. / JB TAG / JB TERMINAL NO. / CABINET TERMINAL STRIP / CABINET TERMINAL NO.
5 - INSTR. TERMINAL NO. OR POLARITY / CABINET TAG / CABINET TERMINAL STRIP / CABINET TERMINAL NO.
6 - INSTR. TERMINAL NO. OR POLARITY / INSTR. TAG / CABINET TERMINAL STRIP/ CABINET TERMINAL NO.
7 - TERMINAL NO. (A) / TERMINAL STRIP (A) / CABINET TAG (B) / CABINET TERMINAL NO. (B) / PAIR OR CORE NO.
8 - PAIR OR CORE NO. / CABINET TERMINAL NO. (A) / CABINET TAG (A) / TERMINAL STRIP (B) / TERMINAL NO. (B)

NOTES: A - HEAT SHRINKABLE BLACK FOR SHIELD OF NIS INSTRUMENT CABLE.
HEAT SHRINKABLE BLUE FOR SHIELD OF IS INSTRUMENT CABLE.
B - ABOVE DESCRIBED PHILOSOPHY IS INTENDED FOR CONNECTION AS REPRESENTED:
IN CASE OF CONNECTION FROM THE OPPOSITE SIDE, ORDER OF FERULE TAG SHALL BE MIRRORED.
C - SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO SHIELDS TERMINATED ON TERMINAL STRIP.

REFERENCE DRAWINGS:

PIPING AND INSTRUMENT DIAGRAM 123A90-DDL-PR-PID-80009
INSTRUMENT INDEX 123A90-DDL-IN-LIS-40088
F&G DETECTORS LAYOUT 123A90-DDL-SAF-DL-30027

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_I	29/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
GENERAL NOTES/LEGENDS

CONTRACT NO./TITLE			SCALE N/A
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

A3	DRAWING NO.	SHEET	REV.
	123A90-DDL-IN-DG-40015	003	01

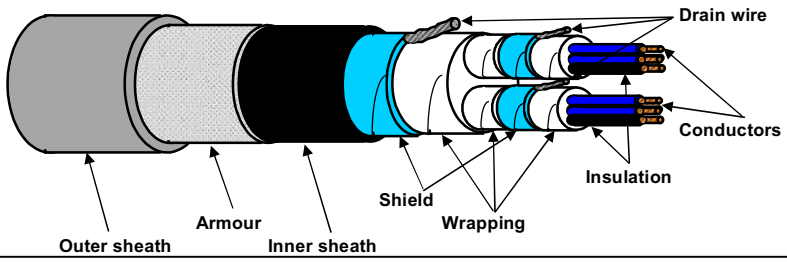
File Name : 123A90-DDL-IN-DG-40015_Rev.01

Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	From Tag Section	To Tag	To Main Function	To Area	To Tag Section	Material ID	Material Desc.	Gland Standard	From Gland	From Entry	From Fitting	To Gland	To Entry	To Fitting	Routing	Routing Manual
C-50-XV-002/00-JE-12006	Cable	IN	VFC	123A90-DDL-IN-LIS-40091						50-XV-002	On-Off Actuated Ball Valve	Lower Deck		00-JE-12006	DI JB to PCS	Lower Deck (B-100) Ext.	Junction Box	SMICV02-2X2X0,75	Cable Cu Cl2/XLPE/IS/OS/LSZH/SWB/LSZH 150/250V (300V) 2x2x0,75mm² - Grey	M20	T2_M20_Double			T2_M20_ Double				L-SEC-10 / L-SEC-1H / L-SEC-1I / L-SEC-1J / L-SEC-1L / L-SEC-1M / L-SEC-16

FLEI s.r.l.

Cu Cl.2/XLPE/IS/OS/LSZH/SWB/LSZH 150/250 V (300 V)

2X2X0,75 - INSTRUMENT CABLE - Flame Retardant - Not I.S.



TECHNICAL FEATURES

Conductors :	**7-STRANDED** plain/bare soft annealed copper wires	**IEC 60228 Class 2**
Insulation :	XLPE, Nominal Thickness 0,5 mm	
Cores colour code :	**White - Black (each core NUMBERED for PAIR identification)**	
Pair Assembling :	13/1mt	
Pair Wrapping:	by polyester-PET Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Drain wire :	7-Stranded **TINNED** annealed copper drain wire, **size 0,5 sqmm**, in continuous contact with the shield	
Pair Shield :	by Aluminium-**Al** Minimum Thickness 0,008 mm / polyester-**PET** Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Shield Insulation :	by polyester-PET Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Total Assembling :	7/1mt	
Overall Wrapping:	by polyester-PET Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Drain wire :	7-Stranded **TINNED** annealed copper drain wire, **size 0,5 sqmm**, in continuous contact with the shield	
Overall Shield :	by Aluminium-**Al** Minimum Thickness 0,008 mm / polyester-**PET** Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Inner sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, Average Thickness 1,2 mm	
Inner sheath color code:	**Black**	
Armour :	Galvanized Steel Wire Braid Armour (coverage ≥ 90%)	
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, moisture/abrasion/UV Resistant, Average Thickness 1,3 mm	
Outer sheath color code:	**Grey**	
Outer printing (INKJET) :	**FLEI - 2X2X0,75 SQMM - XLPE/IS/OS/LSZH/SWB/LSZH - 150/250 V - IEC 60332.1.2 - IEC 60332.3.22 -**	
(every 1000 mm)	**Year of Manufacture - CE + Meter Marking**	
Under armour diameter :	(11,4 ± 10%) mm	
Over armour diameter :	(12,6 ± 10%) mm	
Outer diameter :	(15,2 ± 10%) mm	
Bending radius :	cable outer diameter x 10 (in fixed installation)	
Voltage Test :	1,5 kV a.c. for 5' (Between Cores) / 1,5 kV a.c. for 5' (Between Cores - Shield)	
Conductors DC Resistance :	≤ 26 Ω/km (@ 20°C)	
Insulation Resistance :	≥ 1000 MΩ x Km (@ 20°C)	
Mutual Capacitance :	≤ 150 nF/km	
L/R ratio :	≤ 25 µH/Ω	
Inductance :	≤ 0,9 mH/km	
Applicable Standards		
Design Guidelines :	**IEC 60092.376**	
ON COMPLETE CABLE		
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22	
Acid Gas generation :	IEC 60754.1/2	
Smoke density/Light Transmittance :	IEC 61034.2 (LT ≥ 60%)	
Hazardous Areas :	IEC 60079.14 par.9.3.2a	
Temperature Range :		
ON INSULATION	(max +90°C) (max continuous operation temperature of conductors)	
	(max +250°C) (max conductors temperature during short-circuit for 5 seconds)	
ON COMPLETE CABLE		
During Operation :	(-20°C up to +90°C) (in fixed installation)	
During installation :	(- 5°C up to +50°C)	
Note :	**To meet the requirements of installation and use in Zone 1 & Zone 2 (IEC 60079-14) and "Gas & Vapour Tight" the cable must be provided with Penetrating Inner sheath together with correct ATEX approved equipment or accessories.**	

Office	Date	Sign	Rev.	Date	Sign
Drawn by :	04/04/2024	Messa			
Checked :	04/04/2024	Spaccasassi			
Approved :	04/04/2024	Cucinotta			

The data provided, lending assent for the treatment, will be used to the sense of the article 13 of of the Regulation (UE) 2016/679, also through outsiders, in order to allow the realization of the fulfilments informatives, administrative, commercial and accounting related to the contractual relationship. Integral copy of the informative could be requested at our offices.

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ROSETTI MARINO — CROSSWIND

ITEM	Tag	C-50-XV-003/00-JE-12006	: PROXIMITY SWITCH / MARSHALLING PCS		Dwg	123A90-DDL-IN-LIS-40091	
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)		Module	LD/LD_B-100_Ext	
TASK	code	C10000105	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline Instrumental	Form	CJX10	Multi/Single-Core Instrument Control Cable

CABLE DATA

Type	Cu-XLPE-IS-OS-LSZH-SWB-LSZH	Cores/Size mm²	2X2X0,75 mm2	Color	GREY
From	50-XV-003	To	00-JE-12006		

1	Check cable is as specified in project cable schedule.	OK
2	Check relevant documents are at the latest revision.	OK
3	Check cable is routed in accordance with cable layout drawings.	OK
4	Check cable for any physical damage.	OK
5	Check cable is adequately supported and correctly fixed to rack according to Project specification.	Note
6	Check bending radius is within the specified limits.	OK
7	Check cable is correctly loomed and segregated in accordance with specification.	OK
8	Check cable and core marking are in accordance with specification.	OK
9	Check cable labelling is in accordance with specification.	OK
10	Check that glands, shrouds and earthing are in accordance with specification.	OK
11	Check terminations are in accordance with termination diagram	PL
12	Check gland plate for single core cables is non-ferrous.	NA
13	If required produce Red Line Mark Up for "AS BUILT"	

INSULATION	CORE to EARTH	>999	MΩ
	CORE to CORE	>999	MΩ
	CORE to SCREEN	>999	MΩ
	CORE to ARMr	>999	MΩ
	SCREEN to EARTH	>999	MΩ
	SCREEN to ARMr	>999	MΩ
CONTINUITY	CORES	1,2	Ω
	SCREEN	1,2	Ω
	EARTH	NA	Ω
	ARMr	1,2	Ω
	TEST VOLTS	500	V

TEST ALL CORES AND RECORD LOWEST VALUE

Notes: The lowest value is recorded and must be within project specifications

TESTING INSTRUMENTS USED

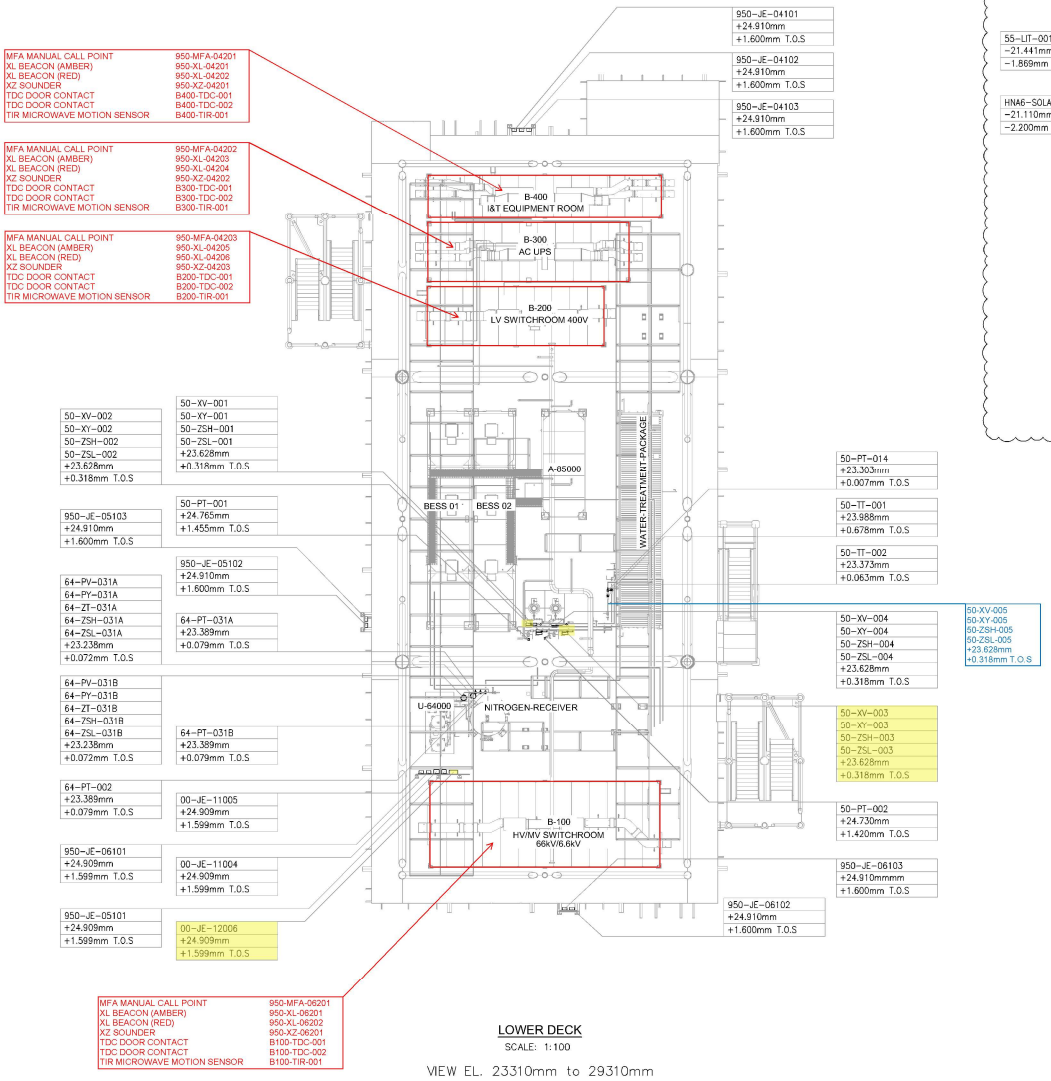
TYPE / SERIAL N°: VOLCRAFT 1000V - ET-200 S/N:H240103023 Calibration date: N°LAT 042 00768/24 12/10/2024

Comments Nota 5: refer to PL C30000680

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Alessio Polo	
Date	2025-02-06	2025-02-08	
Signature	Digitaly signed by Michele Tartaglia 2025-02-06T16:40:00.991Z	Digitaly signed by Alessio Polo 2025-02-08T11:53:55.686Z	

DRAWING NO.: 123A90-DDL-IN-DL-40080

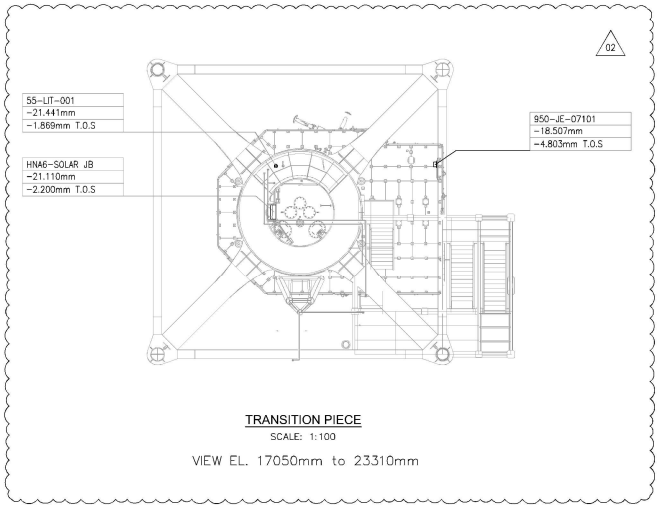
REV. 02



LOWER DECK

SCALE: 1:100

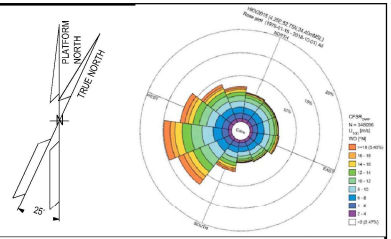
VIEW EL. 23310mm to 29310mm



TRANSITION PIECE

SCALE: 1:100

VIEW EL. 17050mm to 23310mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40081	INSTRUMENT LAYOUT - UPPER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-UPPER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION

FDL DWG: 123A90-FDL-IN-DL-40080

REV.:	DATE:	SIGNATURE:
2_C	06/11/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–LOWER DECK
TOS EL. 23.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO.: 123A90–DDL–IN–DL–40080	SHEET 001	REV. 02

File Name : 123A90-DDL-IN-DL-40080 REV02.dwg

DRAWING NO. 123A90-DDL-IN-DG-40015

REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 00-JE-12006	No.	MARSHALLING CABINET B400-PCS-002

<01>

ON-OFF VALVE LIMIT SWITCHES BOX (SOLDO)
- 50-ZSL-001 (1, 2) WH BK PR1
- 50-ZSH-001 (5, 6) WH BK PR2
- NOTE-2
- C-50-XV-001/00-JE-12006
  2x2x0.75mm2,Sh+ShT+ARM,F.Ret,GREY,NIS

ON-OFF VALVE LIMIT SWITCHES BOX (SOLDO)
- 50-ZSL-002 (1, 2) WH BK PR1
- 50-ZSH-002 (5, 6) WH BK PR2
- NOTE-2
- C-50-XV-002/00-JE-12006
  2x2x0.75mm2,Sh+ShT+ARM,F.Ret,GREY,NIS

ON-OFF VALVE LIMIT SWITCHES BOX (SOLDO)
- 50-ZSL-003 (1, 2) WH BK PR1
- 50-ZSH-003 (5, 6) WH BK PR2
- NOTE-2
- C-50-XV-003/00-JE-12006
  2x2x0.75mm2,Sh+ShT+ARM,F.Ret,GREY,NIS

ON-OFF VALVE LIMIT SWITCHES BOX (SOLDO)
- 50-ZSL-004 (1, 2) WH BK PR1
- 50-ZSH-004 (5, 6) WH BK PR2
- NOTE-2
- C-50-XV-004/00-JE-12006
  2x2x0.75mm2,Sh+ShT+ARM,F.Ret,GREY,NIS

ON-OFF VALVE LIMIT SWITCHES BOX (SOLDO)
- 50-ZSL-005 (1, 2) WH BK PR1
- 50-ZSH-005 (5, 6) WH BK PR2
- NOTE-2
- C-50-XV-005/00-JE-12006
  2x2x0.75mm2,Sh+ShT+ARM,F.Ret,GREY,NIS

TB-1

WH BK	1	WH BK	PR1
	2		
	SH		
WH BK	3	WH BK	PR2
	4		
	SH		
WH BK	5	WH BK	PR3
	6		
	SH		
WH BK	7	WH BK	PR4
	8		
	SH		
WH BK	9	WH BK	PR5
	10		
	SH		
WH BK	11	WH BK	PR6
	12		
	SH		
WH BK	13	WH BK	PR7
	14		
	SH		
WH BK	15	WH BK	PR8
	16		
	SH		
WH BK	17	WH BK	PR9
	18		
	SH		
WH BK	19	WH BK	PR10
	20		
	SH		
SPARE	21	WH BK	PR11
	22		
	SH		
SPARE	23	WH BK	PR12
	24		
	SH		
	OS		

00-JE-12006_1/B400-PCS-002
12x2x0.75mm2,Sh+ShT+ARM,F.Ret,GREY,NIS

TB-00-JE-12006

PR1 WH BK	1	50-ZSL-001
Shield Bar	2	
PR2 WH BK	3	50-ZSH-001
Shield Bar	4	
PR3 WH BK	5	50-ZSL-002
Shield Bar	6	
PR4 WH BK	7	50-ZSH-002
Shield Bar	8	
PR5 WH BK	9	50-ZSL-003
Shield Bar	10	
PR6 WH BK	11	50-ZSH-003
Shield Bar	12	
PR7 WH BK	13	50-ZSL-004
Shield Bar	14	
PR8 WH BK	15	50-ZSH-004
Shield Bar	16	
PR9 WH BK	17	50-ZSL-005
Shield Bar	18	
PR10 WH BK	19	50-ZSH-005
Shield Bar	20	
PR11 WH BK	21	SPARE
Shield Bar	22	
PR12 WH BK	23	SPARE
	24	

Shield Bar
I.E.

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_I	29/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
00–JE–12006–SH.1 OF 2

CONTRACT NO./TITLE			SCALE N/A
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

A3	DRAWING NO.	SHEET	REV.
	123A90–DDL–IN–DG–40015	022	01

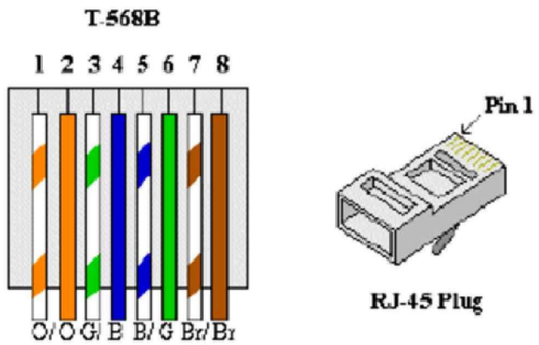
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DRAWING NO. 123A90-DDL-IN-DG-40015

REV. 01

NOTES:

1. ALL SPARE ENTRIES SHALL BE PROVIDED WITH CERTIFIED EX PROOF PLUGS.
2. CABLE SCREENS / DRAIN WIRE SHALL BE SECURELY INSULATED AND TIED BACK IN THE INSTRUMENT SIDE AND SHAL BE TERMINATED IN THE MARSHALLING SIDE OF THE PANEL.
3. SPARE PAIRS / TRIADS SHALL BE CONNECTED TO TERMINALS IN JUNCTION BOX AND PANEL / MARSHALLING CABINETS.
4. ALL CABLE SCREENS TO BE TERMINATED AT THE INSTRUMENT EARTH BAR IN THE RESPECTIVE EARTH BARS (IS OR NIS) AS APPLICABLE IN THE MARSHALLING CABINET.
5. SWITCH TAG NAME AND PORT WILL BE DEFINED DURING THE CONSTRUCTION PHASE
6. FOR OPTICAL FIBERS, USE THE FOLLOWING COLOR CODING:
   - 01- RED
   - 02- GREEN
   - 03- BLUE
   - 04- YELLOW
   - 05- GREY
   - 06- PURPLE
   - 07- BROWN
   - 08- ORANGE
   - 09- WHITE
   - 10- PINK
   - 11- BLACK
   - 12- TURQUOISE
7. CAT.6A CABLE SHALL BE TERMINATED MEETING REQUIREMENTS OF STANDARD EIA/TIA 568B:



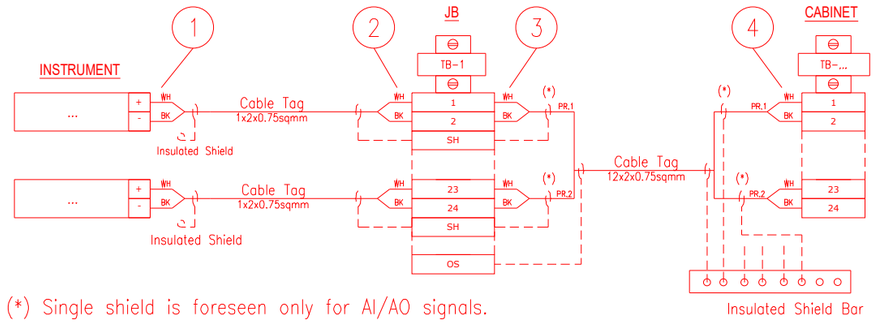
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LEGENDS & SYMBOLS:

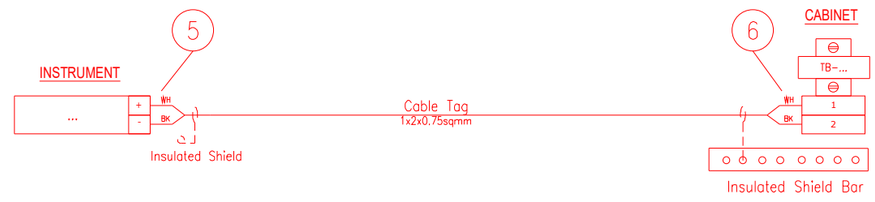
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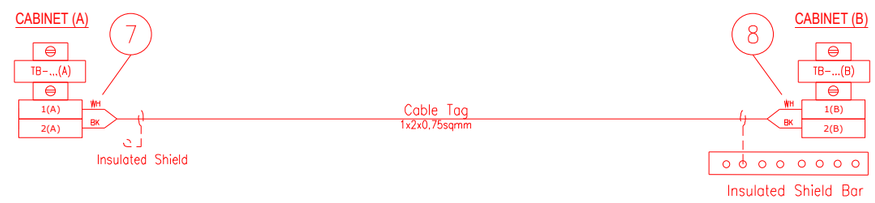
INSTRUMENT CONNECTION THROUGH MARSHALLING JB TO CABINET



INSTRUMENT CONNECTION STRAIGHT TO CABINET



CABINET CONNECTION TO CABINET



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2 - INSTR. TERMINAL NO. OR POLARITY / INSTR. TAG / JB TERMINAL NO.
3 - JB TERMINAL NO. / JB TERMINAL STRIP / CABINET TERMINAL STRIP / PAIR OR CORE NO.
4 - PAIR OR CORE NO. / JB TAG / JB TERMINAL NO. / CABINET TERMINAL STRIP / CABINET TERMINAL NO.
5 - INSTR. TERMINAL NO. OR POLARITY / CABINET TAG / CABINET TERMINAL STRIP / CABINET TERMINAL NO.
6 - INSTR. TERMINAL NO. OR POLARITY / INSTR. TAG / CABINET TERMINAL STRIP/ CABINET TERMINAL NO.
7 - TERMINAL NO. (A) / TERMINAL STRIP (A) / CABINET TAG (B) / CABINET TERMINAL NO. (B) / PAIR OR CORE NO.
8 - PAIR OR CORE NO. / CABINET TERMINAL NO. (A) / CABINET TAG (A) / TERMINAL STRIP (B) / TERMINAL NO. (B)

NOTES: A - HEAT SHRINKABLE BLACK FOR SHIELD OF NIS INSTRUMENT CABLE.
HEAT SHRINKABLE BLUE FOR SHIELD OF IS INSTRUMENT CABLE.
B - ABOVE DESCRIBED PHILOSOPHY IS INTENDED FOR CONNECTION AS REPRESENTED:
IN CASE OF CONNECTION FROM THE OPPOSITE SIDE, ORDER OF FERULE TAG SHALL BE MIRRORED.
C - SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO SHIELDS TERMINATED ON TERMINAL STRIP.

REFERENCE DRAWINGS:

PIPING AND INSTRUMENT DIAGRAM 123A90-DDL-PR-PID-80009
INSTRUMENT INDEX 123A90-DDL-IN-LIS-40088
F&G DETECTORS LAYOUT 123A90-DDL-SAF-DL-30027

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_I	29/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
GENERAL NOTES/LEGENDS

CONTRACT NO./TITLE			SCALE N/A
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

A3	DRAWING NO.	SHEET	REV.
	123A90-DDL-IN-DG-40015	003	01

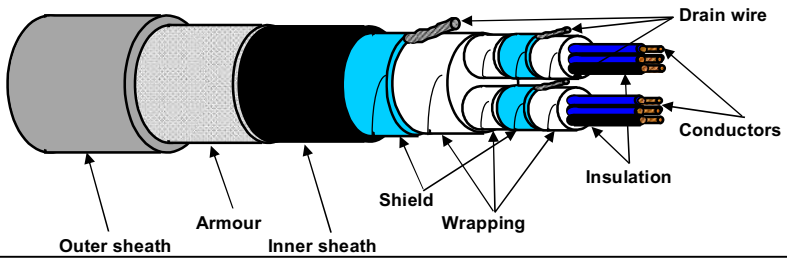
File Name : 123A90-DDL-IN-DG-40015_Rev.01

Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	From Tag Section	To Tag	To Main Function	To Area	To Tag Section	Material ID	Material Desc.	Gland Standard	From Gland	From Entry	From Fitting	To Gland	To Entry	To Fitting	Routing	Routing Manual
C-50-XV-003/00-JE-12006	Cable	IN	VFC	123A90-DDL-IN-LIS-40091						50-XV-003	On-Off Actuated Ball Valve	Lower Deck		00-JE-12006	DI JB to PCS	Lower Deck (B-100) Ext.	Junction Box	SMICV02-2X2X0,75	Cable Cu Cl2/XLPE/IS/OS/LSZH/SWB/LSZH 150/250V (300V) 2x2x0,75mm² - Grey	M20	T2_M20_Double			T2_M20_ Double				L-SEC-10 / L-SEC-1H / L-SEC-1I / L-SEC-1J / L-SEC-1L / L-SEC-1M / L-SEC-16

FLEI s.r.l.

Cu Cl.2/XLPE/IS/OS/LSZH/SWB/LSZH 150/250 V (300 V)

2X2X0,75 - INSTRUMENT CABLE - Flame Retardant - Not I.S.



TECHNICAL FEATURES

Conductors :	**7-STRANDED** plain/bare soft annealed copper wires	**IEC 60228 Class 2**
Insulation :	XLPE, Nominal Thickness 0,5 mm	
Cores colour code :	**White - Black (each core NUMBERED for PAIR identification)**	
Pair Assembling :	13/1mt	
Pair Wrapping:	by polyester-PET Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Drain wire :	7-Stranded **TINNED** annealed copper drain wire, **size 0,5 sqmm**, in continuous contact with the shield	
Pair Shield :	by Aluminium-**Al** Minimum Thickness 0,008 mm / polyester-**PET** Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Shield Insulation :	by polyester-PET Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Total Assembling :	7/1mt	
Overall Wrapping:	by polyester-PET Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Drain wire :	7-Stranded **TINNED** annealed copper drain wire, **size 0,5 sqmm**, in continuous contact with the shield	
Overall Shield :	by Aluminium-**Al** Minimum Thickness 0,008 mm / polyester-**PET** Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Inner sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, Average Thickness 1,2 mm	
Inner sheath color code:	**Black**	
Armour :	Galvanized Steel Wire Braid Armour (coverage ≥ 90%)	
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, moisture/abrasion/UV Resistant, Average Thickness 1,3 mm	
Outer sheath color code:	**Grey**	
Outer printing (INKJET) :	**FLEI - 2X2X0,75 SQMM - XLPE/IS/OS/LSZH/SWB/LSZH - 150/250 V - IEC 60332.1.2 - IEC 60332.3.22 -**	
(every 1000 mm)	**Year of Manufacture - CE + Meter Marking**	
Under armour diameter :	(11,4 ± 10%) mm	
Over armour diameter :	(12,6 ± 10%) mm	
Outer diameter :	(15,2 ± 10%) mm	
Bending radius :	cable outer diameter x 10 (in fixed installation)	
Voltage Test :	1,5 kV a.c. for 5' (Between Cores) / 1,5 kV a.c. for 5' (Between Cores - Shield)	
Conductors DC Resistance :	≤ 26 Ω/km (@ 20°C)	
Insulation Resistance :	≥ 1000 MΩ x Km (@ 20°C)	
Mutual Capacitance :	≤ 150 nF/km	
L/R ratio :	≤ 25 µH/Ω	
Inductance :	≤ 0,9 mH/km	
Applicable Standards		
Design Guidelines :	**IEC 60092.376**	
ON COMPLETE CABLE		
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22	
Acid Gas generation :	IEC 60754.1/2	
Smoke density/Light Transmittance :	IEC 61034.2 (LT ≥ 60%)	
Hazardous Areas :	IEC 60079.14 par.9.3.2a	
Temperature Range :		
ON INSULATION	(max +90°C) (max continuous operation temperature of conductors)	
	(max +250°C) (max conductors temperature during short-circuit for 5 seconds)	
ON COMPLETE CABLE		
During Operation :	(-20°C up to +90°C) (in fixed installation)	
During installation :	(- 5°C up to +50°C)	
Note :	**To meet the requirements of installation and use in Zone 1 & Zone 2 (IEC 60079-14) and "Gas & Vapour Tight" the cable must be provided with Penetrating Inner sheath together with correct ATEX approved equipment or accessories.**	

Office	Date	Sign	Rev.	Date	Sign
Drawn by :	04/04/2024	Messa			
Checked :	04/04/2024	Spaccasassi			
Approved :	04/04/2024	Cucinotta			

The data provided, lending assent for the treatment, will be used to the sense of the article 13 of of the Regulation (UE) 2016/679, also through outsiders, in order to allow the realization of the fulfilments informatives, administrative, commercial and accounting related to the contractual relationship. Integral copy of the informative could be requested at our offices.

All proprietary rights reserved according to law. This document shall be not reproduced without written permission. FLEI reserves the right to change characteristics and technical data of product shown at any time.

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	C-50-XV-004/00-JE-12006	: PROXIMITY SWITCH / MARSHALLING PCS		Dwg	123A90-DDL-IN-LIS-40091	
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)		Module	LD/LD_B-100_Ext	
TASK	code	C10000106	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline Instrumental	Form	CJX10	Multi/Single-Core Instrument Control Cable

CABLE DATA

Type	Cu-XLPE-IS-OS-LSZH-SWB-LSZH	Cores/Size mm²	2X2X0,75 mm2	Color	GREY
From	50-XV-004	To	00-JE-12006		

1	Check cable is as specified in project cable schedule.	OK
2	Check relevant documents are at the latest revision.	OK
3	Check cable is routed in accordance with cable layout drawings.	OK
4	Check cable for any physical damage.	OK
5	Check cable is adequately supported and correctly fixed to rack according to Project specification.	PL
6	Check bending radius is within the specified limits.	OK
7	Check cable is correctly loomed and segregated in accordance with specification.	OK
8	Check cable and core marking are in accordance with specification.	OK
9	Check cable labelling is in accordance with specification.	OK
10	Check that glands, shrouds and earthing are in accordance with specification.	OK
11	Check terminations are in accordance with termination diagram	PL
12	Check gland plate for single core cables is non-ferrous.	NA
13	If required produce Red Line Mark Up for "AS BUILT"	

INSULATION	CORE to EARTH	>999	MΩ
	CORE to CORE	>999	MΩ
	CORE to SCREEN	>999	MΩ
	CORE to ARMr	>999	MΩ
	SCREEN to EARTH	>999	MΩ
	SCREEN to ARMr	>999	MΩ
CONTINUITY	CORES	1,2	Ω
	SCREEN	1,2	Ω
	EARTH	NA	Ω
	ARMr	1,2	Ω
	TEST VOLTS	500	V

TEST ALL CORES AND RECORD LOWEST VALUE

Notes: The lowest value is recorded and must be within project specifications

TESTING INSTRUMENTS USED

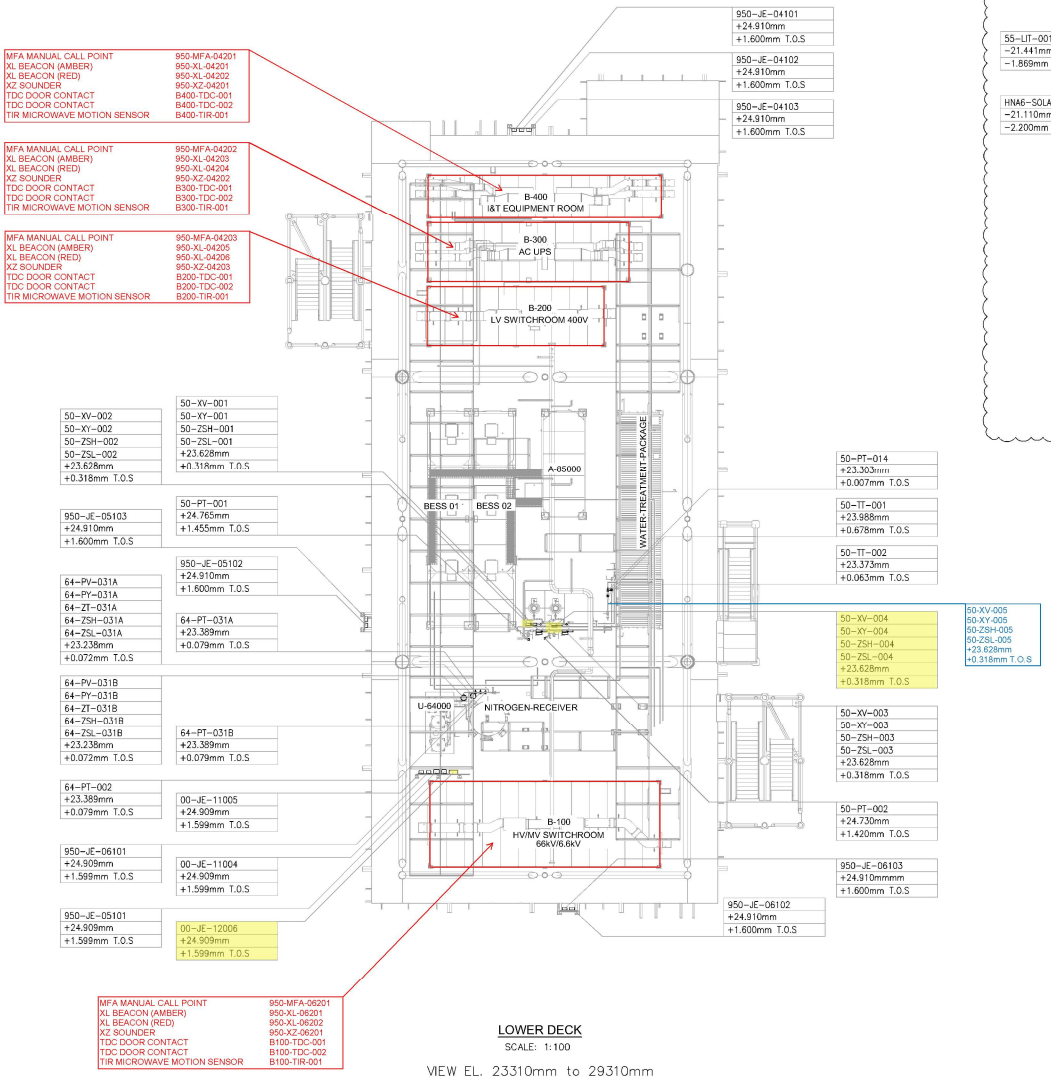
TYPE / SERIAL N°: VOLCRAFT 1000V - ET-200 S/N:H240103023 Calibration date: N°LAT 042 00768/24 12/10/2024

Comments Nota 5: refer to PL C30000680

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICSIMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Alessio Polo	
Date	2025-02-06	2025-02-10	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-06T16:40:41.889Z	PROVERLIS Digitaly signed by Alessio Polo 2025-02-10T10:59:25.089Z	

DRAWING NO.: 123A90-DDL-IN-DL-40080

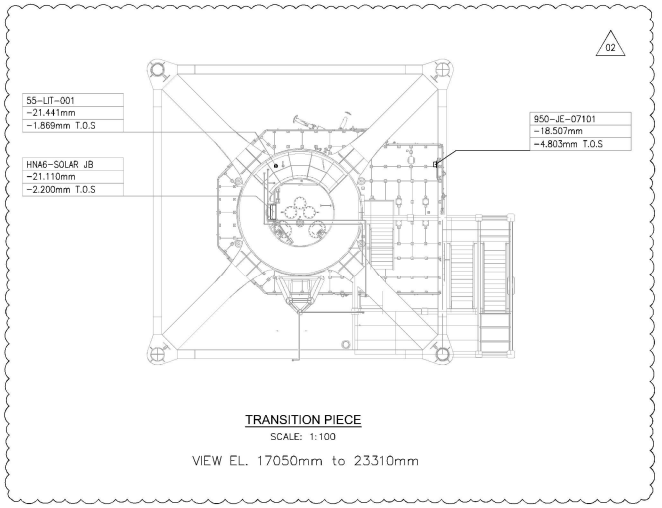
REV. 02



LOWER DECK

SCALE: 1:100

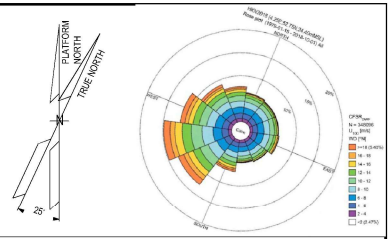
VIEW EL. 23310mm to 29310mm



TRANSITION PIECE

SCALE: 1:100

VIEW EL. 17050mm to 23310mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40081	INSTRUMENT LAYOUT - UPPER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-UPPER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION

FDL DWG: 123A90-FDL-IN-DL-40080

REV.:	DATE:	SIGNATURE:
2_C	06/11/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–LOWER DECK
TOS EL. 23.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90–DDL–IN–DL–40080		SHEET 001 / REV. 02

File Name : 123A90-DDL-IN-DL-40080 REV02.dwg

DRAWING NO. 123A90-DDL-IN-DG-40015

REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 00-JE-12006	No.	MARSHALLING CABINET B400-PCS-002

<01>

ON-OFF VALVE LIMIT SWITCHES BOX (SOLDO)
- 50-ZSL-001 (1, 2) WH BK → PR1
- 50-ZSH-001 (5, 6) WH BK → PR2
- NOTE-2
- C-50-XV-001/00-JE-12006
  2x2x0.75mm2,Sh+ShT+ARM,F.Ret,GREY,NIS

ON-OFF VALVE LIMIT SWITCHES BOX (SOLDO)
- 50-ZSL-002 (1, 2) WH BK → PR1
- 50-ZSH-002 (5, 6) WH BK → PR2
- NOTE-2
- C-50-XV-002/00-JE-12006
  2x2x0.75mm2,Sh+ShT+ARM,F.Ret,GREY,NIS

ON-OFF VALVE LIMIT SWITCHES BOX (SOLDO)
- 50-ZSL-003 (1, 2) WH BK → PR1
- 50-ZSH-003 (5, 6) WH BK → PR2
- NOTE-2
- C-50-XV-003/00-JE-12006
  2x2x0.75mm2,Sh+ShT+ARM,F.Ret,GREY,NIS

ON-OFF VALVE LIMIT SWITCHES BOX (SOLDO)
- 50-ZSL-004 (1, 2) WH BK → PR1
- 50-ZSH-004 (5, 6) WH BK → PR2
- NOTE-2
- C-50-XV-004/00-JE-12006
  2x2x0.75mm2,Sh+ShT+ARM,F.Ret,GREY,NIS

ON-OFF VALVE LIMIT SWITCHES BOX (SOLDO)
- 50-ZSL-005 (1, 2) WH BK → PR1
- 50-ZSH-005 (5, 6) WH BK → PR2
- NOTE-2
- C-50-XV-005/00-JE-12006
  2x2x0.75mm2,Sh+ShT+ARM,F.Ret,GREY,NIS

TB-1

WH BK	1	WH BK	PR1
	2		
	SH		
WH BK	3	WH BK	PR2
	4		
	SH		
WH BK	5	WH BK	PR3
	6		
	SH		
WH BK	7	WH BK	PR4
	8		
	SH		
WH BK	9	WH BK	PR5
	10		
	SH		
WH BK	11	WH BK	PR6
	12		
	SH		
WH BK	13	WH BK	PR7
	14		
	SH		
WH BK	15	WH BK	PR8
	16		
	SH		
WH BK	17	WH BK	PR9
	18		
	SH		
WH BK	19	WH BK	PR10
	20		
	SH		
SPARE	21	WH BK	PR11
	22		
	SH		
SPARE	23	WH BK	PR12
	24		
	SH		
	OS		

00-JE-12006_1/B400-PCS-002
12x2x0.75mm2,Sh+ShT+ARM,F.Ret,GREY,NIS

TB-00-JE-12006

PR1 WH BK	1	50-ZSL-001
Shield Bar	2	
PR2 WH BK	3	50-ZSH-001
Shield Bar	4	
PR3 WH BK	5	50-ZSL-002
Shield Bar	6	
PR4 WH BK	7	50-ZSH-002
Shield Bar	8	
PR5 WH BK	9	50-ZSL-003
Shield Bar	10	
PR6 WH BK	11	50-ZSH-003
Shield Bar	12	
PR7 WH BK	13	50-ZSL-004
Shield Bar	14	
PR8 WH BK	15	50-ZSH-004
Shield Bar	16	
PR9 WH BK	17	50-ZSL-005
Shield Bar	18	
PR10 WH BK	19	50-ZSH-005
Shield Bar	20	
PR11 WH BK	21	SPARE
Shield Bar	22	
PR12 WH BK	23	SPARE
	24	

Shield Bar
I.E.

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_I	29/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
00–JE–12006–SH.1 OF 2

CONTRACT NO./TITLE			SCALE N/A
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

A3	DRAWING NO.	SHEET	REV.
	123A90–DDL–IN–DG–40015	022	01

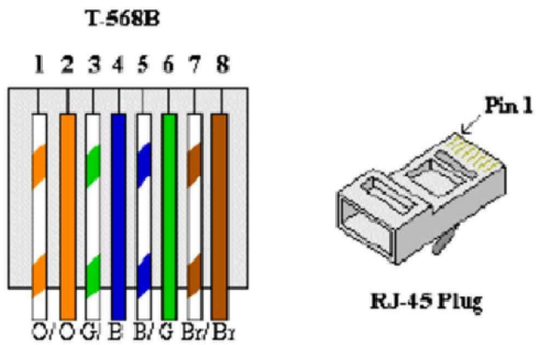
File Name : 123A90-DDL-IN-DG-40015_Rev.01

DRAWING NO. 123A90-DDL-IN-DG-40015

REV. 01

NOTES:

1. ALL SPARE ENTRIES SHALL BE PROVIDED WITH CERTIFIED EX PROOF PLUGS.
2. CABLE SCREENS / DRAIN WIRE SHALL BE SECURELY INSULATED AND TIED BACK IN THE INSTRUMENT SIDE AND SHAL BE TERMINATED IN THE MARSHALLING SIDE OF THE PANEL.
3. SPARE PAIRS / TRIADS SHALL BE CONNECTED TO TERMINALS IN JUNCTION BOX AND PANEL / MARSHALLING CABINETS.
4. ALL CABLE SCREENS TO BE TERMINATED AT THE INSTRUMENT EARTH BAR IN THE RESPECTIVE EARTH BARS (IS OR NIS) AS APPLICABLE IN THE MARSHALLING CABINET.
5. SWITCH TAG NAME AND PORT WILL BE DEFINED DURING THE CONSTRUCTION PHASE
6. FOR OPTICAL FIBERS, USE THE FOLLOWING COLOR CODING:
   - 01- RED
   - 02- GREEN
   - 03- BLUE
   - 04- YELLOW
   - 05- GREY
   - 06- PURPLE
   - 07- BROWN
   - 08- ORANGE
   - 09- WHITE
   - 10- PINK
   - 11- BLACK
   - 12- TURQUOISE
7. CAT.6A CABLE SHALL BE TERMINATED MEETING REQUIREMENTS OF STANDARD EIA/TIA 568B:



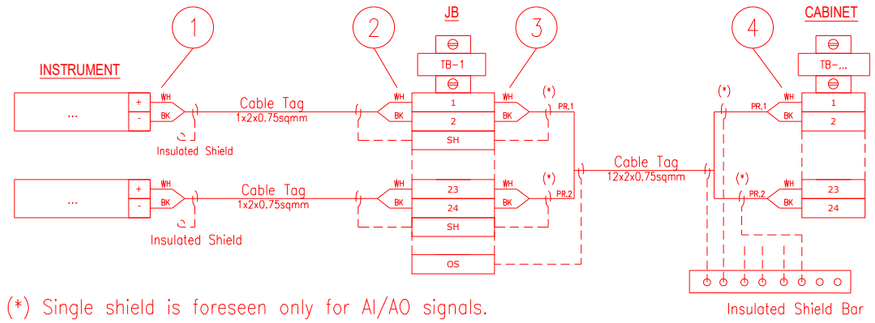
8. FOR INTRISICALLY SAFE CIRCUIT USE LIGHT BLUE CABLE OR ALTERNATIVELY ORANGE CABLE WITH HEAT SHRINKABLE SLEEVE BLUE AT BOTH END (SEE DOC. 123A90-FDL-IN-DD-40017).

LEGENDS & SYMBOLS:

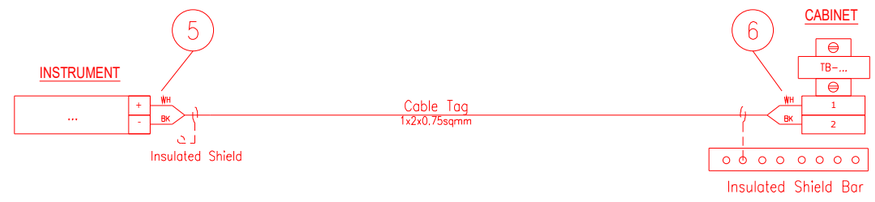
I.E.	- GREEN ⟶ INSTRUMENT SIGNAL EARTH
P.E.	- GREEN / YELLOW ⟶ P.E. EARTH / BONDING
	- TERMINAL BLOCK (TB)
WH	- WHITE
BK	- BLACK
RD	- RED
S	- SHIELD TERMINAL
OS	- OVERALL SHIELD TERMINAL
O/A Shld	- OVERALL SHIELD
I&O/A Shld	- INDIVIDUAL & OVERALL SHIELD
NIS	- NON INTRINSICALLY SAFE
IS	- INTRINSICALLY SAFE
P.E.	- PLANT EARTH
PCS	- PROCESS CONTROL SYSTEM
ESD	- EMERGENCY SHUTDOWN SYSTEM
SIS	- SAFETY INSTRUMENT SYSTEM
FGS	- FIRE & GAS SYSTEM
MC	- MARSHALLING CABINET
AI	- ANALOGUE INPUT
AO	- ANALOGUE OUTPUT
DI	- DIGITAL INPUT
DO	- DIGITAL OUTPUT
JE	- JUNCTION BOX FOR ELECTRICAL SIGNALS

PHILOSOPHY OF CROSS-FERRULING:

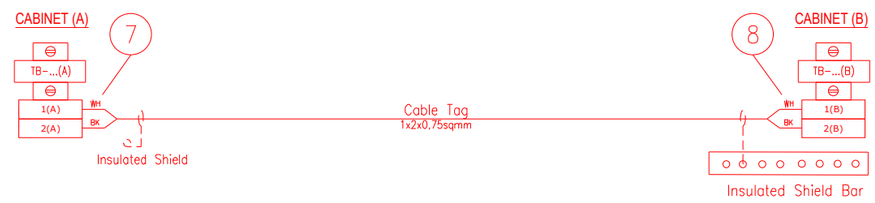
INSTRUMENT CONNECTION THROUGH MARSHALLING JB TO CABINET



INSTRUMENT CONNECTION STRAIGHT TO CABINET



CABINET CONNECTION TO CABINET



1 - INSTR. TERMINAL NO. OR POLARITY / JB TAG / JB TERMINAL NO.
2 - INSTR. TERMINAL NO. OR POLARITY / INSTR. TAG / JB TERMINAL NO.
3 - JB TERMINAL NO. / JB TERMINAL STRIP / CABINET TERMINAL STRIP / PAIR OR CORE NO.
4 - PAIR OR CORE NO. / JB TAG / JB TERMINAL NO. / CABINET TERMINAL STRIP / CABINET TERMINAL NO.
5 - INSTR. TERMINAL NO. OR POLARITY / CABINET TAG / CABINET TERMINAL STRIP / CABINET TERMINAL NO.
6 - INSTR. TERMINAL NO. OR POLARITY / INSTR. TAG / CABINET TERMINAL STRIP/ CABINET TERMINAL NO.
7 - TERMINAL NO. (A) / TERMINAL STRIP (A) / CABINET TAG (B) / CABINET TERMINAL NO. (B) / PAIR OR CORE NO.
8 - PAIR OR CORE NO. / CABINET TERMINAL NO. (A) / CABINET TAG (A) / TERMINAL STRIP (B) / TERMINAL NO. (B)

NOTES: A - HEAT SHRINKABLE BLACK FOR SHIELD OF NIS INSTRUMENT CABLE.
HEAT SHRINKABLE BLUE FOR SHIELD OF IS INSTRUMENT CABLE.
B - ABOVE DESCRIBED PHILOSOPHY IS INTENDED FOR CONNECTION AS REPRESENTED:
IN CASE OF CONNECTION FROM THE OPPOSITE SIDE, ORDER OF FERULE TAG SHALL BE MIRRORED.
C - SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO SHIELDS TERMINATED ON TERMINAL STRIP.

REFERENCE DRAWINGS:

PIPING AND INSTRUMENT DIAGRAM 123A90-DDL-PR-PID-80009
INSTRUMENT INDEX 123A90-DDL-IN-LIS-40088
F&G DETECTORS LAYOUT 123A90-DDL-SAF-DL-30027

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_I	29/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
GENERAL NOTES/LEGENDS

CONTRACT NO./TITLE			SCALE N/A
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

A3	DRAWING NO.	SHEET	REV.
	123A90-DDL-IN-DG-40015	003	01

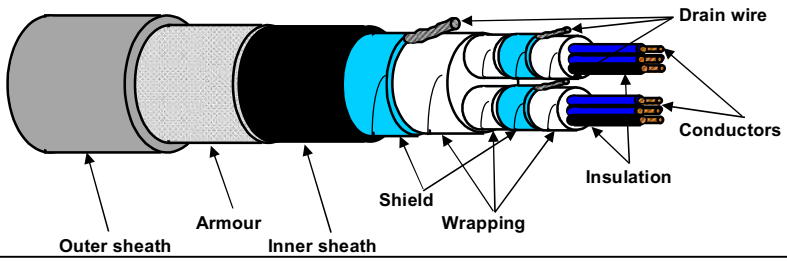
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Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	From Tag Section	To Tag	To Main Function	To Area	To Tag Section	Material ID	Material Desc.	Gland Standard	From Gland	From Entry	From Fitting	To Gland	To Entry	To Fitting	Routing	Routing Manual
C-50-XV-004/00-JE-12006	Cable	IN	VFC	123A90-DDL-IN-LIS-40091						50-XV-004	On-Off Actuated Ball Valve	Lower Deck		00-JE-12006	DI JB to PCS	Lower Deck (B-100) Ext.	Junction Box	SMICV02-2X2X0,75	Cable Cu Cl2/XLPE/IS/OS/LSZH/SWB/LSZH 150/250V (300V) 2x2x0,75mm² - Grey	M20	T2_M20_Double			T2_M20_ Double				L-SEC-10 / L-SEC-1H / L-SEC-1I / L-SEC-1J / L-SEC-1L / L-SEC-1M / L-SEC-16

FLEI s.r.l.

Cu Cl.2/XLPE/IS/OS/LSZH/SWB/LSZH 150/250 V (300 V)

2X2X0,75 - INSTRUMENT CABLE - Flame Retardant - Not I.S.



TECHNICAL FEATURES

Conductors :	**7-STRANDED** plain/bare soft annealed copper wires	**IEC 60228 Class 2**
Insulation :	XLPE, Nominal Thickness 0,5 mm	
Cores colour code :	**White - Black (each core NUMBERED for PAIR identification)**	
Pair Assembling :	13/1mt	
Pair Wrapping:	by polyester-PET Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Drain wire :	7-Stranded **TINNED** annealed copper drain wire, **size 0,5 sqmm**, in continuous contact with the shield	
Pair Shield :	by Aluminium-**Al** Minimum Thickness 0,008 mm / polyester-**PET** Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Shield Insulation :	by polyester-PET Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Total Assembling :	7/1mt	
Overall Wrapping:	by polyester-PET Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Drain wire :	7-Stranded **TINNED** annealed copper drain wire, **size 0,5 sqmm**, in continuous contact with the shield	
Overall Shield :	by Aluminium-**Al** Minimum Thickness 0,008 mm / polyester-**PET** Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)	
Inner sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, Average Thickness 1,2 mm	
Inner sheath color code:	**Black**	
Armour :	Galvanized Steel Wire Braid Armour (coverage ≥ 90%)	
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, moisture/abrasion/UV Resistant, Average Thickness 1,3 mm	
Outer sheath color code:	**Grey**	
Outer printing (INKJET) :	**FLEI - 2X2X0,75 SQMM - XLPE/IS/OS/LSZH/SWB/LSZH - 150/250 V - IEC 60332.1.2 - IEC 60332.3.22 -**	
(every 1000 mm)	**Year of Manufacture - CE + Meter Marking**	
Under armour diameter :	(11,4 ± 10%) mm	
Over armour diameter :	(12,6 ± 10%) mm	
Outer diameter :	(15,2 ± 10%) mm	
Bending radius :	cable outer diameter x 10 (in fixed installation)	
Voltage Test :	1,5 kV a.c. for 5' (Between Cores) / 1,5 kV a.c. for 5' (Between Cores - Shield)	
Conductors DC Resistance :	≤ 26 Ω/km (@ 20°C)	
Insulation Resistance :	≥ 1000 MΩ x Km (@ 20°C)	
Mutual Capacitance :	≤ 150 nF/km	
L/R ratio :	≤ 25 µH/Ω	
Inductance :	≤ 0,9 mH/km	
Applicable Standards		
Design Guidelines :	**IEC 60092.376**	
ON COMPLETE CABLE		
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22	
Acid Gas generation :	IEC 60754.1/2	
Smoke density/Light Transmittance :	IEC 61034.2 (LT ≥ 60%)	
Hazardous Areas :	IEC 60079.14 par.9.3.2a	
Temperature Range :		
ON INSULATION	(max +90°C) (max continuous operation temperature of conductors)	
	(max +250°C) (max conductors temperature during short-circuit for 5 seconds)	
ON COMPLETE CABLE		
During Operation :	(-20°C up to +90°C) (in fixed installation)	
During installation :	(- 5°C up to +50°C)	
Note :	**To meet the requirements of installation and use in Zone 1 & Zone 2 (IEC 60079-14) and "Gas & Vapour Tight" the cable must be provided with Penetrating Inner sheath together with correct ATEX approved equipment or accessories.**	

Office	Date	Sign	Rev.	Date	Sign
Drawn by :	04/04/2024	Messa			
Checked :	04/04/2024	Spaccasassi			
Approved :	04/04/2024	Cucinotta			

The data provided, lending assent for the treatment, will be used to the sense of the article 13 of of the Regulation (UE) 2016/679, also through outsiders, in order to allow the realization of the fulfilments informatives, administrative, commercial and accounting related to the contractual relationship. Integral copy of the informative could be requested at our offices.

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ITEM	Tag	C-50-XY-001/00-JE-13003	: SOLENOID VALVE / MARSHALLING PCS	Dwg	123A90-DDL-IN-LIS-40091		
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)	Module	LD/UD		
TASK	code	C10000125	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline	Instrumental	Form	CJX10

Multi/Single-Core Instrument Control Cable

CABLE DATA

Type: Cu-XLPE-OS-LSZH-SWB-LSZH | Cores/Size mm²: 2X2,5 mm2 | Color: GREY

From: 50-XY-001 To: 00-JE-13003

1	Check cable is as specified in project cable schedule.	OK
2	Check relevant documents are at the latest revision.	OK
3	Check cable is routed in accordance with cable layout drawings.	OK
4	Check cable for any physical damage.	OK
5	Check cable is adequately supported and correctly fixed to rack according to Project specification.	PL
6	Check bending radius is within the specified limits.	OK
7	Check cable is correctly loomed and segregated in accordance with specification.	OK
8	Check cable and core marking are in accordance with specification.	OK
9	Check cable labelling is in accordance with specification.	OK
10	Check that glands, shrouds and earthing are in accordance with specification.	OK
11	Check terminations are in accordance with termination diagram	PL
12	Check gland plate for single core cables is non-ferrous.	NA
13	If required produce Red Line Mark Up for "AS BUILT"	

INSULATION	CORE to EARTH	>999	MΩ
	CORE to CORE	>999	MΩ
	CORE to SCREEN	>999	MΩ
	CORE to ARMr	>999	MΩ
	SCREEN to EARTH	>999	MΩ
	SCREEN to ARMr	>999	MΩ
CONTINUITY	CORES	0,3	Ω
	SCREEN	0,3	Ω
	EARTH	NA	Ω
	ARMr	0,3	Ω
	TEST VOLTS	500	V

TEST ALL CORES AND RECORD LOWEST VALUE

Notes: The lowest value is recorded and must be within project specifications

TESTING INSTRUMENTS USED

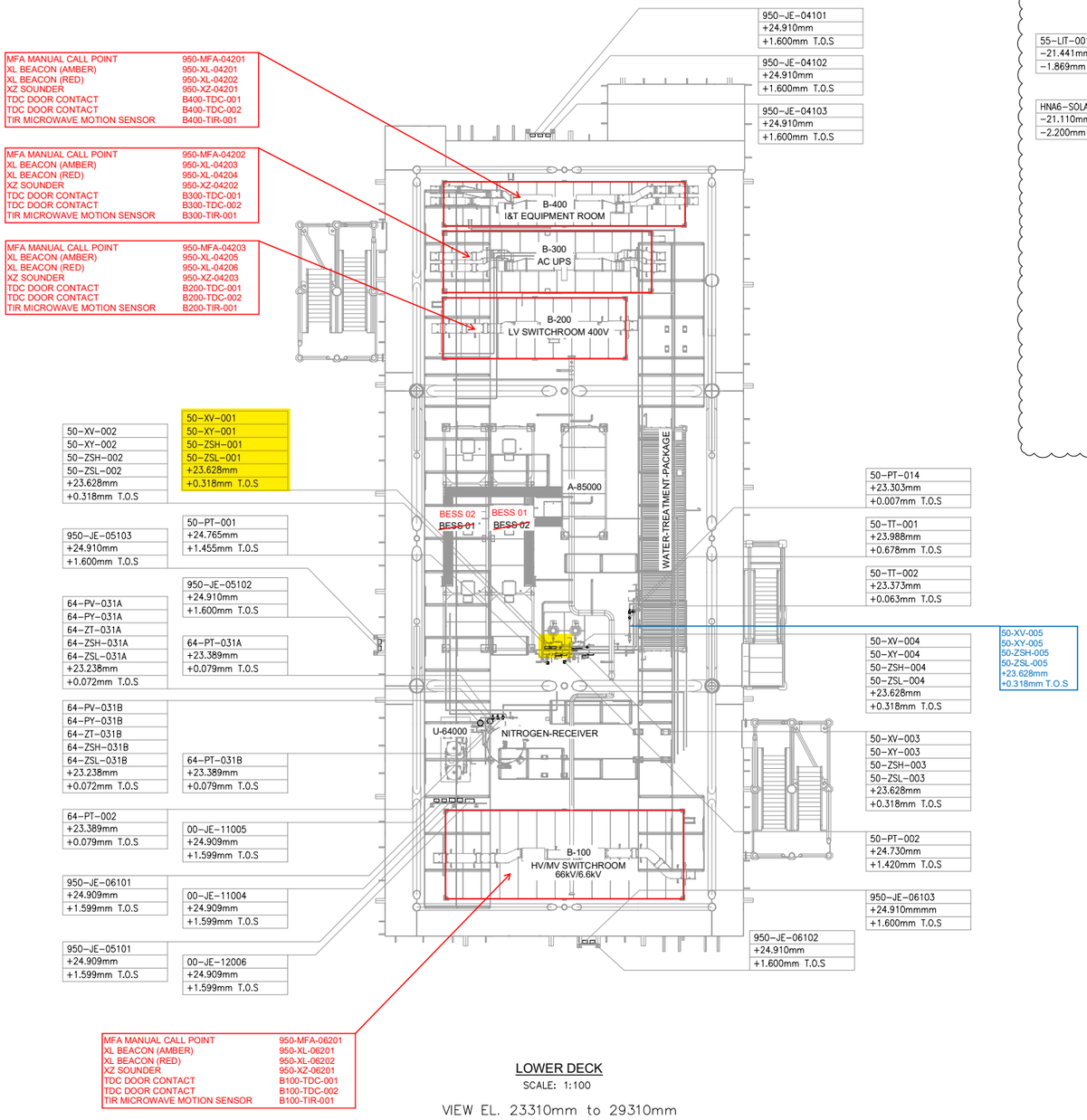
TYPE / SERIAL N°: VOLCRAFT 1000V - ET-200 S/N:H240103023 Calibration date: N°LAT 042 00768/24 12/10/2024

Comments: Nota 5: refer to PL C30000680/C30000682

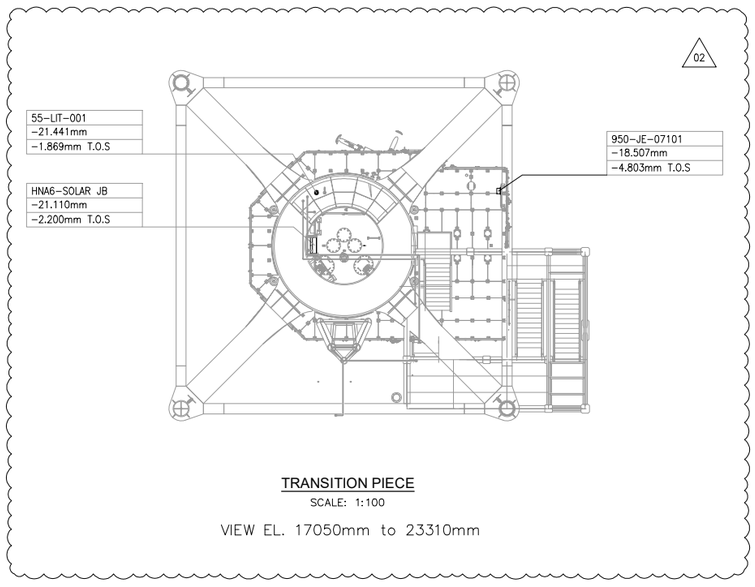
Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Alessio Polo	
Date	2025-02-05	2025-02-10	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-05T10:17:05.167Z	PROVERLIS Digitaly signed by Alessio Polo 2025-02-10T09:37:53.937Z	

DRAWING NO. 123A90-DDL-IN-DL-40080

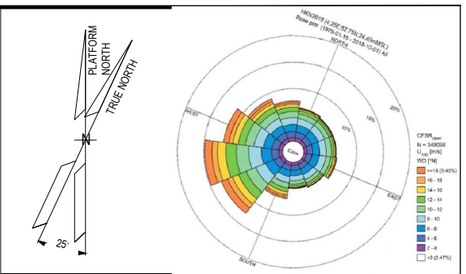
REV. 02



LOWER DECK
SCALE: 1:100
VIEW EL. 23310mm to 29310mm



TRANSITION PIECE
SCALE: 1:100
VIEW EL. 17050mm to 23310mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40081	INSTRUMENT LAYOUT - UPPER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-UPPER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DL-40080**

REV.:	DATE:	SIGNATURE:
2_C	06/11/24	G.Randi

ROSETTI MARINO SpA

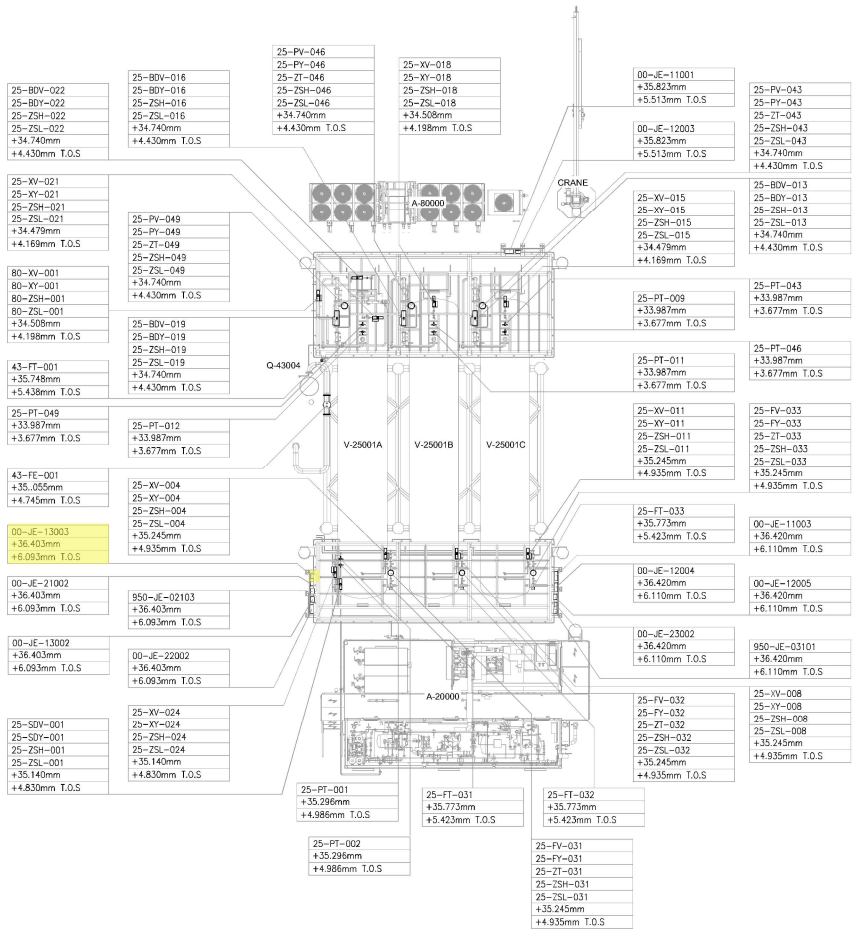
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BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–LOWER DECK
TOS EL. 23.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90–DDL–IN–DL–40080	SHEET 001	REV. 02

File Name : 123A90-DDL-IN-DL-40080 REV02.dwg

DRAWING NO. 123A90-DDL-IN-DL-40081

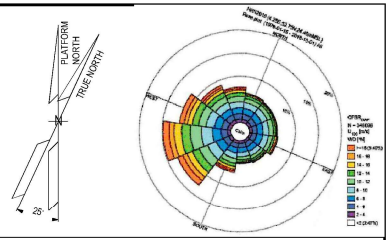
REV. 02



UPPER DECK

SCALE: 1:100

VIEW EL. 33740mm to 36500mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT -LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	05/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
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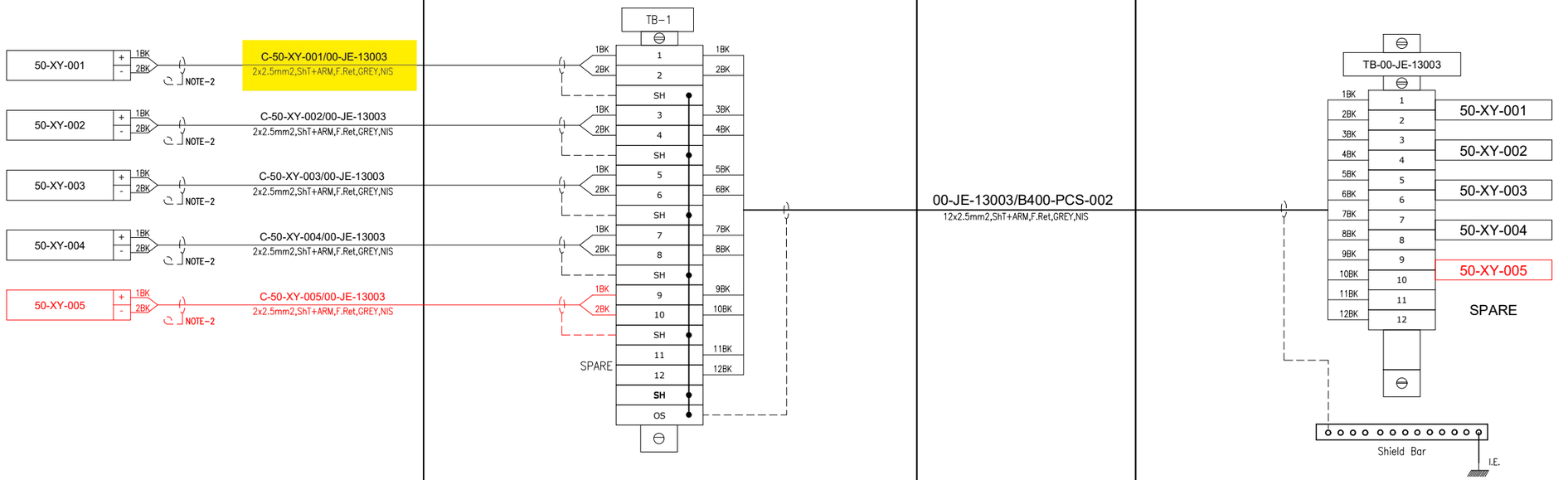
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DRAWING NO. 123A90-DDL-IN-DG-40015

REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)	
INSTRUMENTS	JUNCTION BOX 00-JE-13003	No.	MARSHALLING CABINET B400-PCS-002	

<01>



VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-IN-DG-40015

REV.:	DATE:	SIGNATURE:
1_I	29/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
00–JE–13003

CONTRACT NO./TITLE			SCALE N/A
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

A3	DRAWING NO.	SHEET	REV.
	123A90–DDL–IN–DG–40015	030	01

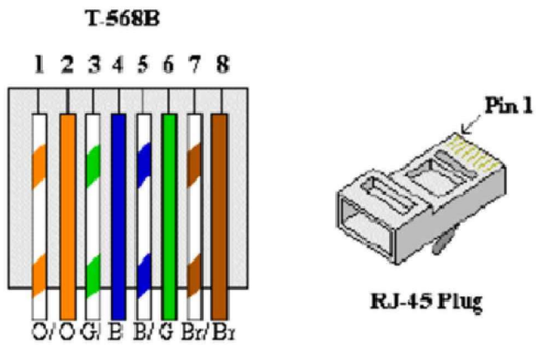
File Name : 123A90-DDL-IN-DG-40015_Rev.01

DRAWING NO. 123A90-DDL-IN-DG-40015

REV. 01

NOTES:

1. ALL SPARE ENTRIES SHALL BE PROVIDED WITH CERTIFIED EX PROOF PLUGS.
2. CABLE SCREENS / DRAIN WIRE SHALL BE SECURELY INSULATED AND TIED BACK IN THE INSTRUMENT SIDE AND SHAL BE TERMINATED IN THE MARSHALLING SIDE OF THE PANEL.
3. SPARE PAIRS / TRIADS SHALL BE CONNECTED TO TERMINALS IN JUNCTION BOX AND PANEL / MARSHALLING CABINETS.
4. ALL CABLE SCREENS TO BE TERMINATED AT THE INSTRUMENT EARTH BAR IN THE RESPECTIVE EARTH BARS (IS OR NIS) AS APPLICABLE IN THE MARSHALLING CABINET.
5. SWITCH TAG NAME AND PORT WILL BE DEFINED DURING THE CONSTRUCTION PHASE
6. FOR OPTICAL FIBERS, USE THE FOLLOWING COLOR CODING:
   - 01- RED
   - 02- GREEN
   - 03- BLUE
   - 04- YELLOW
   - 05- GREY
   - 06- PURPLE
   - 07- BROWN
   - 08- ORANGE
   - 09- WHITE
   - 10- PINK
   - 11- BLACK
   - 12- TURQUOISE
7. CAT.6A CABLE SHALL BE TERMINATED MEETING REQUIREMENTS OF STANDARD EIA/TIA 568B:



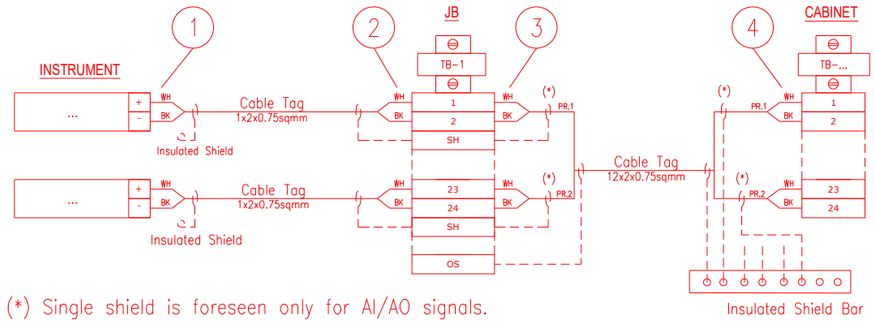
8. FOR INTRISICALLY SAFE CIRCUIT USE LIGHT BLUE CABLE OR ALTERNATIVELY ORANGE CABLE WITH HEAT SHRINKABLE SLEEVE BLUE AT BOTH END (SEE DOC. 123A90-FDL-IN-DD-40017).

LEGENDS & SYMBOLS:

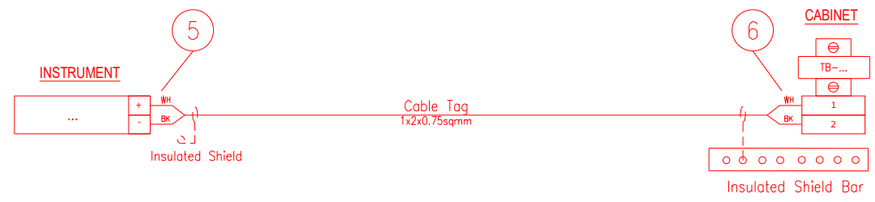
I.E.	- GREEN ⟶ INSTRUMENT SIGNAL EARTH
P.E.	- GREEN / YELLOW ⟶ P.E. EARTH / BONDING
	- TERMINAL BLOCK (TB)
WH	- WHITE
BK	- BLACK
RD	- RED
S	- SHIELD TERMINAL
OS	- OVERALL SHIELD TERMINAL
O/A Shld	- OVERALL SHIELD
I&O/A Shld	- INDIVIDUAL & OVERALL SHIELD
NIS	- NON INTRINSICALLY SAFE
IS	- INTRINSICALLY SAFE
P.E.	- PLANT EARTH
PCS	- PROCESS CONTROL SYSTEM
ESD	- EMERGENCY SHUTDOWN SYSTEM
SIS	- SAFETY INSTRUMENT SYSTEM
FGS	- FIRE & GAS SYSTEM
MC	- MARSHALLING CABINET
AI	- ANALOGUE INPUT
AO	- ANALOGUE OUTPUT
DI	- DIGITAL INPUT
DO	- DIGITAL OUTPUT
JE	- JUNCTION BOX FOR ELECTRICAL SIGNALS

PHILOSOPHY OF CROSS-FERRULING:

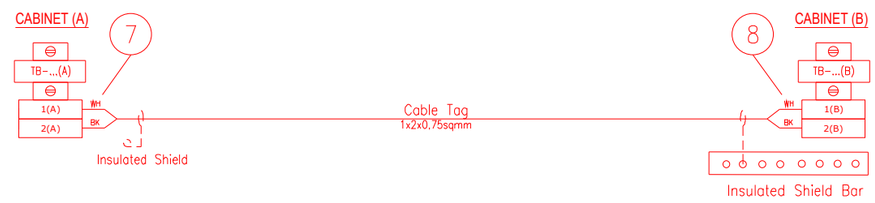
INSTRUMENT CONNECTION THROUGH MARSHALLING JB TO CABINET



INSTRUMENT CONNECTION STRAIGHT TO CABINET



CABINET CONNECTION TO CABINET



1 - INSTR. TERMINAL NO. OR POLARITY / JB TAG / JB TERMINAL NO.
2 - INSTR. TERMINAL NO. OR POLARITY / INSTR. TAG / JB TERMINAL NO.
3 - JB TERMINAL NO. / JB TERMINAL STRIP / CABINET TERMINAL STRIP / PAIR OR CORE NO.
4 - PAIR OR CORE NO. / JB TAG / JB TERMINAL NO. / CABINET TERMINAL STRIP / CABINET TERMINAL NO.
5 - INSTR. TERMINAL NO. OR POLARITY / CABINET TAG / CABINET TERMINAL STRIP / CABINET TERMINAL NO.
6 - INSTR. TERMINAL NO. OR POLARITY / INSTR. TAG / CABINET TERMINAL STRIP/ CABINET TERMINAL NO.
7 - TERMINAL NO. (A) / TERMINAL STRIP (A) / CABINET TAG (B) / CABINET TERMINAL NO. (B) / PAIR OR CORE NO.
8 - PAIR OR CORE NO. / CABINET TERMINAL NO. (A) / CABINET TAG (A) / TERMINAL STRIP (B) / TERMINAL NO. (B)

NOTES: A - HEAT SHRINKABLE BLACK FOR SHIELD OF NIS INSTRUMENT CABLE.
HEAT SHRINKABLE BLUE FOR SHIELD OF IS INSTRUMENT CABLE.
B - ABOVE DESCRIBED PHILOSOPHY IS INTENDED FOR CONNECTION AS REPRESENTED:
IN CASE OF CONNECTION FROM THE OPPOSITE SIDE, ORDER OF FERULE TAG SHALL BE MIRRORED.
C - SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO SHIELDS TERMINATED ON TERMINAL STRIP.

REFERENCE DRAWINGS:

PIPING AND INSTRUMENT DIAGRAM 123A90-DDL-PR-PID-80009
INSTRUMENT INDEX 123A90-DDL-IN-LIS-40088
F&G DETECTORS LAYOUT 123A90-DDL-SAF-DL-30027

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_I	29/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
GENERAL NOTES/LEGENDS

CONTRACT NO./TITLE			SCALE N/A
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

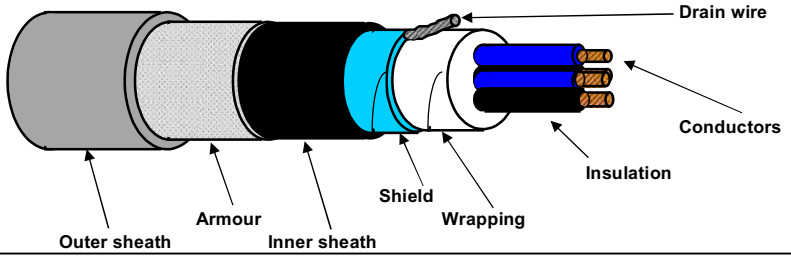
A3	DRAWING NO.	SHEET	REV.
	123A90-DDL-IN-DG-40015	003	01

File Name : 123A90-DDL-IN-DG-40015_Rev.01

Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	From Tag Section	To Tag	To Main Function	To Area	To Tag Section	Material ID	Material Desc.	Gland Standard	From Gland	From Entry	From Fitting	To Gland	To Entry	To Fitting	Routing	Routing Manual
C-50-XY-001/00-JE-13003	Cable	IN	VFC	123A90-DDL-IN-LIS-40091						50-XY-001	Solenoid Valve	Lower Deck		00-JE-13003	DO JB to PCS	Upper Deck	Junction Box	SMICV05-2X2,5	Cable Cu Cl2/XLPE/OS/LSZH/SWB/LSZH 150/250V (300V) 2x2,5mm² - Grey	M20	T2_M20_Double			T2_M20_ Double				U-SEC-1H / U-SEC-14A / U-SEC-15 / L-SEC-10 / L-SEC-11

Cu Cl.2/XLPE/OS/LSZH/SWB/LSZH 150/250 V (300 V)

2X2,5 - INSTRUMENT CABLE - Flame Retardant - Not I.S.



TECHNICAL FEATURES

Conductors :	**7-STRANDED** plain/bare soft annealed copper wires **IEC 60228 Class 2**
Insulation :	XLPE, Nominal Thickness 0,6 mm
Cores colour code :	**Black NUMBERED (from 1 to 2)**
Pair Assembling :	Not required
Pair Wrapping:	Not required
Drain wire :	Not required
Pair Shield :	Not required
Shield Insulation :	Not required
Total Assembling :	9/1mt
Overall Wrapping:	by polyester-PET Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)
Drain wire :	7-Stranded **TINNED** annealed copper drain wire, **size 1,0 sqmm**, in continuous contact with the shield
Overall Shield :	by Aluminium-**Al** Minimum Thickness 0,008 mm / polyester-**PET** Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)
Inner sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, Average Thickness 1,1 mm
Inner sheath color code:	**Black**
Armour :	Galvanized Steel Wire Braid Armour (coverage ≥ 90%)
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, moisture/abrasion/UV Resistant, Average Thickness 1,2 mm
Outer sheath color code:	**Grey**
Outer printing (INKJET) :	**FLEI - 2X2,5 SQMM - XLPE/OS/LSZH/SWB/LSZH - 150/250 V - IEC 60332.1.2 - IEC 60332.3.22 -**
(every 1000 mm)	**Year of Manufacture - CE + Meter Marking**
Under armour diameter :	(8,9 ± 10%) mm
Over armour diameter :	(9,7 ± 10%) mm
Outer diameter :	(12,1 ± 10%) mm
Bending radius :	cable outer diameter x 10 (in fixed installation)
Voltage Test :	1,5 kV a.c. for 5' (Between Cores) / 1,5 kV a.c. for 5' (Between Cores - Shield)
Conductors DC Resistance :	≤ 7,86 Ω/km (@ 20°C)
Insulation Resistance :	≥ 1000 MΩ x Km (@ 20°C)
Applicable Standards	
Design Guidelines :	**IEC 60092.376**
ON COMPLETE CABLE	
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22
Acid Gas generation :	IEC 60754.1/2
Smoke density/Light Transmittance :	IEC 61034.2 (LT ≥ 60%)
Hazardous Areas :	IEC 60079.14 par.9.3.2a
Temperature Range :	
ON INSULATION	(max +90°C) (max continuous operation temperature of conductors)
	(max +250°C) (max conductors temperature during short-circuit for 5 seconds)
ON COMPLETE CABLE	
During Operation :	(-20°C up to +90°C) (in fixed installation)
During installation :	(- 5°C up to +50°C)
Note :	**To meet the requirements of installation and use in Zone 1 & Zone 2 (IEC 60079-14) and "Gas & Vapour Tight" the cable must be provided with Penetrating Inner sheath together with correct ATEX approved equipment or accessories.**

Office	Date	Sign	Rev.	Date	Sign
Drawn by :	04/04/2024	Messa			
Checked :	04/04/2024	Spaccasassi			
Approved :	04/04/2024	Cucinotta			

The data provided, lending assent for the treatment, will be used to the sense of the article 13 of of the Regulation (UE) 2016/679, also through outsiders, in order to allow the realization of the fulfilments informatives, administrative, commercial and accounting related to the contractual relationship. Integral copy of the informative could be requested at our offices.

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ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	C-50-XY-002/00-JE-13003	: SOLENOID VALVE / MARSHALLING PCS	Dwg	123A90-DDL-IN-LIS-40091		
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)	Module	LD/UD		
TASK	code	C10000126	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline	Instrumental	Form	CJX10

Multi/Single-Core Instrument Control Cable

CABLE DATA

Type: Cu-XLPE-OS-LSZH-SWB-LSZH | Cores/Size mm²: 2X2,5 mm2 | Color: GREY

From: 50-XY-002 To: 00-JE-13003

1	Check cable is as specified in project cable schedule.	OK
2	Check relevant documents are at the latest revision.	OK
3	Check cable is routed in accordance with cable layout drawings.	OK
4	Check cable for any physical damage.	OK
5	Check cable is adequately supported and correctly fixed to rack according to Project specification.	PL
6	Check bending radius is within the specified limits.	OK
7	Check cable is correctly loomed and segregated in accordance with specification.	OK
8	Check cable and core marking are in accordance with specification.	OK
9	Check cable labelling is in accordance with specification.	OK
10	Check that glands, shrouds and earthing are in accordance with specification.	OK
11	Check terminations are in accordance with termination diagram	PL
12	Check gland plate for single core cables is non-ferrous.	NA
13	If required produce Red Line Mark Up for "AS BUILT"	

INSULATION	CORE to EARTH	>999	MΩ
	CORE to CORE	>999	MΩ
	CORE to SCREEN	>999	MΩ
	CORE to ARMr	>999	MΩ
	SCREEN to EARTH	>999	MΩ
	SCREEN to ARMr	>999	MΩ
CONTINUITY	CORES	0,3	Ω
	SCREEN	0,3	Ω
	EARTH	NA	Ω
	ARMr	0,3	Ω
	TEST VOLTS	500	V

TEST ALL CORES AND RECORD LOWEST VALUE

Notes: The lowest value is recorded and must be within project specifications

TESTING INSTRUMENTS USED

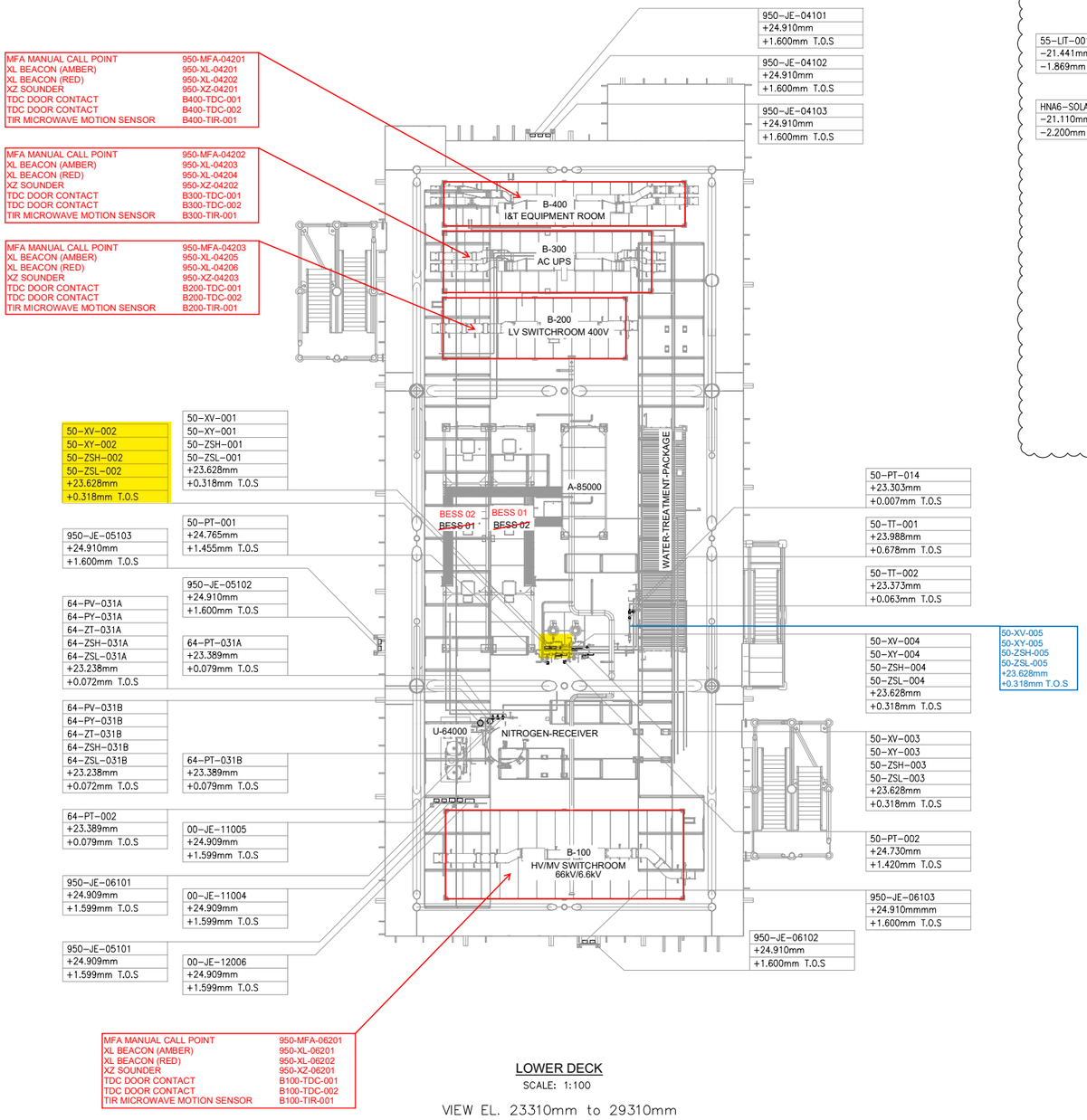
TYPE / SERIAL N°: VOLCRAFT 1000V - ET-200 S/N:H240103023 Calibration date: N°LAT 042 00768/24 12/10/2024

Comments: Nota 5: refer to PL C30000680/C30000682

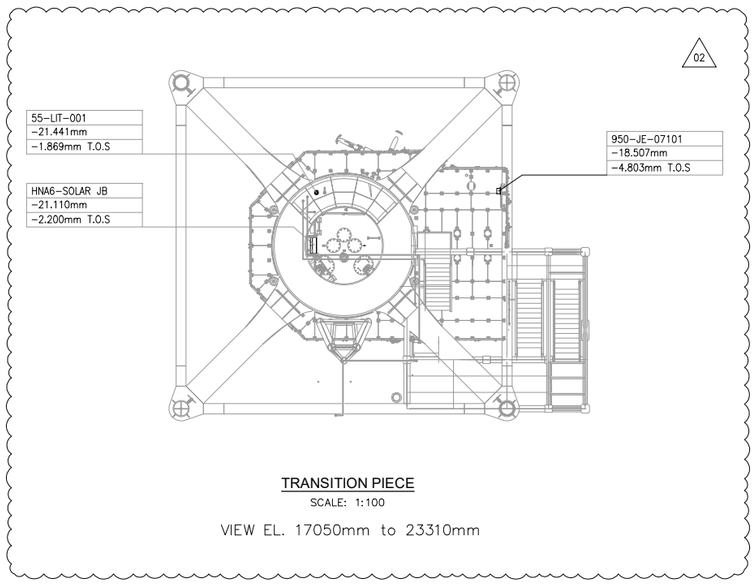
Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Alessio Polo	
Date	2025-02-05	2025-02-10	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-05T10:17:19.580Z	PROVERLIS Digitaly signed by Alessio Polo 2025-02-10T10:11:53.606Z	

DRAWING NO. 123A90-DDL-IN-DL-40080

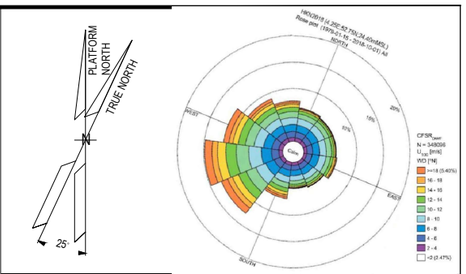
REV. 02



LOWER DECK
SCALE: 1:100
VIEW EL. 23310mm to 29310mm



TRANSITION PIECE
SCALE: 1:100
VIEW EL. 17050mm to 23310mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40081	INSTRUMENT LAYOUT - UPPER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-UPPER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DL-40080**

REV.:	DATE:	SIGNATURE:
2_C	06/11/24	G.Randi

ROSETTI MARINO SpA

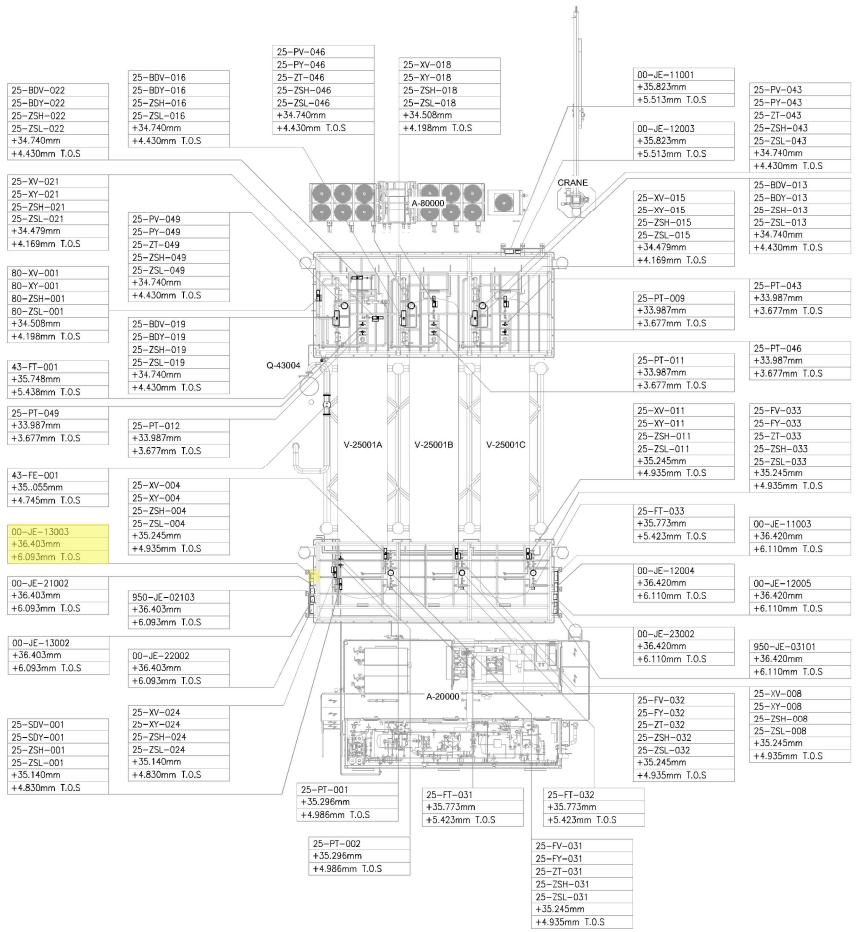
TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–LOWER DECK
TOS EL. 23.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90–DDL–IN–DL–40080	SHEET 001	REV. 02

File Name : 123A90-DDL-IN-DL-40080 REV02.dwg

DRAWING NO. 123A90-DDL-IN-DL-40081

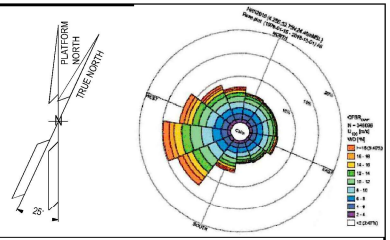
REV. 02



UPPER DECK

SCALE: 1:100

VIEW EL. 33740mm to 36500mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT -LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	05/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90-DDL-IN-DL-40081	SHEET 002	REV. 02

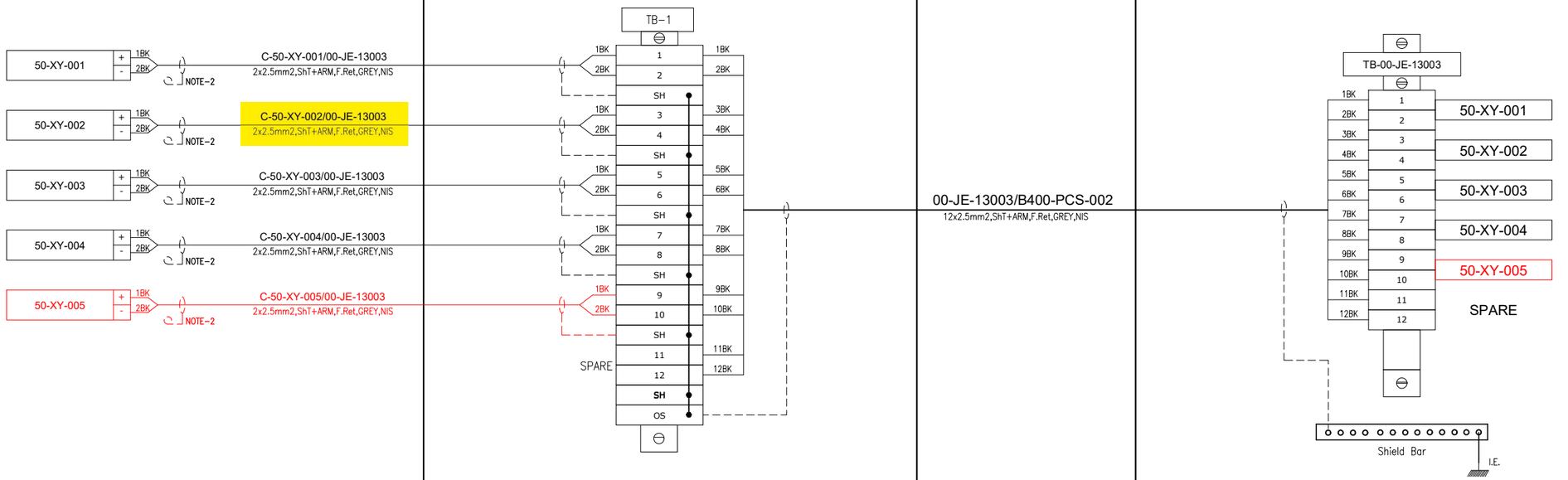
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DRAWING NO. 123A90-DDL-IN-DG-40015

REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 00-JE-13003	No.	MARSHALLING CABINET B400-PCS-002

<01>



VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_I	29/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
00–JE–13003

CONTRACT NO./TITLE			SCALE N/A
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

A3	DRAWING NO.	SHEET	REV.
	123A90–DDL–IN–DG–40015	030	01

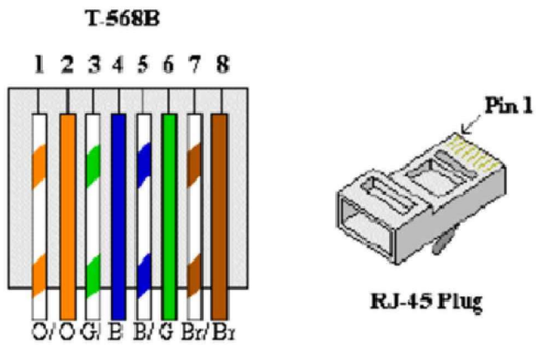
File Name : 123A90-DDL-IN-DG-40015_Rev.01

DRAWING NO. 123A90-DDL-IN-DG-40015

REV. 01

NOTES:

1. ALL SPARE ENTRIES SHALL BE PROVIDED WITH CERTIFIED EX PROOF PLUGS.
2. CABLE SCREENS / DRAIN WIRE SHALL BE SECURELY INSULATED AND TIED BACK IN THE INSTRUMENT SIDE AND SHAL BE TERMINATED IN THE MARSHALLING SIDE OF THE PANEL.
3. SPARE PAIRS / TRIADS SHALL BE CONNECTED TO TERMINALS IN JUNCTION BOX AND PANEL / MARSHALLING CABINETS.
4. ALL CABLE SCREENS TO BE TERMINATED AT THE INSTRUMENT EARTH BAR IN THE RESPECTIVE EARTH BARS (IS OR NIS) AS APPLICABLE IN THE MARSHALLING CABINET.
5. SWITCH TAG NAME AND PORT WILL BE DEFINED DURING THE CONSTRUCTION PHASE
6. FOR OPTICAL FIBERS, USE THE FOLLOWING COLOR CODING:
   - 01- RED
   - 02- GREEN
   - 03- BLUE
   - 04- YELLOW
   - 05- GREY
   - 06- PURPLE
   - 07- BROWN
   - 08- ORANGE
   - 09- WHITE
   - 10- PINK
   - 11- BLACK
   - 12- TURQUOISE
7. CAT.6A CABLE SHALL BE TERMINATED MEETING REQUIREMENTS OF STANDARD EIA/TIA 568B:



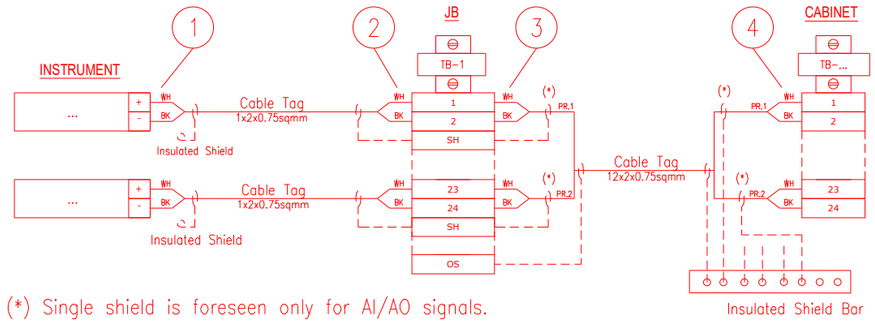
8. FOR INTRISICALLY SAFE CIRCUIT USE LIGHT BLUE CABLE OR ALTERNATIVELY ORANGE CABLE WITH HEAT SHRINKABLE SLEEVE BLUE AT BOTH END (SEE DOC. 123A90-FDL-IN-DD-40017).

LEGENDS & SYMBOLS:

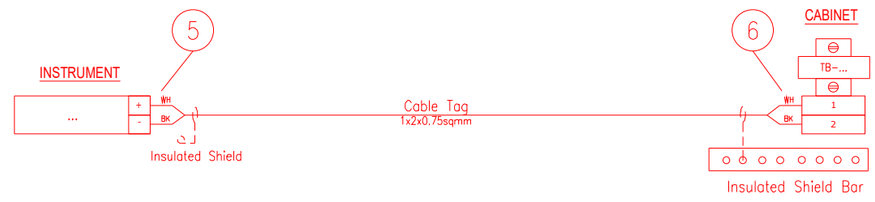
I.E.	- GREEN ⟶ INSTRUMENT SIGNAL EARTH
P.E.	- GREEN / YELLOW ⟶ P.E. EARTH / BONDING
	- TERMINAL BLOCK (TB)
WH	- WHITE
BK	- BLACK
RD	- RED
S	- SHIELD TERMINAL
OS	- OVERALL SHIELD TERMINAL
O/A Shld	- OVERALL SHIELD
I&O/A Shld	- INDIVIDUAL & OVERALL SHIELD
NIS	- NON INTRINSICALLY SAFE
IS	- INTRINSICALLY SAFE
P.E.	- PLANT EARTH
PCS	- PROCESS CONTROL SYSTEM
ESD	- EMERGENCY SHUTDOWN SYSTEM
SIS	- SAFETY INSTRUMENT SYSTEM
FGS	- FIRE & GAS SYSTEM
MC	- MARSHALLING CABINET
AI	- ANALOGUE INPUT
AO	- ANALOGUE OUTPUT
DI	- DIGITAL INPUT
DO	- DIGITAL OUTPUT
JE	- JUNCTION BOX FOR ELECTRICAL SIGNALS

PHILOSOPHY OF CROSS-FERRULING:

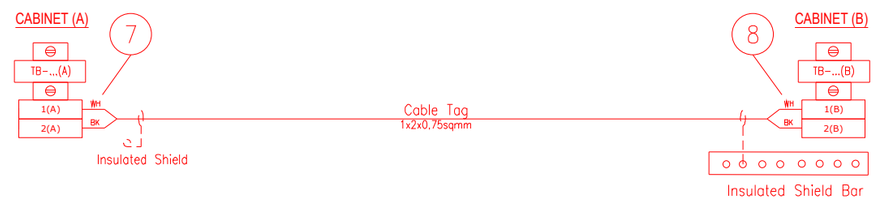
INSTRUMENT CONNECTION THROUGH MARSHALLING JB TO CABINET



INSTRUMENT CONNECTION STRAIGHT TO CABINET



CABINET CONNECTION TO CABINET



1 - INSTR. TERMINAL NO. OR POLARITY / JB TAG / JB TERMINAL NO.
2 - INSTR. TERMINAL NO. OR POLARITY / INSTR. TAG / JB TERMINAL NO.
3 - JB TERMINAL NO. / JB TERMINAL STRIP / CABINET TERMINAL STRIP / PAIR OR CORE NO.
4 - PAIR OR CORE NO. / JB TAG / JB TERMINAL NO. / CABINET TERMINAL STRIP / CABINET TERMINAL NO.
5 - INSTR. TERMINAL NO. OR POLARITY / CABINET TAG / CABINET TERMINAL STRIP / CABINET TERMINAL NO.
6 - INSTR. TERMINAL NO. OR POLARITY / INSTR. TAG / CABINET TERMINAL STRIP/ CABINET TERMINAL NO.
7 - TERMINAL NO. (A) / TERMINAL STRIP (A) / CABINET TAG (B) / CABINET TERMINAL NO. (B) / PAIR OR CORE NO.
8 - PAIR OR CORE NO. / CABINET TERMINAL NO. (A) / CABINET TAG (A) / TERMINAL STRIP (B) / TERMINAL NO. (B)

NOTES: A - HEAT SHRINKABLE BLACK FOR SHIELD OF NIS INSTRUMENT CABLE.
HEAT SHRINKABLE BLUE FOR SHIELD OF IS INSTRUMENT CABLE.
B - ABOVE DESCRIBED PHILOSOPHY IS INTENDED FOR CONNECTION AS REPRESENTED:
IN CASE OF CONNECTION FROM THE OPPOSITE SIDE, ORDER OF FERULE TAG SHALL BE MIRRORED.
C - SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO SHIELDS TERMINATED ON TERMINAL STRIP.

REFERENCE DRAWINGS:

PIPING AND INSTRUMENT DIAGRAM 123A90-DDL-PR-PID-80009
INSTRUMENT INDEX 123A90-DDL-IN-LIS-40088
F&G DETECTORS LAYOUT 123A90-DDL-SAF-DL-30027

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_I	29/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
GENERAL NOTES/LEGENDS

CONTRACT NO./TITLE			SCALE N/A
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

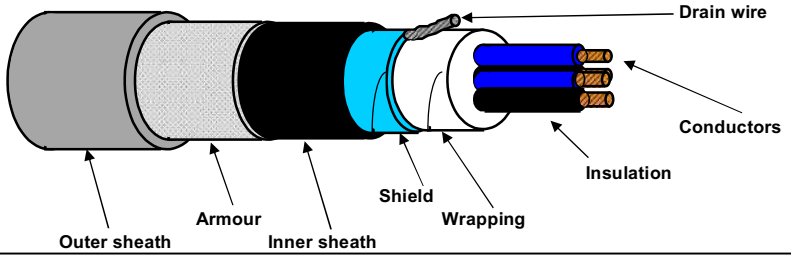
A3	DRAWING NO.	SHEET	REV.
	123A90-DDL-IN-DG-40015	003	01

File Name : 123A90-DDL-IN-DG-40015_Rev.01

Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	From Tag Section	To Tag	To Main Function	To Area	To Tag Section	Material ID	Material Desc.	Gland Standard	From Gland	From Entry	From Fitting	To Gland	To Entry	To Fitting	Routing	Routing Manual
C-50-XY-002/00-JE-13003	Cable	IN	VFC	123A90-DDL-IN-LIS-40091						50-XY-002	Solenoid Valve	Lower Deck		00-JE-13003	DO JB to PCS	Upper Deck	Junction Box	SMICV05-2X2,5	Cable Cu Cl2/XLPE/OS/LSZH/SWB/LSZH 150/250V (300V) 2x2,5mm² - Grey	M20	T2_M20_Double			T2_M20_ Double				U-SEC-1H / U-SEC-14A / U-SEC-15 / L-SEC-10 / L-SEC-11

Cu Cl.2/XLPE/OS/LSZH/SWB/LSZH 150/250 V (300 V)

2X2,5 - INSTRUMENT CABLE - Flame Retardant - Not I.S.



TECHNICAL FEATURES

Conductors :	**7-STRANDED** plain/bare soft annealed copper wires **IEC 60228 Class 2**
Insulation :	XLPE, Nominal Thickness 0,6 mm
Cores colour code :	**Black NUMBERED (from 1 to 2)**
Pair Assembling :	Not required
Pair Wrapping:	Not required
Drain wire :	Not required
Pair Shield :	Not required
Shield Insulation :	Not required
Total Assembling :	9/1mt
Overall Wrapping:	by polyester-PET Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)
Drain wire :	7-Stranded **TINNED** annealed copper drain wire, **size 1,0 sqmm**, in continuous contact with the shield
Overall Shield :	by Aluminium-**Al** Minimum Thickness 0,008 mm / polyester-**PET** Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)
Inner sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, Average Thickness 1,1 mm
Inner sheath color code:	**Black**
Armour :	Galvanized Steel Wire Braid Armour (coverage ≥ 90%)
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, moisture/abrasion/UV Resistant, Average Thickness 1,2 mm
Outer sheath color code:	**Grey**
Outer printing (INKJET) :	**FLEI - 2X2,5 SQMM - XLPE/OS/LSZH/SWB/LSZH - 150/250 V - IEC 60332.1.2 - IEC 60332.3.22 -**
(every 1000 mm)	**Year of Manufacture - CE + Meter Marking**
Under armour diameter :	(8,9 ± 10%) mm
Over armour diameter :	(9,7 ± 10%) mm
Outer diameter :	(12,1 ± 10%) mm
Bending radius :	cable outer diameter x 10 (in fixed installation)
Voltage Test :	1,5 kV a.c. for 5' (Between Cores) / 1,5 kV a.c. for 5' (Between Cores - Shield)
Conductors DC Resistance :	≤ 7,86 Ω/km (@ 20°C)
Insulation Resistance :	≥ 1000 MΩ x Km (@ 20°C)
Applicable Standards	
Design Guidelines :	**IEC 60092.376**
ON COMPLETE CABLE	
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22
Acid Gas generation :	IEC 60754.1/2
Smoke density/Light Transmittance :	IEC 61034.2 (LT ≥ 60%)
Hazardous Areas :	IEC 60079.14 par.9.3.2a
Temperature Range :	
ON INSULATION	(max +90°C) (max continuous operation temperature of conductors)
	(max +250°C) (max conductors temperature during short-circuit for 5 seconds)
ON COMPLETE CABLE	
During Operation :	(-20°C up to +90°C) (in fixed installation)
During installation :	(- 5°C up to +50°C)
Note :	**To meet the requirements of installation and use in Zone 1 & Zone 2 (IEC 60079-14) and "Gas & Vapour Tight" the cable must be provided with Penetrating Inner sheath together with correct ATEX approved equipment or accessories.**

Office	Date	Sign	Rev.	Date	Sign
Drawn by :	04/04/2024	Messa			
Checked :	04/04/2024	Spaccasassi			
Approved :	04/04/2024	Cucinotta			

The data provided, lending assent for the treatment, will be used to the sense of the article 13 of of the Regulation (UE) 2016/679, also through outsiders, in order to allow the realization of the fulfilments informatives, administrative, commercial and accounting related to the contractual relationship. Integral copy of the informative could be requested at our offices.

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ITEM	Tag	C-50-XY-003/00-JE-13003	: SOLENOID VALVE / MARSHALLING PCS		Dwg	123A90-DDL-IN-LIS-40091	
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)		Module	LD/UD	
TASK	code	C10000127	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline Instrumental	Form	CJX10	Multi/Single-Core Instrument Control Cable

CABLE DATA

Type: Cu-XLPE-OS-LSZH-SWB-LSZH | Cores/Size mm²: 2X2,5 mm2 | Color: GREY

From: 50-XY-003 | To: 00-JE-13003

1	Check cable is as specified in project cable schedule.	OK
2	Check relevant documents are at the latest revision.	OK
3	Check cable is routed in accordance with cable layout drawings.	OK
4	Check cable for any physical damage.	OK
5	Check cable is adequately supported and correctly fixed to rack according to Project specification.	PL
6	Check bending radius is within the specified limits.	OK
7	Check cable is correctly loomed and segregated in accordance with specification.	OK
8	Check cable and core marking are in accordance with specification.	OK
9	Check cable labelling is in accordance with specification.	OK
10	Check that glands, shrouds and earthing are in accordance with specification.	OK
11	Check terminations are in accordance with termination diagram	PL
12	Check gland plate for single core cables is non-ferrous.	NA
13	If required produce Red Line Mark Up for "AS BUILT"	

INSULATION	CORE to EARTH	>999	MΩ
	CORE to CORE	>999	MΩ
	CORE to SCREEN	>999	MΩ
	CORE to ARMr	>999	MΩ
	SCREEN to EARTH	>999	MΩ
	SCREEN to ARMr	>999	MΩ
CONTINUITY	CORES	0,3	Ω
	SCREEN	0,3	Ω
	EARTH	NA	Ω
	ARMr	0,3	Ω
	TEST VOLTS	500	V

TEST ALL CORES AND RECORD LOWEST VALUE

Notes: The lowest value is recorded and must be within project specifications

TESTING INSTRUMENTS USED

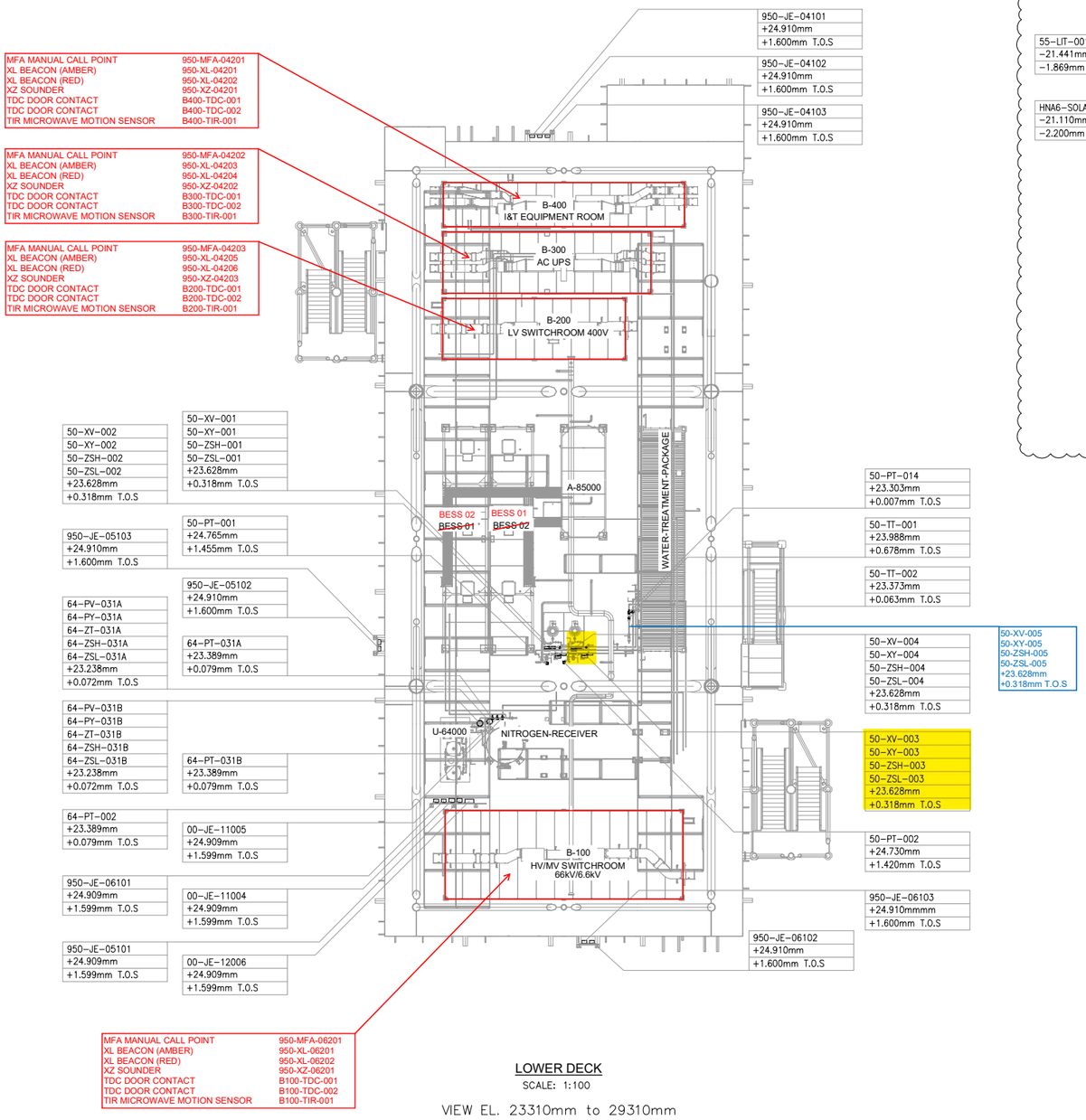
TYPE / SERIAL N°: VOLCRAFT 1000V - ET-200 S/N:H240103023 | Calibration date: N°LAT 042 00768/24 12/10/2024

Comments: Nota 5: refer to PL C30000680/C30000682

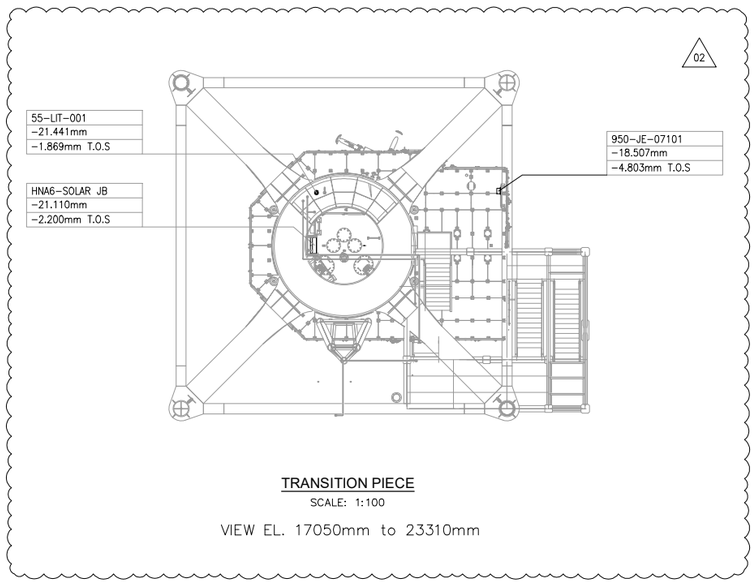
Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Alessio Polo	
Date	2025-02-08	2025-02-08	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-08T09:38:53.978Z	PROVERLIS Digitaly signed by Alessio Polo 2025-02-08T11:20:39.931Z	

DRAWING NO. 123A90-DDL-IN-DL-40080

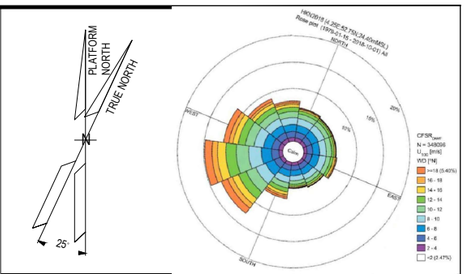
REV. 02



LOWER DECK
SCALE: 1:100
VIEW EL. 23310mm to 29310mm



TRANSITION PIECE
SCALE: 1:100
VIEW EL. 17050mm to 23310mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40081	INSTRUMENT LAYOUT - UPPER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-UPPER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DL-40080**

REV.:	DATE:	SIGNATURE:
2_C	06/11/24	G.Randi

ROSETTI MARINO SpA

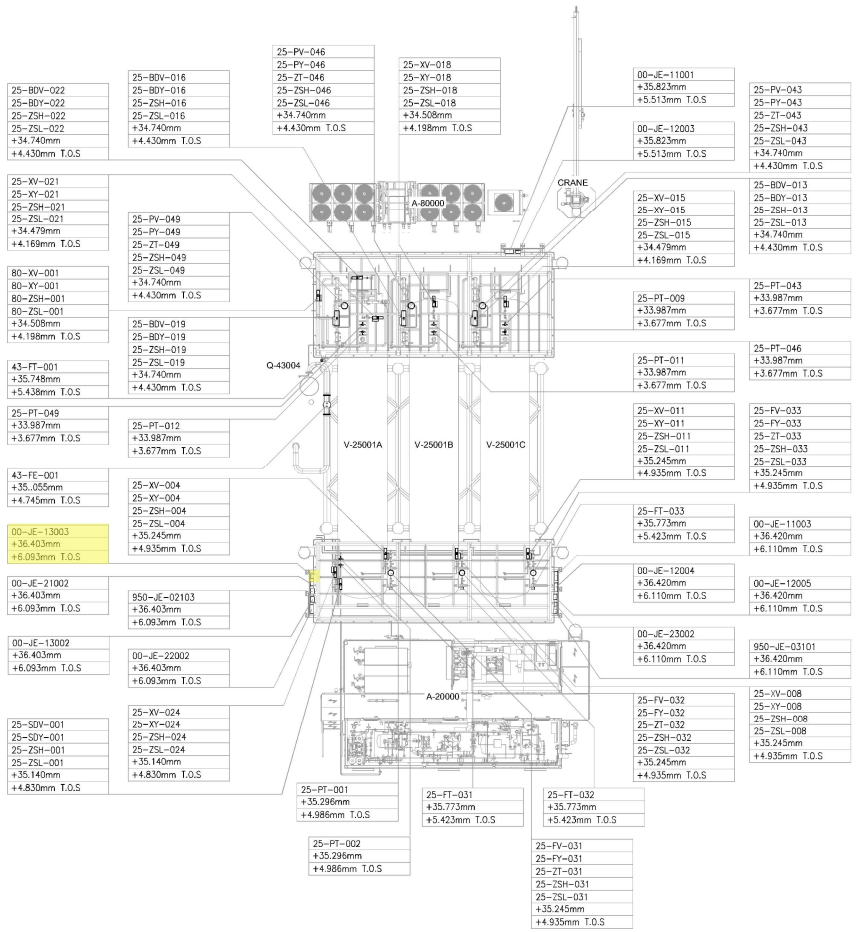
TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–LOWER DECK
TOS EL. 23.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90–DDL–IN–DL–40080	SHEET 001	REV. 02

File Name : 123A90-DDL-IN-DL-40080 REV02.dwg

DRAWING NO. 123A90-DDL-IN-DL-40081

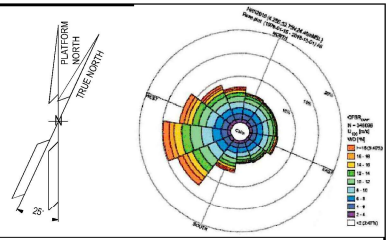
REV. 02



UPPER DECK

SCALE: 1:100

VIEW EL. 33740mm to 36500mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT -LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	05/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
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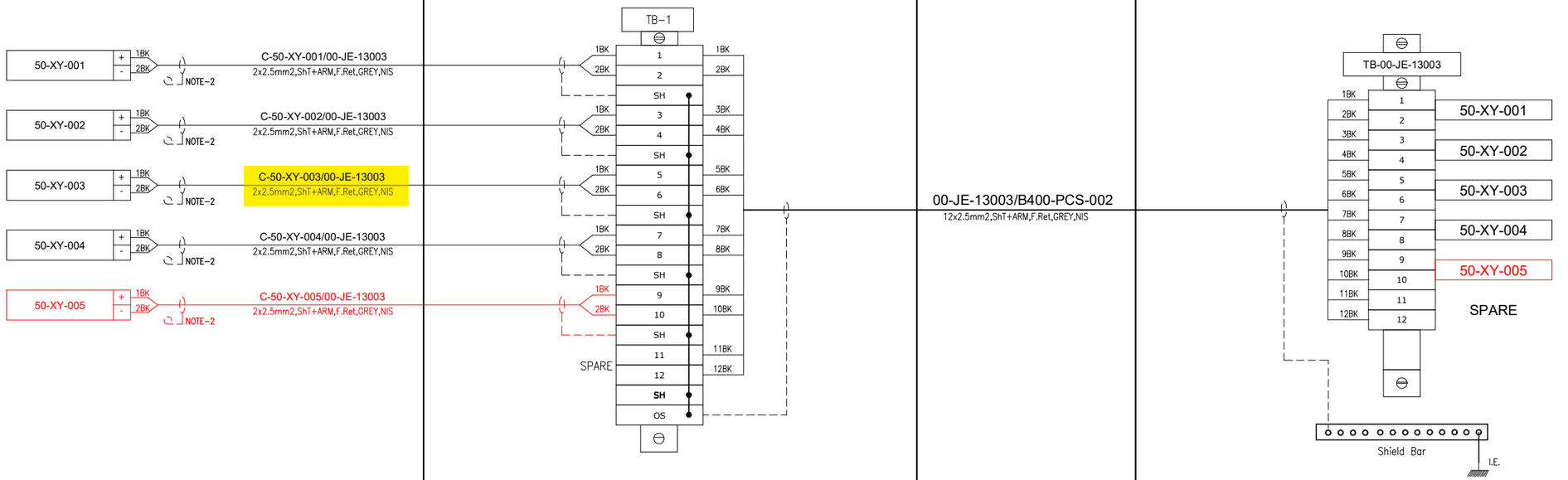
File Name : 123A90-DDL-IN-DL-40081 REV.02.dwg

DRAWING NO. 123A90-DDL-IN-DG-40015

REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 00-JE-13003	No.	MARSHALLING CABINET B400-PCS-002

<01>



VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-IN-DG-40015

REV.:	DATE:	SIGNATURE:
1_I	29/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
00–JE–13003

CONTRACT NO./TITLE			SCALE N/A
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

A3	DRAWING NO.	SHEET	REV.
	123A90–DDL–IN–DG–40015	030	01

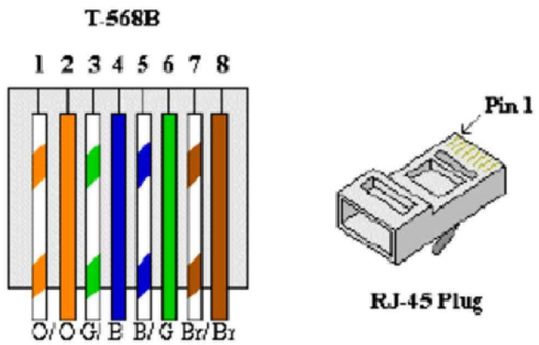
File Name : 123A90-DDL-IN-DG-40015_Rev.01

DRAWING NO. 123A90-DDL-IN-DG-40015

REV. 01

NOTES:

1. ALL SPARE ENTRIES SHALL BE PROVIDED WITH CERTIFIED EX PROOF PLUGS.
2. CABLE SCREENS / DRAIN WIRE SHALL BE SECURELY INSULATED AND TIED BACK IN THE INSTRUMENT SIDE AND SHAL BE TERMINATED IN THE MARSHALLING SIDE OF THE PANEL.
3. SPARE PAIRS / TRIADS SHALL BE CONNECTED TO TERMINALS IN JUNCTION BOX AND PANEL / MARSHALLING CABINETS.
4. ALL CABLE SCREENS TO BE TERMINATED AT THE INSTRUMENT EARTH BAR IN THE RESPECTIVE EARTH BARS (IS OR NIS) AS APPLICABLE IN THE MARSHALLING CABINET.
5. SWITCH TAG NAME AND PORT WILL BE DEFINED DURING THE CONSTRUCTION PHASE
6. FOR OPTICAL FIBERS, USE THE FOLLOWING COLOR CODING:
   - 01- RED
   - 02- GREEN
   - 03- BLUE
   - 04- YELLOW
   - 05- GREY
   - 06- PURPLE
   - 07- BROWN
   - 08- ORANGE
   - 09- WHITE
   - 10- PINK
   - 11- BLACK
   - 12- TURQUOISE
7. CAT.6A CABLE SHALL BE TERMINATED MEETING REQUIREMENTS OF STANDARD EIA/TIA 568B:



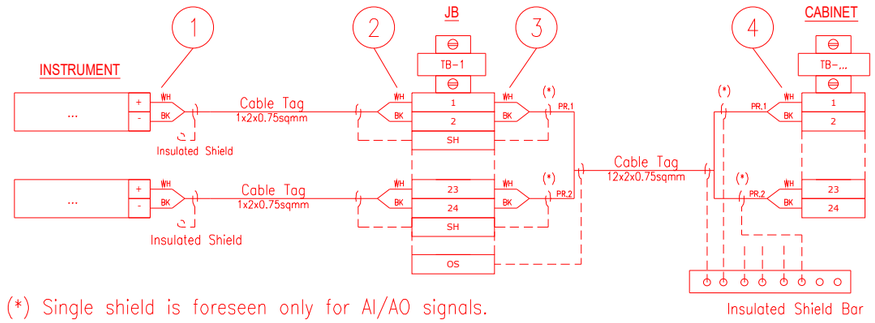
8. FOR INTRISICALLY SAFE CIRCUIT USE LIGHT BLUE CABLE OR ALTERNATIVELY ORANGE CABLE WITH HEAT SHRINKABLE SLEEVE BLUE AT BOTH END (SEE DOC. 123A90-FDL-IN-DD-40017).

LEGENDS & SYMBOLS:

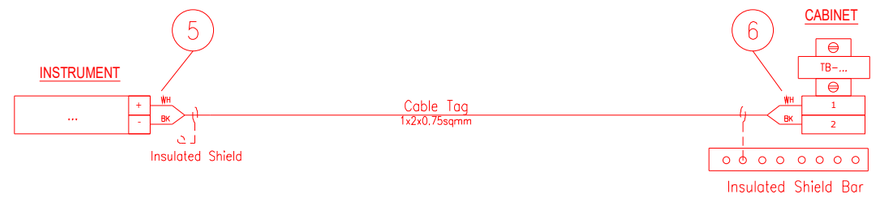
I.E.	- GREEN ⟶ INSTRUMENT SIGNAL EARTH
P.E.	- GREEN / YELLOW ⟶ P.E. EARTH / BONDING
	- TERMINAL BLOCK (TB)
WH	- WHITE
BK	- BLACK
RD	- RED
S	- SHIELD TERMINAL
OS	- OVERALL SHIELD TERMINAL
O/A Shld	- OVERALL SHIELD
I&O/A Shld	- INDIVIDUAL & OVERALL SHIELD
NIS	- NON INTRINSICALLY SAFE
IS	- INTRINSICALLY SAFE
P.E.	- PLANT EARTH
PCS	- PROCESS CONTROL SYSTEM
ESD	- EMERGENCY SHUTDOWN SYSTEM
SIS	- SAFETY INSTRUMENT SYSTEM
FGS	- FIRE & GAS SYSTEM
MC	- MARSHALLING CABINET
AI	- ANALOGUE INPUT
AO	- ANALOGUE OUTPUT
DI	- DIGITAL INPUT
DO	- DIGITAL OUTPUT
JE	- JUNCTION BOX FOR ELECTRICAL SIGNALS

PHILOSOPHY OF CROSS-FERRULING:

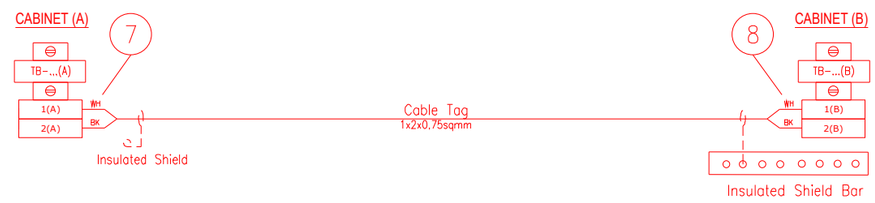
INSTRUMENT CONNECTION THROUGH MARSHALLING JB TO CABINET



INSTRUMENT CONNECTION STRAIGHT TO CABINET



CABINET CONNECTION TO CABINET



1 - INSTR. TERMINAL NO. OR POLARITY / JB TAG / JB TERMINAL NO.
2 - INSTR. TERMINAL NO. OR POLARITY / INSTR. TAG / JB TERMINAL NO.
3 - JB TERMINAL NO. / JB TERMINAL STRIP / CABINET TERMINAL STRIP / PAIR OR CORE NO.
4 - PAIR OR CORE NO. / JB TAG / JB TERMINAL NO. / CABINET TERMINAL STRIP / CABINET TERMINAL NO.
5 - INSTR. TERMINAL NO. OR POLARITY / CABINET TAG / CABINET TERMINAL STRIP / CABINET TERMINAL NO.
6 - INSTR. TERMINAL NO. OR POLARITY / INSTR. TAG / CABINET TERMINAL STRIP/ CABINET TERMINAL NO.
7 - TERMINAL NO. (A) / TERMINAL STRIP (A) / CABINET TAG (B) / CABINET TERMINAL NO. (B) / PAIR OR CORE NO.
8 - PAIR OR CORE NO. / CABINET TERMINAL NO. (A) / CABINET TAG (A) / TERMINAL STRIP (B) / TERMINAL NO. (B)

NOTES: A - HEAT SHRINKABLE BLACK FOR SHIELD OF NIS INSTRUMENT CABLE.
HEAT SHRINKABLE BLUE FOR SHIELD OF IS INSTRUMENT CABLE.
B - ABOVE DESCRIBED PHILOSOPHY IS INTENDED FOR CONNECTION AS REPRESENTED:
IN CASE OF CONNECTION FROM THE OPPOSITE SIDE, ORDER OF FERULE TAG SHALL BE MIRRORED.
C - SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO SHIELDS TERMINATED ON TERMINAL STRIP.

REFERENCE DRAWINGS:

PIPING AND INSTRUMENT DIAGRAM 123A90-DDL-PR-PID-80009
INSTRUMENT INDEX 123A90-DDL-IN-LIS-40088
F&G DETECTORS LAYOUT 123A90-DDL-SAF-DL-30027

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_I	29/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
GENERAL NOTES/LEGENDS

CONTRACT NO./TITLE			SCALE N/A
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

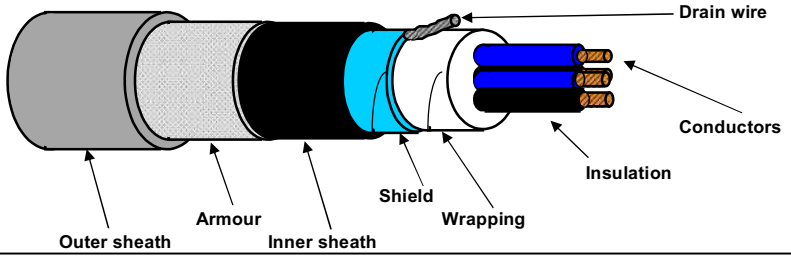
A3	DRAWING NO.	SHEET	REV.
	123A90-DDL-IN-DG-40015	003	01

File Name : 123A90-DDL-IN-DG-40015_Rev.01

Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	From Tag Section	To Tag	To Main Function	To Area	To Tag Section	Material ID	Material Desc.	Gland Standard	From Gland	From Entry	From Fitting	To Gland	To Entry	To Fitting	Routing	Routing Manual
C-50-XY-003/00-JE-13003	Cable	IN	VFC	123A90-DDL-IN-LIS-40091						50-XY-003	Solenoid Valve	Lower Deck		00-JE-13003	DO JB to PCS	Upper Deck	Junction Box	SMICV05-2X2,5	Cable Cu Cl2/XLPE/OS/LSZH/SWB/LSZH 150/250V (300V) 2x2,5mm² - Grey	M20	T2_M20_Double			T2_M20_ Double				U-SEC-1H / U-SEC-14A / U-SEC-15 / L-SEC-10 / L-SEC-11

Cu Cl.2/XLPE/OS/LSZH/SWB/LSZH 150/250 V (300 V)

2X2,5 - INSTRUMENT CABLE - Flame Retardant - Not I.S.



TECHNICAL FEATURES

Conductors :	**7-STRANDED** plain/bare soft annealed copper wires **IEC 60228 Class 2**
Insulation :	XLPE, Nominal Thickness 0,6 mm
Cores colour code :	**Black NUMBERED (from 1 to 2)**
Pair Assembling :	Not required
Pair Wrapping:	Not required
Drain wire :	Not required
Pair Shield :	Not required
Shield Insulation :	Not required
Total Assembling :	9/1mt
Overall Wrapping:	by polyester-PET Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)
Drain wire :	7-Stranded **TINNED** annealed copper drain wire, **size 1,0 sqmm**, in continuous contact with the shield
Overall Shield :	by Aluminium-**Al** Minimum Thickness 0,008 mm / polyester-**PET** Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)
Inner sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, Average Thickness 1,1 mm
Inner sheath color code:	**Black**
Armour :	Galvanized Steel Wire Braid Armour (coverage ≥ 90%)
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, moisture/abrasion/UV Resistant, Average Thickness 1,2 mm
Outer sheath color code:	**Grey**
Outer printing (INKJET) :	**FLEI - 2X2,5 SQMM - XLPE/OS/LSZH/SWB/LSZH - 150/250 V - IEC 60332.1.2 - IEC 60332.3.22 -**
(every 1000 mm)	**Year of Manufacture - CE + Meter Marking**
Under armour diameter :	(8,9 ± 10%) mm
Over armour diameter :	(9,7 ± 10%) mm
Outer diameter :	(12,1 ± 10%) mm
Bending radius :	cable outer diameter x 10 (in fixed installation)
Voltage Test :	1,5 kV a.c. for 5' (Between Cores) / 1,5 kV a.c. for 5' (Between Cores - Shield)
Conductors DC Resistance :	≤ 7,86 Ω/km (@ 20°C)
Insulation Resistance :	≥ 1000 MΩ x Km (@ 20°C)
Applicable Standards	
Design Guidelines :	**IEC 60092.376**
ON COMPLETE CABLE	
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22
Acid Gas generation :	IEC 60754.1/2
Smoke density/Light Transmittance :	IEC 61034.2 (LT ≥ 60%)
Hazardous Areas :	IEC 60079.14 par.9.3.2a
Temperature Range :	
ON INSULATION	(max +90°C) (max continuous operation temperature of conductors)
	(max +250°C) (max conductors temperature during short-circuit for 5 seconds)
ON COMPLETE CABLE	
During Operation :	(-20°C up to +90°C) (in fixed installation)
During installation :	(- 5°C up to +50°C)
Note :	**To meet the requirements of installation and use in Zone 1 & Zone 2 (IEC 60079-14) and "Gas & Vapour Tight" the cable must be provided with Penetrating Inner sheath together with correct ATEX approved equipment or accessories.**

Office	Date	Sign	Rev.	Date	Sign
Drawn by :	04/04/2024	Messa			
Checked :	04/04/2024	Spaccasassi			
Approved :	04/04/2024	Cucinotta			

The data provided, lending assent for the treatment, will be used to the sense of the article 13 of of the Regulation (UE) 2016/679, also through outsiders, in order to allow the realization of the fulfilments informatives, administrative, commercial and accounting related to the contractual relationship. Integral copy of the informative could be requested at our offices.

All proprietary rights reserved according to law. This document shall be not reproduced without written permission. FLEI reserves the right to change characteristics and technical data of product shown at any time.

ITEM	Tag	C-50-XY-004/00-JE-13003	: SOLENOID VALVE / MARSHALLING PCS	Dwg	123A90-DDL-IN-LIS-40091		
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)	Module	LD/UD		
TASK	code	C10000128	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline	Instrumental	Form	CJX10

Multi/Single-Core Instrument Control Cable

CABLE DATA

Type: Cu-XLPE-OS-LSZH-SWB-LSZH | Cores/Size mm²: 2X2,5 mm2 | Color: GREY

From: 50-XY-004 To: 00-JE-13003

1	Check cable is as specified in project cable schedule.	OK
2	Check relevant documents are at the latest revision.	OK
3	Check cable is routed in accordance with cable layout drawings.	OK
4	Check cable for any physical damage.	OK
5	Check cable is adequately supported and correctly fixed to rack according to Project specification.	PL
6	Check bending radius is within the specified limits.	OK
7	Check cable is correctly loomed and segregated in accordance with specification.	OK
8	Check cable and core marking are in accordance with specification.	OK
9	Check cable labelling is in accordance with specification.	OK
10	Check that glands, shrouds and earthing are in accordance with specification.	OK
11	Check terminations are in accordance with termination diagram	PL
12	Check gland plate for single core cables is non-ferrous.	NA
13	If required produce Red Line Mark Up for "AS BUILT"	

INSULATION	CORE to EARTH	>999	MΩ
	CORE to CORE	>999	MΩ
	CORE to SCREEN	>999	MΩ
	CORE to ARMr	>999	MΩ
	SCREEN to EARTH	>999	MΩ
	SCREEN to ARMr	>999	MΩ
CONTINUITY	CORES	0,3	Ω
	SCREEN	0,3	Ω
	EARTH	NA	Ω
	ARMr	0,3	Ω
	TEST VOLTS	500	V

TEST ALL CORES AND RECORD LOWEST VALUE

Notes: The lowest value is recorded and must be within project specifications

TESTING INSTRUMENTS USED

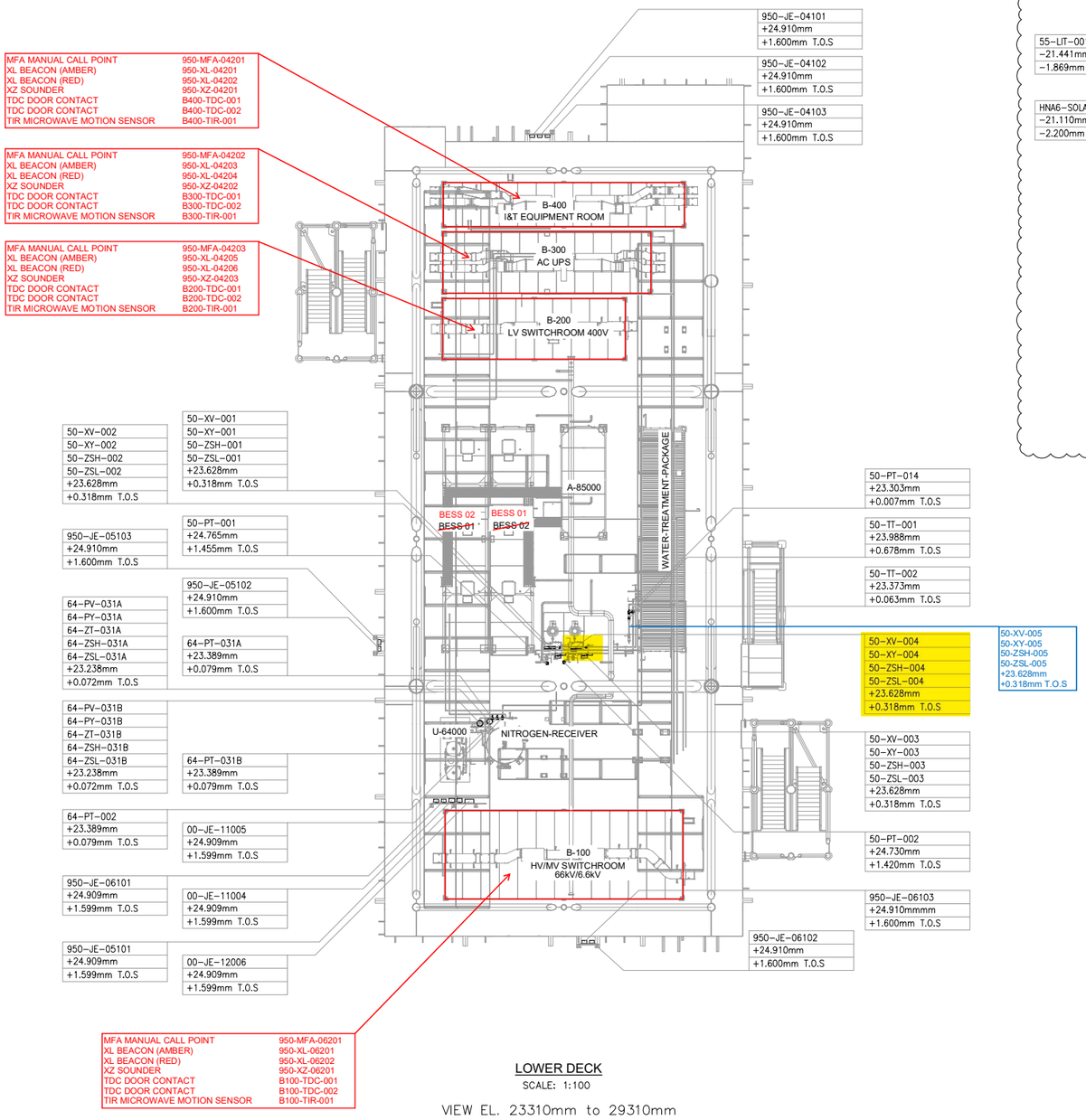
TYPE / SERIAL N°: VOLCRAFT 1000V - ET-200 S/N:H240103023 Calibration date: N°LAT 042 00768/24 12/10/2024

Comments: Nota 5: refer to PL C30000680/C30000682

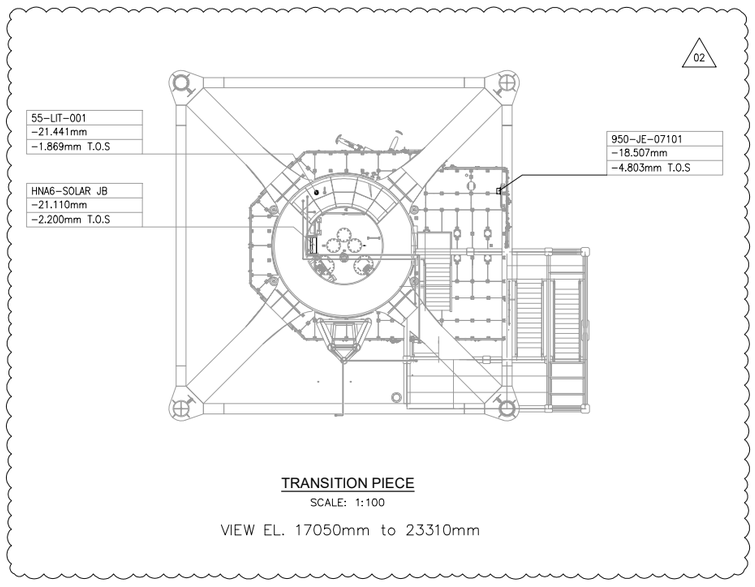
Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Alessio Polo	
Date	2025-02-08	2025-02-10	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-08T09:39:08.313Z	PROVERLIS Digitaly signed by Alessio Polo 2025-02-10T10:43:04.356Z	

DRAWING NO. 123A90-DDL-IN-DL-40080

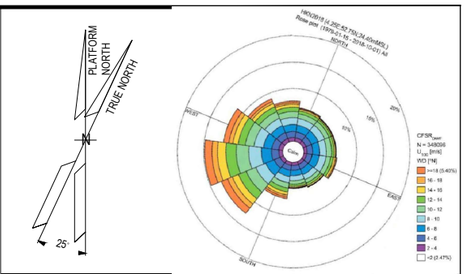
REV. 02



LOWER DECK
SCALE: 1:100
VIEW EL. 23310mm to 29310mm



TRANSITION PIECE
SCALE: 1:100
VIEW EL. 17050mm to 23310mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40081	INSTRUMENT LAYOUT - UPPER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-UPPER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DL-40080**

REV.:	DATE:	SIGNATURE:
2_C	06/11/24	G.Randi

ROSETTI MARINO SpA

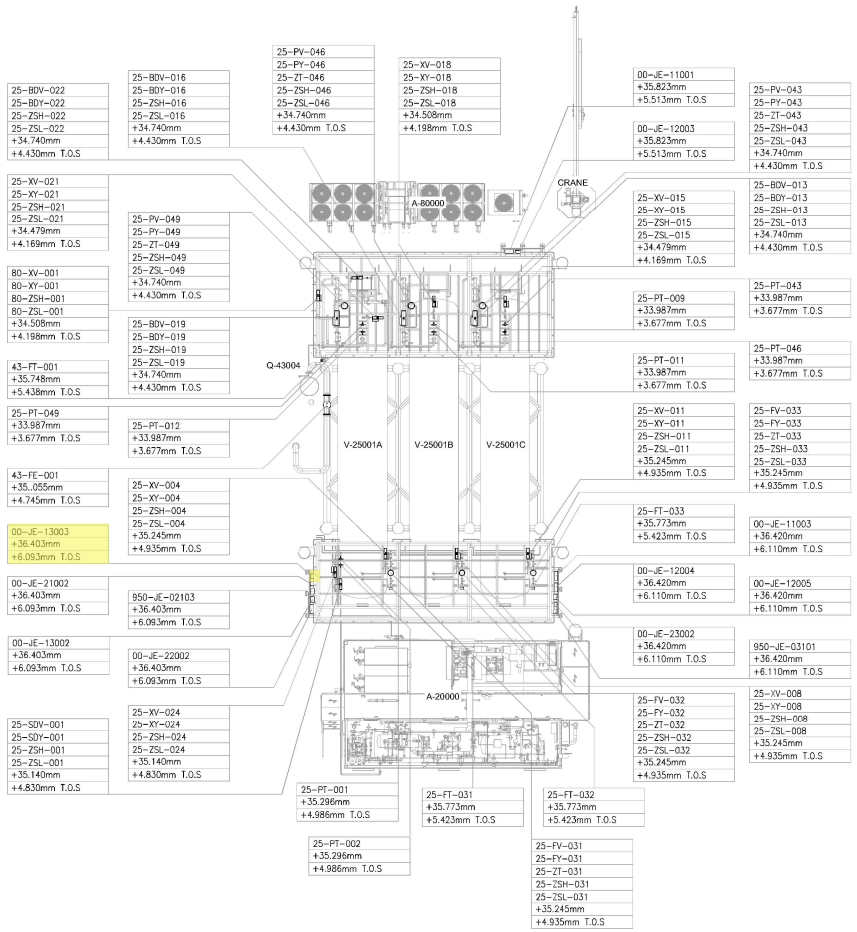
TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–LOWER DECK
TOS EL. 23.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90–DDL–IN–DL–40080	SHEET 001	REV. 02

File Name : 123A90-DDL-IN-DL-40080 REV02.dwg

DRAWING NO. 123A90-DDL-IN-DL-40081

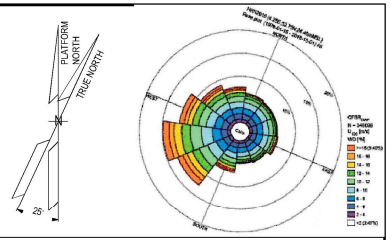
REV. 02



UPPER DECK

SCALE: 1:100

VIEW EL. 33740mm to 36500mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40080	INSTRUMENT LAYOUT -LOWER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-LOWER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	05/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DL-40081**

REV.:	DATE:	SIGNATURE:
2_A	07/10/24	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–UPPER DECK
TOS EL. 30.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90-DDL-IN-DL-40081	SHEET 002	REV. 02

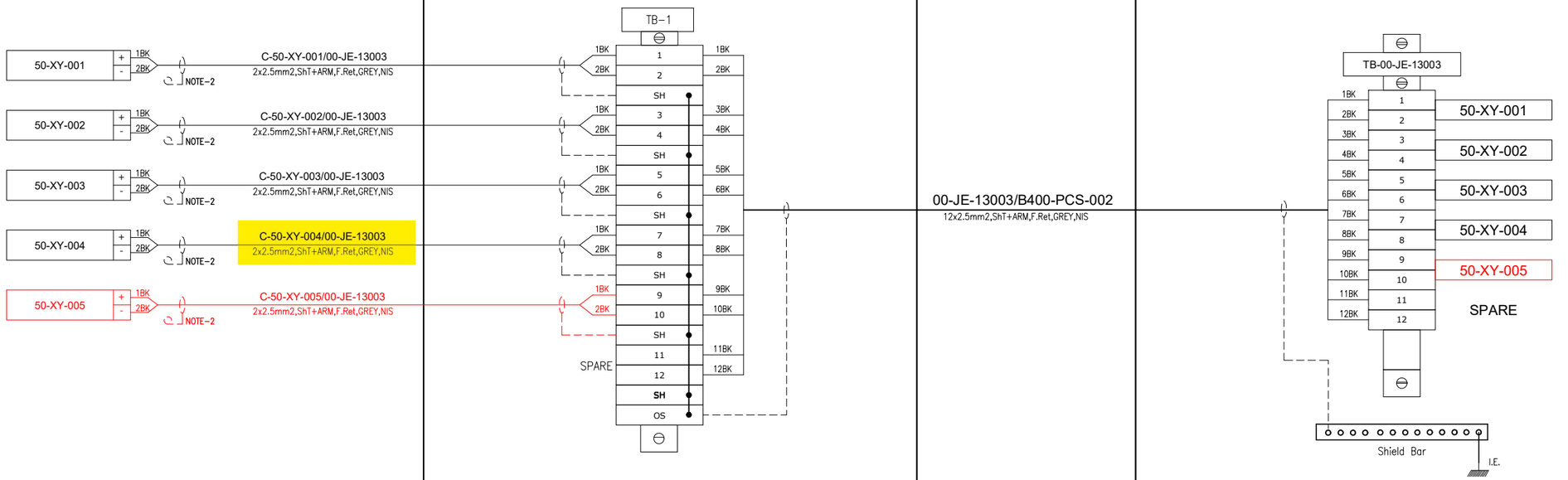
File Name : 123A90-DDL-IN-DL-40081 REV.02.dwg

DRAWING NO. 123A90-DDL-IN-DG-40015

REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 00-JE-13003	No.	MARSHALLING CABINET B400-PCS-002

<01>



VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_I	29/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
00–JE–13003

CONTRACT NO./TITLE			SCALE N/A
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

A3	DRAWING NO.	SHEET	REV.
	123A90–DDL–IN–DG–40015	030	01

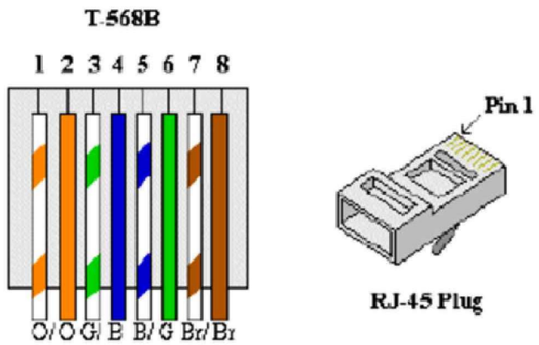
File Name : 123A90-DDL-IN-DG-40015_Rev.01

DRAWING NO. 123A90-DDL-IN-DG-40015

REV. 01

NOTES:

1. ALL SPARE ENTRIES SHALL BE PROVIDED WITH CERTIFIED EX PROOF PLUGS.
2. CABLE SCREENS / DRAIN WIRE SHALL BE SECURELY INSULATED AND TIED BACK IN THE INSTRUMENT SIDE AND SHAL BE TERMINATED IN THE MARSHALLING SIDE OF THE PANEL.
3. SPARE PAIRS / TRIADS SHALL BE CONNECTED TO TERMINALS IN JUNCTION BOX AND PANEL / MARSHALLING CABINETS.
4. ALL CABLE SCREENS TO BE TERMINATED AT THE INSTRUMENT EARTH BAR IN THE RESPECTIVE EARTH BARS (IS OR NIS) AS APPLICABLE IN THE MARSHALLING CABINET.
5. SWITCH TAG NAME AND PORT WILL BE DEFINED DURING THE CONSTRUCTION PHASE
6. FOR OPTICAL FIBERS, USE THE FOLLOWING COLOR CODING:
   - 01- RED
   - 02- GREEN
   - 03- BLUE
   - 04- YELLOW
   - 05- GREY
   - 06- PURPLE
   - 07- BROWN
   - 08- ORANGE
   - 09- WHITE
   - 10- PINK
   - 11- BLACK
   - 12- TURQUOISE
7. CAT.6A CABLE SHALL BE TERMINATED MEETING REQUIREMENTS OF STANDARD EIA/TIA 568B:



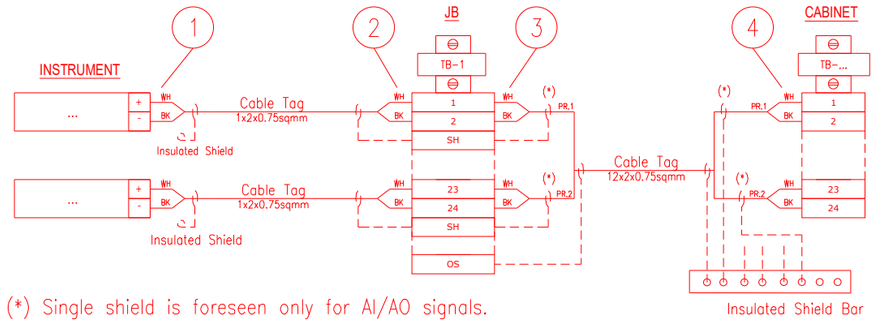
8. FOR INTRISICALLY SAFE CIRCUIT USE LIGHT BLUE CABLE OR ALTERNATIVELY ORANGE CABLE WITH HEAT SHRINKABLE SLEEVE BLUE AT BOTH END (SEE DOC. 123A90-FDL-IN-DD-40017).

LEGENDS & SYMBOLS:

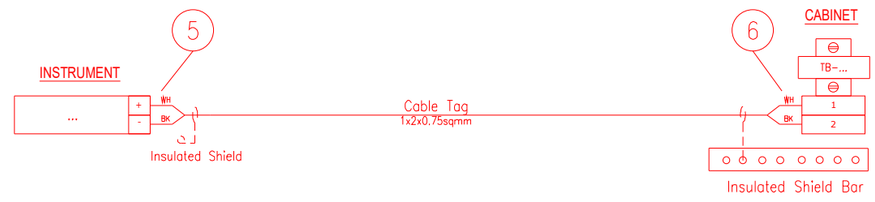
I.E.	- GREEN ⟶ INSTRUMENT SIGNAL EARTH
P.E.	- GREEN / YELLOW ⟶ P.E. EARTH / BONDING
	- TERMINAL BLOCK (TB)
WH	- WHITE
BK	- BLACK
RD	- RED
S	- SHIELD TERMINAL
OS	- OVERALL SHIELD TERMINAL
O/A Shld	- OVERALL SHIELD
I&O/A Shld	- INDIVIDUAL & OVERALL SHIELD
NIS	- NON INTRINSICALLY SAFE
IS	- INTRINSICALLY SAFE
P.E.	- PLANT EARTH
PCS	- PROCESS CONTROL SYSTEM
ESD	- EMERGENCY SHUTDOWN SYSTEM
SIS	- SAFETY INSTRUMENT SYSTEM
FGS	- FIRE & GAS SYSTEM
MC	- MARSHALLING CABINET
AI	- ANALOGUE INPUT
AO	- ANALOGUE OUTPUT
DI	- DIGITAL INPUT
DO	- DIGITAL OUTPUT
JE	- JUNCTION BOX FOR ELECTRICAL SIGNALS

PHILOSOPHY OF CROSS-FERRULING:

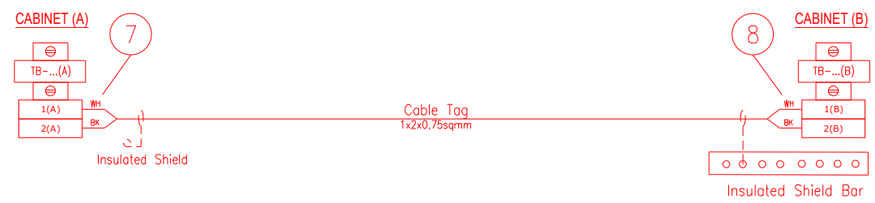
INSTRUMENT CONNECTION THROUGH MARSHALLING JB TO CABINET



INSTRUMENT CONNECTION STRAIGHT TO CABINET



CABINET CONNECTION TO CABINET



1 - INSTR. TERMINAL NO. OR POLARITY / JB TAG / JB TERMINAL NO.
2 - INSTR. TERMINAL NO. OR POLARITY / INSTR. TAG / JB TERMINAL NO.
3 - JB TERMINAL NO. / JB TERMINAL STRIP / CABINET TERMINAL STRIP / PAIR OR CORE NO.
4 - PAIR OR CORE NO. / JB TAG / JB TERMINAL NO. / CABINET TERMINAL STRIP / CABINET TERMINAL NO.
5 - INSTR. TERMINAL NO. OR POLARITY / CABINET TAG / CABINET TERMINAL STRIP / CABINET TERMINAL NO.
6 - INSTR. TERMINAL NO. OR POLARITY / INSTR. TAG / CABINET TERMINAL STRIP/ CABINET TERMINAL NO.
7 - TERMINAL NO. (A) / TERMINAL STRIP (A) / CABINET TAG (B) / CABINET TERMINAL NO. (B) / PAIR OR CORE NO.
8 - PAIR OR CORE NO. / CABINET TERMINAL NO. (A) / CABINET TAG (A) / TERMINAL STRIP (B) / TERMINAL NO. (B)

NOTES: A - HEAT SHRINKABLE BLACK FOR SHIELD OF NIS INSTRUMENT CABLE.
HEAT SHRINKABLE BLUE FOR SHIELD OF IS INSTRUMENT CABLE.
B - ABOVE DESCRIBED PHILOSOPHY IS INTENDED FOR CONNECTION AS REPRESENTED:
IN CASE OF CONNECTION FROM THE OPPOSITE SIDE, ORDER OF FERULE TAG SHALL BE MIRRORED.
C - SAME TAGGING PHILOSOPHY SHALL APPLIED ALSO TO SHIELDS TERMINATED ON TERMINAL STRIP.

REFERENCE DRAWINGS:

PIPING AND INSTRUMENT DIAGRAM 123A90-DDL-PR-PID-80009
INSTRUMENT INDEX 123A90-DDL-IN-LIS-40088
F&G DETECTORS LAYOUT 123A90-DDL-SAF-DL-30027

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_I	29/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
GENERAL NOTES/LEGENDS

CONTRACT NO./TITLE			SCALE N/A
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

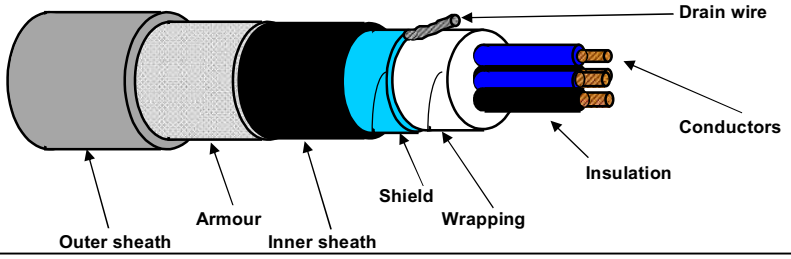
A3	DRAWING NO.	SHEET	REV.
	123A90-DDL-IN-DG-40015	003	01

File Name : 123A90-DDL-IN-DG-40015_Rev.01

Tag Number	Category	Discipline	Eng Status	NativeDoc	Layout	Parent Tag	Main Function	Secondary Function	Area	From Tag	From Main Function	From Area	From Tag Section	To Tag	To Main Function	To Area	To Tag Section	Material ID	Material Desc.	Gland Standard	From Gland	From Entry	From Fitting	To Gland	To Entry	To Fitting	Routing	Routing Manual
C-50-XY-004/00-JE-13003	Cable	IN	VFC	123A90-DDL-IN-LIS-40091						50-XY-004	Solenoid Valve	Lower Deck		00-JE-13003	DO JB to PCS	Upper Deck	Junction Box	SMICV05-2X2,5	Cable Cu Cl2/XLPE/OS/LSZH/SWB/LSZH 150/250V (300V) 2x2,5mm² - Grey	M20	T2_M20_Double			T2_M20_ Double				U-SEC-1H / U-SEC-14A / U-SEC-15 / L-SEC-10 / L-SEC-11

Cu Cl.2/XLPE/OS/LSZH/SWB/LSZH 150/250 V (300 V)

2X2,5 - INSTRUMENT CABLE - Flame Retardant - Not I.S.



TECHNICAL FEATURES

Conductors :	**7-STRANDED** plain/bare soft annealed copper wires **IEC 60228 Class 2**
Insulation :	XLPE, Nominal Thickness 0,6 mm
Cores colour code :	**Black NUMBERED (from 1 to 2)**
Pair Assembling :	Not required
Pair Wrapping:	Not required
Drain wire :	Not required
Pair Shield :	Not required
Shield Insulation :	Not required
Total Assembling :	9/1mt
Overall Wrapping:	by polyester-PET Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)
Drain wire :	7-Stranded **TINNED** annealed copper drain wire, **size 1,0 sqmm**, in continuous contact with the shield
Overall Shield :	by Aluminium-**Al** Minimum Thickness 0,008 mm / polyester-**PET** Minimum Thickness 0,010 mm tape helically wound (overlap ≥ 25%)
Inner sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, Average Thickness 1,1 mm
Inner sheath color code:	**Black**
Armour :	Galvanized Steel Wire Braid Armour (coverage ≥ 90%)
Outer sheath :	Extruded LSZH Thermoplastic Compound (O.I. ≥ 30%), type **SHF1** to IEC 60093.360, moisture/abrasion/UV Resistant, Average Thickness 1,2 mm
Outer sheath color code:	**Grey**
Outer printing (INKJET) :	**FLEI - 2X2,5 SQMM - XLPE/OS/LSZH/SWB/LSZH - 150/250 V - IEC 60332.1.2 - IEC 60332.3.22 -**
(every 1000 mm)	**Year of Manufacture - CE + Meter Marking**
Under armour diameter :	(8,9 ± 10%) mm
Over armour diameter :	(9,7 ± 10%) mm
Outer diameter :	(12,1 ± 10%) mm
Bending radius :	cable outer diameter x 10 (in fixed installation)
Voltage Test :	1,5 kV a.c. for 5' (Between Cores) / 1,5 kV a.c. for 5' (Between Cores - Shield)
Conductors DC Resistance :	≤ 7,86 Ω/km (@ 20°C)
Insulation Resistance :	≥ 1000 MΩ x Km (@ 20°C)
Applicable Standards	
Design Guidelines :	**IEC 60092.376**
ON COMPLETE CABLE	
Flame Retardant test :	IEC 60332.1.2 - IEC 60332.3.22
Acid Gas generation :	IEC 60754.1/2
Smoke density/Light Transmittance :	IEC 61034.2 (LT ≥ 60%)
Hazardous Areas :	IEC 60079.14 par.9.3.2a
Temperature Range :	
ON INSULATION	(max +90°C) (max continuous operation temperature of conductors)
	(max +250°C) (max conductors temperature during short-circuit for 5 seconds)
ON COMPLETE CABLE	
During Operation :	(-20°C up to +90°C) (in fixed installation)
During installation :	(- 5°C up to +50°C)
Note :	**To meet the requirements of installation and use in Zone 1 & Zone 2 (IEC 60079-14) and "Gas & Vapour Tight" the cable must be provided with Penetrating Inner sheath together with correct ATEX approved equipment or accessories.**

Office	Date	Sign	Rev.	Date	Sign
Drawn by :	04/04/2024	Messa			
Checked :	04/04/2024	Spaccasassi			
Approved :	04/04/2024	Cucinotta			

The data provided, lending assent for the treatment, will be used to the sense of the article 13 of of the Regulation (UE) 2016/679, also through outsiders, in order to allow the realization of the fulfilments informatives, administrative, commercial and accounting related to the contractual relationship. Integral copy of the informative could be requested at our offices.

All proprietary rights reserved according to law. This document shall be not reproduced without written permission. FLEI reserves the right to change characteristics and technical data of product shown at any time.

ITEM	Tag	50-PT-001	: Pressure Transmitter - Sea Water from Pump P-50001A			Dwg	123A90-DDL-PR-PID-80021
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10000901		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Instrumental	Form	CJX08 Electrical Instrument

Installation Check

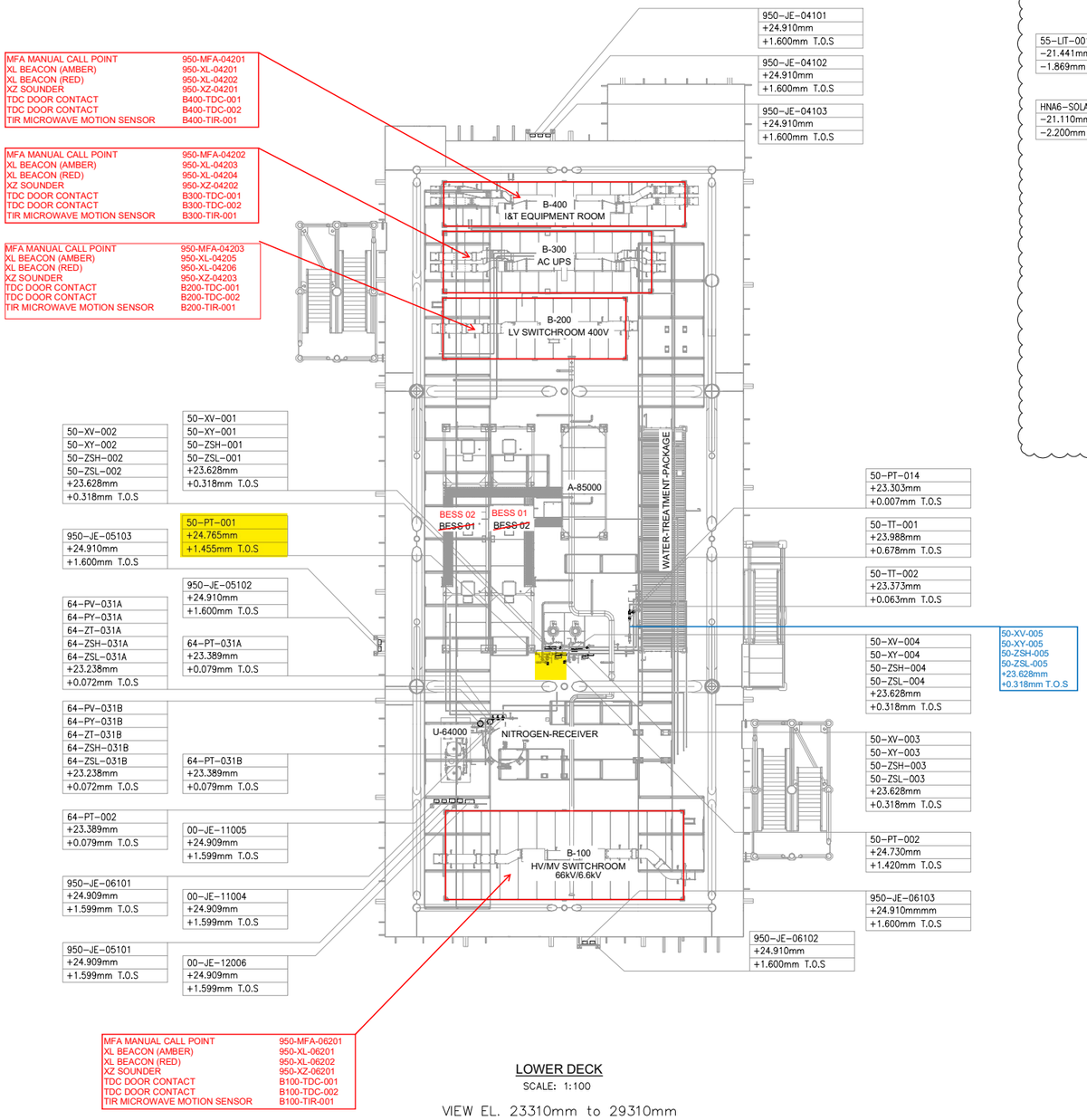
1	Check for mechanical damage.	OK
2	Check installed equipment is suitable and conforms to specification.	OK
3	Check installation conforms to P&ID and hook-up drawing.	OK
4	Check identification (tag number, tag plates).	PL
5	Check supporting and protection against vibrations.	PL
6	Check calibration certificate (TJX04)	OK
7	Visual Check electrical connections.	OK
8	Check earthing connections.	OK
9	Check the conformity of earthing as per specification (I.P.E. or I.E.)	NA
10	Check tube fittings manufacturer is the one chosen for the plant (if applicable).	OK
11	Check piping connections provide required block & bleed facility (if required).	NA
12	If required produce Red Line Mark Up for "AS BUILT"	

Comments:

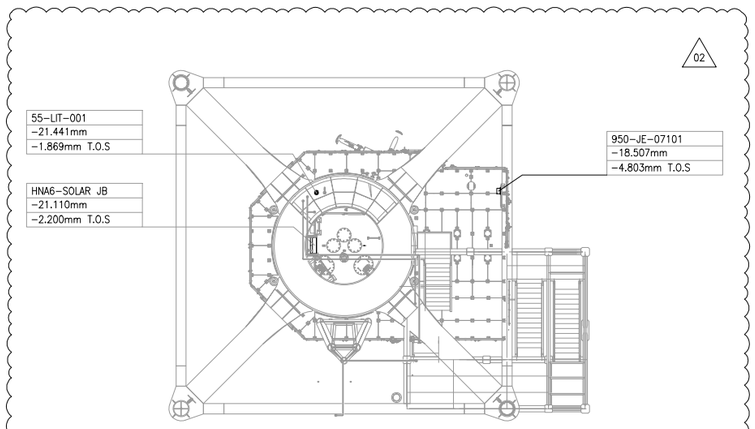
	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Alessio Polo	
Date	2025-02-07	2025-02-07	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-07T13:24:52.662Z	PROVERLIS Digitaly signed by Alessio Polo 2025-02-07T17:01:07.089Z	

DRAWING NO. 123A90-DDL-IN-DL-40080

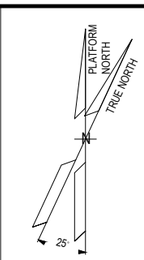
REV. 02

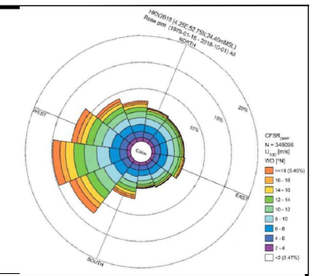


LOWER DECK
SCALE: 1:100
VIEW EL. 23310mm to 29310mm



TRANSITION PIECE
SCALE: 1:100
VIEW EL. 17050mm to 23310mm





NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40081	INSTRUMENT LAYOUT - UPPER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-UPPER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DL-40080**

REV.:	DATE:	SIGNATURE:
2_C	06/11/24	G.Randi

ROSETTI MARINO SpA

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–LOWER DECK
TOS EL. 23.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90–DDL–IN–DL–40080	SHEET 001	REV. 02

File Name : 123A90-DDL-IN-DL-40080 REV02.dwg

DRAWING NO. DRAWING_NO.

REV. REV.

P-50001 A/B

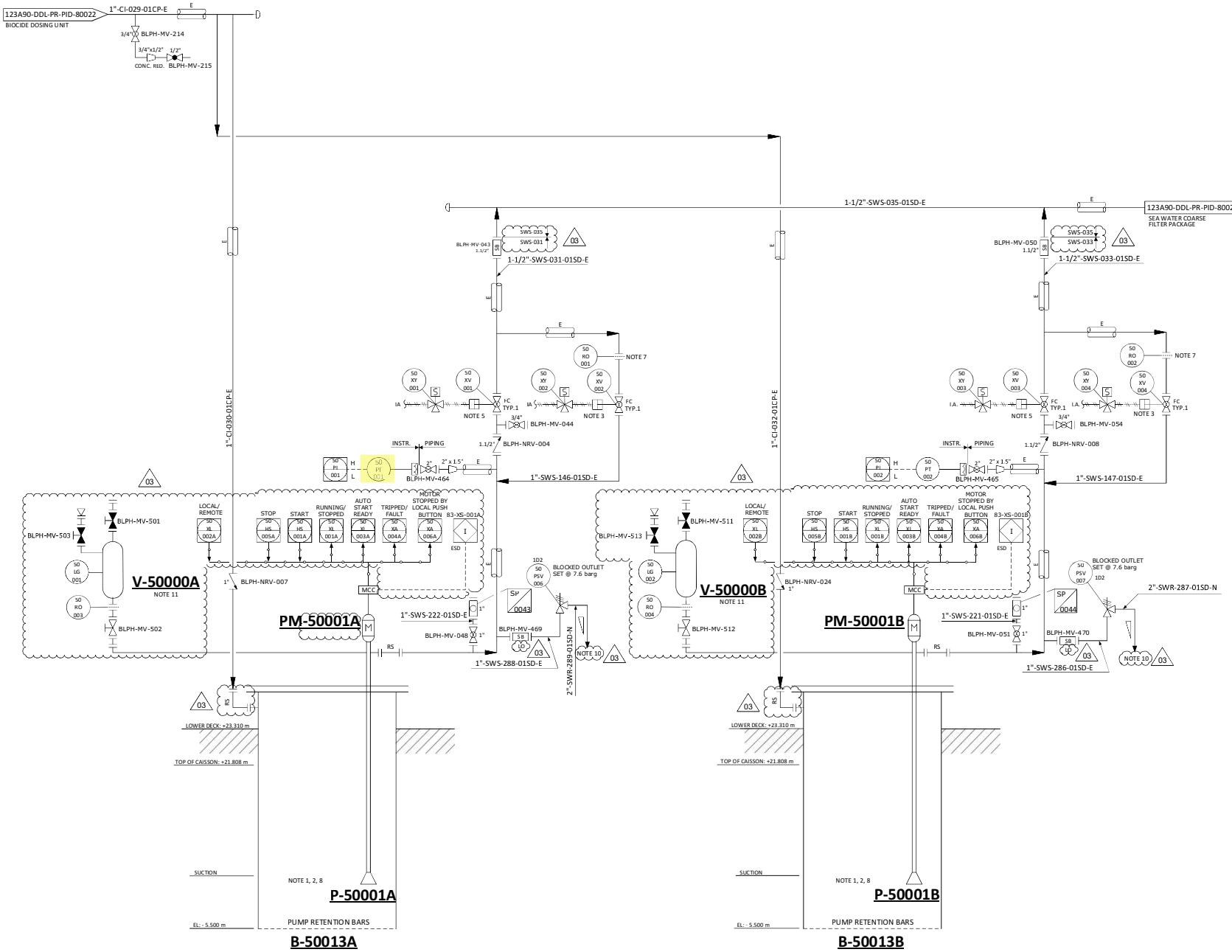
SEA WATER LIFT PUMPS

POWER : 1.6 KW
FLOW : 2.5 m³/h
DESIGN P/T : 7.6 barg / 80°C
DISCHARGE PRESSURE : 5.6 barg (NOTE 9)
MATERIAL : SDSS

B-50013 A/B

SEA WATER LIFT PUMPS
CAISSONS

SIZE : 343 mm (ID) x 27308 mm (H)
MATERIAL : CS + CA



NOTES

1. SEAWATER LIFT PUMPS ARE RATED 2 X 100%
2. AUTO START OF DESIGNATED STANDBY PUMP ON LOSS OF RUNNING STATUS AND DISCHARGE LOW PRESSURE ALARM OF DUTY PUMP.
3. VALVE TO BE OPENED WHEN PUMP IS OFFLINE TO DOSE CAISSON WITH TREATED SEAWATER TO PREVENT BIOLOGICAL GROWTH.
4. DELETED.
5. SOFTWARE INTERLOCK PREVENTS PUMPS FROM STARTING IN CASE THE RELEVANT XV VALVE IS FULLY CLOSED. 03
6. DELETED.
7. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "123A90-DDL-IN-DS-40054 - TECHNICAL DATASHEET FOR RESTRICTION ORIFICE".
8. LOGIC FOR CONTROL OF P-5001A/B THAT PREVENTS SIMULTANEOUS RUNNING OF A AND B PUMP IS PROVIDED.
9. DISCHARGE PRESSURE REFERS TO THE FLANGE DISCHARGE OF THE PUMP AT LOWER DECK.
10. ROUTED TO THE SEA.
11. VESSELS V-50000A/B ARE INSULATED AND HEAT TRACED. 03

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.
5. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
SEA-WATER INTAKE SYSTEM SHEET 1

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE	
A1	DRAWING NO. 123A90-DDL-PR-PID-80021		SHEET 001	REV. 03

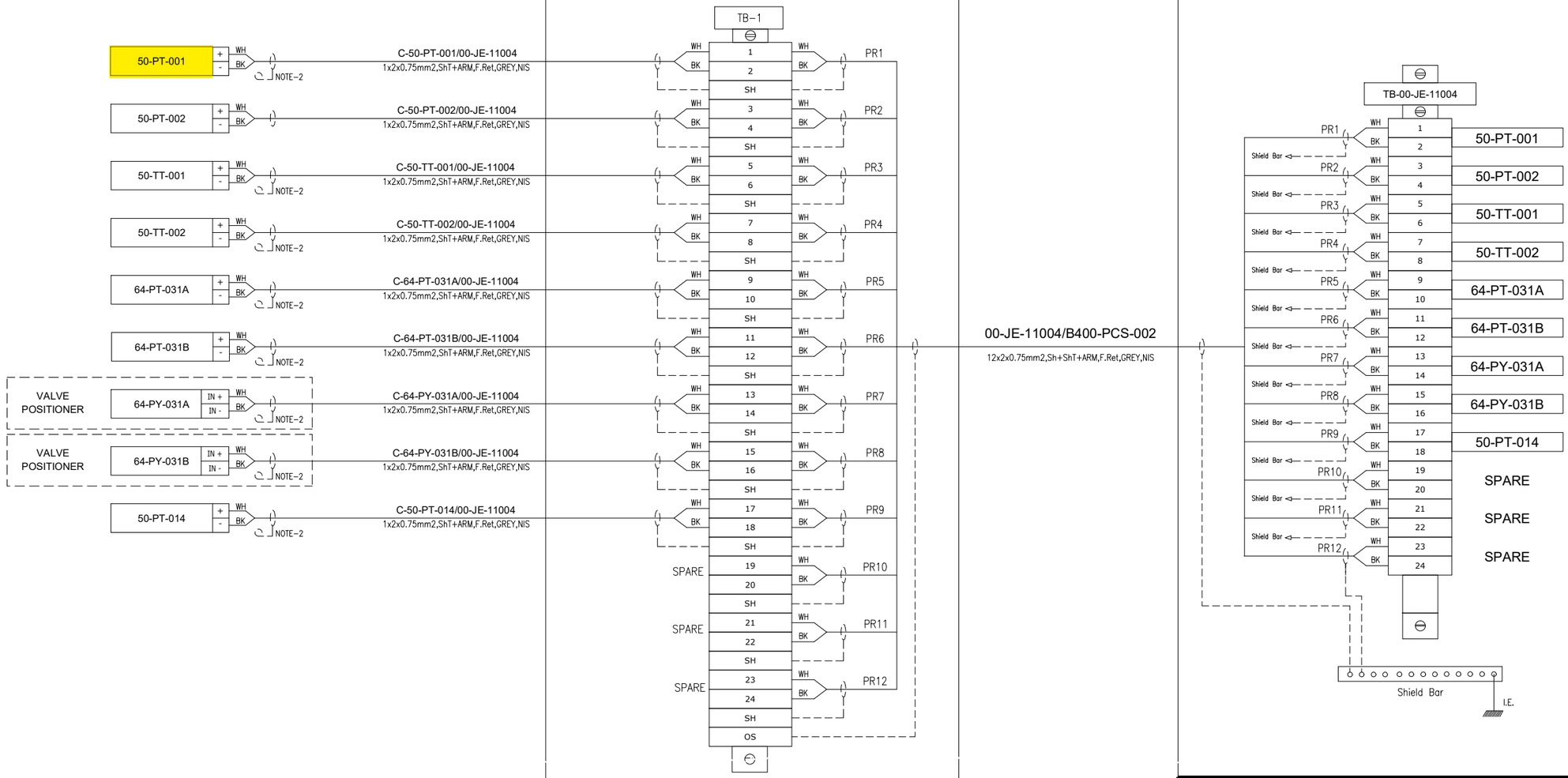
File Name : FILE_NAME

DRAWING NO. 123A90-DDL-IN-DG-40015

REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 00-JE-11004	No.	MARSHALLING CABINET B400-PCS-002

<01>



VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_I	29/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

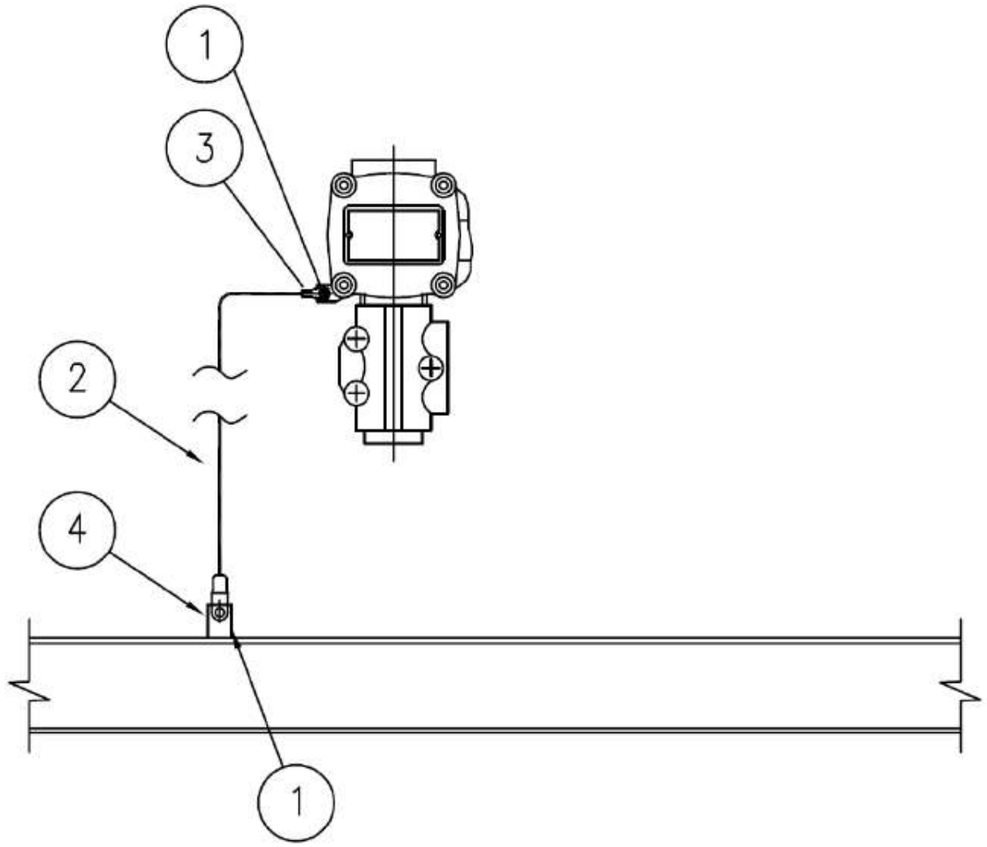
TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
00-JE-11004-SH.1 OF 2

CONTRACT NO./TITLE			SCALE 1:1
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024
A3	DRAWING NO. 123A90-DDL-IN-DG-40015	SHEET 009	REV. 01

File Name : 123A90-DDL-IN-DG-40015_Rev.01

E33



MATERIALS

POS.	Q.TY	DESCRIPTION	NOTES
1	1	A4 STAINLESS STEEL BOLT COMPLETE WITH NUT AND WASHERS	
2	1	Y/G INSULATING COPPER CONDUCTOR - 6mm²	
3	1	COMPRESSION TYPE LUG FOR INSULATING COPPER CONDUCTOR	
4	1	EARTHING BAR / PLATE / THREADED STUD	(1)

NOTE:
1) FOR DETAIL OF EARTHING PLATE, EARTHING BOSS AND THREADED STUD SEE TYP. E11A/C/D/E

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DD-20090**

REV.:	DATE:	SIGNATURE:
2_I	07/11/24	G.Randi

ROSETTI MARINO SpA

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	26/08/24	GRA	AMA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/06/24	SPS	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS-EARTHING SYSTEM
EARTHING FOR GENERIC INSTRUMENT

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : NTS

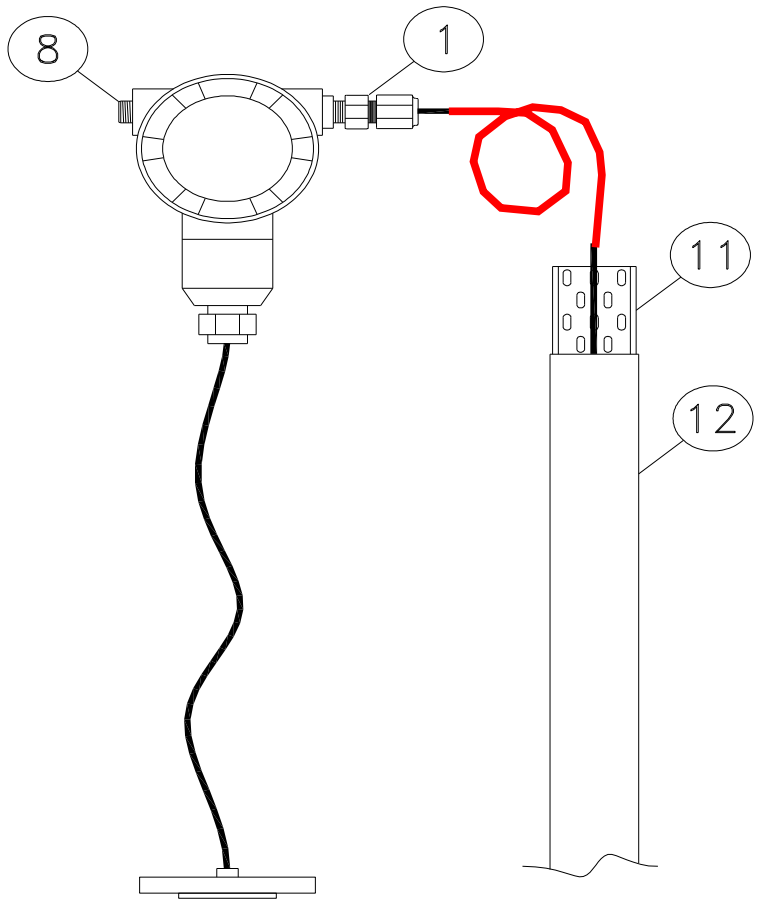
A3 | DRAWING NO. 123A90-DDL-EL-DD-20090 | SHEET 027 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DD-20090 REV.02.DWG

CROSSWIND	HOLLANDSE KUST NOORD WIND PARK Project Contract No. CW-I-WP4-2023-05	ROSETTI MARINO
Document Title:	Instrument Electrical Hook-Ups	Sh. 8 of 37 Date: 27/09/2024 Rev. 02

ELECTRICAL HOOK-UP FOR PRESSURE TRANSMITTERS (C/W DIAPHRAGM SEAL & CAPILLARY)



INSTRUMENT TAG	
1	50-PT-001
2	50-PT-002
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NOTE:

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-HD-40079**

REV.:	DATE:	SIGNATURE:
2_G	20/12/24	V.Ramponi

ROSETTI MARINO SpA

POS.	NORM/STD CODE	DESCRIPTION	SIZE/ CONNECTION TYPE	Q.TY
12		Cover for cable tray, FRP, Grey Color	50 W x 10 H x 5 THK	3 mt
11		Perforated cable tray, FRP, Grey Color	50 W x 50 H x 5 THK	3 mt
8		Nickel Plated Brass Plug Ex-d/e IIC (or IIB + H2) T1	M20	1
1		Nickel Plated Brass Double Compression Cable Gland Ex-d/e IIC (or IIB + H2) T1	M20S	1

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Its distribution is electronically controlled. Once printed shall be considered as "NOT CONTROLLED" copy

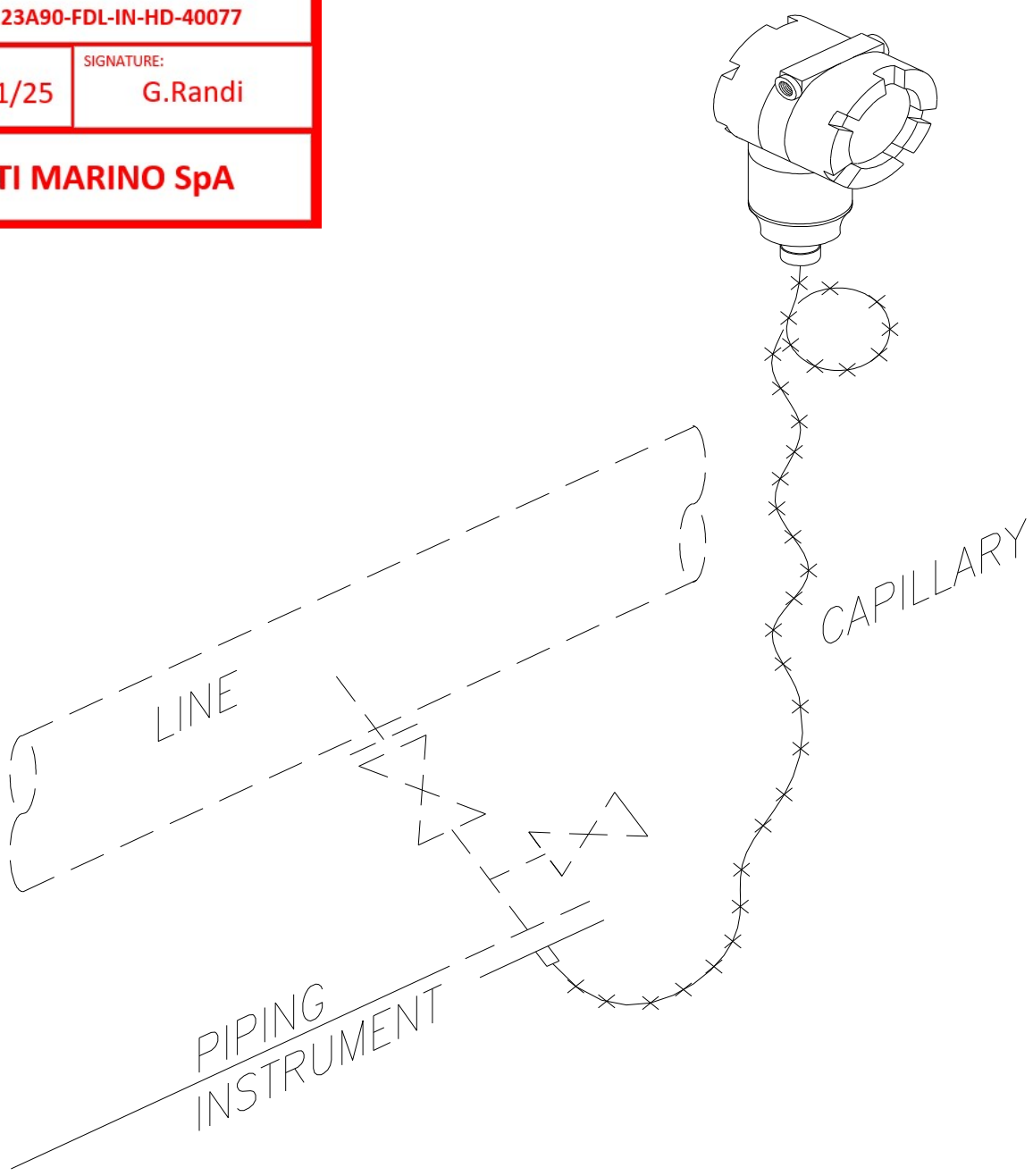
CROSSWIND	HOLLANDSE KUST NOORD WIND PARK Project Contract No. CW-I-WP4-2023-05	ROSETTI MARINO
Document Title:	Instrument Process Hook-Ups	Sh. 7 of 8 Date: 06/12/2024 Rev. 02

PRESSURE TRANSMITTERS - Diaphragm Seal & Capillary

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-HD-40077**

REV.:	DATE:	SIGNATURE:
2_B	17/01/25	G.Randi

ROSETTI MARINO SpA



INSTRUMENT TAG	
1	50-PT-001
2	50-PT-002
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NOTES:

POS.	NORM/STD CODE	DESCRIPTION	SIZE/ CONNECTION TYPE	Q.TY

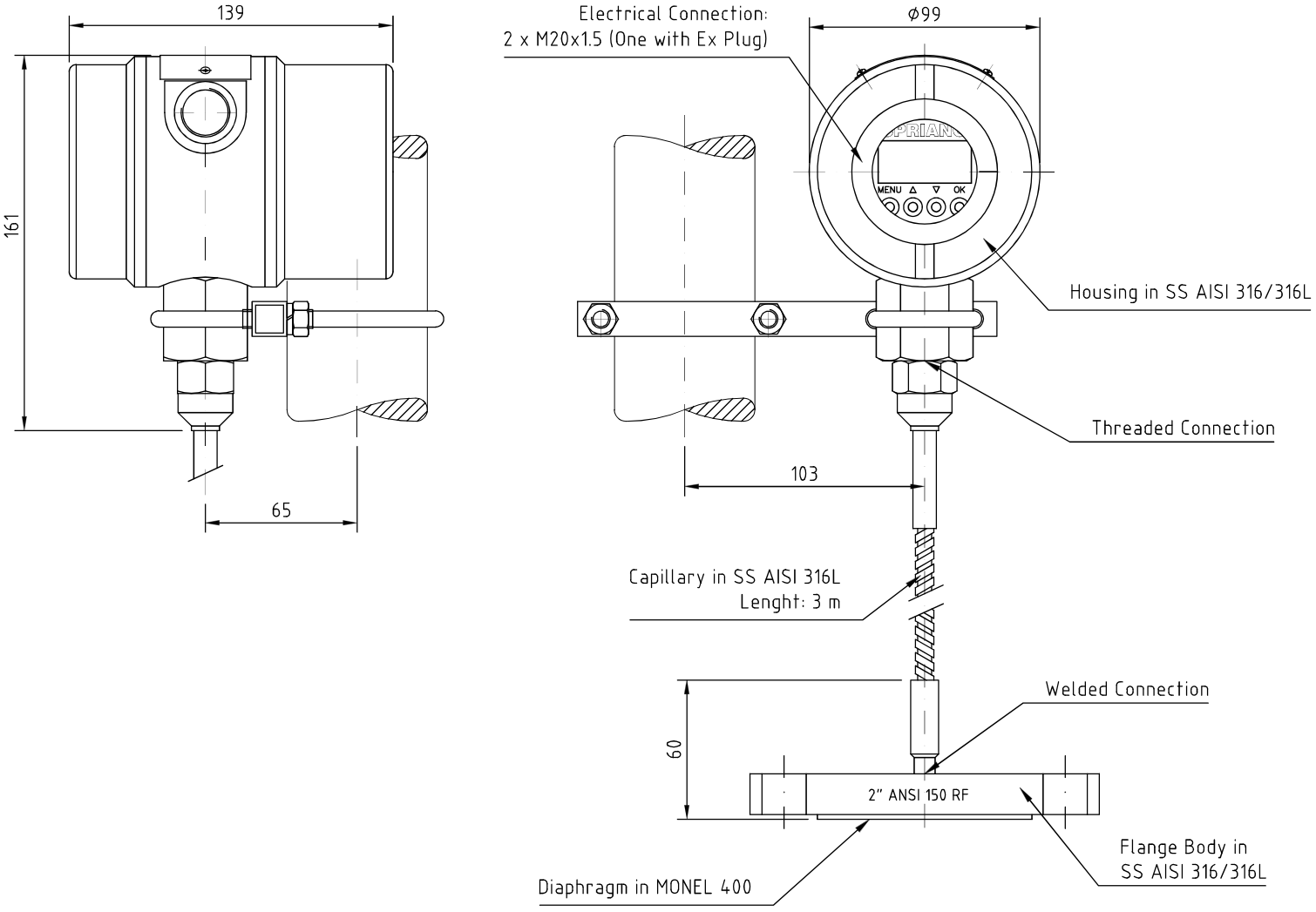
This document undergoes an issuance cycle within EDMS "Fusionlive".
Its distribution is electronically controlled. Once printed shall be considered as "NOT CONTROLLED" copy

SST76 PRESSURE TRANSMITTERS

TAG LIST

#	TAG NUMBER	NOMINAL RANGE	CALIBRATION RANGE
1	50-PT-001	0 ÷ 30 bar	0 ÷ 18 barg
2	50-PT-002	0 ÷ 30 bar	0 ÷ 18 barg

TOTAL QUANTITY: 2



NOTES

SST76 PRESSURE TRANSMITTERS
SST76-H-7-K-2-9-2-1-4 + SEA03 + CAP-2-03

H - OUTPUT: 4-20 mA + HART
7 - PROCESS CONNECTION: FLUSH DIAPHRAGM SEAL 2" ANSI 150RF (SEA03);
K - NOMINAL RANGE: 0 ÷ 30 bar
2 - CALIBRATION: 0 ÷ 18 barg
9 - DIAPHRAGM MATERIAL: MONEL 400, BODY IN SS AISI 316/316L
2 - OPTIONS: HOUSING MATERIAL STAINLESS STEEL WITH ELECTRICAL CONNECTIONS 2 x 1/2" NPT-F
1 - OPTIONS: MOUNTING BRACKET FOR 2" PIPE MOUNTING
4 - EXPLOSION PROTECTION 2014/34/EU: ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1G Ex ia IIC T6/T5/T4 Ga

OPTIONS/ACCESSORIES:
1. SEA03 - FLUSH DIAPHRAGM SEAL 2" ANSI 150RF, DIAPHRAGM IN MONEL, BODY AND FLANGE RING IN SS AISI 316
2. CAP-2-03 - STAINLESS STEEL ARMOURED CAPILLARY, LENGTH 3m

NOTES:
1. OVERALL ACCURACY OF PT (COMPREHENSIVE OF HYSTERESIS, NON-LINEARITY, REPEATABILITY) IS WITHIN +/- 0,07% FS;
2. ALL ITEMS ARE EQUIPPED WITH SS NAMEPLATE;
3. FILLING OF ELEMENT IS FORESEEN WITH DOW CORNING SILICONIC OIL;
4. ELECTRICAL CONNECTION ARE: 2 X 1/2" NPT-F (ONE PLUGGED);
5. INTEGRAL LCD /CONFIGURABLE ENGINEERING UNITS;
6. INGRESS PROTECTION EN 60529: IP66;
7. HOUSING MATERIAL STAINLESS STEEL;
8. ALL INSTRUMENT ARE SIL2 CERTIFIED;
9. HART 6;
10. CAPILLARY IS WELDED TO INSTRUMENT PROCESS CONNECTION.

CERTIFICATES

1. ATEX Ex-d CERTIFICATE (2014/34/EU)
2. IP66 GRADE (EN/IEC 60529)
3. MATERIAL 3.1 (EN 10204) & HYDROSTATIC TEST CERTIFICATES
4. CALIBRATION CERTIFICATES (IEC 60770)

REV	DATE	STATUS	PURPOSE OF ISSUE	PRE'D.	CHC'D.	APP'D.	AUTH'D.
03	18/JULY/24	FOURTH ISSUE	FOR CONSTRUCTION	M. Sassi	G. Abbate	G. Abbate	E. Valletti
02	02/JULY/24	THIRD ISSUE	FOR CONSTRUCTION	M. Sassi	G. Abbate	G. Abbate	E. Valletti
01	13/JUN/24	SECOND ISSUE	FOR CONSTRUCTION	M. Sassi	G. Abbate	G. Abbate	E. Valletti
00	24/MAY/24	FIRST ISSUE	FOR APPROVAL	M. Sassi	G. Abbate	G. Abbate	E. Valletti

CROSSWIND ROSETTI MARINO

P.O. No.: 24/01611/PO | Mod_CAR_Rev17-01 | SCALE – 1:2

TERRANOVA

TERRANOVA SRL

DRAWING TITLE: DIMENSIONAL DRAWINGS

JOB:	4718_OS	SHEET No.	9 OF 10	REV. 03

GENERAL	1	Tag Number		50-PT-001	
	2	Service		SEA WATER FROM PUMP P-50001A TO SEA WATER TREAT.	
	3	P&ID Number	Location	123A90-DDL-PR-PID-80021	1-1/2"-SWS-031-01SD-E
	4	Function		PRESSURE MEASUREMENT	
	5	Mounting		DIRECT ON-LINE	
	6	Area Classification		ATEX Zone2 - IIC (IIB+H2) T1	
	7	Ambient Temperature		Min: -8.4 °C, Norm: 10.5 °C, Max: +25.0 °C.	
PROCESS CONDITIONS	8	Fluid		SEA WATER	
	9	Pressure Des.	Oper. [barg]	17.7	15
	10	Temperature Des.	Oper. [°C]	100	+1.3 / +20.2
	11	Oper. Spec. Gravity	Oper. Viscosity	-	-
	12	Flow Rate	Allowable Temp.	-	-
	13				
TRANSMITTER	14	Instrument Range Min.	Max.	0	30
	15	Calibration Range Min.	Max. [barg]	0	18
	16	Elevation	Suppresion	-	-
	17	Element Type		Diaphragm	
	18	Element Material		Monel 400 (17)	
	19	Body Material	Body Rating	AISI 316 SS	20 bar
	20	Process Flanges Material		-	
	21	Wetted O-Rings Material		-	
	22	Fill Fluid		-	
	23	Bolts	Housing	Manifold/Instrument assembly	AISI 316/316L (3, 7, 8)
	24	Paint		-	
	25	ATEX Certification	Ingress Protection	Atex Ex II 2G Ex db IIC T5	IP66
	26	Process Connection	Electrical Connection	Inner Diaphragm Seal	N. 2 M20x1.5mm
	27	Repeatability	Accuracy	-	0.07 % of Nominal Range
	28	SIL Certification	PED Certification	-	Required (8)
DIAPHRAGM SEAL	29	Process Connection & Rating		2"	150# RF ASME B 16.5
	30	Diaphragm Material	Housing Material	Monel 400	AISI 316/316L
	31	Fill Fluid	Capillary Material	Silicone oil	S.S. Capillary
	32	Capillary Type	Capillary Length	Required	3 m
	33	Flushing Connection		-	
	34				
OPTIONS	35	Integral Meter	Scale	Integral LCD Display	-
	36	Hydrostatic Testing	Cleaning	Required	-
	37	Mounting Brackets	Manifold Model No	Required in Option	-
	38	Lightning Protection	Barrier Manuf./Model	-	-
COMMUNICATION AND SOFTWARE	39	Communication Type	Signal Type	HART 6	4-20mA Loop Powered 24 Vdc
	40	D D Revision	CFF Revision	-	-
	41	Device Tag	Hart Tag	-	-
	42	Internal Diagnostics	Capacitance	-	-
	43	Segment	Device Address	-	-
	44	Device Class	Simulate	-	-
	45	Nominal Current	Operating Voltage	-	-
	46				
PURCHASE	47	Manufacturer		TERRANOVA	
	48	Model		SST76-H-7-K-2-9-2-1-4 +SEA03 + CAP-2-03	
	49	Purchase Order Number		1724000979	

Notes:

No.	Date	By	Chkd	Appr	Description
02	06/12/2024	VBA	LCA	DLO	Accepted for Construcion (AFC)
01	29/08/2024	VBA	LCA	DLO	Accepted for Construcion (AFC)
00	16/01/2024	VBA	LCA	DLO	ISSUED FOR REVIEW (IFR)

INSTRUMENT DATASHEET

Pressure Transmitter

CROSSWIND

ROSETTI MARINO

Sheet 25 of 35

Code: 605 | Dwg. No.: 123A90-DDL-IN-DS-40039 Rev 02

ITEM	Tag	50-PT-002	: Pressure Transmitter - Sea Water from Pump P-50001B			Dwg	123A90-DDL-PR-PID-80021
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10000902		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Instrumental	Form	CJX08 Electrical Instrument

Installation Check

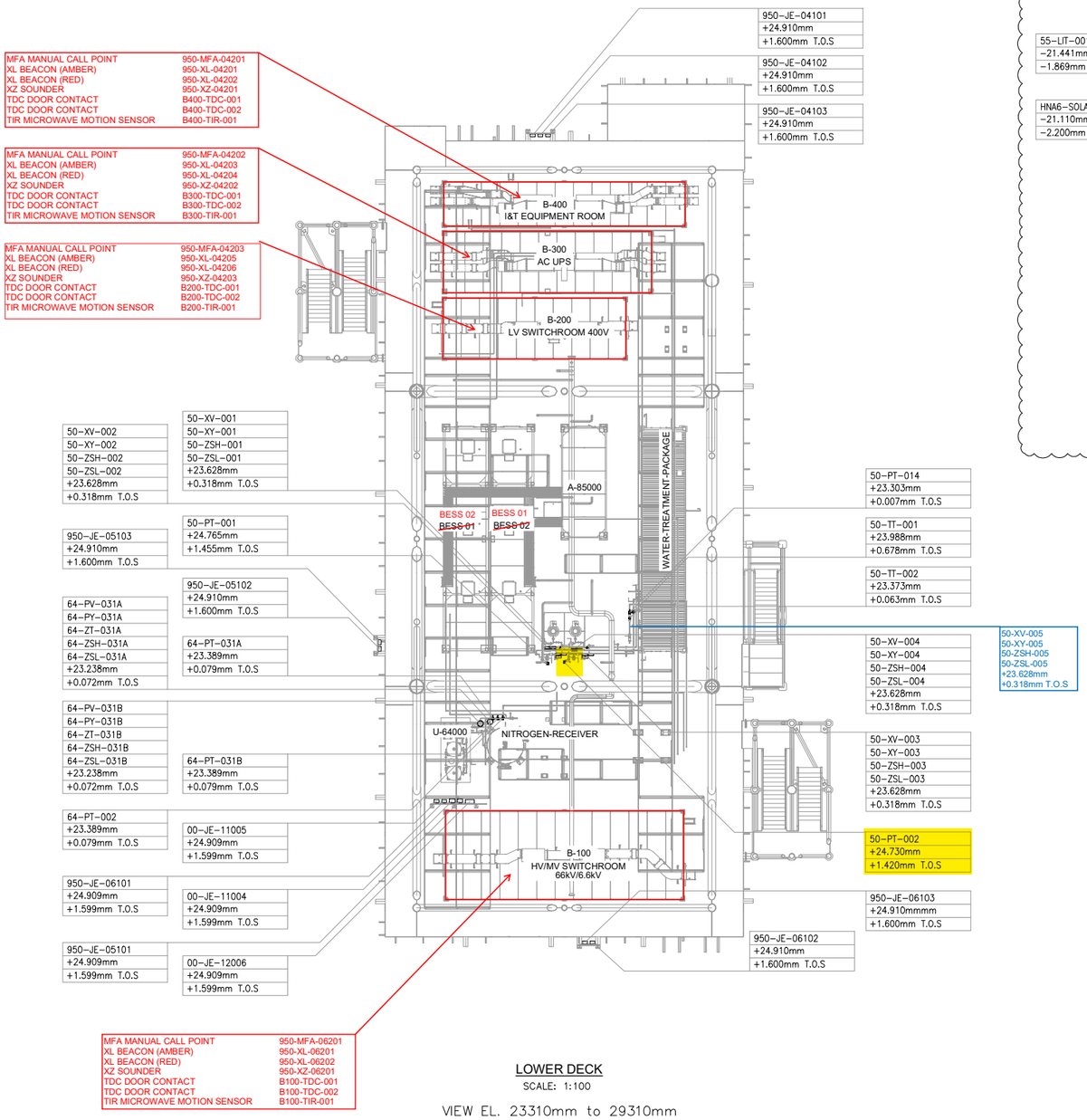
1	Check for mechanical damage.	OK
2	Check installed equipment is suitable and conforms to specification.	OK
3	Check installation conforms to P&ID and hook-up drawing.	OK
4	Check identification (tag number, tag plates).	PL
5	Check supporting and protection against vibrations.	PL
6	Check calibration certificate (TJX04)	OK
7	Visual Check electrical connections.	OK
8	Check earthing connections.	OK
9	Check the conformity of earthing as per specification (I.P.E. or I.E.)	NA
10	Check tube fittings manufacturer is the one chosen for the plant (if applicable).	OK
11	Check piping connections provide required block & bleed facility (if required).	NA
12	If required produce Red Line Mark Up for "AS BUILT"	

Comments:

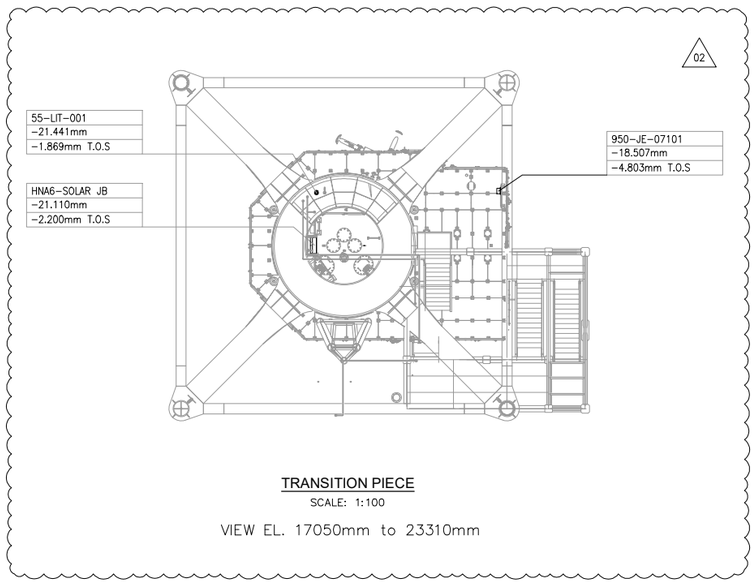
	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Alessio Polo	
Date	2025-02-07	2025-02-07	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-07T13:25:04.250Z	PROVERLIS Digitaly signed by Alessio Polo 2025-02-07T16:47:14.916Z	

DRAWING NO. 123A90-DDL-IN-DL-40080

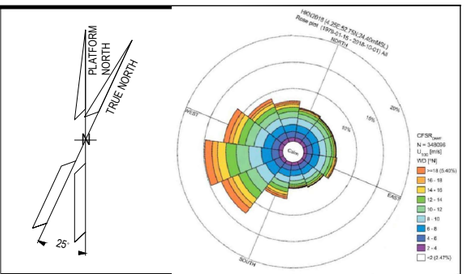
REV. 02



LOWER DECK
SCALE: 1:100
VIEW EL. 23310mm to 29310mm



TRANSITION PIECE
SCALE: 1:100
VIEW EL. 17050mm to 23310mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40081	INSTRUMENT LAYOUT - UPPER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-UPPER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DL-40080**

REV.:	DATE:	SIGNATURE:
2_C	06/11/24	G.Randi

ROSETTI MARINO SpA

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–LOWER DECK
TOS EL. 23.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90–DDL–IN–DL–40080	SHEET 001	REV. 02

File Name : 123A90-DDL-IN-DL-40080 REV02.dwg

DRAWING NO. DRAWING_NO.

REV. REV.

P-50001 A/B

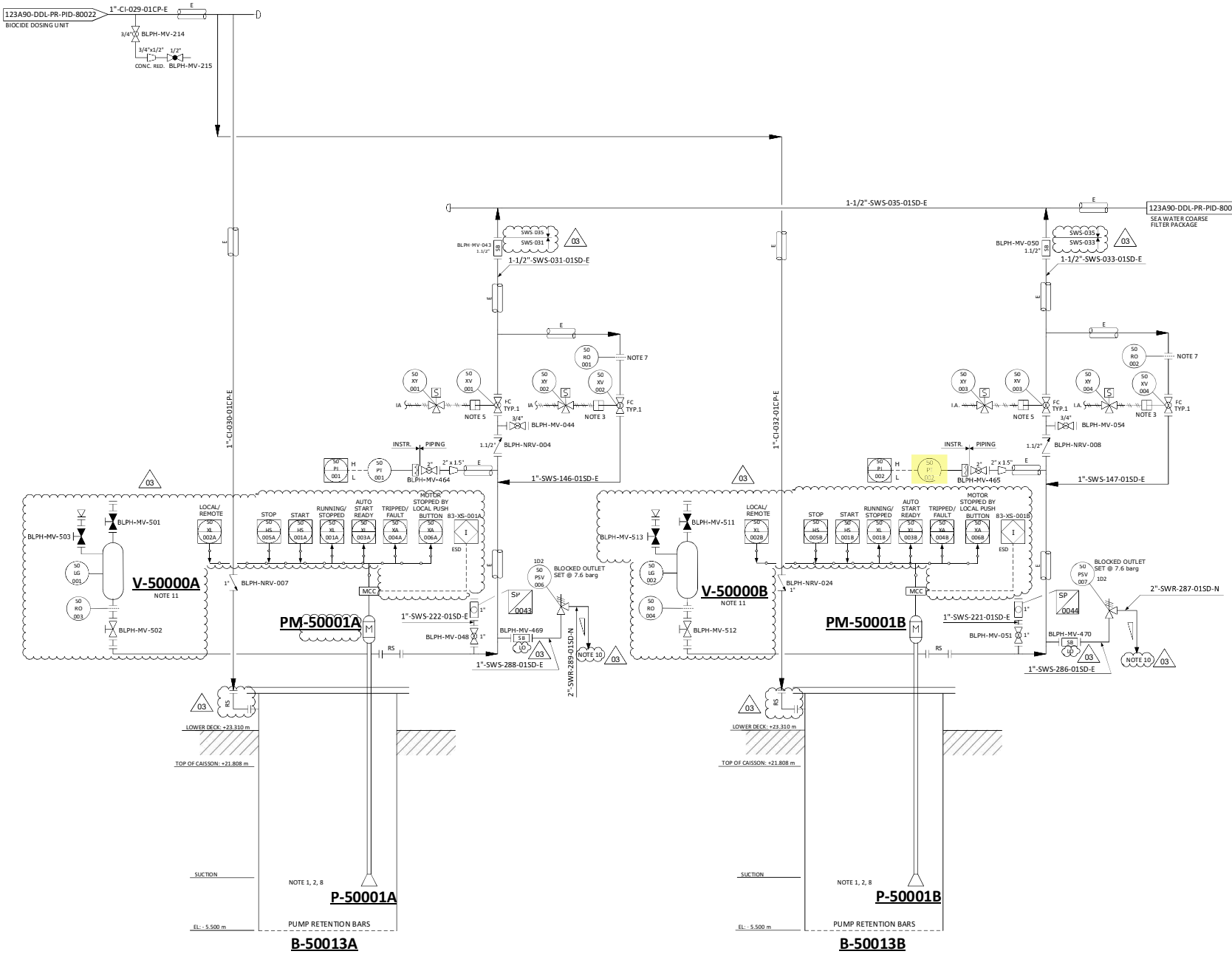
SEA WATER LIFT PUMPS

POWER : 1.6 KW
FLOW : 2.5 m³/h
DESIGN P/T : 7.6 barg / 80°C
DISCHARGE PRESSURE : 5.6 barg (NOTE 9)
MATERIAL : SDSS

B-50013 A/B

SEA WATER LIFT PUMPS
CAISSONS

SIZE : 343 mm (ID) x 27308 mm (H)
MATERIAL : CS + CA



NOTES

1. SEAWATER LIFT PUMPS ARE RATED 2 X 100%
2. AUTO START OF DESIGNATED STANDBY PUMP ON LOSS OF RUNNING STATUS AND DISCHARGE LOW PRESSURE ALARM OF DUTY PUMP.
3. VALVE TO BE OPENED WHEN PUMP IS OFFLINE TO DOSE CAISSON WITH TREATED SEAWATER TO PREVENT BIOLOGICAL GROWTH.
4. DELETED.
5. SOFTWARE INTERLOCK PREVENTS PUMPS FROM STARTING IN CASE THE RELEVANT XV VALVE IS FULLY CLOSED. 03
6. DELETED.
7. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "123A90-DDL-IN-DS-40054 - TECHNICAL DATASHEET FOR RESTRICTION ORIFICE".
8. LOGIC FOR CONTROL OF P-5001A/B THAT PREVENTS SIMULTANEOUS RUNNING OF A AND B PUMP IS PROVIDED.
9. DISCHARGE PRESSURE REFERS TO THE FLANGE DISCHARGE OF THE PUMP AT LOWER DECK.
10. ROUTED TO THE SEA.
11. VESSELS V-50000A/B ARE INSULATED AND HEAT TRACED. 03

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.
5. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
SEA-WATER INTAKE SYSTEM SHEET 1

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE	
A1	DRAWING NO. 123A90-DDL-PR-PID-80021		SHEET 001	REV. 03

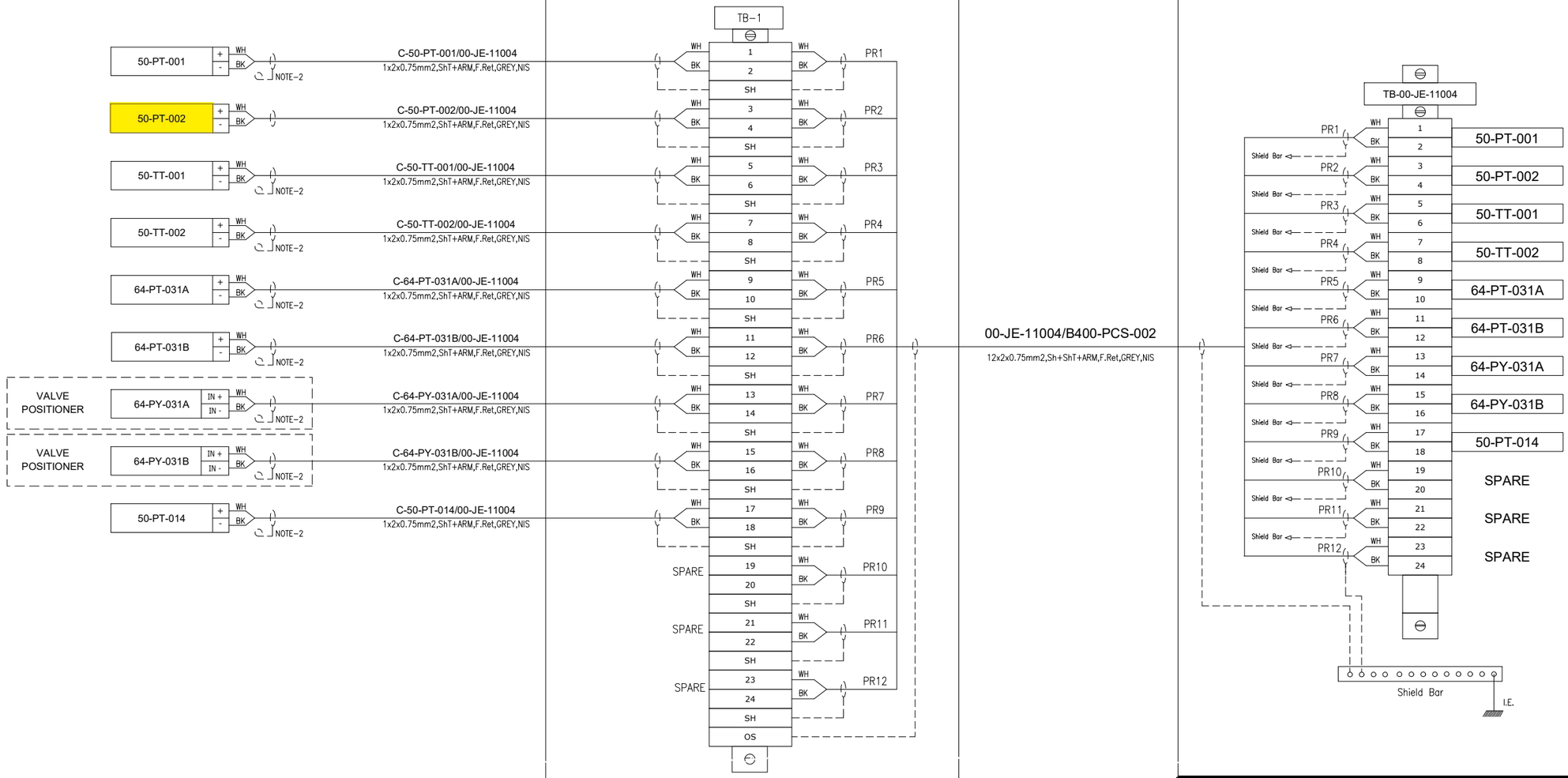
File Name : FILE_NAME

DRAWING NO. 123A90-DDL-IN-DG-40015

REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 00-JE-11004	No.	MARSHALLING CABINET B400-PCS-002

<01>



VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_I	29/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

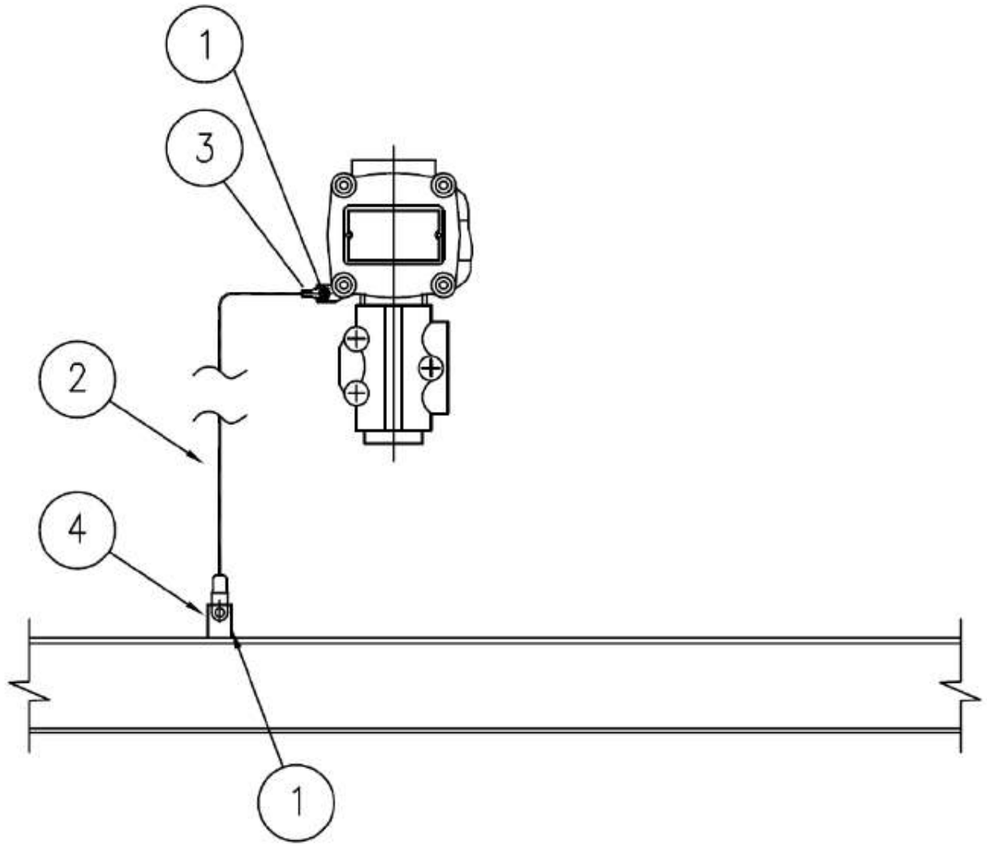
TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
00-JE-11004-SH.1 OF 2

CONTRACT NO./TITLE			SCALE 1:1
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024
A3	DRAWING NO. 123A90-DDL-IN-DG-40015	SHEET 009	REV. 01

File Name : 123A90-DDL-IN-DG-40015_Rev.01

E33



MATERIALS

POS.	Q.TY	DESCRIPTION	NOTES
1	1	A4 STAINLESS STEEL BOLT COMPLETE WITH NUT AND WASHERS	
2	1	Y/G INSULATING COPPER CONDUCTOR - 6mm²	
3	1	COMPRESSION TYPE LUG FOR INSULATING COPPER CONDUCTOR	
4	1	EARTHING BAR / PLATE / THREADED STUD	(1)

NOTE:
1) FOR DETAIL OF EARTHING PLATE, EARTHING BOSS AND THREADED STUD SEE TYP. E11A/C/D/E

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DD-20090**

REV.:	DATE:	SIGNATURE:
2_I	07/11/24	G.Randi

ROSETTI MARINO SpA

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	26/08/24	GRA	AMA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/06/24	SPS	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS-EARTHING SYSTEM
EARTHING FOR GENERIC INSTRUMENT

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : NTS

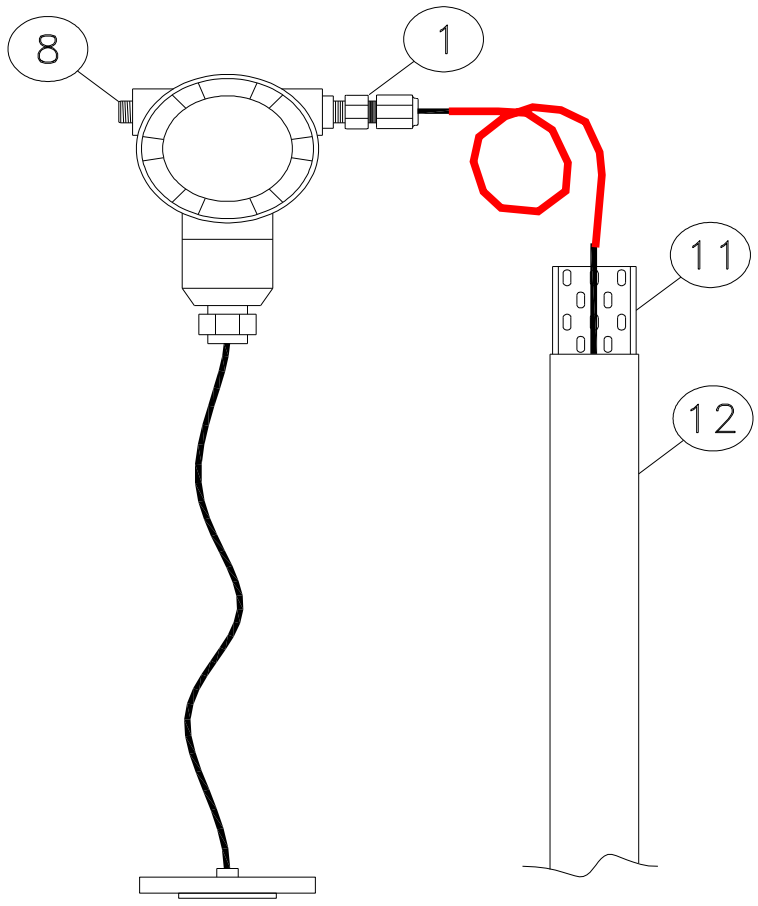
A3 | DRAWING NO. 123A90-DDL-EL-DD-20090 | SHEET 027 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DD-20090 REV.02.DWG

CROSSWIND	HOLLANDSE KUST NOORD WIND PARK Project Contract No. CW-I-WP4-2023-05	ROSETTI MARINO
Document Title:	Instrument Electrical Hook-Ups	Sh. 8 of 37 Date: 27/09/2024 Rev. 02

ELECTRICAL HOOK-UP FOR PRESSURE TRANSMITTERS (C/W DIAPHRAGM SEAL & CAPILLARY)



INSTRUMENT TAG	
1	50-PT-001
2	50-PT-002
3	
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NOTE:

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-HD-40079**

REV.:	DATE:	SIGNATURE:
2_G	20/12/24	V.Ramponi

ROSETTI MARINO SpA

POS.	NORM/STD CODE	DESCRIPTION	SIZE/ CONNECTION TYPE	Q.TY
12		Cover for cable tray, FRP, Grey Color	50 W x 10 H x 5 THK	3 mt
11		Perforated cable tray, FRP, Grey Color	50 W x 50 H x 5 THK	3 mt
8		Nickel Plated Brass Plug Ex-d/e IIC (or IIB + H2) T1	M20	1
1		Nickel Plated Brass Double Compression Cable Gland Ex-d/e IIC (or IIB + H2) T1	M20S	1

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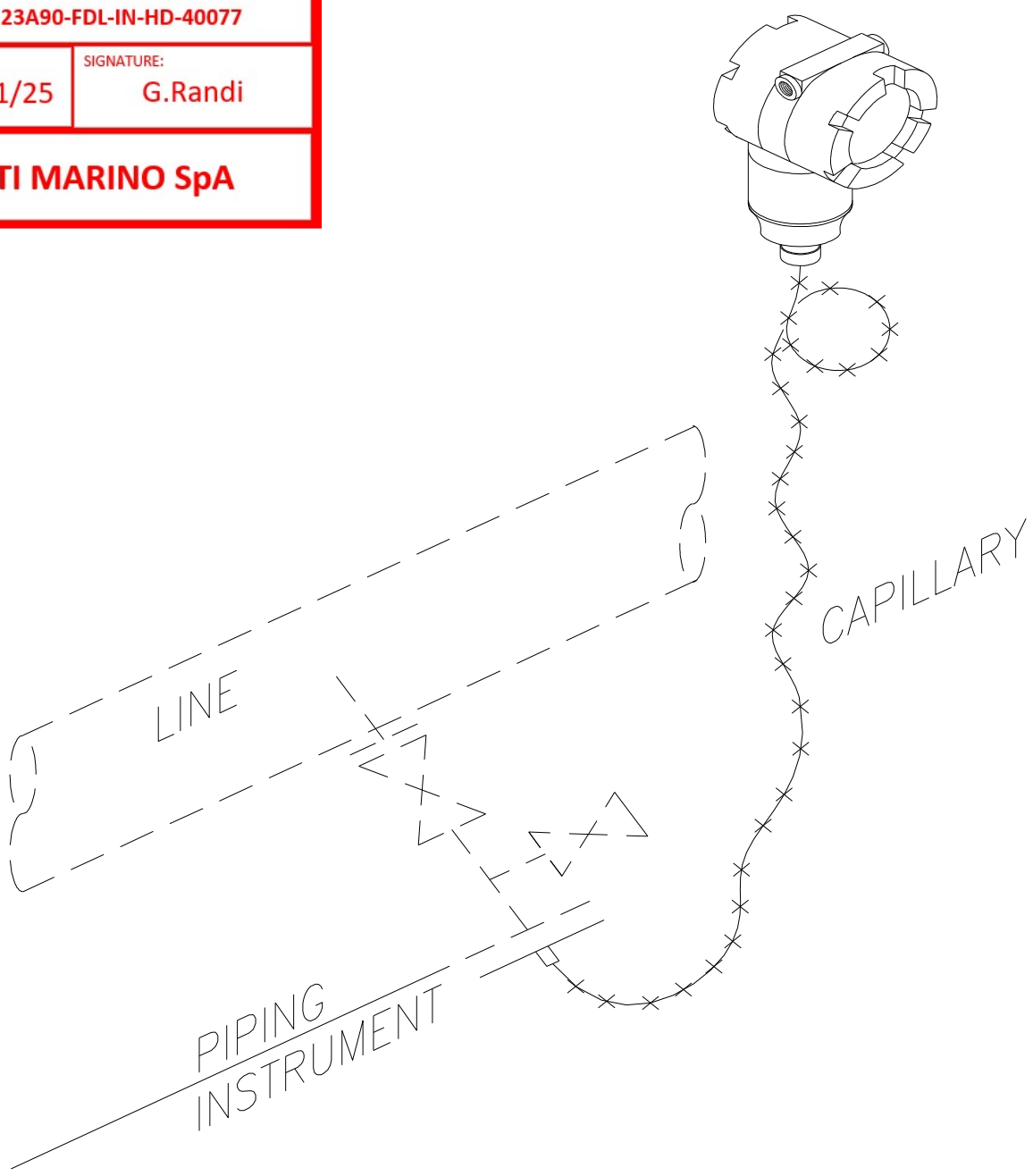
CROSSWIND	HOLLANDSE KUST NOORD WIND PARK Project Contract No. CW-I-WP4-2023-05	ROSETTI MARINO
Document Title:	Instrument Process Hook-Ups	Sh. 7 of 8 Date: 06/12/2024 Rev. 02

PRESSURE TRANSMITTERS - Diaphragm Seal & Capillary

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-HD-40077**

REV.:	DATE:	SIGNATURE:
2_B	17/01/25	G.Randi

ROSETTI MARINO SpA



INSTRUMENT TAG	
1	50-PT-001
2	50-PT-002
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NOTES:

POS.	NORM/STD CODE	DESCRIPTION	SIZE/ CONNECTION TYPE	Q.TY

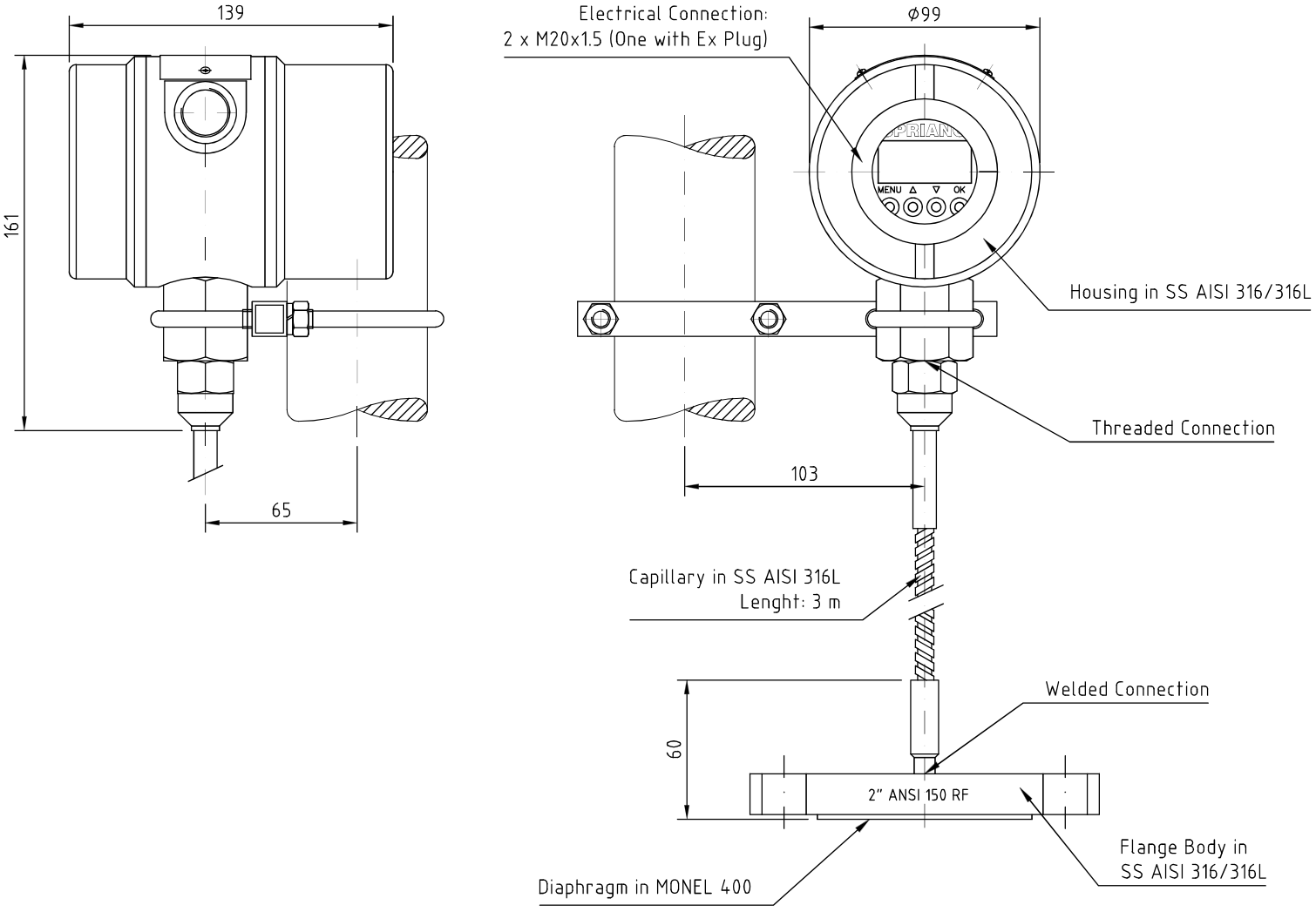
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SST76 PRESSURE TRANSMITTERS

TAG LIST

#	TAG NUMBER	NOMINAL RANGE	CALIBRATION RANGE
1	50-PT-001	0 ÷ 30 bar	0 ÷ 18 barg
2	50-PT-002	0 ÷ 30 bar	0 ÷ 18 barg

TOTAL QUANTITY: 2



NOTES

SST76 PRESSURE TRANSMITTERS
SST76-H-7-K-2-9-2-1-4 + SEA03 + CAP-2-03

H - OUTPUT: 4-20 mA + HART
7 - PROCESS CONNECTION: FLUSH DIAPHRAGM SEAL 2" ANSI 150RF (SEA03);
K - NOMINAL RANGE: 0 ÷ 30 bar
2 - CALIBRATION: 0 ÷ 18 barg
9 - DIAPHRAGM MATERIAL: MONEL 400, BODY IN SS AISI 316/316L
2 - OPTIONS: HOUSING MATERIAL STAINLESS STEEL WITH ELECTRICAL CONNECTIONS 2 x 1/2" NPT-F
1 - OPTIONS: MOUNTING BRACKET FOR 2" PIPE MOUNTING
4 - EXPLOSION PROTECTION 2014/34/EU: ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1G Ex ia IIC T6/T5/T4 Ga

OPTIONS/ACCESSORIES:
1. SEA03 - FLUSH DIAPHRAGM SEAL 2" ANSI 150RF, DIAPHRAGM IN MONEL, BODY AND FLANGE RING IN SS AISI 316
2. CAP-2-03 - STAINLESS STEEL ARMOURED CAPILLARY, LENGTH 3m

NOTES:
1. OVERALL ACCURACY OF PT (COMPREHENSIVE OF HYSTERESIS, NON-LINEARITY, REPEATABILITY) IS WITHIN +/- 0,07% FS;
2. ALL ITEMS ARE EQUIPPED WITH SS NAMEPLATE;
3. FILLING OF ELEMENT IS FORESEEN WITH DOW CORNING SILICONIC OIL;
4. ELECTRICAL CONNECTION ARE: 2 X 1/2" NPT-F (ONE PLUGGED);
5. INTEGRAL LCD /CONFIGURABLE ENGINEERING UNITS;
6. INGRESS PROTECTION EN 60529: IP66;
7. HOUSING MATERIAL STAINLESS STEEL;
8. ALL INSTRUMENT ARE SIL2 CERTIFIED;
9. HART 6;
10. CAPILLARY IS WELDED TO INSTRUMENT PROCESS CONNECTION.

CERTIFICATES

1. ATEX Ex-d CERTIFICATE (2014/34/EU)
2. IP66 GRADE (EN/IEC 60529)
3. MATERIAL 3.1 (EN 10204) & HYDROSTATIC TEST CERTIFICATES
4. CALIBRATION CERTIFICATES (IEC 60770)

REV	DATE	STATUS	PURPOSE OF ISSUE	PRE'D.	CHC'D.	APP'D.	AUTH'D.
03	18/JULY/24	FOURTH ISSUE	FOR CONSTRUCTION	M. Sanna	G. Olivieri	G. Olivieri	S. Valletti
02	02/JULY/24	THIRD ISSUE	FOR CONSTRUCTION	M. Sanna	G. Olivieri	G. Olivieri	S. Valletti
01	13/JUN/24	SECOND ISSUE	FOR CONSTRUCTION	M. Sanna	G. Olivieri	G. Olivieri	S. Valletti
00	24/MAY/24	FIRST ISSUE	FOR APPROVAL	M. Sanna	G. Olivieri	G. Olivieri	S. Valletti

CROSSWIND ROSETTI MARINO

P.O. No.: 24/01611/PO | Mod_CAR_Rev17-01 | SCALE – 1:2

TERRANOVA

TERRANOVA SRL

DRAWING TITLE: DIMENSIONAL DRAWINGS

JOB:	4718_OS	SHEET No.	9 OF 10	REV. 03

GENERAL	1	Tag Number		50-PT-002	
	2	Service		SEA WATER FROM PUMP P-50001B TO SEA WATER TREAT.	
	3	P&ID Number	Location	123A90-DDL-PR-PID-80021	1-1/2"-SWS-033-01SD-E
	4	Function		PRESSURE MEASUREMENT	
	5	Mounting		DIRECT ON-LINE	
	6	Area Classification		ATEX Zone2 - IIC (IIB+H2) T1	
	7	Ambient Temperature		Min: -8.4 °C, Norm: 10.5 °C, Max: +25.0 °C.	
PROCESS CONDITIONS	8	Fluid		SEA WATER	
	9	Pressure Des.	Oper. [barg]	17.7	15
	10	Temperature Des.	Oper. [°C]	100	+1.3 / +20.2
	11	Oper. Spec. Gravity	Oper. Viscosity	-	-
	12	Flow Rate	Allowable Temp.	-	-
	13				
TRANSMITTER	14	Instrument Range Min.	Max.	0	30
	15	Calibration Range Min.	Max. [barg]	0	18
	16	Elevation	Suppresion	-	-
	17	Element Type		Diaphragm	
	18	Element Material		Monel 400 (17)	
	19	Body Material	Body Rating	AISI 316 SS	20 bar
	20	Process Flanges Material		-	
	21	Wetted O-Rings Material		-	
	22	Fill Fluid		-	
	23	Bolts	Housing	Manifold/Instrument assembly	AISI 316/316L (3, 7, 8)
	24	Paint		-	
	25	ATEX Certification	Ingress Protection	Atex Ex II 2G Ex db IIC T5	IP66
	26	Process Connection	Electrical Connection	Inner Diaphragm Seal	N. 2 M20x1.5mm
	27	Repeatability	Accuracy	-	0.07 % of Nominal Range
	28	SIL Certification	PED Certification	-	Required (8)
DIAPHRAGM SEAL	29	Process Connection & Rating		2"	150# RF ASME B 16.5
	30	Diaphragm Material	Housing Material	Monel 400	AISI 316/316L
	31	Fill Fluid	Capillary Material	Silicone oil	S.S. Capillary
	32	Capillary Type	Capillary Length	Required	3 m
	33	Flushing Connection		-	
	34				
OPTIONS	35	Integral Meter	Scale	Integral LCD Display	-
	36	Hydrostatic Testing	Cleaning	Required	-
	37	Mounting Brackets	Manifold Model No	Required in Option	-
	38	Lightning Protection	Barrier Manuf./Model	-	-
COMMUNICATION AND SOFTWARE	39	Communication Type	Signal Type	HART 6	4-20mA Loop Powered 24 Vdc
	40	D D Revision	CFF Revision	-	-
	41	Device Tag	Hart Tag	-	-
	42	Internal Diagnostics	Capacitance	-	-
	43	Segment	Device Address	-	-
	44	Device Class	Simulate	-	-
	45	Nominal Current	Operating Voltage	-	-
	46				
PURCHASE	47	Manufacturer		TERRANOVA	
	48	Model		SST76-H-7-K-2-9-2-1-4 +SEA03 + CAP-2-03	
	49	Purchase Order Number		1724000979	

Notes:

No.	Date	By	Chkd	Appr	Description
02	06/12/2024	VBA	LCA	DLO	Accepted for Construcion (AFC)
01	29/08/2024	VBA	LCA	DLO	Accepted for Construcion (AFC)
00	16/01/2024	VBA	LCA	DLO	ISSUED FOR REVIEW (IFR)

INSTRUMENT DATASHEET

Pressure Transmitter

CROSSWIND

ROSETTI MARINO

Sheet 26 of 35

Code: 605 | Dwg. No.: 123A90-DDL-IN-DS-40039 Rev 02

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	50-TT-001	: Temperature Transmitter - Sea Water from Lift Pump P-50001A/B			Dwg	123A90-DDL-PR-PID-80022
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10000904		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Instrumental	Form	CJX08 Electrical Instrument

Installation Check

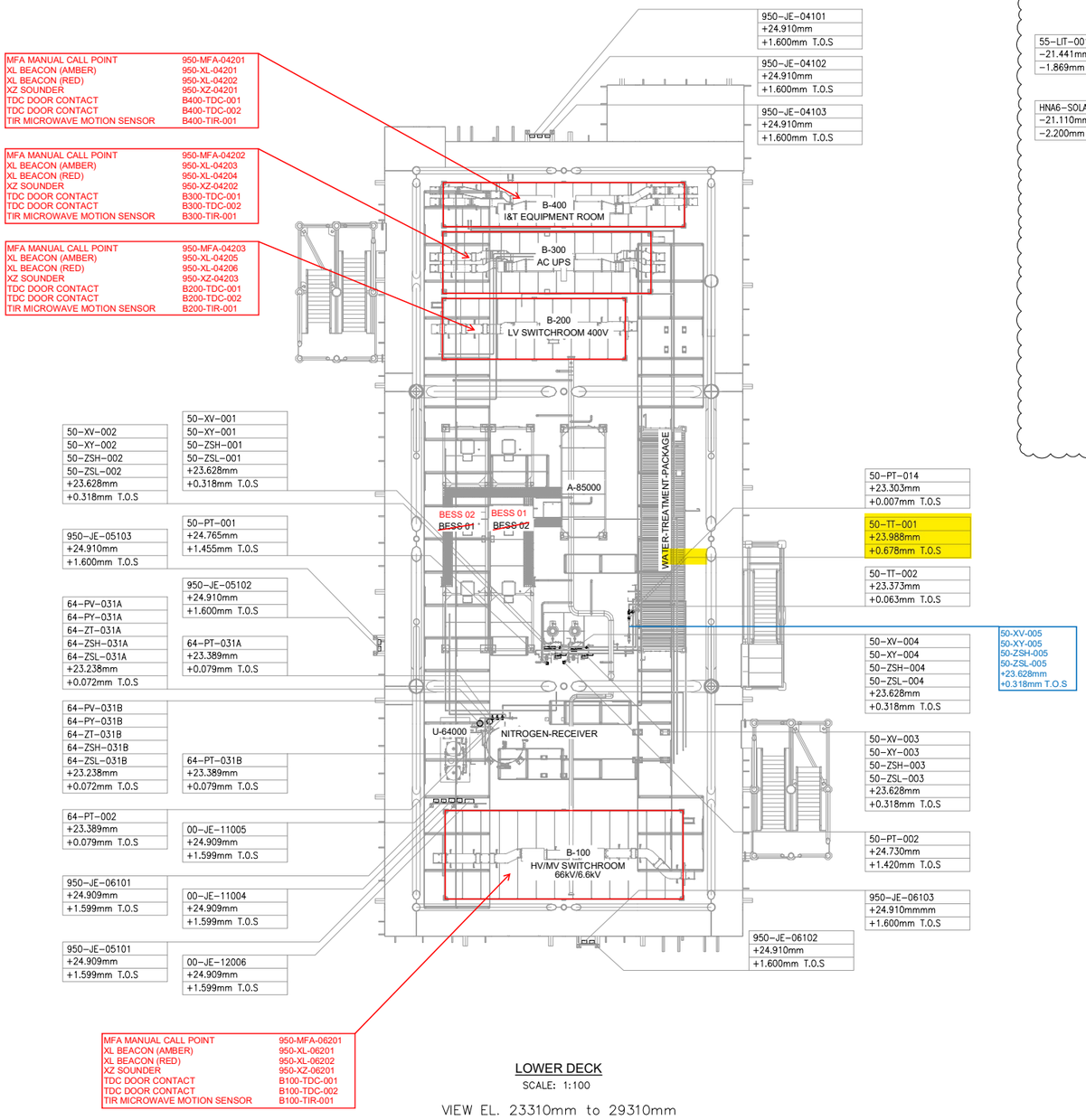
1	Check for mechanical damage.	OK
2	Check installed equipment is suitable and conforms to specification.	OK
3	Check installation conforms to P&ID and hook-up drawing.	OK
4	Check identification (tag number, tag plates).	PL
5	Check supporting and protection against vibrations.	OK
6	Check calibration certificate (TJX04)	OK
7	Visual Check electrical connections.	OK
8	Check earthing connections.	PL
9	Check the conformity of earthing as per specification (I.P.E. or I.E.)	NA
10	Check tube fittings manufacturer is the one chosen for the plant (if applicable).	OK
11	Check piping connections provide required block & bleed facility (if required).	OK
12	If required produce Red Line Mark Up for "AS BUILT"	

Comments:

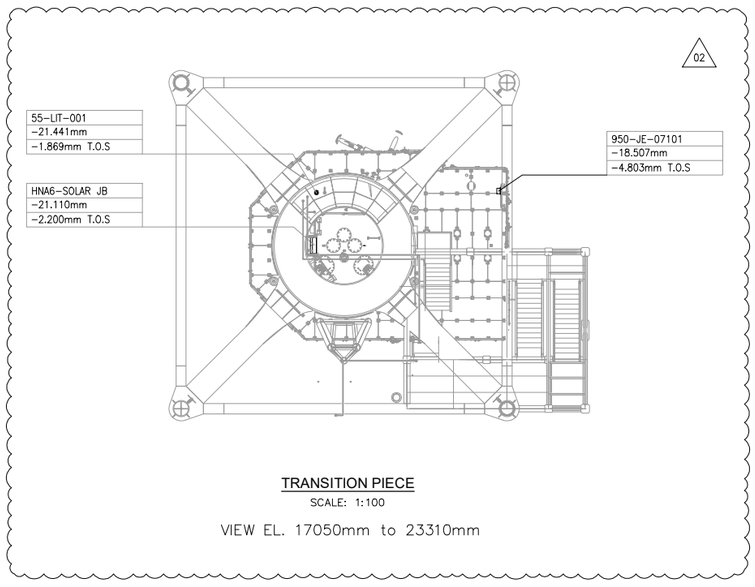
	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Alessio Polo	
Date	2025-02-18	2025-02-21	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-18T09:40:52.220Z	PROVERLIS Digitaly signed by Alessio Polo 2025-02-21T14:08:36.100Z	

DRAWING NO. 123A90-DDL-IN-DL-40080

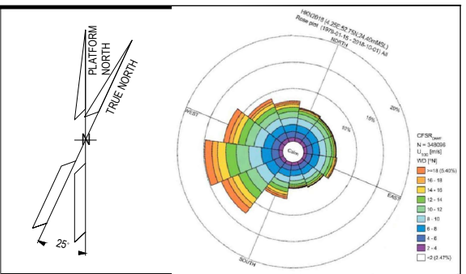
REV. 02



LOWER DECK
SCALE: 1:100
VIEW EL. 23310mm to 29310mm



TRANSITION PIECE
SCALE: 1:100
VIEW EL. 17050mm to 23310mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40081	INSTRUMENT LAYOUT - UPPER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-UPPER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DL-40080**

REV.:	DATE:	SIGNATURE:
2_C	06/11/24	G.Randi

ROSETTI MARINO SpA

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–LOWER DECK
TOS EL. 23.310M

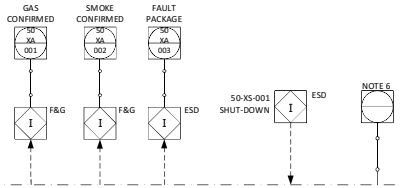
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DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90–DDL–IN–DL–40080	SHEET 001	REV. 02

File Name : 123A90-DDL-IN-DL-40080 REV02.dwg

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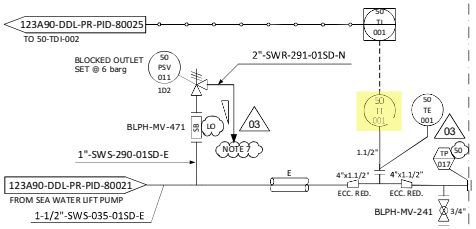
REV. REV.

A-50000
WATER TREATMENT PACKAGE
CAPACITY : 2.5 m³/hr



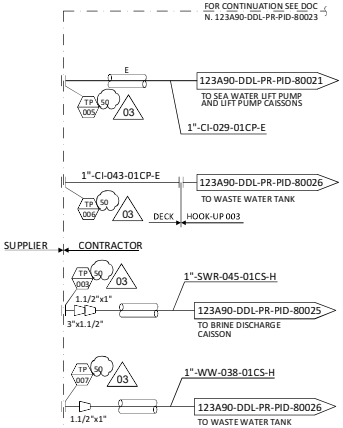
CONTRACTOR SUPPLIER

FOR CONTINUATION SEE DOC N. 123A90-DDL-PR-PID-80023



A-50000
WATER TREATMENT PACKAGE
SEE VENDOR DRAWING
DOC. N. 1724000448-PR-PID-00013

FOR CONTINUATION SEE DOC N. 123A90-DDL-PR-PID-80023



NOTES

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.
5. DELETED.
6. SERIAL COMMUNICATION WITH CONTROL SYSTEM.
7. ROUTED TO THE SEA. 03

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.
5. DELETED.
6. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
SEA-WATER INTAKE SYSTEM SHEET 2

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE	
A1	DRAWING NO. 123A90-DDL-PR-PID-80022		SHEET 001	REV. 03

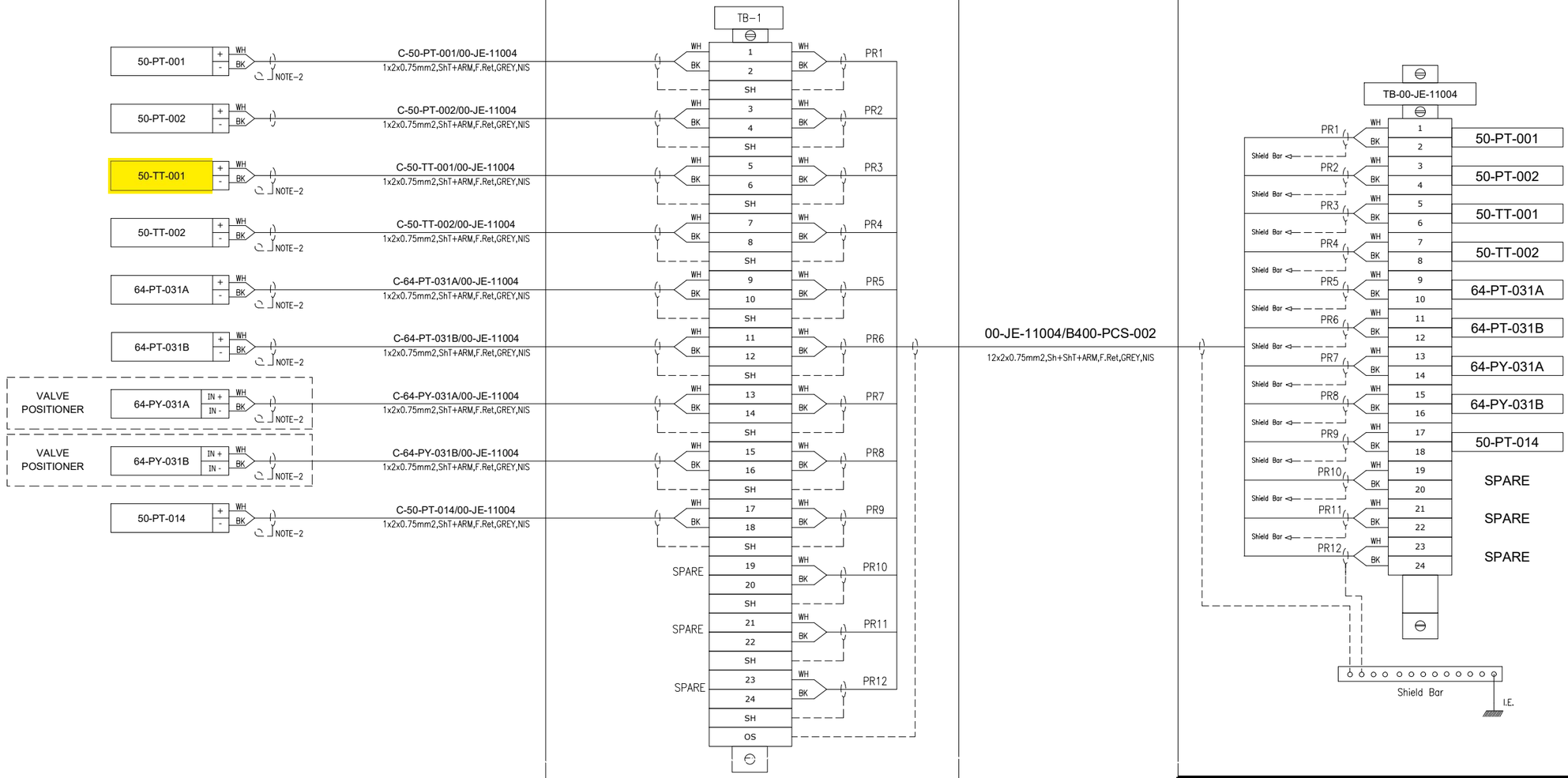
File Name : FILE_NAME

DRAWING NO. 123A90-DDL-IN-DG-40015

REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 00-JE-11004	No.	MARSHALLING CABINET B400-PCS-002

<01>



VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_J	12/02/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

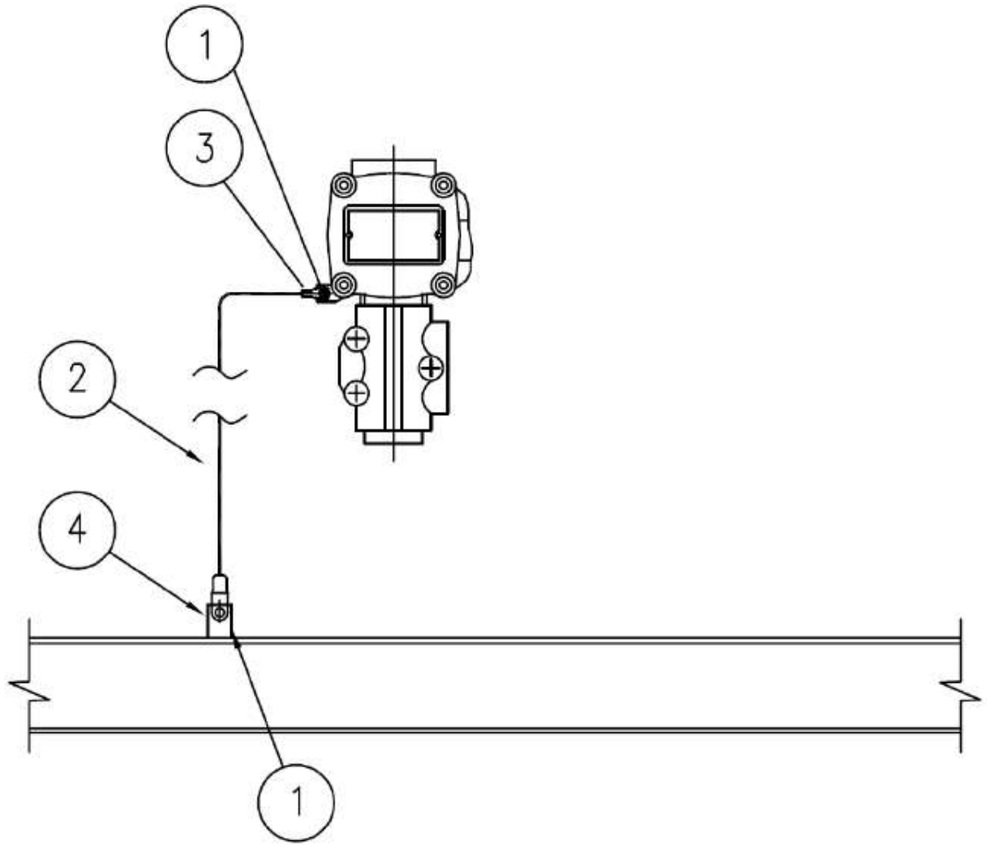
TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
00-JE-11004-SH.1 OF 2

CONTRACT NO./TITLE			SCALE 1:1
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024
A3	DRAWING NO. 123A90-DDL-IN-DG-40015	SHEET 009	REV. 01

File Name : 123A90-DDL-IN-DG-40015_Rev.01

E33



MATERIALS

POS.	Q.TY	DESCRIPTION	NOTES
1	1	A4 STAINLESS STEEL BOLT COMPLETE WITH NUT AND WASHERS	
2	1	Y/G INSULATING COPPER CONDUCTOR - 6mm²	
3	1	COMPRESSION TYPE LUG FOR INSULATING COPPER CONDUCTOR	
4	1	EARTHING BAR / PLATE / THREADED STUD	(1)

NOTE:
1) FOR DETAIL OF EARTHING PLATE, EARTHING BOSS AND THREADED STUD SEE TYP. E11A/C/D/E

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DD-20090**

REV.:	DATE:	SIGNATURE:
2_I	07/11/24	G.Randi

ROSETTI MARINO SpA

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	26/08/24	GRA	AMA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/06/24	SPS	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS-EARTHING SYSTEM
EARTHING FOR GENERIC INSTRUMENT

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : NTS

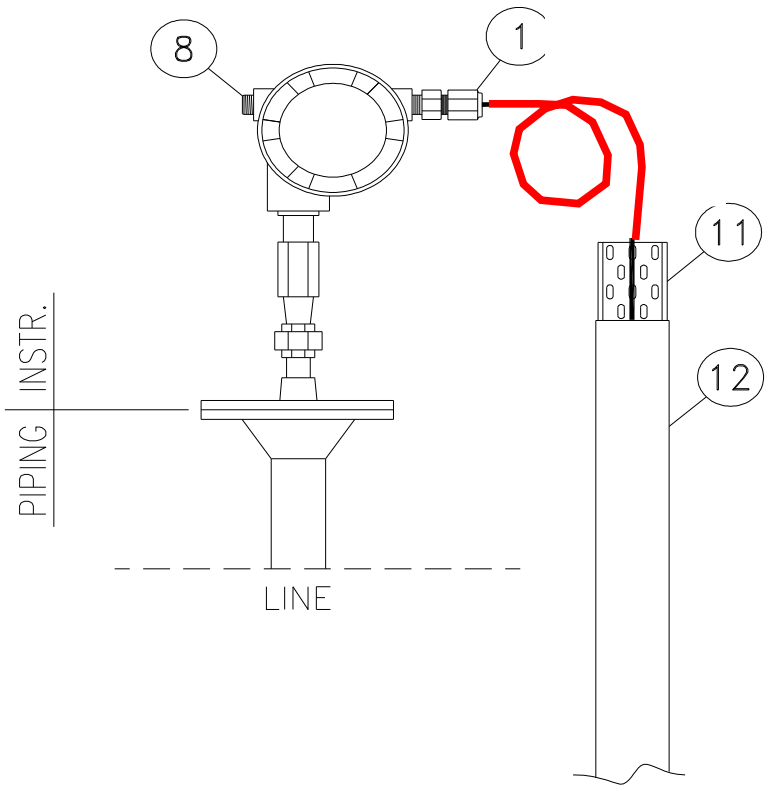
A3 | DRAWING NO. 123A90-DDL-EL-DD-20090 | SHEET 027 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DD-20090 REV.02.DWG

CROSSWIND	HOLLANDSE KUST NOORD WIND PARK Project Contract No. CW-I-WP4-2023-05	ROSETTI MARINO
Document Title:	Instrument Electrical Hook-Ups	Sh. 14 of 37 Date: 27/09/2024 Rev. 02

ELECTRICAL HOOK-UP FOR TEMPERATURE TRANSMITTERS



INSTRUMENT TAG	
1	50-TT-001
2	50-TT-002
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NOTE:

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-HD-40079**

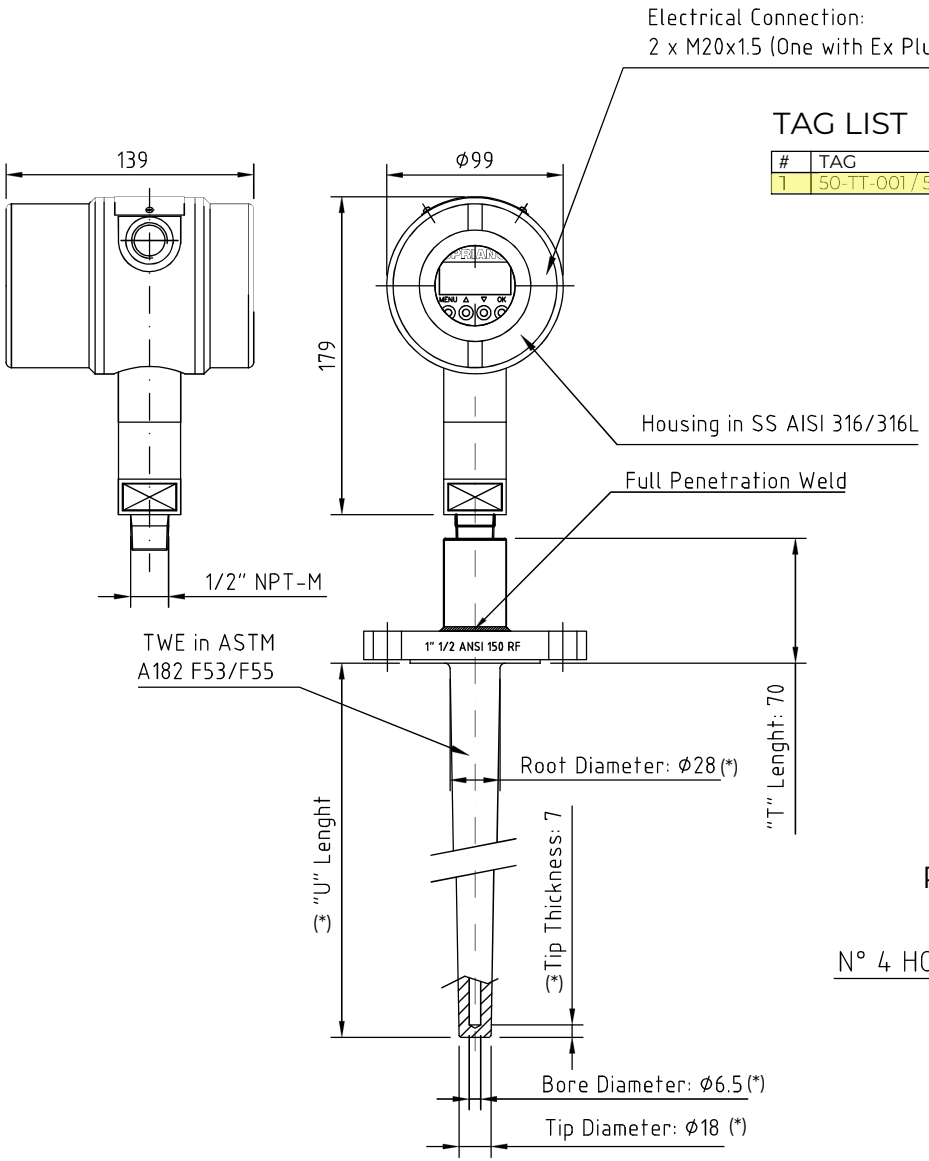
REV.:	DATE:	SIGNATURE:
2_G	20/12/24	V.Ramponi

ROSETTI MARINO SpA

POS.	NORM/STD CODE	DESCRIPTION	SIZE/ CONNECTION TYPE	Q.TY
12		Cover for cable tray, FRP, Grey Color	50 W x 10 H x 5 THK	3 mt
11		Perforated cable tray, FRP, Grey Color	50 W x 50 H x 5 THK	3 mt
8		Nickel Plated Brass Plug Ex-d/e IIC (or IIB + H2) T1	M20	1
1		Nickel Plated Brass Double Compression Cable Gland Ex-d/e IIC (or IIB + H2) T1	M20S	1

This document undergoes an issuance cycle within EDMS "Fusionlive".
File: 123A90-DDL-IN-HD-40079_Rev.02 - Instrument Electrical Hook-up its distribution is electronically controlled. Once printed shall be considered as "NOT CONTROLLED" copy

SST72 TEMPERATURE TRANSMITTERS

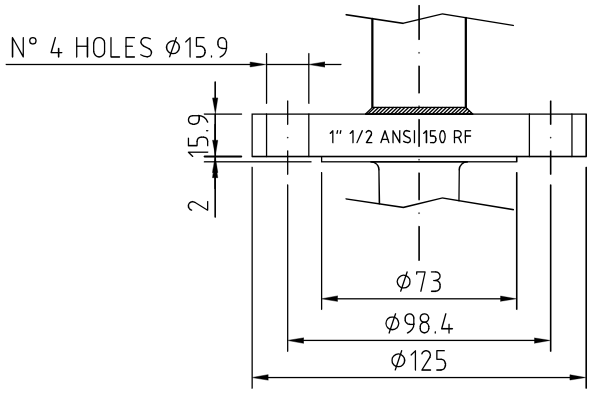


TAG LIST

#	TAG	CALIBRATION RANGE	"U" LENGHT
1	50-TT-001 / 50-TE-001 / 50-TW-001	0 ÷ 50 °C	220 mm

TOTAL QUANTITY: 1

PROCESS CONNECTION: 1" 1/2 ANSI 150 RF



(*) TWE dimensions will be confirmed after Wake Frequencies Calculation approval

NOTES

SST72 TEMPERATURE TRANSMITTER
SST72-TH-1-C-9-1-B-4-3 + TWE

TH - OUTPUT: 4-20 mA + HART
1 - PROCESS CONNECTION: 1/2" NPT-M, SPRING LOADED (PROBE Ø6mm)
C - TYPE OF SENSOR (EXTENSION PROBE): RIGID INOX MGO Ø6mm AISI 316
9 - CALIBRATION RANGE: 0 ÷ 50 °C
1 - RTD TYPE: CLASS A (SINGLE ELEMENT, 3 WIRES)
B - HOUSING TYPE/MATERIAL: BOTTOM CONNECTION, STAINLESS STEEL
4 - EXPLOSION PROTECTION 2014/34/EU: ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb
3 - LOCAL MOUNTING WITH ELECTRICAL CONNECTIONS 2x M20x1.5

COMPLETE WITH:
1. TWE, BARSTOCK THERMOWELL, MATERIAL: ASTM A182 F53/F55, FLANGED 1" 1/2 ANSI 150 RF.

NOTES:
1. OVERALL ACCURACY IS WITHIN +/-0,1% FS;
2. ALL ITEMS ARE EQUIPPED WITH SS 316 NAMEPLATE;
3. ALL ITEMS HAVE INGRESS PROTECTION EN 60529: IP66;
4. HOUSING MATERIAL: STAINLESS STEEL;
5. ELECTRICAL CONNECTIONS ARE 2 x M20x1.5 (ONE PLUGGED);
6. INTEGRAL LCD DISPLAY FOR ALL ITEMS, as PER SPRIANO STD;
7. SHEAT MATERIAL SS AISI 316;
8. HART 6.

CERTIFICATES

1. ATEX Ex-d CERTIFICATE (2014/34/EU)
2. IP66 GRADE (EN/IEC 60529)
3. MATERIAL 3.1 (EN 10204) & HYDRAULIC TEST CERTIFICATES
4. CALIBRATION CERTIFICATES (IEC 60770)
5. WAKE FREQUENCIES CALCULATIONS
6. DYE PENETRANT TEST ON THERMOWELLS

REV	DATE	STATUS	PURPOSE OF ISSUE	PRE'D.	CHC'D.	APP'D.	AUTH'D.
03	18/JULY/24	FOURTH ISSUE	FOR CONSTRUCTION	M. Sanna	G. Abbate	G. Abbate	S. Valletti
02	02/JULY/24	THIRD ISSUE	FOR CONSTRUCTION	M. Sanna	G. Abbate	G. Abbate	S. Valletti
01	13/JUN/24	SECOND ISSUE	FOR CONSTRUCTION	M. Sanna	G. Abbate	G. Abbate	S. Valletti
00	24/MAY/24	FIRST ISSUE	FOR APPROVAL	M. Sanna	G. Abbate	G. Abbate	S. Valletti

CROSSWIND ROSETTI MARINO

P.O. No.: 24/01611/PO | Mod_CAR_Rev17-01 | SCALE – 1:3

TERRANOVA

TERRANOVA SRL

DRAWING TITLE: DIMENSIONAL DRAWINGS

JOB:	4718_OS	SHEET No.	7 OF 10	REV. 03

GENERAL	1	Tag Number					50-TT-001 / 50-TE-001 / 50-TW-001			
	2	Service					SEA WATER LIFT PUMP(B-50013A&B) DISCHARGE			
	3	P&ID Number	Area Classification				123A90-DDL-PR-PID-80022		ATEX Zone2-IIC(IIB+H2) T1	
PIPE LINE	4	Line Number	Equipment Numbrer				1-1/2"-SWS-035-01SD-E		-	
	5	Line Size	Schedule				4"		3.05 Thk (mm)	
	6	Pipe Material	Pipe Insulation				ASTM A790 UNS S32760		ELECTRICALLY HEAT TRACED	
PROCESS CONDITIONS	7	Fluid	Phase				SEA WATER SUPPLY		LIQUID	
	8	Temperature	Min.	Oper.	Max.		1.3 °C	-		20.2 °C
	9	Pressure	Min.	Oper.	Max.			5 barg		
	10	Design Temperature	Min.		Max.		-29 °C		100 °C	
	11	Design Pressure	Min.		Max.		7.6 barg			
	12	Vibrations	Thermal Shock				ASME PTC19.3 (28, 31)		-	
	13	Erosion	Corrosion				-		-	
	14	Flow Rate Max.	Velocity Max.				2500 kg/h		0.08 m/s	
	15	Density	Molecular Weight				1000 kg/m^3			
	16	Viscosity	Oper. Spec. Gravity				1 cP			
	17	Ambient Temperature					Min: -8.4 °C, Norm: 10.5 °C, Max: +25.0 °C.			
ELEMENT	18	T/C	Type				-			
	19	T/C	Epoxy.	Ground		Unground	-	-		-
	20	T/C	Sheath Material							
	21	RTD	Type				RTD, 3 wire PT100			
	22	RTD	Sensor Material	Insulator Material			Platinum		MgO	
	23	RTD	Tollerance Class	Resistance			Class A according IEC 60751		100 ohm at 0°C/138.5 at 100°C	
	24	Single/Duplex/Other	2/3/4 Wire				Single		3 Wire	
	25	Diameter	Length				6 mm (32)		To be assembled with TW	
	26									
TRANSMITTER	27	Type	Mounting				4-20 mA - HART/Smart		Integral, head mounted	
	28	Input	Head Material				-		-	
	29	ATEX Certification	Ingress Protection				Atex Ex II 2G Ex db IIC T5		IP-66	
	30	Housing	Painting				AISI 316/316L (3, 7, 8)		-	
	31	Power Supply	Load Resistance				24 Vdc		220 ÷ 640 Ω (for HART)	
	32	Electrical Connection	Input		Output		-		N. 2 M20x1.5mm	
	33	Accuracy	Responce Time				as per IEC 60751 Cl. A		-	
	34	Linearisation	C J Compensation				as per IEC 60751 Cl. A		-	
	35	Instrument Range	Min.		Max.		-50 °C		450 °C	
	36	Calibration Range	Min.		Max.		0		50 °C	
	37	SIL Certification					-			
	38	PED Certification					Required (8)			
COMMUNICATION AND SOFTWARE	39	Communication Type	Signal Type				HART 6		4-20mA Loop Powered 24 Vdc	
	40	D D Revision	CFF Revision				-		-	
	41	Hart Descriptor	Hart Tag				-		-	
	42	Internal Diagnostics	Capacitance				-		-	
	43	Segment	Device Address				-		-	
	44	Device Class	Simulate				-		-	
	45	Nominal Current	Operating Volage				-		-	
	46									
WELL	47	Process Connection	Rating				1-1/2" Flanged		150# RF ASME B31.3	
	48	Material	Type				ASTM A182 F53/F55		Tapered type (29)	
	49	Construction Type	Internal Connection				Barstock Tapered		1/2" NPT-F	
	50	Length	Overall	Insertion		Immersion	(34)	220 mm (34)		70 mm (34)
	51	Treatments	Finish				-		-	
	52	Tip Thickness	Bore Diameter				7 mm		6.5 mm	
	53	Insertion Diam. Min.	Max.				28 mm		18 mm	
PURCHASE	54	Manufacturer					TERRANOVA			
	55	Model					SST72-TH-1-C-9-1-B-4-3 + TWE			
	56	Purchase Order Number					1724000979			

Notes:

						INSTRUMENT DATASHEET	CROSSWIND
						Temperature Transmitter	ROSETTI MARINO
02	06/12/2024	VBA	LCA	DLO	Accepted for Construction (AFC)		Sheet 34 of 35
01	29/08/2024	VBA	LCA	DLO	Accepted for Construction (AFC)		
00	16/01/2024	VBA	LCA	DLO	ISSUED FOR REVIEW (IFR)		
No.	Date	By	Chkd	Appr	Description	Code:	Rev 02

ITEM	Tag	50-TW-001	: Thermowell - Sea Water from Lift Pump P-50001A/B			Dwg	123A90-DDL-IN-DL-40080
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10000906		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Instrumental	Form	CJX13 Thermowell

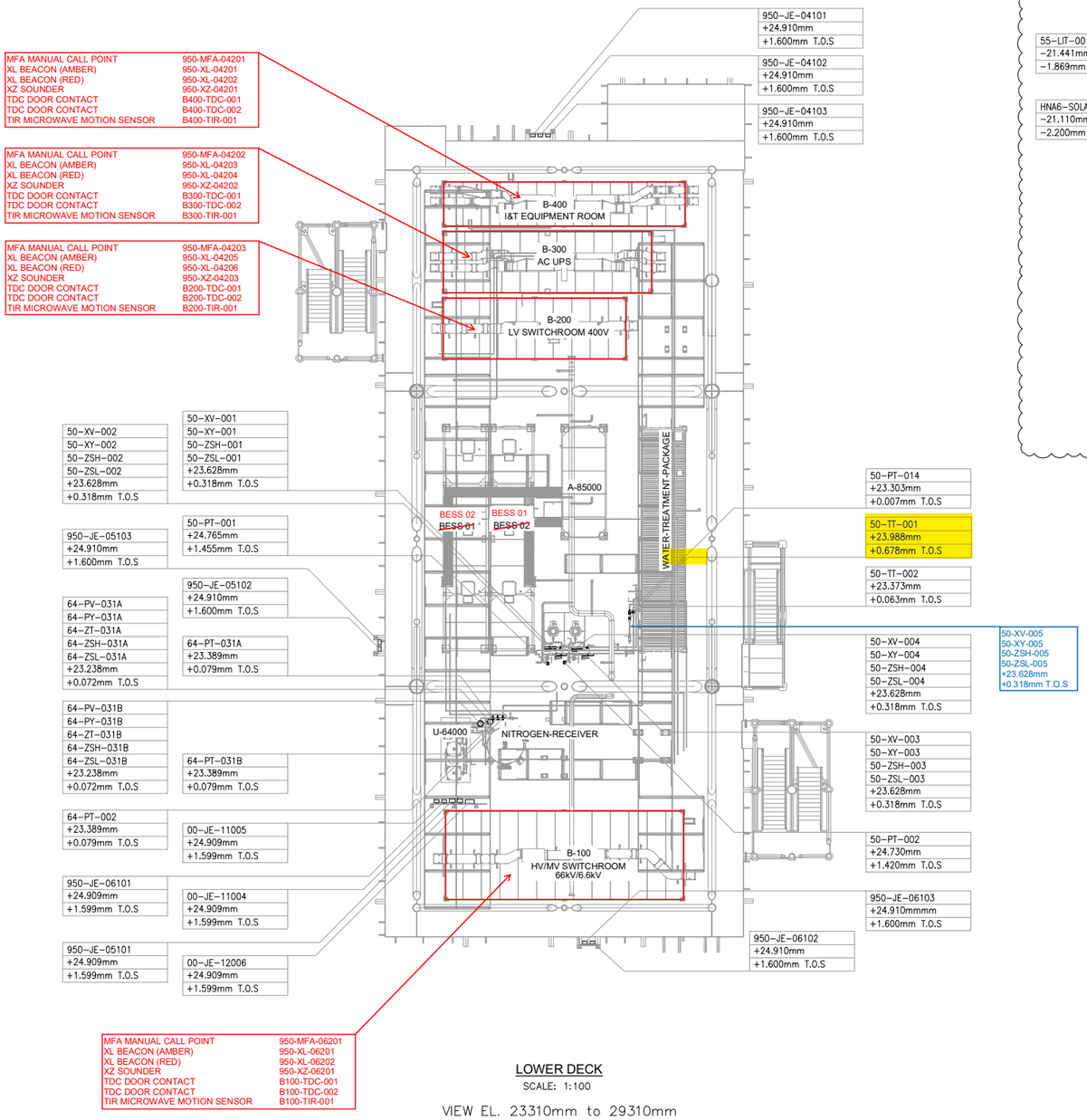
1	Check for mechanical damage.	OK
2	Check installed equipment is suitable and conforms to specification (Insersion and stem length, internal diameter…).	Note
3	Check installation conforms to P&ID and hook-up drawing.	OK
4	Check identification (tag number, tag plates).	OK
5	Check accessibility conforms to specifications with platforming where necessary.	OK
6	If required produce Red Line Mark Up for "AS BUILT"	

Comments: Note 1: only external check has been done on the T.E.(thermo Element), without evaluation of tightening and internal damage
Note 2: Task C10001434 for dimensional check 50-TW-001

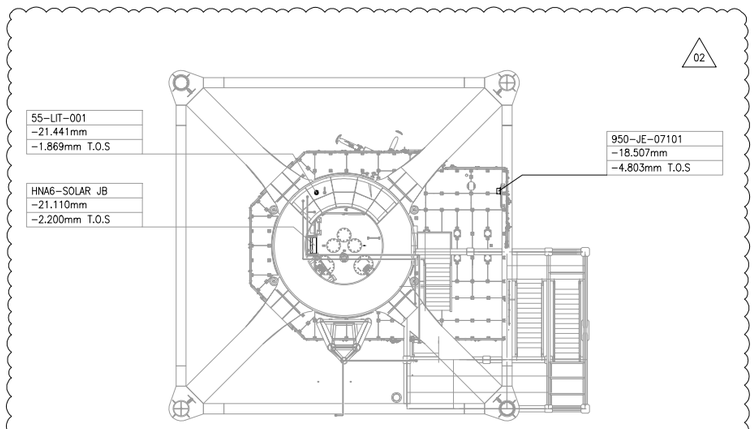
	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Alessio Polo	
Date	2025-02-18	2025-02-21	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-18T09:42:18.336Z	PROVERLIS Digitaly signed by Alessio Polo 2025-02-21T14:10:34.028Z	

DRAWING NO. 123A90-DDL-IN-DL-40080

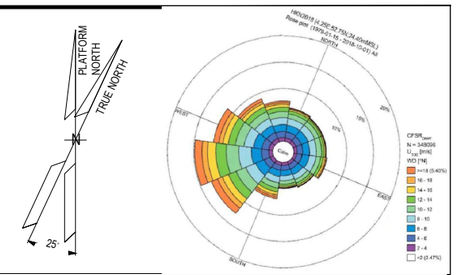
REV. 02



LOWER DECK
SCALE: 1:100
VIEW EL. 23310mm to 29310mm



TRANSITION PIECE
SCALE: 1:100
VIEW EL. 17050mm to 23310mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40081	INSTRUMENT LAYOUT - UPPER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-UPPER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DL-40080**

REV.:	DATE:	SIGNATURE:
2_C	06/11/24	G.Randi

ROSETTI MARINO SpA

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–LOWER DECK
TOS EL. 23.310M

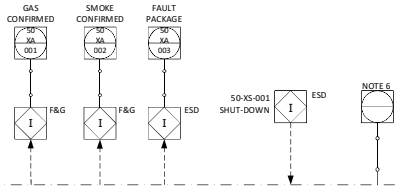
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90–DDL–IN–DL–40080	SHEET 001	REV. 02

File Name : 123A90-DDL-IN-DL-40080 REV02.dwg

DRAWING NO. DRAWING_NO.

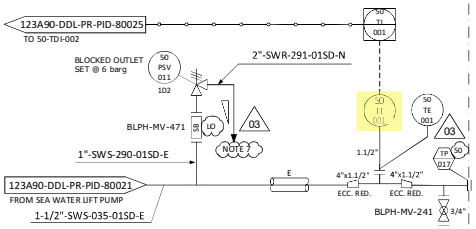
REV. REV.

A-50000
WATER TREATMENT PACKAGE
CAPACITY : 2.5 m³/hr



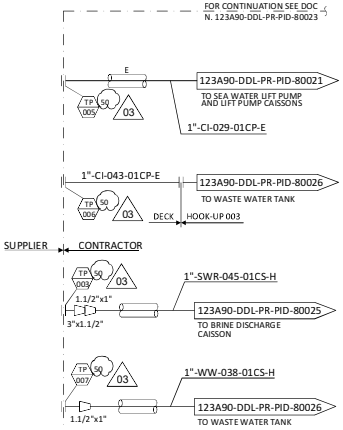
CONTRACTOR SUPPLIER

FOR CONTINUATION SEE DOC N. 123A90-DDL-PR-PID-80023



A-50000
WATER TREATMENT PACKAGE
SEE VENDOR DRAWING
DOC. N. 1724000448-PR-PID-00013

FOR CONTINUATION SEE DOC N. 123A90-DDL-PR-PID-80023



NOTES

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.
5. DELETED.
6. SERIAL COMMUNICATION WITH CONTROL SYSTEM.
7. ROUTED TO THE SEA. 03

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.
5. DELETED.
6. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

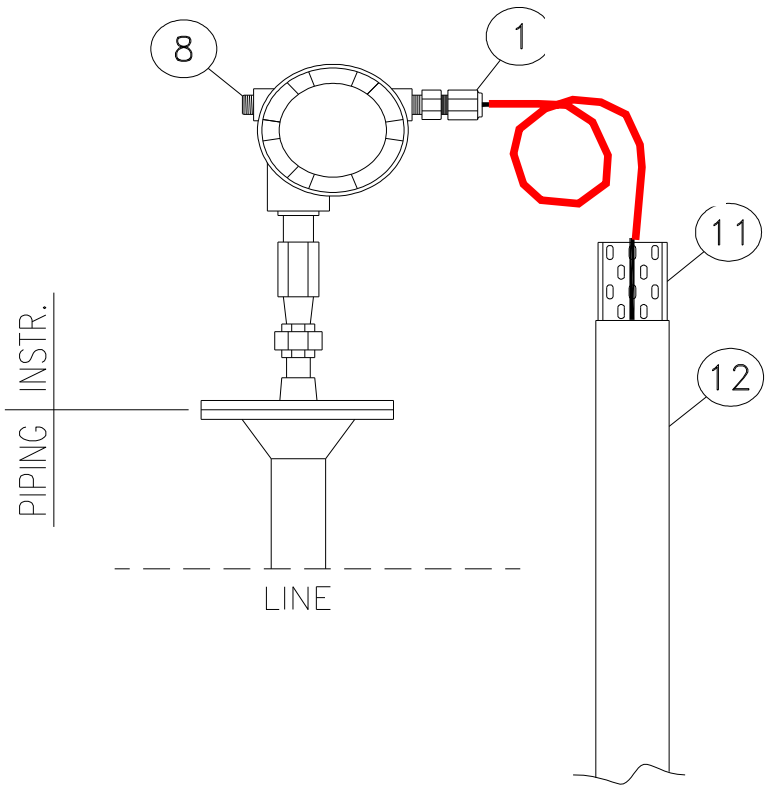
TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
SEA-WATER INTAKE SYSTEM SHEET 2

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80022	SHEET 001	REV. 03

File Name : FILE_NAME

CROSSWIND	HOLLANDSE KUST NOORD WIND PARK Project Contract No. CW-I-WP4-2023-05	ROSETTI MARINO
Document Title:	Instrument Electrical Hook-Ups	Sh. 14 of 37 Date: 27/09/2024 Rev. 02

ELECTRICAL HOOK-UP FOR TEMPERATURE TRANSMITTERS



INSTRUMENT TAG	
1	50-TT-001
2	50-TT-002
3	
4	
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NOTE:

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-HD-40079**

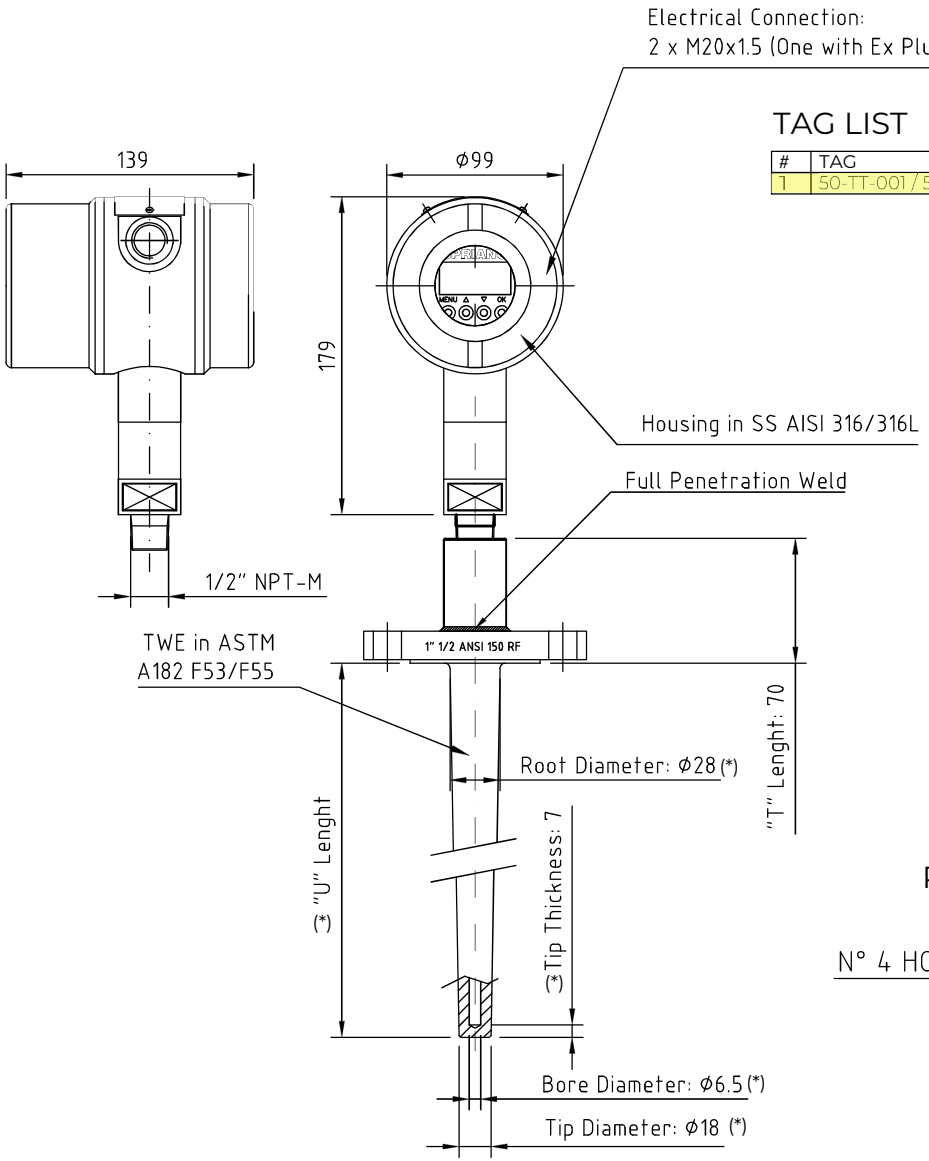
REV.:	DATE:	SIGNATURE:
2_G	20/12/24	V.Ramponi

ROSETTI MARINO SpA

POS.	NORM/STD CODE	DESCRIPTION	SIZE/ CONNECTION TYPE	Q.TY
12		Cover for cable tray, FRP, Grey Color	50 W x 10 H x 5 THK	3 mt
11		Perforated cable tray, FRP, Grey Color	50 W x 50 H x 5 THK	3 mt
8		Nickel Plated Brass Plug Ex-d/e IIC (or IIB + H2) T1	M20	1
1		Nickel Plated Brass Double Compression Cable Gland Ex-d/e IIC (or IIB + H2) T1	M20S	1

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SST72 TEMPERATURE TRANSMITTERS

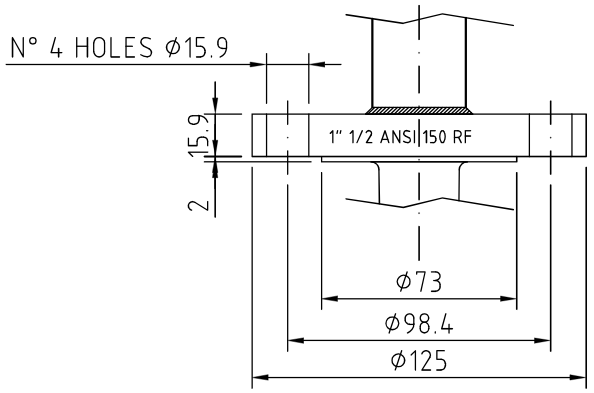


TAG LIST

#	TAG	CALIBRATION RANGE	"U" LENGHT
1	50-TT-001 / 50-TE-001 / 50-TW-001	0 ÷ 50 °C	220 mm

TOTAL QUANTITY: 1

PROCESS CONNECTION: 1" 1/2 ANSI 150 RF



(*) TWE dimensions will be confirmed after Wake Frequencies Calculation approval

NOTES

SST72 TEMPERATURE TRANSMITTER
SST72-TH-1-C-9-1-B-4-3 + TWE

TH - OUTPUT: 4-20 mA + HART
1 - PROCESS CONNECTION: 1/2" NPT-M, SPRING LOADED (PROBE Ø6mm)
C - TYPE OF SENSOR (EXTENSION PROBE): RIGID INOX MGO Ø6mm AISI 316
9 - CALIBRATION RANGE: 0 ÷ 50 °C
1 - RTD TYPE: CLASS A (SINGLE ELEMENT, 3 WIRES)
B - HOUSING TYPE/MATERIAL: BOTTOM CONNECTION, STAINLESS STEEL
4 - EXPLOSION PROTECTION 2014/34/EU: ATEX Ex II 1/2G Ex db IIC / IIB, T6/T5, Ga/Gb or ATEX Ex II 1/2G Ex ia IIC T6/T5/T4 Ga/Gb
3 - LOCAL MOUNTING WITH ELECTRICAL CONNECTIONS 2x M20x1.5

COMPLETE WITH:
1. TWE, BARSTOCK THERMOWELL, MATERIAL: ASTM A182 F53/F55, FLANGED 1" 1/2 ANSI 150 RF.

NOTES:
1. OVERALL ACCURACY IS WITHIN +/-0,1% FS;
2. ALL ITEMS ARE EQUIPPED WITH SS 316 NAMEPLATE;
3. ALL ITEMS HAVE INGRESS PROTECTION EN 60529: IP66;
4. HOUSING MATERIAL: STAINLESS STEEL;
5. ELECTRICAL CONNECTIONS ARE 2 x M20x1.5 (ONE PLUGGED);
6. INTEGRAL LCD DISPLAY FOR ALL ITEMS, as PER SPRIANO STD;
7. SHEAT MATERIAL SS AISI 316;
8. HART 6.

CERTIFICATES

1. ATEX Ex-d CERTIFICATE (2014/34/EU)
2. IP66 GRADE (EN/IEC 60529)
3. MATERIAL 3.1 (EN 10204) & HYDRAULIC TEST CERTIFICATES
4. CALIBRATION CERTIFICATES (IEC 60770)
5. WAKE FREQUENCIES CALCULATIONS
6. DYE PENETRANT TEST ON THERMOWELLS

REV	DATE	STATUS	PURPOSE OF ISSUE	PRE'D.	CHC'D.	APP'D.	AUTH'D.
03	18/JULY/24	FOURTH ISSUE	FOR CONSTRUCTION	M. Sanna	G. Abbate	G. Abbate	E. Valletti
02	02/JULY/24	THIRD ISSUE	FOR CONSTRUCTION	M. Sanna	G. Abbate	G. Abbate	E. Valletti
01	13/JUN/24	SECOND ISSUE	FOR CONSTRUCTION	M. Sanna	G. Abbate	G. Abbate	E. Valletti
00	24/MAY/24	FIRST ISSUE	FOR APPROVAL	M. Sanna	G. Abbate	G. Abbate	E. Valletti

CROSSWIND ROSETTI MARINO

P.O. No.: 24/01611/PO | Mod_CAR_Rev17-01 | SCALE – 1:3

TERRANOVA

TERRANOVA SRL

DRAWING TITLE: DIMENSIONAL DRAWINGS

JOB:	4718_OS	SHEET No.	7 OF 10	REV. 03

GENERAL	1	Tag Number					50-TT-001 / 50-TE-001 / 50-TW-001			
	2	Service					SEA WATER LIFT PUMP(B-50013A&B) DISCHARGE			
	3	P&ID Number	Area Classification				123A90-DDL-PR-PID-80022		ATEX Zone2-IIC(IIB+H2) T1	
PIPE LINE	4	Line Number	Equipment Numbrer				1-1/2"-SWS-035-01SD-E		-	
	5	Line Size	Schedule				4"		3.05 Thk (mm)	
	6	Pipe Material	Pipe Insulation				ASTM A790 UNS S32760		ELECTRICALLY HEAT TRACED	
PROCESS CONDITIONS	7	Fluid	Phase				SEA WATER SUPPLY		LIQUID	
	8	Temperature	Min.	Oper.	Max.		1.3 °C	-		20.2 °C
	9	Pressure	Min.	Oper.	Max.			5 barg		
	10	Design Temperature	Min.		Max.		-29 °C		100 °C	
	11	Design Pressure	Min.		Max.		7.6 barg			
	12	Vibrations	Thermal Shock				ASME PTC19.3 (28, 31)		-	
	13	Erosion	Corrosion				-		-	
	14	Flow Rate Max.	Velocity Max.				2500 kg/h		0.08 m/s	
	15	Density	Molecular Weight				1000 kg/m^3			
	16	Viscosity	Oper. Spec. Gravity				1 cP			
	17	Ambient Temperature					Min: -8.4 °C, Norm: 10.5 °C, Max: +25.0 °C.			
ELEMENT	18	T/C	Type				-			
	19	T/C	Epoxy.	Ground		Unground	-	-		-
	20	T/C	Sheath Material							
	21	RTD	Type				RTD, 3 wire PT100			
	22	RTD	Sensor Material	Insulator Material			Platinum		MgO	
	23	RTD	Tollerance Class	Resistance			Class A according IEC 60751		100 ohm at 0°C/138.5 at 100°C	
	24	Single/Duplex/Other	2/3/4 Wire				Single		3 Wire	
	25	Diameter	Length				6 mm (32)		To be assembled with TW	
	26									
TRANSMITTER	27	Type	Mounting				4-20 mA - HART/Smart		Integral, head mounted	
	28	Input	Head Material				-		-	
	29	ATEX Certification	Ingress Protection				Atex Ex II 2G Ex db IIC T5		IP-66	
	30	Housing	Painting				AISI 316/316L (3, 7, 8)		-	
	31	Power Supply	Load Resistance				24 Vdc		220 ÷ 640 Ω (for HART)	
	32	Electrical Connection	Input		Output		-		N. 2 M20x1.5mm	
	33	Accuracy	Responce Time				as per IEC 60751 Cl. A		-	
	34	Linearisation	C J Compensation				as per IEC 60751 Cl. A		-	
	35	Instrument Range	Min.		Max.		-50 °C		450 °C	
	36	Calibration Range	Min.		Max.		0		50 °C	
	37	SIL Certification					-			
	38	PED Certification					Required (8)			
COMMUNICATION AND SOFTWARE	39	Communication Type	Signal Type				HART 6		4-20mA Loop Powered 24 Vdc	
	40	D D Revision	CFF Revision				-		-	
	41	Hart Descriptor	Hart Tag				-		-	
	42	Internal Diagnostics	Capacitance				-		-	
	43	Segment	Device Address				-		-	
	44	Device Class	Simulate				-		-	
	45	Nominal Current	Operating Volage				-		-	
	46									
WELL	47	Process Connection	Rating				1-1/2" Flanged		150# RF ASME B31.3	
	48	Material	Type				ASTM A182 F53/F55		Tapered type (29)	
	49	Construction Type	Internal Connection				Barstock Tapered		1/2" NPT-F	
	50	Length	Overall	Insertion		Immersion	(34)	220 mm (34)		70 mm (34)
	51	Treatments	Finish				-		-	
	52	Tip Thickness	Bore Diameter				7 mm		6.5 mm	
	53	Insertion Diam. Min.	Max.				28 mm		18 mm	
PURCHASE	54	Manufacturer					TERRANOVA			
	55	Model					SST72-TH-1-C-9-1-B-4-3 + TWE			
	56	Purchase Order Number					1724000979			

Notes:

						INSTRUMENT DATASHEET	CROSSWIND
						Temperature Transmitter	ROSETTI MARINO
02	06/12/2024	VBA	LCA	DLO	Accepted for Construction (AFC)		Sheet 34 of 35
01	29/08/2024	VBA	LCA	DLO	Accepted for Construction (AFC)		
00	16/01/2024	VBA	LCA	DLO	ISSUED FOR REVIEW (IFR)		
No.	Date	By	Chkd	Appr	Description	Code:	Rev 02

ITEM	Tag	50-PT-001	:	Pressure Transmitter - Sea Water from Pump P-50001A	Dwg	123A90-DDL-IN-DS-40039	
	S/Sys	50-00	:	Seawater Intake System (Lifting Pumps)	Module	LD	
TASK	code	C10000941	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity	STS	Discipline	Instrumental	Form	TJX04	Analogue O/P

DATA

VENDOR CALIBRATION MANUAL N° 1724000979-QC-PRO-00005

CALIBRATION/TEST PROCEDURE N° : 123A90-PML-QHSE-PRO-00122

MODEL N° :	SST76-SERIES	SERIAL N° :	SE240660
DATA SHEET N° :	1724000979-IN-DS-00004	Rev :	3
~~TEST EQUIPMENT :~~		~~SERIAL N° :~~	

Instruments calibration is not required prior to the installation, as long as Manufacturer's calibration certificate is provided and transportation or storage conditions have not corrupted the instrument.

Manufacturer's calibration certificate is valid, not expired and attached to this check sheet

See Attachment

Following section must be filled only if certificate is not valid or missing

TEST DETAILS
CALIBRATION FIGURES

CALIBRATION POINTS	RISING						FALLING						UNITS
INPUT A													
INPUT B *													
INPUT C *													
OUTPUT													

* NOTE : COMPLETE IF APPLICABLE

TESTED LABEL AFFIXED

DATA SHEET ATTACHED

~~If required produce Red Line Mark Up for "AS BUILT"~~

Comments:

Page 1/1	Performed by	☉ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS Impianti	RM (ROSETTI MARINO)	
Name	Carmelo Bongiovanni	Giovanni Tangianu	
Date	2024-09-17	2024-10-02	
Signature	PROVERLIS Digitaly signed by Carmelo Bongiovanni 2024-09-17T06:42:21.748Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2024-10-02T09:47:32.156Z	

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Plant	CROSSWIND	Description	SEA WATER FROM PUMP P 50001A TO SEA WATER TREAT	Instrument Tag	50-PT-001
Area	N.P.	Loop Tag	50-PI-001	Report N°	018
Type of verification	periodic	Calibration range	0,00 ÷ 18,00 bar	Reference procedure data sheet	123A90-PML-QHSE-PRO-00122 Page N°8
Type of instrument	Pressure meter	Max uncertainty required	± 0,070 % s.r.		

UNDER EXAMINATION INSTRUMENT 'S DATA

Tag	Manufacture	Model	S/N
50-PT-001	SPRIANO	SST76	SE240660

USED REFERENCE SAMPLE 'S DATA

Manufacture	Model	S/N	n° of certification and calibration center	uncertainty (u.m.)	Date of issue
BEAMEX	MC5-IS	20177766	0640/MP/2024 _LAT 150	± 0,001 c.s.	24/04/2024
Digital pressure gauge				± 0,001 c.s.	24/04/2024

environment temperature at the time of check 25 °C

Value indicated before starting the check 0 bar

CHECK RESULT: *as found*

Verification functionality loop check

Generated value	Expected value	Read value	Error	Error % on s.r.
bar	mA	mA	mA	
0,00	4,00	4,003	+0,003	+0,019
4,50	8,00	8,001	+0,001	+0,006
9,00	12,00	12,002	+0,002	+0,013
13,50	16,00	16,002	+0,002	+0,012
18,00	20,00	20,006	+0,006	+0,038
13,50	16,00	16,003	+0,003	+0,019
9,00	12,00	12,003	+0,003	+0,019
4,50	8,00	7,999	-0,001	-0,006
0,00	4,00	4,002	+0,002	+0,012
		max error detected %		0,038

Check: PASSED

Verification activation of blocks/threshold alarms

Alarm signalling	Type of activation	Alarm intervention	Block description	Action type	Block intervention
bar					

Blocks/alarms check:

Corrective action

CHECK RESULT: *as left*

Verification functionality loop check

Generated value	Expected value	Read value	Error	Error % on s.r.
bar	mA	mA	mA	
		errore massimo rilevato %		0,00

Check:

Verification activation of blocks/threshold alarms

Alarm signalling	Type of activation	Alarm intervention	Block description	Action type	Block intervention
bar	DESCENT				

Blocks/alarms check:

Value indicated after the check 0 bar

Note:

FINAL OUTCOME OF THE VERIFICATION: *The instrument is SUITABLE*

Verification Date	Verification Expiration	Technical Executor	Viewed	Approved by
20/09/2024	09/2025	PENSO SILVIO		
		signature	*signature*	*signature*

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GENERAL	1	Tag Number			50-PT-001	
	2	Service			SEA WATER FROM PUMP P-50001A TO SEA WATER TREAT.	
	3	P&ID Number	Location		123A90-DDL-PR-PID-80021	1-1/2"-SWS-031-01SD-E
	4	Function			PRESSURE MEASUREMENT	
	5	Mounting			DIRECT ON-LINE	
	6	Area Classification			ATEX Zone2 - IIC (IIB+H2) T1	
	7	Ambient Temperature			Min: -8.4 °C, Norm: 10.5 °C, Max: +25.0 °C.	
PROCESS CONDITIONS	8	Fluid			SEA WATER	
	9	Pressure Des.	Oper.	[barg]	17.7	15
	10	Temperature Des.	Oper.	[°C]	100	+1.3 / +20.2
	11	Oper. Spec. Gravity	Oper. Viscosity		-	-
	12	Flow Rate	Allowable Temp.		-	-
TRANSMITTER	13	Instrument Range Min.	Max.	[barg]	0	30
	14	Calibration Range Min.	Max.	[barg]	0	18
	15	Elevation	Suppression		-	-
	16	Element Type			Diaphragm	
	17	Element Material			MONEL 400	
	18	Body Material	Body Rating		AISI 316 SS	20 bar
	19	Process Connection			-	
	20	Wetted O-Rings Material			-	
	21	Fill Fluid			-	
	22	Bolts	Housing		-	SS AISI 316/316L
	23	Paint			N/A	
	24	ATEX Certification	Ingress Protection		ATEX Ex II 2G Ex db IIC T5	IP66
	25	Process Connection	Electrical Connection		Inner Diaphragm Seal	2 X M20X1.5
	26	Accuracy			0.07% of Nominal Range	
	27	SIL Certification	PED Certification		-	Required
DIAPHRAGM SEAL	28	Process Connection & Rating			2"	150# RF
	29	Diaphragm Material	Housing Material		MONEL 400	SS AISI 316/316L
	30	Fill Fluid	Capillary Material		Siliconic Oil	S.S. Capillary
	31	Capillary Type	Capillary Length		Required in Option	3 m
	32	Flushing Connection			-	
OPTIONS	33	Integral Meter	Scale		Required	-
	34	Hydrostatic Testing	Cleaning		Required	-
	35	Mounting Brackets	Manifold Model No		Required	N/A
	36	Lightning Protection	Barrier Manuf./Model		-	-
COMMUNICATION AND SOFTWARE	37	Communication Type	Signal Type		HART 6	4-20mA Loop Powered 24 Vdc
	38	D D Revision	CFF Revision		-	-
	39	Device Tag	Hart Tag		-	-
	40	Internal Diagnostics	Capacitance		-	-
	41	Segment	Device Address		-	-
	42	Device Class	Simulate		-	-
	43	Nominal Current	Operating Voltage		-	-
PURCHASE	44	Manufacturer			TERRANOVA SRL	
	45	Model			SST76-H-7-K-2-9-2-1-4 + SEA03 + CAP-2-03	
	46	Purchase Order Number			4718_OS	

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ITEM	Tag	50-PT-002	: Pressure Transmitter - Sea Water from Pump P-50001B			Dwg	123A90-DDL-IN-DS-40039
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10000942		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity STS	Discipline	Instrumental	Form	TJX04 Analogue O/P

DATA

VENDOR CALIBRATION MANUAL N° 1724000979-QC-PRO-00005

CALIBRATION/TEST PROCEDURE N° : 123A90-PML-QHSE-PRO-00122

MODEL N° :	SST76-SERIES	SERIAL N° :	SE240661
DATA SHEET N° :	1724000979-IN-DS-00004	Rev :	3
~~TEST EQUIPMENT :~~		~~SERIAL N° :~~	

Instruments calibration is not required prior to the installation, as long as Manufacturer's calibration certificate is provided and transportation or storage conditions have not corrupted the instrument.

Manufacturer's calibration certificate is valid, not expired and attached to this check sheet

Following section must be filled only if certificate is not valid or missing

See Attachment

TEST DETAILS
CALIBRATION FIGURES

CALIBRATION POINTS	RISING	FALLING	UNITS
INPUT A			
INPUT B *			
INPUT C *			
OUTPUT			

* NOTE : COMPLETE IF APPLICABLE

TESTED LABEL AFFIXED

DATA SHEET ATTACHED

~~If required produce Red Line Mark Up for "AS BUILT"~~

Comments:

Page 1/1	Performed by	☉ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS Impianti	RM (ROSETTI MARINO)	
Name	Carmelo Bongiovanni	Giovanni Tangianu	
Date	2024-09-17	2024-10-02	
Signature	PROVERLIS Digitaly signed by Carmelo Bongiovanni 2024-09-17T06:43:31.087Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2024-10-02T09:49:04.271Z	

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Plant	CROSSWIND	Description	SEA WATER FROM PUMP P 50001B TO SEA WATER TREAT		
Area	N.P.	Loop Tag	50-PI-002	Instrument Tag	50-PT-002
Type of verification	periodic	Calibration range	0,00 ÷ 18,00 bar	Report N°	019
Type of instrument	Pressure meter	Max uncertainty required	± 0,070 % s.r.	Reference procedure data sheet	123A90-PML-QHSE-PRO-00122 Page N°8

UNDER EXAMINATION INSTRUMENT 'S DATA

Tag	Manufacture	Model	S/N
50-PT-002	SPRIANO	SST76	SE240661

USED REFERENCE SAMPLE 'S DATA

Manufacture	Model	S/N	n° of certification and calibration center	uncertainty (u.m.)	Date of issue
BEAMEX	MC5-IS	20177766	0640/MP/2024 _LAT 150	± 0,001 c.s.	24/04/2024
Digital pressure gauge				± 0,001 c.s.	24/04/2024

environment temperature at the time of check 25 °C

Value indicated before starting the check 0 bar

CHECK RESULT: *as found*

Verification functionality loop check

Generated value	Expected value	Read value	Error	Error % on s.r.
bar	mA	mA	mA	
0,00	4,000	4,001	+0,001	+0,006
4,50	8,000	8,002	+0,002	+0,013
9,00	12,000	12,001	+0,001	+0,006
13,50	16,000	15,998	-0,002	-0,013
18,00	20,000	19,999	-0,001	-0,006
13,50	16,000	15,999	-0,001	-0,006
9,00	12,000	12,002	+0,002	+0,013
4,50	8,000	8,001	+0,001	+0,006
0,00	4,000	4,000	+0,000	+0,000
		max error detected %		0,013

Check: PASSED

Verification activation of blocks/threshold alarms

Alarm signalling	Type of activation	Alarm intervention	Block description	Action type	Block intervention
bar					

Blocks/alarms check:

Corrective action

CHECK RESULT: *as left*

Verification functionality loop check

Generated value	Expected value	Read value	Error	Error % on s.r.
bar	mA	mA	mA	
		errore massimo rilevato %		0,00

Check:

Verification activation of blocks/threshold alarms

Alarm signalling	Type of activation	Alarm intervention	Block description	Action type	Block intervention
bar	DESCENT				

Blocks/alarms check:

Value indicated after the check 0 bar

Note:

FINAL OUTCOME OF THE VERIFICATION: *The instrument is SUITABLE*

Verification Date	Verification Expiration	Technical Executor	Viewed	Approved by
20/09/2024	09/2025	PENSO SILVIO		
		signature	*signature*	*signature*

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GENERAL	1	Tag Number			50-PT-002	
	2	Service			SEA WATER FROM PUMP P-50001B TO SEA WATER TREAT.	
	3	P&ID Number	Location		123A90-DDL-PR-PID-80021	1-1/2"-SWS-033-01SD-E
	4	Function			PRESSURE MEASUREMENT	
	5	Mounting			DIRECT ON-LINE	
	6	Area Classification			ATEX Zone2 - IIC (IIB+H2) T1	
	7	Ambient Temperature			Min: -8.4 °C, Norm: 10.5 °C, Max: +25.0 °C.	
PROCESS CONDITIONS	8	Fluid			SEA WATER	
	9	Pressure Des.	Oper.	[barg]	17.7	15
	10	Temperature Des.	Oper.	[°C]	100	+1.3 / +20.2
	11	Oper. Spec. Gravity	Oper. Viscosity		-	-
	12	Flow Rate	Allowable Temp.		-	-
TRANSMITTER	13	Instrument Range Min.	Max.	[barg]	0	30
	14	Calibration Range Min.	Max.	[barg]	0	18
	15	Elevation	Suppression		-	-
	16	Element Type			Diaphragm	
	17	Element Material			MONEL 400	
	18	Body Material	Body Rating		AISI 316 SS	20 bar
	19	Process Connection			-	
	20	Wetted O-Rings Material			-	
	21	Fill Fluid			-	
	22	Bolts	Housing		-	SS AISI 316/316L
	23	Paint			N/A	
	24	ATEX Certification	Ingress Protection		ATEX Ex II 2G Ex db IIC T5	IP66
	25	Process Connection	Electrical Connection		Inner Diaphragm Seal	2 X M20X1.5
	26	Accuracy			0.07% of Nominal Range	
	27	SIL Certification	PED Certification		-	Required
DIAPHRAGM SEAL	28	Process Connection & Rating			2"	150# RF
	29	Diaphragm Material	Housing Material		MONEL 400	SS AISI 316/316L
	30	Fill Fluid	Capillary Material		Siliconic Oil	S.S. Capillary
	31	Capillary Type	Capillary Length		Required in Option	3 m
	32	Flushing Connection			-	
OPTIONS	33	Integral Meter	Scale		Required	-
	34	Hydrostatic Testing	Cleaning		Required	-
	35	Mounting Brackets	Manifold Model No		Required	N/A
	36	Lightning Protection	Barrier Manuf./Model		-	-
COMMUNICATION AND SOFTWARE	37	Communication Type	Signal Type		HART 6	4-20mA Loop Powered 24 Vdc
	38	D D Revision	CFF Revision		-	-
	39	Device Tag	Hart Tag		-	-
	40	Internal Diagnostics	Capacitance		-	-
	41	Segment	Device Address		-	-
	42	Device Class	Simulate		-	-
	43	Nominal Current	Operating Voltage		-	-
PURCHASE	44	Manufacturer			TERRANOVA SRL	
	45	Model			SST76-H-7-K-2-9-2-1-4 + SEA03 + CAP-2-03	
	46	Purchase Order Number			4718_OS	

This document undergoes an issuance cycle within EDMS Fusionlive". Its distribution is electronically controlled. Once printed shall be considered as "NOT CONTROLLED" copy

ITEM	Tag	50-TT-001	:	Temperature Transmitter - Sea Water from Lift Pump P-50001A/B	Dwg	123A90-DDL-IN-DS-40039	
	S/Sys	50-00	:	Seawater Intake System (Lifting Pumps)	Module	LD	
TASK	code	C10000944	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity	STS	Discipline	Instrumental	Form	TJX04	Analogue O/P

DATA

VENDOR CALIBRATION MANUAL N° 1724000979-QC-PRO-00005

CALIBRATION/TEST PROCEDURE N° : 123A90-PML-QHSE-PRO-00122

MODEL N° :	SST72-SERIES	SERIAL N° :	SE240658
DATA SHEET N° :	1724000979-IN-DS-00004	Rev :	3
~~TEST EQUIPMENT :~~		~~SERIAL N° :~~	

Instruments calibration is not required prior to the installation, as long as Manufacturer's calibration certificate is provided and transportation or storage conditions have not corrupted the instrument.

Manufacturer's calibration certificate is valid, not expired and attached to this check sheet

Following section must be filled only if certificate is not valid or missing

See Attachment

TEST DETAILS
CALIBRATION FIGURES

CALIBRATION POINTS	RISING						FALLING						UNITS
INPUT A													
INPUT B *													
INPUT C *													
OUTPUT													

* NOTE : COMPLETE IF APPLICABLE

TESTED LABEL AFFIXED

DATA SHEET ATTACHED

~~If required produce Red Line Mark Up for "AS BUILT"~~

Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS Impianti	RM (ROSETTI MARINO)	
Name	Carmelo Bongiovanni	Giovanni Tangianu	
Date	2024-09-17	2024-10-02	
Signature	PROVERLIS Digitaly signed by Carmelo Bongiovanni 2024-09-17T06:44:01.136Z	PROVERLIS Digitaly signed by Giovanni Tangianu 2024-10-02T09:51:13.374Z	

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Plant	CROSSWIND	Description	SEA WATER LIFT PUMP B-50013A&B DISCHARGE		
Area	N.P.	Loop Tag	50-TI-001	Instrument Tag	50-TT-001
Type of verification	periodic	Calibration range	0,00 ÷ 50,00 °C	Report N°	027
Type of instrument	RTD 3 wire Pt100	Max uncertainty required	± 0,1 % s.r.	Control procedures	123A90-PML-QHSE-PRO-00122 Page N°13

UNDER EXAMINATION INSTRUMENT 'S DATA

Tag	Manufacture	Model	S/N
50-TT-001	SPRIANO	ST72	SE240658

USED REFERENCE SAMPLE 'S DATA

Manufacture	Model	S/N	n° of certification and calibration center	uncertainty (u.m.)	Expiration
BEAMEX	MC5-IS	20177766	0452/MT/2024 _LAT 150	± 0,1 °C	23/04/2024
ASIT INSTRUMENT	PT-100	20170421-5411	0452/MT/2024 _LAT 150	± 0,1 °C	23/04/2024

environment temperature at the time of check 24 °C

Value indicated before starting the check 23,81 °C

CHECK RESULT: *as found*

Verification functionality loop check

Generated value	Expected value	Read value	Error	Error % on s.r.
°C	mA	mA	mA	
0,00	4,000	3,925	-0,075	-0,469
24,05	11,680	11,620	-0,060	-0,375
25,00	12,000	11,923	-0,077	-0,481
50,00	20,000	19,923	-0,077	-0,481
25,00	12,000	11,924	-0,076	-0,475
24,05	11,680	11,619	-0,061	-0,381
0,00	4,000	3,926	-0,074	-0,462
		max error detected %		0,481

Check: FAILED

Verification activation of blocks/threshold alarms

Alarm signalling	Type of activation	Alarm intervention	Block description	Action type	Block intervention
°C					

Blocks/alarms check:

Corrective action The instrument score less than the set range. Recalibrated.

CHECK RESULT: *as left*

Verification functionality loop check

Generated value	Expected value	Read value	Error	Error % on s.r.
°C	mA	mA	mA	
0	4,000	4,001	+0,001	+0,006
24,05	11,680	11,681	+0,001	+0,006
25	12,000	11,998	-0,002	-0,013
50,00	20,000	19,997	-0,003	-0,019
25	12,000	11,997	-0,003	-0,019
24,05	11,680	11,682	+0,002	+0,013
0	4,000	4,002	0,002	0,012
		errore massimo rilevato %		0,019

Check: PASSED

Verification activation of blocks/threshold alarms

Alarm signalling	Type of activation	Alarm intervention	Block description	Action type	Block intervention
°C	DESCENT				

Blocks/alarms check:

Value indicated after the check 24,05 °C

Note:

FINAL OUTCOME OF THE VERIFICATION: *The instrument is SUITABLE*

Verification Date	Verification Expiration	Technical Executor	Viewed	Approved by
23/09/2024	09/2025	PENSO SILVIO		
		signature	*signature*	*signature*

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GENERAL	1	Tag Number				50-TT-001 / 50-TE-001 / 50-TW-001			
	2	Service				SEA WATER LIFT PUMP(B-50013A&B) DISCHARGE			
	3	P&ID Number	Area Classification			123A90-DDL-PR-PID-80022		ATEX Zone2-IIC(IIB+H2) T1	
PIPE LINE	4	Line Number	Equipment Numbrer			1-1/2"-SWS-035-01SD-E		-	
	5	Line Size	Schedule			4"		3.05 Thk (mm)	
	6	Pipe Material	Pipe Insulation			ASTM A790 UNS S32760		ELECTRICALLY HEAT TRACED	
PROCESS CONDITIONS	7	Fluid	Phase			SEA WATER SUPPLY		LIQUID	
	8	Temperature	Min.	Oper.	Max.	1.3 °C	-		20.2 °C
	9	Pressure	Min.	Oper.	Max.		5 barg		
	10	Design Temperature	Min.		Max.	-29 °C		100 °C	
	11	Design Pressure	Min.		Max.	7.6 barg			
	12	Vibrations				ASME PTC 19.3			
	13	Erosion	Corrosion			-		-	
	14	Flow Rate Max.	Velocity Max.			2500 kg/h		0.08 m/s	
	15	Density				1000 kg/m^3			
	16	Viscosity				1 cP			
	17	Ambient Temperature				Min: -8.4 °C, Norm: 10.5 °C, Max: +25.0 °C.			
ELEMENT	18	T/C	Type			-			
	19		Epoxy.	Ground	Unground	-	-		-
	20		Sheath Material						
	21	RTD	Type			RTD, 3 wire PT100			
	22		Sensor Material		Insulator Material	Platinum		MgO	
	23		Tollerance Class		Resistance	Class A according IEC 60751		100 Ω at 0°C/138.5 at 100°C	
	24	Single/Duplex/Other	2/3/4 Wire			Single		3 Wire	
	25	Diameter	Length			6 mm		to be assembled with TWE	
TRANSMITTER	26	Type	Mounting			4-20 mA - HART/Smart		Integral, head mounted	
	27	Input	Head Material			-		N/A	
	28	ATEX Certification	Ingress Protection			ATEX Ex II 2G Ex db IIC T5		IP-66	
	29	Housing	Painting			SS AISI 316/316L		N/A	
	30	Power Supply	Load Resistance			24 Vdc		220 ÷ 640 Ω (for HART)	
	31	Electrical Connection	Input		Output	-		2 X M20X1.5	
	32	Accuracy				As Per IEC 60751 Class A			
	33	Linearization				As Per IEC 60751 Class A			
	34	Instrument Range	Min.		Max.	-50 °C		450 °C	
	35	Calibration Range	Min.		Max.	0 °C		50 °C	
	36	SIL Certification				-			
	37	PED Certification				Required			
COMMUNICATION AND SOFTWARE	38	Communication Type	Signal Type			HART 6		4-20mA Loop Powered24 Vdc	
	39	D D Revision	CFF Revision			-		-	
	40	Hart Descriptor	Hart Tag			-		-	
	41	Internal Diagnostics	Capacitance			-		-	
	42	Segment	Device Address			-		-	
	43	Device Class	Simulate			-		-	
	44	Nominal Current	Operating Volage			-		-	
WELL	45	Process Connection	Rating			1-1/2" Flanged		150# RF ASME B31.3	
	46	Material	Type			ASTM A182 F53/F55		Tapered Type	
	47	Construction Type	Internal Connection			Barstock Tapered		1/2” NPT-F	
	48	Immersion Length (“U”)	Head Length (“T”)			220 mm		70 mm	
	49	Treatments	Finish			-		-	
	50	Tip Thickness	Bore Diameter			7 mm		6.5 mm	
	51	Insertion Diam. Min.	Max.			28 mm		18 mm	
PURCHASE	52	Manufacturer				TERRANOVA SRL			
	53	Model				SST72-TH-1-C-9-1-B-4-3 + TWE			
	54	Purchase Order Number				4718_OS			

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ITEM	Tag	50-XV-001	: On/Off Valve - Sea Water from Pump P-50001A			Dwg	123A90-DDL-PR-PID-80021
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10001187		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Instrumental	Form	CJX23
							Actuated on/off Valve-Pneumatic/Hydraulic Type

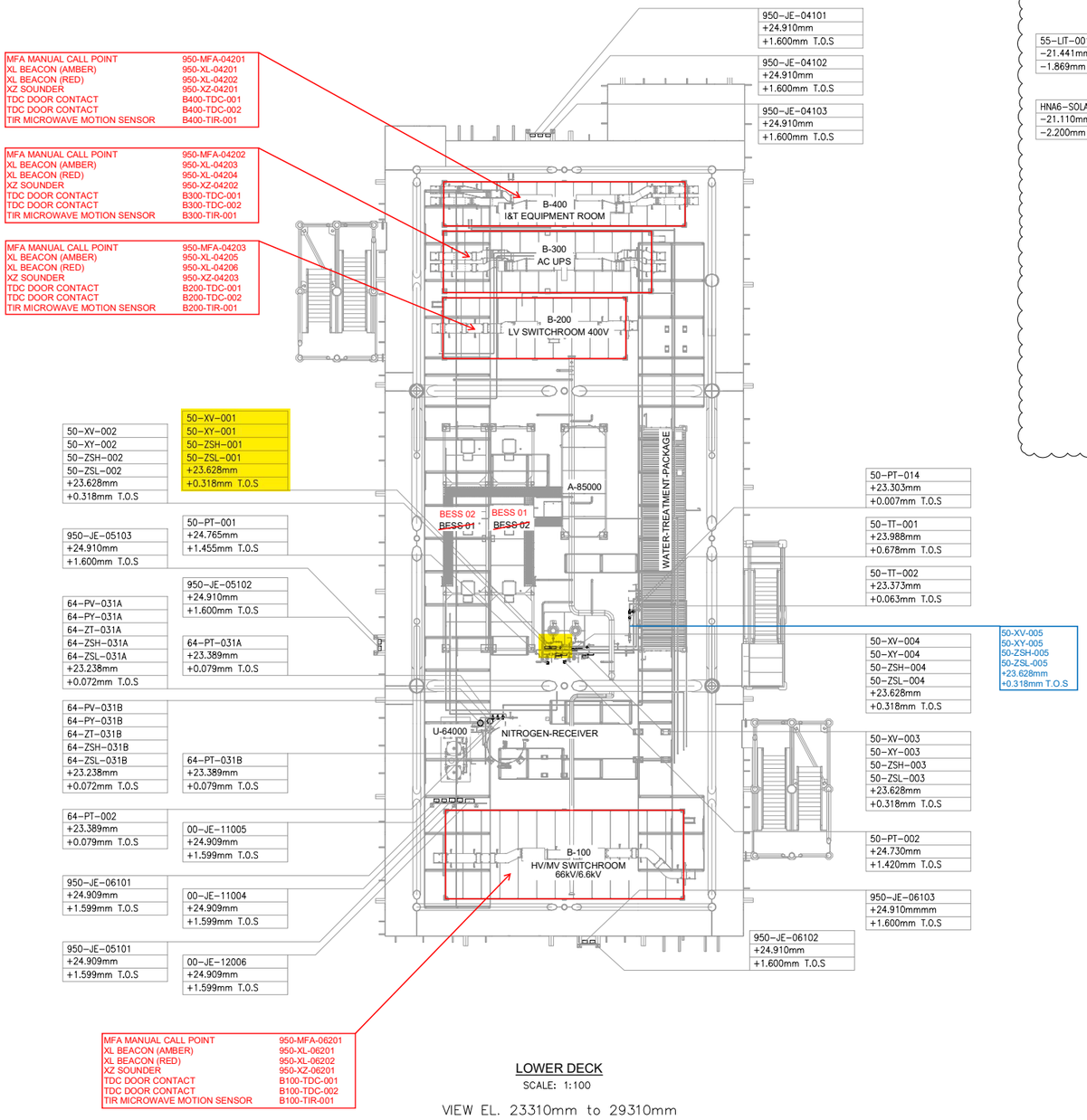
1	Check for mechanical damage.	OK
2	Check installed equipment is suitable and conforms to specification.	OK
3	Check installation conforms to P&ID, typical and hook-up drawing.	OK
4	Check valve is installed in accordance with flow direction.	OK
5	Check all stop plugs are properly installed.	OK
6	Check identification (tag number, tag plates).	OK
7	Check accessibility conforms to specifications, with platforming where necessary.	OK
8	If required produce Red Line Mark Up for "AS BUILT"	

Comments

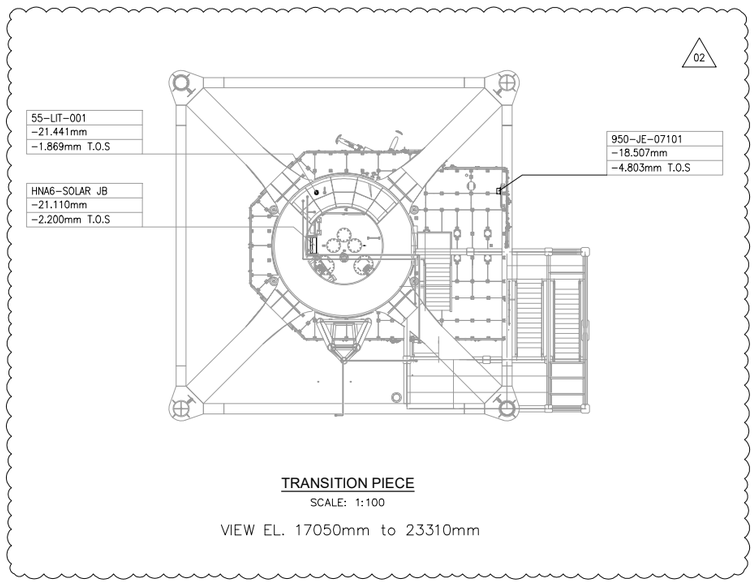
	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Alessio Polo	
Date	2025-02-05	2025-02-10	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-05T10:17:50.304Z	PROVERLIS Digitaly signed by Alessio Polo 2025-02-10T09:15:14.818Z	

DRAWING NO. 123A90-DDL-IN-DL-40080

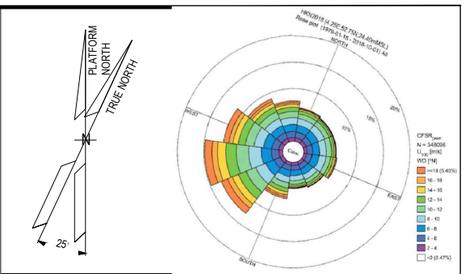
REV. 02



LOWER DECK
SCALE: 1:100
VIEW EL. 23310mm to 29310mm



TRANSITION PIECE
SCALE: 1:100
VIEW EL. 17050mm to 23310mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40081	INSTRUMENT LAYOUT - UPPER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-UPPER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DL-40080**

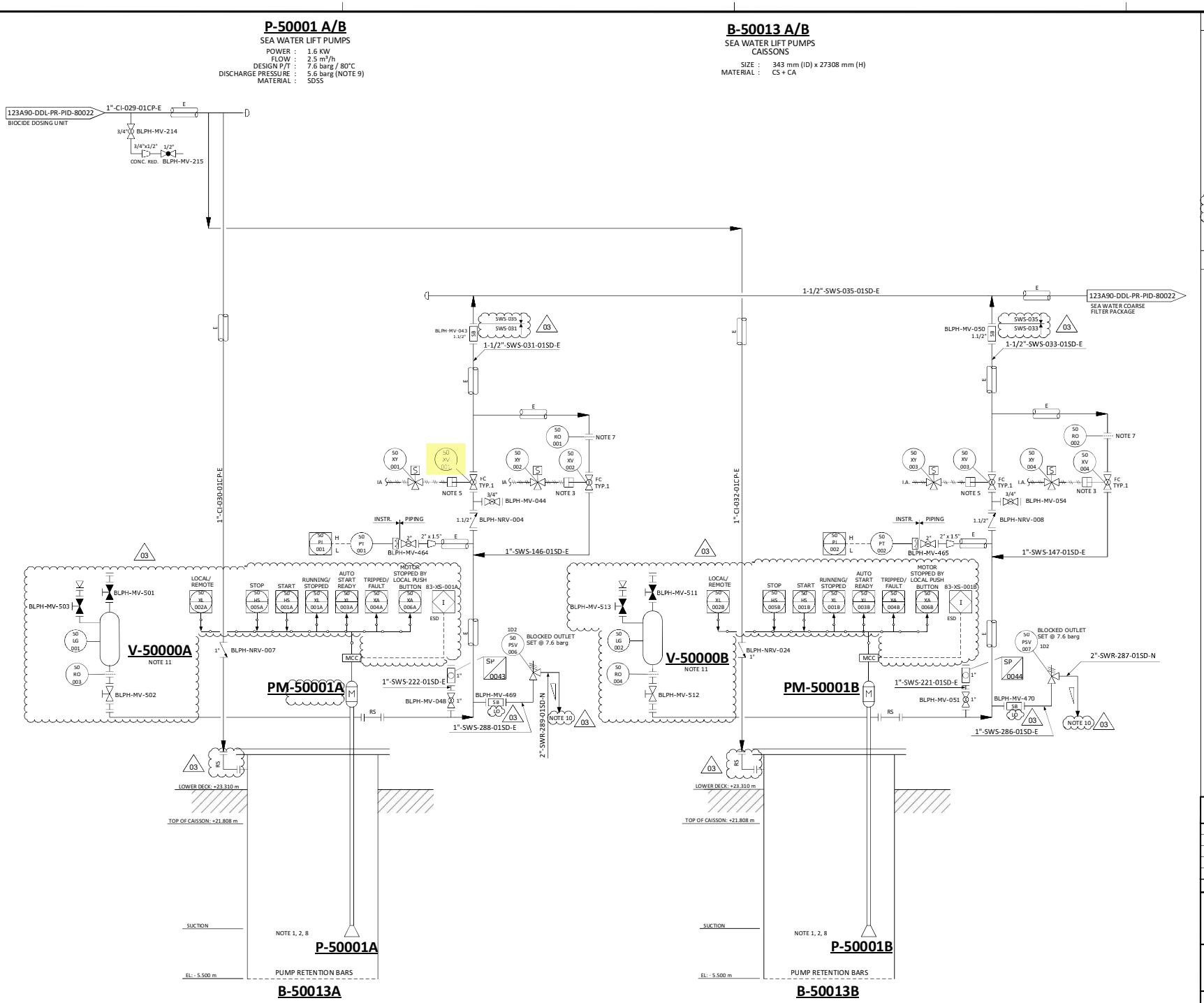
REV.:	DATE:	SIGNATURE:
2_C	06/11/24	G.Randi

ROSETTI MARINO SpA

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–LOWER DECK
TOS EL. 23.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90–DDL–IN–DL–40080	SHEET 001	REV. 02

File Name : 123A90-DDL-IN-DL-40080 REV02.dwg



NOTES

1. SEAWATER LIFT PUMPS ARE RATED 2 X 100%
2. AUTO START OF DESIGNATED STANDBY PUMP ON LOSS OF RUNNING STATUS AND DISCHARGE LOW PRESSURE ALARM OF DUTY PUMP.
3. VALVE TO BE OPENED WHEN PUMP IS OFFLINE TO DOSE CAISSON WITH TREATED SEAWATER TO PREVENT BIOLOGICAL GROWTH.
4. DELETED.
5. SOFTWARE INTERLOCK PREVENTS PUMPS FROM STARTING IN CASE THE RELEVANT XV VALVE IS FULLY CLOSED. 03
6. DELETED.
7. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "123A90-DDL-IN-DS-40054 - TECHNICAL DATASHEET FOR RESTRICTION ORIFICE".
8. LOGIC FOR CONTROL OF P-5001A/B THAT PREVENTS SIMULTANEOUS RUNNING OF A AND B PUMP IS PROVIDED.
9. DISCHARGE PRESSURE REFERS TO THE FLANGE DISCHARGE OF THE PUMP AT LOWER DECK.
10. ROUTED TO THE SEA.
11. VESSELS V-50000A/B ARE INSULATED AND HEAT TRACED. 03

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.
5. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
SEA-WATER INTAKE SYSTEM SHEET 1

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE	
A1	DRAWING NO. 123A90-DDL-PR-PID-80021		SHEET 001	REV. 03

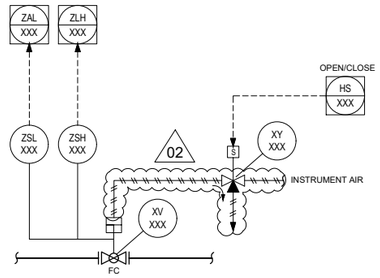
DRAWING NO. DRAWING_NO.
REV. REV.
File Name : FILE_NAME

DRAWING NO.

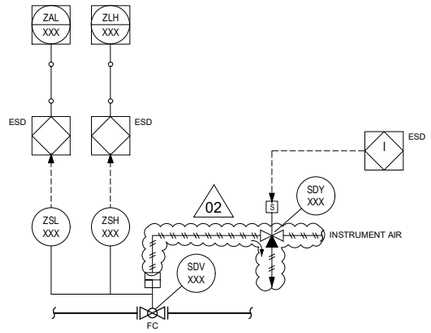
REV. 00

TYPICAL INSTRUMENTATION VALVE

TYP.1 (XV - ON OFF VALVES)

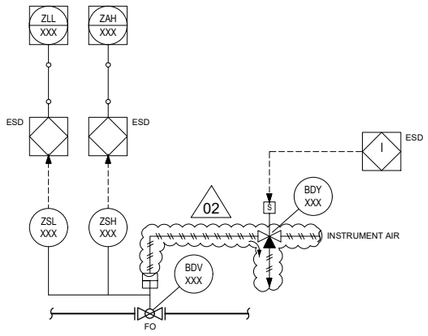


TYP.2 (SDV - SAFETY NO CRITICAL VALVES)



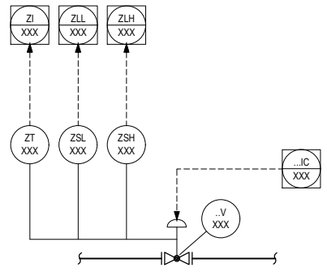
02

TYP.4 (BDV - SAFETY NO CRITICAL VALVES)



02

TYP.6 (CONTROL VALVES - CRITICAL)



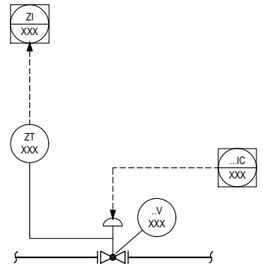
INSTRUMENT SYMBOLOGY DEFINITION

MEANINGS OF IDENTIFICATION LETTERS
THIS TABLE APPLIES TO THE FUNCTIONAL IDENTIFICATION OF INSTRUMENTS

	FIRST- LETTER		SUCCEEDING-LETTER		
	MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
C				CONTROL	
E			SENSOR (PRIMARY ELEMENT) ELEMENT		
F	FLOW RATE	RATIO (FRACTION)			
G			GLASS VIEWING DEVICE		
H	HAND				HIGH
I			INDICATE		
L	LEVEL				LOW
O			ORIFICE, OPEN		
P	PRESSURE, VACUUM				
R		RELIEF			
S		SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
V				VALVE, DAMPER, LOUVER	
X	UNCLASSIFIED				
Y				AUXILIARY DEVICES	
Z	POSITION DIMENSION				

NOTE: FOR FURTHER EXPLANATORY NOTES, REFER TO ANSI/ISA-5.1

TYP.7 (CONTROL VALVES - NOT CRITICAL)



NOTES

1. FOR GENERAL NOTES AND PIPING SYMBOLOGY SEE DRAWINGS: 123A90-DDL-PR-PID-80009 AND 123A90-DDL-PR-PID-80010.
2. DELETED.

HOLDS

1 DELETED 02

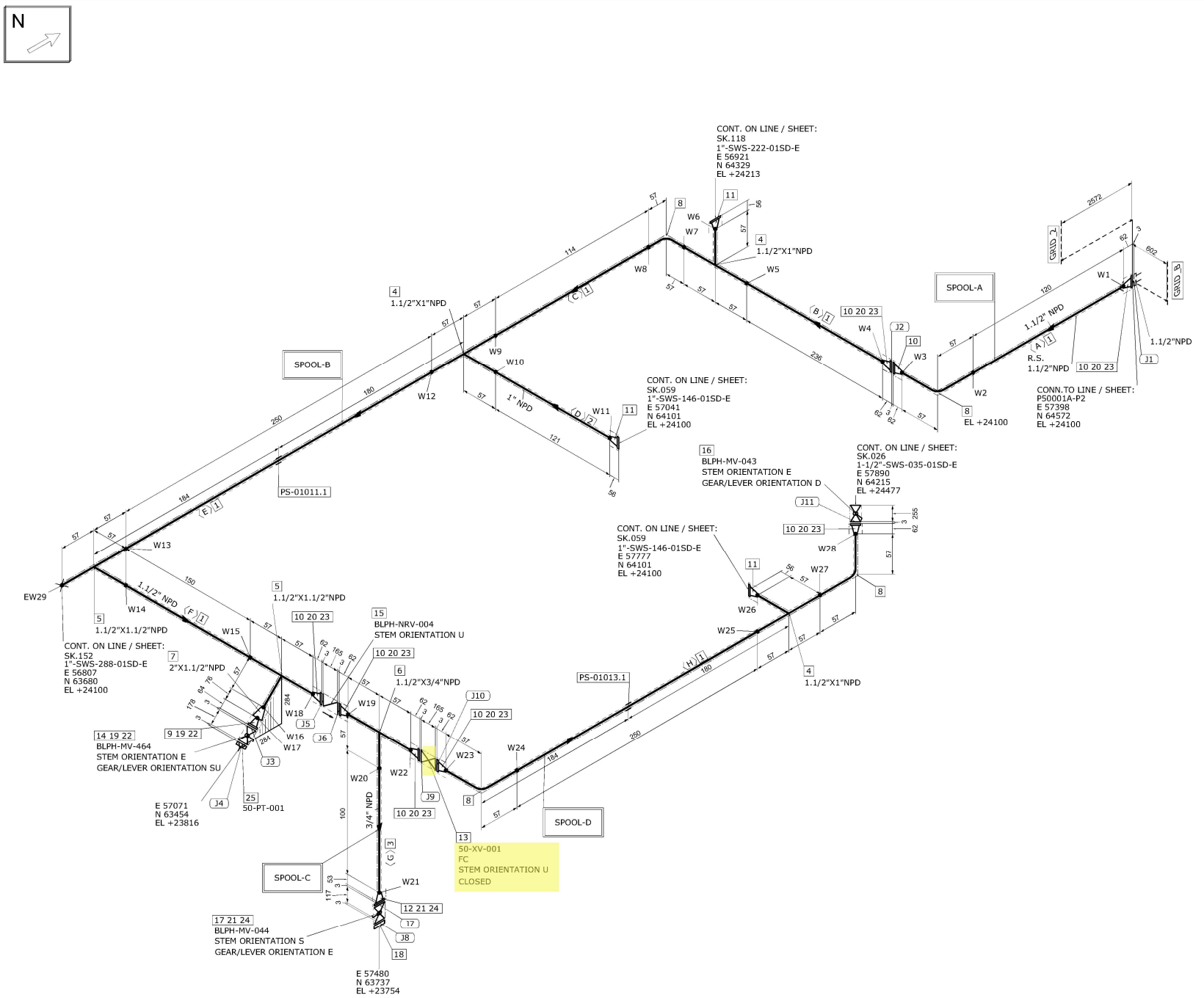
REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND | ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
INSTRUMENTATION SYMBOLOGY

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80042	SHEET 001	REV. 02

File Name :



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1.1/2	PIPESD04761H00	Pipe ASME B36.19M PE 3,68 SML ASTM A790 UNS S32760	1.1M	4.6
2	1	PIPESD02850100	Pipe ASME B36.19M PE 3,38 SML ASTM A790 UNS S32760	0.1M	0.3
3	3/4	PIPESD04753Q00	Pipe ASME B36.19M PE 2,87 SML ASTM A790 UNS S32760	0.1M	0.2
4	1.1/2X1	TER0SD09381H01	Tee Reducing ASME B16.9 BW 3,68x3,38 WRS ASTM A815 UNS S32760	3	2.3
5	1.1/2X1.1/2	TEE0SD02931H00	Tee ASME B16.9 BW 3,68 WRS ASTM A815 UNS S32760	2	1.7
6	1.1/2X3/4	TER0SD09371H3Q	Tee Reducing ASME B16.9 BW 3,68x2,87 WRS ASTM A815 UNS S32760	1	0.8
7	2X1.1/2	REC0SD0803021H	Reducer Concentric ASME B16.9 BW 2,77x3,68 WRS ASTM A815 UNS S32760	1	0.3
8	1.1/2	E90RSD03031H00	90 Deg Elbow Long Radius ASME B16.9 BW 3,68 WRS ASTM A815 UNS S32760	4	1.5
9	2	FLW0SD01250200	Flange WN ASME B16.5 150LB RF 2,77 FRG ASTM A182 Gr.F55	1	2.8
10	1.1/2	FLW0SD02861H00	Flange WN ASME B16.5 150LB RF 3,68 FRG ASTM A182 Gr.F55	8	14.7
11	1	FLW0SD01240100	Flange WN ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	3	4.3
12	3/4	FLW0SD02853Q00	Flange WN ASME B16.5 150LB RF 2,87 FRG ASTM A182 Gr.F55	1	0.9

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
13	1.1/2		ON/OFF Ball Actuator Valve - 150#RF Flanged	1	54.0
14	2	VBC0NN24460200	Ball Valve Split Body FB API 6D FLG 150LB RF BA01F01RF	1	19.2
15	1.1/2	VDRNNN02511H00	Check Valve Piston EN ISO 15761 FLG 150LB RF CH01F02RF	1	0.0
16	1.1/2	VLBLNN01381H00	Block & Bleed Valve API 6D FLG 150LB RF BS01F01RFS	1	28.0
17	3/4	VBC0NN24433Q00	Ball Valve Split Body FB API 6D FLG 150LB RF BS01F01RF	1	7.0
18	3/4	FLB0SD01843Q00	Flange Blind ASME B16.5 150LB RF FRG ASTM A182 Gr.F55	1	0.9
19	2	GFL3GK13230200	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	2	0.2
20	1.1/2	GFL3GK15981H00	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	7	0.4
21	3/4	GFL3GK15963Q00	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	2	0.1
22	5/8	SB20BO00660300	85 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.9
23	1/2	SB20BO00930200	70 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	28	3.4
24	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.0
25	2		Pressure Transmitter	1	2.0

FABRICATION WEIGHT [kg]	34.4
ERECTION WEIGHT [kg]	118.2
OVERALL WEIGHT [kg]	152.5

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1.1/2	BW
W2	1.1/2	BW
W3	1.1/2	BW
W4	1.1/2	BW
W5	1.1/2	BW
W6	1	BW
W7	1.1/2	BW
W8	1.1/2	BW
W9	1.1/2	BW
W10	1	BW
W11	1	BW
W12	1.1/2	BW
W13	1.1/2	BW
W14	1.1/2	BW
W15	1.1/2	BW
W16	1.1/2	BW
W17	2	BW
W18	1.1/2	BW
W19	1.1/2	BW
W20	3/4	BW
W21	3/4	BW
W22	1.1/2	BW
W23	1.1/2	BW
W24	1.1/2	BW
W25	1.1/2	BW
W26	1	BW
W27	1.1/2	BW
W28	1.1/2	BW
EW29	1.1/2	DW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1.1/2	121	BEVEL	BEVEL
B	1.1/2	236	BEVEL	BEVEL
C	1.1/2	114	BEVEL	BEVEL
D	1	121	BEVEL	BEVEL
E	1.1/2	250	BEVEL	BEVEL
F	1.1/2	150	BEVEL	BEVEL
G	3/4	100	BEVEL	BEVEL
H	1.1/2	250	BEVEL	BEVEL

SUPPORT LIST

PS-01011.1
PS-01013.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	4.5	4.6
B	21.5	16.6
C	4.5	5.5
D	8.5	7.7
MONT	1.5	118.2

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 1-1/2"-SWS-031-01SD-E

SK.023

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE: N/A

DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 27-08-2024

FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00023 | SHEET / OF: 1/1 | REV.: 00

LINE DATA

NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3			
PAINTING	SYSTEM N/A	BASE RAL N/A	FLUID PHASE	Liquid			
INSULATION	TYPE H	THICKNESS 20 [mm]	DESIGN	PRESS. 7.6 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	Yes		TEST	PRESS. 11.4 [barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS

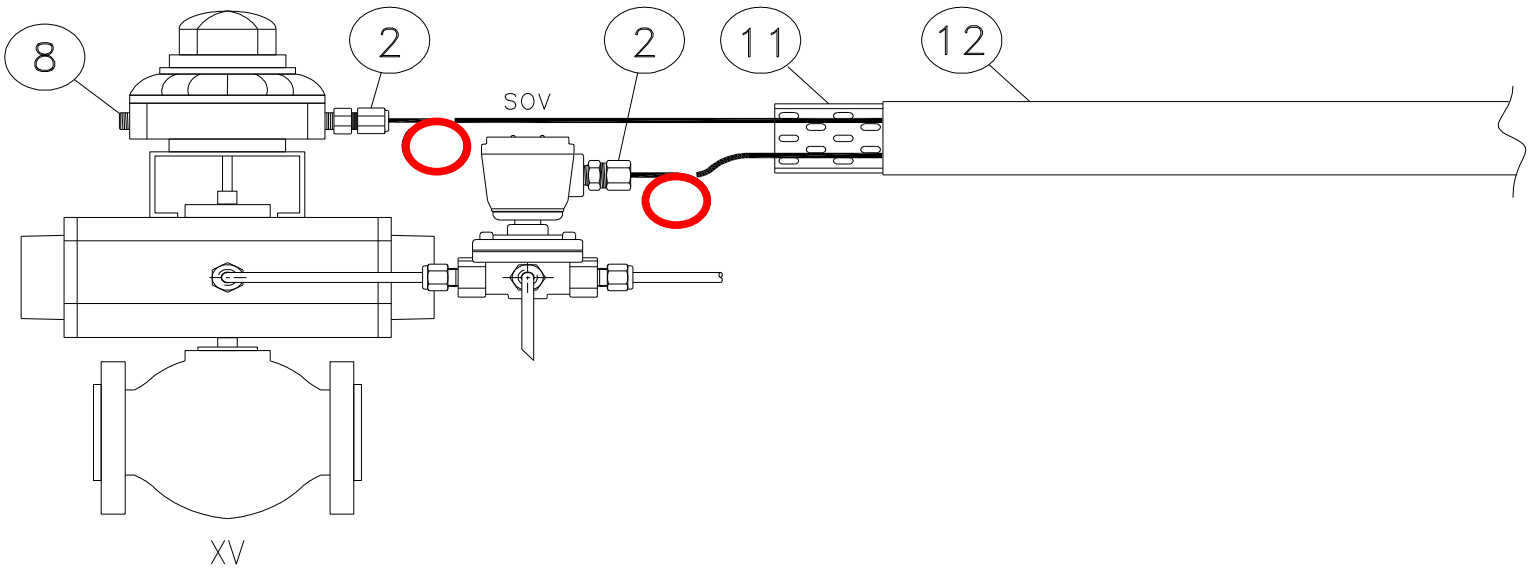
P&ID	123A90-DDL-PR-PID-80021
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

MASTER

CROSSWIND	HOLLANDSE KUST NOORD WIND PARK Project Contract No. CW-I-WP4-2023-05	ROSETTI MARINO
Document Title:	Instrument Electrical Hook-Ups	Sh. 15 of 37 Date: 27/09/2024 Rev. 02

ELECTRICAL HOOK-UP FOR XV (N.1 SOLENOID VALVE + 2 LIMIT SWITCH)



INSTRUMENT TAG	
1	25-XV-004
2	25-XV-006
3	25-XV-008
4	25-XV-009
5	25-XV-011
6	25-XV-012
7	25-XV-014
8	25-XV-015
9	25-XV-017
10	25-XV-018
11	25-XV-020
12	25-XV-021
13	25-XV-024
14	50-XV-001
15	50-XV-002
16	50-XV-003
17	50-XV-004
18	80-XV-001
19	50-XV-005
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	

NOTE:

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-HD-40079**

REV.:	DATE:	SIGNATURE:
2_G	20/12/24	V.Ramponi

ROSETTI MARINO SpA

POS.	NORM/STD CODE	DESCRIPTION	SIZE/ CONNECTION TYPE	Q.TY
12		Cover for cable tray, FRP, Grey Color	50 W x 10 H x 5 THK	3 mt
11		Perforated cable tray, FRP, Grey Color	50 W x 50 H x 5 THK	3 mt
8		Nickel Plated Brass Plug Ex-d/e IIC (or IIB + H2) T1	M20	1
2		Nickel Plated Brass Double Compression Cable Gland Ex-d/e IIC (or IIB + H2) T1	M20	2

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Its distribution is electronically controlled. Once printed shall be considered as "NOT CONTROLLED" copy

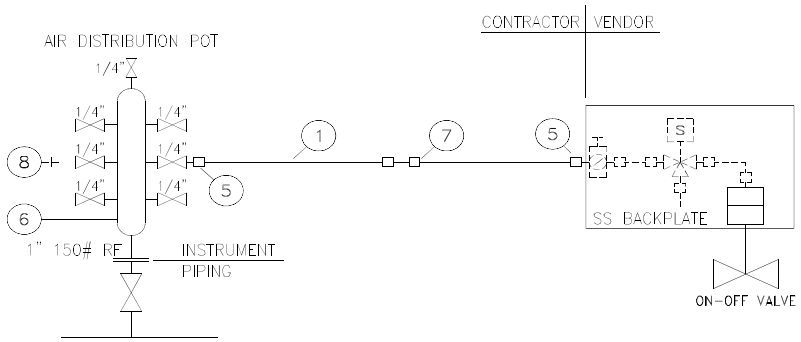
CROSSWIND	HOLLANDSE KUST NOORD WIND PARK Project Contract No. CW-I-WP4-2023-05	ROSETTI MARINO
Document Title:	Instrument Pneumatic Hook-Ups	Sh. 6 of 6 Date: 08/07/2024 Rev. 01

PNEUMATIC HOOK-UP FOR ON-OFF VALVES

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-HD-40078**

REV.:	DATE:	SIGNATURE:
1_B	06/11/24	G.Randi

ROSETTI MARINO SpA

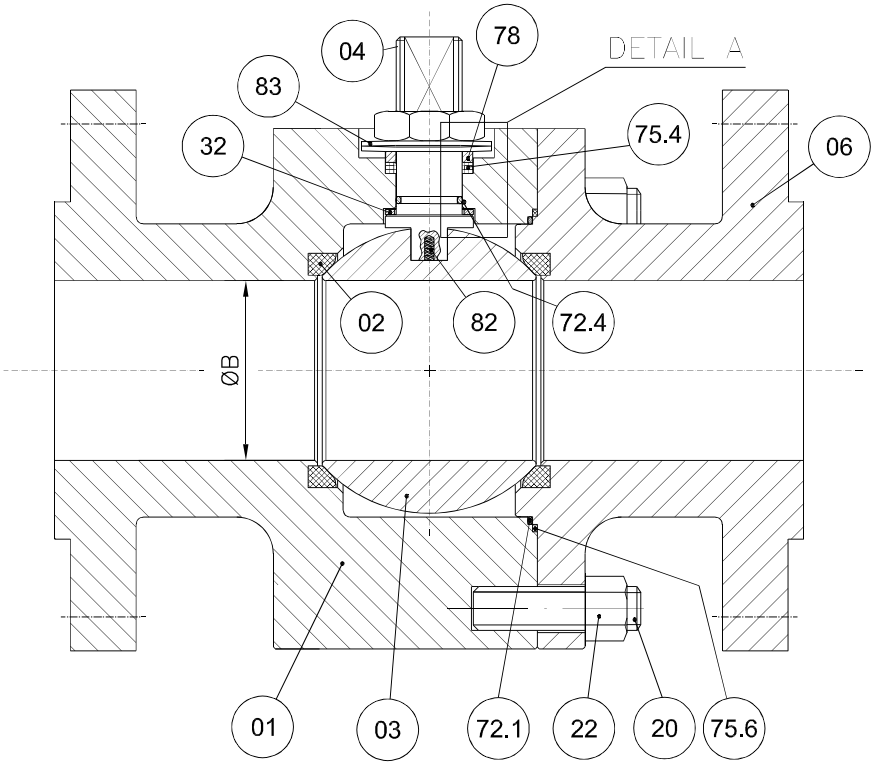


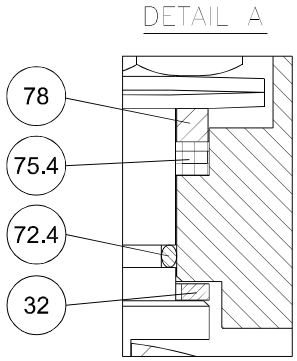
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1	25-BDV-022
2	25-BDV-005
3	25-BDV-007
4	25-BDV-010
5	25-BDV-013
6	25-BDV-016
7	25-BDV-019
8	25-SDV-001
9	25-SDV-023
10	25-XV-004
11	25-XV-006
12	25-XV-008
13	25-XV-009
14	25-XV-011
15	25-XV-012
16	25-XV-014
17	25-XV-015
18	25-XV-017
19	25-XV-018
20	25-XV-020
21	25-XV-021
22	25-XV-024
23	50-XV-001
24	50-XV-002
25	50-XV-003
26	50-XV-004
27	80-XV-001
28	64-SDV-001
29	50-XV-005
30	

NOTE:
(1) For Air Distribution Pot quantities see material take-off on sh. 4

POS.	NORM/STD CODE	DESCRIPTION	SIZE/CONNECTION TYPE	Q.TY
8		SS316 PLUG	1/4" NPT	Note 1
7		SS316 UNION	1/2" O.D. x 1/2" O.D.	N. 1
6		SS316 AIR DISTRIBUTION POT	1" 150#RF - N. 7 1/4" BALL VALVES	Note 1
5		SS316 MALE CONNECTOR	1/4" NPT x 1/2" O.D.	N. 2
1		SS 316L TUBING	1/2" x 0,049"Thk	10 m

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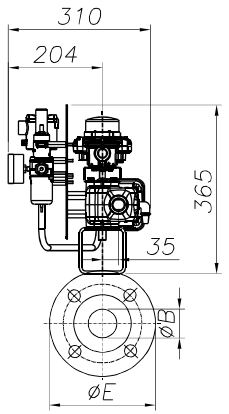


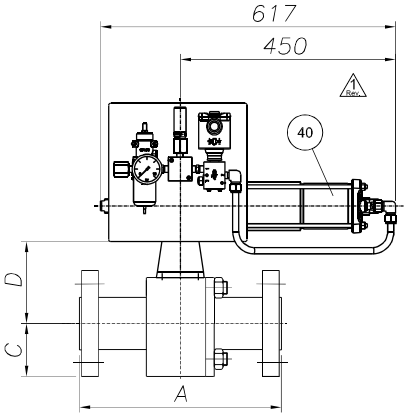


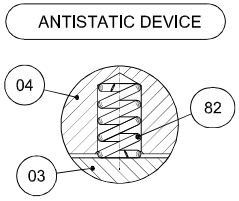
POS.	PART. NAME	MATERIAL
01	BODY	A182 F53
02	SEAT	RPTFE
03	BALL	A182 F53
04	STEM	A182 F53
06	CLOSURE	A182 F53
20	STUD	A193 B7+HDG (1)
22	NUT	A194 Gr.2H+HDG (1)
32	THRUST BEARING	RPTFE
40	PNEUMATIC ACTUATOR	MFR. STD.
72.1	FLANGE O-RING	VITON GLT/AED
72.4	STEM O-RING	VITON GLT/AED
75.4	STEM GASKET	GRAPHITE
75.6	FLANGE GASKET	GRAPHITE
78	PACKING RING	A479 Tp.316
82	ANTISTATIC DEVICE	INCONEL X750
83	BELLEVILLE WASHER	AISI 301

NOTE:

(1) HDG: Hot Dip Galvanised (ASTM A153)







REMARKS:

- Dimensions are in mm
- Design acc. to API 6D
- Face to face acc. to ASME B16.10/API 6D
- Flange connection acc. to ANSI B16.5
- Antistatic device acc. to API 6D

(*): To Be Confirmed

POS:	ITEM:	DATA SHEET:	TAG:	Q.TY:	SIZE:	CLASS:	ENDS:	A	ØB	C	D(*)	ØE	Valve Weight (kg): 1 Rev.	Actuator Weight (kg): 1 Rev.	Tot. Weight (kg):
24	240	BS01F01RF	50-XV-001	1	1-1/2"	150	RF	165	38	64	105	127	18	36	2 Rev. 54
26	260	BS01F01RF	50-XV-003	1	1-1/2"	150	RF	165	38	64	105	127	18	36	2 Rev. 54

CUSTOMER :	ROSETTI MARINO S.p.A.
P.O. N. :	1724000204 123A90A/REV.1
JOB N. :	240062

Rev.	DESCRIPTION	DRAWN	DATE	CHK'D	DATE	APPV'D	DATE
3							
2	ISSUED FOR APPROVAL	S.Madahar	22/04/2024	D.Barcella	22/04/2024	L.Mora	22/04/2024
1	ISSUED FOR APPROVAL	S.Madahar	15/04/2024	D.Barcella	15/04/2024	L.Mora	15/04/2024
0	FIRST ISSUE	S.Madahar	26/02/2024	D.Barcella	26/02/2024	L.Mora	26/02/2024

DRAWING NOT IN SCALE

Fluitek Valves

DESCRIPTION: GENERAL ASSEMBLY DRAWING

VALVE TYPE: SPLIT BODY FLOATING BALL VALVE

DRAWN:	DATE:
S.Madahar	26/02/2024
CHK'D: D.Barcella	DATE: 26/02/2024
APPV'D: L.Mora	DATE: 26/02/2024

SIZE: A3 | SCALE: N.A.

ALL RIGHTS OF THIS DRAWING ARE RESERVED.

DRAWING NAME: D240062-24-26

Rev.: 2

GENERAL	1	Tag Number	Location			50-XV-001	50	
	2	Service				SEA WATER P-50001A DISCHARGE		
	3	P&ID Number	Area Classification			123A90-DDL-PR-PID-80021	Zone 2, Gas Group IIC (or IIB+H2), Class T1	
PIPELINE	4	Line Number				1-1/2"-SWS-031-01SD-E		
	5	Line Size and Schedule	Inlet	Outlet		1-1/2" / 3.68 mm	1-1/2" / 3.68 mm	
	6	Line Material	Line Insulation			ASTM A790 UNS S32760	ELECTRICALLY HEAT TRACED (35)	
PROCESS DATA	7	Fluid				SEA WATER SUPPLY		
	8	Fluid State	Phase			LIQUID	LIQUID	
	9	Operating Pressure Norm/Min/Max			[barg]	15	-	-
	10	Design Pressure	Full Vacuum		[barg]	17.7		
	11	Operating Temperature Norm/Min/Max			[°C]	22	-	-
	12	Design Temperature	Minimum	Maxi	[°C]	-29	100	
	13	Max. Diff. Pressure for Actuator Size			[bar]	17.7		
	14							
	15							
	16	Speed of	Design			Close : (12)	Open : (12)	
	17	Operation (seconds)	Actual			Close : 0.3 minimum	Open : -	
	18							
	19							
VALVE BODY (34)	20	Body Type				BALL VALVE (FLOATING BALL) - SPLIT BODY (BS01F01RF)		
	21	Body Size	Body Form			1-1/2"	FULL BORE	
	22	Body Material	Bonnet Type			ASTM A182 F53	(*)	
	23	Connections	Rating			FLANGED ASME B16.5	#150	
	24	Flange Finish	Gasket Material			RF	Inside the valve (*) (38)	
	25	Packing	Lubrication & Isolation			PTFE (*)	(*)	
	26	Bolting				A193 B7 +HDG / A194 Gr. 2H + HDG		
	27	Trim Material	Ball	Stem	Seat	ASTM A182 F53	ASTM A182 F53	RPTFE
	28	Leakage Class				(1)		
	29	Fire Safe				(2)		
ACTUATOR	30	Manufacturer	Type			Rotork	Spring Return	
	31	Model No.	Size			CP/S	035-100A/BA	
	32	Actuator Orientation	Actuator Form			Horizontal	Cylinder	
	33	Ingress Protection	Certification			IP-66	II 2 G Ex h IIC T5 Gb	
	34	Air Supply	Min	Max	Design	4 barg	10 barg	11 barg
	35	Action on Air Failure	Action on Power Failure			CLOSE	CLOSE	
	36	Fireproofing				NOT APPLICABLE		
	37	Solenoid Valve				50-XY-001 (9, 14, 15, 16) - Bifold FP06P		
	38	Limit Switch Closed	Limit Switch Open			50-ZSL-001 (9, 17) - Soldo SS	50-ZSH-001 (9, 17) - Soldo SS	
	39	Elect. Reset Pushbutton (Actuator mounted)				NOT REQUIRED		
	40	Air Set	Handwheel			(*)	NOT REQUIRED	
	41	Mounting Position				HORIZONTAL / VERTICAL		
	42	Partial Stroke Test Facility				-		
	43	Control Type				-		
	44	Electrical Connection	Electrical Class			No. (*) / M20	H	
EMERGENCY A/S VESSEL	45	Capacity	Fabrication Code			-	-	-
	46	No of Strokes Per Capacity				-		
	47	Safety Valve	Model			-	-	
	48	Check Valve	Mounting			-	-	
PURCHASE	49	Manufacturer				FLUITEK		
	50	Model				FB3		
	51	Purchase Order Number				1724000204		

NOTE
(1) N.1 PSV INSTALLED DOWNSTREAM THE AIR FILTER REGULATOR, SIZE 1/4", SS, set 4.7 barg.

No.	Date	By	Chkd	Appr	Description
03	06/12/24	VBA	LCA	DLO	Accepted for Construction (AFC)
02	28/08/24	VBA	LCA	DLO	Accepted for Construction (AFC)
01	20/12/23	VBA	LCA	DLO	Issued for Review (IFR)
00	06/11/23	VBA	LCA	DLO	Issued for Review (IFR)

INSTRUMENT DATASHEET

SDV/BDV and Tight Shut-Off XV Valves

CROSSWIND

ROSETTI MARINO

Code : Dwg. No.: 123A90-DDL-IN-DS-40030 Rev.03

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ITEM	Tag	50-XV-002	: On/Off Valve - Sea Water Recirculation from Pump P-50001A			Dwg	123A90-DDL-PR-PID-80021
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10001188		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Instrumental	Form	CJX23
							Actuated on/off Valve-Pneumatic/Hydraulic Type

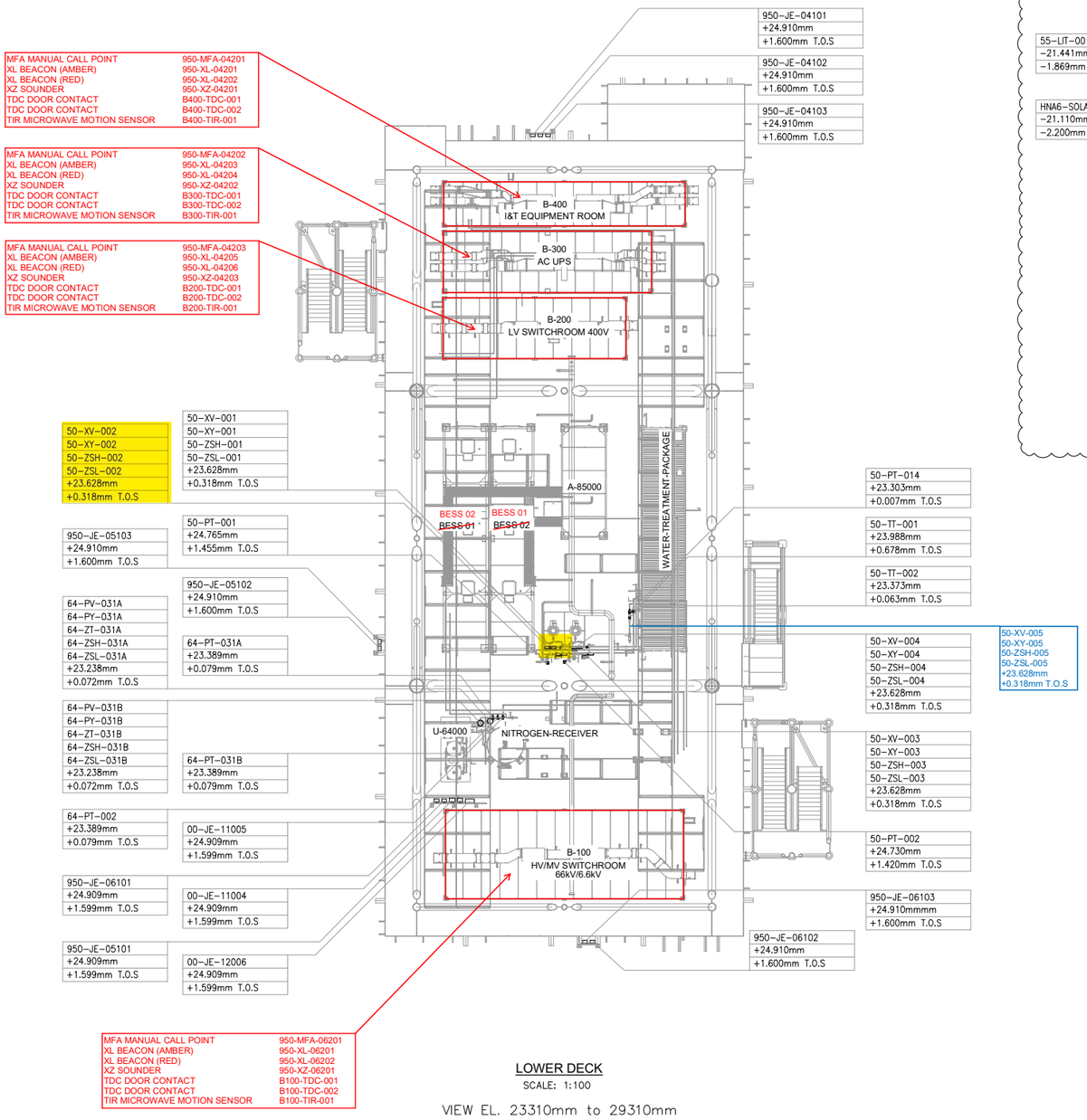
1	Check for mechanical damage.	OK
2	Check installed equipment is suitable and conforms to specification.	OK
3	Check installation conforms to P&ID, typical and hook-up drawing.	OK
4	Check valve is installed in accordance with flow direction.	OK
5	Check all stop plugs are properly installed.	OK
6	Check identification (tag number, tag plates).	OK
7	Check accessibility conforms to specifications, with platforming where necessary.	OK
8	If required produce Red Line Mark Up for "AS BUILT"	

Comments

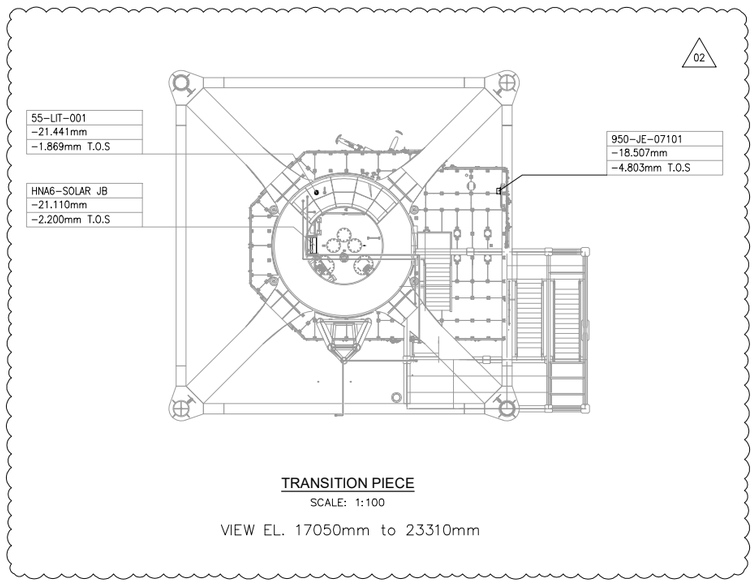
	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Alessio Polo	
Date	2025-02-05	2025-02-10	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-05T10:18:28.637Z	PROVERLIS Digitaly signed by Alessio Polo 2025-02-10T10:04:57.792Z	

DRAWING NO. 123A90-DDL-IN-DL-40080

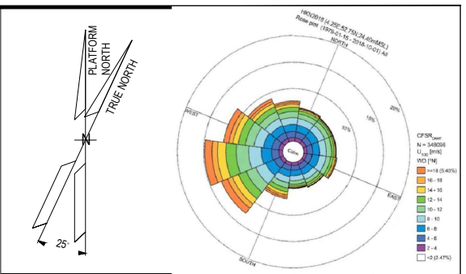
REV. 02



LOWER DECK
SCALE: 1:100
VIEW EL. 23310mm to 29310mm



TRANSITION PIECE
SCALE: 1:100
VIEW EL. 17050mm to 23310mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40081	INSTRUMENT LAYOUT - UPPER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-UPPER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DL-40080**

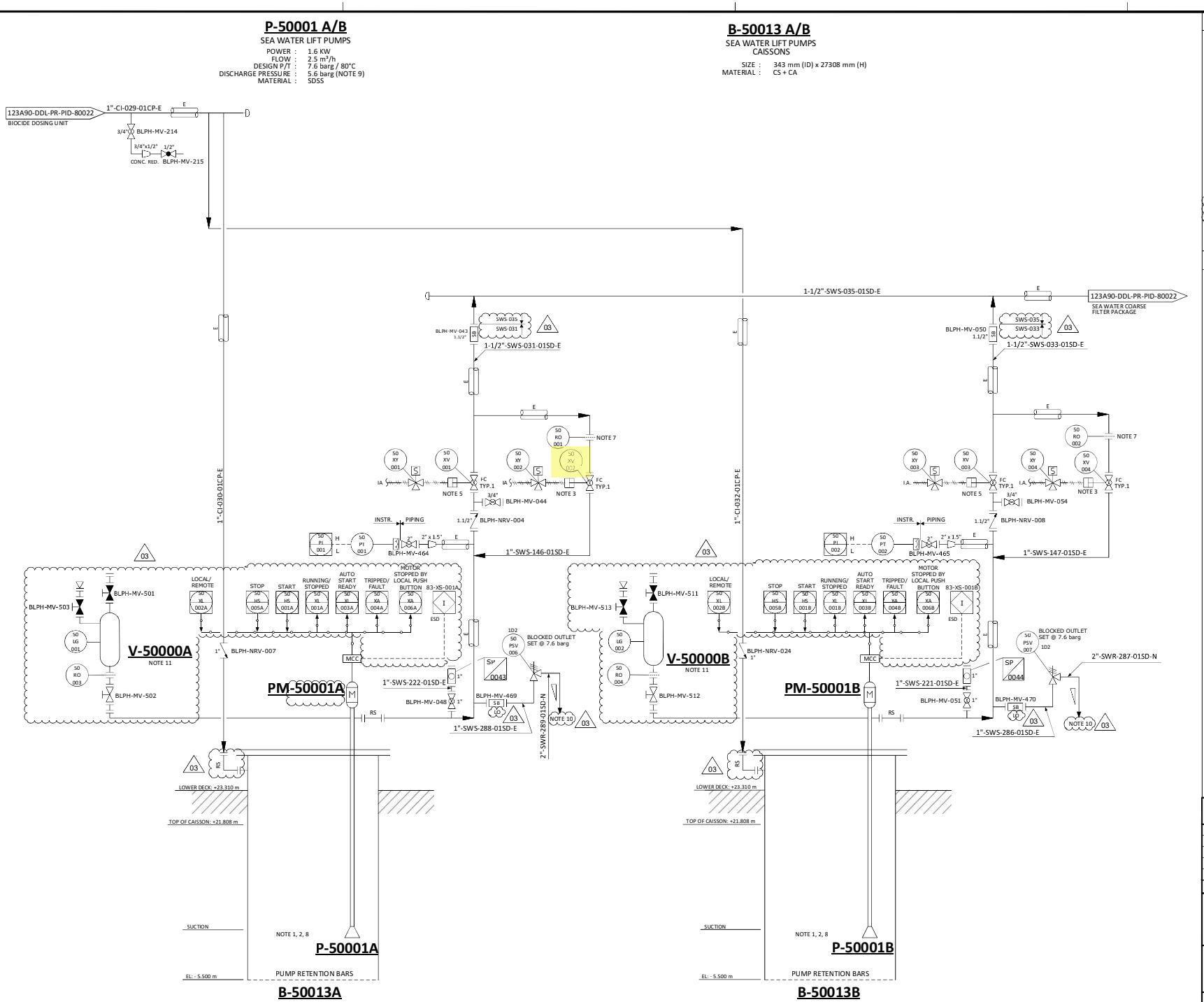
REV.:	DATE:	SIGNATURE:
2_C	06/11/24	G.Randi

ROSETTI MARINO SpA

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–LOWER DECK
TOS EL. 23.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90–DDL–IN–DL–40080	SHEET 001	REV. 02

File Name : 123A90-DDL-IN-DL-40080 REV02.dwg



NOTES

1. SEAWATER LIFT PUMPS ARE RATED 2 X 100%
2. AUTO START OF DESIGNATED STANDBY PUMP ON LOSS OF RUNNING STATUS AND DISCHARGE LOW PRESSURE ALARM OF DUTY PUMP.
3. VALVE TO BE OPENED WHEN PUMP IS OFFLINE TO DOSE CAISSON WITH TREATED SEAWATER TO PREVENT BIOLOGICAL GROWTH.
4. DELETED.
5. SOFTWARE INTERLOCK PREVENTS PUMPS FROM STARTING IN CASE THE RELEVANT XV VALVE IS FULLY CLOSED. 03
6. DELETED.
7. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "123A90-DDL-IN-DS-40054 - TECHNICAL DATASHEET FOR RESTRICTION ORIFICE".
8. LOGIC FOR CONTROL OF P-5001A/B THAT PREVENTS SIMULTANEOUS RUNNING OF A AND B PUMP IS PROVIDED.
9. DISCHARGE PRESSURE REFERS TO THE FLANGE DISCHARGE OF THE PUMP AT LOWER DECK.
10. ROUTED TO THE SEA.
11. VESSELS V-50000A/B ARE INSULATED AND HEAT TRACED. 03

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.
5. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
SEA-WATER INTAKE SYSTEM SHEET 1

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80021	SHEET 001	REV. 03

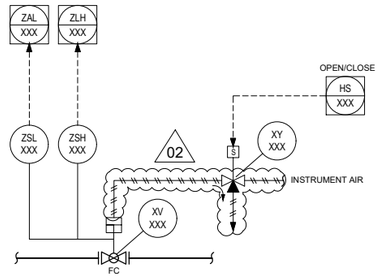
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REV. REV.
File Name : FILE_NAME

DRAWING NO.

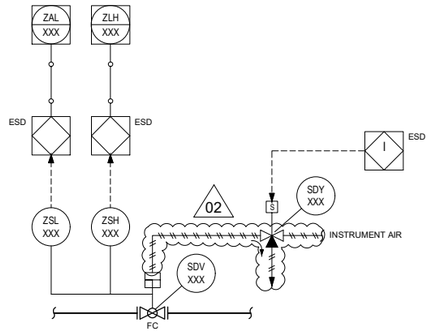
REV. 00

TYPICAL INSTRUMENTATION VALVE

TYP.1 (XV - ON OFF VALVES)

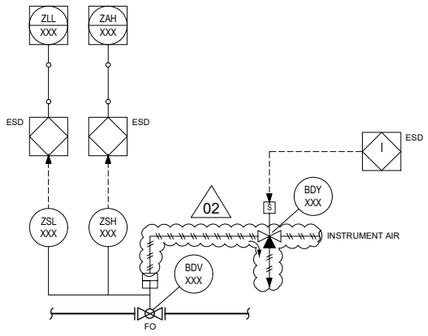


TYP.2 (SDV - SAFETY NO CRITICAL VALVES)



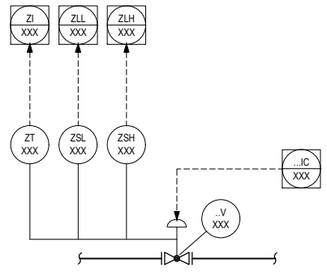
02

TYP.4 (BDV - SAFETY NO CRITICAL VALVES)



02

TYP.6 (CONTROL VALVES - CRITICAL)



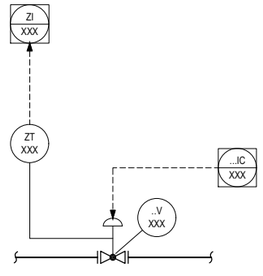
INSTRUMENT SYMBOLOGY DEFINITION

MEANINGS OF IDENTIFICATION LETTERS
THIS TABLE APPLIES TO THE FUNCTIONAL IDENTIFICATION OF INSTRUMENTS

	FIRST- LETTER		SUCCEEDING-LETTER		
	MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
C				CONTROL	
E			SENSOR (PRIMARY ELEMENT) ELEMENT		
F	FLOW RATE	RATIO (FRACTION)			
G			GLASS VIEWING DEVICE		
H	HAND				HIGH
I			INDICATE		
L	LEVEL				LOW
O			ORIFICE, OPEN		
P	PRESSURE, VACUUM				
R		RELIEF			
S		SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
V				VALVE, DAMPER, LOUVER	
X	UNCLASSIFIED				
Y				AUXILIARY DEVICES	
Z	POSITION DIMENSION				

NOTE: FOR FURTHER EXPLANATORY NOTES, REFER TO ANSI/ISA-5.1

TYP.7 (CONTROL VALVES - NOT CRITICAL)



NOTES

1. FOR GENERAL NOTES AND PIPING SYMBOLOGY SEE DRAWINGS: 123A90-DDL-PR-PID-80009 AND 123A90-DDL-PR-PID-80010.
2. DELETED.

HOLDS

1 DELETED 02

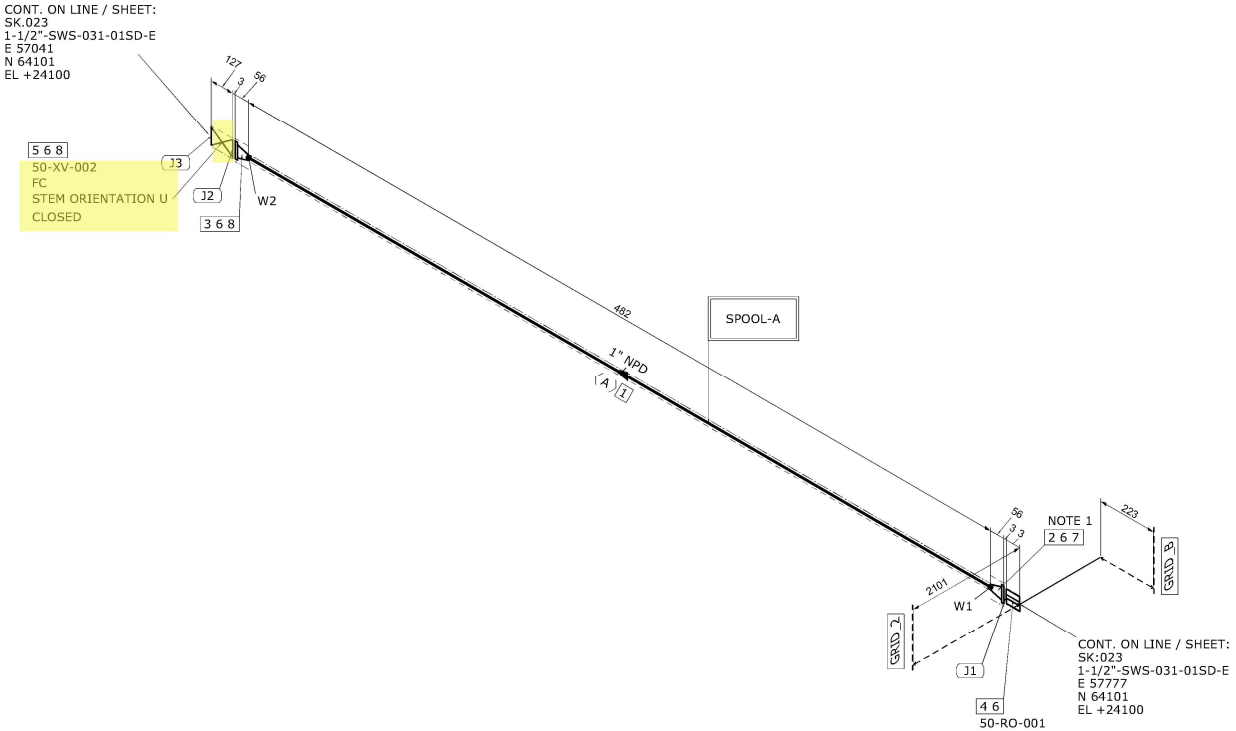
REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND | ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
INSTRUMENTATION SYMBOLOGY

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80042	SHEET 001	REV. 02

File Name :



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPESD02850100	Pipe ASME B36.19M PE 3,38 SML ASTM A790 UNS S32760	0.5M	1.2
2	1	FLWDSD00300100	Flange WN For Jackscrews ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	1	1.4
3	1	FLW0SD01240100	Flange WN ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	1	1.4

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
4	1		Restriction Orifice 150#RF	1	1.0
5	1		ON/OFF Ball Actuator Valve - 150#RF Flanged	1	40.0
6	1	GFL3GK16970100	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	1	0.2
7	1/2	SB20BO00940200	75 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.5
8	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.0

FABRICATION WEIGHT [kg]	4.0
ERECTION WEIGHT [kg]	42.7
OVERALL WEIGHT [kg]	46.7

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1	BW
W2	1	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1	482	BEVEL	BEVEL

SUPPORT LIST

SPOOL	WELD [inches]	WEIGHT [kg]
A	2	4.1
MONT	0	42.7

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF S/L	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 1"-SWS-146-01SD-E

SK.059

LINE DATA

NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3			
PAINTING	SYSTEM N/A	BASE RAL N/A	FLUID PHASE	Liquid			
INSULATION	TYPE H	THICKNESS 20 [mm]	DESIGN	PRESS. 7.6 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	Yes		TEST	PRESS. 11.4 [barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80021
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

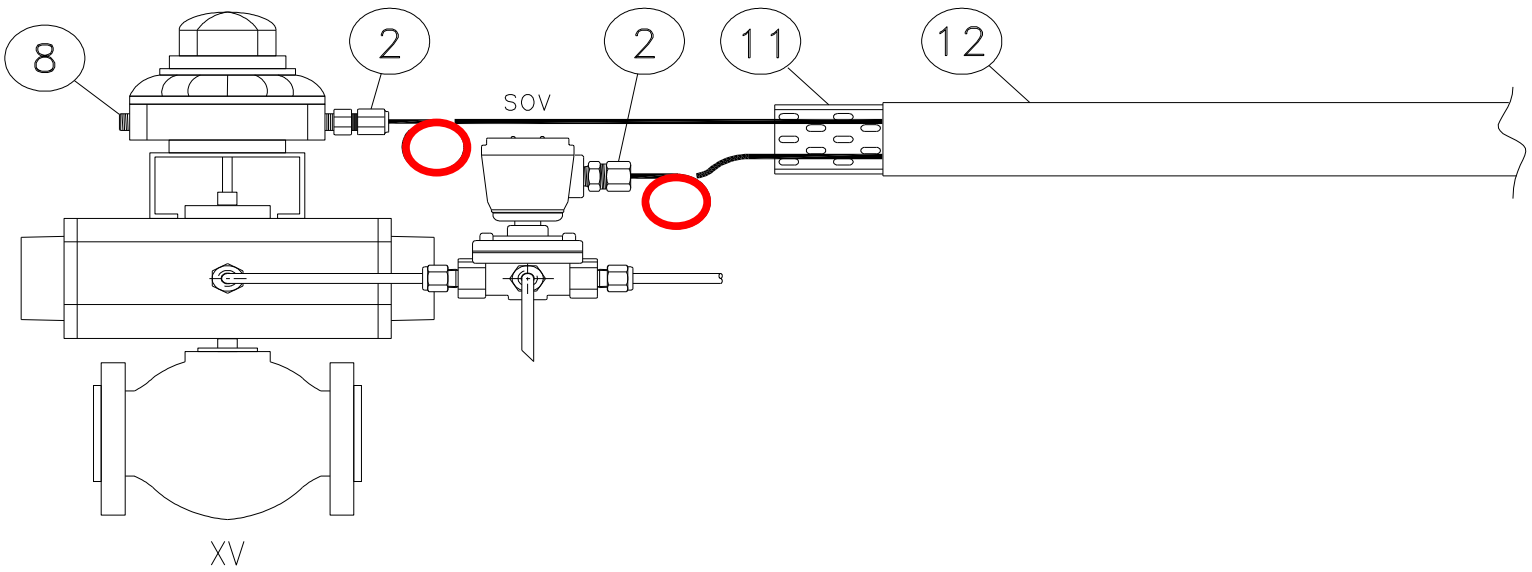
NOTES

1.JACKSCREWS POSITION N/S

MASTER

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE	N/A
DRAWN STAFF SRL	CHECKED RT	APPROVED LM	DATE	27-08-2024
FORMAT A3	DRAWING NO. 123A90-FDL-PP-DI-00059		SHEET / OF 1/1	REV. 00

ELECTRICAL HOOK-UP FOR XV (N.1 SOLENOID VALVE + 2 LIMIT SWITCH)



INSTRUMENT TAG	
1	25-XV-004
2	25-XV-006
3	25-XV-008
4	25-XV-009
5	25-XV-011
6	25-XV-012
7	25-XV-014
8	25-XV-015
9	25-XV-017
10	25-XV-018
11	25-XV-020
12	25-XV-021
13	25-XV-024
14	50-XV-001
15	50-XV-002
16	50-XV-003
17	50-XV-004
18	80-XV-001
19	50-XV-005
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	

NOTE:

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-HD-40079**

REV.:	DATE:	SIGNATURE:
2_G	20/12/24	V.Ramponi

ROSETTI MARINO SpA

POS.	NORM/STD CODE	DESCRIPTION	SIZE/ CONNECTION TYPE	Q.TY
12		Cover for cable tray, FRP, Grey Color	50 W x 10 H x 5 THK	3 mt
11		Perforated cable tray, FRP, Grey Color	50 W x 50 H x 5 THK	3 mt
8		Nickel Plated Brass Plug Ex-d/e IIC (or IIB + H2) T1	M20	1
2		Nickel Plated Brass Double Compression Cable Gland Ex-d/e IIC (or IIB + H2) T1	M20	2

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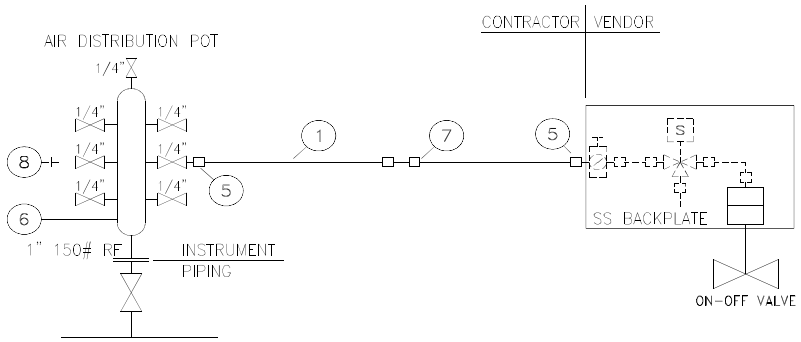
CROSSWIND	HOLLANDSE KUST NOORD WIND PARK Project Contract No. CW-I-WP4-2023-05	ROSETTI MARINO
Document Title:	Instrument Pneumatic Hook-Ups	Sh. 6 of 6 Date: 08/07/2024 Rev. 01

PNEUMATIC HOOK-UP FOR ON-OFF VALVES

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-HD-40078**

REV.:	DATE:	SIGNATURE:
1_B	06/11/24	G.Randi

ROSETTI MARINO SpA

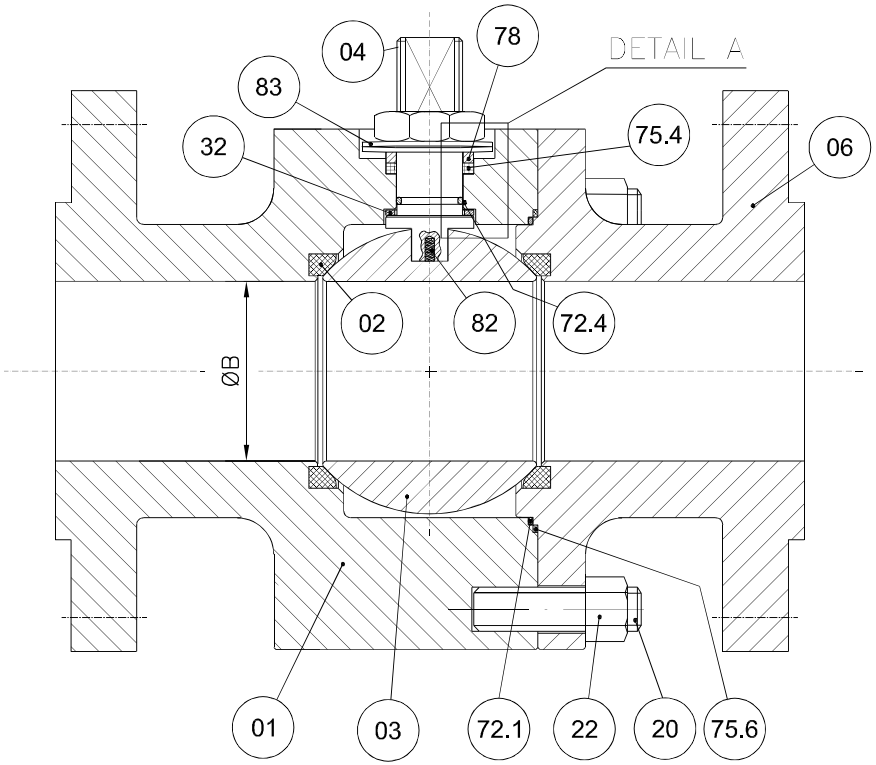


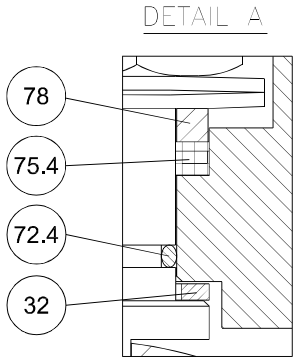
	INSTRUMENT TAG
1	25-BDV-022
2	25-BDV-005
3	25-BDV-007
4	25-BDV-010
5	25-BDV-013
6	25-BDV-016
7	25-BDV-019
8	25-SDV-001
9	25-SDV-023
10	25-XV-004
11	25-XV-006
12	25-XV-008
13	25-XV-009
14	25-XV-011
15	25-XV-012
16	25-XV-014
17	25-XV-015
18	25-XV-017
19	25-XV-018
20	25-XV-020
21	25-XV-021
22	25-XV-024
23	50-XV-001
24	50-XV-002
25	50-XV-003
26	50-XV-004
27	80-XV-001
28	64-SDV-001
29	50-XV-005
30	

NOTE:
(1) For Air Distribution Pot quantities see material take-off on sh. 4

POS.	NORM/STD CODE	DESCRIPTION	SIZE/CONNECTION TYPE	Q.TY
8		SS316 PLUG	1/4" NPT	Note 1
7		SS316 UNION	1/2" O.D. x 1/2" O.D.	N. 1
6		SS316 AIR DISTRIBUTION POT	1" 150#RF - N. 7 1/4" BALL VALVES	Note 1
5		SS316 MALE CONNECTOR	1/4" NPT x 1/2" O.D.	N. 2
1		SS 316L TUBING	1/2" x 0,049"Thk	10 m

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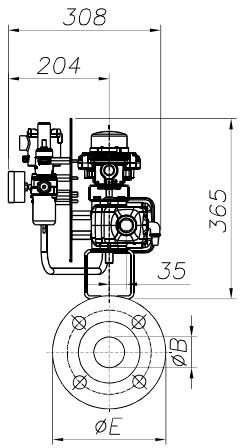


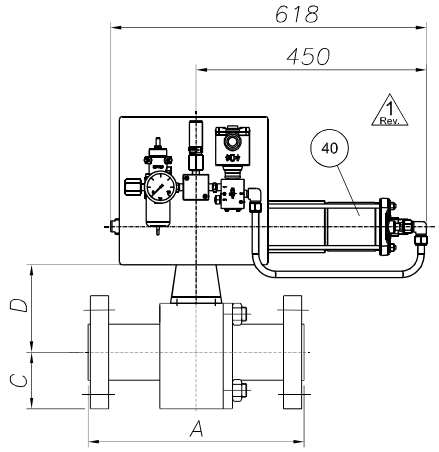


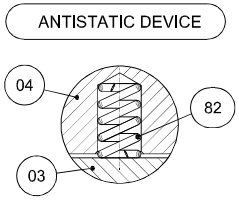
POS.	PART. NAME	MATERIAL
01	BODY	A182 F53
02	SEAT	RPTFE
03	BALL	A182 F53
04	STEM	API 6A CRA UNS N07718
06	CLOSURE	A182 F53
20	STUD	A193 B7+HDG (1)
22	NUT	A194 Gr.2H+HDG (1)
32	THRUST BEARING	RPTFE
40	PNEUMATIC ACTUATOR	MFR. STD.
72.1	FLANGE O-RING	VITON GLT/AED
72.4	STEM O-RING	VITON GLT/AED
75.4	STEM GASKET	GRAPHITE
75.6	FLANGE GASKET	GRAPHITE
78	PACKING RING	A479 Tp.316
82	ANTISTATIC DEVICE	INCONEL X750
83	BELLEVILLE WASHER	AISI 301

NOTE:

(1) HDG: Hot Dip Galvanised (ASTM A153)







REMARKS:

- Dimensions are in mm
- Design acc. to API 6D
- Face to face acc. to ASME B16.10/API 6D
- Flange connection acc. to ANSI B16.5
- Antistatic device acc. to API 6D

(*): To Be Confirmed

POS:	ITEM:	DATA SHEET:	TAG:	Q.TY:	SIZE:	CLASS:	ENDS:	A	ØB	C	D(*)	ØE	Valve Weight (kg):	Actuator Weight (kg):	Total Weight (kg):
25	250	BS01F01RF	50-XV-002	1	1"	150	RF	127	25	54	95	108	6	34	40
27	270	BS01F01RF	50-XV-004	1	1"	150	RF	127	25	54	95	108	6	34	40

1 Rev.

2 Rev.

CUSTOMER :	ROSETTI MARINO S.p.A.
P.O. N. :	1724000204 123A90A/REV.1
JOB N. :	240062

Rev.	DESCRIPTION	DRAWN	DATE	CHK'D	DATE	APPV'D	DATE
3							
2	ISSUED FOR APPROVAL	S.Madahar	22/04/2024	D.Barcella	22/04/2024	L.Mora	22/04/2024
1	ISSUED FOR APPROVAL	S.Madahar	15/04/2024	D.Barcella	15/04/2024	L.Mora	15/04/2024
0	FIRST ISSUE	S.Madahar	26/02/2024	D.Barcella	26/02/2024	L.Mora	26/02/2024

DRAWING NOT IN SCALE

Fluitek Valves

DESCRIPTION: GENERAL ASSEMBLY DRAWING

VALVE TYPE:

SPLIT BODY FLOATING BALL VALVE

DRAWN: S.Madahar	DATE: 26/02/2024	
CHK'D: D.Barcella	DATE: 26/02/2024	
APPV'D: L.Mora	DATE: 26/02/2024	
SIZE: A3	SCALE: N.A.	ALL RIGHTS OF THIS DRAWING ARE RESERVED.

DRAWING NAME: D240062-25-27

Rev.: 2

GENERAL	1	Tag Number	Location			50-XV-002	50	
	2	Service				SEA WATER P-50001A INLET		
	3	P&ID Number	Area Classification			123A90-DDL-PR-PID-80021	Zone 2, Gas Group IIC (or IIB+H2), Class T1	
PIPELINE	4	Line Number				1"-SWS-146-01SD-E		
	5	Line Size and Schedule	Inlet	Outlet		1" / 3.38 mm	1" / 3.38 mm	
	6	Line Material	Line Insulation			ASTM A790 UNS S32760	ELECTRICALLY HEAT TRACED (35)	
PROCESS DATA	7	Fluid				SEA WATER SUPPLY		
	8	Fluid State	Phase			LIQUID	LIQUID	
	9	Operating Pressure Norm/Min/Max			[barg]	-	ATM	15
	10	Design Pressure	Full Vacuum		[barg]	17.7		
	11	Operating Temperature Norm/Min/Max			[°C]	-	-	-
	12	Design Temperature	Minimum	Maxi	[°C]	-29	100	
	13	Max. Diff. Pressure for Actuator Size			[bar]	17.7		
	14							
	15							
	16	Speed of	Design			Close : (12)	Open : (12)	
	17	Operation (seconds)	Actual			Close : 0.3 minimum	Open : -	
	18							
	19							
VALVE BODY (34)	20	Body Type				BALL VALVE (FLOATING BALL) - SPLIT BODY (BS01F01RF)		
	21	Body Size	Body Form			1"	FULL BORE	
	22	Body Material	Bonnet Type			ASTM A182 F53	(*)	
	23	Connections	Rating			FLANGED ASME B16.5	#150	
	24	Flange Finish	Gasket Material			RF	Inside the valve (*) (38)	
	25	Packing	Lubrication & Isolation			PTFE (*)	(*)	
	26	Bolting				A193 B7 +HDG / A194 Gr. 2H + HDG		
	27	Trim Material	Ball	Stem	Seat	ASTM A182 F53	ASTM A182 F53	RPTFE
	28	Leakage Class				(1)		
	29	Fire Safe				(2)		
ACTUATOR	30	Manufacturer	Type			Rotork	Spring Return	
	31	Model No.	Size			CP/S	035-100A/BA	
	32	Actuator Orientation	Actuator Form			Horizontal	Cylinder	
	33	Ingress Protection	Certification			IP-66	II 2 G Ex h IIC T5 Gb	
	34	Air Supply	Min	Max	Design	4 barg	10 barg	11 barg
	35	Action on Air Failure	Action on Power Failure			CLOSE	CLOSE	
	36	Fireproofing				NOT APPLICABLE		
	37	Solenoid Valve				50-XY-002 (9, 14, 15, 16) - Bifold FP06P		
	38	Limit Switch Closed	Limit Switch Open			50-ZSL-002 (9, 17) - Soldo SS	50-ZSH-002 (9, 17) - Soldo SS	
	39	Elect. Reset Pushbutton (Actuator mounted)				NOT REQUIRED		
	40	Air Set	Handwheel			(*)	NOT REQUIRED	
	41	Mounting Position				HORIZONTAL / VERTICAL		
	42	Partial Stroke Test Facility				-		
	43	Control Type				-		
	44	Electrical Connection	Electrical Class			No. (*) / M20	H	
EMERGENCY A/S VESSEL	45	Capacity	Fabrication Code			-	-	-
	46	No of Strokes Per Capacity				-		
	47	Safety Valve	Model			-	-	
	48	Check Valve	Mounting			-	-	
PURCHASE	49	Manufacturer				FLUITEK		
	50	Model				FB3		
	51	Purchase Order Number				1724000204		

NOTE
(1) N.1 PSV INSTALLED DOWNSTREAM THE AIR FILTER REGULATOR, SIZE 1/4", SS, set 4.7 barg.

No.	Date	By	Chkd	Appr	Description
03	06/12/24	VBA	LCA	DLO	Accepted for Construction (AFC)
02	28/08/24	VBA	LCA	DLO	Accepted for Construction (AFC)
01	20/12/23	VBA	LCA	DLO	Issued for Review (IFR)
00	06/11/23	VBA	LCA	DLO	Issued for Review (IFR)

INSTRUMENT DATASHEET

SDV/BDV and Tight Shut-Off XV Valves

CROSSWIND

ROSETTI MARINO

Code : Dwg. No.: 123A90-DDL-IN-DS-40030 Rev.03

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ITEM	Tag	50-XV-003	: On/Off Valve - Sea Water from Pump P-50001B			Dwg	123A90-DDL-PR-PID-80021
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10001189		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Instrumental	Form	CJX23 Actuated on/off Valve-Pneumatic/Hydraulic Type

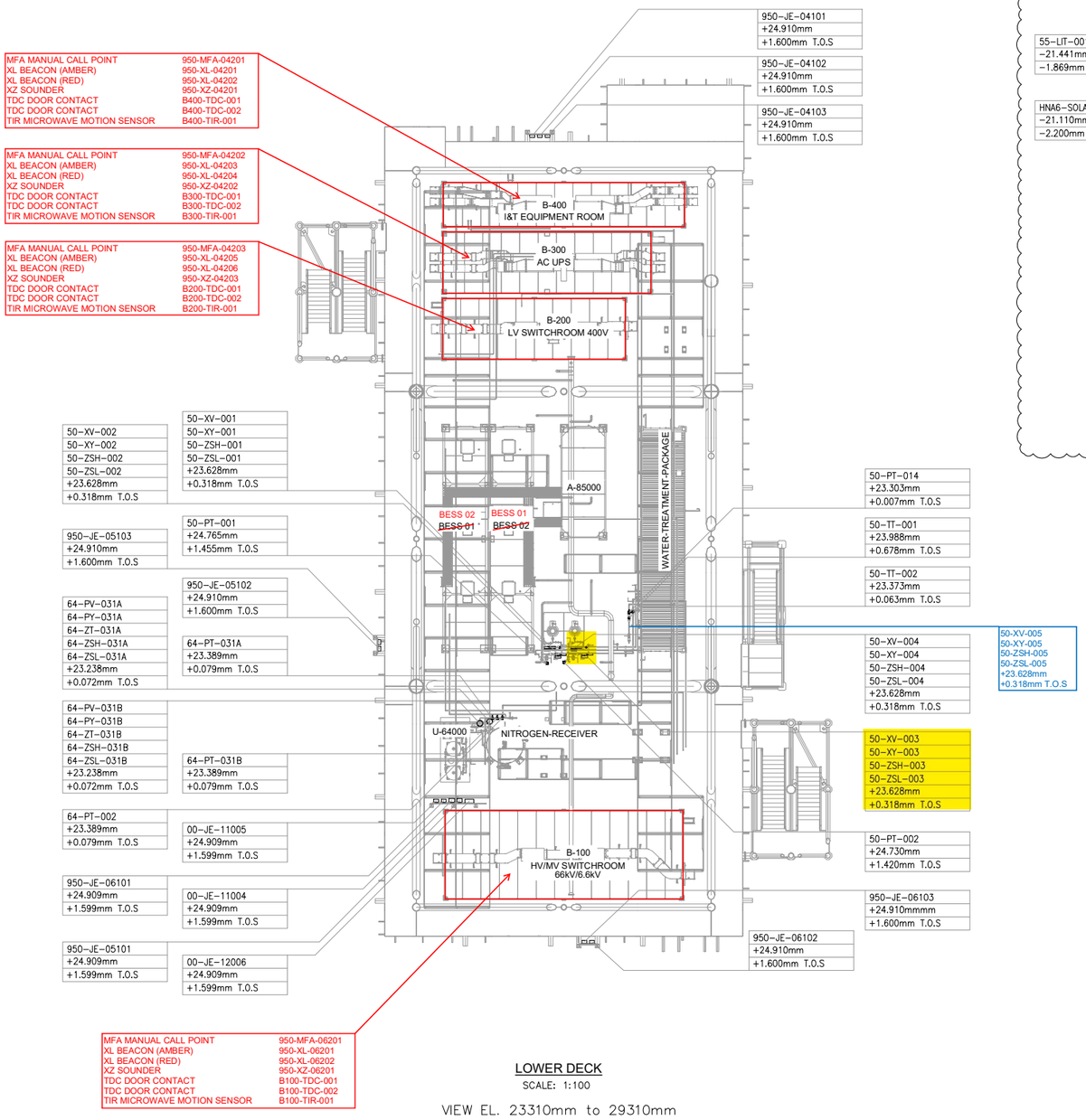
1	Check for mechanical damage.	OK
2	Check installed equipment is suitable and conforms to specification.	OK
3	Check installation conforms to P&ID, typical and hook-up drawing.	OK
4	Check valve is installed in accordance with flow direction.	OK
5	Check all stop plugs are properly installed.	OK
6	Check identification (tag number, tag plates).	OK
7	Check accessibility conforms to specifications, with platforming where necessary.	OK
8	If required produce Red Line Mark Up for "AS BUILT"	

Comments

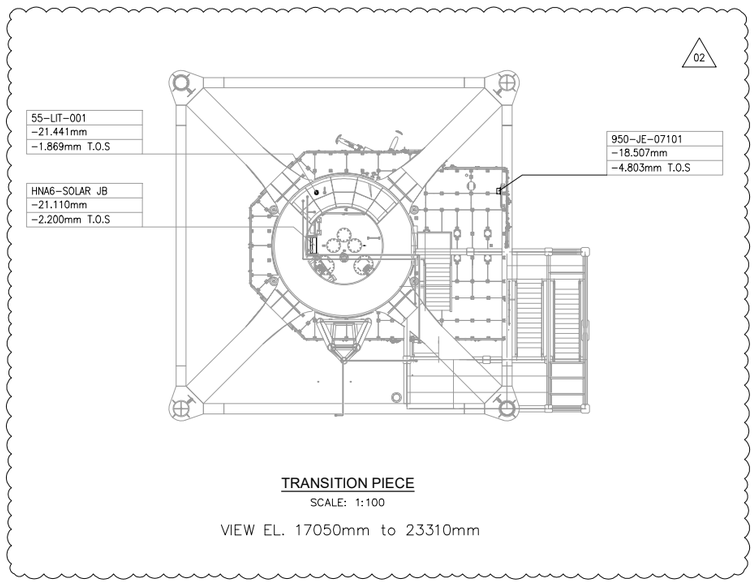
	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICSIMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Alessio Polo	
Date	2025-02-06	2025-02-08	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-06T16:41:43.110Z	PROVERLIS Digitaly signed by Alessio Polo 2025-02-08T10:56:47.385Z	

DRAWING NO. 123A90-DDL-IN-DL-40080

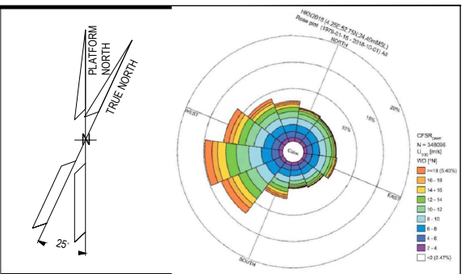
REV. 02



LOWER DECK
SCALE: 1:100
VIEW EL. 23310mm to 29310mm



TRANSITION PIECE
SCALE: 1:100
VIEW EL. 17050mm to 23310mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40081	INSTRUMENT LAYOUT - UPPER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-UPPER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DL-40080**

REV.:	DATE:	SIGNATURE:
2_C	06/11/24	G.Randi

ROSETTI MARINO SpA

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–LOWER DECK
TOS EL. 23.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90–DDL–IN–DL–40080	SHEET 001	REV. 02

File Name : 123A90-DDL-IN-DL-40080 REV02.dwg

DRAWING NO. DRAWING_NO.

REV. REV.

P-50001 A/B

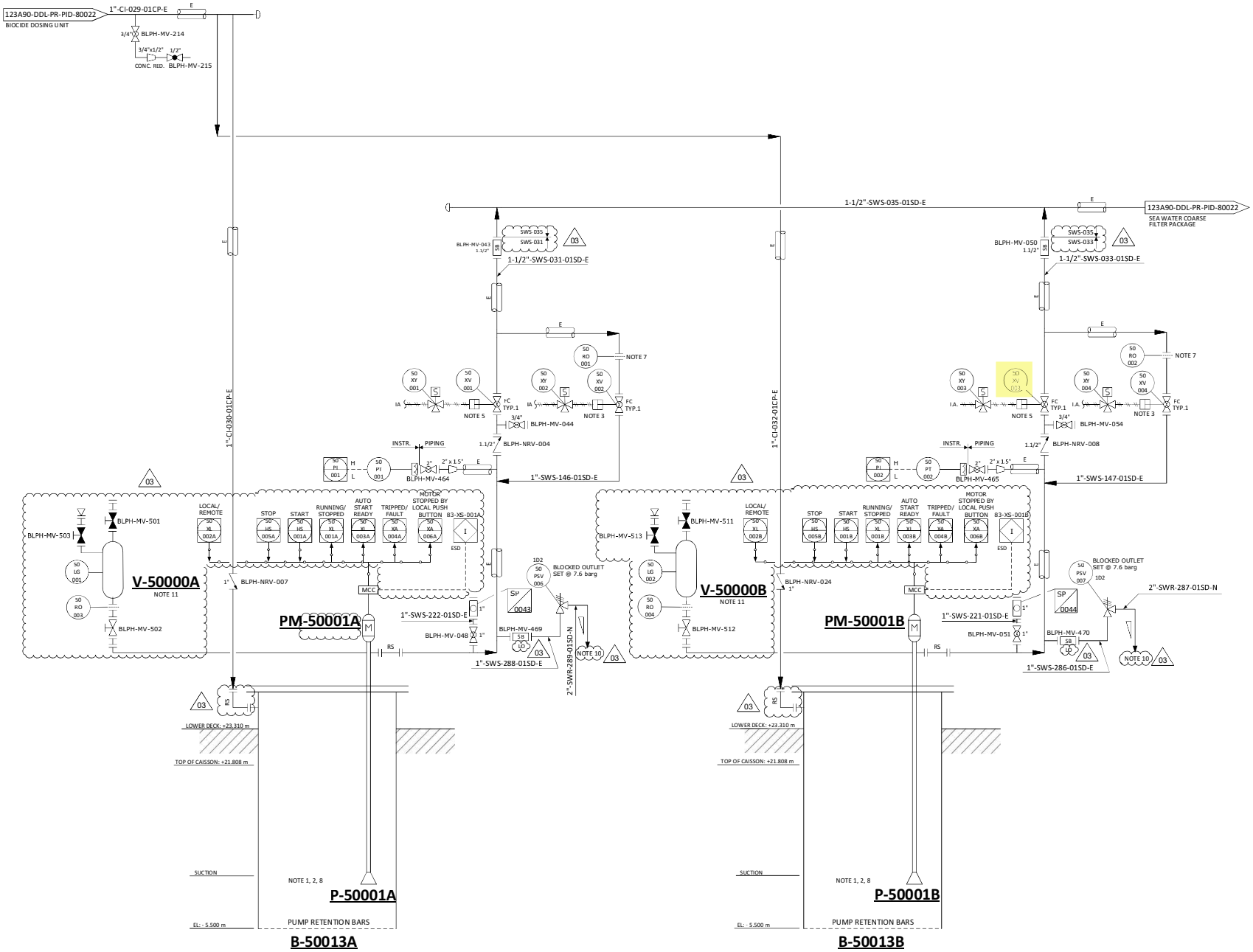
SEA WATER LIFT PUMPS

POWER :	1.6 KW
FLOW :	2.5 m³/h
DESIGN P/T :	7.6 barg / 80°C
DISCHARGE PRESSURE :	5.6 barg (NOTE 9)
MATERIAL :	SDSS

B-50013 A/B

SEA WATER LIFT PUMPS CAISSONS

SIZE :	343 mm (ID) x 27308 mm (H)
MATERIAL :	CS + CA



NOTES

1. SEAWATER LIFT PUMPS ARE RATED 2 X 100%
2. AUTO START OF DESIGNATED STANDBY PUMP ON LOSS OF RUNNING STATUS AND DISCHARGE LOW PRESSURE ALARM OF DUTY PUMP.
3. VALVE TO BE OPENED WHEN PUMP IS OFFLINE TO DOSE CAISSON WITH TREATED SEAWATER TO PREVENT BIOLOGICAL GROWTH.
4. DELETED.
5. SOFTWARE INTERLOCK PREVENTS PUMPS FROM STARTING IN CASE THE RELEVANT XV VALVE IS FULLY CLOSED. 03
6. DELETED.
7. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "123A90-DDL-IN-DS-40054 - TECHNICAL DATASHEET FOR RESTRICTION ORIFICE".
8. LOGIC FOR CONTROL OF P-5001A/B THAT PREVENTS SIMULTANEOUS RUNNING OF A AND B PUMP IS PROVIDED.
9. DISCHARGE PRESSURE REFERS TO THE FLANGE DISCHARGE OF THE PUMP AT LOWER DECK.
10. ROUTED TO THE SEA.
11. VESSELS V-50000A/B ARE INSULATED AND HEAT TRACED. 03

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.
5. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :

BLPH PIPING AND INSTRUMENTATION DIAGRAM
SEA-WATER INTAKE SYSTEM SHEET 1

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80021	SHEET 001	REV. 03

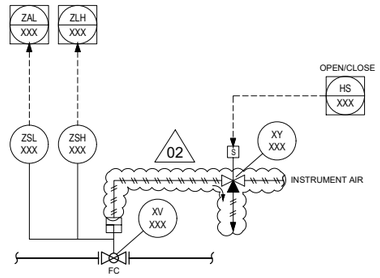
File Name : FILE_NAME

DRAWING NO.

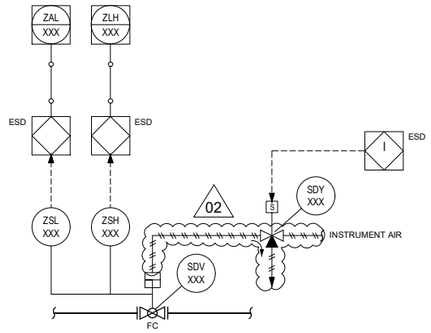
REV. 00

TYPICAL INSTRUMENTATION VALVE

TYP.1 (XV - ON OFF VALVES)

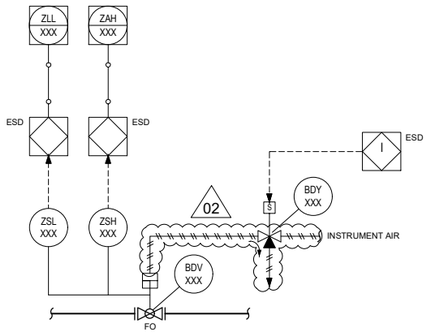


TYP.2 (SDV - SAFETY NO CRITICAL VALVES)



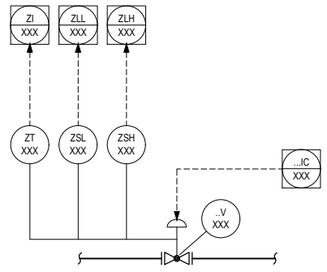
02

TYP.4 (BDV - SAFETY NO CRITICAL VALVES)



02

TYP.6 (CONTROL VALVES - CRITICAL)



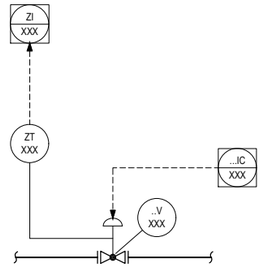
INSTRUMENT SYMBOLOGY DEFINITION

MEANINGS OF IDENTIFICATION LETTERS
THIS TABLE APPLIES TO THE FUNCTIONAL IDENTIFICATION OF INSTRUMENTS

	FIRST- LETTER		SUCCEEDING-LETTER		
	MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
C				CONTROL	
E			SENSOR (PRIMARY ELEMENT) ELEMENT		
F	FLOW RATE	RATIO (FRACTION)			
G			GLASS VIEWING DEVICE		
H	HAND				HIGH
I			INDICATE		
L	LEVEL				LOW
O			ORIFICE, OPEN		
P	PRESSURE, VACUUM				
R		RELIEF			
S		SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
V				VALVE, DAMPER, LOUVER	
X	UNCLASSIFIED				
Y				AUXILIARY DEVICES	
Z	POSITION DIMENSION				

NOTE: FOR FURTHER EXPLANATORY NOTES, REFER TO ANSI/ISA-5.1

TYP.7 (CONTROL VALVES - NOT CRITICAL)



NOTES

1. FOR GENERAL NOTES AND PIPING SYMBOLOGY SEE DRAWINGS: 123A90-DDL-PR-PID-80009 AND 123A90-DDL-PR-PID-80010.
2. DELETED.

HOLDS

1 DELETED 02

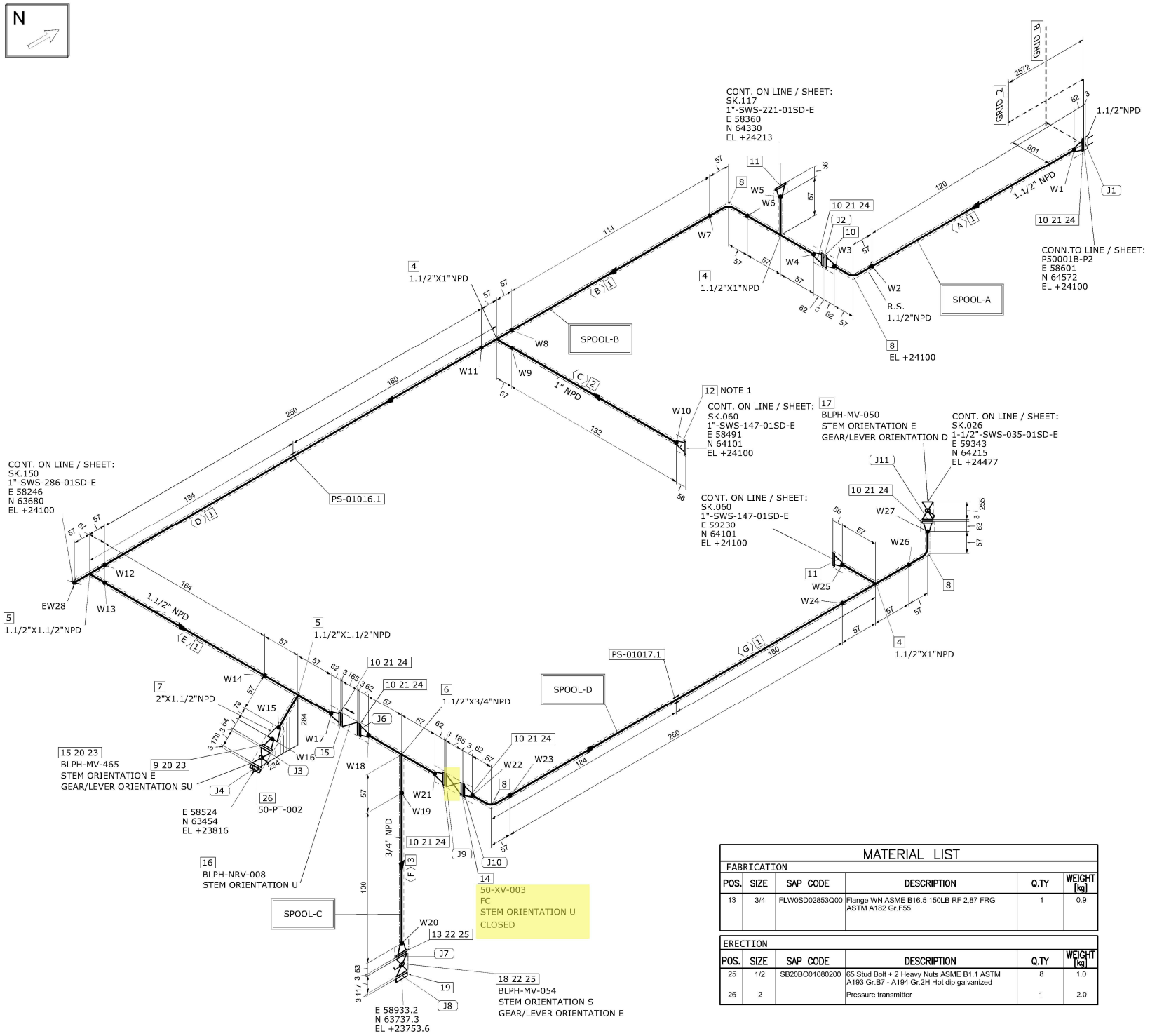
REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND | ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
INSTRUMENTATION SYMBOLOGY

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80042	SHEET 001	REV. 02

File Name :



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1.1/2	PIPESD04761H00	Pipe ASME B36.19M PE 3,68 SML ASTM A790 UNS S32760	0.9M	3.7
2	1	PIPESD02850100	Pipe ASME B36.19M PE 3,38 SML ASTM A790 UNS S32760	0.1M	0.3
3	3/4	PIPESD04753Q00	Pipe ASME B36.19M PE 2,87 SML ASTM A790 UNS S32760	0.1M	0.2
4	1.1/2X1	TER0SD09381H01	Tee Reducing ASME B16.9 BW 3,68x3,38 WRS ASTM A815 UNS S32760	3	2.3
5	1.1/2X1.1/2	TEE0SD02931H00	Tee ASME B16.9 BW 3,68 WRS ASTM A815 UNS S32760	2	1.7
6	1.1/2X3/4	TER0SD09371H3Q	Tee Reducing ASME B16.9 BW 3,68x2,87 WRS ASTM A815 UNS S32760	1	0.8
7	2X1.1/2	REC0SD0803021H	Reducer Concentric ASME B16.9 BW 2,77x3,68 WRS ASTM A815 UNS S32760	1	0.3
8	1.1/2	E90RSD03031H00	90 Deg Elbow Long Radius ASME B16.9 BW 3,68 WRS ASTM A815 UNS S32760	4	1.5
9	2	FLW0SD01250200	Flange WN ASME B16.5 150LB RF 2,77 FRG ASTM A182 Gr.F55	1	2.8
10	1.1/2	FLW0SD02861H00	Flange WN ASME B16.5 150LB RF 3,68 FRG ASTM A182 Gr.F55	8	14.7
11	1	FLW0SD01240100	Flange WN ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	2	2.9
12	1	FLWDSD00300100	Flange WN For Jackscrews ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	1	1.4

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
14	1.1/2		ON/OFF Ball Actuator Valve - 150#RF Flanged	1	54.0
15	2	VBC0NN24460200	Ball Valve Split Body FB API 6D FLG 150LB RF BA01F01RF	1	19.2
16	1.1/2	VDRNNN02511H00	Check Valve Piston EN ISO 15761 FLG 150LB RF CH01F02RF	1	0.0
17	1.1/2	VLBLNN01381H00	Block & Bleed Valve API 6D FLG 150LB RF BS01F01RFS	1	28.0
18	3/4	VBC0NN24433Q00	Ball Valve Split Body FB API 6D FLG 150LB RF BS01F01RF	1	7.0
19	3/4	FLB0SD01843Q00	Flange Blind ASME B16.5 150LB RF FRG ASTM A182 Gr.F55	1	0.9
20	2	GFL3GK13230200	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	2	0.2
21	1.1/2	GFL3GK15981H00	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	7	0.4
22	3/4	GFL3GK15963Q00	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	2	0.1
23	5/8	SB20BO00660300	85 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.9
24	1/2	SB20BO00930200	70 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	28	3.4

FABRICATION WEIGHT [kg]	33.5
ERECTION WEIGHT [kg]	118.1
OVERALL WEIGHT [kg]	151.6

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1.1/2	BW
W2	1.1/2	BW
W3	1.1/2	BW
W4	1.1/2	BW
W5	1	BW
W6	1.1/2	BW
W7	1.1/2	BW
W8	1.1/2	BW
W9	1	BW
W10	1	BW
W11	1.1/2	BW
W12	1.1/2	BW
W13	1.1/2	BW
W14	1.1/2	BW
W15	1.1/2	BW
W16	2	BW
W17	1.1/2	BW
W18	1.1/2	BW
W19	3/4	BW
W20	3/4	BW
W21	1.1/2	BW
W22	1.1/2	BW
W23	1.1/2	BW
W24	1.1/2	BW
W25	1	BW
W26	1.1/2	BW
W27	1.1/2	BW
EW28	1.1/2	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1.1/2	120	BEVEL	BEVEL
B	1.1/2	115	BEVEL	BEVEL
C	1	132	BEVEL	BEVEL
D	1.1/2	250	BEVEL	BEVEL
E	1.1/2	164	BEVEL	BEVEL
F	3/4	100	BEVEL	BEVEL
G	1.1/2	250	BEVEL	BEVEL

SUPPORT LIST

PS-01016.1
PS-01017.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	4.5	4.6
B	20	15.7
C	4.5	5.5
D	8.5	7.7
MONT	1.5	110.1

MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
13	3/4	FLW0SD02853Q00	Flange WN ASME B16.5 150LB RF 2,87 FRG ASTM A182 Gr.F55	1	0.9

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
25	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.0
26	2		Pressure transmitter	1	2.0

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 1-1/2"-SWS-033-01SD-E

SK.025

LINE DATA							
NOT INSPECTION CATEGORY	2	PED CATEGORY	Art. 4, par. 3				
PAINTING	SYSTEM N/A	BASE RAL N/A	FLUID PHASE	Liquid			
INSULATION	TYPE H	THICKNESS 20 [mm]	DESIGN	PRESS. 7.6 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	Yes		TEST	PRESS. 11.4 [barg]	TEMP. AMB	MEDIUM Water	

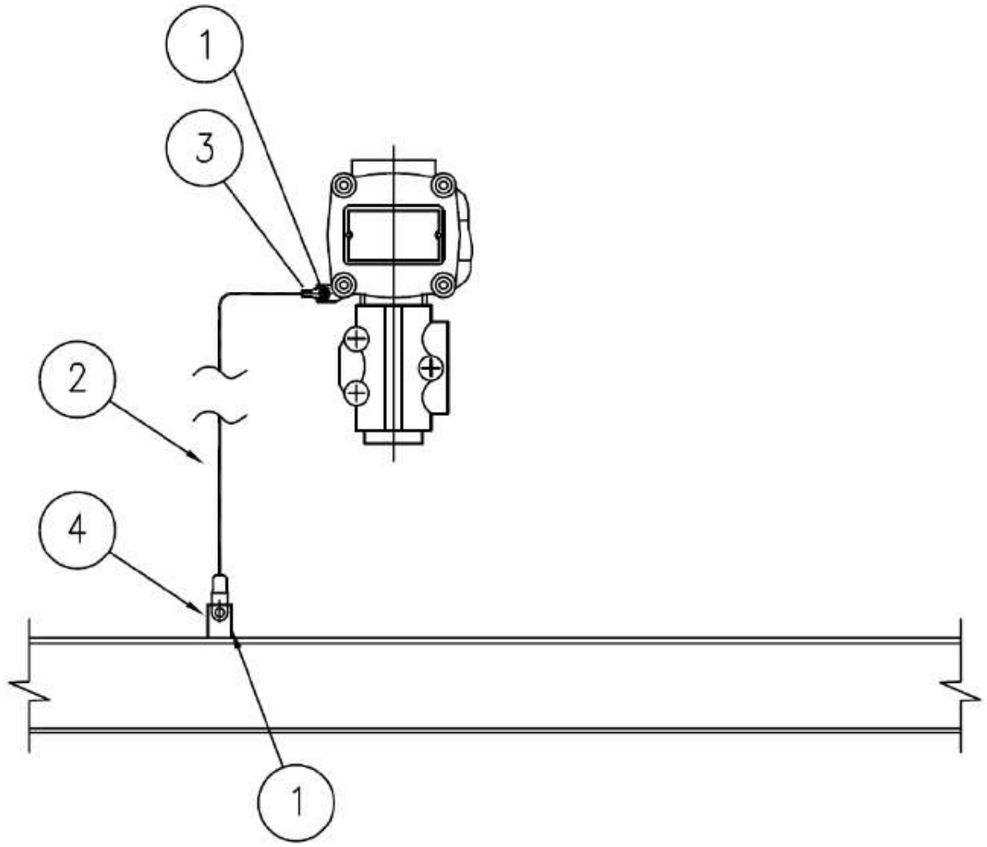
REFERENCE DOCUMENTS	
P&ID	123A90-DDL-PR-PID-80021
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES
1.JACKSCREWS POSITION N/S

MASTER

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK
SCALE	N/A
DRAWN	STAFF SRL
CHECKED	RT
APPROVED	LM
DATE	27-08-2024
FORMAT	A3
DRAWING NO.	123A90-FDL-PP-DI-00025
SHEET / OF	1/1
REV.	00

E33



MATERIALS

POS.	Q.TY	DESCRIPTION	NOTES
1	1	A4 STAINLESS STEEL BOLT COMPLETE WITH NUT AND WASHERS	
2	1	Y/G INSULATING COPPER CONDUCTOR - 6mm²	
3	1	COMPRESSION TYPE LUG FOR INSULATING COPPER CONDUCTOR	
4	1	EARTHING BAR / PLATE / THREADED STUD	(1)

NOTE:
1) FOR DETAIL OF EARTHING PLATE, EARTHING BOSS AND THREADED STUD SEE TYP. E11A/C/D/E

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DD-20090**

REV.:	DATE:	SIGNATURE:
2_I	07/11/24	G.Randi

ROSETTI MARINO SpA

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	26/08/24	GRA	AMA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/06/24	SPS	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS-EARTHING SYSTEM
EARTHING FOR GENERIC INSTRUMENT

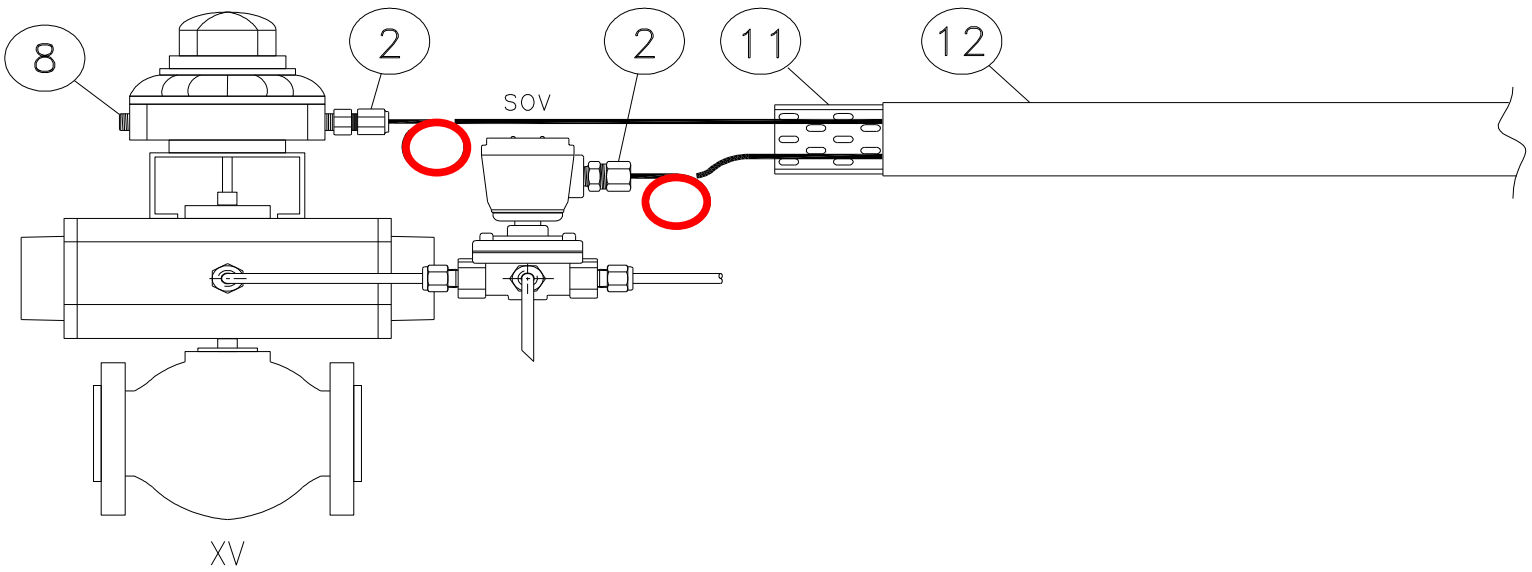
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : NTS

A3 | DRAWING NO. 123A90-DDL-EL-DD-20090 | SHEET 027 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DD-20090 REV.02.DWG

ELECTRICAL HOOK-UP FOR XV (N.1 SOLENOID VALVE + 2 LIMIT SWITCH)



INSTRUMENT TAG	
1	25-XV-004
2	25-XV-006
3	25-XV-008
4	25-XV-009
5	25-XV-011
6	25-XV-012
7	25-XV-014
8	25-XV-015
9	25-XV-017
10	25-XV-018
11	25-XV-020
12	25-XV-021
13	25-XV-024
14	50-XV-001
15	50-XV-002
16	50-XV-003
17	50-XV-004
18	80-XV-001
19	50-XV-005
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	

NOTE:

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-HD-40079**

REV.:	DATE:	SIGNATURE:
2_G	20/12/24	V.Ramponi

ROSETTI MARINO SpA

POS.	NORM/STD CODE	DESCRIPTION	SIZE/ CONNECTION TYPE	Q.TY
12		Cover for cable tray, FRP, Grey Color	50 W x 10 H x 5 THK	3 mt
11		Perforated cable tray, FRP, Grey Color	50 W x 50 H x 5 THK	3 mt
8		Nickel Plated Brass Plug Ex-d/e IIC (or IIB + H2) T1	M20	1
2		Nickel Plated Brass Double Compression Cable Gland Ex-d/e IIC (or IIB + H2) T1	M20	2

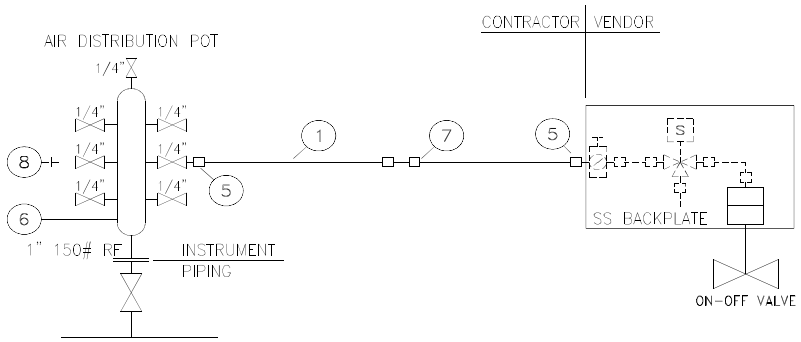
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PNEUMATIC HOOK-UP FOR ON-OFF VALVES

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-HD-40078**

REV.:	DATE:	SIGNATURE:
1_B	06/11/24	G.Randi

ROSETTI MARINO SpA

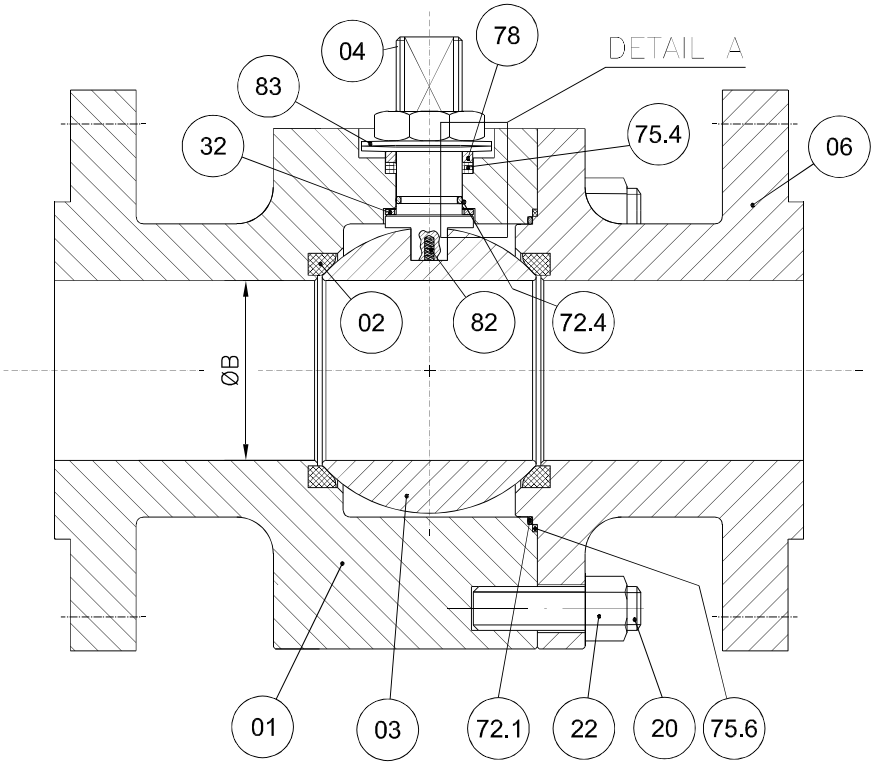


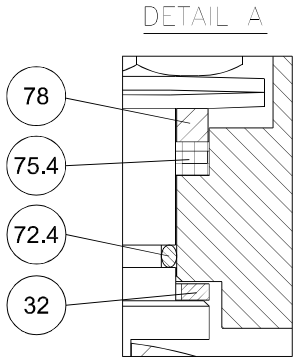
	INSTRUMENT TAG
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2	25-BDV-005
3	25-BDV-007
4	25-BDV-010
5	25-BDV-013
6	25-BDV-016
7	25-BDV-019
8	25-SDV-001
9	25-SDV-023
10	25-XV-004
11	25-XV-006
12	25-XV-008
13	25-XV-009
14	25-XV-011
15	25-XV-012
16	25-XV-014
17	25-XV-015
18	25-XV-017
19	25-XV-018
20	25-XV-020
21	25-XV-021
22	25-XV-024
23	50-XV-001
24	50-XV-002
25	50-XV-003
26	50-XV-004
27	80-XV-001
28	64-SDV-001
29	50-XV-005
30	

NOTE:
(1) For Air Distribution Pot quantities see material take-off on sh. 4

POS.	NORM/STD CODE	DESCRIPTION	SIZE/CONNECTION TYPE	Q.TY
8		SS316 PLUG	1/4" NPT	Note 1
7		SS316 UNION	1/2" O.D. x 1/2" O.D.	N. 1
6		SS316 AIR DISTRIBUTION POT	1" 150#RF - N. 7 1/4" BALL VALVES	Note 1
5		SS316 MALE CONNECTOR	1/4" NPT x 1/2" O.D.	N. 2
1		SS 316L TUBING	1/2" x 0,049"Thk	10 m

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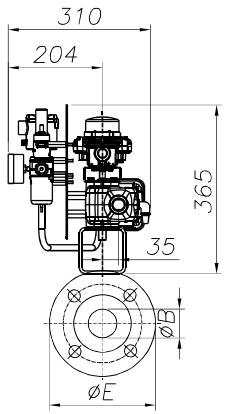


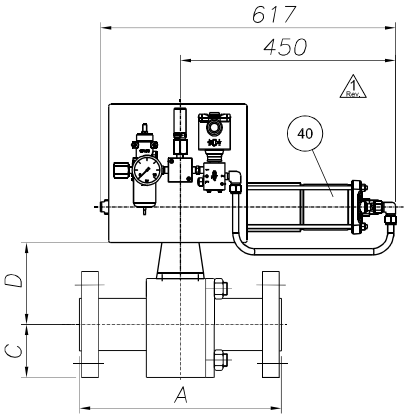


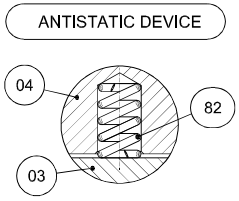
POS.	PART. NAME	MATERIAL
01	BODY	A182 F53
02	SEAT	RPTFE
03	BALL	A182 F53
04	STEM	A182 F53
06	CLOSURE	A182 F53
20	STUD	A193 B7+HDG (1)
22	NUT	A194 Gr.2H+HDG (1)
32	THRUST BEARING	RPTFE
40	PNEUMATIC ACTUATOR	MFR. STD.
72.1	FLANGE O-RING	VITON GLT/AED
72.4	STEM O-RING	VITON GLT/AED
75.4	STEM GASKET	GRAPHITE
75.6	FLANGE GASKET	GRAPHITE
78	PACKING RING	A479 Tp.316
82	ANTISTATIC DEVICE	INCONEL X750
83	BELLEVILLE WASHER	AISI 301

NOTE:

(1) HDG: Hot Dip Galvanised (ASTM A153)







REMARKS:

- Dimensions are in mm
- Design acc. to API 6D
- Face to face acc. to ASME B16.10/API 6D
- Flange connection acc. to ANSI B16.5
- Antistatic device acc. to API 6D

(*): To Be Confirmed

POS:	ITEM:	DATA SHEET:	TAG:	Q.TY:	SIZE:	CLASS:	ENDS:	A	ØB	C	D(*)	ØE	Valve Weight (kg):	Actuator Weight (kg):	Tot. Weight (kg):
24	240	BS01F01RF	50-XV-001	1	1-1/2"	150	RF	165	38	64	105	127	18	36	2 54
26	260	BS01F01RF	50-XV-003	1	1-1/2"	150	RF	165	38	64	105	127	18	36	2 54

CUSTOMER :	ROSETTI MARINO S.p.A.						
P.O. N. :	1724000204 123A90A/REV.1						
JOB N. :	240062						
Rev.	DESCRIPTION	DRAWN	DATE	CHK'D	DATE	APPV'D	DATE
3							
2	ISSUED FOR APPROVAL	S.Madahar	22/04/2024	D.Barcella	22/04/2024	L.Mora	22/04/2024
1	ISSUED FOR APPROVAL	S.Madahar	15/04/2024	D.Barcella	15/04/2024	L.Mora	15/04/2024
0	FIRST ISSUE	S.Madahar	26/02/2024	D.Barcella	26/02/2024	L.Mora	26/02/2024

DRAWING NOT IN SCALE

Fluitek Valves

DESCRIPTION: GENERAL ASSEMBLY DRAWING

VALVE TYPE: SPLIT BODY FLOATING BALL VALVE

DRAWN: S.Madahar	DATE: 26/02/2024	
CHK'D: D.Barcella	DATE: 26/02/2024	
APPV'D: L.Mora	DATE: 26/02/2024	
SIZE: A3	SCALE: N.A.	ALL RIGHTS OF THIS DRAWING ARE RESERVED.

DRAWING NAME: D240062-24-26

Rev.: 2

GENERAL	1	Tag Number	Location			50-XV-003	50
	2	Service				SEA WATER P-50001B DISCHARGE	
	3	P&ID Number	Area Classification			123A90-DDL-PR-PID-80021	Zone 2, Gas Group IIC (or IIB+H2), Class T1
PIPELINE	4	Line Number				1-1/2"-SWS-033-01SD-E	
	5	Line Size and Schedule	Inlet	Outlet		1-1/2" / 3.68 mm	1-1/2" / 3.68 mm
	6	Line Material	Line Insulation			ASTM A790 UNS S32760	ELECTRICALLY HEAT TRACED (35)
PROCESS DATA	7	Fluid				SEA WATER SUPPLY	
	8	Fluid State	Phase			LIQUID	LIQUID
	9	Operating Pressure Norm/Min/Max			[barg]	15 -	-
	10	Design Pressure	Full Vacuum		[barg]	17.7	
	11	Operating Temperature Norm/Min/Max			[°C]	22 -	-
	12	Design Temperature	Minimum	Maxi	[°C]	-29	100
	13	Max. Diff. Pressure for Actuator Size			[bar]	17.7	
	14						
	15						
	16	Speed of	Design			Close : (12)	Open : (12)
	17	Operation (seconds)	Actual			Close : 0.3 minimum	Open : -
	18						
	19						
VALVE BODY (34)	20	Body Type				BALL VALVE (FLOATING BALL) - SPLIT BODY (BS01F01RF)	
	21	Body Size	Body Form			1-1/2"	FULL BORE
	22	Body Material	Bonnet Type			ASTM A182 F53	(*)
	23	Connections	Rating			FLANGED ASME B16.5	#150
	24	Flange Finish	Gasket Material			RF	Inside the valve (*) (38)
	25	Packing	Lubrication & Isolation			PTFE (*)	(*)
	26	Bolting				A193 B7 +HDG / A194 Gr. 2H + HDG	
	27	Trim Material	Ball	Stem	Seat	ASTM A182 F53	ASTM A182 F53 RPTFE
	28	Leakage Class				(1)	
	29	Fire Safe				(2)	
ACTUATOR	30	Manufacturer	Type			Rotork	Spring Return
	31	Model No.	Size			CP/S	035-100A/BA
	32	Actuator Orientation	Actuator Form			Horizontal	Cylinder
	33	Ingress Protection	Certification			IP-66	II 2 G Ex h IIC T5 Gb
	34	Air Supply	Min	Max	Design	4 barg 10 barg	11 barg
	35	Action on Air Failure	Action on Power Failure			CLOSE	CLOSE
	36	Fireproofing				NOT APPLICABLE	
	37	Solenoid Valve				50-XY-003 (9, 14, 15, 16) - Bifold FP06P	
	38	Limit Switch Closed	Limit Switch Open			50-ZSL-003 (9, 17) - Soldo SS	50-ZSH-003 (9, 17) - Soldo SS
	39	Elect. Reset Pushbutton (Actuator mounted)				NOT REQUIRED	
	40	Air Set	Handwheel			(*)	NOT REQUIRED
	41	Mounting Position				HORIZONTAL / VERTICAL	
	42	Partial Stroke Test Facility				-	
	43	Control Type				-	
	44	Electrical Connection	Electrical Class			No. (*) / M20	H
EMERGENCY A/S VESSEL	45	Capacity	Fabrication Code			-	- -
	46	No of Strokes Per Capacity				-	
	47	Safety Valve	Model			-	-
	48	Check Valve	Mounting			-	-
PURCHASE	49	Manufacturer				FLUITEK	
	50	Model				FB3	
	51	Purchase Order Number				1724000204	

NOTE
(1) N.1 PSV INSTALLED DOWNSTREAM THE AIR FILTER REGULATOR, SIZE 1/4", SS, set 4.7 barg.

No.	Date	By	Chkd	Appr	Description
03	06/12/24	VBA	LCA	DLO	Accepted for Construction (AFC)
02	28/08/24	VBA	LCA	DLO	Accepted for Construction (AFC)
01	20/12/23	VBA	LCA	DLO	Issued for Review (IFR)
00	06/11/23	VBA	LCA	DLO	Issued for Review (IFR)

INSTRUMENT DATASHEET

SDV/BDV and Tight Shut-Off XV Valves

CROSSWIND

ROSETTI MARINO

Code : Dwg. No.: 123A90-DDL-IN-DS-40030 Rev.03

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ITEM	Tag	50-XV-004	: On/Off Valve - Sea Water Recirculation from Pump P-50001B			Dwg	123A90-DDL-PR-PID-80021
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10001190		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Instrumental	Form	CJX23
							Actuated on/off Valve-Pneumatic/Hydraulic Type

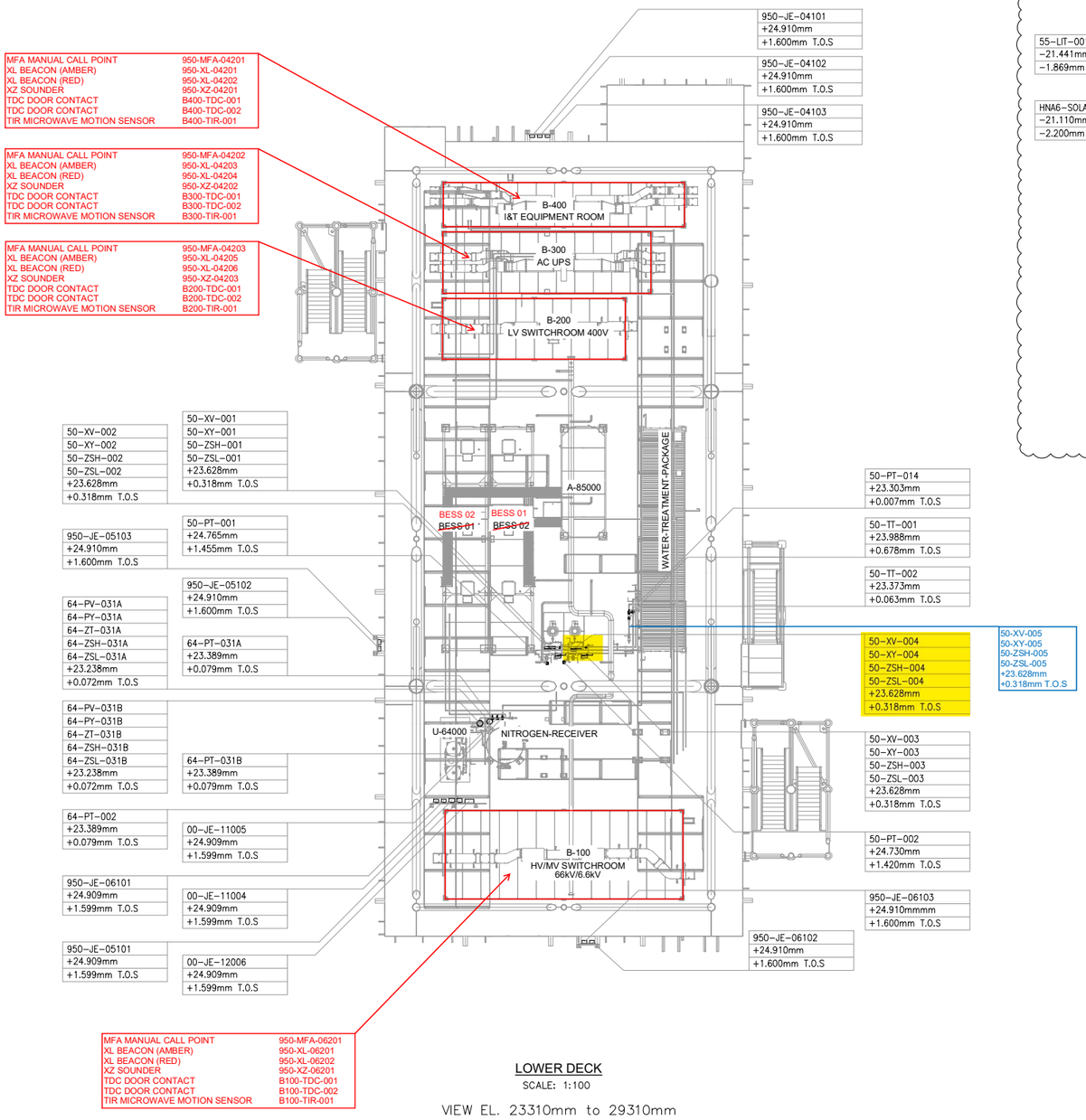
1	Check for mechanical damage.	OK
2	Check installed equipment is suitable and conforms to specification.	OK
3	Check installation conforms to P&ID, typical and hook-up drawing.	OK
4	Check valve is installed in accordance with flow direction.	OK
5	Check all stop plugs are properly installed.	NA
6	Check identification (tag number, tag plates).	PL
7	Check accessibility conforms to specifications, with platforming where necessary.	OK
8	If required produce Red Line Mark Up for "AS BUILT"	

Comments

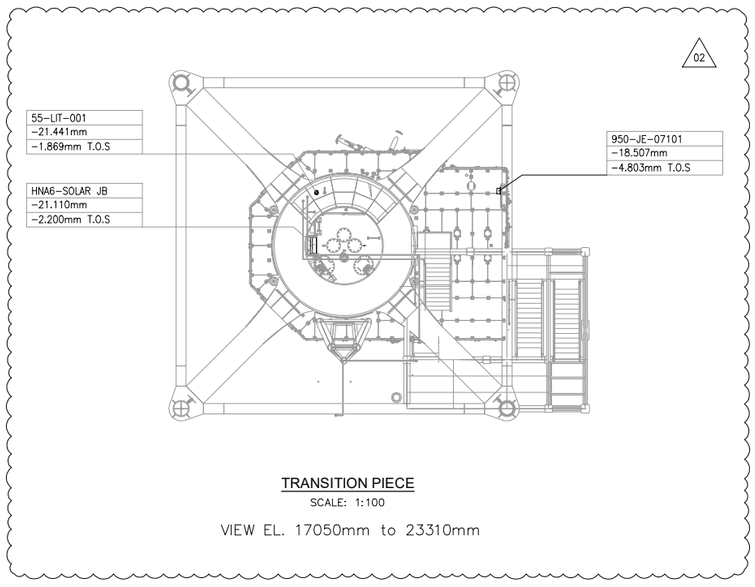
	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICSIMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Alessio Polo	
Date	2025-02-06	2025-02-10	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-06T16:42:08.476Z	PROVERLIS Digitaly signed by Alessio Polo 2025-02-10T10:51:30.957Z	

DRAWING NO. 123A90-DDL-IN-DL-40080

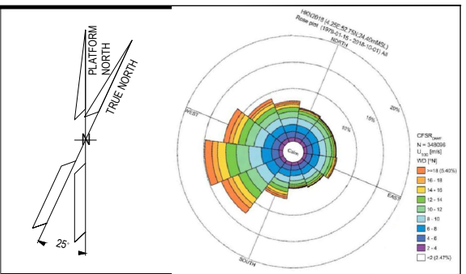
REV. 02



LOWER DECK
SCALE: 1:100
VIEW EL. 23310mm to 29310mm



TRANSITION PIECE
SCALE: 1:100
VIEW EL. 17050mm to 23310mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40081	INSTRUMENT LAYOUT - UPPER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-UPPER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DL-40080**

REV.:	DATE:	SIGNATURE:
2_C	06/11/24	G.Randi

ROSETTI MARINO SpA

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–LOWER DECK
TOS EL. 23.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90–DDL–IN–DL–40080	SHEET 001	REV. 02

File Name : 123A90-DDL-IN-DL-40080 REV02.dwg

DRAWING NO. DRAWING_NO.

REV. REV.

P-50001 A/B

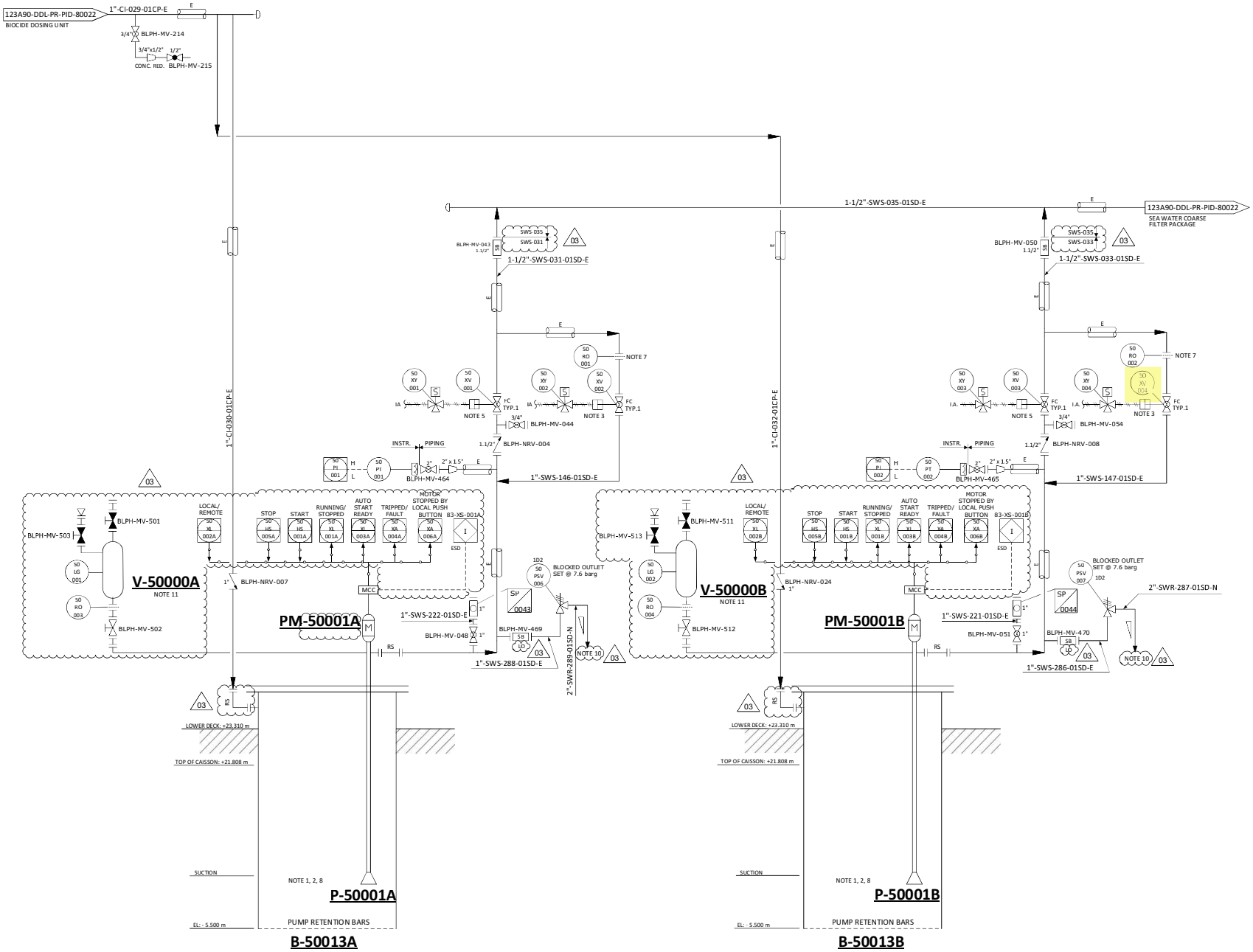
SEA WATER LIFT PUMPS

POWER :	1.6 KW
FLOW :	2.5 m³/h
DESIGN P/T :	7.6 barg / 80°C
DISCHARGE PRESSURE :	5.6 barg (NOTE 9)
MATERIAL :	SDSS

B-50013 A/B

SEA WATER LIFT PUMPS CAISSONS

SIZE :	343 mm (ID) x 27308 mm (H)
MATERIAL :	CS + CA



NOTES

1. SEAWATER LIFT PUMPS ARE RATED 2 X 100%
2. AUTO START OF DESIGNATED STANDBY PUMP ON LOSS OF RUNNING STATUS AND DISCHARGE LOW PRESSURE ALARM OF DUTY PUMP.
3. VALVE TO BE OPENED WHEN PUMP IS OFFLINE TO DOSE CAISSON WITH TREATED SEAWATER TO PREVENT BIOLOGICAL GROWTH.
4. DELETED.
5. SOFTWARE INTERLOCK PREVENTS PUMPS FROM STARTING IN CASE THE RELEVANT XV VALVE IS FULLY CLOSED. 03
6. DELETED.
7. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "123A90-DDL-IN-DS-40054 - TECHNICAL DATASHEET FOR RESTRICTION ORIFICE".
8. LOGIC FOR CONTROL OF P-5001A/B THAT PREVENTS SIMULTANEOUS RUNNING OF A AND B PUMP IS PROVIDED.
9. DISCHARGE PRESSURE REFERS TO THE FLANGE DISCHARGE OF THE PUMP AT LOWER DECK.
10. ROUTED TO THE SEA.
11. VESSELS V-50000A/B ARE INSULATED AND HEAT TRACED. 03

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.
5. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :

BLPH PIPING AND INSTRUMENTATION DIAGRAM
SEA-WATER INTAKE SYSTEM SHEET 1

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80021	SHEET 001	REV. 03

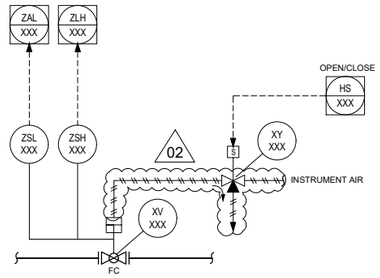
File Name : FILE_NAME

DRAWING NO.

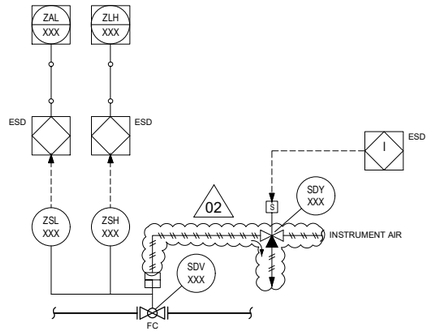
REV. 00

TYPICAL INSTRUMENTATION VALVE

TYP.1 (XV - ON OFF VALVES)

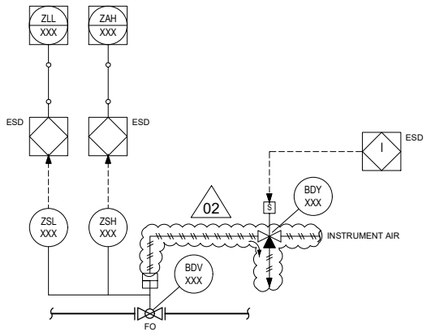


TYP.2 (SDV - SAFETY NO CRITICAL VALVES)



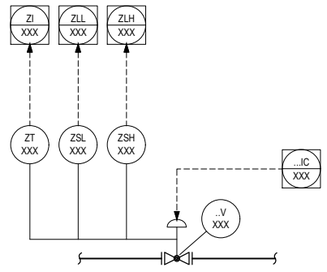
02

TYP.4 (BDV - SAFETY NO CRITICAL VALVES)



02

TYP.6 (CONTROL VALVES - CRITICAL)



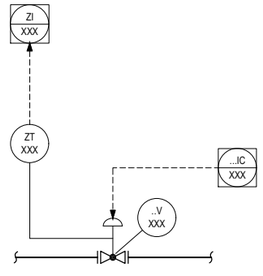
INSTRUMENT SYMBOLOGY DEFINITION

MEANINGS OF IDENTIFICATION LETTERS
THIS TABLE APPLIES TO THE FUNCTIONAL IDENTIFICATION OF INSTRUMENTS

	FIRST- LETTER		SUCCEEDING-LETTER		
	MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
C				CONTROL	
E			SENSOR (PRIMARY ELEMENT) ELEMENT		
F	FLOW RATE	RATIO (FRACTION)			
G			GLASS VIEWING DEVICE		
H	HAND				HIGH
I			INDICATE		
L	LEVEL				LOW
O			ORIFICE, OPEN		
P	PRESSURE, VACUUM				
R		RELIEF			
S		SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
V				VALVE, DAMPER, LOUVER	
X	UNCLASSIFIED				
Y				AUXILIARY DEVICES	
Z	POSITION DIMENSION				

NOTE: FOR FURTHER EXPLANATORY NOTES, REFER TO ANSI/ISA-5.1

TYP.7 (CONTROL VALVES - NOT CRITICAL)



NOTES

1. FOR GENERAL NOTES AND PIPING SYMBOLOGY SEE DRAWINGS: 123A90-DDL-PR-PID-80009 AND 123A90-DDL-PR-PID-80010.
2. DELETED.

HOLDS

1 DELETED 02

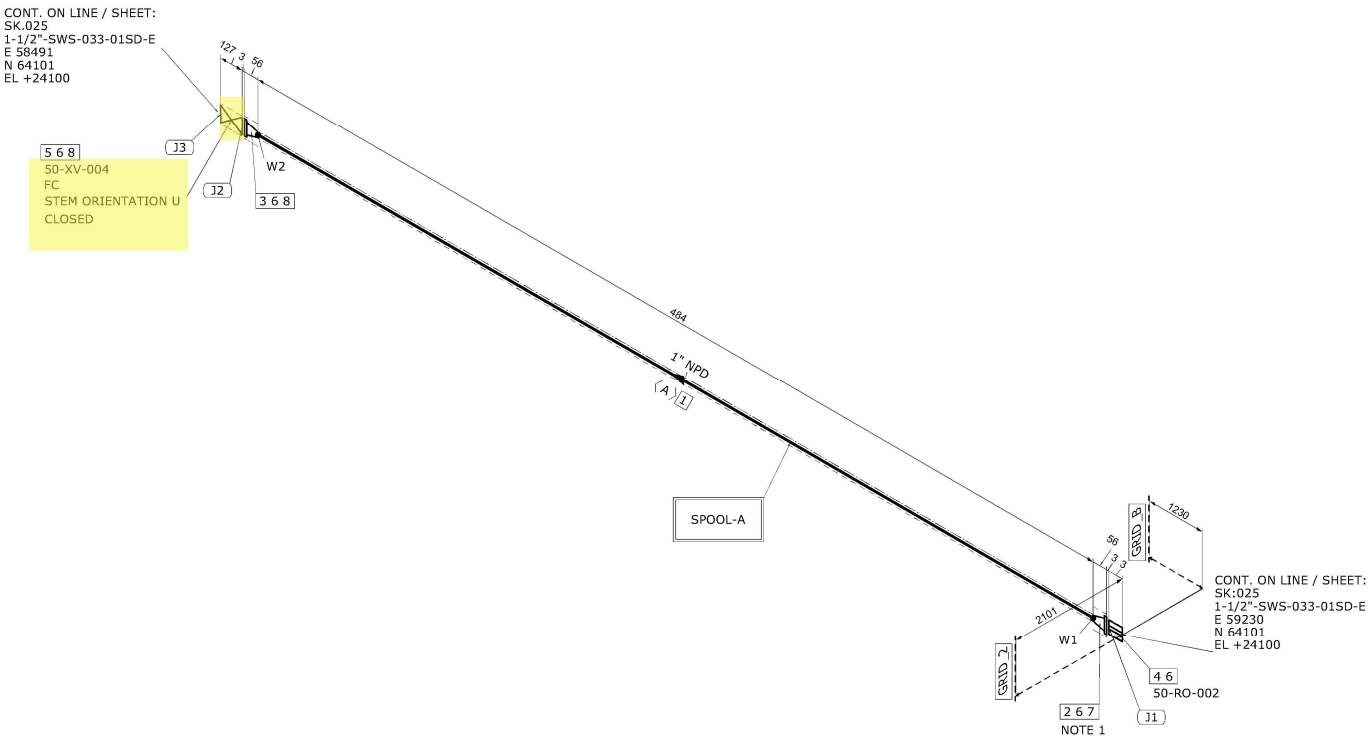
REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND | ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
INSTRUMENTATION SYMBOLOGY

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80042	SHEET 001	REV. 02

File Name :



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPESD02850100	Pipe ASME B36.19M PE 3,38 SML ASTM A790 UNS S32760	0.5M	1.2
2	1	FLWDSD00300100	Flange WN For Jackscrews ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	1	1.4
3	1	FLW0SD01240100	Flange WN ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	1	1.4

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
4	1		Restriction Orifice 150#RF	1	1.0
5	1		ON/OFF Ball Actuator Valve - 150#RF Flanged	1	40.0
6	1	GFL3GK16970100	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	1	0.2
7	1/2	SB20BO00940200	75 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.5
8	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.0

FABRICATION WEIGHT [kg]	4.0
ERECTION WEIGHT [kg]	42.7
OVERALL WEIGHT [kg]	46.7

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1	BW
W2	1	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1	485	BEVEL	BEVEL

SUPPORT LIST

SPOOL	WELD [inches]	WEIGHT [kg]
A	2	4.1
MONT	0	42.7

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF S/L	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 1"-SWS-147-01SD-E

SK.060

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE: N/A

DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 27-08-2024

FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00060 | SHEET / OF: 1/1 | REV.: 00

LINE DATA

NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3			
PAINTING	SYSTEM N/A	BASE RAL N/A	FLUID PHASE	Liquid			
INSULATION	TYPE H	THICKNESS 20 [mm]	DESIGN	PRESS. 7.6 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	Yes		TEST	PRESS. 11.4 [barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS

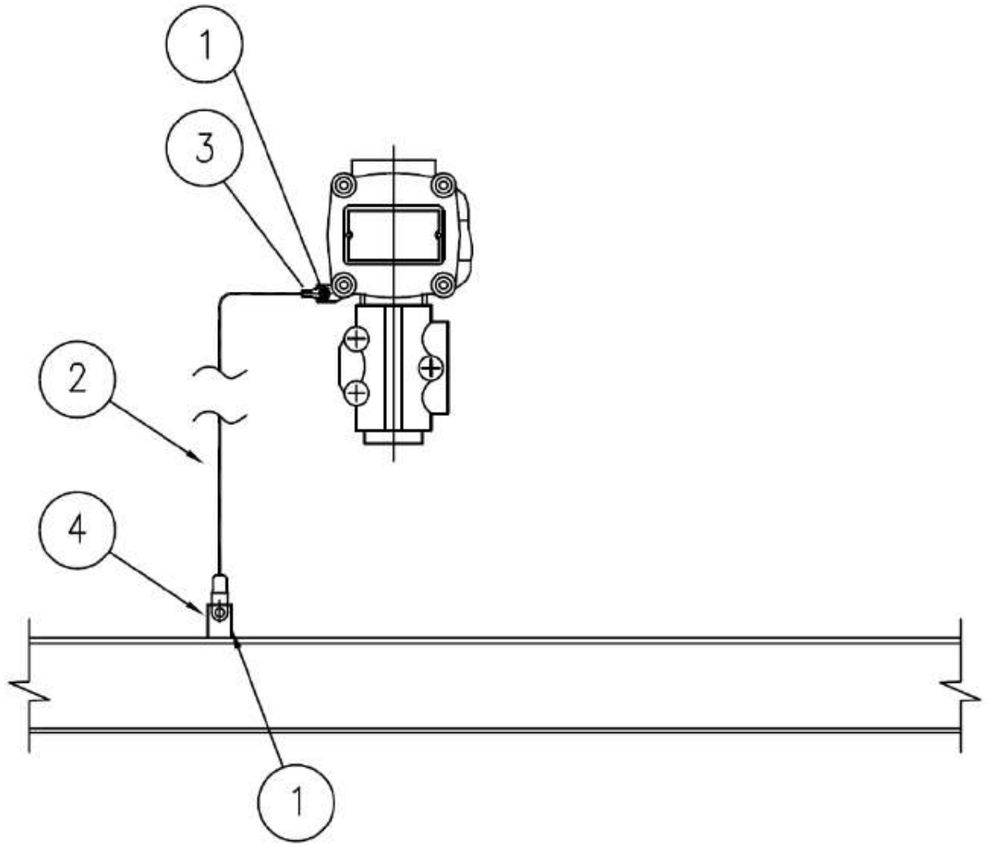
P&ID	123A90-DDL-PR-PID-80021
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

1. JACKSCREWS POSITION N/S

MASTER

E33



MATERIALS

POS.	Q.TY	DESCRIPTION	NOTES
1	1	A4 STAINLESS STEEL BOLT COMPLETE WITH NUT AND WASHERS	
2	1	Y/G INSULATING COPPER CONDUCTOR - 6mm²	
3	1	COMPRESSION TYPE LUG FOR INSULATING COPPER CONDUCTOR	
4	1	EARTHING BAR / PLATE / THREADED STUD	(1)

NOTE:
1) FOR DETAIL OF EARTHING PLATE, EARTHING BOSS AND THREADED STUD SEE TYP. E11A/C/D/E

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DD-20090**

REV.:	DATE:	SIGNATURE:
2_I	07/11/24	G.Randi

ROSETTI MARINO SpA

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	26/08/24	GRA	AMA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/06/24	SPS	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS-EARTHING SYSTEM
EARTHING FOR GENERIC INSTRUMENT

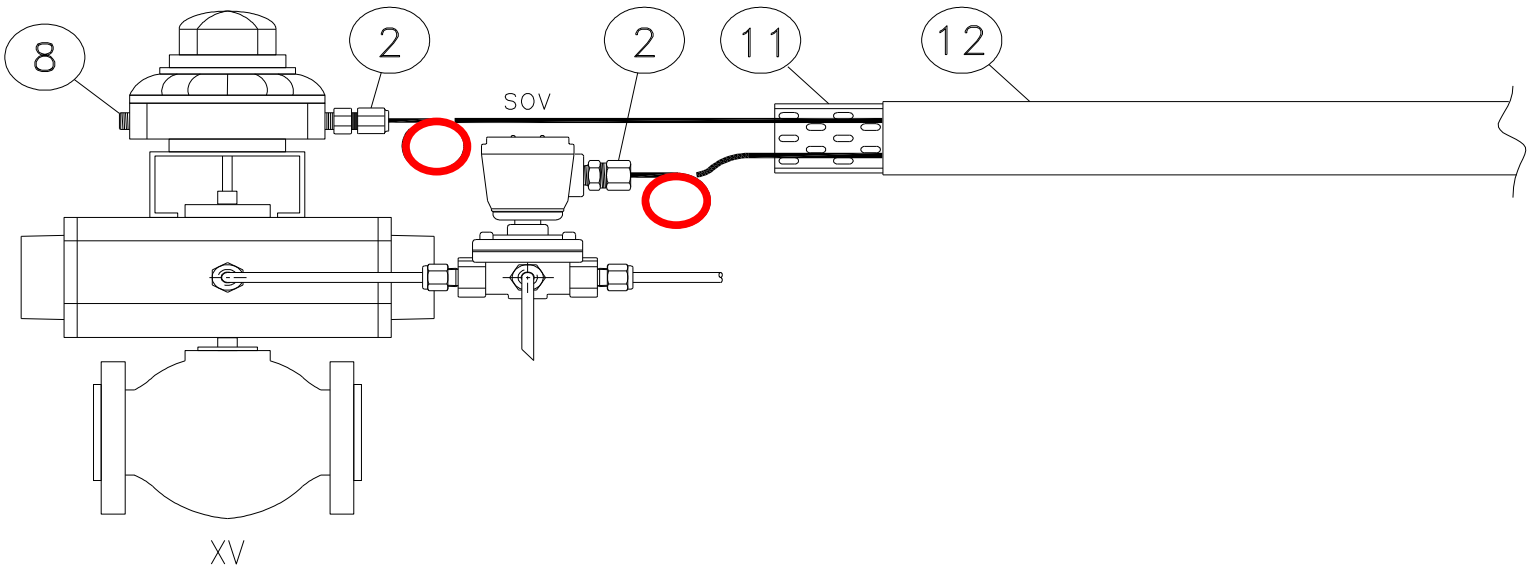
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : NTS

A3 | DRAWING NO. 123A90-DDL-EL-DD-20090 | SHEET 027 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DD-20090 REV.02.DWG

ELECTRICAL HOOK-UP FOR XV (N.1 SOLENOID VALVE + 2 LIMIT SWITCH)



INSTRUMENT TAG	
1	25-XV-004
2	25-XV-006
3	25-XV-008
4	25-XV-009
5	25-XV-011
6	25-XV-012
7	25-XV-014
8	25-XV-015
9	25-XV-017
10	25-XV-018
11	25-XV-020
12	25-XV-021
13	25-XV-024
14	50-XV-001
15	50-XV-002
16	50-XV-003
17	50-XV-004
18	80-XV-001
19	50-XV-005
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	

NOTE:

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-HD-40079**

REV.:	DATE:	SIGNATURE:
2_G	20/12/24	V.Ramponi

ROSETTI MARINO SpA

POS.	NORM/STD CODE	DESCRIPTION	SIZE/ CONNECTION TYPE	Q.TY
12		Cover for cable tray, FRP, Grey Color	50 W x 10 H x 5 THK	3 mt
11		Perforated cable tray, FRP, Grey Color	50 W x 50 H x 5 THK	3 mt
8		Nickel Plated Brass Plug Ex-d/e IIC (or IIB + H2) T1	M20	1
2		Nickel Plated Brass Double Compression Cable Gland Ex-d/e IIC (or IIB + H2) T1	M20	2

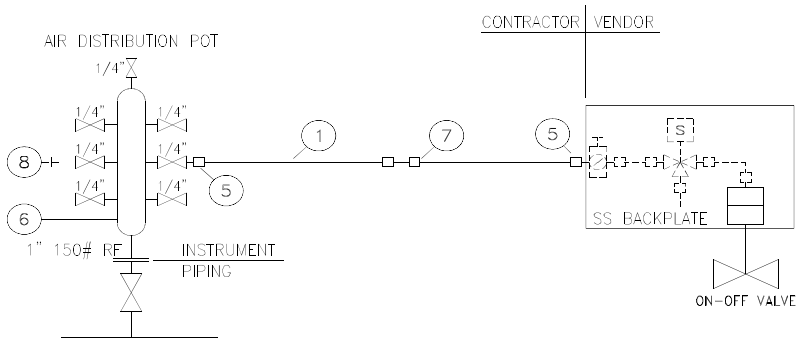
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PNEUMATIC HOOK-UP FOR ON-OFF VALVES

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-HD-40078**

REV.:	DATE:	SIGNATURE:
1_B	06/11/24	G.Randi

ROSETTI MARINO SpA

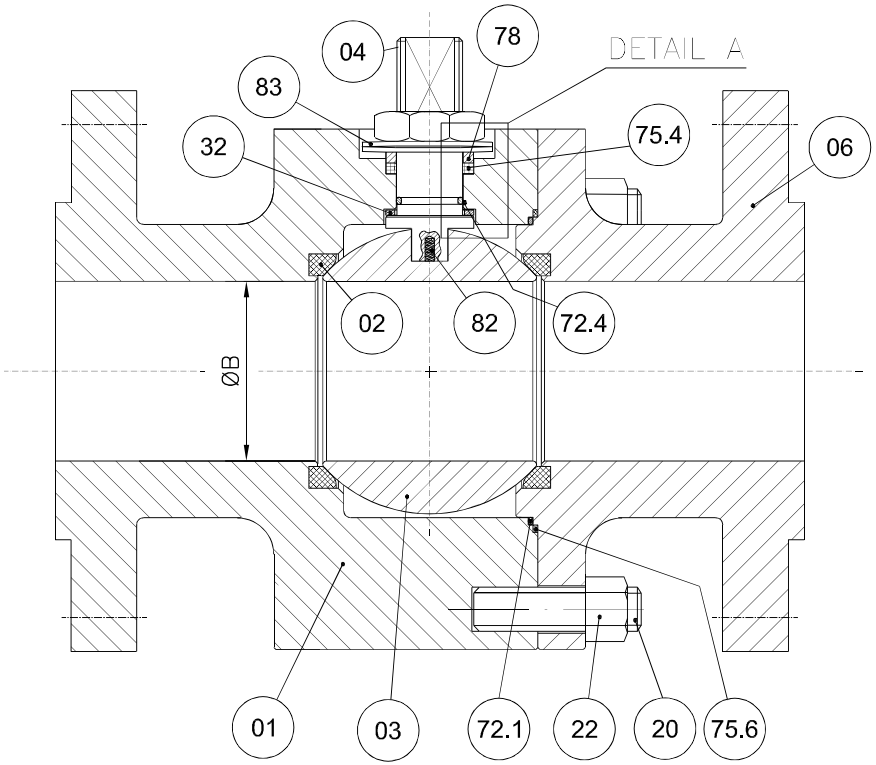


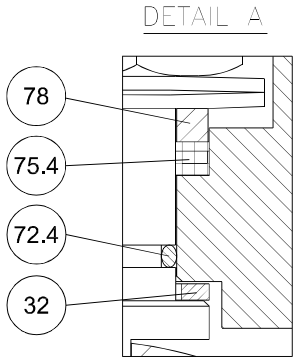
	INSTRUMENT TAG
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2	25-BDV-005
3	25-BDV-007
4	25-BDV-010
5	25-BDV-013
6	25-BDV-016
7	25-BDV-019
8	25-SDV-001
9	25-SDV-023
10	25-XV-004
11	25-XV-006
12	25-XV-008
13	25-XV-009
14	25-XV-011
15	25-XV-012
16	25-XV-014
17	25-XV-015
18	25-XV-017
19	25-XV-018
20	25-XV-020
21	25-XV-021
22	25-XV-024
23	50-XV-001
24	50-XV-002
25	50-XV-003
26	50-XV-004
27	80-XV-001
28	64-SDV-001
29	50-XV-005
30	

NOTE:
(1) For Air Distribution Pot quantities see material take-off on sh. 4

POS.	NORM/STD CODE	DESCRIPTION	SIZE/CONNECTION TYPE	Q.TY
8		SS316 PLUG	1/4" NPT	Note 1
7		SS316 UNION	1/2" O.D. x 1/2" O.D.	N. 1
6		SS316 AIR DISTRIBUTION POT	1" 150#RF - N. 7 1/4" BALL VALVES	Note 1
5		SS316 MALE CONNECTOR	1/4" NPT x 1/2" O.D.	N. 2
1		SS 316L TUBING	1/2" x 0,049"Thk	10 m

This document undergoes an issuance cycle within EDMS "Fusionlive".
Its distribution is electronically controlled. Once printed shall be considered as "NOT CONTROLLED" copy

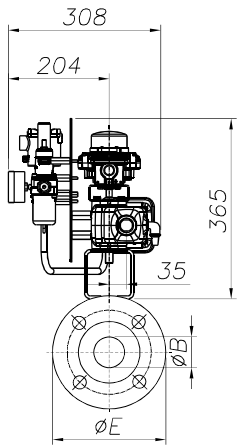


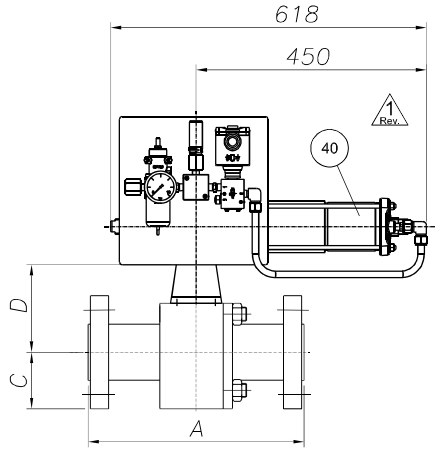


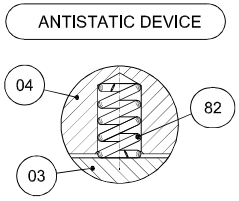
POS.	PART. NAME	MATERIAL
01	BODY	A182 F53
02	SEAT	RPTFE
03	BALL	A182 F53
04	STEM	API 6A CRA UNS N07718
06	CLOSURE	A182 F53
20	STUD	A193 B7+HDG (1)
22	NUT	A194 Gr.2H+HDG (1)
32	THRUST BEARING	RPTFE
40	PNEUMATIC ACTUATOR	MFR. STD.
72.1	FLANGE O-RING	VITON GLT/AED
72.4	STEM O-RING	VITON GLT/AED
75.4	STEM GASKET	GRAPHITE
75.6	FLANGE GASKET	GRAPHITE
78	PACKING RING	A479 Tp.316
82	ANTISTATIC DEVICE	INCONEL X750
83	BELLEVILLE WASHER	AISI 301

NOTE:

(1) HDG: Hot Dip Galvanised (ASTM A153)







REMARKS:

- Dimensions are in mm
- Design acc. to API 6D
- Face to face acc. to ASME B16.10/API 6D
- Flange connection acc. to ANSI B16.5
- Antistatic device acc. to API 6D

(*): To Be Confirmed

POS:	ITEM:	DATA SHEET:	TAG:	Q.TY:	SIZE:	CLASS:	ENDS:	A	ØB	C	D(*)	ØE	Valve Weight (kg):	Actuator Weight (kg):	Total Weight (kg):
25	250	BS01F01RF	50-XV-002	1	1"	150	RF	127	25	54	95	108	6	34	40
27	270	BS01F01RF	50-XV-004	1	1"	150	RF	127	25	54	95	108	6	34	40

1 Rev.

2 Rev.

CUSTOMER :	ROSETTI MARINO S.p.A.
P.O. N. :	1724000204 123A90A/REV.1
JOB N. :	240062

Rev.	DESCRIPTION	DRAWN	DATE	CHK'D	DATE	APPV'D	DATE
3							
2	ISSUED FOR APPROVAL	S.Madahar	22/04/2024	D.Barcella	22/04/2024	L.Mora	22/04/2024
1	ISSUED FOR APPROVAL	S.Madahar	15/04/2024	D.Barcella	15/04/2024	L.Mora	15/04/2024
0	FIRST ISSUE	S.Madahar	26/02/2024	D.Barcella	26/02/2024	L.Mora	26/02/2024

DRAWING NOT IN SCALE

Fluitek Valves

DESCRIPTION: GENERAL ASSEMBLY DRAWING

VALVE TYPE: SPLIT BODY FLOATING BALL VALVE

DRAWN:	DATE:
S.Madahar	26/02/2024
CHK'D: D.Barcella	DATE: 26/02/2024
APPV'D: L.Mora	DATE: 26/02/2024

SIZE: A3 | SCALE: N.A.

ALL RIGHTS OF THIS DRAWING ARE RESERVED.

DRAWING NAME: D240062-25-27

Rev.: 2

GENERAL	1	Tag Number	Location			50-XV-004	50
	2	Service				SEA WATER P-50001B INLET	
	3	P&ID Number	Area Classification			123A90-DDL-PR-PID-80021	Zone 2, Gas Group IIC (or IIB+H2), Class T1
PIPELINE	4	Line Number				1"-SWS-147-01SD-E	
	5	Line Size and Schedule	Inlet	Outlet		1" / 3.38 mm	1" / 3.38 mm
	6	Line Material	Line Insulation			ASTM A790 UNS S32760	ELECTRICALLY HEAT TRACED (35)
PROCESS DATA	7	Fluid				SEA WATER SUPPLY	
	8	Fluid State	Phase			LIQUID	LIQUID
	9	Operating Pressure Norm/Min/Max			[barg]	-	ATM / 15
	10	Design Pressure	Full Vacuum		[barg]	17.7	
	11	Operating Temperature Norm/Min/Max			[°C]	-	- / -
	12	Design Temperature	Minimum	Maxi	[°C]	-29	100
	13	Max. Diff. Pressure for Actuator Size			[bar]	17.7	
	14						
	15						
	16	Speed of	Design			Close : (12)	Open : (12)
	17	Operation (seconds)	Actual			Close : 0.3 minimum	Open : -
	18						
	19						
VALVE BODY (34)	20	Body Type				BALL VALVE (FLOATING BALL) - SPLIT BODY (BS01F01RF)	
	21	Body Size	Body Form			1"	FULL BORE
	22	Body Material	Bonnet Type			ASTM A182 F53	(*)
	23	Connections	Rating			FLANGED ASME B16.5	#150
	24	Flange Finish	Gasket Material			RF	Inside the valve (*) (38)
	25	Packing	Lubrication & Isolation			PTFE (*)	(*)
	26	Bolting				A193 B7 +HDG / A194 Gr. 2H + HDG	
	27	Trim Material	Ball	Stem	Seat	ASTM A182 F53	ASTM A182 F53 / RPTFE
	28	Leakage Class				(1)	
	29	Fire Safe				(2)	
ACTUATOR	30	Manufacturer	Type			Rotork	Spring Return
	31	Model No.	Size			CP/S	035-100A/BA
	32	Actuator Orientation	Actuator Form			Horizontal	Cylinder
	33	Ingress Protection	Certification			IP-66	II 2 G Ex h IIC T5 Gb
	34	Air Supply	Min	Max	Design	4 barg	10 barg / 11 barg
	35	Action on Air Failure	Action on Power Failure			CLOSE	CLOSE
	36	Fireproofing				NOT APPLICABLE	
	37	Solenoid Valve				50-XY-004 (9, 14, 15, 16) - Bifold FP06P	
	38	Limit Switch Closed	Limit Switch Open			50-ZSL-004 (9, 17) - Soldo SS	50-ZSH-004 (9, 17) - Soldo SS
	39	Elect. Reset Pushbutton (Actuator mounted)				NOT REQUIRED	
	40	Air Set	Handwheel			(*)	NOT REQUIRED
	41	Mounting Position				HORIZONTAL / VERTICAL	
	42	Partial Stroke Test Facility				-	
	43	Control Type				-	
	44	Electrical Connection	Electrical Class			No. (*) / M20	H
EMERGENCY A/S VESSEL	45	Capacity	Fabrication Code			-	- / -
	46	No of Strokes Per Capacity				-	
	47	Safety Valve	Model			-	-
	48	Check Valve	Mounting			-	-
PURCHASE	49	Manufacturer				FLUITEK	
	50	Model				FB3	
	51	Purchase Order Number				1724000204	

NOTE
(1) N.1 PSV INSTALLED DOWNSTREAM THE AIR FILTER REGULATOR, SIZE 1/4", SS, set 4.7 barg.

No.	Date	By	Chkd	Appr	Description
03	06/12/24	VBA	LCA	DLO	Accepted for Construction (AFC)
02	28/08/24	VBA	LCA	DLO	Accepted for Construction (AFC)
01	20/12/23	VBA	LCA	DLO	Issued for Review (IFR)
00	06/11/23	VBA	LCA	DLO	Issued for Review (IFR)

INSTRUMENT DATASHEET

SDV/BDV and Tight Shut-Off XV Valves

CROSSWIND

ROSETTI MARINO

Code : Dwg. No.: 123A90-DDL-IN-DS-40030 Rev.03

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Its distribution is electronically controlled. Once printed shall be considered as “NOT CONTROLLED” copy

ITEM	Tag	50-RO-001	: Restriction Orifice - Sea water recirculation from pump P-50001A			Dwg	123A90-DDL-PR-PID-80021
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10001216		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Instrumental	Form	CJX11 Orifice Plate

1	Check for mechanical damage.	OK
2	Check installed equipment is suitable and conforms to specification.	OK
3	Check installation conforms to P&ID and hook-up drawing.	OK
4	Check that flow orifice is installed with correct flow direction clearly identified on the tab.	OK
5	Check tag number is stamped or engraved on tab.	OK
6	Check accessibility conforms to specifications, with platforming where necessary.	OK
7	Check calibration certificate/conformity.	OK
8	Check plate flatness and surface finish.	OK
9	If required produce Red Line Mark Up for "AS BUILT"	

Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Lorenzo Novaga	
Date	2025-02-07	2025-02-21	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-02-07T13:15:33.759Z	PROVERLIS Digitaly signed by Lorenzo Novaga 2025-02-21T16:31:25.001Z	

DRAWING NO. DRAWING_NO.

REV. REV.

P-50001 A/B

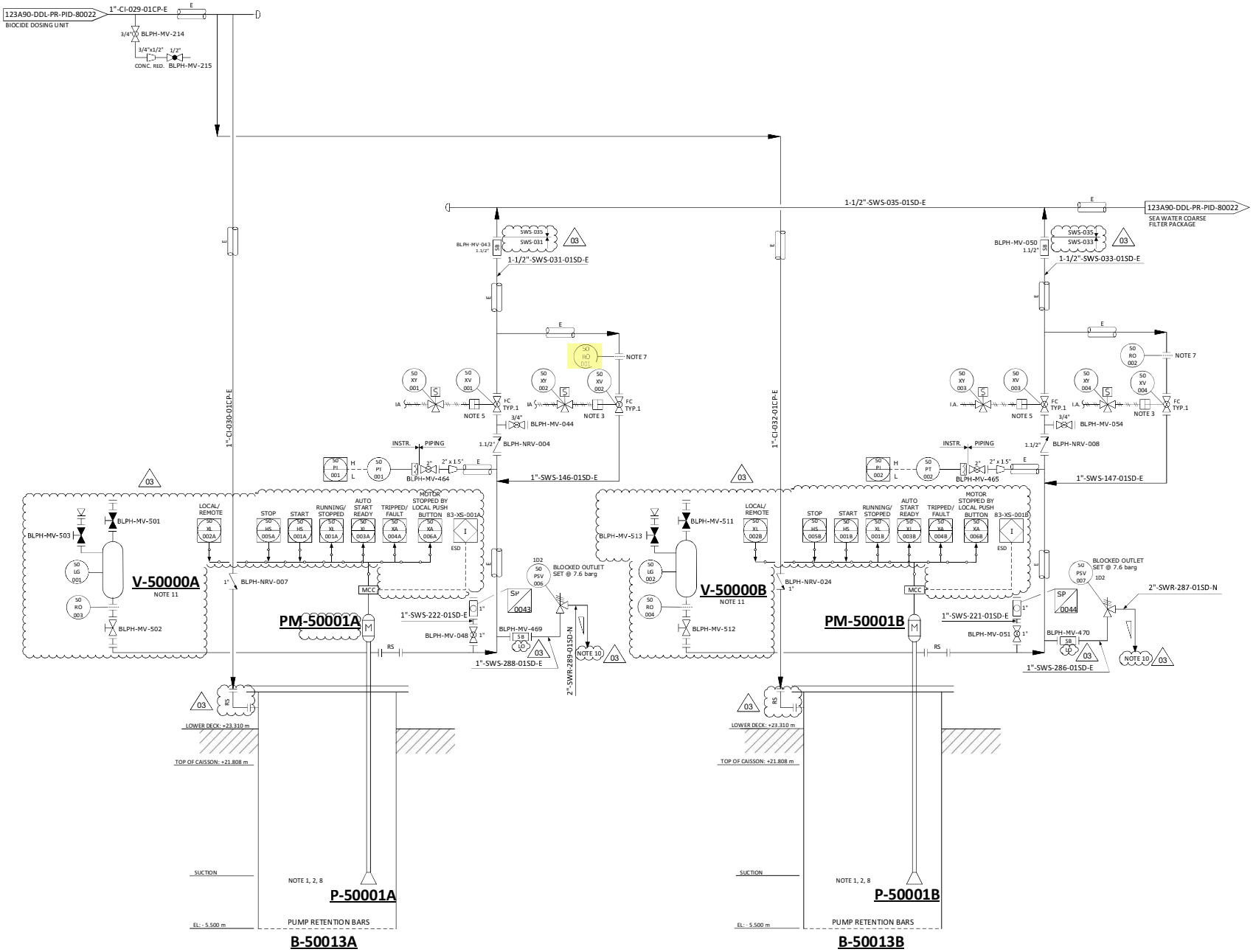
SEA WATER LIFT PUMPS

POWER :	1.6 KW
FLOW :	2.5 m³/h
DESIGN P/T :	7.6 barg / 80°C
DISCHARGE PRESSURE :	5.6 barg (NOTE 9)
MATERIAL :	SDSS

B-50013 A/B

SEA WATER LIFT PUMPS CAISSONS

SIZE :	343 mm (ID) x 27308 mm (H)
MATERIAL :	CS + CA



NOTES

1. SEAWATER LIFT PUMPS ARE RATED 2 X 100%
2. AUTO START OF DESIGNATED STANDBY PUMP ON LOSS OF RUNNING STATUS AND DISCHARGE LOW PRESSURE ALARM OF DUTY PUMP.
3. VALVE TO BE OPENED WHEN PUMP IS OFFLINE TO DOSE CAISSON WITH TREATED SEAWATER TO PREVENT BIOLOGICAL GROWTH.
4. DELETED.
5. SOFTWARE INTERLOCK PREVENTS PUMPS FROM STARTING IN CASE THE RELEVANT XV VALVE IS FULLY CLOSED. 03
6. DELETED.
7. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "123A90-DDL-IN-DS-40054 - TECHNICAL DATASHEET FOR RESTRICTION ORIFICE".
8. LOGIC FOR CONTROL OF P-5001A/B THAT PREVENTS SIMULTANEOUS RUNNING OF A AND B PUMP IS PROVIDED.
9. DISCHARGE PRESSURE REFERS TO THE FLANGE DISCHARGE OF THE PUMP AT LOWER DECK.
10. ROUTED TO THE SEA.
11. VESSELS V-50000A/B ARE INSULATED AND HEAT TRACED. 03

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.
5. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

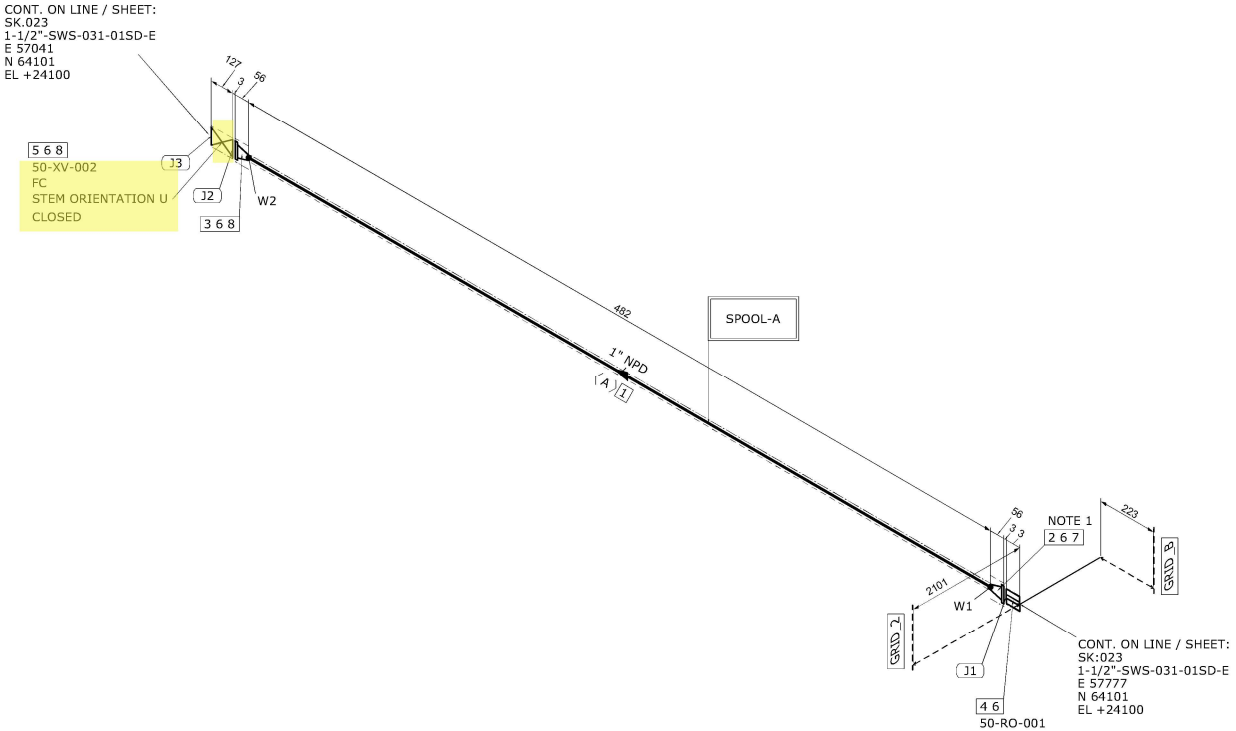
ROSETTI MARINO

TITLE :

BLPH PIPING AND INSTRUMENTATION DIAGRAM
SEA-WATER INTAKE SYSTEM SHEET 1

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80021	SHEET 001	REV. 03

File Name : FILE_NAME



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPESD02850100	Pipe ASME B36.19M PE 3,38 SML ASTM A790 UNS S32760	0.5M	1.2
2	1	FLWDSD00300100	Flange WN For Jackscrews ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	1	1.4
3	1	FLW0SD01240100	Flange WN ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	1	1.4

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
4	1		Restriction Orifice 150#RF	1	1.0
5	1		ON/OFF Ball Actuator Valve - 150#RF Flanged	1	40.0
6	1	GFL3GK16970100	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	1	0.2
7	1/2	SB20BO00940200	75 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.5
8	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.0

FABRICATION WEIGHT [kg]	4.0
ERECTION WEIGHT [kg]	42.7
OVERALL WEIGHT [kg]	46.7

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1	BW
W2	1	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1	482	BEVEL	BEVEL

SUPPORT LIST

SPOOL	WELD [inches]	WEIGHT [kg]
A	2	4.1
MONT	0	42.7

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF S/L	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 1"-SWS-146-01SD-E

SK.059

LINE DATA

NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3			
PAINTING	SYSTEM N/A	BASE RAL N/A	FLUID PHASE	Liquid			
INSULATION	TYPE H	THICKNESS 20 [mm]	DESIGN	PRESS. 7.6 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	Yes		TEST	PRESS. 11.4 [barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80021
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

1.JACKSCREWS POSITION N/S

MASTER

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE	N/A
DRAWN STAFF SRL	CHECKED RT	APPROVED LM	DATE	27-08-2024
FORMAT A3	DRAWING NO. 123A90-FDL-PP-DI-00059		SHEET / OF 1/1	REV. 00

ITEM	Tag	50-RO-002	: Restriction Orifice - Sea water recirculation from pump P-50001B			Dwg	123A90-DDL-PR-PID-80021
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10001217		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Instrumental	Form	CJX11 Orifice Plate

1	Check for mechanical damage.	OK
2	Check installed equipment is suitable and conforms to specification.	OK
3	Check installation conforms to P&ID and hook-up drawing.	OK
4	Check that flow orifice is installed with correct flow direction clearly identified on the tab.	OK
5	Check tag number is stamped or engraved on tab.	OK
6	Check accessibility conforms to specifications, with platforming where necessary.	OK
7	Check calibration certificate/conformity.	OK
8	Check plate flatness and surface finish.	OK
9	If required produce Red Line Mark Up for "AS BUILT"	

Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Lorenzo Novaga	
Date	2025-02-07	2025-02-21	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-02-07T13:15:46.695Z	PROVERLIS Digitaly signed by Lorenzo Novaga 2025-02-21T16:30:53.324Z	

DRAWING NO. DRAWING_NO.

REV. REV.

P-50001 A/B

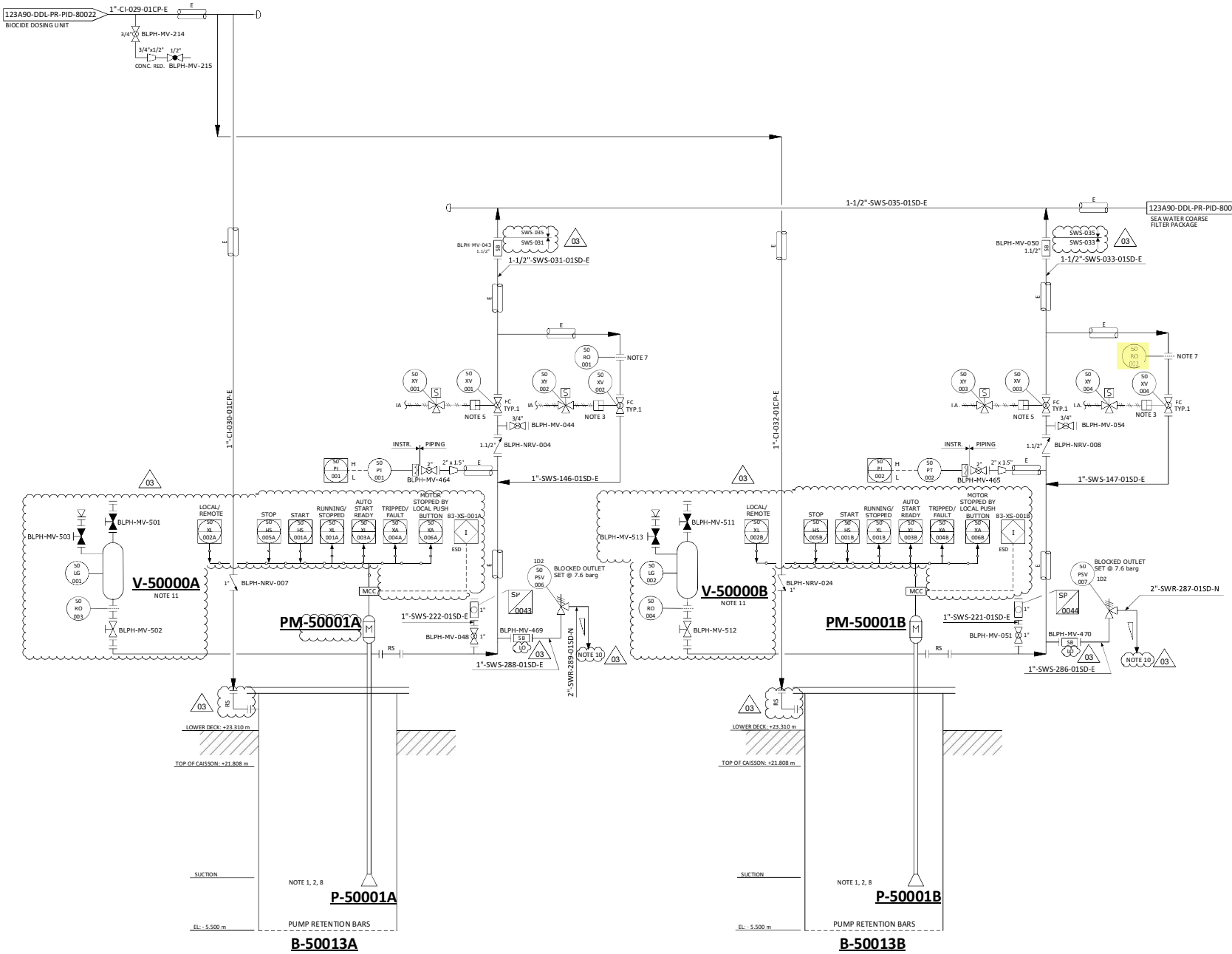
SEA WATER LIFT PUMPS

POWER : 1.6 KW
FLOW : 2.5 m³/h
DESIGN P/T : 7.6 barg / 80°C
DISCHARGE PRESSURE : 5.6 barg (NOTE 9)
MATERIAL : SDSS

B-50013 A/B

SEA WATER LIFT PUMPS
CAISSONS

SIZE : 343 mm (ID) x 27308 mm (H)
MATERIAL : CS + CA



NOTES

1. SEAWATER LIFT PUMPS ARE RATED 2 X 100%
2. AUTO START OF DESIGNATED STANDBY PUMP ON LOSS OF RUNNING STATUS AND DISCHARGE LOW PRESSURE ALARM OF DUTY PUMP.
3. VALVE TO BE OPENED WHEN PUMP IS OFFLINE TO DOSE CAISSON WITH TREATED SEAWATER TO PREVENT BIOLOGICAL GROWTH.
4. DELETED.
5. SOFTWARE INTERLOCK PREVENTS PUMPS FROM STARTING IN CASE THE RELEVANT XV VALVE IS FULLY CLOSED. 03
6. DELETED.
7. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "123A90-DDL-IN-DS-40054 - TECHNICAL DATASHEET FOR RESTRICTION ORIFICE".
8. LOGIC FOR CONTROL OF P-5001A/B THAT PREVENTS SIMULTANEOUS RUNNING OF A AND B PUMP IS PROVIDED.
9. DISCHARGE PRESSURE REFERS TO THE FLANGE DISCHARGE OF THE PUMP AT LOWER DECK.
10. ROUTED TO THE SEA.
11. VESSELS V-50000A/B ARE INSULATED AND HEAT TRACED. 03

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.
5. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

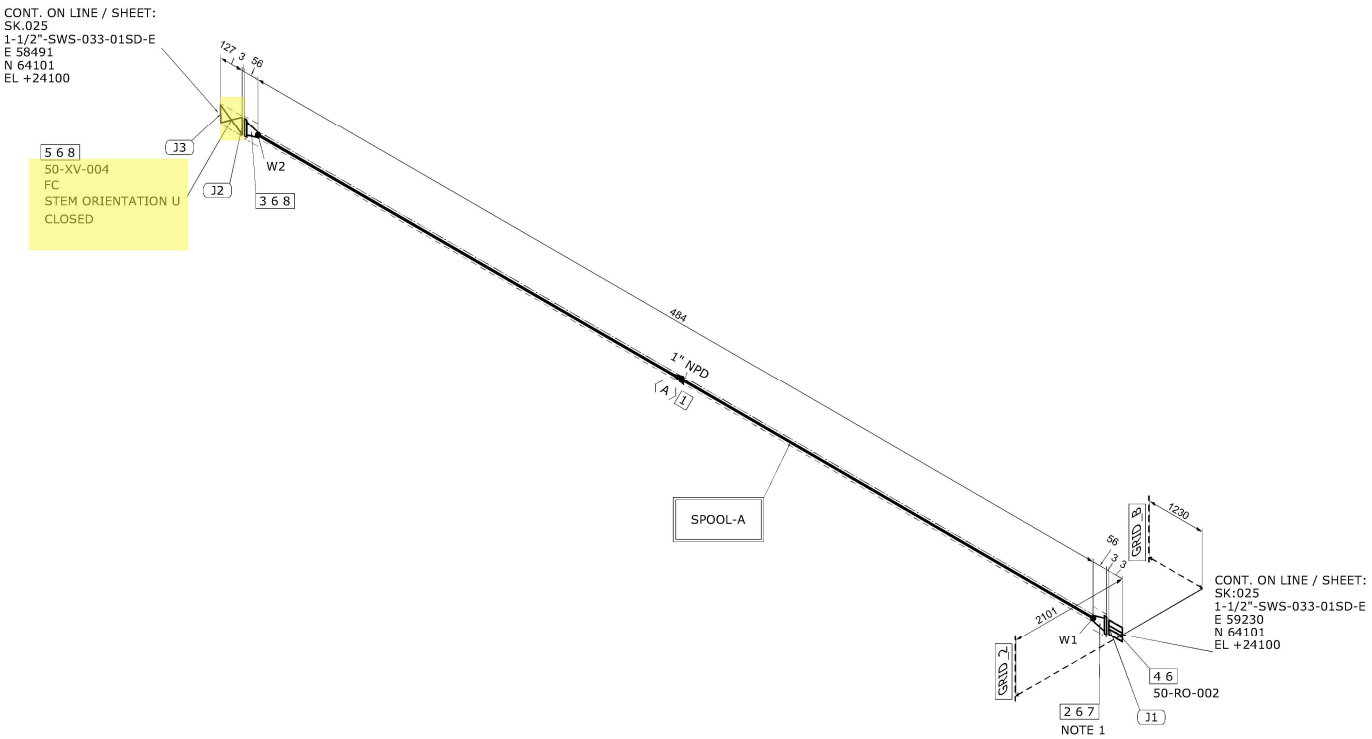
CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
SEA-WATER INTAKE SYSTEM SHEET 1

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE	
A1	DRAWING NO. 123A90-DDL-PR-PID-80021		SHEET 001	REV. 03

File Name : FILE_NAME



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPESD02850100	Pipe ASME B36.19M PE 3,38 SML ASTM A790 UNS S32760	0.5M	1.2
2	1	FLWDSD00300100	Flange WN For Jackscrews ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	1	1.4
3	1	FLW0SD01240100	Flange WN ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	1	1.4

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
4	1		Restriction Orifice 150#RF	1	1.0
5	1		ON/OFF Ball Actuator Valve - 150#RF Flanged	1	40.0
6	1	GFL3GK16970100	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	1	0.2
7	1/2	SB20BO00940200	75 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.5
8	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.0

FABRICATION WEIGHT [kg]	4.0
ERECTION WEIGHT [kg]	42.7
OVERALL WEIGHT [kg]	46.7

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1	BW
W2	1	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1	485	BEVEL	BEVEL

SUPPORT LIST

SPOOL	WELD [inches]	WEIGHT [kg]
A	2	4.1
MONT	0	42.7

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF S/L	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 1"-SWS-147-01SD-E

SK.060

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE: N/A

DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 27-08-2024

FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00060 | SHEET / OF: 1/1 | REV.: 00

LINE DATA

NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3			
PAINTING	SYSTEM N/A	BASE RAL N/A	FLUID PHASE	Liquid			
INSULATION	TYPE H	THICKNESS 20 [mm]	DESIGN	PRESS. 7.6 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	Yes		TEST	PRESS. 11.4 [barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80021
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

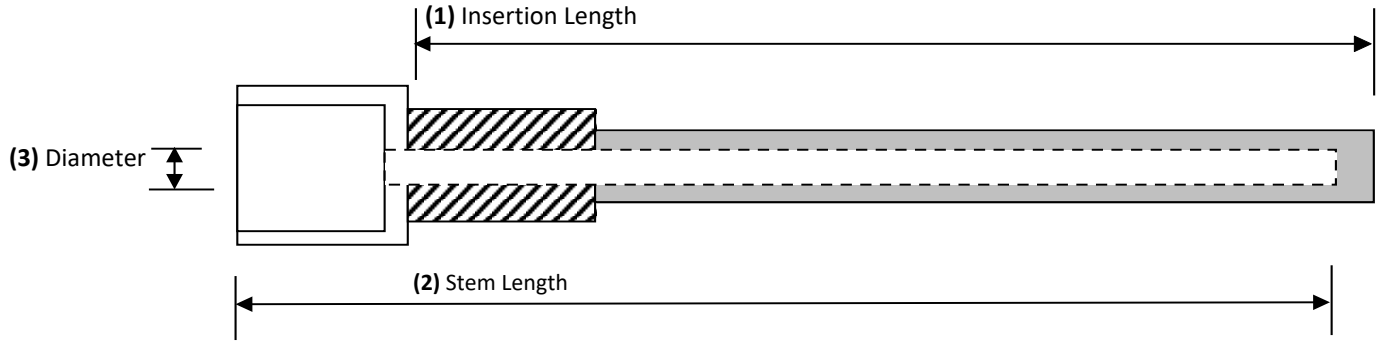
NOTES

1. JACKSCREWS POSITION N/S

MASTER

ITEM	Tag	50-TW-001	: Thermowell - Sea Water from Lift Pump P-50001A/B			Dwg	123A90-DDL-IN-DL-40080
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10001434		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity STS	Discipline	Instrumental Form TJX13		Thermowell

1	Insertion length (1) mm	220
2	Stem Length (2) mm	70
3	Internal diameter (3) mm	6,5
4	Thermowell filled-up by:	N/A
5	If required produce Red Line Mark Up for "AS BUILT"	



Comments:

Page 1/1	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM (ROSETTI MARINO)	
Name	Michele Tartaglia	Giovanni Tangianu	
Date	2025-02-13	2025-02-13	
Signature	Digitaly signed by Michele Tartaglia 2025-02-13T14:21:01.547Z	Digitaly signed by Giovanni Tangianu 2025-02-13T14:36:48.317Z	

GENERAL	1	Tag Number					50-TT-001 / 50-TE-001 / 50-TW-001			
	2	Service					SEA WATER LIFT PUMP(B-50013A&B) DISCHARGE			
	3	P&ID Number	Area Classification				123A90-DDL-PR-PID-80022		ATEX Zone2-IIC(IIB+H2) T1	
PIPE LINE	4	Line Number	Equipment Numbrer				1-1/2"-SWS-035-01SD-E		-	
	5	Line Size	Schedule				4"		3.05 Thk (mm)	
	6	Pipe Material	Pipe Insulation				ASTM A790 UNS S32760		ELECTRICALLY HEAT TRACED	
PROCESS CONDITIONS	7	Fluid	Phase				SEA WATER SUPPLY		LIQUID	
	8	Temperature	Min.	Oper.	Max.		1.3 °C	-		20.2 °C
	9	Pressure	Min.	Oper.	Max.			5 barg		
	10	Design Temperature	Min.		Max.		-29 °C		100 °C	
	11	Design Pressure	Min.		Max.		7.6 barg			
	12	Vibrations					ASME PTC 19.3			
	13	Erosion	Corrosion				-		-	
	14	Flow Rate Max.	Velocity Max.				2500 kg/h		0.08 m/s	
	15	Density					1000 kg/m^3			
	16	Viscosity					1 cP			
	17	Ambient Temperature					Min: -8.4 °C, Norm: 10.5 °C, Max: +25.0 °C.			
ELEMENT	18	T/C	Type				-			
	19		Epoxy.	Ground		Unground	-	-		-
	20		Sheath Material							
	21	RTD	Type				RTD, 3 wire PT100			
	22		Sensor Material		Insulator Material		Platinum		MgO	
	23		Tollerance Class		Resistance		Class A according IEC 60751		100 Ω at 0°C/138.5 at 100°C	
	24	Single/Duplex/Other	2/3/4 Wire				Single		3 Wire	
	25	Diameter	Length				6 mm		to be assembled with TWE	
TRANSMITTER	26	Type	Mounting				4-20 mA - HART/Smart		Integral, head mounted	
	27	Input	Head Material				-		N/A	
	28	ATEX Certification	Ingress Protection				ATEX Ex II 2G Ex db IIC T5		IP-66	
	29	Housing	Painting				SS AISI 316/316L		N/A	
	30	Power Supply	Load Resistance				24 Vdc		220 ÷ 640 Ω (for HART)	
	31	Electrical Connection	Input		Output		-		2 X M20X1.5	
	32	Accuracy					As Per IEC 60751 Class A			
	33	Linearization					As Per IEC 60751 Class A			
	34	Instrument Range	Min.		Max.		-50 °C		450 °C	
	35	Calibration Range	Min.		Max.		0 °C		50 °C	
	36	SIL Certification					-			
	37	PED Certification					Required			
COMMUNICATION AND SOFTWARE	38	Communication Type	Signal Type				HART 6		4-20mA Loop Powered24 Vdc	
	39	D D Revision	CFF Revision				-		-	
	40	Hart Descriptor	Hart Tag				-		-	
	41	Internal Diagnostics	Capacitance				-		-	
	42	Segment	Device Address				-		-	
	43	Device Class	Simulate				-		-	
	44	Nominal Current	Operating Volage				-		-	
WELL	45	Process Connection	Rating				1-1/2" Flanged		150# RF ASME B31.3	
	46	Material	Type				ASTM A182 F53/F55		Tapered Type	
	47	Construction Type	Internal Connection				Barstock Tapered		1/2" NPT-F	
	48	Immersion Length ("U")	Head Length ("T")				220 mm		70 mm	
	49	Treatments	Finish				-		-	
	50	Tip Thickness	Bore Diameter				7 mm		6.5 mm	
	51	Insertion Diam. Min.	Max.				28 mm		18 mm	
PURCHASE	52	Manufacturer					TERRANOVA SRL			
	53	Model					SST72-TH-1-C-9-1-B-4-3 + TWE			
	54	Purchase Order Number					4718_OS			

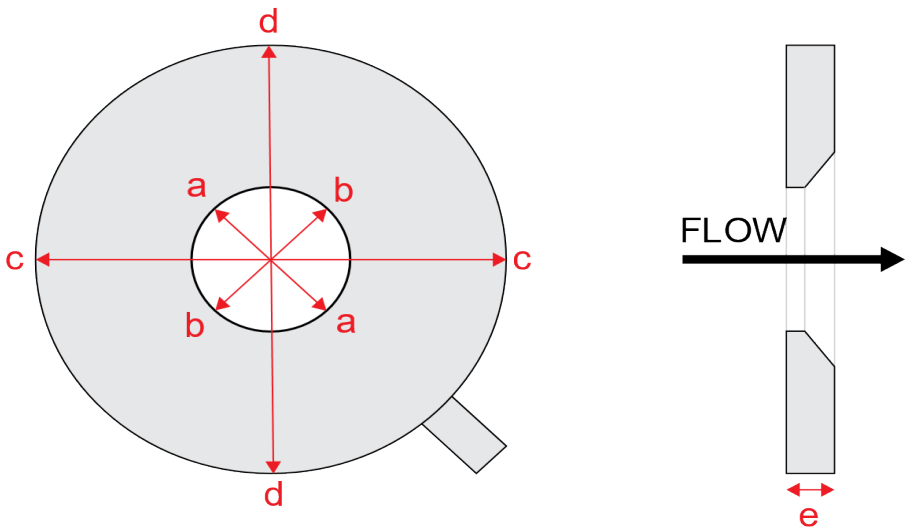
This document undergoes an issuance cycle within EDMS Fusionlive". Its distribution is electronically controlled. Once printed shall be considered as "NOT CONTROLLED" copy

ITEM	Tag	50-RO-001	: Restriction Orifice - Sea water recirculation from pump P-50001A			Dwg	123A90-DDL-PR-PID-80021
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10001444	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity STS	Discipline	Instrumental	Form	TJX11 Orifice Plate

EQUIPMENT DATA

CALCULATION SHEET REF:	1724001690-IN-CA-00005		
DATA SHEET N°:	123A90-DDL-IN-DS-40054		
MATERIAL	AISI 316/316L	SPECIFIED THICKNESS:	3 mm
SPECIFIED OD:	33.4 mm	MODEL N°:	Restriction orifice - single hole
TEST EQUIPMENT:	micrometer	SPECIFIED ID:	0.129 mm

TEST DETAILS



Measured Diameter : **a**	0.129 mm	Measured Diameter : **b**	0.129 mm
Measured Diameter : **c**	67 mm	Measured Diameter : **d**	67 mm
Actual plate thickness : **e**	3 mm	Flow element correctly stamped:	OK
Presence of degasing holes	No	Presence of degasing holes	No
TESTED LABEL AFFIXED	No	DATA SHEET ATTACHED	Yes

If required produce Red Line Mark Up for "AS BUILT"

Comments:

Page 1/1	Performed by	☉ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM (ROSETTI MARINO)	
Name	Michele Tartaglia	Massimo Bruschi	
Date	2025-02-21	2025-02-21	
Signature	Digitaly signed by Michele Tartaglia 2025-02-21T13:46:22.958Z	Digitaly signed by Massimo Bruschi 2025-02-21T13:47:04.687Z	

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Customer:	ROSETTI MARINO	PO	:4791_OS
TAG	:50-RO-001	Doc	:1724001690-IN-CA-00005-01
TAGFluid	:SEA_WATER	Sales Order	:/
Fluid Ref.	:ENTER SEA_WATER	Service	:SEA WATER
Pipe	:316 Stainless Steel	Primary	:Super Duplex
Meter	:Pipe Taps, Restrictive Orifice	Taps	:2 1/2 & 8 D
Coeff Eq	:Stolz	Calculation	:SIZE
Preparer	:THORAT	Printed	:30/07/2024

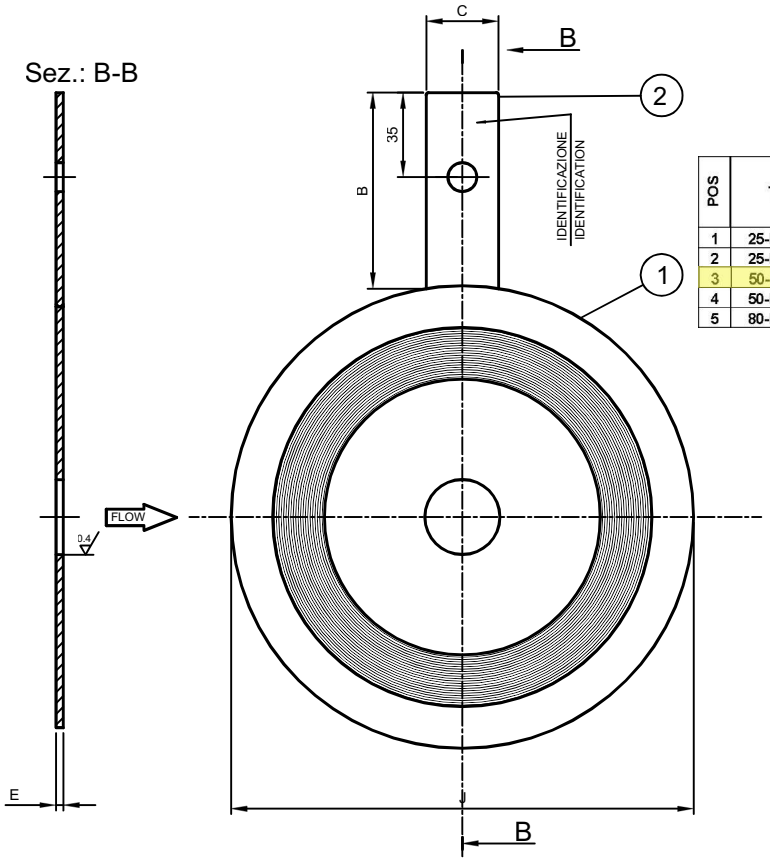
----------Max/Design/Normal----------		
Flow Rate	0,850000	litre/h(Flow Volume)
Differential	4,6000	Bar
Pipe Reynolds Number	11,	
----------Measurements----------		
Pressure pG	5,6000	Bar,gage
Barometric	1,0133	Bar,abs
Temperature (Flowing)	22,0000	degC
----------Fluid Properties----------		
Density (Flowing)	1000,00000	kg/m^3
Viscosity	1,00000	cP
----------Factors----------		
Sizing Factor(SM)	0,00001	@ Normal Flow
Discharge Coefficient(C)	0,59593	@ Normal Flow
Pipe Thermal Expansion(FaD)	1,00003	
Bore Thermal Expansion(Fad)	1,00003	
----------Design Information----------		
Pipe Diameter(D)	26,64460	mm@20,degC
Bore Diameter	0,12896	mm@20, degC
Plate thickness-Flange Mounted Plate	3,1750	mm@20, degC
Beta	0,00484	@20, degC
Pipeline Velocity (Max)	0,00	m/s
Overall Pressure Loss(Max)	4,6000	Bar

Velocity 0.00 below normal minimum 0.30 metre/s
Beta=0.0048 is less than 0.15 reduce differential or increase flow-rate to maintain dploss accuracy
Meter is starting to cavitate
Stress and deflection should be checked based on actual thickness, material, and process conditions
Orifice plate thickness is calculated using ROARK Stress/Strain equations.
Shown thickness is within the required limits for the plate material

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TAG KEPT IN HOLD STATUS

ORI ORIFICE PLATES (SINGLE HOLE)



POS	TAG	ND	RATING	SCH	PIPE			RESTRICTION ORIFICE								NOISE LEVEL [Dba]	CAV. NUMBER	NOTE	
					O.D. [mm]	I.D. [mm]	THK [mm]	MTL	n°OF HOLES	d [mm]	d1 [mm]	E [mm]	J [mm]	B [mm]	C [mm]				
1	25-RO-022	1"	300	40S	33,4	26,64	3,38	SS 316/316L	1	5,19	5,19	6	73,0	115	30	86		CRITICAL	THICK PLATE RESTRICTION
2	25-RO-024	1"	300	40S	33,4	26,64	3,38	SS 316/316L	1	4,26	4,26	6	73,0	115	30	65		CRITICAL	THICK PLATE RESTRICTION
3	50-RO-001	1"	150	40S	33,4	26,64	3,38	SS 316/316L	1	0,12	0,12	3	67,0	110	30	65	1,22		
4	50-RO-002	1"	150	40S	33,4	26,64	3,38	SS 316/316L	1	0,12	0,12	3	67,0	110	30	65	1,22		
5	80-RO-001	1"	150	40S	33,4	26,64	3,38	SS 316/316L	1	4,26	4,26	6	67,0	110	30	65		CRITICAL	THICK PLATE RESTRICTION

TAGS 50-RO-001 AND 50-RO-002 KEPT IN HOLD STATUS.

NOTES:
1. FLOW METER REFERENCE CODE: ISO 5167 / MILLER ENGINEERING HANDBOOK
2. MARKING: MARKING DETAIL AS PER CUSTOMER SPECIFICATION (TAG / d / ID / SIZE / RATING / MATERIAL / REF CODE / DIRECTION OF FLOW (as minimum)
3. d, PRESSURE DROP: refer to CALCULATION SHEETS

CERTIFICATES
- Material Certificates 3.1 (EN 10204)
- PMI Test on all Plates
- Visual & Dimensional Test

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CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	23/10/24	MZ	GA	GO	ACCEPTED FOR CONSTRUCTION (AFC)
00	03/10/24	MZ	GA	GO	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
GENERAL ARRANGEMENT DRAWINGS-RESTRICTION ORIFICE
RESTRICTION ORIFICE (SINGLE HOLE)

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : 1:2

A3 | DRAWING NO. 1724001690-IN-DA-00003 | SHEET 003 | REV. 01

File Name : 123A90.DDL.XX.XXXXXX Rev. 00

F.to UNI A3: 420mmx297mm

GENERAL	1	Tag Number			50-RO-001		
	2	Service			SEA WATER BY-PASS PUMP P-50001A		
	3	P&ID Number			123A90-DDL-PR-PID-80021		
	4	Line Number			1"-SWS-146-01SD-E		
	5	Line Size	Line Schedule		1"	Thk (mm) = 3.38	
	6	Line Material			ASTM A790 UNS S32760		
	7						
PROCESS CONDITIONS	8	Fluid	State		SEA WATER	LIQUID	
	9	Design Pressure	Min.	Max.		7.6 barg	
	10	Design Temperature	Min.	Max.		100°C	
	11	Base Pressure	Base Temperature				
	12	Critical Pressure					
	13	Permanent Pressure Loss Across Meter					
	14	Entrained Gas / Liquid (% Mass)					
	15				Units	@ Max. Flow	@ Norm. Flow	@ Min. Flow
	16	Flow Operating			l/h		0.85	
	17	Upsteam Pressure			barg		5.6	
	18	Temperature			°C		22	
	19	Density			kg/m^3		1025	
	20	Compressibility Factor			-		N/A	
	21	Viscosity			cP		1	
	22	Vapour Pressure			bar		0.02	
	23	Specific Heat Ratio Cp/Cv			-		1.33	
	24	Molecular Weight			18			
ORIFICE PLATE	25	Type			RESTRICTION ORIFICE CONCENTRIC TYPE		
	26	Material			25% CR SDPLX		
	27	Thickness			3mm '(2)		
	28	Bore Diameter			(2) (1)		
	29	Beta Ratio			(2)		
	30	Drain or Vent Hole			N.A.		
	31	Flow Full Scale			(2)		
	32	Differential Pressure @ Full scale			(2)		
	33						
ORIFICE FLANGES	34	Size			1" (Flanges are Out of scope of Vendor's supply)		
	35	Rating			150#		
	36	Type			Flanged		
	37	Facing			RF		
	38	Flange Material			ASTM A182 Gr.F55		
	39	Gasket Material			(Gaskets are Out of scope of Vendor's supply)		
	40	Taps Type	Quantity		-	-	
	41	Taps Size	Connection		-	-	
	42	Taps Orientation			-		
	43						
	44						
PURCHASE	45	Manufacturer			TECNOMATIC		
	46	Model			-		
	47	Purchase Order Number			1724001690		

Notes:
(1) Downstream Pressure = atm;
(2) The flow through the orifice will be determined during the performance test of the Seawater Lift Pump

No.	Date	By	Chkd	Appr	Description
01	06/09/2024	VBA	LCA	DLO	Accepted for Construction (AFC)
00	22/02/2024	VBA	LCA	DLO	Issued for Review (IFR)

INSTRUMENT DATASHEET

Orifice Plate

CROSSWIND

ROSETTI MARINO

Sheet 13 of 15

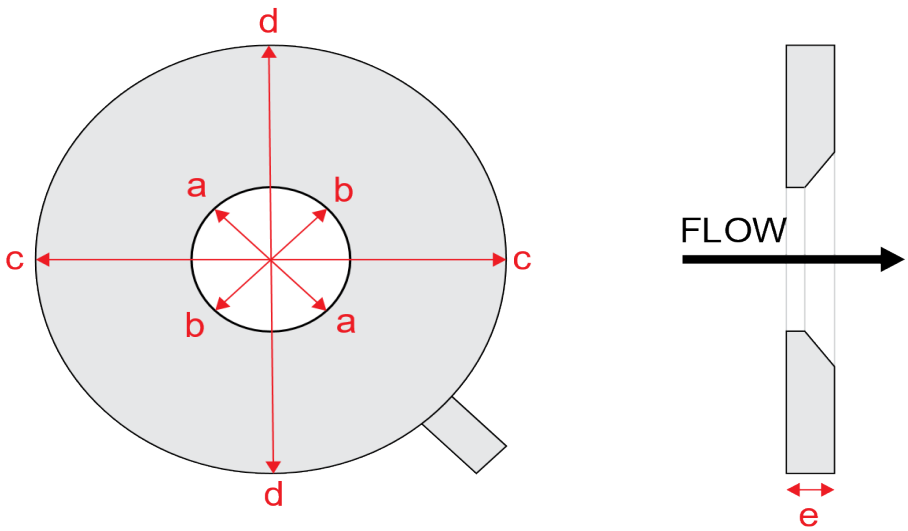
Code: 314 Doc. No.: 123A90-DDL-IN-DS-40054 Rev 01

ITEM	Tag	50-RO-002	: Restriction Orifice - Sea water recirculation from pump P-50001B	Dwg	123A90-DDL-PR-PID-80021		
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)	Module	LD		
TASK	code	C10001445	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity STS	Discipline	Instrumental	Form TJX11	Orifice Plate

EQUIPMENT DATA

CALCULATION SHEET REF:	1724001690-IN-CA-00005		
DATA SHEET N°:	123A90-DDL-IN-DS-40054		
MATERIAL	AISI 316/316L	SPECIFIED THICKNESS:	3 mm
SPECIFIED OD:	33.4 mm	MODEL N°:	Restriction orifice - single hole
TEST EQUIPMENT:	Vernier caliper	SPECIFIED ID:	0.129 mm

TEST DETAILS



Measured Diameter : **a**	0.129 mm	Measured Diameter : **b**	0.129 mm
Measured Diameter : **c**	67 mm	Measured Diameter : **d**	67 mm
Actual plate thickness : **e**	3 mm	Flow element correctly stamped:	OK
Presence of degasing holes	No	Presence of degasing holes	No
TESTED LABEL AFFIXED	No	DATA SHEET ATTACHED	Yes

If required produce Red Line Mark Up for "AS BUILT"

Comments:

	Performed by	☉ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM (ROSETTI MARINO)	
Name	Michele Tartaglia	Massimo Bruschi	
Date	2025-02-21	2025-02-21	
Signature	Digitaly signed by Michele Tartaglia 2025-02-21T13:46:39.137Z	Digitaly signed by Massimo Bruschi 2025-02-21T13:47:12.549Z	

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Customer:	ROSETTI MARINO	PO	:4791_OS
TAG	:50-RO-002	Doc	:1724001690-IN-CA-00005-01
TAGFluid	:SEA_WATER	Sales Order	:/
Fluid Ref.	:ENTER SEA_WATER	Service	:SEA WATER
Pipe	:316 Stainless Steel	Primary	:Super Duplex
Meter	:Pipe Taps, Restrictive Orifice	Taps	:2 1/2 & 8 D
Coeff Eq	:Stolz	Calculation	:SIZE
Preparer	:THORAT	Printed	:30/07/2024

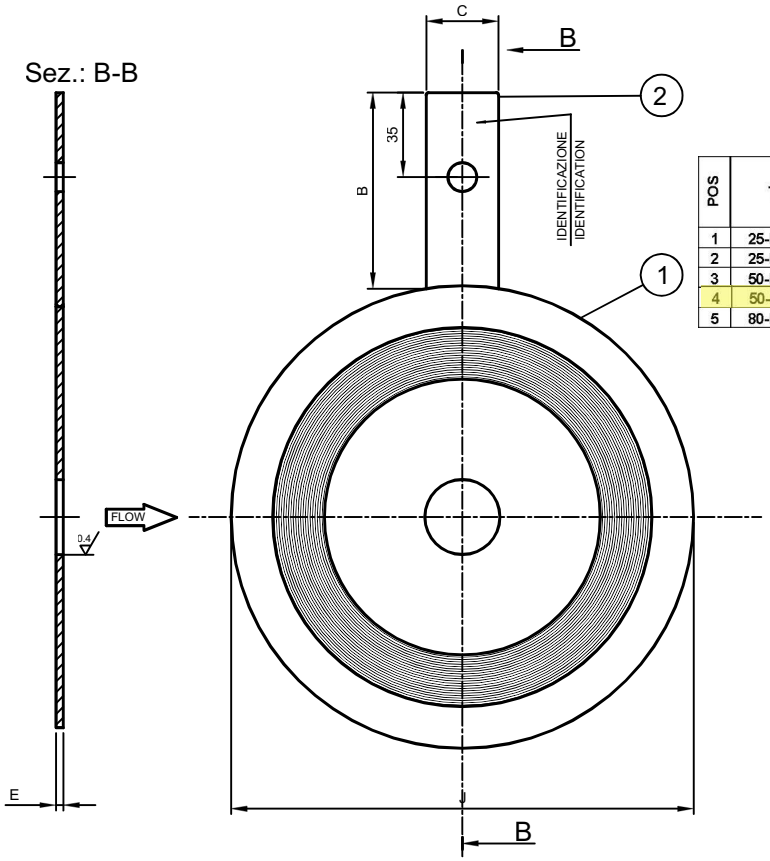
Max/Design/Normal		
Flow Rate	0,850000	litre/h(Flow Volume)
Differential	4,6000	Bar
Pipe Reynolds Number	11,	
Measurements		
Pressure pG	5,6000	Bar,gage
Barometric	1,0133	Bar,abs
Temperature (Flowing)	22,0000	degC
Fluid Properties		
Density (Flowing)	1000,00000	kg/m^3
Viscosity	1,00000	cP
Factors		
Sizing Factor(SM)	0,00001	@ Normal Flow
Discharge Coefficient(C)	0,59593	@ Normal Flow
Pipe Thermal Expansion(FaD)	1,00003	
Bore Thermal Expansion(Fad)	1,00003	
Design Information		
Pipe Diameter(D)	26,64460	mm@20,degC
Bore Diameter	0,12896	mm@20, degC
Plate thickness-Flange Mounted Plate	3,1750	mm@20, degC
Beta	0,00484	@20, degC
Pipeline Velocity (Max)	0,00	m/s
Overall Pressure Loss(Max)	4,6000	Bar

Velocity 0.00 below normal minimum 0.30 metre/s
Beta=0.0048 is less than 0.15 reduce differential or increase flow-rate to maintain dploss accuracy
Meter is starting to cavitate
Stress and deflection should be checked based on actual thickness, material, and process conditions
Orifice plate thickness is calculated using ROARK Stress/Strain equations.
Shown thickness is within the required limits for the plate material

R.W. Miller and Associates, Inc. The FLOW CONSULTANT TM Licensed Software C1987-2012 Version 7.1.0007

TAG KEPT IN HOLD STATUS

ORI ORIFICE PLATES (SINGLE HOLE)



POS	TAG	ND	RATING	SCH	PIPE			RESTRICTION ORIFICE								NOISE LEVEL [Dba]	CAV. NUMBER	NOTE	
					O.D. [mm]	I.D. [mm]	THK [mm]	MTL	n°OF HOLES	d [mm]	d1 [mm]	E [mm]	J [mm]	B [mm]	C [mm]				
1	25-RO-022	1"	300	40S	33,4	26,64	3,38	SS 316/316L	1	5,19	5,19	6	73,0	115	30	86		CRITICAL	THICK PLATE RESTRICTION
2	25-RO-024	1"	300	40S	33,4	26,64	3,38	SS 316/316L	1	4,26	4,26	6	73,0	115	30	65		CRITICAL	THICK PLATE RESTRICTION
3	50-RO-001	1"	150	40S	33,4	26,64	3,38	SS 316/316L	1	0,12	0,12	3	67,0	110	30	65	1,22		
4	50-RO-002	1"	150	40S	33,4	26,64	3,38	SS 316/316L	1	0,12	0,12	3	67,0	110	30	65	1,22		
5	80-RO-001	1"	150	40S	33,4	26,64	3,38	SS 316/316L	1	4,26	4,26	6	67,0	110	30	65		CRITICAL	THICK PLATE RESTRICTION

TAGS 50-RO-001 AND 50-RO-002 KEPT IN HOLD STATUS.

NOTES:
1. FLOW METER REFERENCE CODE: ISO 5167 / MILLER ENGINEERING HANDBOOK
2. MARKING: MARKING DETAIL AS PER CUSTOMER SPECIFICATION (TAG / d / ID / SIZE / RATING / MATERIAL / REF CODE / DIRECTION OF FLOW (as minimum)
3. d, PRESSURE DROP: refer to CALCULATION SHEETS

CERTIFICATES
- Material Certificates 3.1 (EN 10204)
- PMI Test on all Plates
- Visual & Dimensional Test

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	23/10/24	MZ	GA	GO	ACCEPTED FOR CONSTRUCTION (AFC)
00	03/10/24	MZ	GA	GO	ISSUE FOR REVIEW (IFR)

TERRANOVA SPRIANO Nuovo Pignone MEC-REL
CROSSWIND
ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
GENERAL ARRANGEMENT DRAWINGS-RESTRICTION ORIFICE
RESTRICTION ORIFICE (SINGLE HOLE)

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : 1:2

A3 | DRAWING NO. 1724001690-IN-DA-00003 | SHEET 003 | REV. 01

F.to UNI A3: 420mmx297mm

File Name : 123A90.DDL.XX.XXXXXX Rev. 00

GENERAL	1	Tag Number			50-RO-002		
	2	Service			SEA WATER BY-PASS PUMP P-50001B		
	3	P&ID Number			123A90-DDL-PR-PID-80021		
	4	Line Number			1"-SWS-147-01SD-E		
	5	Line Size	Line Schedule		1"	Thk (mm) = 3.38	
	6	Line Material			ASTM A790 UNS S32760		
	7						
PROCESS CONDITIONS	8	Fluid	State		SEA WATER	LIQUID	
	9	Design Pressure	Min.	Max.		7.6 barg	
	10	Design Temperature	Min.	Max.		100°C	
	11	Base Pressure	Base Temperature				
	12	Critical Pressure					
	13	Permanent Pressure Loss Across Meter					
	14	Entrained Gas / Liquid (% Mass)					
	15				Units	@ Max. Flow	@ Norm. Flow	@ Min. Flow
	16	Flow Operating			l/h		0.85	
	17	Upsteam Pressure			barg		5.6	
	18	Temperature			°C		22	
	19	Density			kg/m^3		1025	
	20	Compressibility Factor			-		N/A	
	21	Viscosity			cP		1	
	22	Vapour Pressure			bar		0.02	
	23	Specific Heat Ratio Cp/Cv			-		1.33	
	24	Molecular Weight			18			
ORIFICE PLATE	25	Type			RESTRICTION ORIFICE CONCENTRIC TYPE		
	26	Material			25% CR SDPLX		
	27	Thickness			3mm '(2)		
	28	Bore Diameter			(2) (1)		
	29	Beta Ratio			(2)		
	30	Drain or Vent Hole			N.A.		
	31	Flow Full Scale			(2)		
	32	Differential Pressure @ Full scale			(2)		
	33						
ORIFICE FLANGES	34	Size			1" (Flanges are Out of scope of Vendor's supply)		
	35	Rating			150#		
	36	Type			Flanged		
	37	Facing			RF		
	38	Flange Material			ASTM A182 Gr.F55		
	39	Gasket Material			(Gaskets are Out of scope of Vendor's supply)		
	40	Taps Type	Quantity		-	-	
	41	Taps Size	Connection		-	-	
	42	Taps Orientation			-		
	43						
	44						
PURCHASE	45	Manufacturer			TECNOMATIC		
	46	Model			-		
	47	Purchase Order Number			1724001690		

Notes:
(1) Downstream Pressure = atm;
(2) The flow through the orifice will be determined during the performance test of the Seawater Lift Pump

No.	Date	By	Chkd	Appr	Description
01	06/09/2024	VBA	LCA	DLO	Accepted for Construction (AFC)
00	22/02/2024	VBA	LCA	DLO	Issued for Review (IFR)

INSTRUMENT DATASHEET

Orifice Plate

CROSSWIND

ROSETTI MARINO

Sheet 14 of 15

Code: 314 Doc. No.: 123A90-DDL-IN-DS-40054 Rev 01

ITEM	Tag	AV-63008/50-XV-001	: Pneumatic Connection Air Supply - 50-XV-001			Dwg	123A90-DDL-IN-LIS-40092
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10001969		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Instrumental	Form	CJX06 Tubing Hydraulic

General

1	Drawings (P&ID tube) attached.	OK
2	Isometric drawings (P&ID pipe) attached.	NA
3	Check drawings at last revision.	OK
4	Material certificates for pipe/tube/fittings/flanges/hose and support clamps checked	OK
5	Welders certificates checked	NA
6	Certificate and mark-up drawings for welding WPS and WPQR and material certificates checked	NA
7	Certificates and mark-up drawings for NDT report checked	NA

Check before Flushing and/or Testing

8	Installation complete and in compliance with drawings and specifications.	OK
9	Tubing/Piping tray checked.	NA
10	Hose according to specifications and tightened	NA
11	Flanges - nuts and bolts tightened.	NA
12	Fittings are mounted and tightened.	OK
13	Pipe supports completed and installed as required.	OK
14	Cable ladders, trays, sharp edges protected, cut ends sealed.	NA
15	Maintenance evaluation.	OK

REFER TO FINAL SHEET FOR ACCEPTANCE

ITEM	Tag	AV-63008/50-XV-001	: Pneumatic Connection Air Supply - 50-XV-001		Dwg	123A90-DDL-IN-LIS-40092	
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)		Module	LD	
TASK	code	C10001969	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline Instrumental	Form	CJX06	Tubing Hydraulic

Flushing / Pressure testing

16	Drawings of flushing loops (P&ID tube) attached	NA
17	Equipment & valves bypassed and blinded	OK
18	Calibration certificates attached	OK
19	Type of flushing medium correct	NA
20	Printout from recorder/particle counter	NA
21	Printout from pressure indicator	OK

Final Check

22	Final inspection of pipework.	OK
23	Preservation of tested pipework.	NA
24	System/equipment labelled with: "Hot Oil flushing performed".	NA
25	If required produce Red Line Mark Up for "AS BUILT"	

TEST SPECIFIED USED

TEST FLUID: IA TEST PRESSURE BAR G: 5.5 TEST DURATION : 11 MIN

TEST EQUIPMENT: CPG 1500 SERIAL N°: 1A014ILJJIM

HOOK UP DIAGRAM Number: 123A90-DDL-IN-HD-40078

Line FROM	Line TO	Tubing cleaned			Tubing flushed			Diam ID/OD
		Yes	No	N/A	Yes	No	N/A	
AV-63008	50-XV-001	●					●	1/2" OD x Thk. 0,049"

TESTED LABEL AFFIXED DATA SHEET ATTACHED

Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Paolo Schintu	
Date	2025-02-04	2025-02-06	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-04T13:14:17.484Z	PROVERLIS Digitaly signed by Paolo Schintu 2025-02-06T11:22:14.996Z	

Logger protocol

Protocollo di acquisizione elenco dati

ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	AV-63008/50-XV-001

Instrument

Strumento

Electrical pressure gauge *Misuratore di pressione elettronico*	
Model *Modello*	CPG1500
Serial number *Numero di serie*	1A014ILJJIM
Log temperature *Registrazioni di Temperatura*	Active *Attivo*
Scale range *Campo scala*	(0 ... 1000) bar a
Accuracy *Accuratezza*	0.1 % FS
Tag number *Numero tag*	
Communication *Comunicazione*	Wireless (00:13:43:85:DD:8D)

Measurement conditions

Condizioni di misura

Settings *Impostazioni*	
Mode *Modalità*	Automatic *Automatico*
Interval (ms) *Intervallo (ms)*	15000
Duration (hh:mm:ss) *Durata (hh:mm:ss)*	00:11:26
Start time (hh:mm:ss) *Tempo di avvio (hh:mm:ss)*	02:43:11 pm

Logger protocol

Protocollo di acquisizione elenco dati

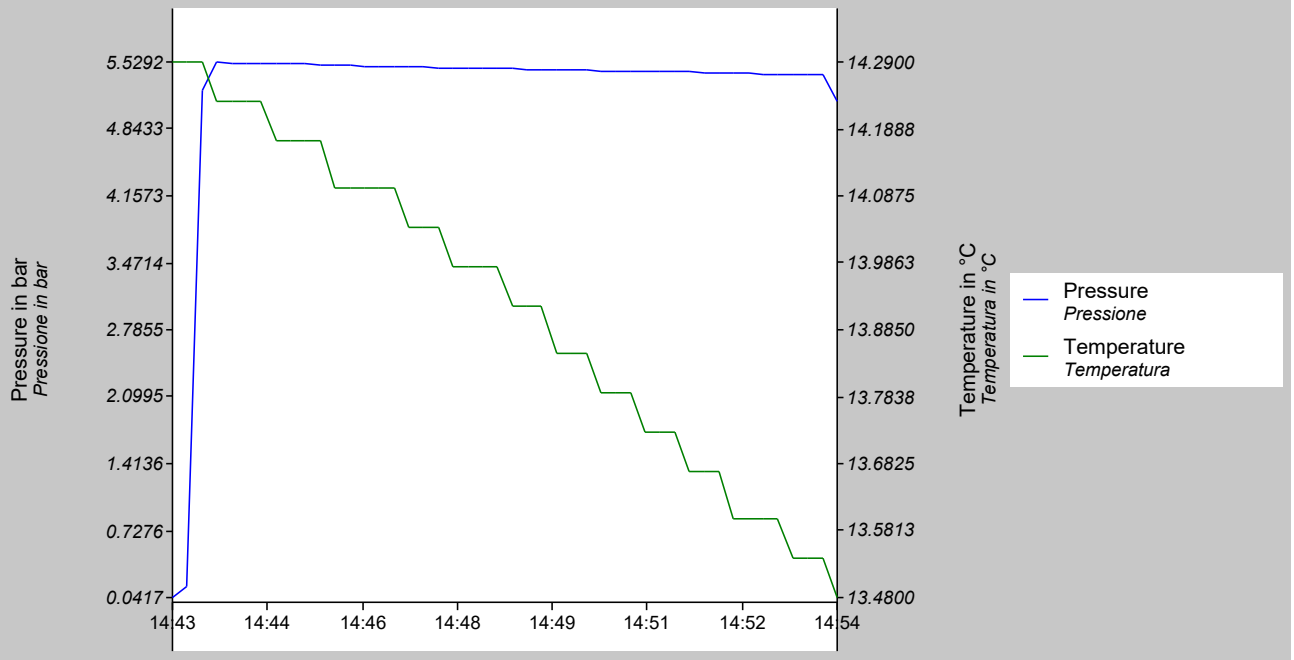
ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	AV-63008/50-XV-001

Measurement results

Risultati della misura

Graphical representation of progression
Rappresentazione grafica dell'andamento



Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
02/01/2025 14:43:11.000	0.0417	14.2900
02/01/2025 14:43:26.000	0.1617	14.2900
02/01/2025 14:43:41.000	5.2393	14.2900
02/01/2025 14:43:56.000	5.5292	14.2300
02/01/2025 14:44:11.000	5.5158	14.2300
02/01/2025 14:44:26.000	5.5152	14.2300
02/01/2025 14:44:41.000	5.5128	14.2300
02/01/2025 14:44:56.000	5.5121	14.1700
02/01/2025 14:45:11.000	5.5100	14.1700
02/01/2025 14:45:26.000	5.5060	14.1700
02/01/2025 14:45:41.000	5.5025	14.1700
02/01/2025 14:45:56.000	5.5047	14.1000
02/01/2025 14:46:11.000	5.4959	14.1000
02/01/2025 14:46:26.000	5.4860	14.1000
02/01/2025 14:46:41.000	5.4885	14.1000
02/01/2025 14:46:56.000	5.4806	14.1000
02/01/2025 14:47:11.000	5.4785	14.0400

Logger protocol

Protocollo di acquisizione elenco dati

ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	AV-63008/50-XV-001

Measurement results

Risultati della misura

Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
02/01/2025 14:47:26.000	5.4750	14.0400
02/01/2025 14:47:41.000	5.4672	14.0400
02/01/2025 14:47:56.000	5.4710	13.9800
02/01/2025 14:48:11.000	5.4613	13.9800
02/01/2025 14:48:26.000	5.4642	13.9800
02/01/2025 14:48:41.000	5.4566	13.9800
02/01/2025 14:48:56.000	5.4579	13.9200
02/01/2025 14:49:11.000	5.4546	13.9200
02/01/2025 14:49:26.000	5.4452	13.9200
02/01/2025 14:49:41.000	5.4448	13.8500
02/01/2025 14:49:56.000	5.4428	13.8500
02/01/2025 14:50:11.000	5.4417	13.8500
02/01/2025 14:50:26.000	5.4401	13.7900
02/01/2025 14:50:41.000	5.4339	13.7900
02/01/2025 14:50:56.000	5.4281	13.7900
02/01/2025 14:51:11.000	5.4322	13.7300
02/01/2025 14:51:26.000	5.4254	13.7300
02/01/2025 14:51:41.000	5.4268	13.7300
02/01/2025 14:51:56.000	5.4249	13.6700
02/01/2025 14:52:11.000	5.4192	13.6700
02/01/2025 14:52:26.000	5.4207	13.6700
02/01/2025 14:52:41.000	5.4176	13.6000
02/01/2025 14:52:56.000	5.4129	13.6000
02/01/2025 14:53:11.000	5.4077	13.6000
02/01/2025 14:53:26.000	5.4060	13.6000
02/01/2025 14:53:41.000	5.4031	13.5400
02/01/2025 14:53:56.000	5.3986	13.5400
02/01/2025 14:54:11.000	5.3972	13.5400
02/01/2025 14:54:26.000	5.1268	13.4800

CROSSWIND

HOLLANDSE KUST NOORD WIND PARK Project
Contract No. CW-I-WP4-2023-05

INSTRUMENT TUBING LIST

ROSETTI MARINO

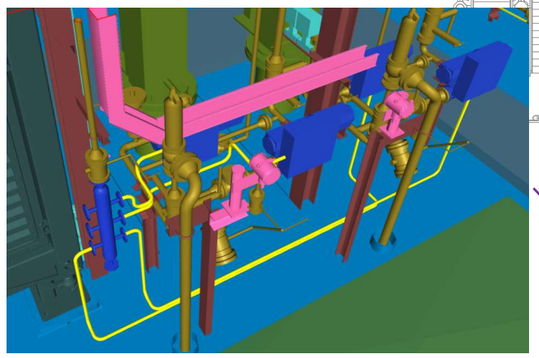
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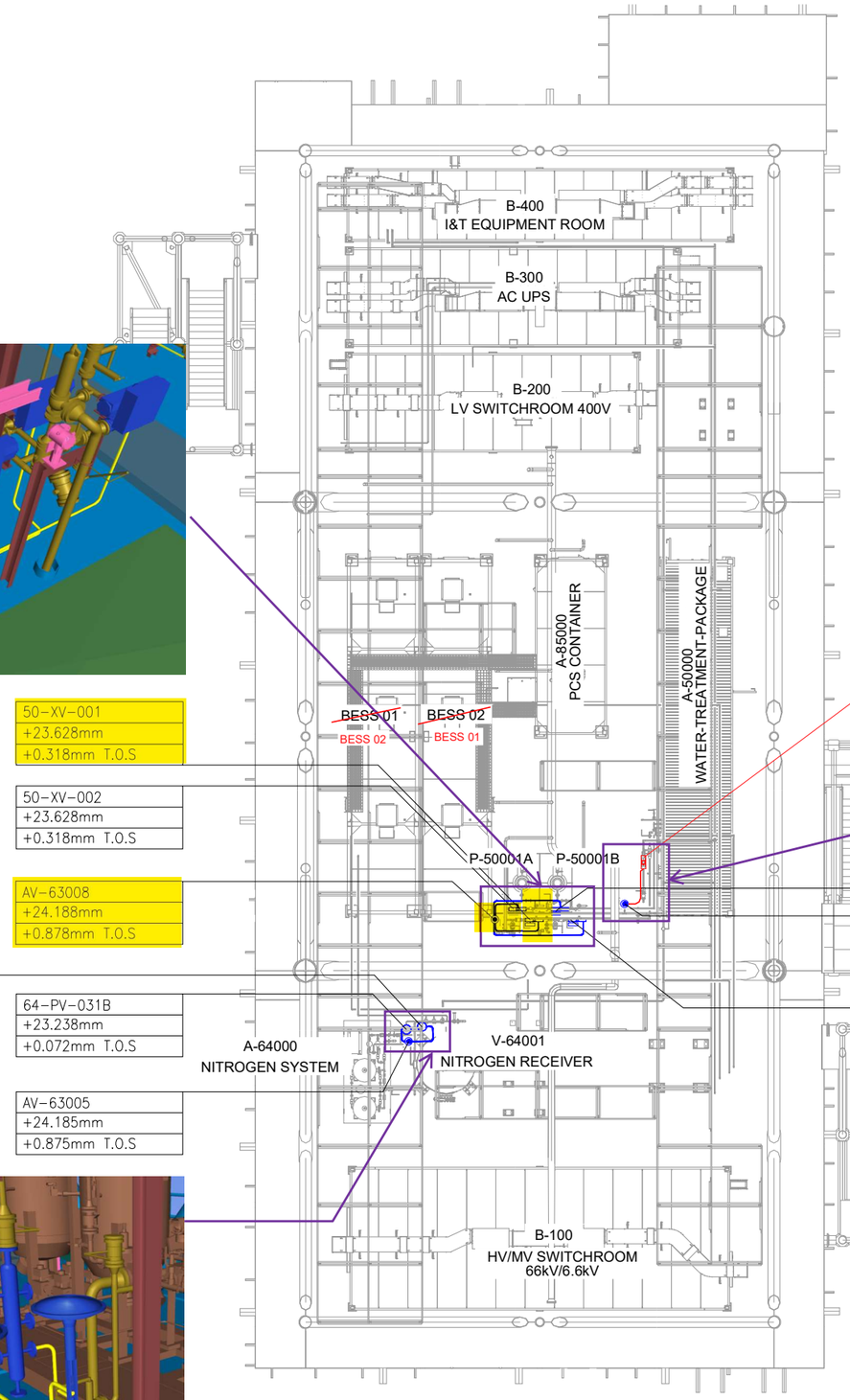
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POS.	REV	SUPPLY SCOPE	LAINING SCOPE	TAG Tubing	P&ID	MAIN FUNCTION	SERVICE	DESIGN TEMPERATURE(C°)	OPERATING PRESSURE (Barg)	DESIGN PRESSURE (Barg)	TEST PRESSURE (Barg)	FLUID TEST	DIMENSIONS	MATERIAL	REF. DOC.	Q.TY (m)	FIRE PROOFING	HEAT TRACING	MODULE	AREA	FROM ITEM	REF. P&I	DESCRIPTION	MODULE	AREA	TO ITEM	REF. LAYOUT	DESCRIPTION	NOTE
01	04	RM	RM	**AV-63001/25-XV-011**	123A90-DDL-PR-PID-80017	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63001	123A90-DDL-PR-PID-80041	Distribution Pot 1	BLPH	Upper Deck	25-XV-011	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
02	04	RM	RM	**AV-63001/25-FV-033**	123A90-DDL-PR-PID-80017	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**9**	N.A.	N.A.	BLPH	Upper Deck	AV-63001	123A90-DDL-PR-PID-80041	Distribution Pot 1	BLPH	Upper Deck	25-FV-033	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
03	04	RM	RM	**AV-63001/25-XV-008**	123A90-DDL-PR-PID-80016	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Upper Deck	AV-63001	123A90-DDL-PR-PID-80041	Distribution Pot 1	BLPH	Upper Deck	25-XV-008	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
04	04	RM	RM	**AV-63001/25-FV-032**	123A90-DDL-PR-PID-80016	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Upper Deck	AV-63001	123A90-DDL-PR-PID-80041	Distribution Pot 1	BLPH	Upper Deck	25-FV-032	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
05	04	RM	RM	**AV-63002/25-XV-020**	123A90-DDL-PR-PID-80020	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-XV-020	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
06	04	RM	RM	**AV-63002/25-FV-036**	123A90-DDL-PR-PID-80020	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**11**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-FV-036	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
07	04	RM	RM	**AV-63002/25-XV-017**	123A90-DDL-PR-PID-80019	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**5**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-XV-017	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
08	04	RM	RM	**AV-63002/25-FV-038**	123A90-DDL-PR-PID-80019	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-FV-038	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
09	04	RM	RM	**AV-63002/25-XV-014**	123A90-DDL-PR-PID-80018	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-XV-014	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
10	04	RM	RM	**AV-63002/25-FV-034**	123A90-DDL-PR-PID-80018	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-FV-034	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
11	04	RM	RM	**AV-63003/25-BDV-010**	123A90-DDL-PR-PID-80017	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63003	123A90-DDL-PR-PID-80041	Distribution Pot 3	BLPH	Upper Deck	25-BDV-010	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
12	04	RM	RM	**AV-63003/25-PV-040**	123A90-DDL-PR-PID-80017	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63003	123A90-DDL-PR-PID-80041	Distribution Pot 3	BLPH	Upper Deck	25-PV-040	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
13	04	RM	RM	**AV-63003/25-XV-012**	123A90-DDL-PR-PID-80017	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Upper Deck	AV-63003	123A90-DDL-PR-PID-80041	Distribution Pot 3	BLPH	Upper Deck	25-XV-012	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
14	04	RM	RM	**AV-63003/25-XV-009**	123A90-DDL-PR-PID-80016	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**13**	N.A.	N.A.	BLPH	Upper Deck	AV-63003	123A90-DDL-PR-PID-80041	Distribution Pot 3	BLPH	Upper Deck	25-XV-009	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
15	04	RM	RM	**AV-63004/25-BDV-013**	123A90-DDL-PR-PID-80018	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63004	123A90-DDL-PR-PID-80041	Distribution Pot 4	BLPH	Upper Deck	25-BDV-013	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
16	04	RM	RM	**AV-63004/25-PV-043**	123A90-DDL-PR-PID-80018	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63004	123A90-DDL-PR-PID-80041	Distribution Pot 4	BLPH	Upper Deck	25-PV-043	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
17	04	RM	RM	**AV-63004/25-XV-015**	123A90-DDL-PR-PID-80018	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Upper Deck	AV-63004	123A90-DDL-PR-PID-80041	Distribution Pot 4	BLPH	Upper Deck	25-XV-015	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
18	04	RM	RM	**AV-63005/64-PV-031A**	123A90-DDL-PR-PID-80027	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**4**	N.A.	N.A.	BLPH	Lower Deck	AV-63005	123A90-DDL-PR-PID-80041	Distribution Pot 5	BLPH	Lower Deck	64-PV-031A	123A90-DDL-IN-DL-40080	Pneumatic Control Valve	Design Pressure set as per downstream PSV
19	04	RM	RM	**AV-63005/64-PV-031B**	123A90-DDL-PR-PID-80027	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**3**	N.A.	N.A.	BLPH	Lower Deck	AV-63005	123A90-DDL-PR-PID-80041	Distribution Pot 5	BLPH	Lower Deck	64-PV-031B	123A90-DDL-IN-DL-40080	Pneumatic Control Valve	Design Pressure set as per downstream PSV
20	04	RM	RM	**AV-63006/25-BDV-022**	123A90-DDL-PR-PID-80014	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Upper Deck	AV-63006	123A90-DDL-PR-PID-80041	Distribution Pot 6	BLPH	Upper Deck	25-BDV-022	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
21	04	RM	RM	**AV-63006/25-XV-021**	123A90-DDL-PR-PID-80020	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Upper Deck	AV-63006	123A90-DDL-PR-PID-80041	Distribution Pot 6	BLPH	Upper Deck	25-XV-021	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
22	04	RM	RM	**AV-63006/25-PV-049**	123A90-DDL-PR-PID-80020	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**9**	N.A.	N.A.	BLPH	Upper Deck	AV-63006	123A90-DDL-PR-PID-80041	Distribution Pot 6	BLPH	Upper Deck	25-PV-049	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
23	04	RM	RM	**AV-63006/25-BDV-019**	123A90-DDL-PR-PID-80020	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63006	123A90-DDL-PR-PID-80041	Distribution Pot 6	BLPH	Upper Deck	25-BDV-019	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
24	04	RM	RM	**AV-63006/80-XV-001**	123A90-DDL-PR-PID-80012	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63006	123A90-DDL-PR-PID-80041	Distribution Pot 6	BLPH	Upper Deck	80-XV-001	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
25	04	RM	RM	**AV-63007/25-XV-006**	123A90-DDL-PR-PID-80015	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**9**	N.A.	N.A.	BLPH	Upper Deck	AV-63007	123A90-DDL-PR-PID-80041	Distribution Pot 7	BLPH	Upper Deck	25-XV-006	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
26	04	RM	RM	**AV-63007/25-PV-035**	123A90-DDL-PR-PID-80015	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**11**	N.A.	N.A.	BLPH	Upper Deck	AV-63007	123A90-DDL-PR-PID-80041	Distribution Pot 7	BLPH	Upper Deck	25-PV-035	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
27	04	RM	RM	**AV-63007/25-BDV-005**	123A90-DDL-PR-PID-80015	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63007	123A90-DDL-PR-PID-80041	Distribution Pot 7	BLPH	Upper Deck	25-BDV-005	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
28	04	RM	RM	**AV-63007/25-PV-037**	123A90-DDL-PR-PID-80016	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63007	123A90-DDL-PR-PID-80041	Distribution Pot 7	BLPH	Upper Deck	25-PV-037	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
29	04	RM	RM	**AV-63007/25-BDV-007**	123A90-DDL-PR-PID-80016	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63007	123A90-DDL-PR-PID-80041	Distribution Pot 7	BLPH	Upper Deck	25-BDV-007	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
30	04	RM	RM	**AV-63008/50-XV-001**	123A90-DDL-PR-PID-80021	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Lower Deck	AV-63008	123A90-DDL-PR-PID-80041	Distribution Pot 8	BLPH	Lower Deck	50-XV-001	123A90-DDL-IN-DL-40080	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
31	04	RM	RM	**AV-63008/50-XV-002**	123A90-DDL-PR-PID-80021	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**5**	N.A.	N.A.	BLPH	Lower Deck	AV-63008	123A90-DDL-PR-PID-80041	Distribution Pot 8	BLPH	Lower Deck	50-XV-002	123A90-DDL-IN-DL-40080	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
32	04	RM	RM	**AV-63008/50-XV-003**	123A90-DDL-PR-PID-80021	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Lower Deck	AV-63008	123A90-DDL-PR-PID-80041	Distribution Pot 8	BLPH	Lower Deck	50-XV-003	123A90-DDL-IN-DL-40080	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
33	04	RM	RM	**AV-63008/50-XV-004**	123A90-DDL-PR-PID-80021	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Lower Deck	AV-63008	123A90-DDL-PR-PID-80041	Distribution Pot 8	BLPH	Lower Deck	50-XV-004	123A90-DDL-IN-DL-40080	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
33A	04	RM	RM	**AV-63009/50-XV-005**	123A90-DDL-PR-PID-80025	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**4**	N.A.	N.A.	BLPH	Lower Deck	AV-63009	123A90-DDL-PR-PID-80041	Distribution Pot 9	BLPH	Lower Deck	50-XV-005	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
34	04	RM	RM	**AV-63010/25-SDV-001**	123A90-DDL-PR-PID-80013	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63010	123A90-DDL-PR-PID-80041	Distribution Pot 10	BLPH	Upper Deck	25-SDV-001	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
35	04	RM	RM	**AV-63010/25-XV-024**	123A90-DDL-PR-PID-80013	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**9**	N.A.	N.A.	BLPH	Upper Deck	AV-63010	123A90-DDL-PR-PID-80041	Distribution Pot 10	BLPH	Upper Deck	25-XV-024	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
36	04	RM	RM	**AV-63010/25-XV-004**	123A90-DDL-PR-PID-80015	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**5**	N.A.	N.A.	BLPH	Upper Deck	AV-63010	123A90-DDL-PR-PID-80041	Distribution Pot 10	BLPH	Upper Deck	25-XV-004	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
37	04	RM	RM	**AV-63010/25-FV-031**	123A90-DDL-PR-PID-80015	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Upper Deck	AV-63010	123A90-DDL-PR-PID-80041	Distribution Pot 10	BLPH	Upper Deck	25-FV-031	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
38	04	RM	RM	**AV-63010/64-SDV-001**	123A90-DDL-PR-PID-80027	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**15**	N.A.	N.A.	BLPH	Upper Deck	AV-63010	123A90-DDL-PR-PID-80041	Distribution Pot 10	BLPH	Upper Deck	64-SDV-001	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
39	04	RM	RM	**AV-63011/25-SDV-023**	123A90-DDL-PR-PID-80014	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**4**	N.A.	N.A.	BLPH	Upper Deck	AV-63011	123A90-DDL-PR-PID-80041	Distribution Pot 11	BLPH	Upper Deck	25-SDV-023	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
40	04	RM	RM	**AV-63011/25-PV-055A**	123A90-DDL-PR-PID-80014	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Upper Deck	AV-63011	123A90-DDL-PR-PID-80041	Distribution Pot 11	BLPH	Upper Deck	25-PV-055A	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
41	04	RM	RM	**AV-63011/25-PV-055B**	123A90-DDL-PR-PID-80014	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Upper Deck	AV-63011	123A90-DDL-PR-PID-80041	Distribution Pot 11	BLPH	Upper Deck	25-PV-055B	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
42	04	RM	RM	**AV-63012/25-XV-018**	123A90-DDL-PR-PID-80019	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**5**	N.A.	N.A.	BLPH	Upper Deck	AV-63012	123A90-DDL-PR-PID-80041	Distribution Pot 12	BLPH	Upper Deck	25-XV-018	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
43	04	RM	RM	**AV-63012/25-PV-046**	123A90-DDL-PR-PID-80019	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63012	123A90-DDL-PR-PID-80041	Distribution Pot 12	BLPH	Upper Deck	25-PV-046	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
44	04	RM	RM	**AV-63012/25-BDV-016**	123A90-DDL-PR-PID-80019	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**9**	N.A.	N.A.	BLPH	Upper Deck	AV-63012	123A90-DDL-PR-PID-80041	Distribution Pot 12	BLPH	Upper Deck	25-BDV-016	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
~~45~~	03	DELETED	DELETED	~~**BLPH-MV-014/25-PT-001**~~	~~123A90-DDL-PR-PID-80013~~	~~Process Connection~~	~~Hydrogen~~	~~80~~	~~7,5 / 30~~	~~40~~	~~7,5 / 30~~	~~N_2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-014~~	~~123A90-DDL-PR-PID-80013~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~25-PT-001~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
~~46~~	03	DELETED	DELETED	~~**BLPH-MV-013/25-PT-002**~~	~~123A90-DDL-PR-PID-80013~~	~~Process Connection~~	~~Hydrogen~~	~~80~~	~~7,5 / 30~~	~~40~~	~~7,5 / 30~~	~~N_2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-013~~	~~123A90-DDL-PR-PID-80013~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~25-PT-002~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
~~47~~	03	DELETED	DELETED	~~**BLPH-MV-025/25-PT-055A**~~	~~123A90-DDL-PR-PID-80014~~	~~Process Connection~~	~~Hydrogen~~	~~100~~	~~17,7~~	~~19~~	~~17,7~~	~~N_2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-025~~	~~123A90-DDL-PR-PID-80014~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~25-PT-055A~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
~~48~~	03	DELETED	DELETED	~~**BLPH-MV-213/25-PT-055B**~~	~~123A90-DDL-PR-PID-80014~~	~~Process Connection~~	~~Hydrogen~~	~~100~~	~~3,5 / 6,5~~	~~10~~	~~3,5 / 6,5~~	~~N_2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-213~~	~~123A90-DDL-PR-PID-80014~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~25-PT-055B~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
~~49~~	03	DELETED	DELETED	~~**BLPH-MV-407/43-PT-001**~~	~~123A90-DDL-PR-PID-80029~~	~~Process Connection~~	~~Hydrogen~~	~~-10 / +80~~	~~ATM~~	~~3,5~~	~~ATM~~	~~N_2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-407~~	~~123A90-DDL-PR-PID-80029~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~43-PT-001~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
~~50~~	03	DELETED	DELETED	~~**BLPH-MV-411/50-PT-014**~~	~~123A90-DDL-PR-PID-80025~~	~~Process Connection~~	~~Waste Water~~	~~100~~	~~ATM~~	~~17,7~~	~~ATM~~	~~N_2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~YES~~	~~BLPH~~	~~Lower Deck~~	~~BLPH-MV-411~~	~~123A90-DDL-PR-PID-80025~~	~~Manual Valve~~	~~BLPH~~	~~Lower Deck~~	~~50-PT-014~~	~~123A90-DDL-IN-DL-40080~~	~~Pressure Transmitter~~	
~~51~~	03	DELETED	DELETED	~~**BLPH-MV-150/63-PT-003**~~	~~123A90-DDL-PR-PID-80027~~	~~Process Connection~~	~~Instrument Air~~	~~100~~	~~4 / 10~~	~~11~~	~~4 / 10~~	~~N_2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-150~~	~~123A90-DDL-PR-PID-80027~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~63-PT-003~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
~~52~~	03	DELETED	DELETED	~~**BLPH-MV-151/63-PT-004**~~	~~123A90-DDL-PR-PID-80027~~	~~Process Connection~~	~~Instrument Air~~	~~100~~	~~4 / 10~~	~~11~~	~~4 / 10~~	~~N_2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-151~~	~~123A90-DDL-PR-PID-80027~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~63-PT-004~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
53	04	RM	RM	**BLPH-MV-386/64-PT-031A**	123A90-DDL-PR-PID-80027	Process Connection	Nitrogen Gas	100	6	10	11	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40077	**0,5**	N.A.	N.A.	BLPH	Lower Deck	BLPH-MV-386	123A90-DDL-PR-PID-80027	Manual Valve	BLPH	Lower Deck	64-PT-031A	123A90-DDL-IN-DL-40080	Pressure Transmitter	
~~54~~	03	DELETED	DELETED	~~**BLPH-MV-166/64-PT-031B**~~	~~123A90-DDL-PR-PID-80027~~	~~Process Connection~~	~~Nitrogen Gas~~	~~100~~	~~6~~	~~10~~	~~6~~	~~N_2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Lower Deck~~	~~BLPH-MV-166~~	~~123A90-DDL-PR-PID-80027~~	~~Manual Valve~~	~~BLPH~~	~~Lower Deck~~	~~64-PT-031B~~	~~123A90-DDL-IN-DL-40080~~	~~Pressure Transmitter~~	
~~55~~	03	DELETED	DELETED	~~**BLPH-MV-167/64-PT-002**~~	~~123A90-DDL-PR-PID-80027~~	~~Process Connection~~	~~Nitrogen Gas~~	~~100~~	~~6~~	~~10~~	~~6~~	~~N_2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Lower Deck~~	~~BLPH-MV-167~~	~~123A90-DDL-PR-PID-80027~~	~~Manual Valve~~	~~BLPH~~	~~Lower Deck~~	~~64-PT-002~~	~~123A90-DDL-IN-DL-40080~~	~~Pressure Transmitter~~	
~~56~~	03	DELETED	DELETED	~~**BLPH-MV-038/80-PT-002**~~	~~123A90-DDL-PR-PID-80012~~	~~Process Connection~~	~~Hydrogen~~	~~100~~	~~3,5 / 6~~	~~10~~	~~3,5 / 6~~	~~N_2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-038~~	~~123A90-DDL-PR-PID-80012~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~80-PT-002~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
57	04	RM	RM	**BLPH-MV-404/43-LT-001**	123A90-DDL-PR-PID-80029	Process Connection	Water	-10 / +80	ATM	3,5	3,85	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40077	**4**	N.A.	YES	BLPH	Upper Deck	BLPH-MV-404	123A90-DDL-PR-PID-80029	Manual Valve	BLPH	Upper Deck	43-LT-001	123A90-DDL-IN-DL-40081	Level DP Transmitter	
58	04	RM	RM	**BLPH-MV-405/43-LT-001**	123A90-DDL-PR-PID-80029	Process Connection	Water	-10 / +80	ATM	3,5	3,85	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40077	**4**	N.A.	YES	BLPH	Upper Deck	BLPH-MV-405	123A90-DDL-PR-PID-80029	Manual Valve	BLPH	Upper Deck	43-LT-001	123A90-DDL-IN-DL-40081	Level DP Transmitter	
59	04	RM	RM	**BLPH-MV-462/43-LT-003**	123A90-DDL-PR-PID-80029	Process Connection	Water	-10 / +80	ATM	3,5	3,85	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40077	**4**	N.A.	YES	BLPH	Upper Deck	BLPH-MV-462	123A90-DDL-PR-PID-80029	Manual Valve	BLPH	Upper Deck	43-LT-003	123A90-DDL-IN-DL-40081	Level DP Transmitter	
60	04	RM	RM	**BLPH-MV-463/43-LT-003**	123A90-DDL-PR-PID-80029	Process Connection	Water	-10 / +80	ATM	3,5	3,85	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40077	**4**	N.A.	YES	BLPH	Upper Deck	BLPH-MV-463	123A90-DDL-PR-PID-80029	Manual Valve	BLPH	Upper Deck	43-LT-003	123A90-DDL-IN-DL-40081	Level DP Transmitter	

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DRAWING NO. 123A90-DDL-IN-DL-40084

REV. 01





50-XV-001
+23.628mm
+0.318mm T.O.S

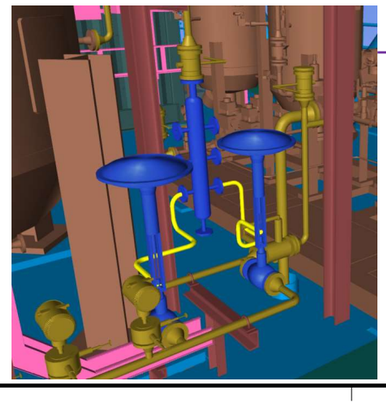
50-XV-002
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+0.318mm T.O.S

AV-63008
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+0.878mm T.O.S

64-PV-031A
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+0.072mm T.O.S

64-PV-031B
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+0.072mm T.O.S

AV-63005
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+0.875mm T.O.S

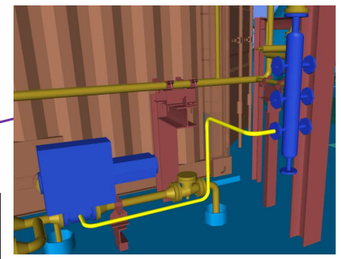


50-XV-005
+23.628mm
+0.318mm T.O.S.

50-XV-004
+23.628mm
+0.318mm T.O.S

AV-63009
+24.235mm
+0.925mm T.O.S

50-XV-003
+23.628mm
+0.318mm T.O.S



AV-63005

64-PV-031A | SPARE
64-PV-031B | SPARE
SPARE | SPARE

AV-63008

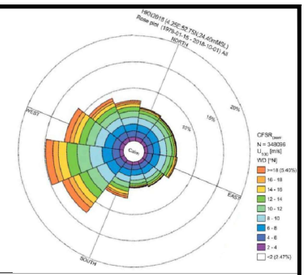
50-XV-001 | 50-XV-004
50-XV-002 | SPARE
50-XV-003 | SPARE

AV-63009

50-XV-005 | SPARE
SPARE | SPARE
SPARE | SPARE

LOWER DECK
SCALE: 1:1

VIEW EL. 23310mm to 29310mm



NOTES

1) TUBING ROUTING > 2m IS SHOWN AND IT IS INDICATIVE ONLY.
TUBING ROUTING SHALL BE FINALIZED DURING CONSTRUCTION ACTIVITIES.

LEGEND

- AIR DISTRIBUTION POT
- CONTROL VALVE
- ON-OFF VALVE
- TUBING

HOLDS

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-IN-DL-40084

REV.:	DATE:	SIGNATURE:
1_D	12/12/24	C.Pilato

ROSETTI MARINO SpA

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	23/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	23/02/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

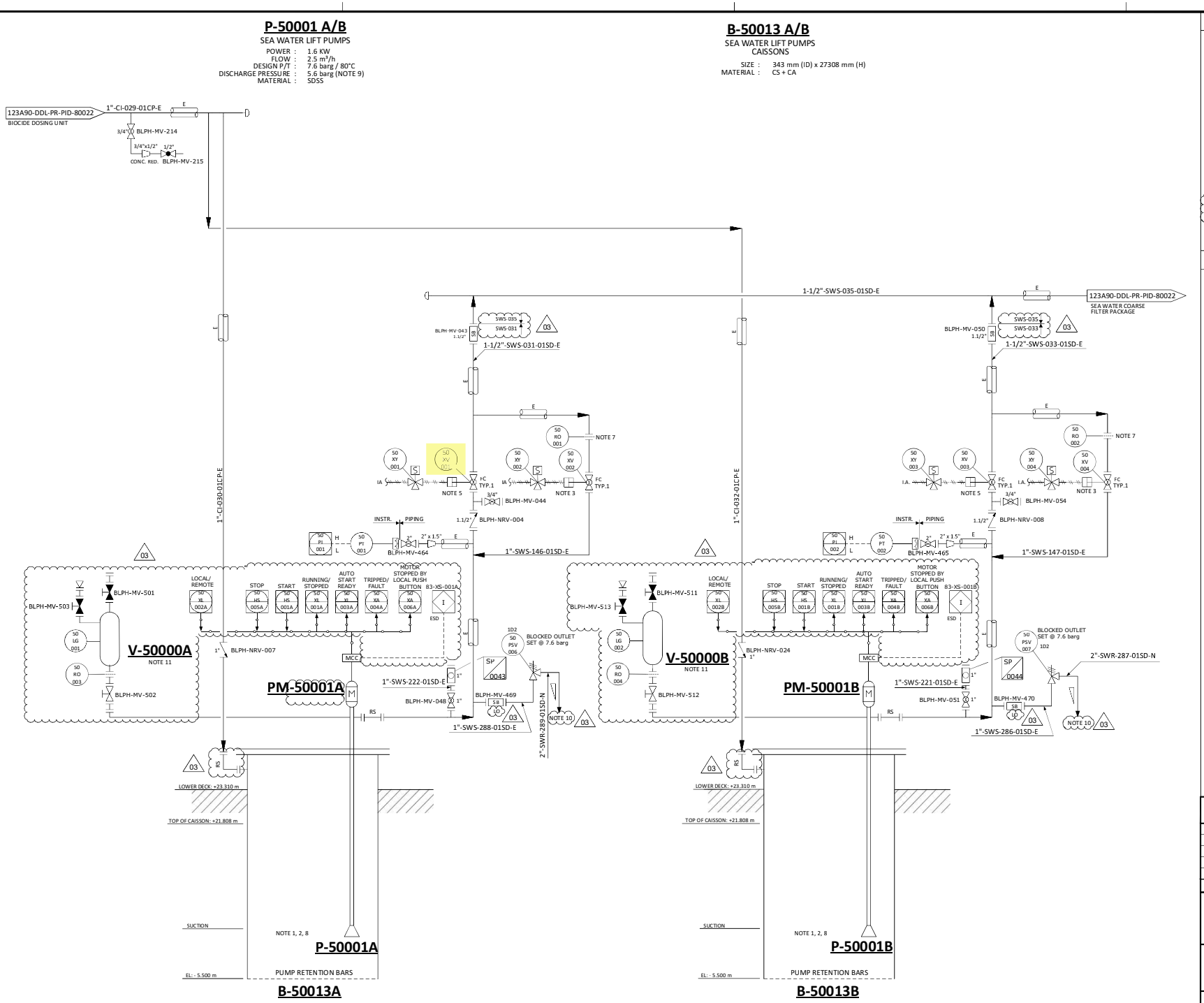
CROSSWIND | ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT TUBING LAYOUT
ELEVATION 23.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE 1:100
DRAWN DRAWN_BY | CHECKED CHECKED_BY | APPROVED APPROVED_BY | DATE DD/MM/YY

A1 | DRAWING NO. 123A90-DDL-IN-DL-40084 | SHEET 001 | REV. 01

File Name : 12390-DDL-IN-DL-40084_Rev.01



NOTES

1. SEAWATER LIFT PUMPS ARE RATED 2 X 100%
2. AUTO START OF DESIGNATED STANDBY PUMP ON LOSS OF RUNNING STATUS AND DISCHARGE LOW PRESSURE ALARM OF DUTY PUMP.
3. VALVE TO BE OPENED WHEN PUMP IS OFFLINE TO DOSE CAISSON WITH TREATED SEAWATER TO PREVENT BIOLOGICAL GROWTH.
4. DELETED.
5. SOFTWARE INTERLOCK PREVENTS PUMPS FROM STARTING IN CASE THE RELEVANT XV VALVE IS FULLY CLOSED. 03
6. DELETED.
7. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "123A90-DDL-IN-DS-40054 - TECHNICAL DATASHEET FOR RESTRICTION ORIFICE".
8. LOGIC FOR CONTROL OF P-5001A/B THAT PREVENTS SIMULTANEOUS RUNNING OF A AND B PUMP IS PROVIDED.
9. DISCHARGE PRESSURE REFERS TO THE FLANGE DISCHARGE OF THE PUMP AT LOWER DECK.
10. ROUTED TO THE SEA.
11. VESSELS V-50000A/B ARE INSULATED AND HEAT TRACED. 03

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.
5. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
SEA-WATER INTAKE SYSTEM SHEET 1

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE	
A1	DRAWING NO. 123A90-DDL-PR-PID-80021		SHEET 001	REV. 03

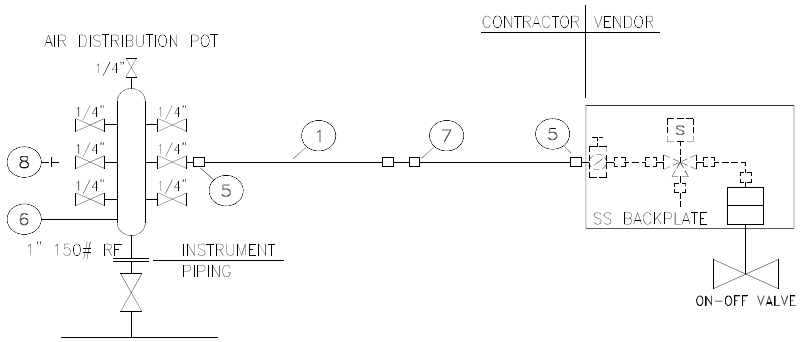
DRAWING NO. DRAWING_NO.
REV. REV.
File Name : FILE_NAME

PNEUMATIC HOOK-UP FOR ON-OFF VALVES

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-HD-40078**

REV.:	DATE:	SIGNATURE:
1_B	06/11/24	G.Randi

ROSETTI MARINO SpA

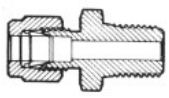
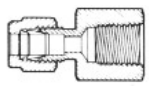
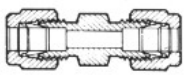


	INSTRUMENT TAG
1	25-BDV-022
2	25-BDV-005
3	25-BDV-007
4	25-BDV-010
5	25-BDV-013
6	25-BDV-016
7	25-BDV-019
8	25-SDV-001
9	25-SDV-023
10	25-XV-004
11	25-XV-006
12	25-XV-008
13	25-XV-009
14	25-XV-011
15	25-XV-012
16	25-XV-014
17	25-XV-015
18	25-XV-017
19	25-XV-018
20	25-XV-020
21	25-XV-021
22	25-XV-024
23	50-XV-001
24	50-XV-002
25	50-XV-003
26	50-XV-004
27	80-XV-001
28	64-SDV-001
29	50-XV-005
30	

NOTE:
(1) For Air Distribution Pot quantities see material take-off on sh. 4

POS.	NORM/STD CODE	DESCRIPTION	SIZE/CONNECTION TYPE	Q.TY
8		SS316 PLUG	1/4" NPT	Note 1
7		SS316 UNION	1/2" O.D. x 1/2" O.D.	N. 1
6		SS316 AIR DISTRIBUTION POT	1" 150#RF - N. 7 1/4" BALL VALVES	Note 1
5		SS316 MALE CONNECTOR	1/4" NPT x 1/2" O.D.	N. 2
1		SS 316L TUBING	1/2" x 0,049"Thk	10 m

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POS	PICTURE	DESCRIPTION		ITEM ID CODE	TOTAL					
		COMPRESSION FITTING TYPE: **DOUBLE FERRULE** THREADING: ASME B1.20.1 NPT MATERIAL: AISI 316 WORKING PRESSURE AS PER ASME B31.1 TUBING TYPE: ■ INCHES ☐ METRIC			UNIT	Counted	Required			
							Rev. 00	Rev. 01	Rev.	Rev.
1		STRAIGHT MALE CONNECTOR	1/2" NPT-M x 3/8" O.D.		nr.					
2			1/4" NPT-M x 1/2" O.D.		nr.	102	102	102		
3			1/2" NPT-M x 1/2" O.D.		nr.	36	36	-		
4			1/2" NPT-M x 3/4" O.D.		nr.					
5			3/4" NPT-M x 3/4" O.D.		nr.					
6			3/8" NPT-M x 3/8" O.D.		nr.					
7		STRAIGHT FEMALE CONNECTOR	1/2" NPT-F x 3/8" O.D.		nr.					
8			1/4" NPT-F x 1/2" O.D.		nr.					
9			1/2" NPT-F x 1/2" O.D.		nr.					
10			1/2" NPT-F x 3/4" O.D.		nr.					
11		UNION CONNECTOR	1/4" O.D. x 1/4" O.D.		nr.					
12			3/8" O.D. x 3/8" O.D.		nr.					
13			1/2" O.D. x 1/2" O.D.		nr.	49	49	49		
14			3/4" O.D. x 3/4" O.D.		nr.					
15		ELBOW CONNECTOR	1/4" NPT-M x 1/2" O.D.		nr.	27	27	27		
16			1/2" NPT-M x 1/2" O.D.		nr.					
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
27										
28										
29										
30										
31										
32										
33										
34										

VENDOR / ORDER : **AF SYSTEM / 1724001332**

MATERIAL :

- ☐ ASTM A106 Gr.B
- ■ AISI 316 L
- ☐ UNS S31254

SPECIAL REQUIREMENTS :

- ☐ ...

REMARKS :

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CROSSWIND	HOLLANDSE KUST NOORD WIND PARK Project Contract No. CW-I-WP4-2023-05	ROSETTI MARINO
Document Title:	TDS - Tubing and Fittings	Sh. 6 of 6 Date: 06/09/2024 Rev. 01

POS	SIZE	RATING	DESCRIPTION	ITEM ID CODE	UNIT	TOTAL				
						Counted	Required			
							Rev. 00	Rev. 01	Rev.	Rev.
1	1/2"		SS316 NIPPLE 1/2" NPT - L=100mm			40	40	2		
2	1/4"		SS316 PLUG 1/4" NPT			27	27	27		
3	1"		SS316L AIR DISTRIBUTION POT 1" 150#RF - N. 7 1/4" BALL VALVES			14	14	13		
4	1/2"	0,049"	SEAMLESS TUBING AISI 316L		m	558	558	276		
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										

VENDOR / ORDER : AF SYSTEM / 1724001332

MATERIAL :

- ☐ ASTM A106 Gr.B
- ■ AISI 316 L
- ☐ UNS S31254

SPECIAL REQUIREMENTS :

- ☐ ...

REMARKS :

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www.wika.it

Centro di Taratura LAT N°114
Calibration Centre
Laboratorio Accreditato di Taratura
Accredited Calibration Laboratory

LAT N° 114

CERTIFICATO DI TARATURA LAT 114 0435-SM-24
Certificate of Calibration

- data di emissione date of issue	2024-09-20
- cliente customer	FAST AUTOMATION SRL VIA DELLA PREVIDENZA SOCIALE, 8 IT-42124 REGGIO EMILIA (RE)
- destinatario receiver	ROSETTI MARINO SPA - YARD PIOMBONI VIA DEL MARCHESATO, 37 IT-48122 MARINA DI RAVENNA (RA)

Si riferisce a
referring to

- oggetto *item*	Misuratore di pressione elettronico Electrical pressure gauge
- costruttore *manufacturer*	WIKA
- modello *model*	CPG1500
- matricola *serial number*	1A014ILJJIM
- data di ricev. oggetto *date of receipt of item*	2024-09-17
- data delle misure *date of measurements*	2024-09-20
- registro di laboratorio *laboratory reference*	0435-SM-24

Il presente certificato di taratura è emesso in base all'accreditamento LAT N. 114 rilasciato in accordo ai decreti attuativi della legge n. 273/1991 che ha istituito il Sistema Nazionale di Taratura (SNT). ACCREDIA attesta le capacità di misura e di taratura, le competenze metrologiche del Centro e la riferibilità delle tarature eseguite ai campioni nazionali ed internazionali delle unità del Sistema Internazionale delle Unità (SI).
Questo certificato non può essere riprodotto in modo parziale, salvo espressa autorizzazione scritta da parte del Centro.

This certificate of calibration is issued in compliance with the accreditation LAT No.114 granted according to decrees connected with Italian law No. 273/1991 which has established the National Calibration System. ACCREDIA attests the calibration and measurement capability, metrological competence of the Centre and the traceability of calibration results to the national and International standards of the International System of Units (SI).
This certificate may not be partially reproduced, except with the prior written permission of the issuing Centre.

I risultati di misura riportati nel presente Certificato sono stati ottenuti applicando le procedure di taratura citate alla pagina seguente, dove sono specificati anche i campioni o gli strumenti che garantiscono la catena di riferibilità del Centro e i rispettivi certificati di taratura in corso di validità. Essi si riferiscono esclusivamente all'oggetto in taratura e sono validi nel momento e nelle condizioni di taratura, salvo diversamente specificato.

The measurement results reported in this Certificate were obtained following the calibration procedures given in the following page, where the reference standards or instruments are indicated which guarantee the traceability chain of the laboratory, and the related calibration certificates in the course of validity are indicated as well. They relate only to the calibrated item and they are valid for the time and conditions of calibration, unless otherwise specified.

Le incertezze di misura dichiarate in questo documento sono state determinate conformemente alla Guida ISO/IEC 98 e al documento EA-4/02. Solitamente sono espresse come incertezza estesa ottenuta moltiplicando l'incertezza tipo per il fattore di copertura *k* corrispondente ad un livello di fiducia di circa il 95 %. Normalmente tale fattore *k* vale 2.

The measurement uncertainties stated in this document have been determined according to the ISO/IEC Guide 98 and to EA-4/02. Usually, they have been estimated as expanded uncertainty obtained multiplying the standard uncertainty by the coverage factor k corresponding to a confidence level of about 95%. Normally, this factor k is 2.

Direzione Tecnica
(Approving Officer)

Enrico Reccagni

Enrico Reccagni

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LAT N° 114

CARATTERISTICHE DELLO STRUMENTO IN TARATURA/ Properties of devices under calibration

Misuratore di pressione elettronico ***Electrical pressure gauge***	
Tipo *Model*	Misuratore di pressione elettronico Electrical pressure gauge
Numero di matricola *Serial No.*	1A014ILJJIM
Campo di misura *Scale range*	(0 ... 1000) bar g
Accuratezza dichiarata dal costruttore *Accuracy declared by the manufacturer*	0,1 % FS
Risoluzione *Resolution (scale division)*	0,1 bar
Tag. N. *Tag No.*	--

Procedura di taratura e catena di riferibilità
Calibration procedure and traceability chain

La taratura è stata effettuata in accordo alla linea guida DKD-R 6-1 "Taratura di strumenti di pressione" (versione 03/2014) procedura B, per confronto fra i valori dello strumento in taratura con quelli di riferimento dati dal campione di lavoro.

Calibration was carried out according to DKD-R 6-1 "Kalibrierung von Druckmessgeräten" (Ausgabe 03/2014) procedure B, by comparing the measured values of the calibration item with those of the reference or working standard.

I risultati riportati sono stati ottenuti applicando le procedure n° LMO-PT-01 rev.2

The results have been obtained using the procedures n° LMO-PT-01 rev.2

La catena di riferibilità ha inizio dai campioni di riferimento n° PM1-09

The traceability chain starts from the reference standards n° PM1-09

muniti di certificati validi di taratura, rispettivamente n° D21090

with the relevant valid calibration certificates n° D21090

Luogo di taratura
Place of calibration

Laboratorio WIKA ITALIA - Laboratorio di Modugno (BA)
WIKA ITALY Laboratory - Modugno (BA)

Campione di lavoro
Working Standard

Norma di riferimento (RS) Bilancia di pressione ***Reference standard (RS) Dead-weight tester***	
Tipo *Model*	PM1-09
Certificato di taratura *Calibration mark*	D-K-15105/D21090
Campo di misura *Scale range*	(10 ... 2500) bar g
Accuratezza *Accuracy*	0,015 % della lettura + 255 Pa

Operatore
Technichian

Francesco Donatelli

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Condizioni di misura
Measurement conditions

Schema di collegamento *Assembly*	
Fluido utilizzato *Pressure medium*	Sebacate *Sebacate*
Livello di riferimento *Refence height (for reference value)*	Superficie di tenuta DUT *Sealing face DUT*
Posizione di montaggio *Position during calibration*	verticale *vertical*

Note di taratura
Calibration Note

Lo strumento è stato tarato e riconsegnato nelle stesse condizioni in cui è arrivato nel laboratorio, in accordo con il metodo "as found as left" / The device under test (DUT) was calibrated in the same conditions it was arrived in laboratory, according to the method "as found as left".

Condizioni Ambientali
Environmental conditions

Temperatura *Temperature*	(22 ± 1,5)	°C
Pressione atmoferica *Atmospheric pressure*	(1009,3 ± 0,2)	hPa
Umidità relativa *Rel. Humidity*	(50 ± 15)	% UR

I dati meteo sono stati acquisiti tramite stazione meteo WIKA CPU6000-W s/n.1A00VCX6GJ2

Weather data were acquired via the WIKA CPU6000-W weather station s/n.1A00VCX6GJ2

Misure rilevate
Measurement results

Valore di riferimento *Reference value RS* bar	**Letture** *Reading DUT* bar		
	M1	**M2**	**M3**
0,00	0,0	0,0	0,0
99,91	99,9	99,9	99,9
199,82	199,9	199,9	199,9
299,73	299,8	299,8	299,8
399,63	399,7	399,7	399,7
499,53	499,5	499,6	499,6
599,44	599,4	599,4	599,4
699,34	699,3	699,3	699,3
799,25	799,1	799,2	799,1
899,14	899,0	899,1	899,0
999,04	999,0	999,0	999,0

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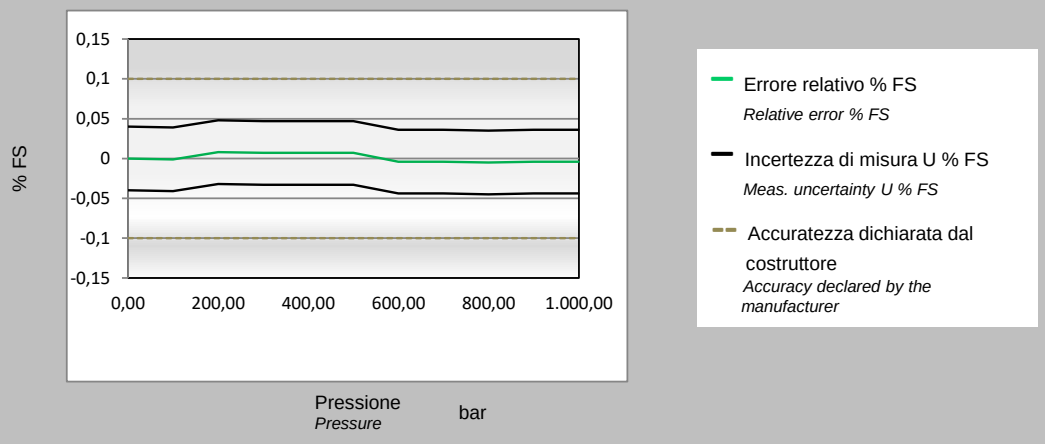
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Incertezza di misura
Uncertainty of measurement

Valori di riferimento *Reference value RS* bar	Media delle misure *Mean value* bar	Errore *Error* bar	Ripetibilità *Repeatability* bar	Isteresi *Hysteresis* bar	Incertezza di misura *Meas. Uncertainty* bar
0,00	0,0	0,0	0,0	0,0	0,40
99,91	99,9	0,0	0,0	0,0	0,40
199,82	199,9	0,1	0,0	0,0	0,40
299,73	299,8	0,1	0,0	0,0	0,40
399,63	399,7	0,1	0,0	0,0	0,40
499,53	499,6	0,1	0,1	0,1	0,40
599,44	599,4	0,0	0,0	0,0	0,40
699,34	699,3	0,0	0,0	0,0	0,40
799,25	799,2	0,0	0,0	0,1	0,40
899,14	899,1	0,0	0,0	0,1	0,40
999,04	999,0	0,0	0,0	0,0	0,40

Grafico degli errori di misura
Graphical representation of measurement uncertainty



L'incertezza estesa senza correzione del DUT è pari a 0,5 bar
The expanded uncertainty of the DUT without correction is equal to

Questo dato è ottenuto come MAX{Incertezza_di_misura$_i$ + |Errore$_i$|} della tabella precedente
This data is obatined as MAX{Meas._uncertainty$_i$ + |Error$_i$|} of the previous table

Il presente certificato non rappresenta una dichiarazione di conformità a specifica
This certificate is not a statement of compliance

ITEM	Tag	AV-63008/50-XV-002	: Pneumatic Connection Air Supply - 50-XV-002			Dwg	123A90-DDL-IN-LIS-40092
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10001970		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Instrumental	Form	CJX06 Tubing Hydraulic

General

1	Drawings (P&ID tube) attached.	OK
2	Isometric drawings (P&ID pipe) attached.	NA
3	Check drawings at last revision.	OK
4	Material certificates for pipe/tube/fittings/flanges/hose and support clamps checked	OK
5	Welders certificates checked	NA
6	Certificate and mark-up drawings for welding WPS and WPQR and material certificates checked	NA
7	Certificates and mark-up drawings for NDT report checked	NA

Check before Flushing and/or Testing

8	Installation complete and in compliance with drawings and specifications.	OK
9	Tubing/Piping tray checked.	NA
10	Hose according to specifications and tightened	NA
11	Flanges - nuts and bolts tightened.	NA
12	Fittings are mounted and tightened.	OK
13	Pipe supports completed and installed as required.	OK
14	Cable ladders, trays, sharp edges protected, cut ends sealed.	NA
15	Maintenance evaluation.	OK

REFER TO FINAL SHEET FOR ACCEPTANCE

ROSETTI MARINO PROVERLIS CROSSWIND

ITEM	Tag	AV-63008/50-XV-002	: Pneumatic Connection Air Supply - 50-XV-002			Dwg	123A90-DDL-IN-LIS-40092
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10001970	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Instrumental	Form	CJX06 Tubing Hydraulic

Flushing / Pressure testing

16	Drawings of flushing loops (P&ID tube) attached	NA
17	Equipment & valves bypassed and blinded	OK
18	Calibration certificates attached	OK
19	Type of flushing medium correct	NA
20	Printout from recorder/particle counter	NA
21	Printout from pressure indicator	OK

Final Check

22	Final inspection of pipework.	OK
23	Preservation of tested pipework.	NA
24	System/equipment labelled with: "Hot Oil flushing performed".	NA
25	If required produce Red Line Mark Up for "AS BUILT"	

TEST SPECIFIED USED

TEST FLUID: IA TEST PRESSURE BAR G: 5.5 TEST DURATION : 11 MIN

TEST EQUIPMENT: CPG 1500 SERIAL N°: 1A014ILJJIM

HOOK UP DIAGRAM Number: 123A90-DDL-IN-HD-40078

Line FROM	Line TO	Tubing cleaned			Tubing flushed			Diam ID/OD
		Yes	No	N/A	Yes	No	N/A	
AV-63008	50-XV-002	●					●	1/2" OD x Thk. 0,049"

TESTED LABEL AFFIXED DATA SHEET ATTACHED

Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Paolo Schintu	
Date	2025-02-04	2025-02-06	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-04T13:14:29.589Z	PROVERLIS Digitaly signed by Paolo Schintu 2025-02-06T11:23:11.843Z	

Logger protocol

Protocollo di acquisizione elenco dati

ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	AV-63008/50-XV-002

Instrument

Strumento

Electrical pressure gauge *Misuratore di pressione elettronico*	
Model *Modello*	CPG1500
Serial number *Numero di serie*	1A014ILJJIM
Log temperature *Registrazioni di Temperatura*	Active *Attivo*
Scale range *Campo scala*	(0 ... 1000) bar a
Accuracy *Accuratezza*	0.1 % FS
Tag number *Numero tag*	
Communication *Comunicazione*	Wireless (00:13:43:85:DD:8D)

Measurement conditions

Condizioni di misura

Settings *Impostazioni*	
Mode *Modalità*	Automatic *Automatico*
Interval (ms) *Intervallo (ms)*	15000
Duration (hh:mm:ss) *Durata (hh:mm:ss)*	00:11:26
Start time (hh:mm:ss) *Tempo di avvio (hh:mm:ss)*	02:43:11 pm

Logger protocol

Protocollo di acquisizione elenco dati

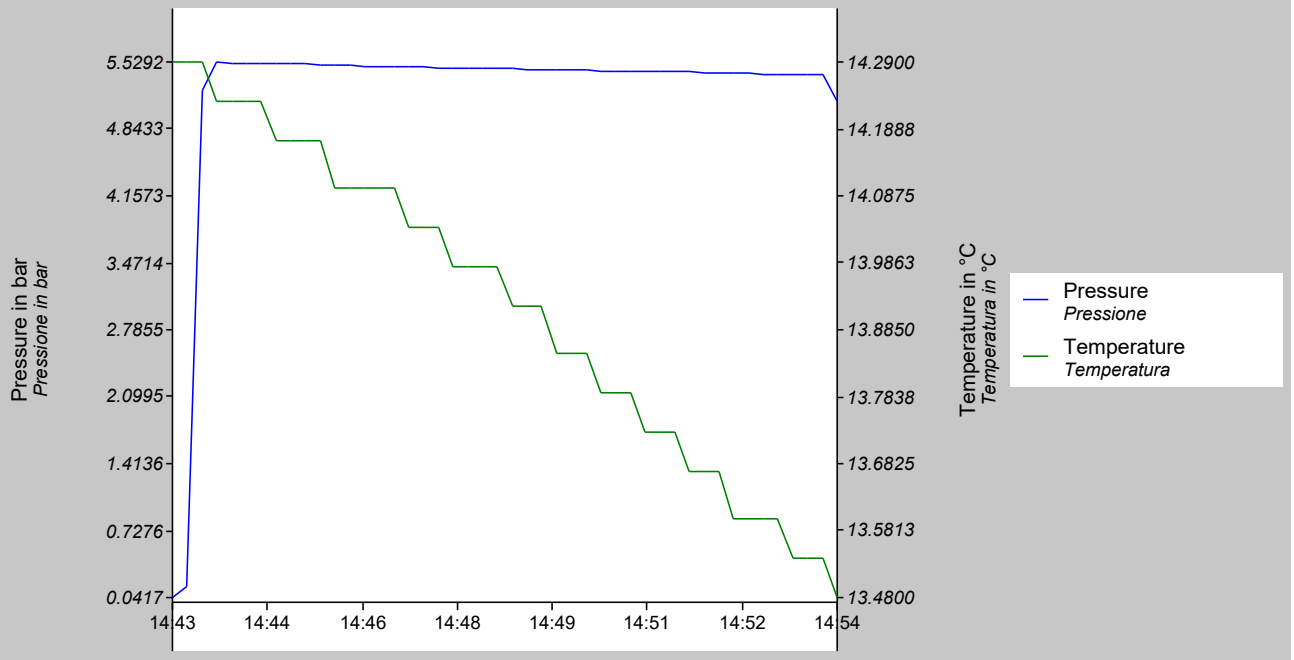
ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	AV-63008/50-XV-002

Measurement results

Risultati della misura

Graphical representation of progression
Rappresentazione grafica dell'andamento



Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
02/01/2025 14:43:11.000	0.0417	14.2900
02/01/2025 14:43:26.000	0.1617	14.2900
02/01/2025 14:43:41.000	5.2393	14.2900
02/01/2025 14:43:56.000	5.5292	14.2300
02/01/2025 14:44:11.000	5.5158	14.2300
02/01/2025 14:44:26.000	5.5152	14.2300
02/01/2025 14:44:41.000	5.5128	14.2300
02/01/2025 14:44:56.000	5.5121	14.1700
02/01/2025 14:45:11.000	5.5100	14.1700
02/01/2025 14:45:26.000	5.5060	14.1700
02/01/2025 14:45:41.000	5.5025	14.1700
02/01/2025 14:45:56.000	5.5047	14.1000
02/01/2025 14:46:11.000	5.4959	14.1000
02/01/2025 14:46:26.000	5.4860	14.1000
02/01/2025 14:46:41.000	5.4885	14.1000
02/01/2025 14:46:56.000	5.4806	14.1000
02/01/2025 14:47:11.000	5.4785	14.0400

Logger protocol

Protocollo di acquisizione elenco dati

ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	AV-63008/50-XV-002

Measurement results

Risultati della misura

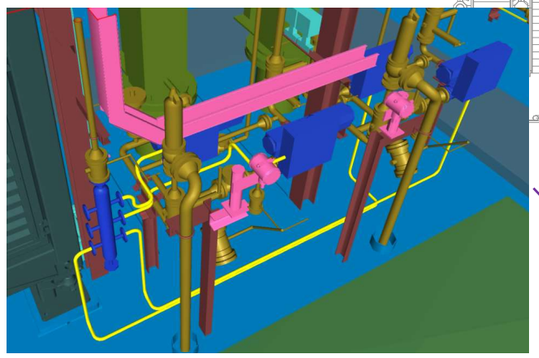
Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
02/01/2025 14:47:26.000	5.4750	14.0400
02/01/2025 14:47:41.000	5.4672	14.0400
02/01/2025 14:47:56.000	5.4710	13.9800
02/01/2025 14:48:11.000	5.4613	13.9800
02/01/2025 14:48:26.000	5.4642	13.9800
02/01/2025 14:48:41.000	5.4566	13.9800
02/01/2025 14:48:56.000	5.4579	13.9200
02/01/2025 14:49:11.000	5.4546	13.9200
02/01/2025 14:49:26.000	5.4452	13.9200
02/01/2025 14:49:41.000	5.4448	13.8500
02/01/2025 14:49:56.000	5.4428	13.8500
02/01/2025 14:50:11.000	5.4417	13.8500
02/01/2025 14:50:26.000	5.4401	13.7900
02/01/2025 14:50:41.000	5.4339	13.7900
02/01/2025 14:50:56.000	5.4281	13.7900
02/01/2025 14:51:11.000	5.4322	13.7300
02/01/2025 14:51:26.000	5.4254	13.7300
02/01/2025 14:51:41.000	5.4268	13.7300
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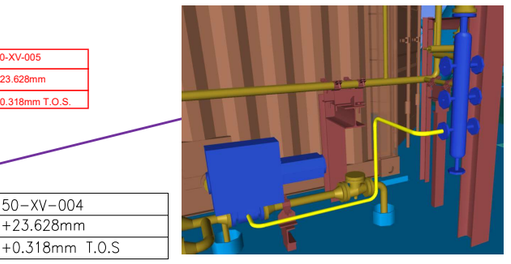
DATA TUBING																			FROM AREA					TO AREA					
POS.	REV	SUPPLY SCOPE	LAINING SCOPE	TAG Tubing	P&ID	MAIN FUNCTION	SERVICE	DESIGN TEMPERATURE(C°)	OPERATING PRESSURE (Barg)	DESIGN PRESSURE (Barg)	TEST PRESSURE (Barg)	FLUID TEST	DIMENSIONS	MATERIAL	REF. DOC.	Q.TY (m)	FIRE PROOFING	HEAT TRACING	MODULE	AREA	FROM ITEM	REF. P&I	DESCRIPTION	MODULE	AREA	TO ITEM	REF. LAYOUT	DESCRIPTION	NOTE
01	04	RM	RM	**AV-63001/25-XV-011**	123A90-DDL-PR-PID-80017	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63001	123A90-DDL-PR-PID-80041	Distribution Pot 1	BLPH	Upper Deck	25-XV-011	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
02	04	RM	RM	**AV-63001/25-FV-033**	123A90-DDL-PR-PID-80017	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**9**	N.A.	N.A.	BLPH	Upper Deck	AV-63001	123A90-DDL-PR-PID-80041	Distribution Pot 1	BLPH	Upper Deck	25-FV-033	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
03	04	RM	RM	**AV-63001/25-XV-008**	123A90-DDL-PR-PID-80016	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Upper Deck	AV-63001	123A90-DDL-PR-PID-80041	Distribution Pot 1	BLPH	Upper Deck	25-XV-008	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
04	04	RM	RM	**AV-63001/25-FV-032**	123A90-DDL-PR-PID-80016	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Upper Deck	AV-63001	123A90-DDL-PR-PID-80041	Distribution Pot 1	BLPH	Upper Deck	25-FV-032	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
05	04	RM	RM	**AV-63002/25-XV-020**	123A90-DDL-PR-PID-80020	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-XV-020	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
06	04	RM	RM	**AV-63002/25-FV-036**	123A90-DDL-PR-PID-80020	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**11**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-FV-036	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
07	04	RM	RM	**AV-63002/25-XV-017**	123A90-DDL-PR-PID-80019	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**5**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-XV-017	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
08	04	RM	RM	**AV-63002/25-FV-038**	123A90-DDL-PR-PID-80019	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-FV-038	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
09	04	RM	RM	**AV-63002/25-XV-014**	123A90-DDL-PR-PID-80018	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-XV-014	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
10	04	RM	RM	**AV-63002/25-FV-034**	123A90-DDL-PR-PID-80018	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-FV-034	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
11	04	RM	RM	**AV-63003/25-BDV-010**	123A90-DDL-PR-PID-80017	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63003	123A90-DDL-PR-PID-80041	Distribution Pot 3	BLPH	Upper Deck	25-BDV-010	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
12	04	RM	RM	**AV-63003/25-PV-040**	123A90-DDL-PR-PID-80017	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63003	123A90-DDL-PR-PID-80041	Distribution Pot 3	BLPH	Upper Deck	25-PV-040	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
13	04	RM	RM	**AV-63003/25-XV-012**	123A90-DDL-PR-PID-80017	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Upper Deck	AV-63003	123A90-DDL-PR-PID-80041	Distribution Pot 3	BLPH	Upper Deck	25-XV-012	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
14	04	RM	RM	**AV-63003/25-XV-009**	123A90-DDL-PR-PID-80016	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**13**	N.A.	N.A.	BLPH	Upper Deck	AV-63003	123A90-DDL-PR-PID-80041	Distribution Pot 3	BLPH	Upper Deck	25-XV-009	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
15	04	RM	RM	**AV-63004/25-BDV-013**	123A90-DDL-PR-PID-80018	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63004	123A90-DDL-PR-PID-80041	Distribution Pot 4	BLPH	Upper Deck	25-BDV-013	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
16	04	RM	RM	**AV-63004/25-PV-043**	123A90-DDL-PR-PID-80018	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63004	123A90-DDL-PR-PID-80041	Distribution Pot 4	BLPH	Upper Deck	25-PV-043	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
17	04	RM	RM	**AV-63004/25-XV-015**	123A90-DDL-PR-PID-80018	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Upper Deck	AV-63004	123A90-DDL-PR-PID-80041	Distribution Pot 4	BLPH	Upper Deck	25-XV-015	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
18	04	RM	RM	**AV-63005/64-PV-031A**	123A90-DDL-PR-PID-80027	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**4**	N.A.	N.A.	BLPH	Lower Deck	AV-63005	123A90-DDL-PR-PID-80041	Distribution Pot 5	BLPH	Lower Deck	64-PV-031A	123A90-DDL-IN-DL-40080	Pneumatic Control Valve	Design Pressure set as per downstream PSV
19	04	RM	RM	**AV-63005/64-PV-031B**	123A90-DDL-PR-PID-80027	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**3**	N.A.	N.A.	BLPH	Lower Deck	AV-63005	123A90-DDL-PR-PID-80041	Distribution Pot 5	BLPH	Lower Deck	64-PV-031B	123A90-DDL-IN-DL-40080	Pneumatic Control Valve	Design Pressure set as per downstream PSV
20	04	RM	RM	**AV-63006/25-BDV-022**	123A90-DDL-PR-PID-80014	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Upper Deck	AV-63006	123A90-DDL-PR-PID-80041	Distribution Pot 6	BLPH	Upper Deck	25-BDV-022	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
21	04	RM	RM	**AV-63006/25-XV-021**	123A90-DDL-PR-PID-80020	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Upper Deck	AV-63006	123A90-DDL-PR-PID-80041	Distribution Pot 6	BLPH	Upper Deck	25-XV-021	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
22	04	RM	RM	**AV-63006/25-PV-049**	123A90-DDL-PR-PID-80020	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**9**	N.A.	N.A.	BLPH	Upper Deck	AV-63006	123A90-DDL-PR-PID-80041	Distribution Pot 6	BLPH	Upper Deck	25-PV-049	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
23	04	RM	RM	**AV-63006/25-BDV-019**	123A90-DDL-PR-PID-80020	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63006	123A90-DDL-PR-PID-80041	Distribution Pot 6	BLPH	Upper Deck	25-BDV-019	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
24	04	RM	RM	**AV-63006/80-XV-001**	123A90-DDL-PR-PID-80012	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63006	123A90-DDL-PR-PID-80041	Distribution Pot 6	BLPH	Upper Deck	80-XV-001	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
25	04	RM	RM	**AV-63007/25-XV-006**	123A90-DDL-PR-PID-80015	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**9**	N.A.	N.A.	BLPH	Upper Deck	AV-63007	123A90-DDL-PR-PID-80041	Distribution Pot 7	BLPH	Upper Deck	25-XV-006	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
26	04	RM	RM	**AV-63007/25-PV-035**	123A90-DDL-PR-PID-80015	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**11**	N.A.	N.A.	BLPH	Upper Deck	AV-63007	123A90-DDL-PR-PID-80041	Distribution Pot 7	BLPH	Upper Deck	25-PV-035	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
27	04	RM	RM	**AV-63007/25-BDV-005**	123A90-DDL-PR-PID-80015	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63007	123A90-DDL-PR-PID-80041	Distribution Pot 7	BLPH	Upper Deck	25-BDV-005	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
28	04	RM	RM	**AV-63007/25-PV-037**	123A90-DDL-PR-PID-80016	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63007	123A90-DDL-PR-PID-80041	Distribution Pot 7	BLPH	Upper Deck	25-PV-037	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
29	04	RM	RM	**AV-63007/25-BDV-007**	123A90-DDL-PR-PID-80016	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63007	123A90-DDL-PR-PID-80041	Distribution Pot 7	BLPH	Upper Deck	25-BDV-007	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
30	04	RM	RM	**AV-63008/50-XV-001**	123A90-DDL-PR-PID-80021	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Lower Deck	AV-63008	123A90-DDL-PR-PID-80041	Distribution Pot 8	BLPH	Lower Deck	50-XV-001	123A90-DDL-IN-DL-40080	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
31	04	RM	RM	**AV-63008/50-XV-002**	123A90-DDL-PR-PID-80021	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**5**	N.A.	N.A.	BLPH	Lower Deck	AV-63008	123A90-DDL-PR-PID-80041	Distribution Pot 8	BLPH	Lower Deck	50-XV-002	123A90-DDL-IN-DL-40080	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
32	04	RM	RM	**AV-63008/50-XV-003**	123A90-DDL-PR-PID-80021	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Lower Deck	AV-63008	123A90-DDL-PR-PID-80041	Distribution Pot 8	BLPH	Lower Deck	50-XV-003	123A90-DDL-IN-DL-40080	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
33	04	RM	RM	**AV-63008/50-XV-004**	123A90-DDL-PR-PID-80021	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Lower Deck	AV-63008	123A90-DDL-PR-PID-80041	Distribution Pot 8	BLPH	Lower Deck	50-XV-004	123A90-DDL-IN-DL-40080	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
33A	04	RM	RM	**AV-63009/50-XV-005**	123A90-DDL-PR-PID-80025	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**4**	N.A.	N.A.	BLPH	Lower Deck	AV-63009	123A90-DDL-PR-PID-80041	Distribution Pot 9	BLPH	Lower Deck	50-XV-005	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
34	04	RM	RM	**AV-63010/25-SDV-001**	123A90-DDL-PR-PID-80013	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63010	123A90-DDL-PR-PID-80041	Distribution Pot 10	BLPH	Upper Deck	25-SDV-001	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
35	04	RM	RM	**AV-63010/25-XV-024**	123A90-DDL-PR-PID-80013	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**9**	N.A.	N.A.	BLPH	Upper Deck	AV-63010	123A90-DDL-PR-PID-80041	Distribution Pot 10	BLPH	Upper Deck	25-XV-024	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
36	04	RM	RM	**AV-63010/25-XV-004**	123A90-DDL-PR-PID-80015	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**5**	N.A.	N.A.	BLPH	Upper Deck	AV-63010	123A90-DDL-PR-PID-80041	Distribution Pot 10	BLPH	Upper Deck	25-XV-004	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
37	04	RM	RM	**AV-63010/25-FV-031**	123A90-DDL-PR-PID-80015	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Upper Deck	AV-63010	123A90-DDL-PR-PID-80041	Distribution Pot 10	BLPH	Upper Deck	25-FV-031	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
38	04	RM	RM	**AV-63010/64-SDV-001**	123A90-DDL-PR-PID-80027	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**15**	N.A.	N.A.	BLPH	Upper Deck	AV-63010	123A90-DDL-PR-PID-80041	Distribution Pot 10	BLPH	Upper Deck	64-SDV-001	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
39	04	RM	RM	**AV-63011/25-SDV-023**	123A90-DDL-PR-PID-80014	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**4**	N.A.	N.A.	BLPH	Upper Deck	AV-63011	123A90-DDL-PR-PID-80041	Distribution Pot 11	BLPH	Upper Deck	25-SDV-023	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
40	04	RM	RM	**AV-63011/25-PV-055A**	123A90-DDL-PR-PID-80014	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Upper Deck	AV-63011	123A90-DDL-PR-PID-80041	Distribution Pot 11	BLPH	Upper Deck	25-PV-055A	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
41	04	RM	RM	**AV-63011/25-PV-055B**	123A90-DDL-PR-PID-80014	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Upper Deck	AV-63011	123A90-DDL-PR-PID-80041	Distribution Pot 11	BLPH	Upper Deck	25-PV-055B	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
42	04	RM	RM	**AV-63012/25-XV-018**	123A90-DDL-PR-PID-80019	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**5**	N.A.	N.A.	BLPH	Upper Deck	AV-63012	123A90-DDL-PR-PID-80041	Distribution Pot 12	BLPH	Upper Deck	25-XV-018	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
43	04	RM	RM	**AV-63012/25-PV-046**	123A90-DDL-PR-PID-80019	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63012	123A90-DDL-PR-PID-80041	Distribution Pot 12	BLPH	Upper Deck	25-PV-046	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
44	04	RM	RM	**AV-63012/25-BDV-016**	123A90-DDL-PR-PID-80019	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**9**	N.A.	N.A.	BLPH	Upper Deck	AV-63012	123A90-DDL-PR-PID-80041	Distribution Pot 12	BLPH	Upper Deck	25-BDV-016	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
~~45~~	03	DELETED	DELETED	~~**BLPH-MV-014/25-PT-001**~~	~~123A90-DDL-PR-PID-80013~~	~~Process Connection~~	~~Hydrogen~~	~~80~~	~~7,5 / 30~~	~~40~~	~~7,5 / 30~~	~~N_2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-014~~	~~123A90-DDL-PR-PID-80013~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~25-PT-001~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
~~46~~	03	DELETED	DELETED	~~**BLPH-MV-013/25-PT-002**~~	~~123A90-DDL-PR-PID-80013~~	~~Process Connection~~	~~Hydrogen~~	~~80~~	~~7,5 / 30~~	~~40~~	~~7,5 / 30~~	~~N_2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-013~~	~~123A90-DDL-PR-PID-80013~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~25-PT-002~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
~~47~~	03	DELETED	DELETED	~~**BLPH-MV-025/25-PT-055A**~~	~~123A90-DDL-PR-PID-80014~~	~~Process Connection~~	~~Hydrogen~~	~~100~~	~~17,7~~	~~19~~	~~17,7~~	~~N_2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-025~~	~~123A90-DDL-PR-PID-80014~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~25-PT-055A~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
~~48~~	03	DELETED	DELETED	~~**BLPH-MV-213/25-PT-055B**~~	~~123A90-DDL-PR-PID-80014~~	~~Process Connection~~	~~Hydrogen~~	~~100~~	~~3,5 / 6,5~~	~~10~~	~~3,5 / 6,5~~	~~N_2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-213~~	~~123A90-DDL-PR-PID-80014~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~25-PT-055B~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
~~49~~	03	DELETED	DELETED	~~**BLPH-MV-407/43-PT-001**~~	~~123A90-DDL-PR-PID-80029~~	~~Process Connection~~	~~Hydrogen~~	~~-10 / +80~~	~~ATM~~	~~3,5~~	~~ATM~~	~~N_2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-407~~	~~123A90-DDL-PR-PID-80029~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~43-PT-001~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
~~50~~	03	DELETED	DELETED	~~**BLPH-MV-411/50-PT-014**~~	~~123A90-DDL-PR-PID-80025~~	~~Process Connection~~	~~Waste Water~~	~~100~~	~~ATM~~	~~17,7~~	~~ATM~~	~~N_2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~YES~~	~~BLPH~~	~~Lower Deck~~	~~BLPH-MV-411~~	~~123A90-DDL-PR-PID-80025~~	~~Manual Valve~~	~~BLPH~~	~~Lower Deck~~	~~50-PT-014~~	~~123A90-DDL-IN-DL-40080~~	~~Pressure Transmitter~~	
~~51~~	03	DELETED	DELETED	~~**BLPH-MV-150/63-PT-003**~~	~~123A90-DDL-PR-PID-80027~~	~~Process Connection~~	~~Instrument Air~~	~~100~~	~~4 / 10~~	~~11~~	~~4 / 10~~	~~N_2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-150~~	~~123A90-DDL-PR-PID-80027~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~63-PT-003~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
~~52~~	03	DELETED	DELETED	~~**BLPH-MV-151/63-PT-004**~~	~~123A90-DDL-PR-PID-80027~~	~~Process Connection~~	~~Instrument Air~~	~~100~~	~~4 / 10~~	~~11~~	~~4 / 10~~	~~N_2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-151~~	~~123A90-DDL-PR-PID-80027~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~63-PT-004~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
53	04	RM	RM	**BLPH-MV-386/64-PT-031A**	123A90-DDL-PR-PID-80027	Process Connection	Nitrogen Gas	100	6	10	11	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40077	**0,5**	N.A.	N.A.	BLPH	Lower Deck	BLPH-MV-386	123A90-DDL-PR-PID-80027	Manual Valve	BLPH	Lower Deck	64-PT-031A	123A90-DDL-IN-DL-40080	Pressure Transmitter	
~~54~~	03	DELETED	DELETED	~~**BLPH-MV-166/64-PT-031B**~~	~~123A90-DDL-PR-PID-80027~~	~~Process Connection~~	~~Nitrogen Gas~~	~~100~~	~~6~~	~~10~~	~~6~~	~~N_2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Lower Deck~~	~~BLPH-MV-166~~	~~123A90-DDL-PR-PID-80027~~	~~Manual Valve~~	~~BLPH~~	~~Lower Deck~~	~~64-PT-031B~~	~~123A90-DDL-IN-DL-40080~~	~~Pressure Transmitter~~	
~~55~~	03	DELETED	DELETED	~~**BLPH-MV-167/64-PT-002**~~	~~123A90-DDL-PR-PID-80027~~	~~Process Connection~~	~~Nitrogen Gas~~	~~100~~	~~6~~	~~10~~	~~6~~	~~N_2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Lower Deck~~	~~BLPH-MV-167~~	~~123A90-DDL-PR-PID-80027~~	~~Manual Valve~~	~~BLPH~~	~~Lower Deck~~	~~64-PT-002~~	~~123A90-DDL-IN-DL-40080~~	~~Pressure Transmitter~~	
~~56~~	03	DELETED	DELETED	~~**BLPH-MV-038/80-PT-002**~~	~~123A90-DDL-PR-PID-80012~~	~~Process Connection~~	~~Hydrogen~~	~~100~~	~~3,5 / 6~~	~~10~~	~~3,5 / 6~~	~~N_2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-038~~	~~123A90-DDL-PR-PID-80012~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~80-PT-002~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
57	04	RM	RM	**BLPH-MV-404/43-LT-001**	123A90-DDL-PR-PID-80029	Process Connection	Water	-10 / +80	ATM	3,5	3,85	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40077	**4**	N.A.	YES	BLPH	Upper Deck	BLPH-MV-404	123A90-DDL-PR-PID-80029	Manual Valve	BLPH	Upper Deck	43-LT-001	123A90-DDL-IN-DL-40081	Level DP Transmitter	
58	04	RM	RM	**BLPH-MV-405/43-LT-001**	123A90-DDL-PR-PID-80029	Process Connection	Water	-10 / +80	ATM	3,5	3,85	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40077	**4**	N.A.	YES	BLPH	Upper Deck	BLPH-MV-405	123A90-DDL-PR-PID-80029	Manual Valve	BLPH	Upper Deck	43-LT-001	123A90-DDL-IN-DL-40081	Level DP Transmitter	
59	04	RM	RM	**BLPH-MV-462/43-LT-003**	123A90-DDL-PR-PID-80029	Process Connection	Water	-10 / +80	ATM	3,5	3,85	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40077	**4**	N.A.	YES	BLPH	Upper Deck	BLPH-MV-462	123A90-DDL-PR-PID-80029	Manual Valve	BLPH	Upper Deck	43-LT-003	123A90-DDL-IN-DL-40081	Level DP Transmitter	
60	04	RM	RM	**BLPH-MV-463/43-LT-003**	123A90-DDL-PR-PID-80029	Process Connection	Water	-10 / +80	ATM	3,5	3,85	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40077	**4**	N.A.	YES	BLPH	Upper Deck	BLPH-MV-463	123A90-DDL-PR-PID-80029	Manual Valve	BLPH	Upper Deck	43-LT-003	123A90-DDL-IN-DL-40081	Level DP Transmitter	

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DRAWING NO. 123A90-DDL-IN-DL-40084

REV. 01





50-XV-005
+23.628mm
+0.318mm T.O.S.

50-XV-001
+23.628mm
+0.318mm T.O.S

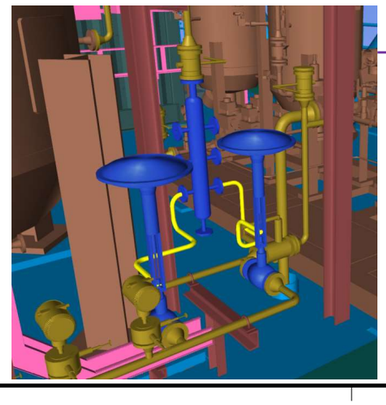
50-XV-002
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+0.318mm T.O.S

AV-63008
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+0.878mm T.O.S

64-PV-031A
+23.238mm
+0.072mm T.O.S

64-PV-031B
+23.238mm
+0.072mm T.O.S

AV-63005
+24.185mm
+0.875mm T.O.S



B-400
I&T EQUIPMENT ROOM

B-300
AC UPS

B-200
LV SWITCHROOM 400V

A-85000
PCS CONTAINER

A-50000
WATER-TREATMENT-PACKAGE

BESS 01
BESS 02

BESS 02
BESS 01

P-50001A
P-50001B

A-64000
NITROGEN SYSTEM

V-64001
NITROGEN RECEIVER

B-100
HV/MV SWITCHROOM
66kV/6.6kV

50-XV-004
+23.628mm
+0.318mm T.O.S

AV-63009
+24.235mm
+0.925mm T.O.S

50-XV-003
+23.628mm
+0.318mm T.O.S

AV-63005

64-PV-031A | SPARE
64-PV-031B | SPARE
SPARE | SPARE

AV-63008

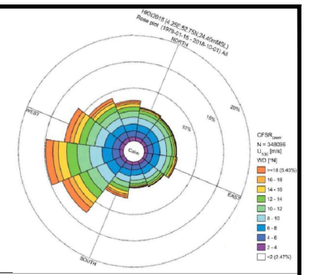
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50-XV-002 | SPARE
50-XV-003 | SPARE

AV-63009

50-XV-005 | SPARE
SPARE | SPARE
SPARE | SPARE

LOWER DECK
SCALE: 1:1

VIEW EL. 23310mm to 29310mm



NOTES

1) TUBING ROUTING > 2m IS SHOWN AND IT IS INDICATIVE ONLY.
TUBING ROUTING SHALL BE FINALIZED DURING CONSTRUCTION ACTIVITIES.

LEGEND

- AIR DISTRIBUTION POT
- CONTROL VALVE
- ON-OFF VALVE
- TUBING

HOLDS

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	23/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	23/02/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-IN-DL-40084

REV.:	DATE:	SIGNATURE:
1_D	12/12/24	C.Pilato

ROSETTI MARINO SpA

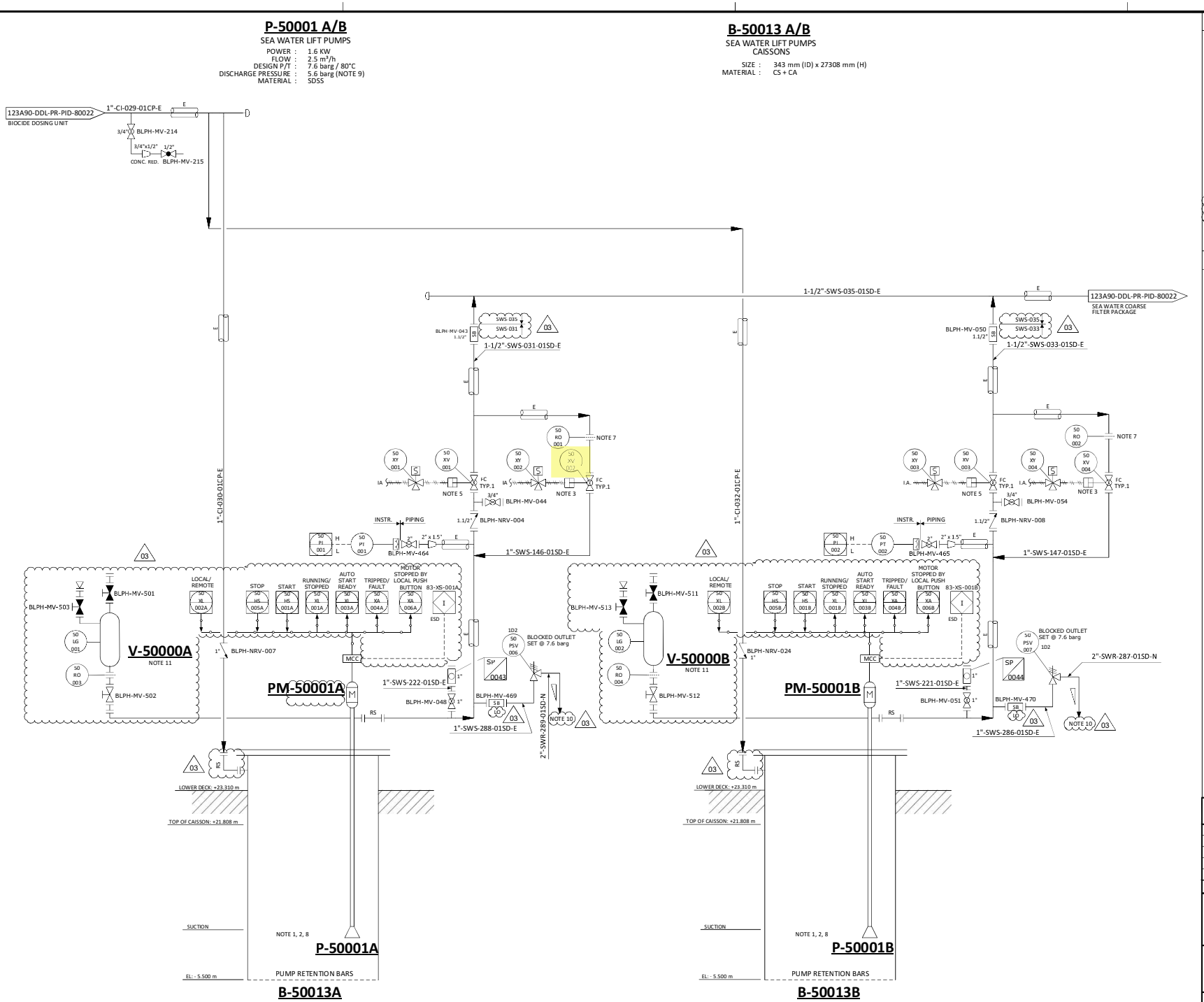
TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT TUBING LAYOUT
ELEVATION 23.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE 1:100

DRAWN DRAWN_BY | CHECKED CHECKED_BY | APPROVED APPROVED_BY | DATE DD/MM/YY

A1 | DRAWING NO. 123A90-DDL-IN-DL-40084 | SHEET 001 | REV. 01

File Name : 12390-DDL-IN-DL-40084_Rev.01



NOTES

1. SEAWATER LIFT PUMPS ARE RATED 2 X 100%
2. AUTO START OF DESIGNATED STANDBY PUMP ON LOSS OF RUNNING STATUS AND DISCHARGE LOW PRESSURE ALARM OF DUTY PUMP.
3. VALVE TO BE OPENED WHEN PUMP IS OFFLINE TO DOSE CAISSON WITH TREATED SEAWATER TO PREVENT BIOLOGICAL GROWTH.
4. DELETED.
5. SOFTWARE INTERLOCK PREVENTS PUMPS FROM STARTING IN CASE THE RELEVANT XV VALVE IS FULLY CLOSED. 03
6. DELETED.
7. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "123A90-DDL-IN-DS-40054 - TECHNICAL DATASHEET FOR RESTRICTION ORIFICE".
8. LOGIC FOR CONTROL OF P-5001A/B THAT PREVENTS SIMULTANEOUS RUNNING OF A AND B PUMP IS PROVIDED.
9. DISCHARGE PRESSURE REFERS TO THE FLANGE DISCHARGE OF THE PUMP AT LOWER DECK.
10. ROUTED TO THE SEA.
11. VESSELS V-50000A/B ARE INSULATED AND HEAT TRACED. 03

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.
5. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
SEA-WATER INTAKE SYSTEM SHEET 1

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80021	SHEET 001	REV. 03

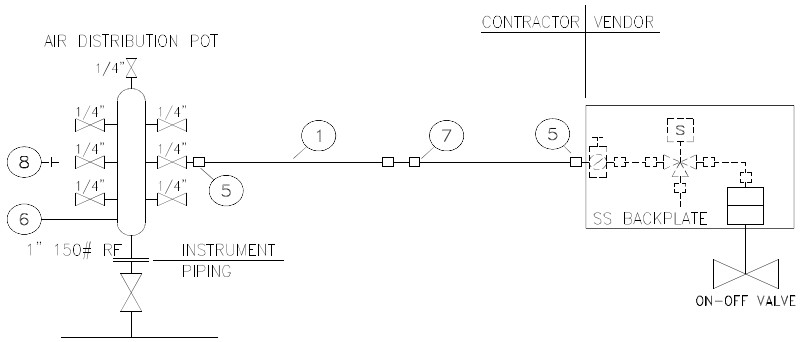
DRAWING NO. DRAWING_NO.
REV. REV.
File Name : FILE_NAME

PNEUMATIC HOOK-UP FOR ON-OFF VALVES

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-HD-40078**

REV.:	DATE:	SIGNATURE:
1_B	06/11/24	G.Randi

ROSETTI MARINO SpA

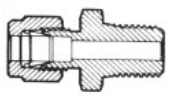
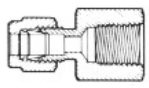
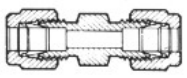


	INSTRUMENT TAG
1	25-BDV-022
2	25-BDV-005
3	25-BDV-007
4	25-BDV-010
5	25-BDV-013
6	25-BDV-016
7	25-BDV-019
8	25-SDV-001
9	25-SDV-023
10	25-XV-004
11	25-XV-006
12	25-XV-008
13	25-XV-009
14	25-XV-011
15	25-XV-012
16	25-XV-014
17	25-XV-015
18	25-XV-017
19	25-XV-018
20	25-XV-020
21	25-XV-021
22	25-XV-024
23	50-XV-001
24	50-XV-002
25	50-XV-003
26	50-XV-004
27	80-XV-001
28	64-SDV-001
29	50-XV-005
30	

NOTE:
(1) For Air Distribution Pot quantities see material take-off on sh. 4

POS.	NORM/STD CODE	DESCRIPTION	SIZE/CONNECTION TYPE	Q.TY
8		SS316 PLUG	1/4" NPT	Note 1
7		SS316 UNION	1/2" O.D. x 1/2" O.D.	N. 1
6		SS316 AIR DISTRIBUTION POT	1" 150#RF - N. 7 1/4" BALL VALVES	Note 1
5		SS316 MALE CONNECTOR	1/4" NPT x 1/2" O.D.	N. 2
1		SS 316L TUBING	1/2" x 0,049"Thk	10 m

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POS	PICTURE	DESCRIPTION		ITEM ID CODE	TOTAL					
		COMPRESSION FITTING TYPE: **DOUBLE FERRULE** THREADING: ASME B1.20.1 NPT MATERIAL: AISI 316 WORKING PRESSURE AS PER ASME B31.1 TUBING TYPE: ■ INCHES ☐ METRIC			UNIT	Counted	Required			
							Rev. 00	Rev. 01	Rev.	Rev.
1		STRAIGHT MALE CONNECTOR	1/2" NPT-M x 3/8" O.D.		nr.					
2			1/4" NPT-M x 1/2" O.D.		nr.	102	102	102		
3			1/2" NPT-M x 1/2" O.D.		nr.	36	36	-		
4			1/2" NPT-M x 3/4" O.D.		nr.					
5			3/4" NPT-M x 3/4" O.D.		nr.					
6			3/8" NPT-M x 3/8" O.D.		nr.					
7		STRAIGHT FEMALE CONNECTOR	1/2" NPT-F x 3/8" O.D.		nr.					
8			1/4" NPT-F x 1/2" O.D.		nr.					
9			1/2" NPT-F x 1/2" O.D.		nr.					
10			1/2" NPT-F x 3/4" O.D.		nr.					
11		UNION CONNECTOR	1/4" O.D. x 1/4" O.D.		nr.					
12			3/8" O.D. x 3/8" O.D.		nr.					
13			1/2" O.D. x 1/2" O.D.		nr.	49	49	49		
14			3/4" O.D. x 3/4" O.D.		nr.					
15		ELBOW CONNECTOR	1/4" NPT-M x 1/2" O.D.		nr.	27	27	27		
16			1/2" NPT-M x 1/2" O.D.		nr.					
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
27										
28										
29										
30										
31										
32										
33										
34										

VENDOR / ORDER : **AF SYSTEM / 1724001332**

MATERIAL :

- ☐ ASTM A106 Gr.B
- ■ AISI 316 L
- ☐ UNS S31254

SPECIAL REQUIREMENTS :

- ☐ ...

REMARKS :

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CROSSWIND	HOLLANDSE KUST NOORD WIND PARK Project Contract No. CW-I-WP4-2023-05	ROSETTI MARINO
Document Title:	TDS - Tubing and Fittings	Sh. 6 of 6 Date: 06/09/2024 Rev. 01

POS	SIZE	RATING	DESCRIPTION	ITEM ID CODE	UNIT	TOTAL				
						Counted	Required			
							Rev. 00	Rev. 01	Rev.	Rev.
1	1/2"		SS316 NIPPLE 1/2" NPT - L=100mm			40	40	2		
2	1/4"		SS316 PLUG 1/4" NPT			27	27	27		
3	1"		SS316L AIR DISTRIBUTION POT 1" 150#RF - N. 7 1/4" BALL VALVES			14	14	13		
4	1/2"	0,049"	SEAMLESS TUBING AISI 316L		m	558	558	276		
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										

VENDOR / ORDER : AF SYSTEM / 1724001332

MATERIAL :

- ☐ ASTM A106 Gr.B
- ■ AISI 316 L
- ☐ UNS S31254

SPECIAL REQUIREMENTS :

- ☐ ...

REMARKS :

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I Traversa, n. 8
70026 - Modugno (BA) • Italy
www.wika.it

Centro di Taratura LAT N°114
Calibration Centre
Laboratorio Accreditato di Taratura
Accredited Calibration Laboratory

LAT N° 114

CERTIFICATO DI TARATURA LAT 114 0435-SM-24
Certificate of Calibration

- data di emissione date of issue	2024-09-20
- cliente customer	FAST AUTOMATION SRL VIA DELLA PREVIDENZA SOCIALE, 8 IT-42124 REGGIO EMILIA (RE)
- destinatario receiver	ROSETTI MARINO SPA - YARD PIOMBONI VIA DEL MARCHESATO, 37 IT-48122 MARINA DI RAVENNA (RA)

Si riferisce a
referring to

- oggetto *item*	Misuratore di pressione elettronico Electrical pressure gauge
- costruttore *manufacturer*	WIKA
- modello *model*	CPG1500
- matricola *serial number*	1A014ILJJIM
- data di ricev. oggetto *date of receipt of item*	2024-09-17
- data delle misure *date of measurements*	2024-09-20
- registro di laboratorio *laboratory reference*	0435-SM-24

Il presente certificato di taratura è emesso in base all'accreditamento LAT N. 114 rilasciato in accordo ai decreti attuativi della legge n. 273/1991 che ha istituito il Sistema Nazionale di Taratura (SNT). ACCREDIA attesta le capacità di misura e di taratura, le competenze metrologiche del Centro e la riferibilità delle tarature eseguite ai campioni nazionali ed internazionali delle unità del Sistema Internazionale delle Unità (SI).
Questo certificato non può essere riprodotto in modo parziale, salvo espressa autorizzazione scritta da parte del Centro.

This certificate of calibration is issued in compliance with the accreditation LAT No.114 granted according to decrees connected with Italian law No. 273/1991 which has established the National Calibration System. ACCREDIA attests the calibration and measurement capability, metrological competence of the Centre and the traceability of calibration results to the national and International standards of the International System of Units (SI).
This certificate may not be partially reproduced, except with the prior written permission of the issuing Centre.

I risultati di misura riportati nel presente Certificato sono stati ottenuti applicando le procedure di taratura citate alla pagina seguente, dove sono specificati anche i campioni o gli strumenti che garantiscono la catena di riferibilità del Centro e i rispettivi certificati di taratura in corso di validità. Essi si riferiscono esclusivamente all'oggetto in taratura e sono validi nel momento e nelle condizioni di taratura, salvo diversamente specificato.

The measurement results reported in this Certificate were obtained following the calibration procedures given in the following page, where the reference standards or instruments are indicated which guarantee the traceability chain of the laboratory, and the related calibration certificates in the course of validity are indicated as well. They relate only to the calibrated item and they are valid for the time and conditions of calibration, unless otherwise specified.

Le incertezze di misura dichiarate in questo documento sono state determinate conformemente alla Guida ISO/IEC 98 e al documento EA-4/02. Solitamente sono espresse come incertezza estesa ottenuta moltiplicando l'incertezza tipo per il fattore di copertura *k* corrispondente ad un livello di fiducia di circa il 95 %. Normalmente tale fattore *k* vale 2.

The measurement uncertainties stated in this document have been determined according to the ISO/IEC Guide 98 and to EA-4/02. Usually, they have been estimated as expanded uncertainty obtained multiplying the standard uncertainty by the coverage factor k corresponding to a confidence level of about 95%. Normally, this factor k is 2.

Direzione Tecnica
(Approving Officer)

Enrico Reccagni

Enrico Reccagni

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LAT N° 114

CARATTERISTICHE DELLO STRUMENTO IN TARATURA/ Properties of devices under calibration

Misuratore di pressione elettronico ***Electrical pressure gauge***	
Tipo *Model*	Misuratore di pressione elettronico Electrical pressure gauge
Numero di matricola *Serial No.*	1A014ILJJIM
Campo di misura *Scale range*	(0 ... 1000) bar g
Accuratezza dichiarata dal costruttore *Accuracy declared by the manufacturer*	0,1 % FS
Risoluzione *Resolution (scale division)*	0,1 bar
Tag. N. *Tag No.*	--

Procedura di taratura e catena di riferibilità
Calibration procedure and traceability chain

La taratura è stata effettuata in accordo alla linea guida DKD-R 6-1 "Taratura di strumenti di pressione" (versione 03/2014) procedura B, per confronto fra i valori dello strumento in taratura con quelli di riferimento dati dal campione di lavoro.

Calibration was carried out according to DKD-R 6-1 "Kalibrierung von Druckmessgeräten" (Ausgabe 03/2014) procedure B, by comparing the measured values of the calibration item with those of the reference or working standard.

I risultati riportati sono stati ottenuti applicando le procedure n° LMO-PT-01 rev.2

The results have been obtained using the procedures n° LMO-PT-01 rev.2

La catena di riferibilità ha inizio dai campioni di riferimento n° PM1-09

The traceability chain starts from the reference standards n° PM1-09

muniti di certificati validi di taratura, rispettivamente n° D21090

with the relevant valid calibration certificates n° D21090

Luogo di taratura
Place of calibration

Laboratorio WIKA ITALIA - Laboratorio di Modugno (BA)
WIKA ITALY Laboratory - Modugno (BA)

Campione di lavoro
Working Standard

Norma di riferimento (RS) Bilancia di pressione ***Reference standard (RS) Dead-weight tester***	
Tipo *Model*	PM1-09
Certificato di taratura *Calibration mark*	D-K-15105/D21090
Campo di misura *Scale range*	(10 ... 2500) bar g
Accuratezza *Accuracy*	0,015 % della lettura + 255 Pa

Operatore
Technichian

Francesco Donatelli

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Condizioni di misura
Measurement conditions

Schema di collegamento *Assembly*	
Fluido utilizzato *Pressure medium*	Sebacate *Sebacate*
Livello di riferimento *Refence height (for reference value)*	Superficie di tenuta DUT *Sealing face DUT*
Posizione di montaggio *Position during calibration*	verticale *vertical*

Note di taratura
Calibration Note

Lo strumento è stato tarato e riconsegnato nelle stesse condizioni in cui è arrivato nel laboratorio, in accordo con il metodo "as found as left" / The device under test (DUT) was calibrated in the same conditions it was arrived in laboratory, according to the method "as found as left".

Condizioni Ambientali
Environmental conditions

Temperatura *Temperature*	(22 ± 1,5)	°C
Pressione atmoferica *Atmospheric pressure*	(1009,3 ± 0,2)	hPa
Umidità relativa *Rel. Humidity*	(50 ± 15)	% UR

I dati meteo sono stati acquisiti tramite stazione meteo WIKA CPU6000-W s/n.1A00VCX6GJ2

Weather data were acquired via the WIKA CPU6000-W weather station s/n.1A00VCX6GJ2

Misure rilevate
Measurement results

Valore di riferimento *Reference value RS* bar	**Letture** *Reading DUT* bar		
	M1	**M2**	**M3**
0,00	0,0	0,0	0,0
99,91	99,9	99,9	99,9
199,82	199,9	199,9	199,9
299,73	299,8	299,8	299,8
399,63	399,7	399,7	399,7
499,53	499,5	499,6	499,6
599,44	599,4	599,4	599,4
699,34	699,3	699,3	699,3
799,25	799,1	799,2	799,1
899,14	899,0	899,1	899,0
999,04	999,0	999,0	999,0

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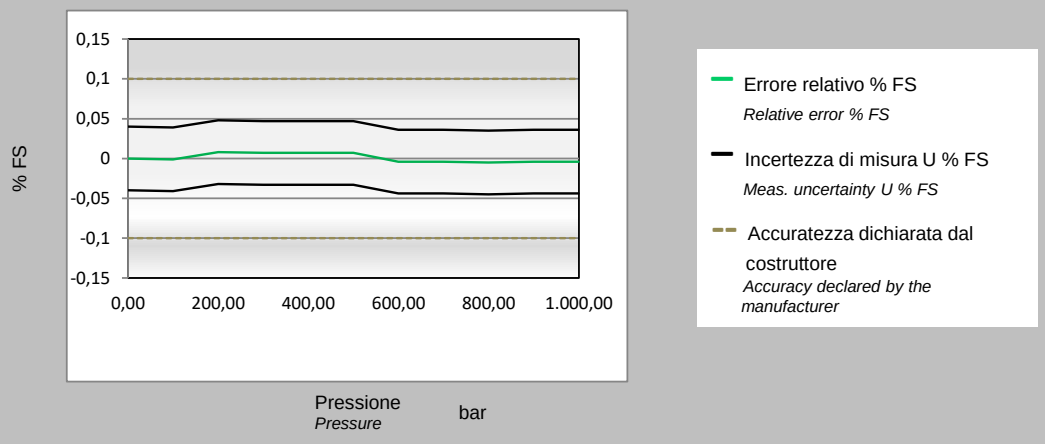
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Incertezza di misura
Uncertainty of measurement

Valori di riferimento *Reference value RS* bar	Media delle misure *Mean value* bar	Errore *Error* bar	Ripetibilità *Repeatability* bar	Isteresi *Hysteresis* bar	Incertezza di misura *Meas. Uncertainty* bar
0,00	0,0	0,0	0,0	0,0	0,40
99,91	99,9	0,0	0,0	0,0	0,40
199,82	199,9	0,1	0,0	0,0	0,40
299,73	299,8	0,1	0,0	0,0	0,40
399,63	399,7	0,1	0,0	0,0	0,40
499,53	499,6	0,1	0,1	0,1	0,40
599,44	599,4	0,0	0,0	0,0	0,40
699,34	699,3	0,0	0,0	0,0	0,40
799,25	799,2	0,0	0,0	0,1	0,40
899,14	899,1	0,0	0,0	0,1	0,40
999,04	999,0	0,0	0,0	0,0	0,40

Grafico degli errori di misura
Graphical representation of measurement uncertainty



L'incertezza estesa senza correzione del DUT è pari a 0,5 bar
The expanded uncertainty of the DUT without correction is equal to

Questo dato è ottenuto come MAX{Incertezza_di_misura$_i$ + |Errore$_i$|} della tabella precedente
This data is obatined as MAX{Meas._uncertainty$_i$ + |Error$_i$|} of the previous table

Il presente certificato non rappresenta una dichiarazione di conformità a specifica
This certificate is not a statement of compliance

ITEM	Tag	AV-63008/50-XV-003	: Pneumatic Connection Air Supply - 50-XV-003			Dwg	123A90-DDL-IN-LIS-40092
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10001971		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Instrumental	Form	CJX06 Tubing Hydraulic

General

1	Drawings (P&ID tube) attached.	OK
2	Isometric drawings (P&ID pipe) attached.	NA
3	Check drawings at last revision.	OK
4	Material certificates for pipe/tube/fittings/flanges/hose and support clamps checked	OK
5	Welders certificates checked	NA
6	Certificate and mark-up drawings for welding WPS and WPQR and material certificates checked	NA
7	Certificates and mark-up drawings for NDT report checked	NA

Check before Flushing and/or Testing

8	Installation complete and in compliance with drawings and specifications.	OK
9	Tubing/Piping tray checked.	NA
10	Hose according to specifications and tightened	NA
11	Flanges - nuts and bolts tightened.	NA
12	Fittings are mounted and tightened.	OK
13	Pipe supports completed and installed as required.	OK
14	Cable ladders, trays, sharp edges protected, cut ends sealed.	NA
15	Maintenance evaluation.	OK

ROSETTI MARINO PROVERLIS CROSSWIND

ITEM	Tag	AV-63008/50-XV-003	: Pneumatic Connection Air Supply - 50-XV-003			Dwg	123A90-DDL-IN-LIS-40092
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10001971	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Instrumental	Form CJX06	Tubing Hydraulic

Flushing / Pressure testing

16	Drawings of flushing loops (P&ID tube) attached	NA
17	Equipment & valves bypassed and blinded	OK
18	Calibration certificates attached	OK
19	Type of flushing medium correct	NA
20	Printout from recorder/particle counter	NA
21	Printout from pressure indicator	OK

Final Check

22	Final inspection of pipework.	OK
23	Preservation of tested pipework.	NA
24	System/equipment labelled with: "Hot Oil flushing performed".	NA
25	If required produce Red Line Mark Up for "AS BUILT"	

TEST SPECIFIED USED

TEST FLUID: IA TEST PRESSURE BAR G: 5.5 TEST DURATION : 11 MIN

TEST EQUIPMENT: CPG 1500 SERIAL N°: 1A014ILJJIM

HOOK UP DIAGRAM Number: 123A90-DDL-IN-HD-40078

Line FROM	Line TO	Tubing cleaned			Tubing flushed			Diam ID/OD
		Yes	No	N/A	Yes	No	N/A	
AV-63008	50-XV-003	●					●	1/2" OD x Thk. 0,049"

TESTED LABEL AFFIXED DATA SHEET ATTACHED

Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Paolo Schintu	
Date	2025-02-04	2025-02-06	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-04T13:14:43.939Z	PROVERLIS Digitaly signed by Paolo Schintu 2025-02-06T11:24:01.553Z	

Logger protocol

Protocollo di acquisizione elenco dati

	Log no. *N. elenco dati*	AV-63008/50-XV-003

Instrument

Strumento

Electrical pressure gauge *Misuratore di pressione elettronico*	
Model *Modello*	CPG1500
Serial number *Numero di serie*	1A014ILJJIM
Log temperature *Registrazioni di Temperatura*	Active *Attivo*
Scale range *Campo scala*	(0 ... 1000) bar a
Accuracy *Accuratezza*	0.1 % FS
Tag number *Numero tag*	
Communication *Comunicazione*	Wireless (00:13:43:85:DD:8D)

Measurement conditions

Condizioni di misura

Settings *Impostazioni*	
Mode *Modalità*	Automatic *Automatico*
Interval (ms) *Intervallo (ms)*	15000
Duration (hh:mm:ss) *Durata (hh:mm:ss)*	00:11:26
Start time (hh:mm:ss) *Tempo di avvio (hh:mm:ss)*	02:43:11 pm

Logger protocol

Protocollo di acquisizione elenco dati

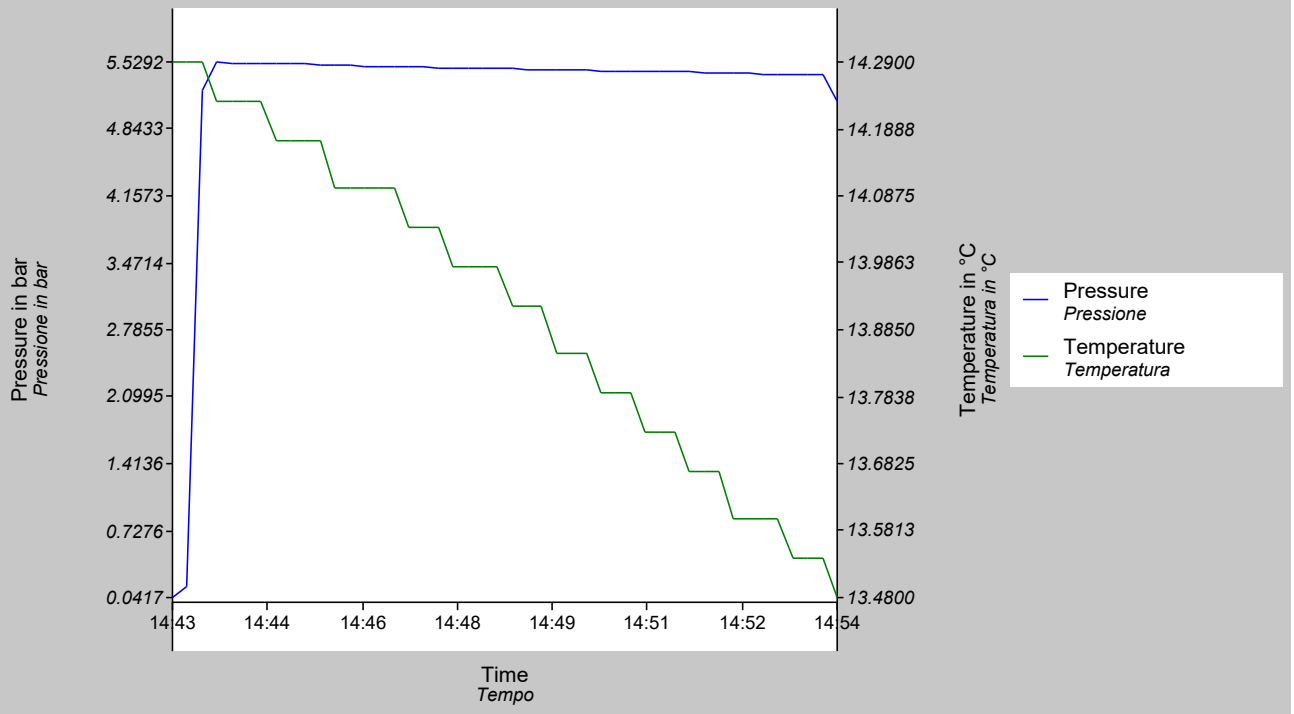
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Group of Companies

Log no. *N. elenco dati*	AV-63008/50-XV-003

Measurement results

Risultati della misura

Graphical representation of progression
Rappresentazione grafica dell'andamento



Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
02/01/2025 14:43:11.000	0.0417	14.2900
02/01/2025 14:43:26.000	0.1617	14.2900
02/01/2025 14:43:41.000	5.2393	14.2900
02/01/2025 14:43:56.000	5.5292	14.2300
02/01/2025 14:44:11.000	5.5158	14.2300
02/01/2025 14:44:26.000	5.5152	14.2300
02/01/2025 14:44:41.000	5.5128	14.2300
02/01/2025 14:44:56.000	5.5121	14.1700
02/01/2025 14:45:11.000	5.5100	14.1700
02/01/2025 14:45:26.000	5.5060	14.1700
02/01/2025 14:45:41.000	5.5025	14.1700
02/01/2025 14:45:56.000	5.5047	14.1000
02/01/2025 14:46:11.000	5.4959	14.1000
02/01/2025 14:46:26.000	5.4860	14.1000
02/01/2025 14:46:41.000	5.4885	14.1000
02/01/2025 14:46:56.000	5.4806	14.1000
02/01/2025 14:47:11.000	5.4785	14.0400

Logger protocol

Protocollo di acquisizione elenco dati

ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	AV-63008/50-XV-003

Measurement results

Risultati della misura

Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
02/01/2025 14:47:26.000	5.4750	14.0400
02/01/2025 14:47:41.000	5.4672	14.0400
02/01/2025 14:47:56.000	5.4710	13.9800
02/01/2025 14:48:11.000	5.4613	13.9800
02/01/2025 14:48:26.000	5.4642	13.9800
02/01/2025 14:48:41.000	5.4566	13.9800
02/01/2025 14:48:56.000	5.4579	13.9200
02/01/2025 14:49:11.000	5.4546	13.9200
02/01/2025 14:49:26.000	5.4452	13.9200
02/01/2025 14:49:41.000	5.4448	13.8500
02/01/2025 14:49:56.000	5.4428	13.8500
02/01/2025 14:50:11.000	5.4417	13.8500
02/01/2025 14:50:26.000	5.4401	13.7900
02/01/2025 14:50:41.000	5.4339	13.7900
02/01/2025 14:50:56.000	5.4281	13.7900
02/01/2025 14:51:11.000	5.4322	13.7300
02/01/2025 14:51:26.000	5.4254	13.7300
02/01/2025 14:51:41.000	5.4268	13.7300
02/01/2025 14:51:56.000	5.4249	13.6700
02/01/2025 14:52:11.000	5.4192	13.6700
02/01/2025 14:52:26.000	5.4207	13.6700
02/01/2025 14:52:41.000	5.4176	13.6000
02/01/2025 14:52:56.000	5.4129	13.6000
02/01/2025 14:53:11.000	5.4077	13.6000
02/01/2025 14:53:26.000	5.4060	13.6000
02/01/2025 14:53:41.000	5.4031	13.5400
02/01/2025 14:53:56.000	5.3986	13.5400
02/01/2025 14:54:11.000	5.3972	13.5400
02/01/2025 14:54:26.000	5.1268	13.4800

CROSSWIND

HOLLANDSE KUST NOORD WIND PARK Project
Contract No. CW-I-WP4-2023-05

INSTRUMENT TUBING LIST

ROSETTI MARINO

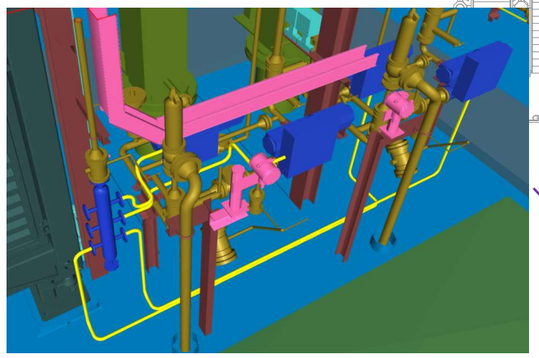
Sh,	4	of	4	REV.	00	01	02	03	04
					X	X	X	X	X

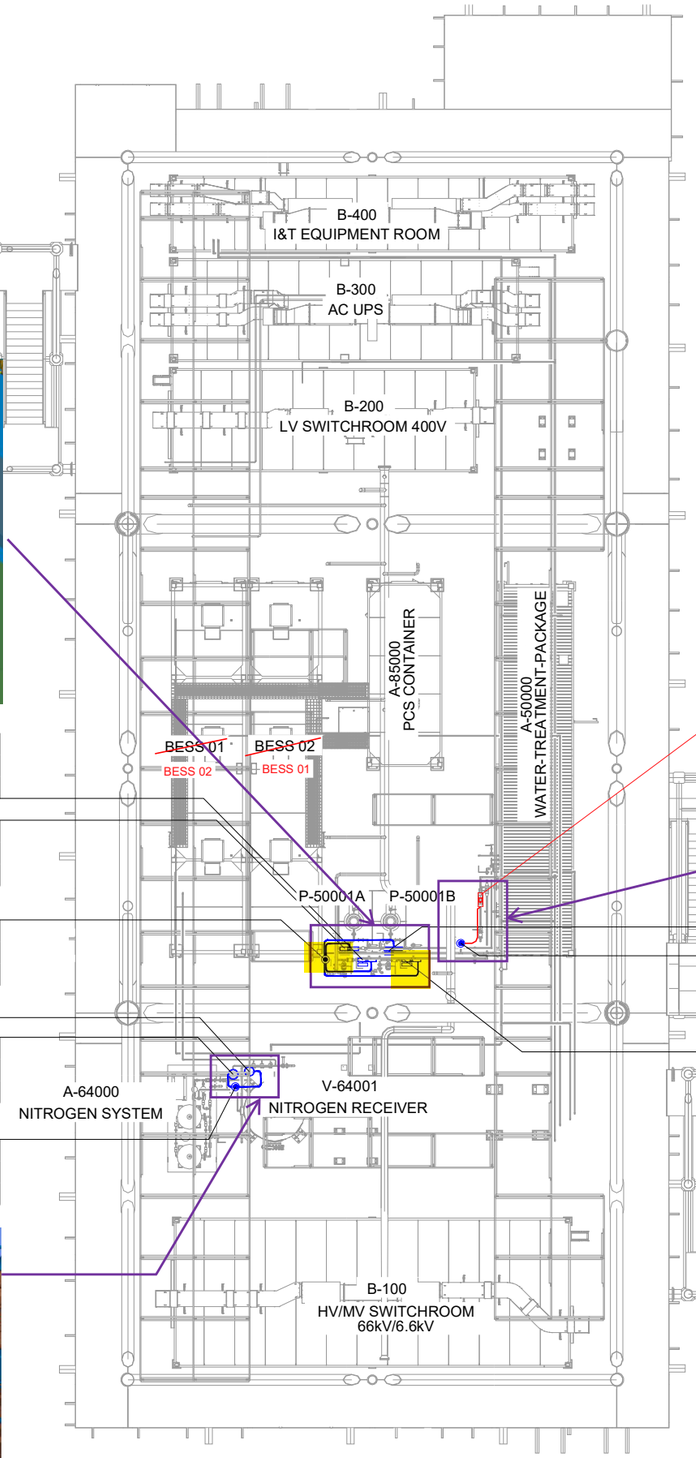
DATA TUBING																			FROM AREA					TO AREA					
POS.	REV	SUPPLY SCOPE	LAINING SCOPE	TAG Tubing	P&ID	MAIN FUNCTION	SERVICE	DESIGN TEMPERATURE(C°)	OPERATING PRESSURE (Barg)	DESIGN PRESSURE (Barg)	TEST PRESSURE (Barg)	FLUID TEST	DIMENSIONS	MATERIAL	REF. DOC.	Q.TY (m)	FIRE PROOFING	HEAT TRACING	MODULE	AREA	FROM ITEM	REF. P&I	DESCRIPTION	MODULE	AREA	TO ITEM	REF. LAYOUT	DESCRIPTION	NOTE
01	04	RM	RM	**AV-63001/25-XV-011**	123A90-DDL-PR-PID-80017	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63001	123A90-DDL-PR-PID-80041	Distribution Pot 1	BLPH	Upper Deck	25-XV-011	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
02	04	RM	RM	**AV-63001/25-FV-033**	123A90-DDL-PR-PID-80017	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**9**	N.A.	N.A.	BLPH	Upper Deck	AV-63001	123A90-DDL-PR-PID-80041	Distribution Pot 1	BLPH	Upper Deck	25-FV-033	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
03	04	RM	RM	**AV-63001/25-XV-008**	123A90-DDL-PR-PID-80016	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Upper Deck	AV-63001	123A90-DDL-PR-PID-80041	Distribution Pot 1	BLPH	Upper Deck	25-XV-008	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
04	04	RM	RM	**AV-63001/25-FV-032**	123A90-DDL-PR-PID-80016	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Upper Deck	AV-63001	123A90-DDL-PR-PID-80041	Distribution Pot 1	BLPH	Upper Deck	25-FV-032	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
05	04	RM	RM	**AV-63002/25-XV-020**	123A90-DDL-PR-PID-80020	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-XV-020	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
06	04	RM	RM	**AV-63002/25-FV-036**	123A90-DDL-PR-PID-80020	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**11**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-FV-036	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
07	04	RM	RM	**AV-63002/25-XV-017**	123A90-DDL-PR-PID-80019	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**5**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-XV-017	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
08	04	RM	RM	**AV-63002/25-FV-038**	123A90-DDL-PR-PID-80019	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-FV-038	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
09	04	RM	RM	**AV-63002/25-XV-014**	123A90-DDL-PR-PID-80018	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-XV-014	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
10	04	RM	RM	**AV-63002/25-FV-034**	123A90-DDL-PR-PID-80018	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-FV-034	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
11	04	RM	RM	**AV-63003/25-BDV-010**	123A90-DDL-PR-PID-80017	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63003	123A90-DDL-PR-PID-80041	Distribution Pot 3	BLPH	Upper Deck	25-BDV-010	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
12	04	RM	RM	**AV-63003/25-PV-040**	123A90-DDL-PR-PID-80017	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63003	123A90-DDL-PR-PID-80041	Distribution Pot 3	BLPH	Upper Deck	25-PV-040	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
13	04	RM	RM	**AV-63003/25-XV-012**	123A90-DDL-PR-PID-80017	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Upper Deck	AV-63003	123A90-DDL-PR-PID-80041	Distribution Pot 3	BLPH	Upper Deck	25-XV-012	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
14	04	RM	RM	**AV-63003/25-XV-009**	123A90-DDL-PR-PID-80016	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**13**	N.A.	N.A.	BLPH	Upper Deck	AV-63003	123A90-DDL-PR-PID-80041	Distribution Pot 3	BLPH	Upper Deck	25-XV-009	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
15	04	RM	RM	**AV-63004/25-BDV-013**	123A90-DDL-PR-PID-80018	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63004	123A90-DDL-PR-PID-80041	Distribution Pot 4	BLPH	Upper Deck	25-BDV-013	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
16	04	RM	RM	**AV-63004/25-PV-043**	123A90-DDL-PR-PID-80018	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63004	123A90-DDL-PR-PID-80041	Distribution Pot 4	BLPH	Upper Deck	25-PV-043	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
17	04	RM	RM	**AV-63004/25-XV-015**	123A90-DDL-PR-PID-80018	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Upper Deck	AV-63004	123A90-DDL-PR-PID-80041	Distribution Pot 4	BLPH	Upper Deck	25-XV-015	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
18	04	RM	RM	**AV-63005/64-PV-031A**	123A90-DDL-PR-PID-80027	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**4**	N.A.	N.A.	BLPH	Lower Deck	AV-63005	123A90-DDL-PR-PID-80041	Distribution Pot 5	BLPH	Lower Deck	64-PV-031A	123A90-DDL-IN-DL-40080	Pneumatic Control Valve	Design Pressure set as per downstream PSV
19	04	RM	RM	**AV-63005/64-PV-031B**	123A90-DDL-PR-PID-80027	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**3**	N.A.	N.A.	BLPH	Lower Deck	AV-63005	123A90-DDL-PR-PID-80041	Distribution Pot 5	BLPH	Lower Deck	64-PV-031B	123A90-DDL-IN-DL-40080	Pneumatic Control Valve	Design Pressure set as per downstream PSV
20	04	RM	RM	**AV-63006/25-BDV-022**	123A90-DDL-PR-PID-80014	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Upper Deck	AV-63006	123A90-DDL-PR-PID-80041	Distribution Pot 6	BLPH	Upper Deck	25-BDV-022	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
21	04	RM	RM	**AV-63006/25-XV-021**	123A90-DDL-PR-PID-80020	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Upper Deck	AV-63006	123A90-DDL-PR-PID-80041	Distribution Pot 6	BLPH	Upper Deck	25-XV-021	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
22	04	RM	RM	**AV-63006/25-PV-049**	123A90-DDL-PR-PID-80020	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**9**	N.A.	N.A.	BLPH	Upper Deck	AV-63006	123A90-DDL-PR-PID-80041	Distribution Pot 6	BLPH	Upper Deck	25-PV-049	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
23	04	RM	RM	**AV-63006/25-BDV-019**	123A90-DDL-PR-PID-80020	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63006	123A90-DDL-PR-PID-80041	Distribution Pot 6	BLPH	Upper Deck	25-BDV-019	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
24	04	RM	RM	**AV-63006/80-XV-001**	123A90-DDL-PR-PID-80012	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63006	123A90-DDL-PR-PID-80041	Distribution Pot 6	BLPH	Upper Deck	80-XV-001	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
25	04	RM	RM	**AV-63007/25-XV-006**	123A90-DDL-PR-PID-80015	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**9**	N.A.	N.A.	BLPH	Upper Deck	AV-63007	123A90-DDL-PR-PID-80041	Distribution Pot 7	BLPH	Upper Deck	25-XV-006	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
26	04	RM	RM	**AV-63007/25-PV-035**	123A90-DDL-PR-PID-80015	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**11**	N.A.	N.A.	BLPH	Upper Deck	AV-63007	123A90-DDL-PR-PID-80041	Distribution Pot 7	BLPH	Upper Deck	25-PV-035	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
27	04	RM	RM	**AV-63007/25-BDV-005**	123A90-DDL-PR-PID-80015	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63007	123A90-DDL-PR-PID-80041	Distribution Pot 7	BLPH	Upper Deck	25-BDV-005	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
28	04	RM	RM	**AV-63007/25-PV-037**	123A90-DDL-PR-PID-80016	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63007	123A90-DDL-PR-PID-80041	Distribution Pot 7	BLPH	Upper Deck	25-PV-037	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
29	04	RM	RM	**AV-63007/25-BDV-007**	123A90-DDL-PR-PID-80016	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63007	123A90-DDL-PR-PID-80041	Distribution Pot 7	BLPH	Upper Deck	25-BDV-007	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
30	04	RM	RM	**AV-63008/50-XV-001**	123A90-DDL-PR-PID-80021	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Lower Deck	AV-63008	123A90-DDL-PR-PID-80041	Distribution Pot 8	BLPH	Lower Deck	50-XV-001	123A90-DDL-IN-DL-40080	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
31	04	RM	RM	**AV-63008/50-XV-002**	123A90-DDL-PR-PID-80021	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**5**	N.A.	N.A.	BLPH	Lower Deck	AV-63008	123A90-DDL-PR-PID-80041	Distribution Pot 8	BLPH	Lower Deck	50-XV-002	123A90-DDL-IN-DL-40080	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
32	04	RM	RM	**AV-63008/50-XV-003**	123A90-DDL-PR-PID-80021	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Lower Deck	AV-63008	123A90-DDL-PR-PID-80041	Distribution Pot 8	BLPH	Lower Deck	50-XV-003	123A90-DDL-IN-DL-40080	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
33	04	RM	RM	**AV-63008/50-XV-004**	123A90-DDL-PR-PID-80021	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Lower Deck	AV-63008	123A90-DDL-PR-PID-80041	Distribution Pot 8	BLPH	Lower Deck	50-XV-004	123A90-DDL-IN-DL-40080	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
33A	04	RM	RM	**AV-63009/50-XV-005**	123A90-DDL-PR-PID-80025	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**4**	N.A.	N.A.	BLPH	Lower Deck	AV-63009	123A90-DDL-PR-PID-80041	Distribution Pot 9	BLPH	Lower Deck	50-XV-005	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
34	04	RM	RM	**AV-63010/25-SDV-001**	123A90-DDL-PR-PID-80013	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63010	123A90-DDL-PR-PID-80041	Distribution Pot 10	BLPH	Upper Deck	25-SDV-001	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
35	04	RM	RM	**AV-63010/25-XV-024**	123A90-DDL-PR-PID-80013	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**9**	N.A.	N.A.	BLPH	Upper Deck	AV-63010	123A90-DDL-PR-PID-80041	Distribution Pot 10	BLPH	Upper Deck	25-XV-024	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
36	04	RM	RM	**AV-63010/25-XV-004**	123A90-DDL-PR-PID-80015	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**5**	N.A.	N.A.	BLPH	Upper Deck	AV-63010	123A90-DDL-PR-PID-80041	Distribution Pot 10	BLPH	Upper Deck	25-XV-004	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
37	04	RM	RM	**AV-63010/25-FV-031**	123A90-DDL-PR-PID-80015	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Upper Deck	AV-63010	123A90-DDL-PR-PID-80041	Distribution Pot 10	BLPH	Upper Deck	25-FV-031	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
38	04	RM	RM	**AV-63010/64-SDV-001**	123A90-DDL-PR-PID-80027	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**15**	N.A.	N.A.	BLPH	Upper Deck	AV-63010	123A90-DDL-PR-PID-80041	Distribution Pot 10	BLPH	Upper Deck	64-SDV-001	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
39	04	RM	RM	**AV-63011/25-SDV-023**	123A90-DDL-PR-PID-80014	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**4**	N.A.	N.A.	BLPH	Upper Deck	AV-63011	123A90-DDL-PR-PID-80041	Distribution Pot 11	BLPH	Upper Deck	25-SDV-023	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
40	04	RM	RM	**AV-63011/25-PV-055A**	123A90-DDL-PR-PID-80014	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Upper Deck	AV-63011	123A90-DDL-PR-PID-80041	Distribution Pot 11	BLPH	Upper Deck	25-PV-055A	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
41	04	RM	RM	**AV-63011/25-PV-055B**	123A90-DDL-PR-PID-80014	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Upper Deck	AV-63011	123A90-DDL-PR-PID-80041	Distribution Pot 11	BLPH	Upper Deck	25-PV-055B	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
42	04	RM	RM	**AV-63012/25-XV-018**	123A90-DDL-PR-PID-80019	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**5**	N.A.	N.A.	BLPH	Upper Deck	AV-63012	123A90-DDL-PR-PID-80041	Distribution Pot 12	BLPH	Upper Deck	25-XV-018	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
43	04	RM	RM	**AV-63012/25-PV-046**	123A90-DDL-PR-PID-80019	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63012	123A90-DDL-PR-PID-80041	Distribution Pot 12	BLPH	Upper Deck	25-PV-046	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
44	04	RM	RM	**AV-63012/25-BDV-016**	123A90-DDL-PR-PID-80019	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**9**	N.A.	N.A.	BLPH	Upper Deck	AV-63012	123A90-DDL-PR-PID-80041	Distribution Pot 12	BLPH	Upper Deck	25-BDV-016	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
~~45~~	03	DELETED	DELETED	~~**BLPH-MV-014/25-PT-001**~~	~~123A90-DDL-PR-PID-80013~~	~~Process Connection~~	~~Hydrogen~~	~~80~~	~~7,5 / 30~~	~~40~~	~~7,5 / 30~~	~~N_2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-014~~	~~123A90-DDL-PR-PID-80013~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~25-PT-001~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
~~46~~	03	DELETED	DELETED	~~**BLPH-MV-013/25-PT-002**~~	~~123A90-DDL-PR-PID-80013~~	~~Process Connection~~	~~Hydrogen~~	~~80~~	~~7,5 / 30~~	~~40~~	~~7,5 / 30~~	~~N_2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-013~~	~~123A90-DDL-PR-PID-80013~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~25-PT-002~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
~~47~~	03	DELETED	DELETED	~~**BLPH-MV-025/25-PT-055A**~~	~~123A90-DDL-PR-PID-80014~~	~~Process Connection~~	~~Hydrogen~~	~~100~~	~~17,7~~	~~19~~	~~17,7~~	~~N_2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-025~~	~~123A90-DDL-PR-PID-80014~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~25-PT-055A~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
~~48~~	03	DELETED	DELETED	~~**BLPH-MV-213/25-PT-055B**~~	~~123A90-DDL-PR-PID-80014~~	~~Process Connection~~	~~Hydrogen~~	~~100~~	~~3,5 / 6,5~~	~~10~~	~~3,5 / 6,5~~	~~N_2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-213~~	~~123A90-DDL-PR-PID-80014~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~25-PT-055B~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
~~49~~	03	DELETED	DELETED	~~**BLPH-MV-407/43-PT-001**~~	~~123A90-DDL-PR-PID-80029~~	~~Process Connection~~	~~Hydrogen~~	~~-10 / +80~~	~~ATM~~	~~3,5~~	~~ATM~~	~~N_2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-407~~	~~123A90-DDL-PR-PID-80029~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~43-PT-001~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
~~50~~	03	DELETED	DELETED	~~**BLPH-MV-411/50-PT-014**~~	~~123A90-DDL-PR-PID-80025~~	~~Process Connection~~	~~Waste Water~~	~~100~~	~~ATM~~	~~17,7~~	~~ATM~~	~~N_2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~YES~~	~~BLPH~~	~~Lower Deck~~	~~BLPH-MV-411~~	~~123A90-DDL-PR-PID-80025~~	~~Manual Valve~~	~~BLPH~~	~~Lower Deck~~	~~50-PT-014~~	~~123A90-DDL-IN-DL-40080~~	~~Pressure Transmitter~~	
~~51~~	03	DELETED	DELETED	~~**BLPH-MV-150/63-PT-003**~~	~~123A90-DDL-PR-PID-80027~~	~~Process Connection~~	~~Instrument Air~~	~~100~~	~~4 / 10~~	~~11~~	~~4 / 10~~	~~N_2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-150~~	~~123A90-DDL-PR-PID-80027~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~63-PT-003~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
~~52~~	03	DELETED	DELETED	~~**BLPH-MV-151/63-PT-004**~~	~~123A90-DDL-PR-PID-80027~~	~~Process Connection~~	~~Instrument Air~~	~~100~~	~~4 / 10~~	~~11~~	~~4 / 10~~	~~N_2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-151~~	~~123A90-DDL-PR-PID-80027~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~63-PT-004~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
53	04	RM	RM	**BLPH-MV-386/64-PT-031A**	123A90-DDL-PR-PID-80027	Process Connection	Nitrogen Gas	100	6	10	11	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40077	**0,5**	N.A.	N.A.	BLPH	Lower Deck	BLPH-MV-386	123A90-DDL-PR-PID-80027	Manual Valve	BLPH	Lower Deck	64-PT-031A	123A90-DDL-IN-DL-40080	Pressure Transmitter	
~~54~~	03	DELETED	DELETED	~~**BLPH-MV-166/64-PT-031B**~~	~~123A90-DDL-PR-PID-80027~~	~~Process Connection~~	~~Nitrogen Gas~~	~~100~~	~~6~~	~~10~~	~~6~~	~~N_2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Lower Deck~~	~~BLPH-MV-166~~	~~123A90-DDL-PR-PID-80027~~	~~Manual Valve~~	~~BLPH~~	~~Lower Deck~~	~~64-PT-031B~~	~~123A90-DDL-IN-DL-40080~~	~~Pressure Transmitter~~	
~~55~~	03	DELETED	DELETED	~~**BLPH-MV-167/64-PT-002**~~	~~123A90-DDL-PR-PID-80027~~	~~Process Connection~~	~~Nitrogen Gas~~	~~100~~	~~6~~	~~10~~	~~6~~	~~N_2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Lower Deck~~	~~BLPH-MV-167~~	~~123A90-DDL-PR-PID-80027~~	~~Manual Valve~~	~~BLPH~~	~~Lower Deck~~	~~64-PT-002~~	~~123A90-DDL-IN-DL-40080~~	~~Pressure Transmitter~~	
~~56~~	03	DELETED	DELETED	~~**BLPH-MV-038/80-PT-002**~~	~~123A90-DDL-PR-PID-80012~~	~~Process Connection~~	~~Hydrogen~~	~~100~~	~~3,5 / 6~~	~~10~~	~~3,5 / 6~~	~~N_2~~	~~1/2" OD x Thk. 0,049"~~	~~AISI 316L~~	~~123A90-DDL-IN-HD-40077~~	~~**0,5**~~	~~N.A.~~	~~N.A.~~	~~BLPH~~	~~Upper Deck~~	~~BLPH-MV-038~~	~~123A90-DDL-PR-PID-80012~~	~~Manual Valve~~	~~BLPH~~	~~Upper Deck~~	~~80-PT-002~~	~~123A90-DDL-IN-DL-40081~~	~~Pressure Transmitter~~	
57	04	RM	RM	**BLPH-MV-404/43-LT-001**	123A90-DDL-PR-PID-80029	Process Connection	Water	-10 / +80	ATM	3,5	3,85	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40077	**4**	N.A.	YES	BLPH	Upper Deck	BLPH-MV-404	123A90-DDL-PR-PID-80029	Manual Valve	BLPH	Upper Deck	43-LT-001	123A90-DDL-IN-DL-40081	Level DP Transmitter	
58	04	RM	RM	**BLPH-MV-405/43-LT-001**	123A90-DDL-PR-PID-80029	Process Connection	Water	-10 / +80	ATM	3,5	3,85	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40077	**4**	N.A.	YES	BLPH	Upper Deck	BLPH-MV-405	123A90-DDL-PR-PID-80029	Manual Valve	BLPH	Upper Deck	43-LT-001	123A90-DDL-IN-DL-40081	Level DP Transmitter	
59	04	RM	RM	**BLPH-MV-462/43-LT-003**	123A90-DDL-PR-PID-80029	Process Connection	Water	-10 / +80	ATM	3,5	3,85	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40077	**4**	N.A.	YES	BLPH	Upper Deck	BLPH-MV-462	123A90-DDL-PR-PID-80029	Manual Valve	BLPH	Upper Deck	43-LT-003	123A90-DDL-IN-DL-40081	Level DP Transmitter	
60	04	RM	RM	**BLPH-MV-463/43-LT-003**	123A90-DDL-PR-PID-80029	Process Connection	Water	-10 / +80	ATM	3,5	3,85	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40077	**4**	N.A.	YES	BLPH	Upper Deck	BLPH-MV-463	123A90-DDL-PR-PID-80029	Manual Valve	BLPH	Upper Deck	43-LT-003	123A90-DDL-IN-DL-40081	Level DP Transmitter	

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DRAWING NO. 123A90-DDL-IN-DL-40084

REV. 01





50-XV-001
+23.628mm
+0.318mm T.O.S

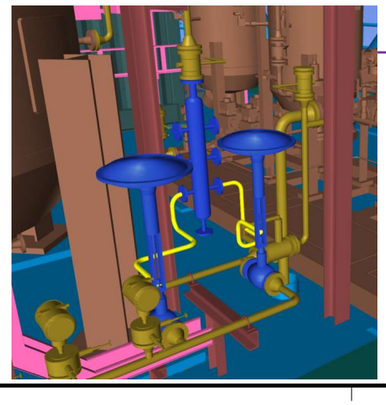
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AV-63008
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64-PV-031A
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+0.072mm T.O.S

64-PV-031B
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AV-63005
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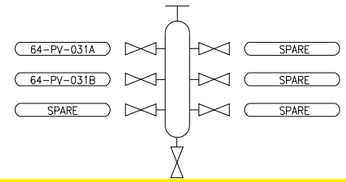
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50-XV-004
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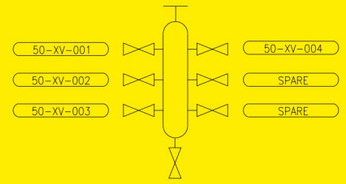
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50-XV-003
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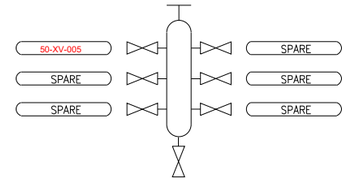
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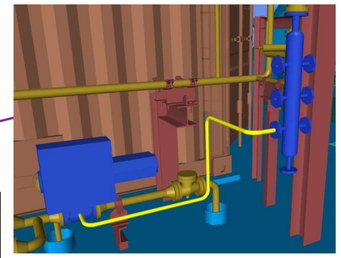


AV-63008



AV-63009

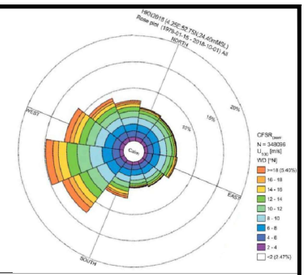




LOWER DECK

SCALE: 1:1

VIEW EL. 23310mm to 29310mm



NOTES

1) TUBING ROUTING > 2m IS SHOWN AND IT IS INDICATIVE ONLY.
TUBING ROUTING SHALL BE FINALIZED DURING CONSTRUCTION ACTIVITIES.

LEGEND

- AIR DISTRIBUTION POT
- CONTROL VALVE
- ON-OFF VALVE
- TUBING

HOLDS

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DL-40084**

REV.:	DATE:	SIGNATURE:
1_D	12/12/24	C.Pilato

ROSETTI MARINO SpA

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	23/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	23/02/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND | ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT TUBING LAYOUT
ELEVATION 23.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK				SCALE 1:100
DRAWN DRAWN_BY	CHECKED CHECKED_BY	APPROVED APPROVED_BY	DATE DD/MM/YY	
A1	DRAWING NO. 123A90-DDL-IN-DL-40084		SHEET 001	REV. 01

File Name : 12390-DDL-IN-DL-40084_Rev.01

DRAWING NO. DRAWING_NO.

REV. REV.

P-50001 A/B

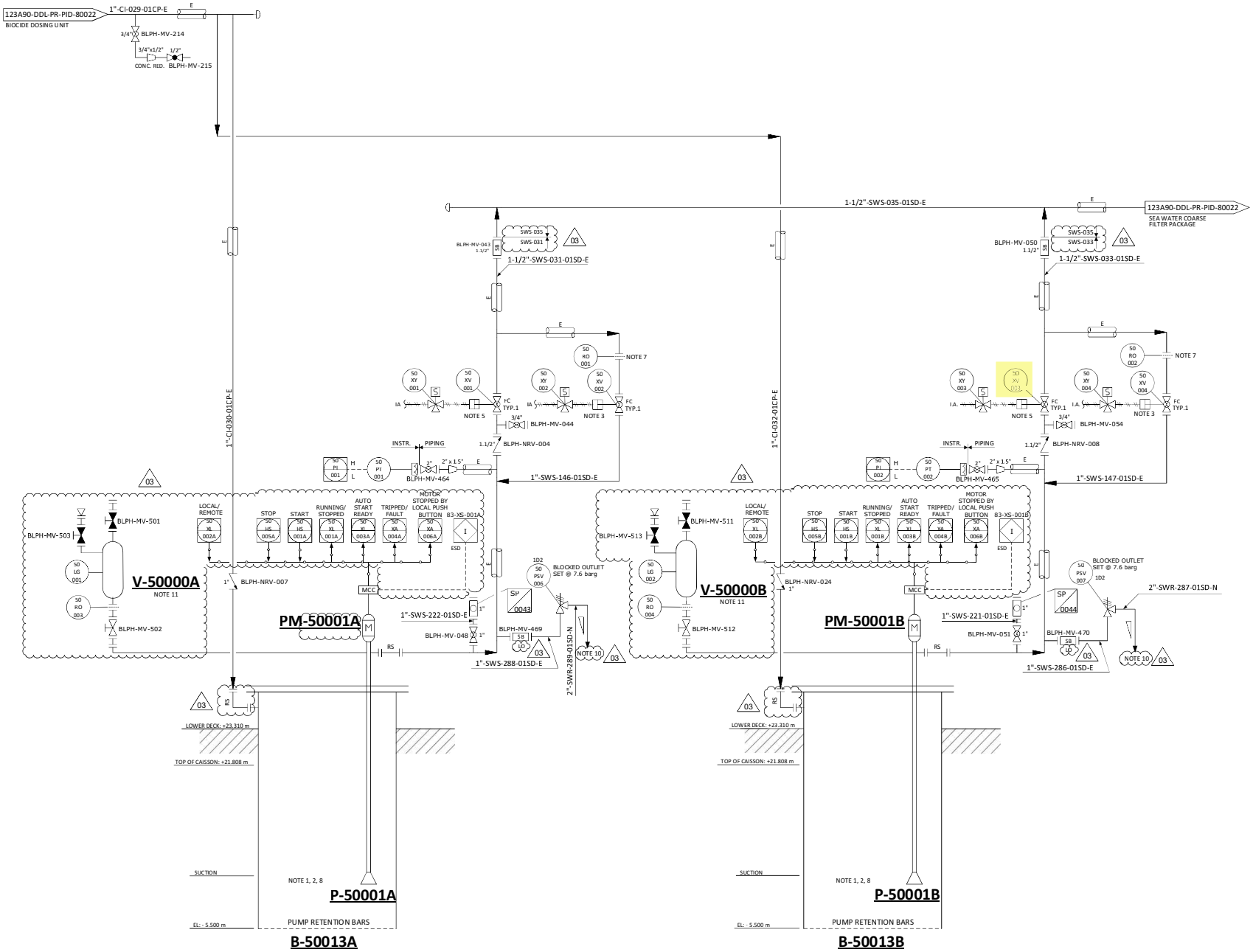
SEA WATER LIFT PUMPS

POWER :	1.6 KW
FLOW :	2.5 m³/h
DESIGN P/T :	7.6 barg / 80°C
DISCHARGE PRESSURE :	5.6 barg (NOTE 9)
MATERIAL :	SDSS

B-50013 A/B

SEA WATER LIFT PUMPS CAISSONS

SIZE :	343 mm (ID) x 27308 mm (H)
MATERIAL :	CS + CA



NOTES

1. SEAWATER LIFT PUMPS ARE RATED 2 X 100%
2. AUTO START OF DESIGNATED STANDBY PUMP ON LOSS OF RUNNING STATUS AND DISCHARGE LOW PRESSURE ALARM OF DUTY PUMP.
3. VALVE TO BE OPENED WHEN PUMP IS OFFLINE TO DOSE CAISSON WITH TREATED SEAWATER TO PREVENT BIOLOGICAL GROWTH.
4. DELETED.
5. SOFTWARE INTERLOCK PREVENTS PUMPS FROM STARTING IN CASE THE RELEVANT XV VALVE IS FULLY CLOSED. 03
6. DELETED.
7. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "123A90-DDL-IN-DS-40054 - TECHNICAL DATASHEET FOR RESTRICTION ORIFICE".
8. LOGIC FOR CONTROL OF P-5001A/B THAT PREVENTS SIMULTANEOUS RUNNING OF A AND B PUMP IS PROVIDED.
9. DISCHARGE PRESSURE REFERS TO THE FLANGE DISCHARGE OF THE PUMP AT LOWER DECK.
10. ROUTED TO THE SEA.
11. VESSELS V-50000A/B ARE INSULATED AND HEAT TRACED. 03

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.
5. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :

BLPH PIPING AND INSTRUMENTATION DIAGRAM
SEA-WATER INTAKE SYSTEM SHEET 1

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80021	SHEET 001	REV. 03

File Name : FILE_NAME

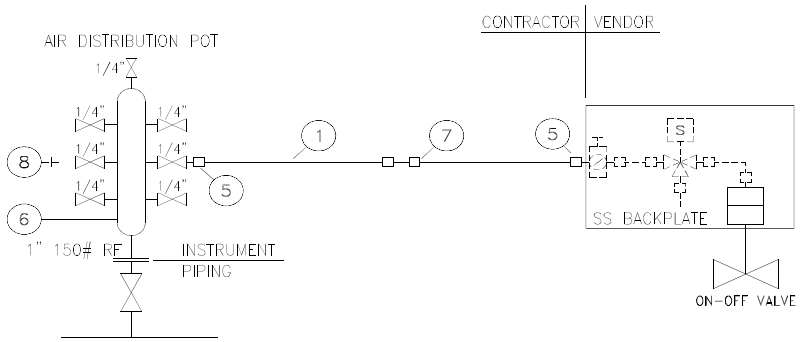
CROSSWIND	HOLLANDSE KUST NOORD WIND PARK Project Contract No. CW-I-WP4-2023-05	ROSETTI MARINO
Document Title:	Instrument Pneumatic Hook-Ups	Sh. 6 of 6 Date: 08/07/2024 Rev. 01

PNEUMATIC HOOK-UP FOR ON-OFF VALVES

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-HD-40078**

REV.:	DATE:	SIGNATURE:
1_B	06/11/24	G.Randi

ROSETTI MARINO SpA

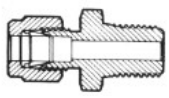
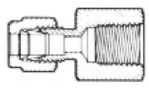
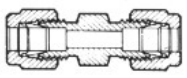


	INSTRUMENT TAG
1	25-BDV-022
2	25-BDV-005
3	25-BDV-007
4	25-BDV-010
5	25-BDV-013
6	25-BDV-016
7	25-BDV-019
8	25-SDV-001
9	25-SDV-023
10	25-XV-004
11	25-XV-006
12	25-XV-008
13	25-XV-009
14	25-XV-011
15	25-XV-012
16	25-XV-014
17	25-XV-015
18	25-XV-017
19	25-XV-018
20	25-XV-020
21	25-XV-021
22	25-XV-024
23	50-XV-001
24	50-XV-002
25	50-XV-003
26	50-XV-004
27	80-XV-001
28	64-SDV-001
29	50-XV-005
30	

NOTE:
(1) For Air Distribution Pot quantities see material take-off on sh. 4

POS.	NORM/STD CODE	DESCRIPTION	SIZE/CONNECTION TYPE	Q.TY
8		SS316 PLUG	1/4" NPT	Note 1
7		SS316 UNION	1/2" O.D. x 1/2" O.D.	N. 1
6		SS316 AIR DISTRIBUTION POT	1" 150#RF - N. 7 1/4" BALL VALVES	Note 1
5		SS316 MALE CONNECTOR	1/4" NPT x 1/2" O.D.	N. 2
1		SS 316L TUBING	1/2" x 0,049"Thk	10 m

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POS	PICTURE	DESCRIPTION		ITEM ID CODE	TOTAL					
		COMPRESSION FITTING TYPE: **DOUBLE FERRULE** THREADING: ASME B1.20.1 NPT MATERIAL: AISI 316 WORKING PRESSURE AS PER ASME B31.1 TUBING TYPE: ■ INCHES ☐ METRIC			UNIT	Counted	Required			
							Rev. 00	Rev. 01	Rev.	Rev.
1		STRAIGHT MALE CONNECTOR	1/2" NPT-M x 3/8" O.D.		nr.					
2			1/4" NPT-M x 1/2" O.D.		nr.	102	102	102		
3			1/2" NPT-M x 1/2" O.D.		nr.	36	36	-		
4			1/2" NPT-M x 3/4" O.D.		nr.					
5			3/4" NPT-M x 3/4" O.D.		nr.					
6			3/8" NPT-M x 3/8" O.D.		nr.					
7		STRAIGHT FEMALE CONNECTOR	1/2" NPT-F x 3/8" O.D.		nr.					
8			1/4" NPT-F x 1/2" O.D.		nr.					
9			1/2" NPT-F x 1/2" O.D.		nr.					
10			1/2" NPT-F x 3/4" O.D.		nr.					
11		UNION CONNECTOR	1/4" O.D. x 1/4" O.D.		nr.					
12			3/8" O.D. x 3/8" O.D.		nr.					
13			1/2" O.D. x 1/2" O.D.		nr.	49	49	49		
14			3/4" O.D. x 3/4" O.D.		nr.					
15		ELBOW CONNECTOR	1/4" NPT-M x 1/2" O.D.		nr.	27	27	27		
16			1/2" NPT-M x 1/2" O.D.		nr.					
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
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30										
27										
28										
29										
30										
31										
32										
33										
34										

VENDOR / ORDER : **AF SYSTEM / 1724001332**

MATERIAL :

- ☐ ASTM A106 Gr.B
- ■ AISI 316 L
- ☐ UNS S31254

SPECIAL REQUIREMENTS :

- ☐ ...

REMARKS :

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CROSSWIND	HOLLANDSE KUST NOORD WIND PARK Project Contract No. CW-I-WP4-2023-05	ROSETTI MARINO
Document Title:	TDS - Tubing and Fittings	Sh. 6 of 6 Date: 06/09/2024 Rev. 01

POS	SIZE	RATING	DESCRIPTION	ITEM ID CODE	UNIT	TOTAL				
						Counted	Required			
							Rev. 00	Rev. 01	Rev.	Rev.
1	1/2"		SS316 NIPPLE 1/2" NPT - L=100mm			40	40	2		
2	1/4"		SS316 PLUG 1/4" NPT			27	27	27		
3	1"		SS316L AIR DISTRIBUTION POT 1" 150#RF - N. 7 1/4" BALL VALVES			14	14	13		
4	1/2"	0,049"	SEAMLESS TUBING AISI 316L		m	558	558	276		
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										

VENDOR / ORDER : AF SYSTEM / 1724001332

MATERIAL :

- ☐ ASTM A106 Gr.B
- ■ AISI 316 L
- ☐ UNS S31254

SPECIAL REQUIREMENTS :

- ☐ ...

REMARKS :

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WIKA Italia S.r.l. & C. s.a.s.
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70026 - Modugno (BA) • Italy
www.wika.it

Centro di Taratura LAT N°114
Calibration Centre
Laboratorio Accreditato di Taratura
Accredited Calibration Laboratory

LAT N° 114

CERTIFICATO DI TARATURA LAT 114 0435-SM-24
Certificate of Calibration

- data di emissione date of issue	2024-09-20
- cliente customer	FAST AUTOMATION SRL VIA DELLA PREVIDENZA SOCIALE, 8 IT-42124 REGGIO EMILIA (RE)
- destinatario receiver	ROSETTI MARINO SPA - YARD PIOMBONI VIA DEL MARCHESATO, 37 IT-48122 MARINA DI RAVENNA (RA)

Si riferisce a
referring to

- oggetto *item*	Misuratore di pressione elettronico Electrical pressure gauge
- costruttore *manufacturer*	WIKA
- modello *model*	CPG1500
- matricola *serial number*	1A014ILJJIM
- data di ricev. oggetto *date of receipt of item*	2024-09-17
- data delle misure *date of measurements*	2024-09-20
- registro di laboratorio *laboratory reference*	0435-SM-24

Il presente certificato di taratura è emesso in base all'accreditamento LAT N. 114 rilasciato in accordo ai decreti attuativi della legge n. 273/1991 che ha istituito il Sistema Nazionale di Taratura (SNT). ACCREDIA attesta le capacità di misura e di taratura, le competenze metrologiche del Centro e la riferibilità delle tarature eseguite ai campioni nazionali ed internazionali delle unità del Sistema Internazionale delle Unità (SI).
Questo certificato non può essere riprodotto in modo parziale, salvo espressa autorizzazione scritta da parte del Centro.

This certificate of calibration is issued in compliance with the accreditation LAT No.114 granted according to decrees connected with Italian law No. 273/1991 which has established the National Calibration System. ACCREDIA attests the calibration and measurement capability, metrological competence of the Centre and the traceability of calibration results to the national and International standards of the International System of Units (SI).
This certificate may not be partially reproduced, except with the prior written permission of the issuing Centre.

I risultati di misura riportati nel presente Certificato sono stati ottenuti applicando le procedure di taratura citate alla pagina seguente, dove sono specificati anche i campioni o gli strumenti che garantiscono la catena di riferibilità del Centro e i rispettivi certificati di taratura in corso di validità. Essi si riferiscono esclusivamente all'oggetto in taratura e sono validi nel momento e nelle condizioni di taratura, salvo diversamente specificato.

The measurement results reported in this Certificate were obtained following the calibration procedures given in the following page, where the reference standards or instruments are indicated which guarantee the traceability chain of the laboratory, and the related calibration certificates in the course of validity are indicated as well. They relate only to the calibrated item and they are valid for the time and conditions of calibration, unless otherwise specified.

Le incertezze di misura dichiarate in questo documento sono state determinate conformemente alla Guida ISO/IEC 98 e al documento EA-4/02. Solitamente sono espresse come incertezza estesa ottenuta moltiplicando l'incertezza tipo per il fattore di copertura *k* corrispondente ad un livello di fiducia di circa il 95 %. Normalmente tale fattore *k* vale 2.

The measurement uncertainties stated in this document have been determined according to the ISO/IEC Guide 98 and to EA-4/02. Usually, they have been estimated as expanded uncertainty obtained multiplying the standard uncertainty by the coverage factor k corresponding to a confidence level of about 95%. Normally, this factor k is 2.

Direzione Tecnica
(Approving Officer)

Enrico Reccagni

Enrico Reccagni

WIKA Italia S.r.l. & C. s.a.s.
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CARATTERISTICHE DELLO STRUMENTO IN TARATURA/ Properties of devices under calibration

Misuratore di pressione elettronico ***Electrical pressure gauge***	
Tipo *Model*	Misuratore di pressione elettronico Electrical pressure gauge
Numero di matricola *Serial No.*	1A014ILJJIM
Campo di misura *Scale range*	(0 ... 1000) bar g
Accuratezza dichiarata dal costruttore *Accuracy declared by the manufacturer*	0,1 % FS
Risoluzione *Resolution (scale division)*	0,1 bar
Tag. N. *Tag No.*	--

Procedura di taratura e catena di riferibilità
Calibration procedure and traceability chain

La taratura è stata effettuata in accordo alla linea guida DKD-R 6-1 "Taratura di strumenti di pressione" (versione 03/2014) procedura B, per confronto fra i valori dello strumento in taratura con quelli di riferimento dati dal campione di lavoro.

Calibration was carried out according to DKD-R 6-1 "Kalibrierung von Druckmessgeräten" (Ausgabe 03/2014) procedure B, by comparing the measured values of the calibration item with those of the reference or working standard.

I risultati riportati sono stati ottenuti applicando le procedure n° LMO-PT-01 rev.2

The results have been obtained using the procedures n° LMO-PT-01 rev.2

La catena di riferibilità ha inizio dai campioni di riferimento n° PM1-09

The traceability chain starts from the reference standards n° PM1-09

muniti di certificati validi di taratura, rispettivamente n° D21090

with the relevant valid calibration certificates n° D21090

Luogo di taratura
Place of calibration

Laboratorio WIKA ITALIA - Laboratorio di Modugno (BA)
WIKA ITALY Laboratory - Modugno (BA)

Campione di lavoro
Working Standard

Norma di riferimento (RS) Bilancia di pressione ***Reference standard (RS) Dead-weight tester***	
Tipo *Model*	PM1-09
Certificato di taratura *Calibration mark*	D-K-15105/D21090
Campo di misura *Scale range*	(10 ... 2500) bar g
Accuratezza *Accuracy*	0,015 % della lettura + 255 Pa

Operatore
Technichian

Francesco Donatelli

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Condizioni di misura
Measurement conditions

Schema di collegamento *Assembly*	
Fluido utilizzato *Pressure medium*	Sebacate *Sebacate*
Livello di riferimento *Refence height (for reference value)*	Superficie di tenuta DUT *Sealing face DUT*
Posizione di montaggio *Position during calibration*	verticale *vertical*

Note di taratura
Calibration Note

Lo strumento è stato tarato e riconsegnato nelle stesse condizioni in cui è arrivato nel laboratorio, in accordo con il metodo "as found as left" / The device under test (DUT) was calibrated in the same conditions it was arrived in laboratory, according to the method "as found as left".

Condizioni Ambientali
Environmental conditions

Temperatura *Temperature*	(22 ± 1,5)	°C
Pressione atmoferica *Atmospheric pressure*	(1009,3 ± 0,2)	hPa
Umidità relativa *Rel. Humidity*	(50 ± 15)	% UR

I dati meteo sono stati acquisiti tramite stazione meteo WIKA CPU6000-W s/n.1A00VCX6GJ2

Weather data were acquired via the WIKA CPU6000-W weather station s/n.1A00VCX6GJ2

Misure rilevate
Measurement results

Valore di riferimento *Reference value RS* bar	**Letture** *Reading DUT* bar		
	M1	**M2**	**M3**
0,00	0,0	0,0	0,0
99,91	99,9	99,9	99,9
199,82	199,9	199,9	199,9
299,73	299,8	299,8	299,8
399,63	399,7	399,7	399,7
499,53	499,5	499,6	499,6
599,44	599,4	599,4	599,4
699,34	699,3	699,3	699,3
799,25	799,1	799,2	799,1
899,14	899,0	899,1	899,0
999,04	999,0	999,0	999,0

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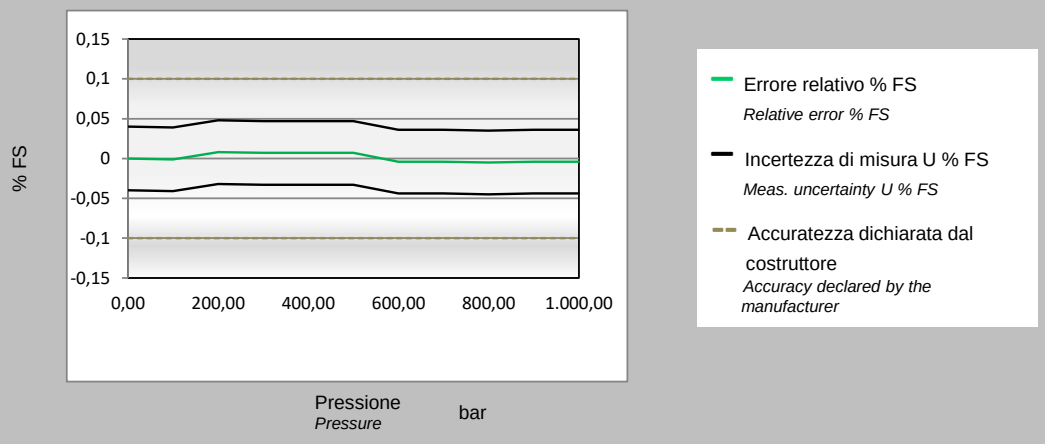
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Incertezza di misura
Uncertainty of measurement

Valori di riferimento *Reference value RS* bar	Media delle misure *Mean value* bar	Errore *Error* bar	Ripetibilità *Repeatability* bar	Isteresi *Hysteresis* bar	Incertezza di misura *Meas. Uncertainty* bar
0,00	0,0	0,0	0,0	0,0	0,40
99,91	99,9	0,0	0,0	0,0	0,40
199,82	199,9	0,1	0,0	0,0	0,40
299,73	299,8	0,1	0,0	0,0	0,40
399,63	399,7	0,1	0,0	0,0	0,40
499,53	499,6	0,1	0,1	0,1	0,40
599,44	599,4	0,0	0,0	0,0	0,40
699,34	699,3	0,0	0,0	0,0	0,40
799,25	799,2	0,0	0,0	0,1	0,40
899,14	899,1	0,0	0,0	0,1	0,40
999,04	999,0	0,0	0,0	0,0	0,40

Grafico degli errori di misura
Graphical representation of measurement uncertainty



L'incertezza estesa senza correzione del DUT è pari a 0,5 bar
The expanded uncertainty of the DUT without correction is equal to

Questo dato è ottenuto come MAX{Incertezza_di_misura$_i$ + |Errore$_i$|} della tabella precedente
This data is obatined as MAX{Meas._uncertainty$_i$ + |Error$_i$|} of the previous table

Il presente certificato non rappresenta una dichiarazione di conformità a specifica
This certificate is not a statement of compliance

ITEM	Tag	AV-63008/50-XV-004	: Pneumatic Connection Air Supply - 50-XV-004			Dwg	123A90-DDL-IN-LIS-40092
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10001972		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Instrumental	Form	CJX06 Tubing Hydraulic

General

1	Drawings (P&ID tube) attached.	OK
2	Isometric drawings (P&ID pipe) attached.	NA
3	Check drawings at last revision.	OK
4	Material certificates for pipe/tube/fittings/flanges/hose and support clamps checked	OK
5	Welders certificates checked	NA
6	Certificate and mark-up drawings for welding WPS and WPQR and material certificates checked	NA
7	Certificates and mark-up drawings for NDT report checked	NA

Check before Flushing and/or Testing

8	Installation complete and in compliance with drawings and specifications.	OK
9	Tubing/Piping tray checked.	NA
10	Hose according to specifications and tightened	NA
11	Flanges - nuts and bolts tightened.	NA
12	Fittings are mounted and tightened.	OK
13	Pipe supports completed and installed as required.	OK
14	Cable ladders, trays, sharp edges protected, cut ends sealed.	NA
15	Maintenance evaluation.	OK

REFER TO FINAL SHEET FOR ACCEPTANCE

ROSETTI MARINO PROVERLIS CROSSWIND

ITEM	Tag	AV-63008/50-XV-004	: Pneumatic Connection Air Supply - 50-XV-004			Dwg	123A90-DDL-IN-LIS-40092
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10001972	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Instrumental	Form	CJX06 Tubing Hydraulic

Flushing / Pressure testing

16	Drawings of flushing loops (P&ID tube) attached	NA
17	Equipment & valves bypassed and blinded	OK
18	Calibration certificates attached	OK
19	Type of flushing medium correct	NA
20	Printout from recorder/particle counter	NA
21	Printout from pressure indicator	OK

Final Check

22	Final inspection of pipework.	OK
23	Preservation of tested pipework.	NA
24	System/equipment labelled with: "Hot Oil flushing performed".	NA
25	If required produce Red Line Mark Up for "AS BUILT"	

TEST SPECIFIED USED

TEST FLUID: IA TEST PRESSURE BAR G: 5.5 TEST DURATION : 11 MIN

TEST EQUIPMENT: CPG 1500 SERIAL N°: 1A014ILJJIM

HOOK UP DIAGRAM Number: 123A90-DDL-IN-HD-40078

Line FROM	Line TO	Tubing cleaned			Tubing flushed			Diam ID/OD
		Yes	No	N/A	Yes	No	N/A	
AV-63008	50-XV-004	●					●	1/2" OD x Thk. 0,049"

TESTED LABEL AFFIXED DATA SHEET ATTACHED

Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Paolo Schintu	
Date	2025-02-04	2025-02-06	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-04T13:15:02.877Z	PROVERLIS Digitaly signed by Paolo Schintu 2025-02-06T11:24:58.949Z	

Logger protocol

Protocollo di acquisizione elenco dati

ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	AV-63008/50-XV-004

Instrument

Strumento

Electrical pressure gauge *Misuratore di pressione elettronico*	
Model *Modello*	CPG1500
Serial number *Numero di serie*	1A014ILJJIM
Log temperature *Registrazioni di Temperatura*	Active *Attivo*
Scale range *Campo scala*	(0 ... 1000) bar a
Accuracy *Accuratezza*	0.1 % FS
Tag number *Numero tag*	
Communication *Comunicazione*	Wireless (00:13:43:85:DD:8D)

Measurement conditions

Condizioni di misura

Settings *Impostazioni*	
Mode *Modalità*	Automatic *Automatico*
Interval (ms) *Intervallo (ms)*	15000
Duration (hh:mm:ss) *Durata (hh:mm:ss)*	00:11:26
Start time (hh:mm:ss) *Tempo di avvio (hh:mm:ss)*	02:43:11 pm

Logger protocol

Protocollo di acquisizione elenco dati

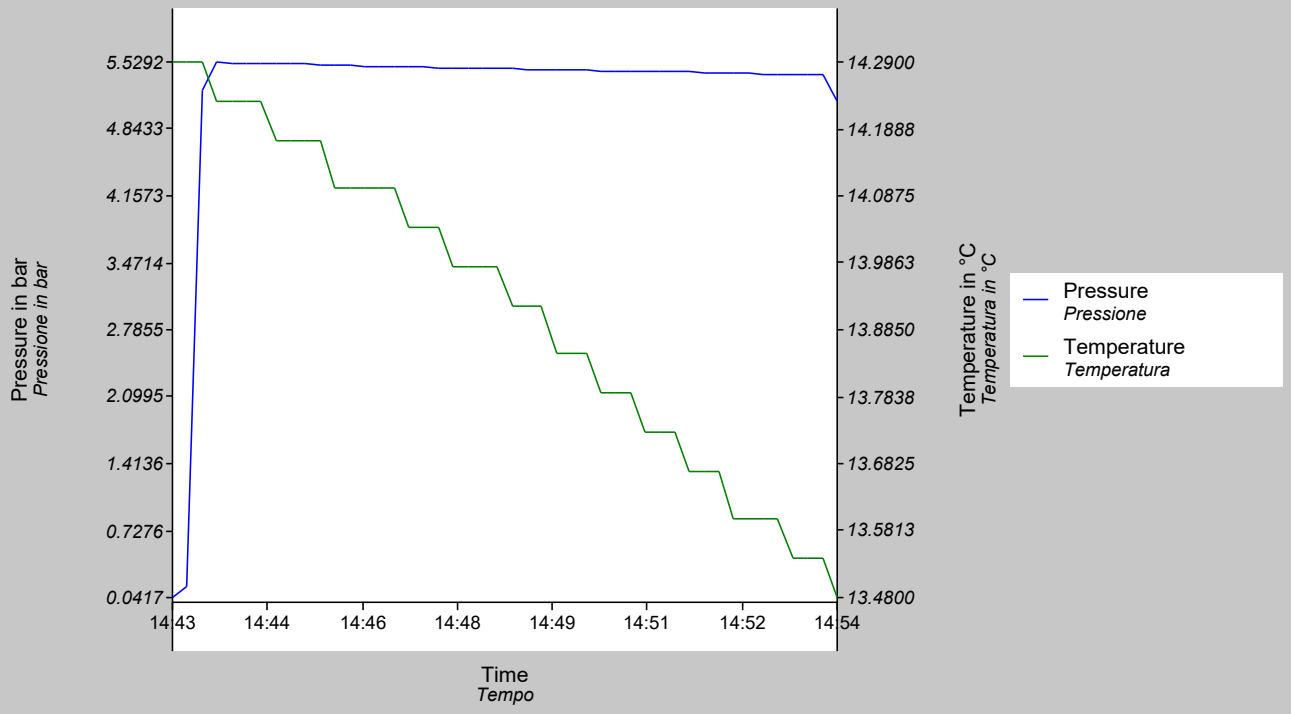
ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	AV-63008/50-XV-004

Measurement results

Risultati della misura

Graphical representation of progression
Rappresentazione grafica dell'andamento



Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
02/01/2025 14:43:11.000	0.0417	14.2900
02/01/2025 14:43:26.000	0.1617	14.2900
02/01/2025 14:43:41.000	5.2393	14.2900
02/01/2025 14:43:56.000	5.5292	14.2300
02/01/2025 14:44:11.000	5.5158	14.2300
02/01/2025 14:44:26.000	5.5152	14.2300
02/01/2025 14:44:41.000	5.5128	14.2300
02/01/2025 14:44:56.000	5.5121	14.1700
02/01/2025 14:45:11.000	5.5100	14.1700
02/01/2025 14:45:26.000	5.5060	14.1700
02/01/2025 14:45:41.000	5.5025	14.1700
02/01/2025 14:45:56.000	5.5047	14.1000
02/01/2025 14:46:11.000	5.4959	14.1000
02/01/2025 14:46:26.000	5.4860	14.1000
02/01/2025 14:46:41.000	5.4885	14.1000
02/01/2025 14:46:56.000	5.4806	14.1000
02/01/2025 14:47:11.000	5.4785	14.0400

Logger protocol

Protocollo di acquisizione elenco dati

ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	AV-63008/50-XV-004

Measurement results

Risultati della misura

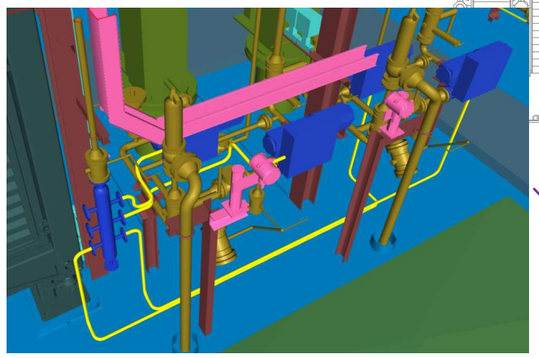
Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
02/01/2025 14:47:26.000	5.4750	14.0400
02/01/2025 14:47:41.000	5.4672	14.0400
02/01/2025 14:47:56.000	5.4710	13.9800
02/01/2025 14:48:11.000	5.4613	13.9800
02/01/2025 14:48:26.000	5.4642	13.9800
02/01/2025 14:48:41.000	5.4566	13.9800
02/01/2025 14:48:56.000	5.4579	13.9200
02/01/2025 14:49:11.000	5.4546	13.9200
02/01/2025 14:49:26.000	5.4452	13.9200
02/01/2025 14:49:41.000	5.4448	13.8500
02/01/2025 14:49:56.000	5.4428	13.8500
02/01/2025 14:50:11.000	5.4417	13.8500
02/01/2025 14:50:26.000	5.4401	13.7900
02/01/2025 14:50:41.000	5.4339	13.7900
02/01/2025 14:50:56.000	5.4281	13.7900
02/01/2025 14:51:11.000	5.4322	13.7300
02/01/2025 14:51:26.000	5.4254	13.7300
02/01/2025 14:51:41.000	5.4268	13.7300
02/01/2025 14:51:56.000	5.4249	13.6700
02/01/2025 14:52:11.000	5.4192	13.6700
02/01/2025 14:52:26.000	5.4207	13.6700
02/01/2025 14:52:41.000	5.4176	13.6000
02/01/2025 14:52:56.000	5.4129	13.6000
02/01/2025 14:53:11.000	5.4077	13.6000
02/01/2025 14:53:26.000	5.4060	13.6000
02/01/2025 14:53:41.000	5.4031	13.5400
02/01/2025 14:53:56.000	5.3986	13.5400
02/01/2025 14:54:11.000	5.3972	13.5400
02/01/2025 14:54:26.000	5.1268	13.4800

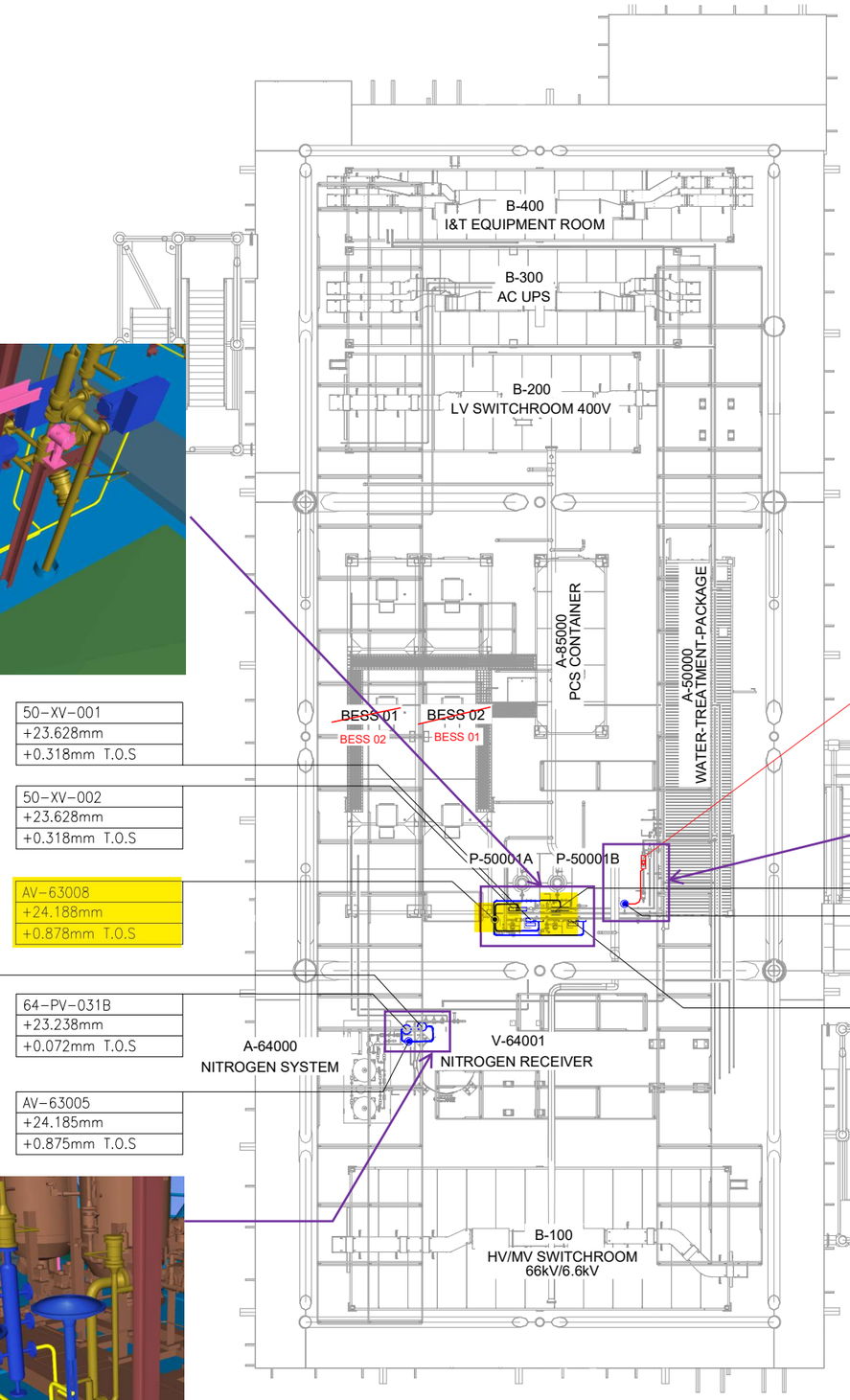
								DATA TUBING											FROM AREA					TO AREA					
POS.	REV	SUPPLY SCOPE	LAINING SCOPE	TAG Tubing	P&ID	MAIN FUNCTION	SERVICE	DESIGN TEMPERATURE(C°)	OPERATING PRESSURE (Barg)	DESIGN PRESSURE (Barg)	TEST PRESSURE (Barg)	FLUID TEST	DIMENSIONS	MATERIAL	REF. DOC.	Q.TY (m)	FIRE PROOFING	HEAT TRACING	MODULE	AREA	FROM ITEM	REF. P&I	DESCRIPTION	MODULE	AREA	TO ITEM	REF. LAYOUT	DESCRIPTION	NOTE
01	04	RM	RM	**AV-63001/25-XV-011**	123A90-DDL-PR-PID-80017	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63001	123A90-DDL-PR-PID-80041	Distribution Pot 1	BLPH	Upper Deck	25-XV-011	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
02	04	RM	RM	**AV-63001/25-FV-033**	123A90-DDL-PR-PID-80017	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**9**	N.A.	N.A.	BLPH	Upper Deck	AV-63001	123A90-DDL-PR-PID-80041	Distribution Pot 1	BLPH	Upper Deck	25-FV-033	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
03	04	RM	RM	**AV-63001/25-XV-008**	123A90-DDL-PR-PID-80016	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Upper Deck	AV-63001	123A90-DDL-PR-PID-80041	Distribution Pot 1	BLPH	Upper Deck	25-XV-008	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
04	04	RM	RM	**AV-63001/25-FV-032**	123A90-DDL-PR-PID-80016	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Upper Deck	AV-63001	123A90-DDL-PR-PID-80041	Distribution Pot 1	BLPH	Upper Deck	25-FV-032	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
05	04	RM	RM	**AV-63002/25-XV-020**	123A90-DDL-PR-PID-80020	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-XV-020	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
06	04	RM	RM	**AV-63002/25-FV-036**	123A90-DDL-PR-PID-80020	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**11**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-FV-036	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
07	04	RM	RM	**AV-63002/25-XV-017**	123A90-DDL-PR-PID-80019	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**5**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-XV-017	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
08	04	RM	RM	**AV-63002/25-FV-038**	123A90-DDL-PR-PID-80019	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-FV-038	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
09	04	RM	RM	**AV-63002/25-XV-014**	123A90-DDL-PR-PID-80018	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-XV-014	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
10	04	RM	RM	**AV-63002/25-FV-034**	123A90-DDL-PR-PID-80018	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63002	123A90-DDL-PR-PID-80041	Distribution Pot 2	BLPH	Upper Deck	25-FV-034	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
11	04	RM	RM	**AV-63003/25-BDV-010**	123A90-DDL-PR-PID-80017	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63003	123A90-DDL-PR-PID-80041	Distribution Pot 3	BLPH	Upper Deck	25-BDV-010	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
12	04	RM	RM	**AV-63003/25-PV-040**	123A90-DDL-PR-PID-80017	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63003	123A90-DDL-PR-PID-80041	Distribution Pot 3	BLPH	Upper Deck	25-PV-040	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
13	04	RM	RM	**AV-63003/25-XV-012**	123A90-DDL-PR-PID-80017	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Upper Deck	AV-63003	123A90-DDL-PR-PID-80041	Distribution Pot 3	BLPH	Upper Deck	25-XV-012	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
14	04	RM	RM	**AV-63003/25-XV-009**	123A90-DDL-PR-PID-80016	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**13**	N.A.	N.A.	BLPH	Upper Deck	AV-63003	123A90-DDL-PR-PID-80041	Distribution Pot 3	BLPH	Upper Deck	25-XV-009	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
15	04	RM	RM	**AV-63004/25-BDV-013**	123A90-DDL-PR-PID-80018	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63004	123A90-DDL-PR-PID-80041	Distribution Pot 4	BLPH	Upper Deck	25-BDV-013	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
16	04	RM	RM	**AV-63004/25-PV-043**	123A90-DDL-PR-PID-80018	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63004	123A90-DDL-PR-PID-80041	Distribution Pot 4	BLPH	Upper Deck	25-PV-043	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
17	04	RM	RM	**AV-63004/25-XV-015**	123A90-DDL-PR-PID-80018	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Upper Deck	AV-63004	123A90-DDL-PR-PID-80041	Distribution Pot 4	BLPH	Upper Deck	25-XV-015	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
18	04	RM	RM	**AV-63005/64-PV-031A**	123A90-DDL-PR-PID-80027	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**4**	N.A.	N.A.	BLPH	Lower Deck	AV-63005	123A90-DDL-PR-PID-80041	Distribution Pot 5	BLPH	Lower Deck	64-PV-031A	123A90-DDL-IN-DL-40080	Pneumatic Control Valve	Design Pressure set as per downstream PSV
19	04	RM	RM	**AV-63005/64-PV-031B**	123A90-DDL-PR-PID-80027	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**3**	N.A.	N.A.	BLPH	Lower Deck	AV-63005	123A90-DDL-PR-PID-80041	Distribution Pot 5	BLPH	Lower Deck	64-PV-031B	123A90-DDL-IN-DL-40080	Pneumatic Control Valve	Design Pressure set as per downstream PSV
20	04	RM	RM	**AV-63006/25-BDV-022**	123A90-DDL-PR-PID-80014	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Upper Deck	AV-63006	123A90-DDL-PR-PID-80041	Distribution Pot 6	BLPH	Upper Deck	25-BDV-022	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
21	04	RM	RM	**AV-63006/25-XV-021**	123A90-DDL-PR-PID-80020	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Upper Deck	AV-63006	123A90-DDL-PR-PID-80041	Distribution Pot 6	BLPH	Upper Deck	25-XV-021	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
22	04	RM	RM	**AV-63006/25-PV-049**	123A90-DDL-PR-PID-80020	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**9**	N.A.	N.A.	BLPH	Upper Deck	AV-63006	123A90-DDL-PR-PID-80041	Distribution Pot 6	BLPH	Upper Deck	25-PV-049	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
23	04	RM	RM	**AV-63006/25-BDV-019**	123A90-DDL-PR-PID-80020	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63006	123A90-DDL-PR-PID-80041	Distribution Pot 6	BLPH	Upper Deck	25-BDV-019	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
24	04	RM	RM	**AV-63006/80-XV-001**	123A90-DDL-PR-PID-80012	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63006	123A90-DDL-PR-PID-80041	Distribution Pot 6	BLPH	Upper Deck	80-XV-001	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
25	04	RM	RM	**AV-63007/25-XV-006**	123A90-DDL-PR-PID-80015	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**9**	N.A.	N.A.	BLPH	Upper Deck	AV-63007	123A90-DDL-PR-PID-80041	Distribution Pot 7	BLPH	Upper Deck	25-XV-006	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
26	04	RM	RM	**AV-63007/25-PV-035**	123A90-DDL-PR-PID-80015	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**11**	N.A.	N.A.	BLPH	Upper Deck	AV-63007	123A90-DDL-PR-PID-80041	Distribution Pot 7	BLPH	Upper Deck	25-PV-035	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
27	04	RM	RM	**AV-63007/25-BDV-005**	123A90-DDL-PR-PID-80015	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63007	123A90-DDL-PR-PID-80041	Distribution Pot 7	BLPH	Upper Deck	25-BDV-005	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
28	04	RM	RM	**AV-63007/25-PV-037**	123A90-DDL-PR-PID-80016	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63007	123A90-DDL-PR-PID-80041	Distribution Pot 7	BLPH	Upper Deck	25-PV-037	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
29	04	RM	RM	**AV-63007/25-BDV-007**	123A90-DDL-PR-PID-80016	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63007	123A90-DDL-PR-PID-80041	Distribution Pot 7	BLPH	Upper Deck	25-BDV-007	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
30	04	RM	RM	**AV-63008/50-XV-001**	123A90-DDL-PR-PID-80021	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Lower Deck	AV-63008	123A90-DDL-PR-PID-80041	Distribution Pot 8	BLPH	Lower Deck	50-XV-001	123A90-DDL-IN-DL-40080	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
31	04	RM	RM	**AV-63008/50-XV-002**	123A90-DDL-PR-PID-80021	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**5**	N.A.	N.A.	BLPH	Lower Deck	AV-63008	123A90-DDL-PR-PID-80041	Distribution Pot 8	BLPH	Lower Deck	50-XV-002	123A90-DDL-IN-DL-40080	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
32	04	RM	RM	**AV-63008/50-XV-003**	123A90-DDL-PR-PID-80021	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Lower Deck	AV-63008	123A90-DDL-PR-PID-80041	Distribution Pot 8	BLPH	Lower Deck	50-XV-003	123A90-DDL-IN-DL-40080	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
33	04	RM	RM	**AV-63008/50-XV-004**	123A90-DDL-PR-PID-80021	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Lower Deck	AV-63008	123A90-DDL-PR-PID-80041	Distribution Pot 8	BLPH	Lower Deck	50-XV-004	123A90-DDL-IN-DL-40080	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
33A	04	RM	RM	**AV-63009/50-XV-005**	123A90-DDL-PR-PID-80025	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**4**	N.A.	N.A.	BLPH	Lower Deck	AV-63009	123A90-DDL-PR-PID-80041	Distribution Pot 9	BLPH	Lower Deck	50-XV-005	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
34	04	RM	RM	**AV-63010/25-SDV-001**	123A90-DDL-PR-PID-80013	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**10**	N.A.	N.A.	BLPH	Upper Deck	AV-63010	123A90-DDL-PR-PID-80041	Distribution Pot 10	BLPH	Upper Deck	25-SDV-001	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
35	04	RM	RM	**AV-63010/25-XV-024**	123A90-DDL-PR-PID-80013	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**9**	N.A.	N.A.	BLPH	Upper Deck	AV-63010	123A90-DDL-PR-PID-80041	Distribution Pot 10	BLPH	Upper Deck	25-XV-024	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
36	04	RM	RM	**AV-63010/25-XV-004**	123A90-DDL-PR-PID-80015	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**5**	N.A.	N.A.	BLPH	Upper Deck	AV-63010	123A90-DDL-PR-PID-80041	Distribution Pot 10	BLPH	Upper Deck	25-XV-004	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
37	04	RM	RM	**AV-63010/25-FV-031**	123A90-DDL-PR-PID-80015	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Upper Deck	AV-63010	123A90-DDL-PR-PID-80041	Distribution Pot 10	BLPH	Upper Deck	25-FV-031	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
38	04	RM	RM	**AV-63010/64-SDV-001**	123A90-DDL-PR-PID-80027	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**15**	N.A.	N.A.	BLPH	Upper Deck	AV-63010	123A90-DDL-PR-PID-80041	Distribution Pot 10	BLPH	Upper Deck	64-SDV-001	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
39	04	RM	RM	**AV-63011/25-SDV-023**	123A90-DDL-PR-PID-80014	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**4**	N.A.	N.A.	BLPH	Upper Deck	AV-63011	123A90-DDL-PR-PID-80041	Distribution Pot 11	BLPH	Upper Deck	25-SDV-023	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
40	04	RM	RM	**AV-63011/25-PV-055A**	123A90-DDL-PR-PID-80014	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**7**	N.A.	N.A.	BLPH	Upper Deck	AV-63011	123A90-DDL-PR-PID-80041	Distribution Pot 11	BLPH	Upper Deck	25-PV-055A	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
41	04	RM	RM	**AV-63011/25-PV-055B**	123A90-DDL-PR-PID-80014	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**6**	N.A.	N.A.	BLPH	Upper Deck	AV-63011	123A90-DDL-PR-PID-80041	Distribution Pot 11	BLPH	Upper Deck	25-PV-055B	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
42	04	RM	RM	**AV-63012/25-XV-018**	123A90-DDL-PR-PID-80019	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**5**	N.A.	N.A.	BLPH	Upper Deck	AV-63012	123A90-DDL-PR-PID-80041	Distribution Pot 12	BLPH	Upper Deck	25-XV-018	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
43	04	RM	RM	**AV-63012/25-PV-046**	123A90-DDL-PR-PID-80019	Pneumatic Connection	Air Supply	100	4	6	6,6	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**8**	N.A.	N.A.	BLPH	Upper Deck	AV-63012	123A90-DDL-PR-PID-80041	Distribution Pot 12	BLPH	Upper Deck	25-PV-046	123A90-DDL-IN-DL-40081	Pneumatic Control Valve	Design Pressure set as per downstream PSV
44	04	RM	RM	**AV-63012/25-BDV-016**	123A90-DDL-PR-PID-80019	Pneumatic Connection	Air Supply	100	4	4,7	5,17	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40078	**9**	N.A.	N.A.	BLPH	Upper Deck	AV-63012	123A90-DDL-PR-PID-80041	Distribution Pot 12	BLPH	Upper Deck	25-BDV-016	123A90-DDL-IN-DL-40081	Pneumatic On/Off Valve	Design Pressure set as per downstream PSV
45	03	DELETED	DELETED	**BLPH-MV-014/25-PT-001**	123A90-DDL-PR-PID-80013	Process Connection	Hydrogen	80	7,5 / 30	40	7,5 / 30	N_2	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40077	**0,5**	N.A.	N.A.	BLPH	Upper Deck	BLPH-MV-014	123A90-DDL-PR-PID-80013	Manual Valve	BLPH	Upper Deck	25-PT-001	123A90-DDL-IN-DL-40081	Pressure Transmitter	
46	03	DELETED	DELETED	**BLPH-MV-013/25-PT-002**	123A90-DDL-PR-PID-80013	Process Connection	Hydrogen	80	7,5 / 30	40	7,5 / 30	N_2	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40077	**0,5**	N.A.	N.A.	BLPH	Upper Deck	BLPH-MV-013	123A90-DDL-PR-PID-80013	Manual Valve	BLPH	Upper Deck	25-PT-002	123A90-DDL-IN-DL-40081	Pressure Transmitter	
47	03	DELETED	DELETED	**BLPH-MV-025/25-PT-055A**	123A90-DDL-PR-PID-80014	Process Connection	Hydrogen	100	17,7	19	17,7	N_2	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40077	**0,5**	N.A.	N.A.	BLPH	Upper Deck	BLPH-MV-025	123A90-DDL-PR-PID-80014	Manual Valve	BLPH	Upper Deck	25-PT-055A	123A90-DDL-IN-DL-40081	Pressure Transmitter	
48	03	DELETED	DELETED	**BLPH-MV-213/25-PT-055B**	123A90-DDL-PR-PID-80014	Process Connection	Hydrogen	100	3,5 / 6,5	10	3,5 / 6,5	N_2	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40077	**0,5**	N.A.	N.A.	BLPH	Upper Deck	BLPH-MV-213	123A90-DDL-PR-PID-80014	Manual Valve	BLPH	Upper Deck	25-PT-055B	123A90-DDL-IN-DL-40081	Pressure Transmitter	
49	03	DELETED	DELETED	**BLPH-MV-407/43-PT-001**	123A90-DDL-PR-PID-80029	Process Connection	Hydrogen	-10 / +80	ATM	3,5	ATM	N_2	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40077	**0,5**	N.A.	N.A.	BLPH	Upper Deck	BLPH-MV-407	123A90-DDL-PR-PID-80029	Manual Valve	BLPH	Upper Deck	43-PT-001	123A90-DDL-IN-DL-40081	Pressure Transmitter	
50	03	DELETED	DELETED	**BLPH-MV-411/50-PT-014**	123A90-DDL-PR-PID-80025	Process Connection	Waste Water	100	ATM	17,7	ATM	N_2	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40077	**0,5**	N.A.	YES	BLPH	Lower Deck	BLPH-MV-411	123A90-DDL-PR-PID-80025	Manual Valve	BLPH	Lower Deck	50-PT-014	123A90-DDL-IN-DL-40080	Pressure Transmitter	
51	03	DELETED	DELETED	**BLPH-MV-150/63-PT-003**	123A90-DDL-PR-PID-80027	Process Connection	Instrument Air	100	4 / 10	11	4 / 10	N_2	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40077	**0,5**	N.A.	N.A.	BLPH	Upper Deck	BLPH-MV-150	123A90-DDL-PR-PID-80027	Manual Valve	BLPH	Upper Deck	63-PT-003	123A90-DDL-IN-DL-40081	Pressure Transmitter	
52	03	DELETED	DELETED	**BLPH-MV-151/63-PT-004**	123A90-DDL-PR-PID-80027	Process Connection	Instrument Air	100	4 / 10	11	4 / 10	N_2	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40077	**0,5**	N.A.	N.A.	BLPH	Upper Deck	BLPH-MV-151	123A90-DDL-PR-PID-80027	Manual Valve	BLPH	Upper Deck	63-PT-004	123A90-DDL-IN-DL-40081	Pressure Transmitter	
53	04	RM	RM	**BLPH-MV-386/64-PT-031A**	123A90-DDL-PR-PID-80027	Process Connection	Nitrogen Gas	100	6	10	11	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40077	**0,5**	N.A.	N.A.	BLPH	Lower Deck	BLPH-MV-386	123A90-DDL-PR-PID-80027	Manual Valve	BLPH	Lower Deck	64-PT-031A	123A90-DDL-IN-DL-40080	Pressure Transmitter	
54	03	DELETED	DELETED	**BLPH-MV-166/64-PT-031B**	123A90-DDL-PR-PID-80027	Process Connection	Nitrogen Gas	100	6	10	6	N_2	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40077	**0,5**	N.A.	N.A.	BLPH	Lower Deck	BLPH-MV-166	123A90-DDL-PR-PID-80027	Manual Valve	BLPH	Lower Deck	64-PT-031B	123A90-DDL-IN-DL-40080	Pressure Transmitter	
55	03	DELETED	DELETED	**BLPH-MV-167/64-PT-002**	123A90-DDL-PR-PID-80027	Process Connection	Nitrogen Gas	100	6	10	6	N_2	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40077	**0,5**	N.A.	N.A.	BLPH	Lower Deck	BLPH-MV-167	123A90-DDL-PR-PID-80027	Manual Valve	BLPH	Lower Deck	64-PT-002	123A90-DDL-IN-DL-40080	Pressure Transmitter	
56	03	DELETED	DELETED	**BLPH-MV-038/80-PT-002**	123A90-DDL-PR-PID-80012	Process Connection	Hydrogen	100	3,5 / 6	10	3,5 / 6	N_2	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40077	**0,5**	N.A.	N.A.	BLPH	Upper Deck	BLPH-MV-038	123A90-DDL-PR-PID-80012	Manual Valve	BLPH	Upper Deck	80-PT-002	123A90-DDL-IN-DL-40081	Pressure Transmitter	
57	04	RM	RM	**BLPH-MV-404/43-LT-001**	123A90-DDL-PR-PID-80029	Process Connection	Water	-10 / +80	ATM	3,5	3,85	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40077	**4**	N.A.	YES	BLPH	Upper Deck	BLPH-MV-404	123A90-DDL-PR-PID-80029	Manual Valve	BLPH	Upper Deck	43-LT-001	123A90-DDL-IN-DL-40081	Level DP Transmitter	
58	04	RM	RM	**BLPH-MV-405/43-LT-001**	123A90-DDL-PR-PID-80029	Process Connection	Water	-10 / +80	ATM	3,5	3,85	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40077	**4**	N.A.	YES	BLPH	Upper Deck	BLPH-MV-405	123A90-DDL-PR-PID-80029	Manual Valve	BLPH	Upper Deck	43-LT-001	123A90-DDL-IN-DL-40081	Level DP Transmitter	
59	04	RM	RM	**BLPH-MV-462/43-LT-003**	123A90-DDL-PR-PID-80029	Process Connection	Water	-10 / +80	ATM	3,5	3,85	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40077	**4**	N.A.	YES	BLPH	Upper Deck	BLPH-MV-462	123A90-DDL-PR-PID-80029	Manual Valve	BLPH	Upper Deck	43-LT-003	123A90-DDL-IN-DL-40081	Level DP Transmitter	
60	04	RM	RM	**BLPH-MV-463/43-LT-003**	123A90-DDL-PR-PID-80029	Process Connection	Water	-10 / +80	ATM	3,5	3,85	N2 / Dry Air	1/2" OD x Thk. 0,049"	AISI 316L	123A90-DDL-IN-HD-40077	**4**	N.A.	YES	BLPH	Upper Deck	BLPH-MV-463	123A90-DDL-PR-PID-80029	Manual Valve	BLPH	Upper Deck	43-LT-003	123A90-DDL-IN-DL-40081	Level DP Transmitter	

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DRAWING NO. 123A90-DDL-IN-DL-40084

REV. 01





50-XV-001
+23.628mm
+0.318mm T.O.S

50-XV-002
+23.628mm
+0.318mm T.O.S

AV-63008
+24.188mm
+0.878mm T.O.S

64-PV-031A
+23.238mm
+0.072mm T.O.S

64-PV-031B
+23.238mm
+0.072mm T.O.S

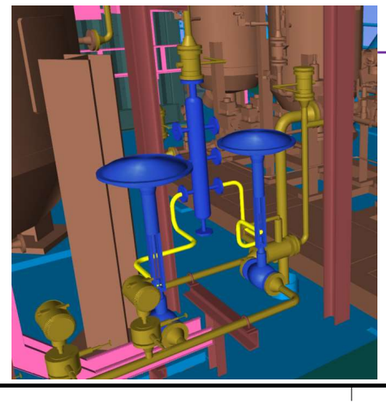
AV-63005
+24.185mm
+0.875mm T.O.S

50-XV-005
+23.628mm
+0.318mm T.O.S.

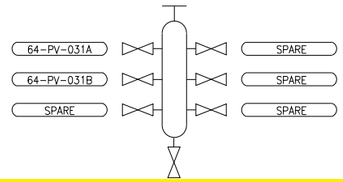
50-XV-004
+23.628mm
+0.318mm T.O.S

AV-63009
+24.235mm
+0.925mm T.O.S

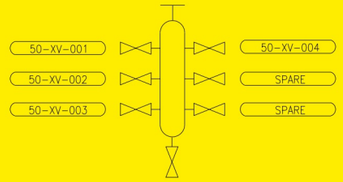
50-XV-003
+23.628mm
+0.318mm T.O.S



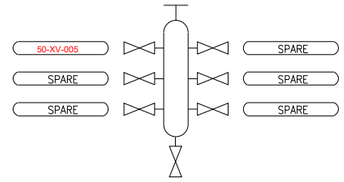
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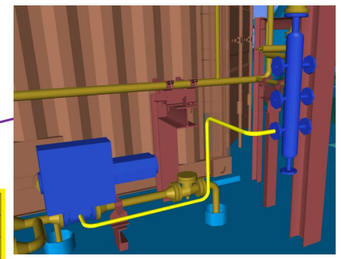


AV-63008



AV-63009

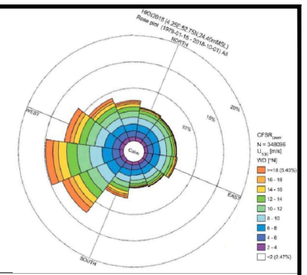




LOWER DECK

SCALE: 1:1

VIEW EL. 23310mm to 29310mm



NOTES

1) TUBING ROUTING > 2m IS SHOWN AND IT IS INDICATIVE ONLY.
TUBING ROUTING SHALL BE FINALIZED DURING CONSTRUCTION ACTIVITIES.

LEGEND

- AIR DISTRIBUTION POT
- CONTROL VALVE
- ON-OFF VALVE
- TUBING

HOLDS

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DL-40084**

REV.:	DATE:	SIGNATURE:
1_D	12/12/24	C.Pilato

ROSETTI MARINO SpA

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	23/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	23/02/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT TUBING LAYOUT
ELEVATION 23.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE 1:100

DRAWN DRAWN_BY | CHECKED CHECKED_BY | APPROVED APPROVED_BY | DATE DD/MM/YY

A1 | DRAWING NO. 123A90-DDL-IN-DL-40084 | SHEET 001 | REV. 01

File Name : 12390-DDL-IN-DL-40084_Rev.01

DRAWING NO. DRAWING_NO.

REV. REV.

P-50001 A/B

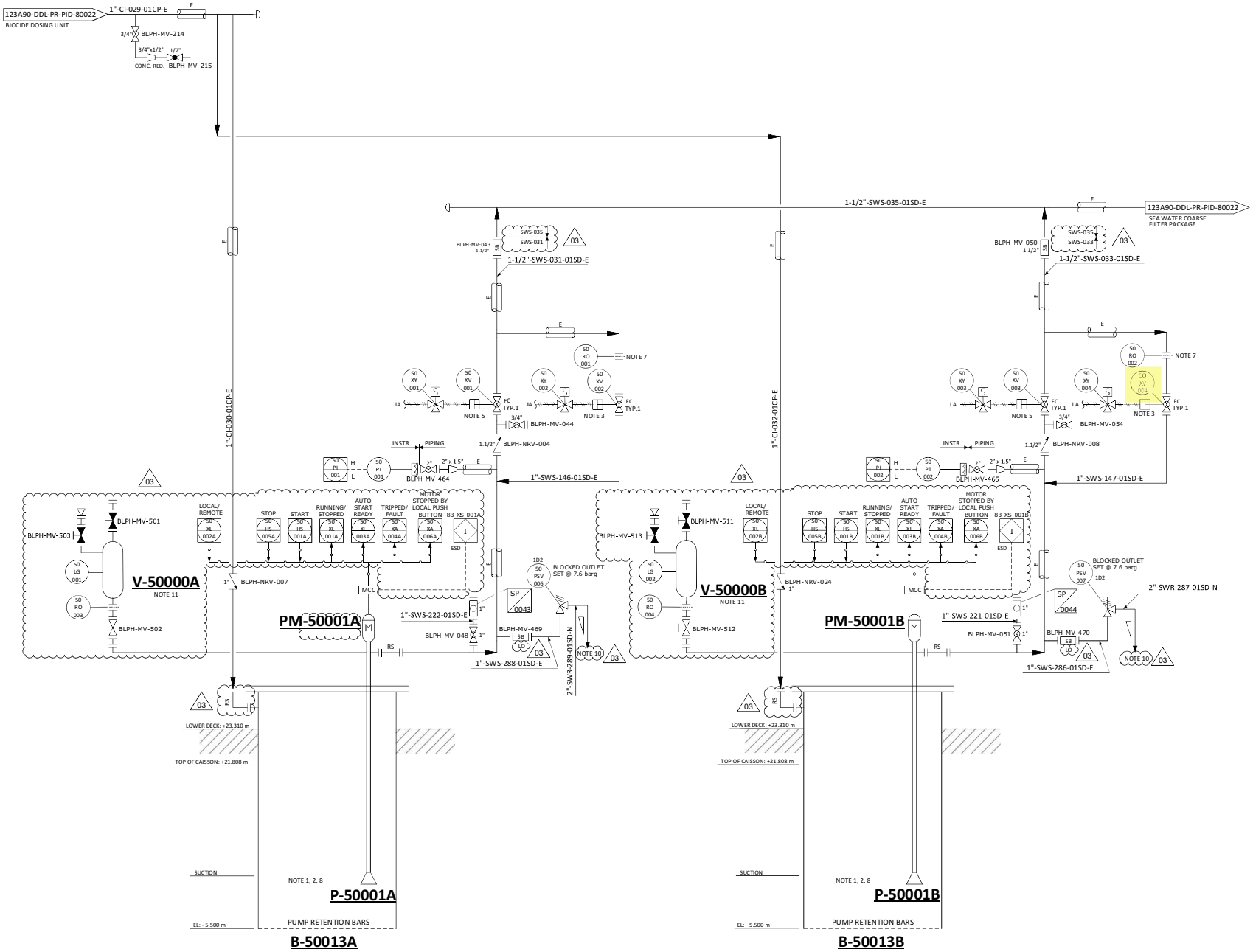
SEA WATER LIFT PUMPS

POWER :	1.6 KW
FLOW :	2.5 m³/h
DESIGN P/T :	7.6 barg / 80°C
DISCHARGE PRESSURE :	5.6 barg (NOTE 9)
MATERIAL :	SDSS

B-50013 A/B

SEA WATER LIFT PUMPS CAISSONS

SIZE :	343 mm (ID) x 27308 mm (H)
MATERIAL :	CS + CA



NOTES

1. SEAWATER LIFT PUMPS ARE RATED 2 X 100%
2. AUTO START OF DESIGNATED STANDBY PUMP ON LOSS OF RUNNING STATUS AND DISCHARGE LOW PRESSURE ALARM OF DUTY PUMP.
3. VALVE TO BE OPENED WHEN PUMP IS OFFLINE TO DOSE CAISSON WITH TREATED SEAWATER TO PREVENT BIOLOGICAL GROWTH.
4. DELETED.
5. SOFTWARE INTERLOCK PREVENTS PUMPS FROM STARTING IN CASE THE RELEVANT XV VALVE IS FULLY CLOSED. 03
6. DELETED.
7. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "123A90-DDL-IN-DS-40054 - TECHNICAL DATASHEET FOR RESTRICTION ORIFICE".
8. LOGIC FOR CONTROL OF P-5001A/B THAT PREVENTS SIMULTANEOUS RUNNING OF A AND B PUMP IS PROVIDED.
9. DISCHARGE PRESSURE REFERS TO THE FLANGE DISCHARGE OF THE PUMP AT LOWER DECK.
10. ROUTED TO THE SEA.
11. VESSELS V-50000A/B ARE INSULATED AND HEAT TRACED. 03

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.
5. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :

BLPH PIPING AND INSTRUMENTATION DIAGRAM
SEA-WATER INTAKE SYSTEM SHEET 1

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80021	SHEET 001	REV. 03

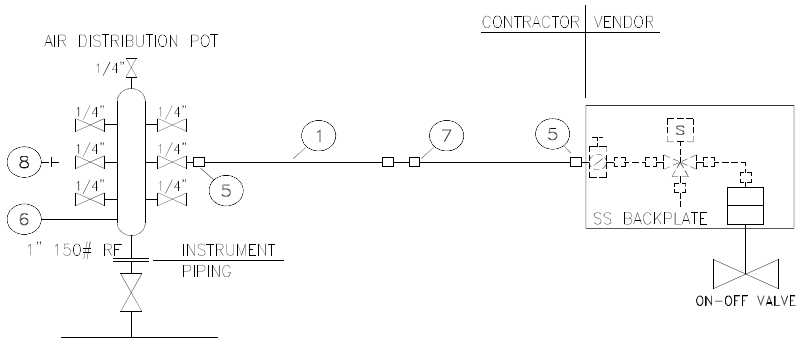
File Name : FILE_NAME

PNEUMATIC HOOK-UP FOR ON-OFF VALVES

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-HD-40078**

REV.:	DATE:	SIGNATURE:
1_B	06/11/24	G.Randi

ROSETTI MARINO SpA

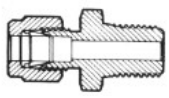
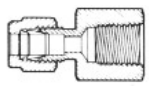
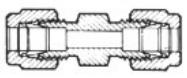


	INSTRUMENT TAG
1	25-BDV-022
2	25-BDV-005
3	25-BDV-007
4	25-BDV-010
5	25-BDV-013
6	25-BDV-016
7	25-BDV-019
8	25-SDV-001
9	25-SDV-023
10	25-XV-004
11	25-XV-006
12	25-XV-008
13	25-XV-009
14	25-XV-011
15	25-XV-012
16	25-XV-014
17	25-XV-015
18	25-XV-017
19	25-XV-018
20	25-XV-020
21	25-XV-021
22	25-XV-024
23	50-XV-001
24	50-XV-002
25	50-XV-003
26	50-XV-004
27	80-XV-001
28	64-SDV-001
29	50-XV-005
30	

NOTE:
(1) For Air Distribution Pot quantities see material take-off on sh. 4

POS.	NORM/STD CODE	DESCRIPTION	SIZE/CONNECTION TYPE	Q.TY
8		SS316 PLUG	1/4" NPT	Note 1
7		SS316 UNION	1/2" O.D. x 1/2" O.D.	N. 1
6		SS316 AIR DISTRIBUTION POT	1" 150#RF - N. 7 1/4" BALL VALVES	Note 1
5		SS316 MALE CONNECTOR	1/4" NPT x 1/2" O.D.	N. 2
1		SS 316L TUBING	1/2" x 0,049"Thk	10 m

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POS	PICTURE	DESCRIPTION		ITEM ID CODE	TOTAL					
		COMPRESSION FITTING TYPE: **DOUBLE FERRULE** THREADING: ASME B1.20.1 NPT MATERIAL: AISI 316 WORKING PRESSURE AS PER ASME B31.1 TUBING TYPE: ■ INCHES ☐ METRIC			UNIT	Counted	Required			
							Rev. 00	Rev. 01	Rev.	Rev.
1		STRAIGHT MALE CONNECTOR	1/2" NPT-M x 3/8" O.D.		nr.					
2			1/4" NPT-M x 1/2" O.D.		nr.	102	102	102		
3			1/2" NPT-M x 1/2" O.D.		nr.	36	36	-		
4			1/2" NPT-M x 3/4" O.D.		nr.					
5			3/4" NPT-M x 3/4" O.D.		nr.					
6			3/8" NPT-M x 3/8" O.D.		nr.					
7		STRAIGHT FEMALE CONNECTOR	1/2" NPT-F x 3/8" O.D.		nr.					
8			1/4" NPT-F x 1/2" O.D.		nr.					
9			1/2" NPT-F x 1/2" O.D.		nr.					
10			1/2" NPT-F x 3/4" O.D.		nr.					
11		UNION CONNECTOR	1/4" O.D. x 1/4" O.D.		nr.					
12			3/8" O.D. x 3/8" O.D.		nr.					
13			1/2" O.D. x 1/2" O.D.		nr.	49	49	49		
14			3/4" O.D. x 3/4" O.D.		nr.					
15		ELBOW CONNECTOR	1/4" NPT-M x 1/2" O.D.		nr.	27	27	27		
16			1/2" NPT-M x 1/2" O.D.		nr.					
17										
18										
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32										
33										
34										

VENDOR / ORDER : **AF SYSTEM / 1724001332**

MATERIAL :

- ☐ ASTM A106 Gr.B
- ■ AISI 316 L
- ☐ UNS S31254

SPECIAL REQUIREMENTS :

- ☐ ...

REMARKS :

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CROSSWIND	HOLLANDSE KUST NOORD WIND PARK Project Contract No. CW-I-WP4-2023-05	ROSETTI MARINO
Document Title:	TDS - Tubing and Fittings	Sh. 6 of 6 Date: 06/09/2024 Rev. 01

POS	SIZE	RATING	DESCRIPTION	ITEM ID CODE	UNIT	TOTAL				
						Counted	Required			
							Rev. 00	Rev. 01	Rev.	Rev.
1	1/2"		SS316 NIPPLE 1/2" NPT - L=100mm			40	40	2		
2	1/4"		SS316 PLUG 1/4" NPT			27	27	27		
3	1"		SS316L AIR DISTRIBUTION POT 1" 150#RF - N. 7 1/4" BALL VALVES			14	14	13		
4	1/2"	0,049"	SEAMLESS TUBING AISI 316L		m	558	558	276		
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										

VENDOR / ORDER : AF SYSTEM / 1724001332

MATERIAL :

- ☐ ASTM A106 Gr.B
- ■ AISI 316 L
- ☐ UNS S31254

SPECIAL REQUIREMENTS :

- ☐ ...

REMARKS :

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I Traversa, n. 8
70026 - Modugno (BA) • Italy
www.wika.it

Centro di Taratura LAT N°114
Calibration Centre
Laboratorio Accreditato di Taratura
Accredited Calibration Laboratory

LAT N° 114

CERTIFICATO DI TARATURA LAT 114 0435-SM-24
Certificate of Calibration

- data di emissione date of issue	2024-09-20
- cliente customer	FAST AUTOMATION SRL VIA DELLA PREVIDENZA SOCIALE, 8 IT-42124 REGGIO EMILIA (RE)
- destinatario receiver	ROSETTI MARINO SPA - YARD PIOMBONI VIA DEL MARCHESATO, 37 IT-48122 MARINA DI RAVENNA (RA)

Si riferisce a
referring to

- oggetto *item*	Misuratore di pressione elettronico Electrical pressure gauge
- costruttore *manufacturer*	WIKA
- modello *model*	CPG1500
- matricola *serial number*	1A014ILJJIM
- data di ricev. oggetto *date of receipt of item*	2024-09-17
- data delle misure *date of measurements*	2024-09-20
- registro di laboratorio *laboratory reference*	0435-SM-24

Il presente certificato di taratura è emesso in base all'accreditamento LAT N. 114 rilasciato in accordo ai decreti attuativi della legge n. 273/1991 che ha istituito il Sistema Nazionale di Taratura (SNT). ACCREDIA attesta le capacità di misura e di taratura, le competenze metrologiche del Centro e la riferibilità delle tarature eseguite ai campioni nazionali ed internazionali delle unità del Sistema Internazionale delle Unità (SI).
Questo certificato non può essere riprodotto in modo parziale, salvo espressa autorizzazione scritta da parte del Centro.

This certificate of calibration is issued in compliance with the accreditation LAT No.114 granted according to decrees connected with Italian law No. 273/1991 which has established the National Calibration System. ACCREDIA attests the calibration and measurement capability, metrological competence of the Centre and the traceability of calibration results to the national and International standards of the International System of Units (SI).
This certificate may not be partially reproduced, except with the prior written permission of the issuing Centre.

I risultati di misura riportati nel presente Certificato sono stati ottenuti applicando le procedure di taratura citate alla pagina seguente, dove sono specificati anche i campioni o gli strumenti che garantiscono la catena di riferibilità del Centro e i rispettivi certificati di taratura in corso di validità. Essi si riferiscono esclusivamente all'oggetto in taratura e sono validi nel momento e nelle condizioni di taratura, salvo diversamente specificato.

The measurement results reported in this Certificate were obtained following the calibration procedures given in the following page, where the reference standards or instruments are indicated which guarantee the traceability chain of the laboratory, and the related calibration certificates in the course of validity are indicated as well. They relate only to the calibrated item and they are valid for the time and conditions of calibration, unless otherwise specified.

Le incertezze di misura dichiarate in questo documento sono state determinate conformemente alla Guida ISO/IEC 98 e al documento EA-4/02. Solitamente sono espresse come incertezza estesa ottenuta moltiplicando l'incertezza tipo per il fattore di copertura *k* corrispondente ad un livello di fiducia di circa il 95 %. Normalmente tale fattore *k* vale 2.

The measurement uncertainties stated in this document have been determined according to the ISO/IEC Guide 98 and to EA-4/02. Usually, they have been estimated as expanded uncertainty obtained multiplying the standard uncertainty by the coverage factor k corresponding to a confidence level of about 95%. Normally, this factor k is 2.

Direzione Tecnica
(Approving Officer)

Enrico Reccagni

Enrico Reccagni

WIKA Italia S.r.l. & C. s.a.s.
Viale dell'Artigianato,
I Traversa, n. 8
70026 - Modugno (BA) • Italy
www.wika.it

Centro di Taratura LAT N°114
Calibration Centre
Laboratorio Accreditato di Taratura
Accredited Calibration Laboratory

LAT N° 114

CARATTERISTICHE DELLO STRUMENTO IN TARATURA/ Properties of devices under calibration

Misuratore di pressione elettronico ***Electrical pressure gauge***	
Tipo *Model*	Misuratore di pressione elettronico Electrical pressure gauge
Numero di matricola *Serial No.*	1A014ILJJIM
Campo di misura *Scale range*	(0 ... 1000) bar g
Accuratezza dichiarata dal costruttore *Accuracy declared by the manufacturer*	0,1 % FS
Risoluzione *Resolution (scale division)*	0,1 bar
Tag. N. *Tag No.*	--

Procedura di taratura e catena di riferibilità
Calibration procedure and traceability chain

La taratura è stata effettuata in accordo alla linea guida DKD-R 6-1 "Taratura di strumenti di pressione" (versione 03/2014) procedura B, per confronto fra i valori dello strumento in taratura con quelli di riferimento dati dal campione di lavoro.

Calibration was carried out according to DKD-R 6-1 "Kalibrierung von Druckmessgeräten" (Ausgabe 03/2014) procedure B, by comparing the measured values of the calibration item with those of the reference or working standard.

I risultati riportati sono stati ottenuti applicando le procedure n° LMO-PT-01 rev.2

The results have been obtained using the procedures n° LMO-PT-01 rev.2

La catena di riferibilità ha inizio dai campioni di riferimento n° PM1-09

The traceability chain starts from the reference standards n° PM1-09

muniti di certificati validi di taratura, rispettivamente n° D21090

with the relevant valid calibration certificates n° D21090

Luogo di taratura
Place of calibration

Laboratorio WIKA ITALIA - Laboratorio di Modugno (BA)
WIKA ITALY Laboratory - Modugno (BA)

Campione di lavoro
Working Standard

Norma di riferimento (RS) Bilancia di pressione ***Reference standard (RS) Dead-weight tester***	
Tipo *Model*	PM1-09
Certificato di taratura *Calibration mark*	D-K-15105/D21090
Campo di misura *Scale range*	(10 ... 2500) bar g
Accuratezza *Accuracy*	0,015 % della lettura + 255 Pa

Operatore
Technichian

Francesco Donatelli

WIKA Italia S.r.l. & C. s.a.s.
Viale dell'Artigianato,
I Traversa, n. 8
70026 - Modugno (BA) • Italy
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Laboratorio Accreditato di Taratura
Accredited Calibration Laboratory

LAT N° 114

Condizioni di misura
Measurement conditions

Schema di collegamento *Assembly*	
Fluido utilizzato *Pressure medium*	Sebacate *Sebacate*
Livello di riferimento *Refence height (for reference value)*	Superficie di tenuta DUT *Sealing face DUT*
Posizione di montaggio *Position during calibration*	verticale *vertical*

Note di taratura
Calibration Note

Lo strumento è stato tarato e riconsegnato nelle stesse condizioni in cui è arrivato nel laboratorio, in accordo con il metodo "as found as left" / The device under test (DUT) was calibrated in the same conditions it was arrived in laboratory, according to the method "as found as left".

Condizioni Ambientali
Environmental conditions

Temperatura *Temperature*	(22 ± 1,5)	°C
Pressione atmoferica *Atmospheric pressure*	(1009,3 ± 0,2)	hPa
Umidità relativa *Rel. Humidity*	(50 ± 15)	% UR

I dati meteo sono stati acquisiti tramite stazione meteo WIKA CPU6000-W s/n.1A00VCX6GJ2

Weather data were acquired via the WIKA CPU6000-W weather station s/n.1A00VCX6GJ2

Misure rilevate
Measurement results

Valore di riferimento *Reference value RS* bar	**Letture** *Reading DUT* bar		
	M1	**M2**	**M3**
0,00	0,0	0,0	0,0
99,91	99,9	99,9	99,9
199,82	199,9	199,9	199,9
299,73	299,8	299,8	299,8
399,63	399,7	399,7	399,7
499,53	499,5	499,6	499,6
599,44	599,4	599,4	599,4
699,34	699,3	699,3	699,3
799,25	799,1	799,2	799,1
899,14	899,0	899,1	899,0
999,04	999,0	999,0	999,0

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I Traversa, n. 8
70026 - Modugno (BA) • Italy
www.wika.it

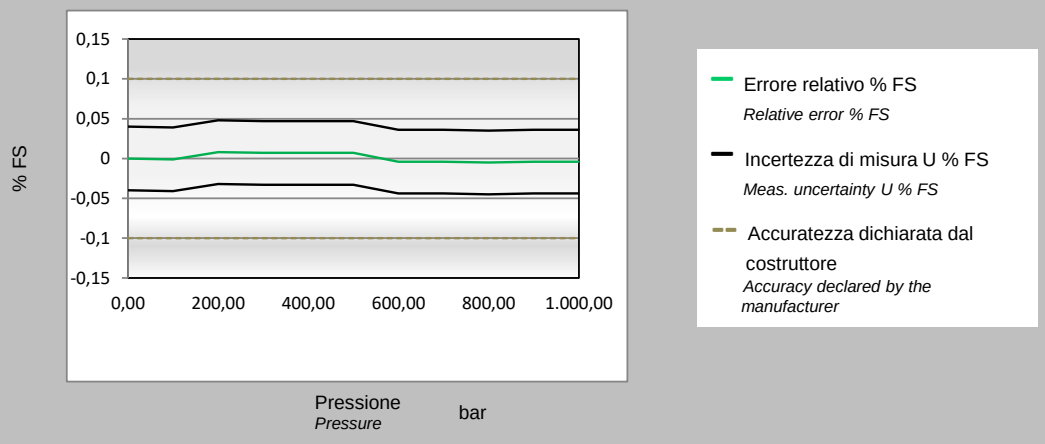
Centro di Taratura LAT N°114
Calibration Centre
Laboratorio Accreditato di Taratura
Accredited Calibration Laboratory

LAT N° 114

Incertezza di misura
Uncertainty of measurement

Valori di riferimento *Reference value RS* bar	Media delle misure *Mean value* bar	Errore *Error* bar	Ripetibilità *Repeatability* bar	Isteresi *Hysteresis* bar	Incertezza di misura *Meas. Uncertainty* bar
0,00	0,0	0,0	0,0	0,0	0,40
99,91	99,9	0,0	0,0	0,0	0,40
199,82	199,9	0,1	0,0	0,0	0,40
299,73	299,8	0,1	0,0	0,0	0,40
399,63	399,7	0,1	0,0	0,0	0,40
499,53	499,6	0,1	0,1	0,1	0,40
599,44	599,4	0,0	0,0	0,0	0,40
699,34	699,3	0,0	0,0	0,0	0,40
799,25	799,2	0,0	0,0	0,1	0,40
899,14	899,1	0,0	0,0	0,1	0,40
999,04	999,0	0,0	0,0	0,0	0,40

Grafico degli errori di misura
Graphical representation of measurement uncertainty



L'incertezza estesa senza correzione del DUT è pari a 0,5 bar
The expanded uncertainty of the DUT without correction is equal to

Questo dato è ottenuto come MAX{Incertezza_di_misura$_i$ + |Errore$_i$|} della tabella precedente
This data is obatined as MAX{Meas._uncertainty$_i$ + |Error$_i$|} of the previous table

Il presente certificato non rappresenta una dichiarazione di conformità a specifica
This certificate is not a statement of compliance

ITEM	Tag	50-XY-001	: Solenoid Valve - Sea Water from Pump P-50001A			Dwg	123A90-DDL-PR-PID-80021
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10002015		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Instrumental	Form	CJX00 Miscellaneous

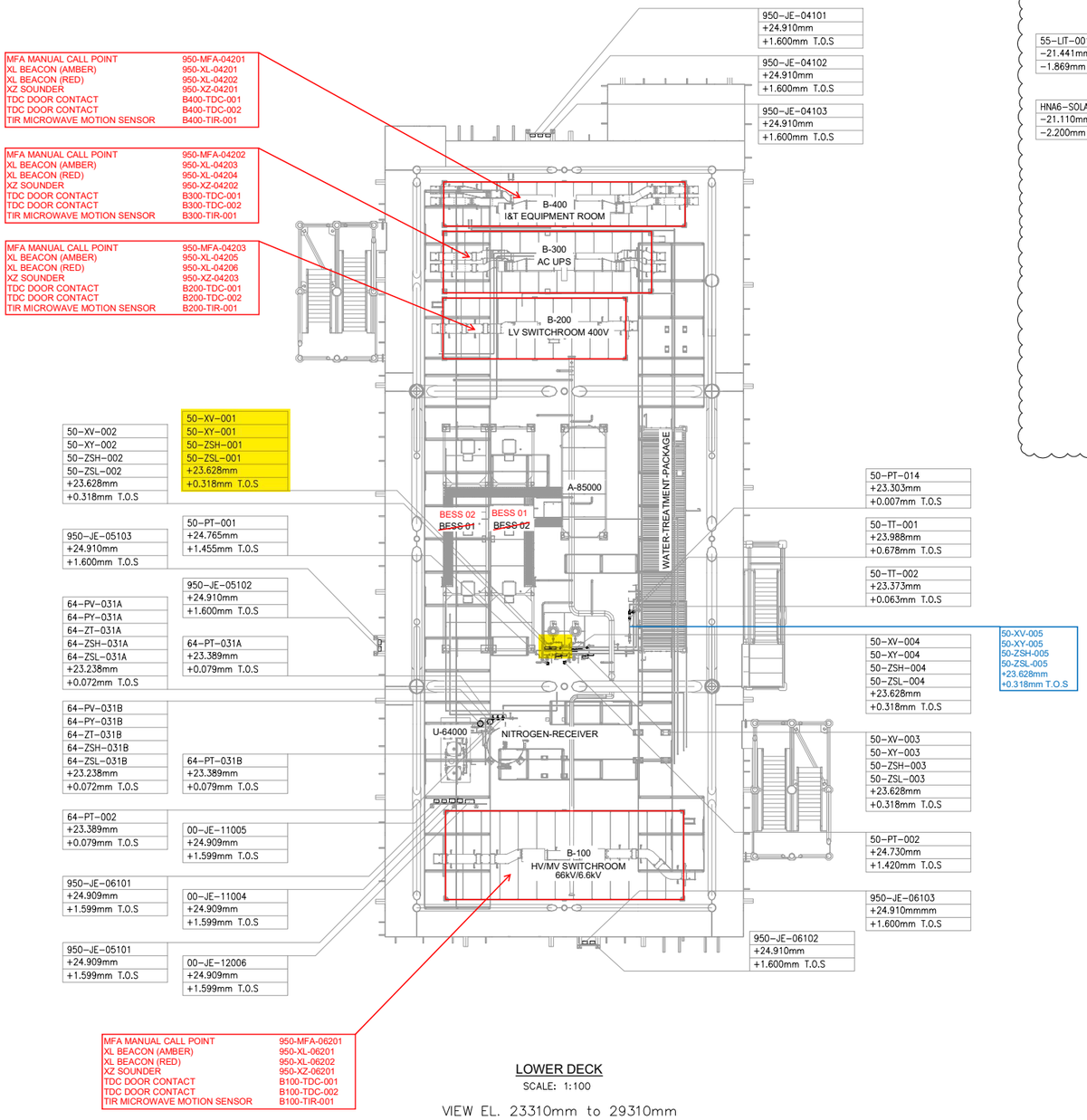
1	Check for mechanical damage.	OK
2	Check installed equipment is suitable and conforms to specification.	OK
3	Check installation conforms to P&ID and hook-up drawing.	OK
4	Check tube fittings manufacturer is the one chosen for the plant.	OK
5	Check that piping connections provide the block & bleed facility (if required).	NA
6	Check that all stop plugs are properly installed	NA
7	Check identification (tag number, tag plates).	PL
8	Check supporting and protection against vibrations.	OK
9	Check the conformity of earthing as per specification (I.P.E. or I.E.)	OK
10	If required produce Red Line Mark Up for "AS BUILT"	

Comments:

	Performed by	☉ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Alessio Polo	
Date	2025-02-05	2025-02-10	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-05T10:18:37.550Z	PROVERLIS Digitaly signed by Alessio Polo 2025-02-10T09:21:45.690Z	

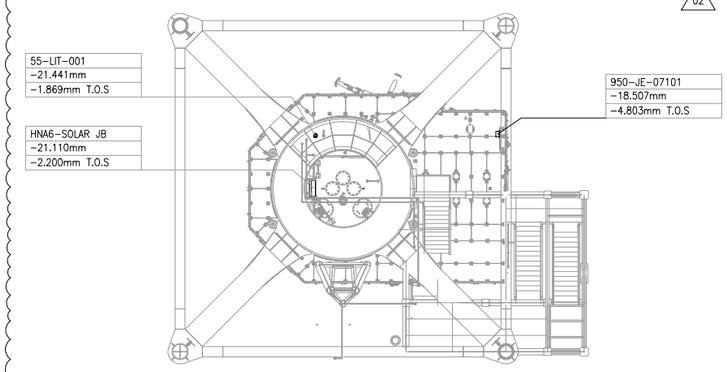
DRAWING NO. 123A90-DDL-IN-DL-40080

REV. 02

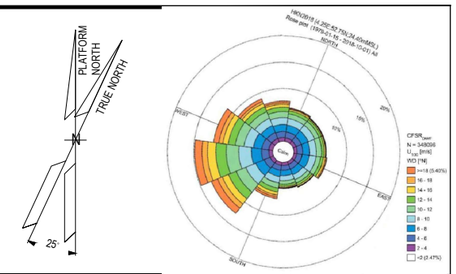


LOWER DECK
SCALE: 1:100
VIEW EL. 23310mm to 29310mm

02



TRANSITION PIECE
SCALE: 1:100
VIEW EL. 17050mm to 23310mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40081	INSTRUMENT LAYOUT - UPPER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-UPPER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DL-40080**

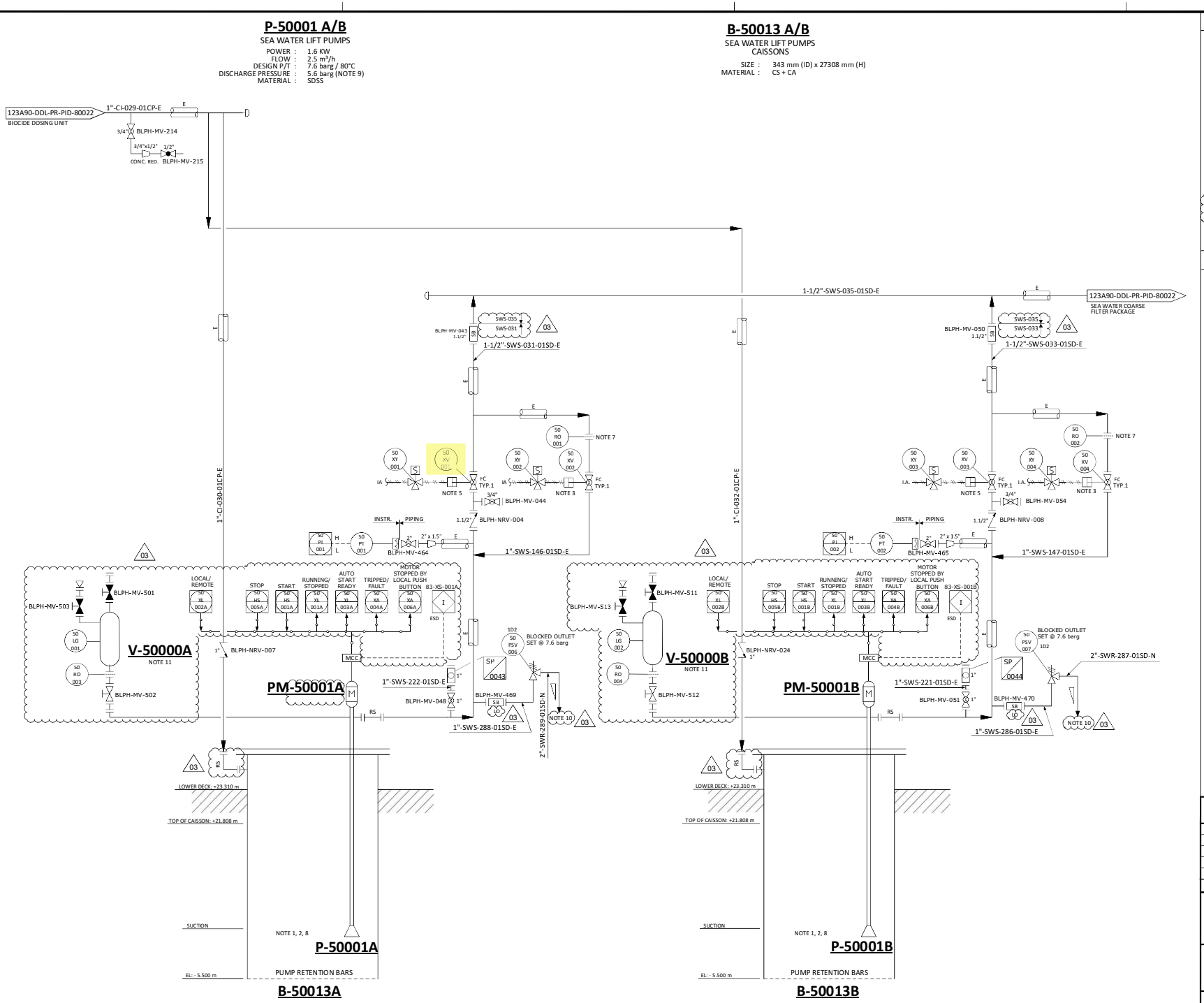
REV.:	DATE:	SIGNATURE:
2_C	06/11/24	G.Randi

ROSETTI MARINO SpA

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–LOWER DECK
TOS EL. 23.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90–DDL–IN–DL–40080	SHEET 001	REV. 02

File Name : 123A90-DDL-IN-DL-40080 REV02.dwg



NOTES

1. SEAWATER LIFT PUMPS ARE RATED 2 X 100%
2. AUTO START OF DESIGNATED STANDBY PUMP ON LOSS OF RUNNING STATUS AND DISCHARGE LOW PRESSURE ALARM OF DUTY PUMP.
3. VALVE TO BE OPENED WHEN PUMP IS OFFLINE TO DOSE CAISSON WITH TREATED SEAWATER TO PREVENT BIOLOGICAL GROWTH.
4. DELETED.
5. SOFTWARE INTERLOCK PREVENTS PUMPS FROM STARTING IN CASE THE RELEVANT XV VALVE IS FULLY CLOSED. 03
6. DELETED.
7. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "123A90-DDL-IN-DS-40054 - TECHNICAL DATASHEET FOR RESTRICTION ORIFICE".
8. LOGIC FOR CONTROL OF P-5001A/B THAT PREVENTS SIMULTANEOUS RUNNING OF A AND B PUMP IS PROVIDED.
9. DISCHARGE PRESSURE REFERS TO THE FLANGE DISCHARGE OF THE PUMP AT LOWER DECK.
10. ROUTED TO THE SEA.
11. VESSELS V-50000A/B ARE INSULATED AND HEAT TRACED. 03

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.
5. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
SEA-WATER INTAKE SYSTEM SHEET 1

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE
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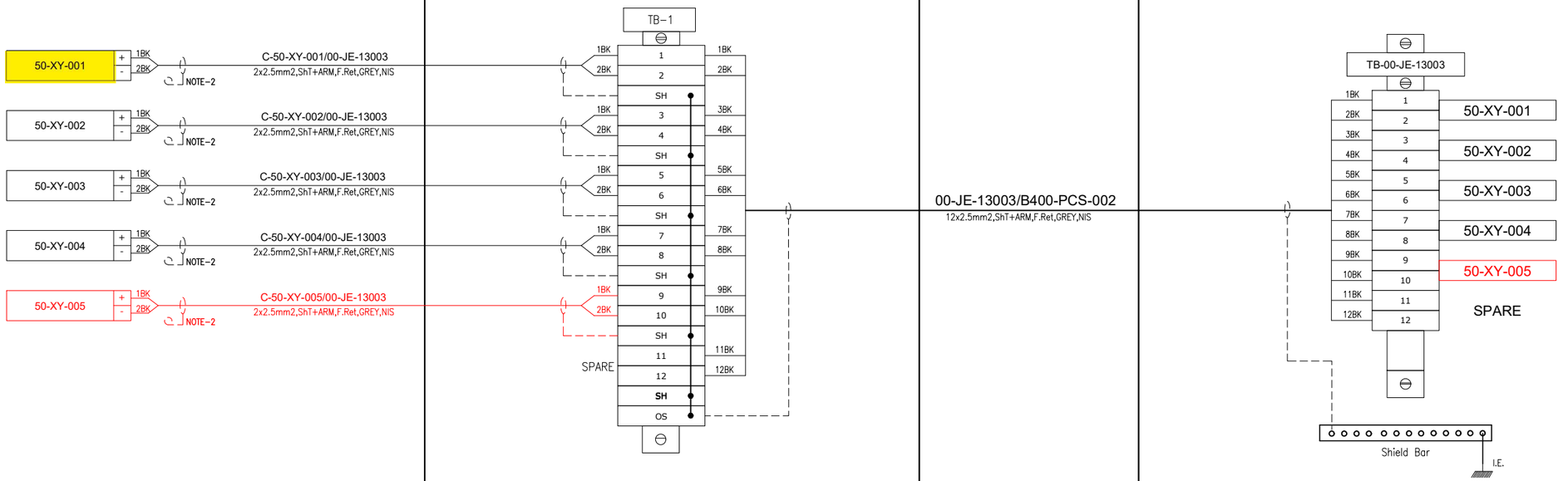
DRAWING NO. DRAWING_NO.
REV. REV.
File Name : FILE_NAME

DRAWING NO. 123A90-DDL-IN-DG-40015

REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX	No.	MARSHALLING CABINET
	00-JE-13003		B400-PCS-002

<01>



VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_I	29/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

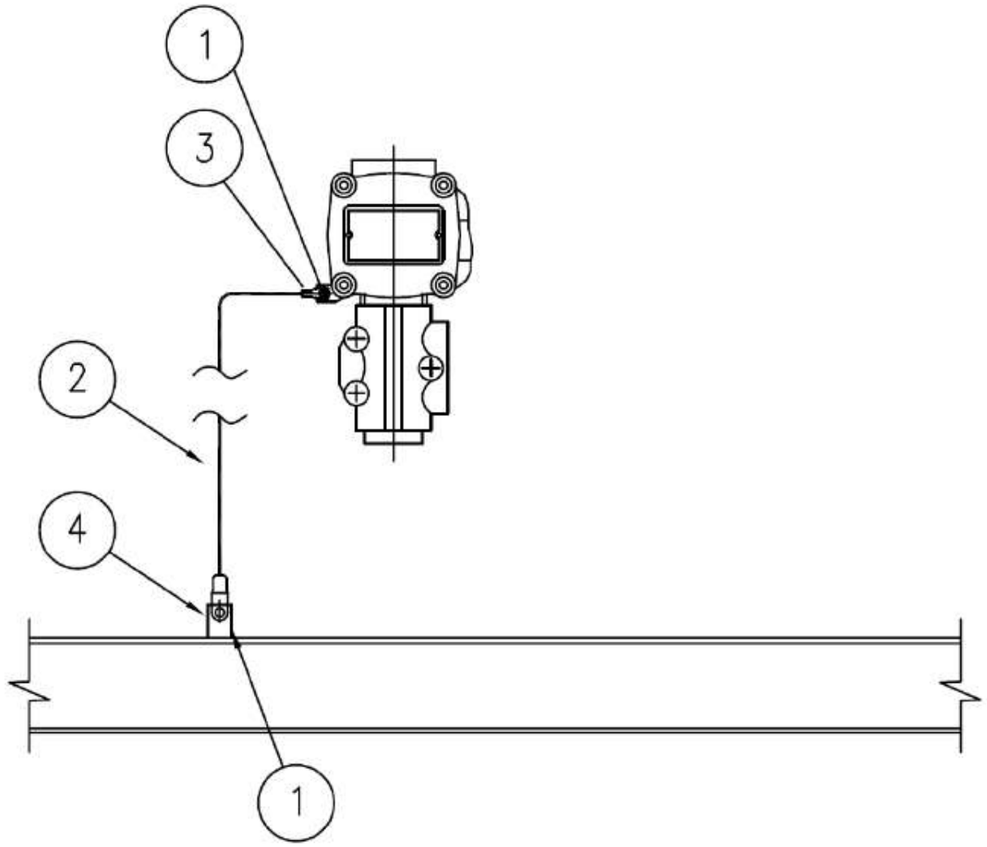
TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
00–JE–13003

CONTRACT NO./TITLE			SCALE N/A
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

A3	DRAWING NO.	SHEET	REV.
	123A90–DDL–IN–DG–40015	030	01

File Name : 123A90-DDL-IN-DG-40015_Rev.01

E33



MATERIALS

POS.	Q.TY	DESCRIPTION	NOTES
1	1	A4 STAINLESS STEEL BOLT COMPLETE WITH NUT AND WASHERS	
2	1	Y/G INSULATING COPPER CONDUCTOR - 6mm²	
3	1	COMPRESSION TYPE LUG FOR INSULATING COPPER CONDUCTOR	
4	1	EARTHING BAR / PLATE / THREADED STUD	(1)

NOTE:
1) FOR DETAIL OF EARTHING PLATE, EARTHING BOSS AND THREADED STUD SEE TYP. E11A/C/D/E

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DD-20090**

REV.:	DATE:	SIGNATURE:
2_I	07/11/24	G.Randi

ROSETTI MARINO SpA

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	26/08/24	GRA	AMA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/06/24	SPS	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS-EARTHING SYSTEM
EARTHING FOR GENERIC INSTRUMENT

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : NTS

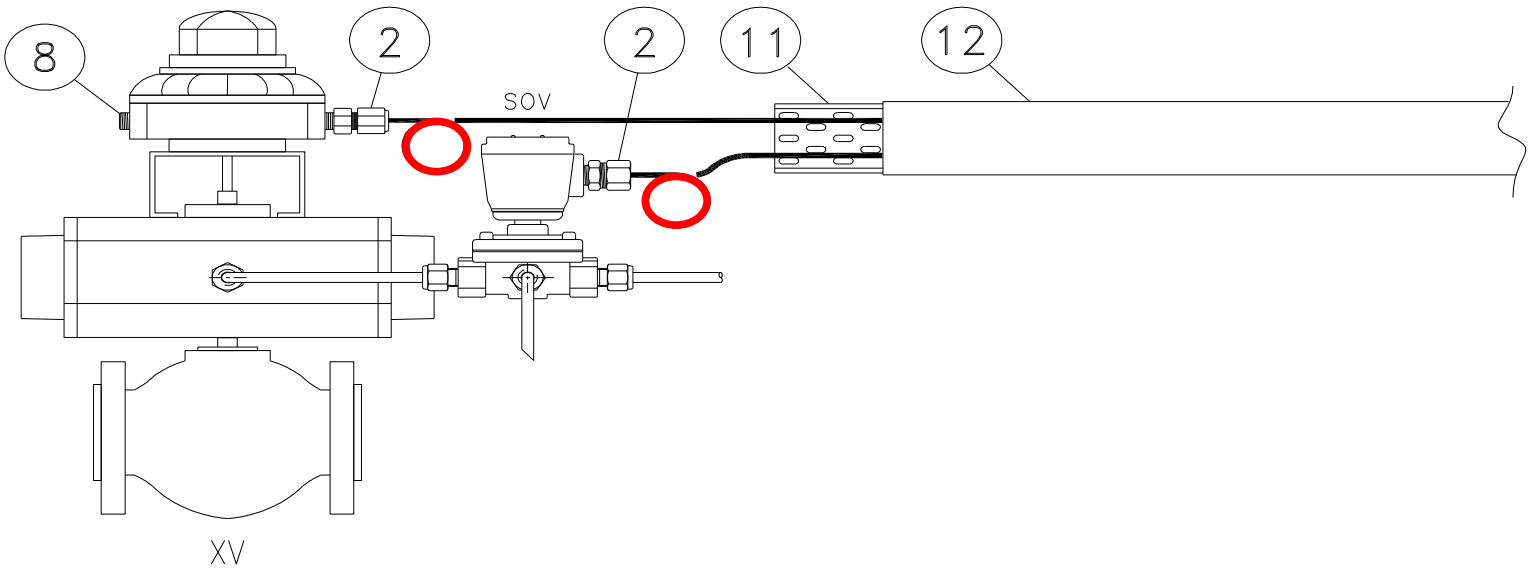
A3 | DRAWING NO. 123A90-DDL-EL-DD-20090 | SHEET 027 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DD-20090 REV.02.DWG

CROSSWIND	HOLLANDSE KUST NOORD WIND PARK Project Contract No. CW-I-WP4-2023-05	ROSETTI MARINO
Document Title:	Instrument Electrical Hook-Ups	Sh. 15 of 37 Date: 27/09/2024 Rev. 02

ELECTRICAL HOOK-UP FOR XV (N.1 SOLENOID VALVE + 2 LIMIT SWITCH)



INSTRUMENT TAG	
1	25-XV-004
2	25-XV-006
3	25-XV-008
4	25-XV-009
5	25-XV-011
6	25-XV-012
7	25-XV-014
8	25-XV-015
9	25-XV-017
10	25-XV-018
11	25-XV-020
12	25-XV-021
13	25-XV-024
14	50-XV-001
15	50-XV-002
16	50-XV-003
17	50-XV-004
18	80-XV-001
19	50-XV-005
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30	

NOTE:

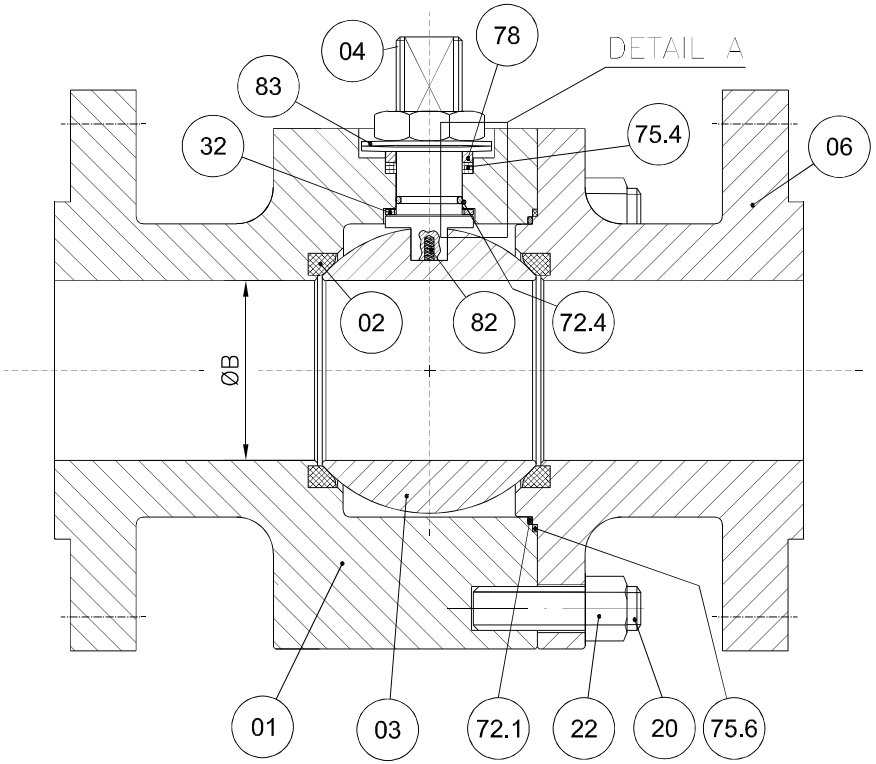
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FDL DWG: **123A90-FDL-IN-HD-40079**

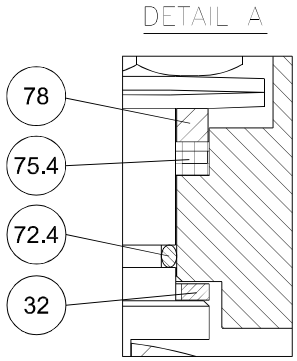
REV.:	DATE:	SIGNATURE:
2_G	20/12/24	V.Ramponi

ROSETTI MARINO SpA

POS.	NORM/STD CODE	DESCRIPTION	SIZE/ CONNECTION TYPE	Q.TY
12		Cover for cable tray, FRP, Grey Color	50 W x 10 H x 5 THK	3 mt
11		Perforated cable tray, FRP, Grey Color	50 W x 50 H x 5 THK	3 mt
8		Nickel Plated Brass Plug Ex-d/e IIC (or IIB + H2) T1	M20	1
2		Nickel Plated Brass Double Compression Cable Gland Ex-d/e IIC (or IIB + H2) T1	M20	2

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Its distribution is electronically controlled. Once printed shall be considered as "NOT CONTROLLED" copy

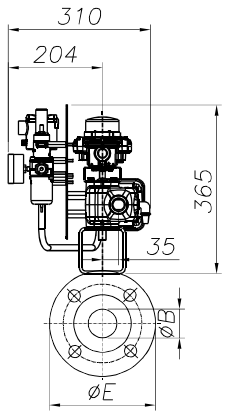


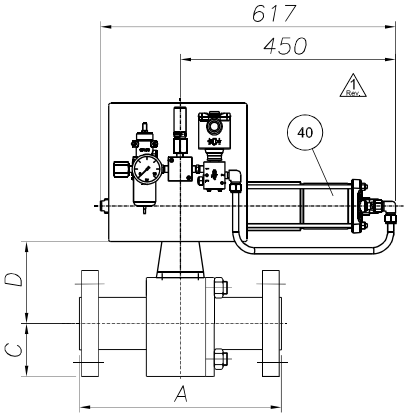


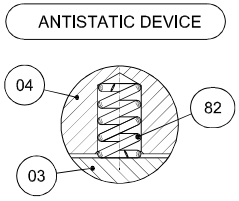
POS.	PART. NAME	MATERIAL
01	BODY	A182 F53
02	SEAT	RPTFE
03	BALL	A182 F53
04	STEM	A182 F53
06	CLOSURE	A182 F53
20	STUD	A193 B7+HDG (1)
22	NUT	A194 Gr.2H+HDG (1)
32	THRUST BEARING	RPTFE
40	PNEUMATIC ACTUATOR	MFR. STD.
72.1	FLANGE O-RING	VITON GLT/AED
72.4	STEM O-RING	VITON GLT/AED
75.4	STEM GASKET	GRAPHITE
75.6	FLANGE GASKET	GRAPHITE
78	PACKING RING	A479 Tp.316
82	ANTISTATIC DEVICE	INCONEL X750
83	BELLEVILLE WASHER	AISI 301

NOTE:

(1) HDG: Hot Dip Galvanised (ASTM A153)







REMARKS:

- Dimensions are in mm
- Design acc. to API 6D
- Face to face acc. to ASME B16.10/API 6D
- Flange connection acc. to ANSI B16.5
- Antistatic device acc. to API 6D

(*): To Be Confirmed

POS:	ITEM:	DATA SHEET:	TAG:	Q.TY:	SIZE:	CLASS:	ENDS:	A	ØB	C	D(*)	ØE	Valve Weight (kg): 1 Rev.	Actuator Weight (kg): 1 Rev.	Tot. Weight (kg):
24	240	BS01F01RF	50-XV-001	1	1-1/2"	150	RF	165	38	64	105	127	18	36	2 Rev. 54
26	260	BS01F01RF	50-XV-003	1	1-1/2"	150	RF	165	38	64	105	127	18	36	2 Rev. 54

CUSTOMER :	ROSETTI MARINO S.p.A.
P.O. N. :	1724000204 123A90A/REV.1
JOB N. :	240062

Rev.	DESCRIPTION	DRAWN	DATE	CHK'D	DATE	APPV'D	DATE
3							
2	ISSUED FOR APPROVAL	S.Madahar	22/04/2024	D.Barcella	22/04/2024	L.Mora	22/04/2024
1	ISSUED FOR APPROVAL	S.Madahar	15/04/2024	D.Barcella	15/04/2024	L.Mora	15/04/2024
0	FIRST ISSUE	S.Madahar	26/02/2024	D.Barcella	26/02/2024	L.Mora	26/02/2024

DRAWING NOT IN SCALE

Fluitek Valves

DESCRIPTION: GENERAL ASSEMBLY DRAWING

VALVE TYPE:

SPLIT BODY FLOATING BALL VALVE

DRAWN: S.Madahar	DATE: 26/02/2024	
CHK'D: D.Barcella	DATE: 26/02/2024	
APPV'D: L.Mora	DATE: 26/02/2024	
SIZE: A3	SCALE: N.A.	ALL RIGHTS OF THIS DRAWING ARE RESERVED.

DRAWING NAME: D240062-24-26

Rev.: 2

GENERAL	1	Tag Number	Location			50-XV-001	50	
	2	Service				SEA WATER P-50001A DISCHARGE		
	3	P&ID Number	Area Classification			123A90-DDL-PR-PID-80021	Zone 2, Gas Group IIC (or IIB+H2), Class T1	
PIPELINE	4	Line Number				1-1/2"-SWS-031-01SD-E		
	5	Line Size and Schedule	Inlet	Outlet		1-1/2" / 3.68 mm	1-1/2" / 3.68 mm	
	6	Line Material	Line Insulation			ASTM A790 UNS S32760	ELECTRICALLY HEAT TRACED (35)	
PROCESS DATA	7	Fluid				SEA WATER SUPPLY		
	8	Fluid State	Phase			LIQUID	LIQUID	
	9	Operating Pressure Norm/Min/Max			[barg]	15	-	-
	10	Design Pressure	Full Vacuum		[barg]	17.7		
	11	Operating Temperature Norm/Min/Max			[°C]	22	-	-
	12	Design Temperature	Minimum	Maxi	[°C]	-29	100	
	13	Max. Diff. Pressure for Actuator Size			[bar]	17.7		
	14							
	15							
	16	Speed of	Design			Close : (12)	Open : (12)	
	17	Operation (seconds)	Actual			Close : 0.3 minimum	Open : -	
	18							
	19							
VALVE BODY (34)	20	Body Type				BALL VALVE (FLOATING BALL) - SPLIT BODY (BS01F01RF)		
	21	Body Size	Body Form			1-1/2"	FULL BORE	
	22	Body Material	Bonnet Type			ASTM A182 F53	(*)	
	23	Connections	Rating			FLANGED ASME B16.5	#150	
	24	Flange Finish	Gasket Material			RF	Inside the valve (*) (38)	
	25	Packing	Lubrication & Isolation			PTFE (*)	(*)	
	26	Bolting				A193 B7 +HDG / A194 Gr. 2H + HDG		
	27	Trim Material	Ball	Stem	Seat	ASTM A182 F53	ASTM A182 F53	RPTFE
	28	Leakage Class				(1)		
	29	Fire Safe				(2)		
ACTUATOR	30	Manufacturer	Type			Rotork	Spring Return	
	31	Model No.	Size			CP/S	035-100A/BA	
	32	Actuator Orientation	Actuator Form			Horizontal	Cylinder	
	33	Ingress Protection	Certification			IP-66	II 2 G Ex h IIC T5 Gb	
	34	Air Supply	Min	Max	Design	4 barg	10 barg	11 barg
	35	Action on Air Failure	Action on Power Failure			CLOSE	CLOSE	
	36	Fireproofing				NOT APPLICABLE		
	37	Solenoid Valve				50-XY-001 (9, 14, 15, 16) - Bifold FP06P		
	38	Limit Switch Closed	Limit Switch Open			50-ZSL-001 (9, 17) - Soldo SS	50-ZSH-001 (9, 17) - Soldo SS	
	39	Elect. Reset Pushbutton (Actuator mounted)				NOT REQUIRED		
	40	Air Set	Handwheel			(*)	NOT REQUIRED	
	41	Mounting Position				HORIZONTAL / VERTICAL		
	42	Partial Stroke Test Facility				-		
	43	Control Type				-		
	44	Electrical Connection	Electrical Class			No. (*) / M20	H	
EMERGENCY A/S VESSEL	45	Capacity	Fabrication Code			-	-	-
	46	No of Strokes Per Capacity				-		
	47	Safety Valve	Model			-	-	
	48	Check Valve	Mounting			-	-	
PURCHASE	49	Manufacturer				FLUITEK		
	50	Model				FB3		
	51	Purchase Order Number				1724000204		

NOTE
(1) N.1 PSV INSTALLED DOWNSTREAM THE AIR FILTER REGULATOR, SIZE 1/4", SS, set 4.7 barg.

No.	Date	By	Chkd	Appr	Description
03	06/12/24	VBA	LCA	DLO	Accepted for Construction (AFC)
02	28/08/24	VBA	LCA	DLO	Accepted for Construction (AFC)
01	20/12/23	VBA	LCA	DLO	Issued for Review (IFR)
00	06/11/23	VBA	LCA	DLO	Issued for Review (IFR)

INSTRUMENT DATASHEET

SDV/BDV and Tight Shut-Off XV Valves

CROSSWIND

ROSETTI MARINO

Code : Dwg. No.: 123A90-DDL-IN-DS-40030 Rev.03

This document undergoes an issuance cycle within EDMS "Fusionlive".
Its distribution is electronically controlled. Once printed shall be considered as “NOT CONTROLLED” copy

ITEM	Tag	50-XY-002	: Solenoid Valve - Sea Water Recirculation from Pump P-50001A			Dwg	123A90-DDL-PR-PID-80021
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10002016		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Instrumental	Form	CJX00 Miscellaneous

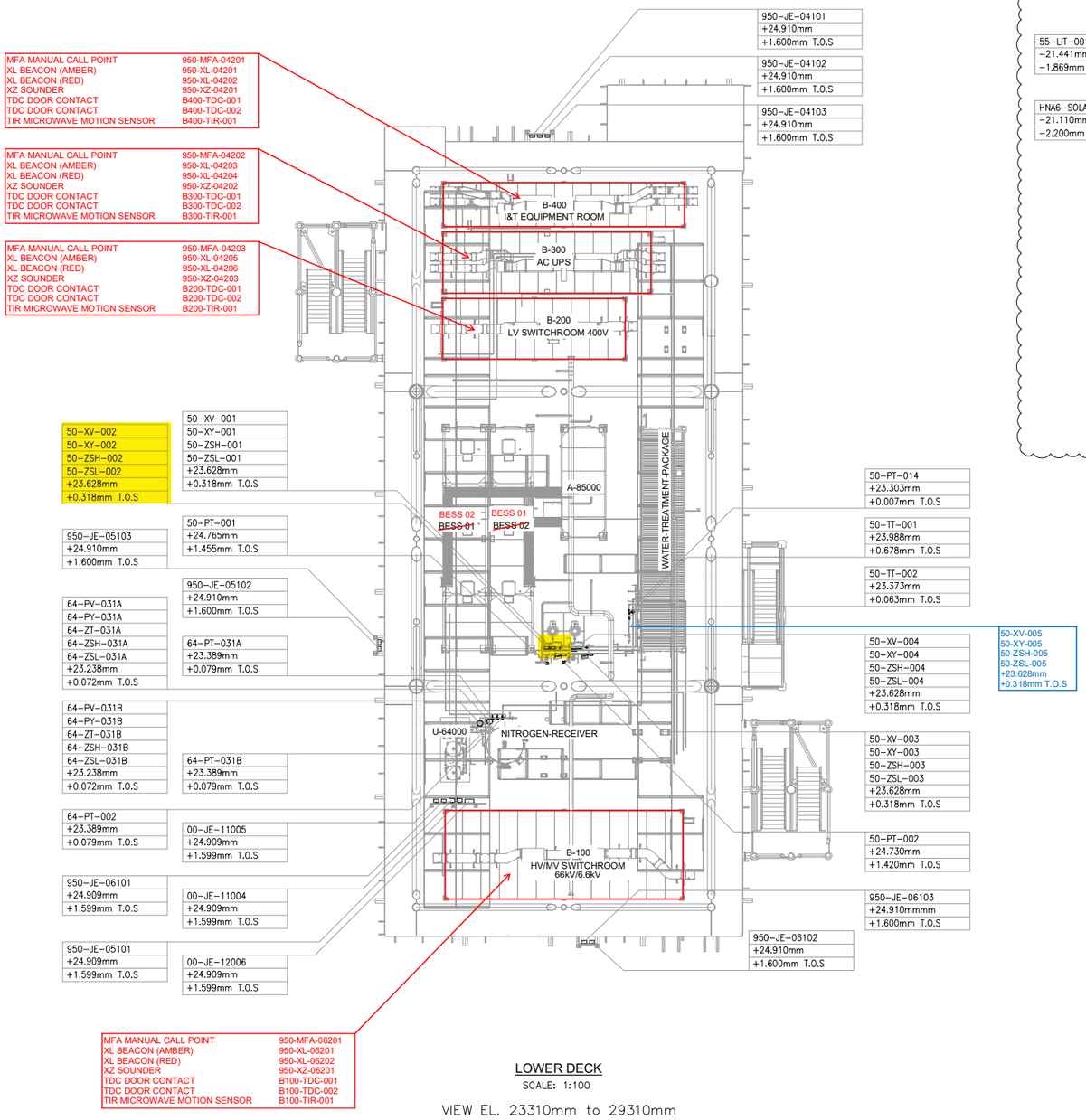
1	Check for mechanical damage.	OK
2	Check installed equipment is suitable and conforms to specification.	OK
3	Check installation conforms to P&ID and hook-up drawing.	OK
4	Check tube fittings manufacturer is the one chosen for the plant.	OK
5	Check that piping connections provide the block & bleed facility (if required).	NA
6	Check that all stop plugs are properly installed	NA
7	Check identification (tag number, tag plates).	PL
8	Check supporting and protection against vibrations.	OK
9	Check the conformity of earthing as per specification (I.P.E. or I.E.)	OK
10	If required produce Red Line Mark Up for "AS BUILT"	

Comments:

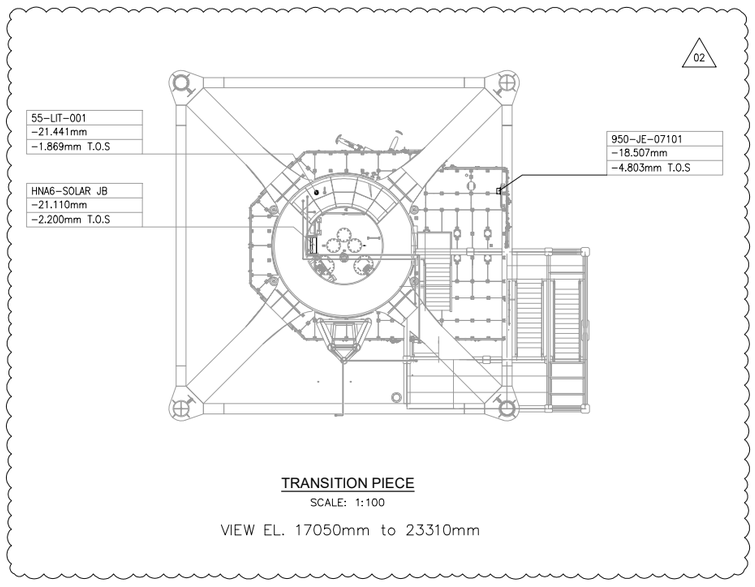
	Performed by	☉ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Alessio Polo	
Date	2025-02-05	2025-02-10	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-05T10:18:46.268Z	PROVERLIS Digitaly signed by Alessio Polo 2025-02-10T10:13:21.414Z	

DRAWING NO. 123A90-DDL-IN-DL-40080

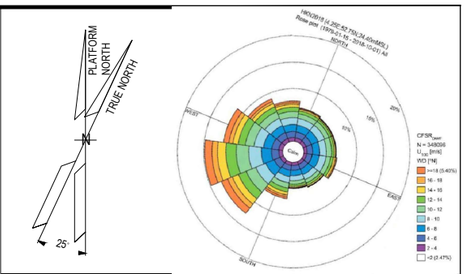
REV. 02



LOWER DECK
SCALE: 1:100
VIEW EL. 23310mm to 29310mm



TRANSITION PIECE
SCALE: 1:100
VIEW EL. 17050mm to 23310mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40081	INSTRUMENT LAYOUT - UPPER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-UPPER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DL-40080**

REV.:	DATE:	SIGNATURE:
2_C	06/11/24	G.Randi

ROSETTI MARINO SpA

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–LOWER DECK
TOS EL. 23.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90–DDL–IN–DL–40080	SHEET 001	REV. 02

File Name : 123A90-DDL-IN-DL-40080 REV02.dwg

DRAWING NO. DRAWING_NO.

REV. REV.

P-50001 A/B

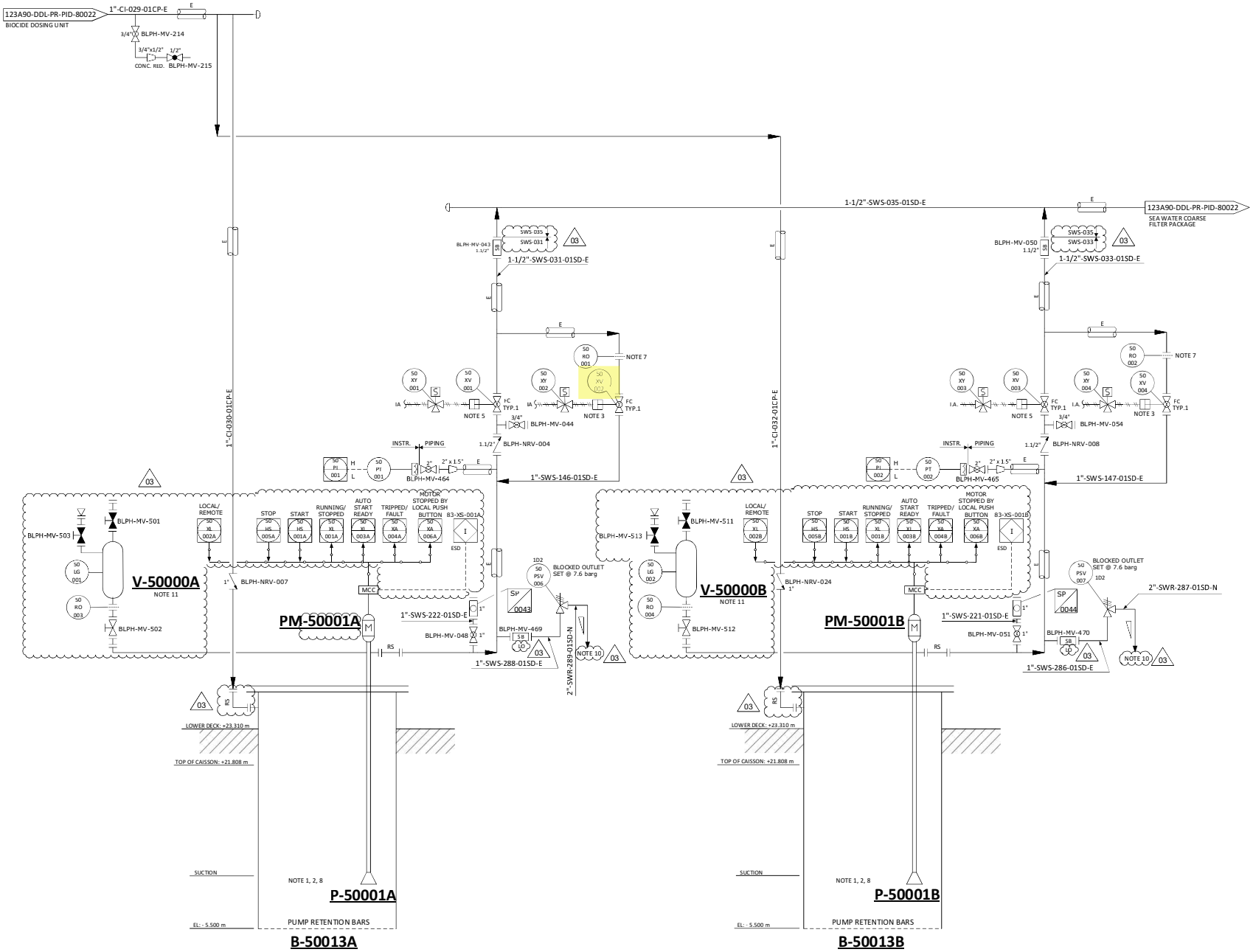
SEA WATER LIFT PUMPS

POWER :	1.6 KW
FLOW :	2.5 m³/h
DESIGN P/T :	7.6 barg / 80°C
DISCHARGE PRESSURE :	5.6 barg (NOTE 9)
MATERIAL :	SDSS

B-50013 A/B

SEA WATER LIFT PUMPS CAISSONS

SIZE :	343 mm (ID) x 27308 mm (H)
MATERIAL :	CS + CA



NOTES

1. SEAWATER LIFT PUMPS ARE RATED 2 X 100%
2. AUTO START OF DESIGNATED STANDBY PUMP ON LOSS OF RUNNING STATUS AND DISCHARGE LOW PRESSURE ALARM OF DUTY PUMP.
3. VALVE TO BE OPENED WHEN PUMP IS OFFLINE TO DOSE CAISSON WITH TREATED SEAWATER TO PREVENT BIOLOGICAL GROWTH.
4. DELETED.
5. SOFTWARE INTERLOCK PREVENTS PUMPS FROM STARTING IN CASE THE RELEVANT XV VALVE IS FULLY CLOSED. 03
6. DELETED.
7. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "123A90-DDL-IN-DS-40054 - TECHNICAL DATASHEET FOR RESTRICTION ORIFICE".
8. LOGIC FOR CONTROL OF P-5001A/B THAT PREVENTS SIMULTANEOUS RUNNING OF A AND B PUMP IS PROVIDED.
9. DISCHARGE PRESSURE REFERS TO THE FLANGE DISCHARGE OF THE PUMP AT LOWER DECK.
10. ROUTED TO THE SEA.
11. VESSELS V-50000A/B ARE INSULATED AND HEAT TRACED. 03

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.
5. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :

BLPH PIPING AND INSTRUMENTATION DIAGRAM
SEA-WATER INTAKE SYSTEM SHEET 1

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80021	SHEET 001	REV. 03

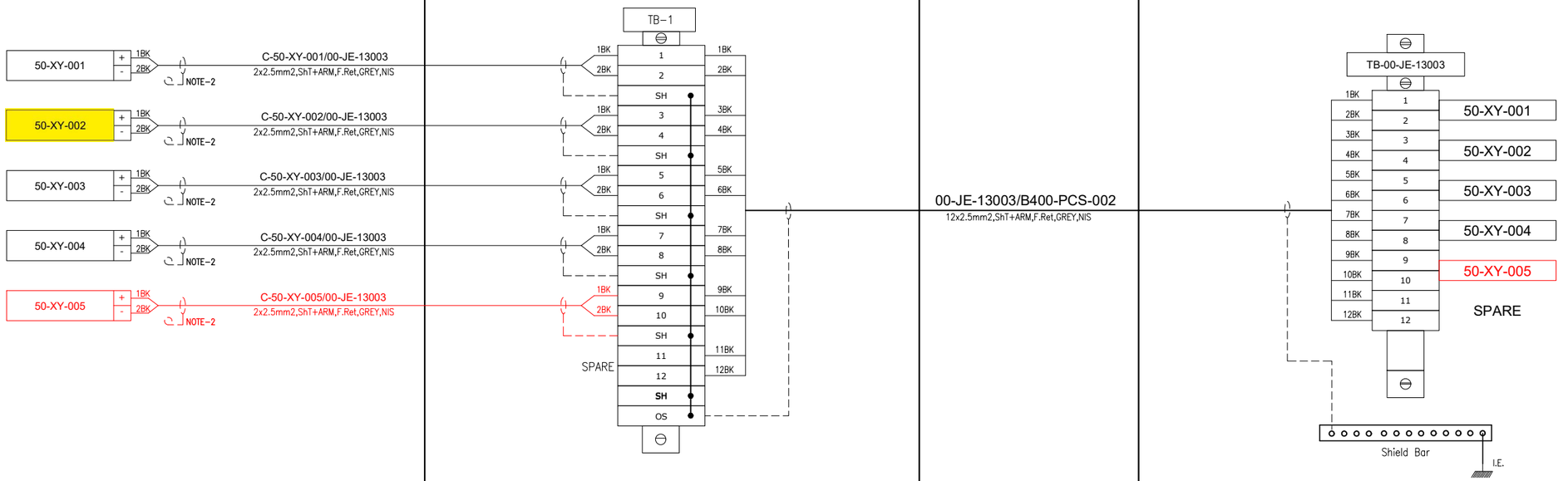
File Name : FILE_NAME

DRAWING NO. 123A90-DDL-IN-DG-40015

REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX	No.	MARSHALLING CABINET
	00-JE-13003		B400-PCS-002

<01>



VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_I	29/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

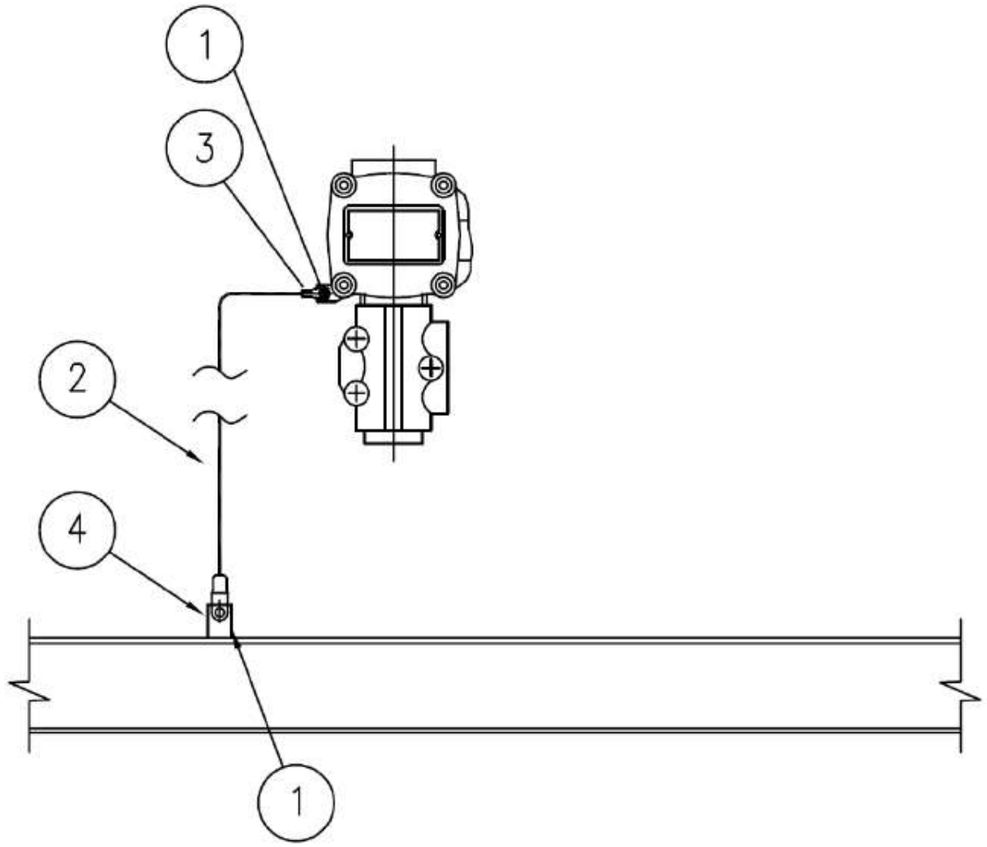
TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
00–JE–13003

CONTRACT NO./TITLE			SCALE N/A
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

A3	DRAWING NO.	SHEET	REV.
	123A90–DDL–IN–DG–40015	030	01

File Name : 123A90-DDL-IN-DG-40015_Rev.01

E33



MATERIALS

POS.	Q.TY	DESCRIPTION	NOTES
1	1	A4 STAINLESS STEEL BOLT COMPLETE WITH NUT AND WASHERS	
2	1	Y/G INSULATING COPPER CONDUCTOR - 6mm²	
3	1	COMPRESSION TYPE LUG FOR INSULATING COPPER CONDUCTOR	
4	1	EARTHING BAR / PLATE / THREADED STUD	(1)

NOTE:
1) FOR DETAIL OF EARTHING PLATE, EARTHING BOSS AND THREADED STUD SEE TYP. E11A/C/D/E

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DD-20090**

REV.:	DATE:	SIGNATURE:
2_I	07/11/24	G.Randi

ROSETTI MARINO SpA

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	26/08/24	GRA	AMA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/06/24	SPS	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS-EARTHING SYSTEM
EARTHING FOR GENERIC INSTRUMENT

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : NTS

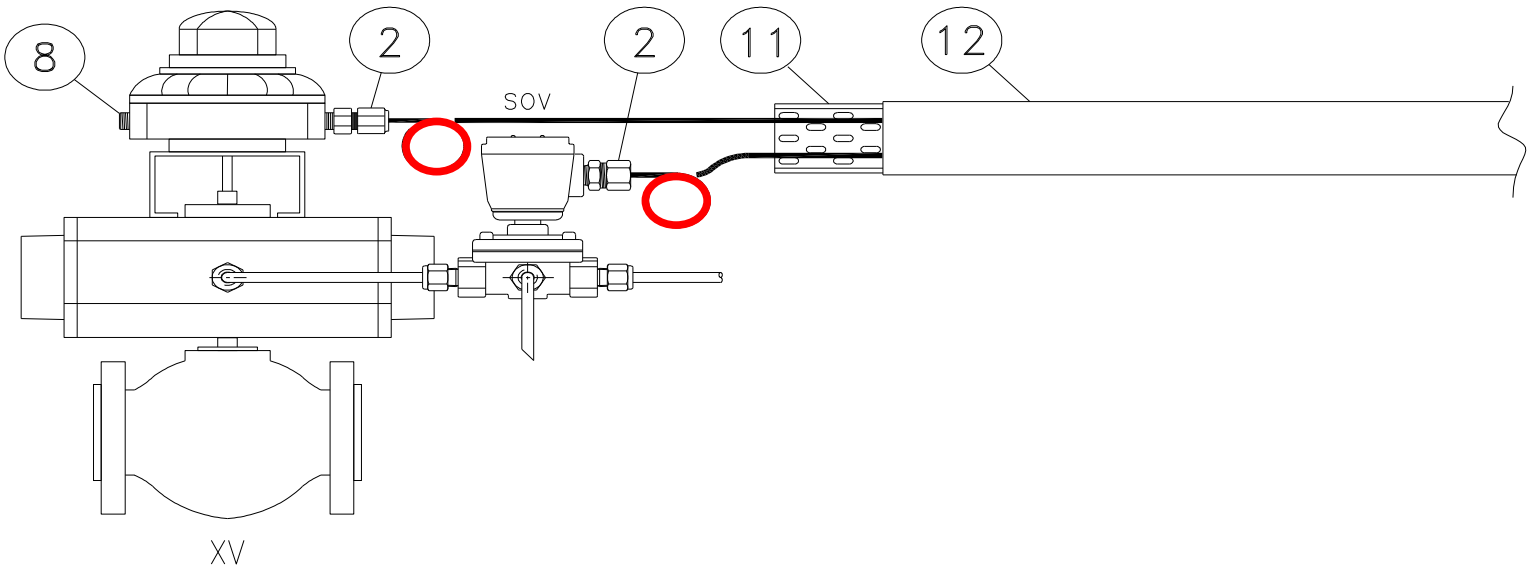
A3 | DRAWING NO. 123A90-DDL-EL-DD-20090 | SHEET 027 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DD-20090 REV.02.DWG

CROSSWIND	HOLLANDSE KUST NOORD WIND PARK Project Contract No. CW-I-WP4-2023-05	ROSETTI MARINO
Document Title:	Instrument Electrical Hook-Ups	Sh. 15 of 37 Date: 27/09/2024 Rev. 02

ELECTRICAL HOOK-UP FOR XV (N.1 SOLENOID VALVE + 2 LIMIT SWITCH)



INSTRUMENT TAG	
1	25-XV-004
2	25-XV-006
3	25-XV-008
4	25-XV-009
5	25-XV-011
6	25-XV-012
7	25-XV-014
8	25-XV-015
9	25-XV-017
10	25-XV-018
11	25-XV-020
12	25-XV-021
13	25-XV-024
14	50-XV-001
15	50-XV-002
16	50-XV-003
17	50-XV-004
18	80-XV-001
19	50-XV-005
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	

NOTE:

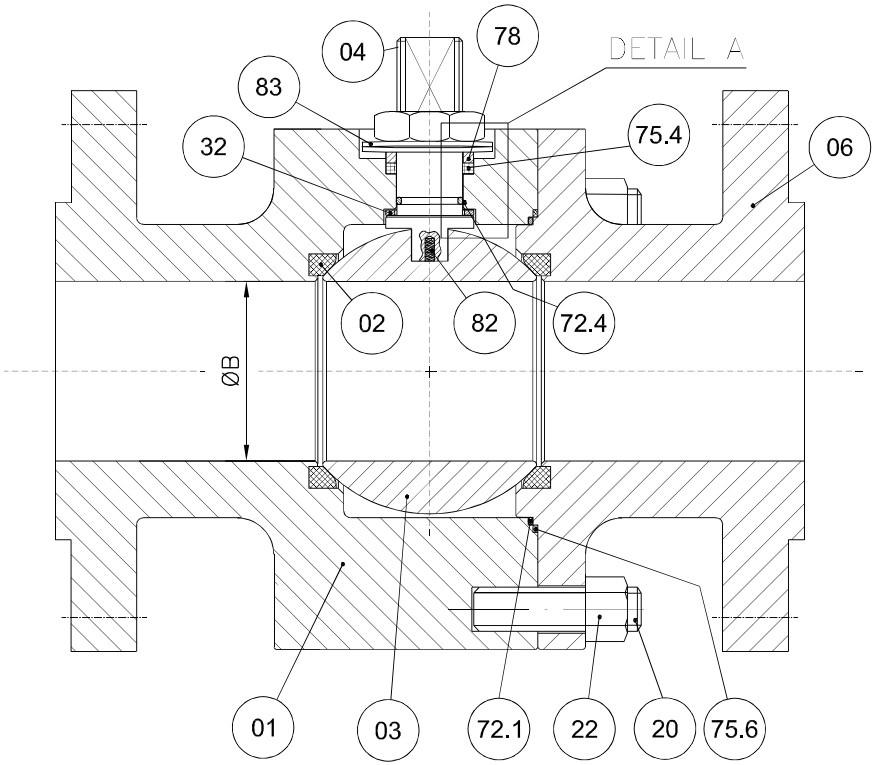
VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-HD-40079**

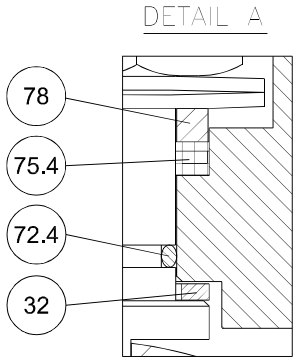
REV.:	DATE:	SIGNATURE:
2_G	20/12/24	V.Ramponi

ROSETTI MARINO SpA

POS.	NORM/STD CODE	DESCRIPTION	SIZE/ CONNECTION TYPE	Q.TY
12		Cover for cable tray, FRP, Grey Color	50 W x 10 H x 5 THK	3 mt
11		Perforated cable tray, FRP, Grey Color	50 W x 50 H x 5 THK	3 mt
8		Nickel Plated Brass Plug Ex-d/e IIC (or IIB + H2) T1	M20	1
2		Nickel Plated Brass Double Compression Cable Gland Ex-d/e IIC (or IIB + H2) T1	M20	2

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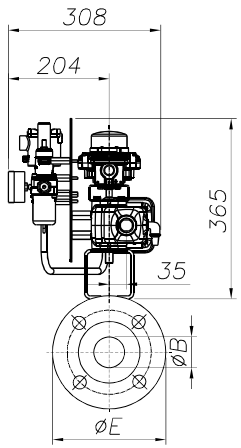


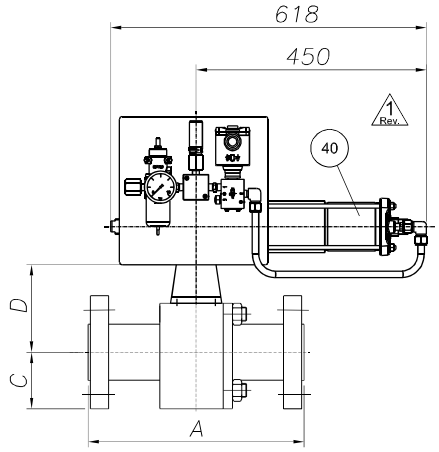


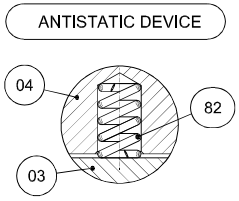
POS.	PART. NAME	MATERIAL
01	BODY	A182 F53
02	SEAT	RPTFE
03	BALL	A182 F53
04	STEM	API 6A CRA UNS N07718
06	CLOSURE	A182 F53
20	STUD	A193 B7+HDG (1)
22	NUT	A194 Gr.2H+HDG (1)
32	THRUST BEARING	RPTFE
40	PNEUMATIC ACTUATOR	MFR. STD.
72.1	FLANGE O-RING	VITON GLT/AED
72.4	STEM O-RING	VITON GLT/AED
75.4	STEM GASKET	GRAPHITE
75.6	FLANGE GASKET	GRAPHITE
78	PACKING RING	A479 Tp.316
82	ANTISTATIC DEVICE	INCONEL X750
83	BELLEVILLE WASHER	AISI 301

NOTE:

(1) HDG: Hot Dip Galvanised (ASTM A153)







REMARKS:

- Dimensions are in mm
- Design acc. to API 6D
- Face to face acc. to ASME B16.10/API 6D
- Flange connection acc. to ANSI B16.5
- Antistatic device acc. to API 6D

(*): To Be Confirmed

POS:	ITEM:	DATA SHEET:	TAG:	Q.TY:	SIZE:	CLASS:	ENDS:	A	ØB	C	D(*)	ØE	Valve Weight (kg):	Actuator Weight (kg):	Total Weight (kg):
25	250	BS01F01RF	50-XV-002	1	1"	150	RF	127	25	54	95	108	6	34	40
27	270	BS01F01RF	50-XV-004	1	1"	150	RF	127	25	54	95	108	6	34	40

1 Rev.

2 Rev.

CUSTOMER :	ROSETTI MARINO S.p.A.
P.O. N. :	1724000204 123A90A/REV.1
JOB N. :	240062

Rev.	DESCRIPTION	DRAWN	DATE	CHK'D	DATE	APPV'D	DATE
3							
2	ISSUED FOR APPROVAL	S.Madahar	22/04/2024	D.Barcella	22/04/2024	L.Mora	22/04/2024
1	ISSUED FOR APPROVAL	S.Madahar	15/04/2024	D.Barcella	15/04/2024	L.Mora	15/04/2024
0	FIRST ISSUE	S.Madahar	26/02/2024	D.Barcella	26/02/2024	L.Mora	26/02/2024

DRAWING NOT IN SCALE

Fluitek Valves

DESCRIPTION: GENERAL ASSEMBLY DRAWING

VALVE TYPE: SPLIT BODY FLOATING BALL VALVE

DRAWN:	DATE:
S.Madahar	26/02/2024
CHK'D: D.Barcella	DATE: 26/02/2024
APPV'D: L.Mora	DATE: 26/02/2024

SIZE: A3 | SCALE: N.A.

ALL RIGHTS OF THIS DRAWING ARE RESERVED.

DRAWING NAME: D240062-25-27

Rev.: 2

GENERAL	1	Tag Number	Location			50-XV-002		50
	2	Service				SEA WATER P-50001A INLET		
	3	P&ID Number	Area Classification			123A90-DDL-PR-PID-80021		Zone 2, Gas Group IIC (or IIB+H2), Class T1
PIPELINE	4	Line Number				1"-SWS-146-01SD-E		
	5	Line Size and Schedule	Inlet	Outlet		1" / 3.38 mm		1" / 3.38 mm
	6	Line Material	Line Insulation			ASTM A790 UNS S32760		ELECTRICALLY HEAT TRACED (35)
PROCESS DATA	7	Fluid				SEA WATER SUPPLY		
	8	Fluid State	Phase			LIQUID		LIQUID
	9	Operating Pressure Norm/Min/Max			[barg]	-	ATM	15
	10	Design Pressure	Full Vacuum		[barg]	17.7		
	11	Operating Temperature Norm/Min/Max			[°C]	-	-	-
	12	Design Temperature	Minimum	Maxi	[°C]	-29		100
	13	Max. Diff. Pressure for Actuator Size			[bar]	17.7		
	14							
	15							
	16	Speed of	Design			Close :	(12)	Open : (12)
	17	Operation (seconds)	Actual			Close :	0.3 minimum	Open : -
	18							
	19							
VALVE BODY (34)	20	Body Type				BALL VALVE (FLOATING BALL) - SPLIT BODY (BS01F01RF)		
	21	Body Size	Body Form			1"		FULL BORE
	22	Body Material	Bonnet Type			ASTM A182 F53		(*)
	23	Connections	Rating			FLANGED ASME B16.5		#150
	24	Flange Finish	Gasket Material			RF		Inside the valve (*) (38)
	25	Packing	Lubrication & Isolation			PTFE (*)		(*)
	26	Bolting				A193 B7 +HDG / A194 Gr. 2H + HDG		
	27	Trim Material	Ball	Stem	Seat	ASTM A182 F53	ASTM A182 F53	RPTFE
	28	Leakage Class				(1)		
	29	Fire Safe				(2)		
ACTUATOR	30	Manufacturer	Type			Rotork		Spring Return
	31	Model No.	Size			CP/S		035-100A/BA
	32	Actuator Orientation	Actuator Form			Horizontal		Cylinder
	33	Ingress Protection	Certification			IP-66		II 2 G Ex h IIC T5 Gb
	34	Air Supply	Min	Max	Design	4 barg	10 barg	11 barg
	35	Action on Air Failure	Action on Power Failure			CLOSE		CLOSE
	36	Fireproofing				NOT APPLICABLE		
	37	Solenoid Valve				50-XY-002 (9, 14, 15, 16) - Bifold FP06P		
	38	Limit Switch Closed	Limit Switch Open			50-ZSL-002 (9, 17) - Soldo SS		50-ZSH-002 (9, 17) - Soldo SS
	39	Elect. Reset Pushbutton (Actuator mounted)				NOT REQUIRED		
	40	Air Set	Handwheel			(*)		NOT REQUIRED
	41	Mounting Position				HORIZONTAL / VERTICAL		
	42	Partial Stroke Test Facility				-		
	43	Control Type				-		
	44	Electrical Connection	Electrical Class			No. (*) / M20		H
EMERGENCY A/S VESSEL	45	Capacity	Fabrication Code			-	-	-
	46	No of Strokes Per Capacity				-		
	47	Safety Valve	Model			-		-
	48	Check Valve	Mounting			-		-
PURCHASE	49	Manufacturer				FLUITEK		
	50	Model				FB3		
	51	Purchase Order Number				1724000204		

NOTE
(1) N.1 PSV INSTALLED DOWNSTREAM THE AIR FILTER REGULATOR, SIZE 1/4", SS, set 4.7 barg.

No.	Date	By	Chkd	Appr	Description
03	06/12/24	VBA	LCA	DLO	Accepted for Construction (AFC)
02	28/08/24	VBA	LCA	DLO	Accepted for Construction (AFC)
01	20/12/23	VBA	LCA	DLO	Issued for Review (IFR)
00	06/11/23	VBA	LCA	DLO	Issued for Review (IFR)

INSTRUMENT DATASHEET

SDV/BDV and Tight Shut-Off XV Valves

CROSSWIND

ROSETTI MARINO

Code : Dwg. No.: 123A90-DDL-IN-DS-40030 Rev.03

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ITEM	Tag	50-XY-003	: Solenoid Valve - Sea Water from Pump P-50001B			Dwg	123A90-DDL-PR-PID-80021
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10002017		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Instrumental Form CJX00		Miscellaneous

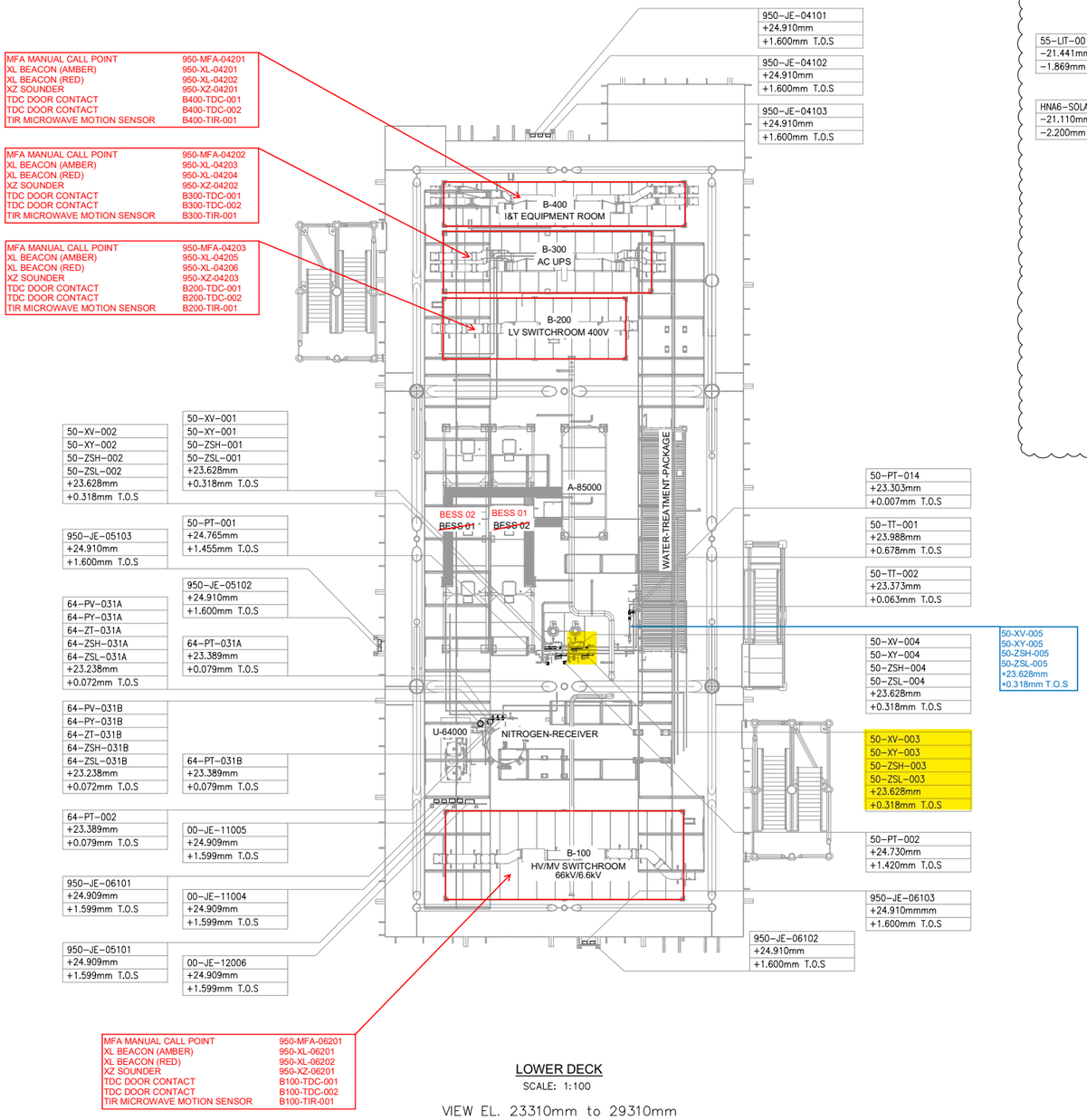
1	Check for mechanical damage.	OK
2	Check installed equipment is suitable and conforms to specification.	OK
3	Check installation conforms to P&ID and hook-up drawing.	OK
4	Check tube fittings manufacturer is the one chosen for the plant.	OK
5	Check that piping connections provide the block & bleed facility (if required).	NA
6	Check that all stop plugs are properly installed	NA
7	Check identification (tag number, tag plates).	PL
8	Check supporting and protection against vibrations.	OK
9	Check the conformity of earthing as per specification (I.P.E. or I.E.)	NA
10	If required produce Red Line Mark Up for "AS BUILT"	

Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Alessio Polo	
Date	2025-02-08	2025-02-08	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-08T11:05:14.891Z	PROVERLIS Digitaly signed by Alessio Polo 2025-02-08T11:25:30.157Z	

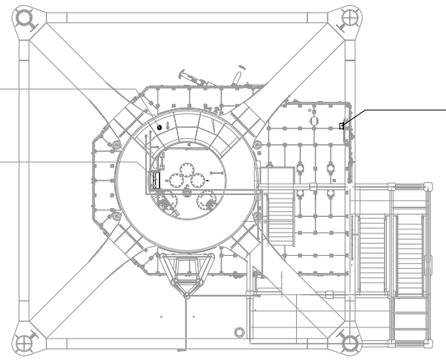
DRAWING NO. 123A90-DDL-IN-DL-40080

REV. 02

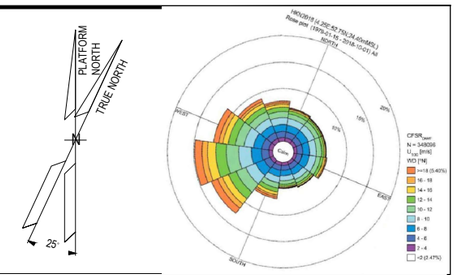


LOWER DECK
SCALE: 1:100
VIEW EL. 23310mm to 29310mm

02



TRANSITION PIECE
SCALE: 1:100
VIEW EL. 17050mm to 23310mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40081	INSTRUMENT LAYOUT - UPPER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-UPPER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DL-40080**

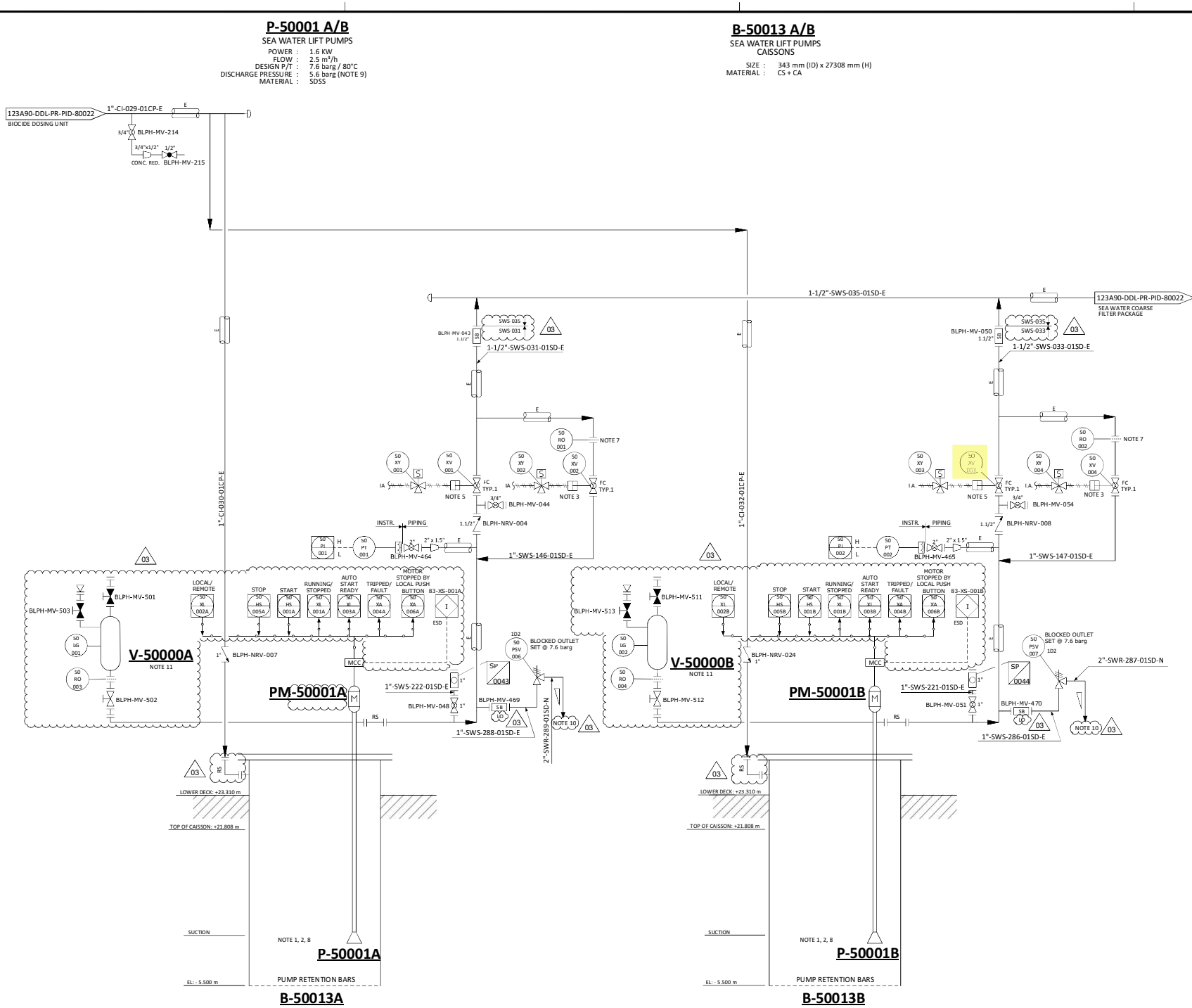
REV.:	DATE:	SIGNATURE:
2_C	06/11/24	G.Randi

ROSETTI MARINO SpA

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–LOWER DECK
TOS EL. 23.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90–DDL–IN–DL–40080	SHEET 001	REV. 02

File Name : 123A90-DDL-IN-DL-40080 REV02.dwg



NOTES

1. SEAWATER LIFT PUMPS ARE RATED 2 X 100%
2. AUTO START OF DESIGNATED STANDBY PUMP ON LOSS OF RUNNING STATUS AND DISCHARGE LOW PRESSURE ALARM OF DUTY PUMP.
3. VALVE TO BE OPENED WHEN PUMP IS OFFLINE TO DOSE CAISSON WITH TREATED SEAWATER TO PREVENT BIOLOGICAL GROWTH.
4. DELETED.
5. SOFTWARE INTERLOCK PREVENTS PUMPS FROM STARTING IN CASE THE RELEVANT XV VALVE IS FULLY CLOSED. 03
6. DELETED.
7. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "123A90-DDL-IN-DS-40054 - TECHNICAL DATASHEET FOR RESTRICTION ORIFICE".
8. LOGIC FOR CONTROL OF P-5001A/B THAT PREVENTS SIMULTANEOUS RUNNING OF A AND B PUMP IS PROVIDED.
9. DISCHARGE PRESSURE REFERS TO THE FLANGE DISCHARGE OF THE PUMP AT LOWER DECK.
10. ROUTED TO THE SEA.
11. VESSELS V-50000A/B ARE INSULATED AND HEAT TRACED. 03

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.
5. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
SEA-WATER INTAKE SYSTEM SHEET 1

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE	
A1	DRAWING NO. 123A90-DDL-PR-PID-80021		SHEET 001	REV. 03

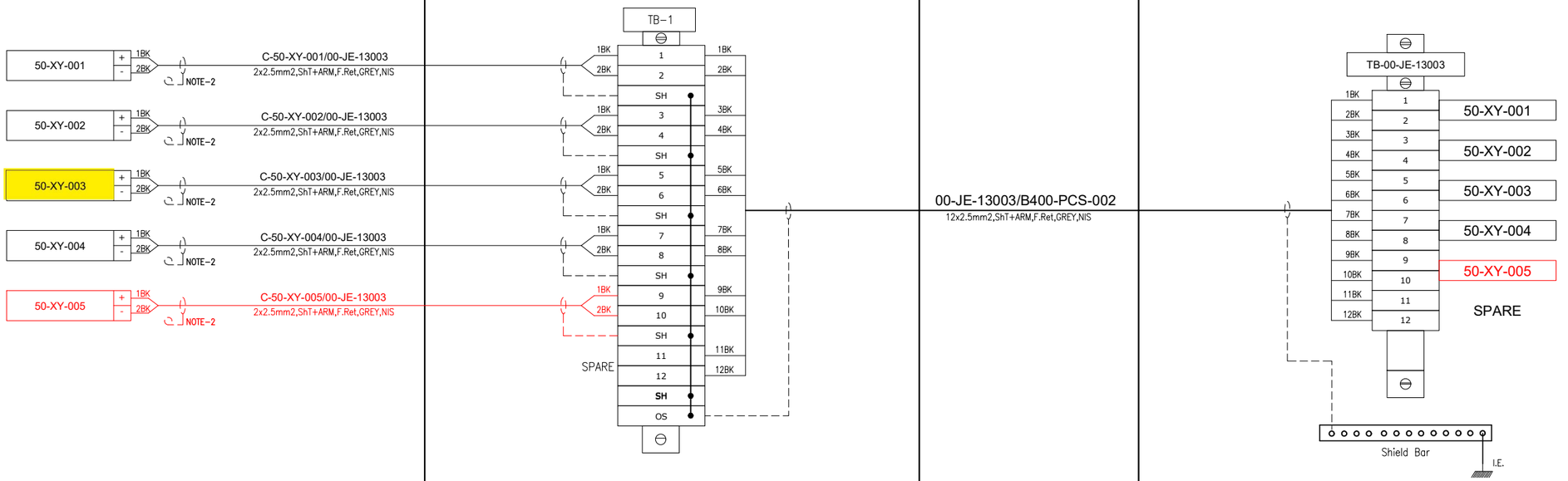
DRAWING NO. DRAWING_NO.
REV. REV.
File Name : FILE_NAME

DRAWING NO. 123A90-DDL-IN-DG-40015

REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 00-JE-13003	No.	MARSHALLING CABINET B400-PCS-002

<01>



VALID FOR CONSTRUCTION
FDL DWG: 123A90-FDL-IN-DG-40015

REV.:	DATE:	SIGNATURE:
1_I	29/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

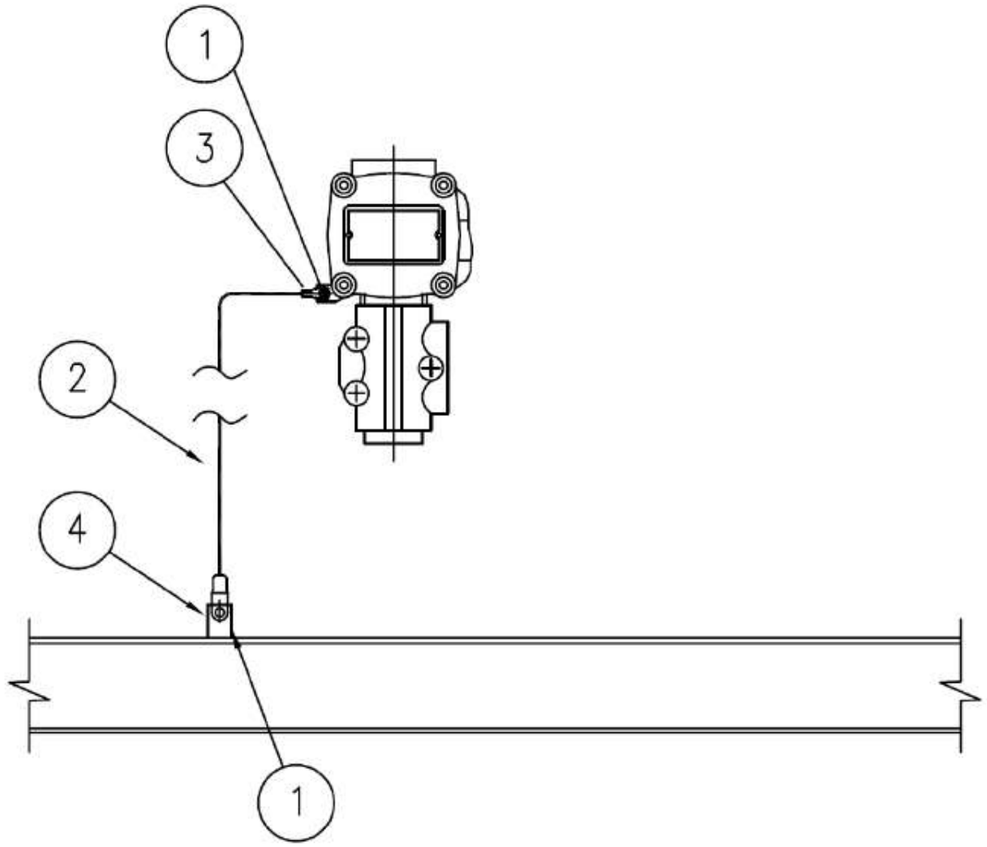
TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
00–JE–13003

CONTRACT NO./TITLE			SCALE N/A
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

A3	DRAWING NO.	SHEET	REV.
	123A90–DDL–IN–DG–40015	030	01

File Name : 123A90-DDL-IN-DG-40015_Rev.01

E33



MATERIALS

POS.	Q.TY	DESCRIPTION	NOTES
1	1	A4 STAINLESS STEEL BOLT COMPLETE WITH NUT AND WASHERS	
2	1	Y/G INSULATING COPPER CONDUCTOR - 6mm²	
3	1	COMPRESSION TYPE LUG FOR INSULATING COPPER CONDUCTOR	
4	1	EARTHING BAR / PLATE / THREADED STUD	(1)

NOTE:
1) FOR DETAIL OF EARTHING PLATE, EARTHING BOSS AND THREADED STUD SEE TYP. E11A/C/D/E

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DD-20090**

REV.:	DATE:	SIGNATURE:
2_I	07/11/24	G.Randi

ROSETTI MARINO SpA

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	26/08/24	GRA	AMA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/06/24	SPS	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS-EARTHING SYSTEM
EARTHING FOR GENERIC INSTRUMENT

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : NTS

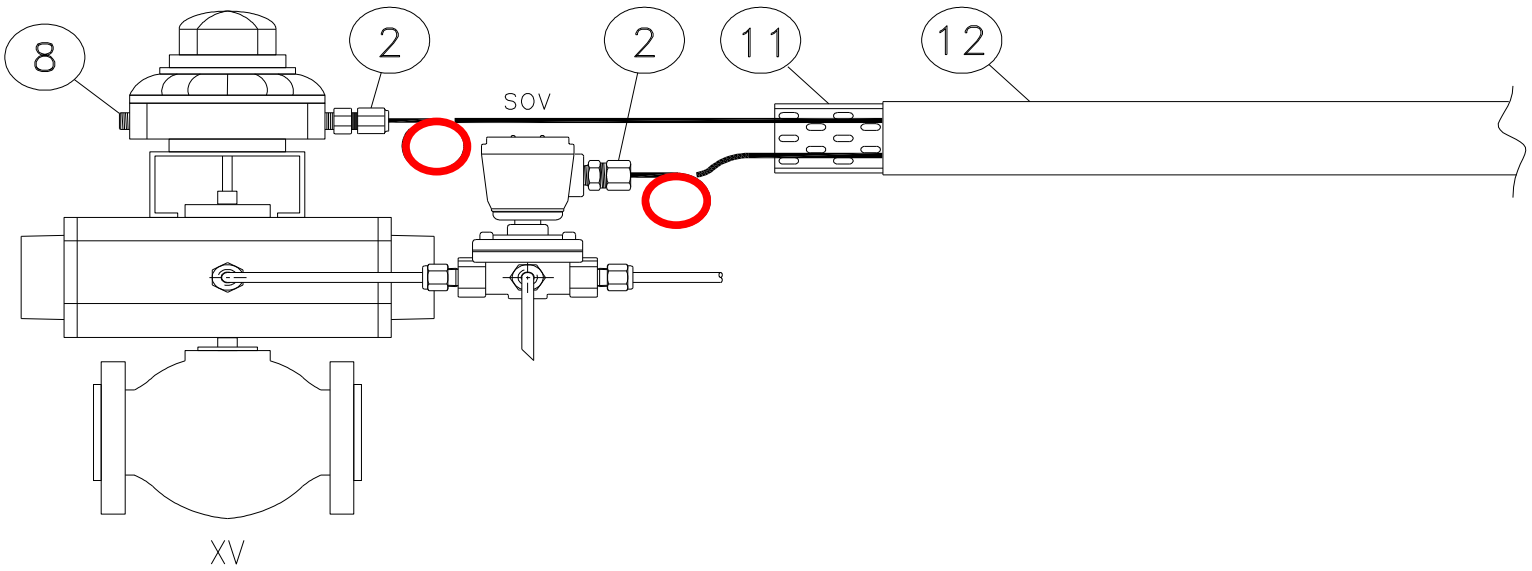
A3 | DRAWING NO. 123A90-DDL-EL-DD-20090 | SHEET 027 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DD-20090 REV.02.DWG

CROSSWIND	HOLLANDSE KUST NOORD WIND PARK Project Contract No. CW-I-WP4-2023-05	ROSETTI MARINO
Document Title:	Instrument Electrical Hook-Ups	Sh. 15 of 37 Date: 27/09/2024 Rev. 02

ELECTRICAL HOOK-UP FOR XV (N.1 SOLENOID VALVE + 2 LIMIT SWITCH)



INSTRUMENT TAG	
1	25-XV-004
2	25-XV-006
3	25-XV-008
4	25-XV-009
5	25-XV-011
6	25-XV-012
7	25-XV-014
8	25-XV-015
9	25-XV-017
10	25-XV-018
11	25-XV-020
12	25-XV-021
13	25-XV-024
14	50-XV-001
15	50-XV-002
16	50-XV-003
17	50-XV-004
18	80-XV-001
19	50-XV-005
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	

NOTE:

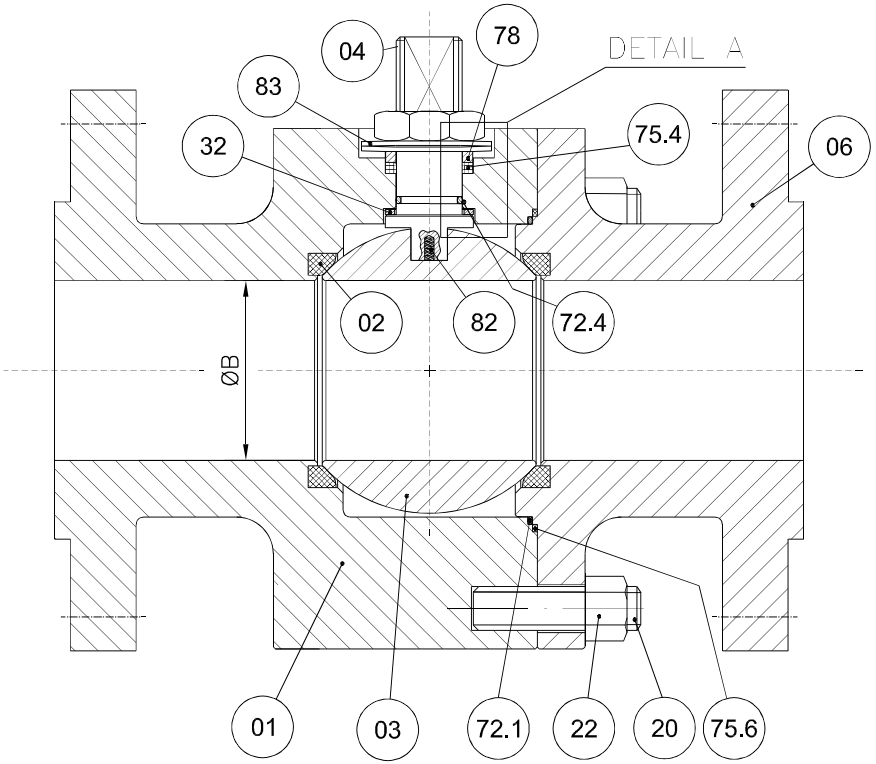
VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-HD-40079**

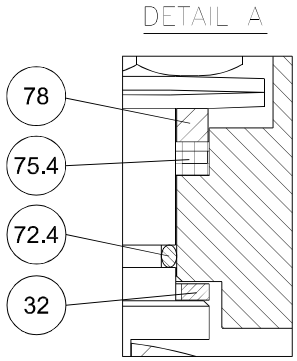
REV.:	DATE:	SIGNATURE:
2_G	20/12/24	V.Ramponi

ROSETTI MARINO SpA

POS.	NORM/STD CODE	DESCRIPTION	SIZE/ CONNECTION TYPE	Q.TY
12		Cover for cable tray, FRP, Grey Color	50 W x 10 H x 5 THK	3 mt
11		Perforated cable tray, FRP, Grey Color	50 W x 50 H x 5 THK	3 mt
8		Nickel Plated Brass Plug Ex-d/e IIC (or IIB + H2) T1	M20	1
2		Nickel Plated Brass Double Compression Cable Gland Ex-d/e IIC (or IIB + H2) T1	M20	2

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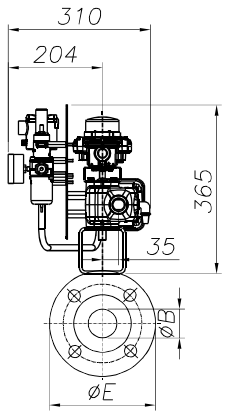


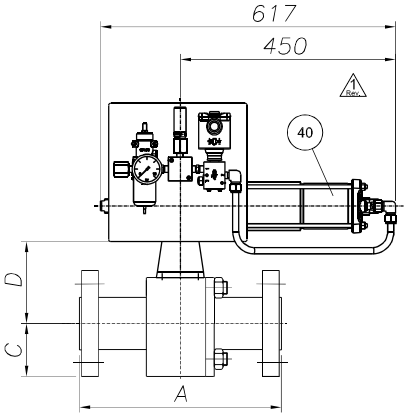


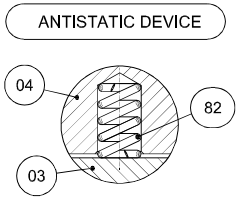
POS.	PART. NAME	MATERIAL
01	BODY	A182 F53
02	SEAT	RPTFE
03	BALL	A182 F53
04	STEM	A182 F53
06	CLOSURE	A182 F53
20	STUD	A193 B7+HDG (1)
22	NUT	A194 Gr.2H+HDG (1)
32	THRUST BEARING	RPTFE
40	PNEUMATIC ACTUATOR	MFR. STD.
72.1	FLANGE O-RING	VITON GLT/AED
72.4	STEM O-RING	VITON GLT/AED
75.4	STEM GASKET	GRAPHITE
75.6	FLANGE GASKET	GRAPHITE
78	PACKING RING	A479 Tp.316
82	ANTISTATIC DEVICE	INCONEL X750
83	BELLEVILLE WASHER	AISI 301

NOTE:

(1) HDG: Hot Dip Galvanised (ASTM A153)







REMARKS:

- Dimensions are in mm
- Design acc. to API 6D
- Face to face acc. to ASME B16.10/API 6D
- Flange connection acc. to ANSI B16.5
- Antistatic device acc. to API 6D

(*): To Be Confirmed

POS:	ITEM:	DATA SHEET:	TAG:	Q.TY:	SIZE:	CLASS:	ENDS:	A	ØB	C	D(*)	ØE	Valve Weight (kg):	Actuator Weight (kg):	Tot. Weight (kg):
24	240	BS01F01RF	50-XV-001	1	1-1/2"	150	RF	165	38	64	105	127	18	36	2 54
26	260	BS01F01RF	50-XV-003	1	1-1/2"	150	RF	165	38	64	105	127	18	36	2 54

CUSTOMER :	ROSETTI MARINO S.p.A.
P.O. N. :	1724000204 123A90A/REV.1
JOB N. :	240062

Rev.	DESCRIPTION	DRAWN	DATE	CHK'D	DATE	APPV'D	DATE
3							
2	ISSUED FOR APPROVAL	S.Madahar	22/04/2024	D.Barcella	22/04/2024	L.Mora	22/04/2024
1	ISSUED FOR APPROVAL	S.Madahar	15/04/2024	D.Barcella	15/04/2024	L.Mora	15/04/2024
0	FIRST ISSUE	S.Madahar	26/02/2024	D.Barcella	26/02/2024	L.Mora	26/02/2024

DRAWING NOT IN SCALE

Fluitek Valves

DESCRIPTION: GENERAL ASSEMBLY DRAWING

VALVE TYPE:

SPLIT BODY FLOATING BALL VALVE

DRAWN:	DATE:
S.Madahar	26/02/2024
CHK'D: D.Barcella	DATE: 26/02/2024
APPV'D: L.Mora	DATE: 26/02/2024

SIZE: A3 | SCALE: N.A.

ALL RIGHTS OF THIS DRAWING ARE RESERVED.

DRAWING NAME: D240062-24-26

Rev.: 2

GENERAL	1	Tag Number	Location			50-XV-003	50
	2	Service				SEA WATER P-50001B DISCHARGE	
	3	P&ID Number	Area Classification			123A90-DDL-PR-PID-80021	Zone 2, Gas Group IIC (or IIB+H2), Class T1
PIPELINE	4	Line Number				1-1/2"-SWS-033-01SD-E	
	5	Line Size and Schedule	Inlet	Outlet		1-1/2" / 3.68 mm	1-1/2" / 3.68 mm
	6	Line Material	Line Insulation			ASTM A790 UNS S32760	ELECTRICALLY HEAT TRACED (35)
PROCESS DATA	7	Fluid				SEA WATER SUPPLY	
	8	Fluid State	Phase			LIQUID	LIQUID
	9	Operating Pressure Norm/Min/Max			[barg]	15 -	-
	10	Design Pressure	Full Vacuum		[barg]	17.7	
	11	Operating Temperature Norm/Min/Max			[°C]	22 -	-
	12	Design Temperature	Minimum	Maxi	[°C]	-29	100
	13	Max. Diff. Pressure for Actuator Size			[bar]	17.7	
	14						
	15						
	16	Speed of	Design			Close : (12)	Open : (12)
	17	Operation (seconds)	Actual			Close : 0.3 minimum	Open : -
	18						
	19						
VALVE BODY (34)	20	Body Type				BALL VALVE (FLOATING BALL) - SPLIT BODY (BS01F01RF)	
	21	Body Size	Body Form			1-1/2"	FULL BORE
	22	Body Material	Bonnet Type			ASTM A182 F53	(*)
	23	Connections	Rating			FLANGED ASME B16.5	#150
	24	Flange Finish	Gasket Material			RF	Inside the valve (*) (38)
	25	Packing	Lubrication & Isolation			PTFE (*)	(*)
	26	Bolting				A193 B7 +HDG / A194 Gr. 2H + HDG	
	27	Trim Material	Ball	Stem	Seat	ASTM A182 F53	ASTM A182 F53 RPTFE
	28	Leakage Class				(1)	
	29	Fire Safe				(2)	
ACTUATOR	30	Manufacturer	Type			Rotork	Spring Return
	31	Model No.	Size			CP/S	035-100A/BA
	32	Actuator Orientation	Actuator Form			Horizontal	Cylinder
	33	Ingress Protection	Certification			IP-66	II 2 G Ex h IIC T5 Gb
	34	Air Supply	Min	Max	Design	4 barg 10 barg	11 barg
	35	Action on Air Failure	Action on Power Failure			CLOSE	CLOSE
	36	Fireproofing				NOT APPLICABLE	
	37	Solenoid Valve				50-XY-003 (9, 14, 15, 16) - Bifold FP06P	
	38	Limit Switch Closed	Limit Switch Open			50-ZSL-003 (9, 17) - Soldo SS	50-ZSH-003 (9, 17) - Soldo SS
	39	Elect. Reset Pushbutton (Actuator mounted)				NOT REQUIRED	
	40	Air Set	Handwheel			(*)	NOT REQUIRED
	41	Mounting Position				HORIZONTAL / VERTICAL	
	42	Partial Stroke Test Facility				-	
	43	Control Type				-	
	44	Electrical Connection	Electrical Class			No. (*) / M20	H
EMERGENCY A/S VESSEL	45	Capacity	Fabrication Code			-	- -
	46	No of Strokes Per Capacity				-	
	47	Safety Valve	Model			-	-
	48	Check Valve	Mounting			-	-
PURCHASE	49	Manufacturer				FLUITEK	
	50	Model				FB3	
	51	Purchase Order Number				1724000204	

NOTE
(1) N.1 PSV INSTALLED DOWNSTREAM THE AIR FILTER REGULATOR, SIZE 1/4", SS, set 4.7 barg.

No.	Date	By	Chkd	Appr	Description
03	06/12/24	VBA	LCA	DLO	Accepted for Construction (AFC)
02	28/08/24	VBA	LCA	DLO	Accepted for Construction (AFC)
01	20/12/23	VBA	LCA	DLO	Issued for Review (IFR)
00	06/11/23	VBA	LCA	DLO	Issued for Review (IFR)

INSTRUMENT DATASHEET

SDV/BDV and Tight Shut-Off XV Valves

CROSSWIND

ROSETTI MARINO

Code : Dwg. No.: 123A90-DDL-IN-DS-40030 Rev.03

This document undergoes an issuance cycle within EDMS "Fusionlive".
Its distribution is electronically controlled. Once printed shall be considered as “NOT CONTROLLED” copy

ITEM	Tag	50-XY-004	: Solenoid Valve - Sea Water Recirculation from Pump P-50001B			Dwg	123A90-DDL-PR-PID-80021
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10002018		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Instrumental	Form	CJX00 Miscellaneous

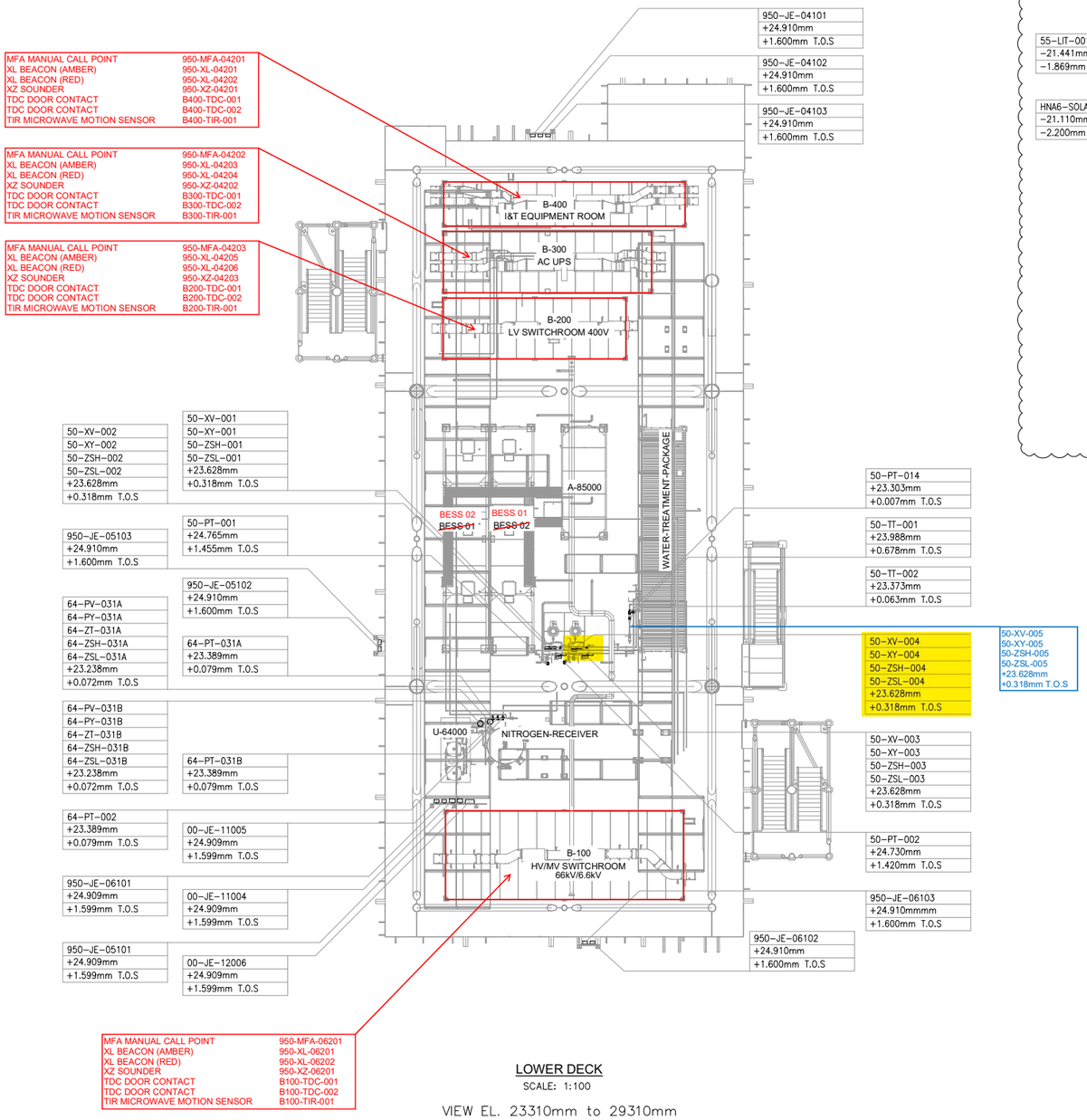
1	Check for mechanical damage.	OK
2	Check installed equipment is suitable and conforms to specification.	OK
3	Check installation conforms to P&ID and hook-up drawing.	OK
4	Check tube fittings manufacturer is the one chosen for the plant.	OK
5	Check that piping connections provide the block & bleed facility (if required).	OK
6	Check that all stop plugs are properly installed	NA
7	Check identification (tag number, tag plates).	PL
8	Check supporting and protection against vibrations.	OK
9	Check the conformity of earthing as per specification (I.P.E. or I.E.)	PL
10	If required produce Red Line Mark Up for "AS BUILT"	

Comments:

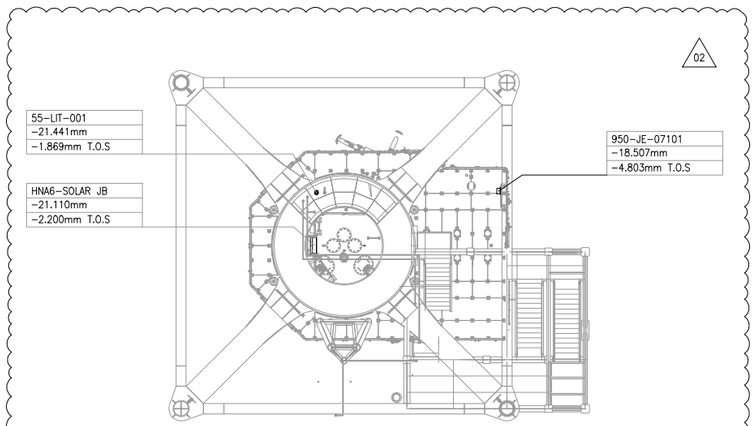
	Performed by	☉ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Alessio Polo	
Date	2025-02-08	2025-02-10	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-08T11:05:27.650Z	PROVERLIS Digitaly signed by Alessio Polo 2025-02-10T10:28:47.930Z	

DRAWING NO. 123A90-DDL-IN-DL-40080

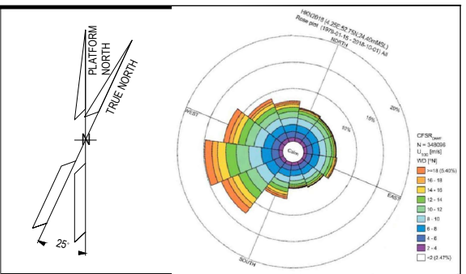
REV. 02



LOWER DECK
SCALE: 1:100
VIEW EL. 23310mm to 29310mm



TRANSITION PIECE
SCALE: 1:100
VIEW EL. 17050mm to 23310mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40081	INSTRUMENT LAYOUT - UPPER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-UPPER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DL-40080**

REV.:	DATE:	SIGNATURE:
2_C	06/11/24	G.Randi

ROSETTI MARINO SpA

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–LOWER DECK
TOS EL. 23.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90–DDL–IN–DL–40080	SHEET 001	REV. 02

File Name : 123A90-DDL-IN-DL-40080 REV02.dwg

DRAWING NO. DRAWING_NO.

REV. REV.

P-50001 A/B

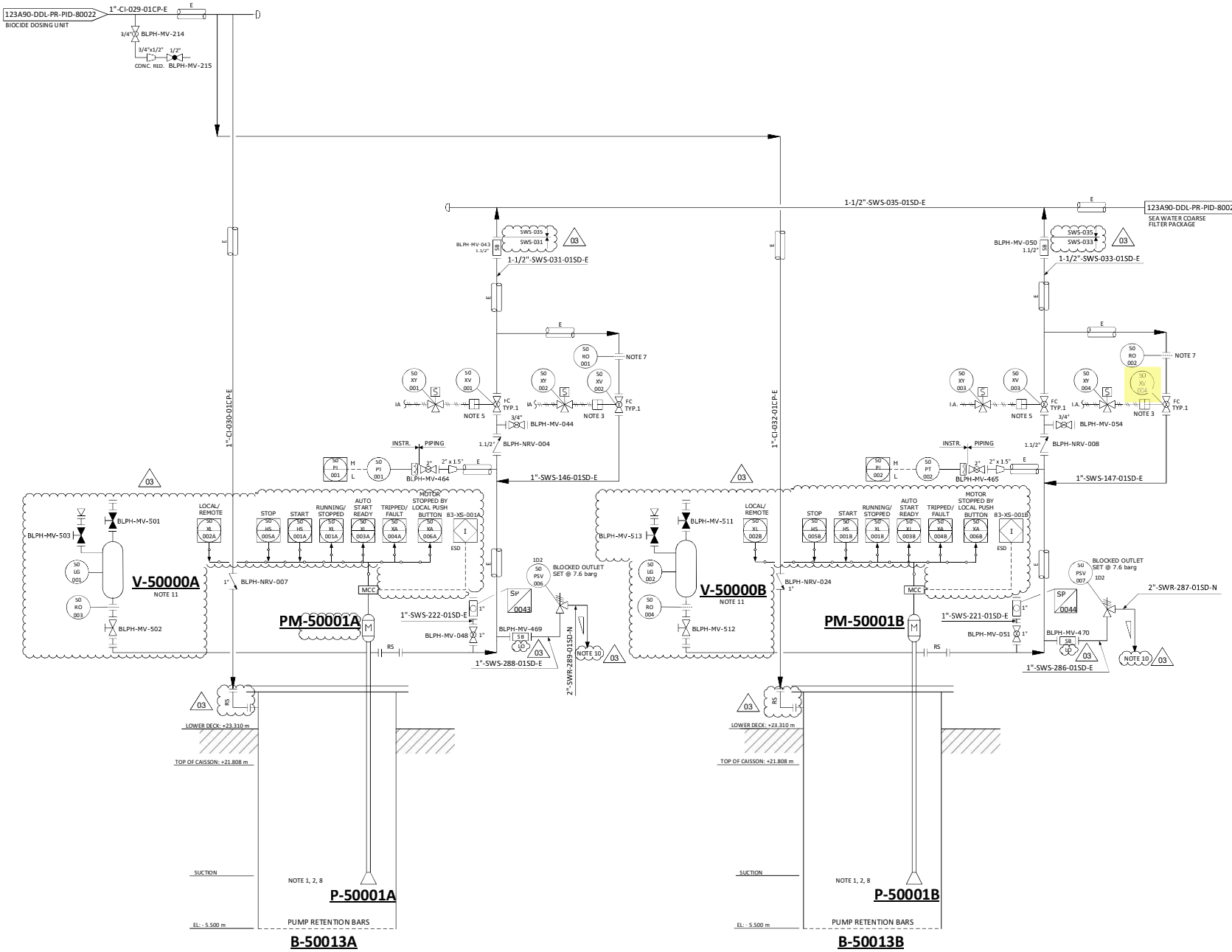
SEA WATER LIFT PUMPS

POWER :	1.6 KW
FLOW :	2.5 m³/h
DESIGN P/T :	7.6 barg / 80°C
DISCHARGE PRESSURE :	5.6 barg (NOTE 9)
MATERIAL :	SDSS

B-50013 A/B

SEA WATER LIFT PUMPS CAISSONS

SIZE :	343 mm (ID) x 27308 mm (H)
MATERIAL :	CS + CA



NOTES

1. SEAWATER LIFT PUMPS ARE RATED 2 X 100%
2. AUTO START OF DESIGNATED STANDBY PUMP ON LOSS OF RUNNING STATUS AND DISCHARGE LOW PRESSURE ALARM OF DUTY PUMP.
3. VALVE TO BE OPENED WHEN PUMP IS OFFLINE TO DOSE CAISSON WITH TREATED SEAWATER TO PREVENT BIOLOGICAL GROWTH.
4. DELETED.
5. SOFTWARE INTERLOCK PREVENTS PUMPS FROM STARTING IN CASE THE RELEVANT XV VALVE IS FULLY CLOSED. 03
6. DELETED.
7. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "123A90-DDL-IN-DS-40054 - TECHNICAL DATASHEET FOR RESTRICTION ORIFICE".
8. LOGIC FOR CONTROL OF P-5001A/B THAT PREVENTS SIMULTANEOUS RUNNING OF A AND B PUMP IS PROVIDED.
9. DISCHARGE PRESSURE REFERS TO THE FLANGE DISCHARGE OF THE PUMP AT LOWER DECK.
10. ROUTED TO THE SEA.
11. VESSELS V-50000A/B ARE INSULATED AND HEAT TRACED. 03

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.
5. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :

BLPH PIPING AND INSTRUMENTATION DIAGRAM
SEA-WATER INTAKE SYSTEM SHEET 1

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80021	SHEET 001	REV. 03

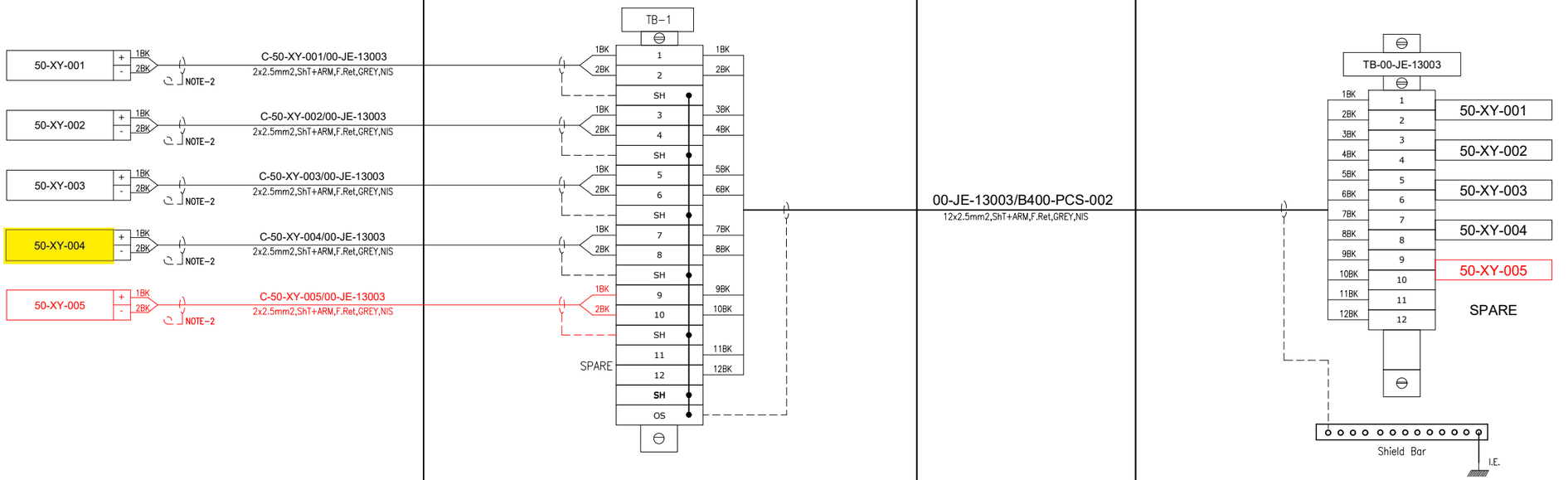
File Name : FILE_NAME

DRAWING NO. 123A90-DDL-IN-DG-40015

REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX	No.	MARSHALLING CABINET
	00-JE-13003		B400-PCS-002

<01>



VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_I	29/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

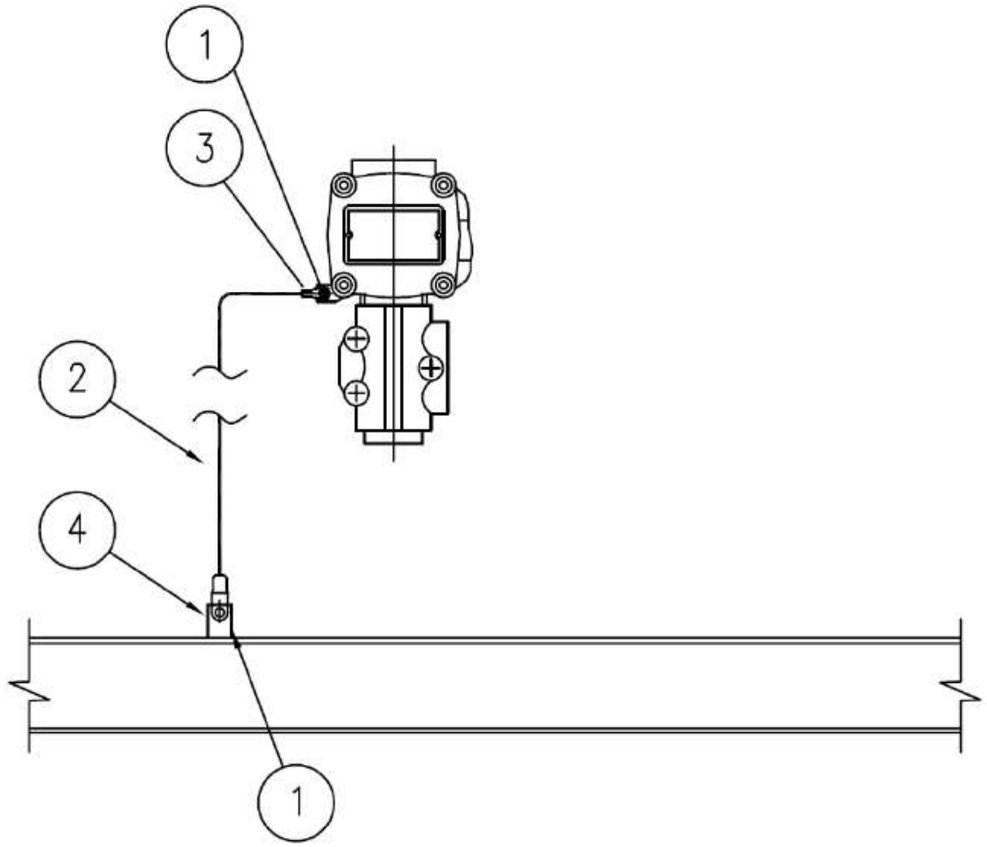
TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
00–JE–13003

CONTRACT NO./TITLE			SCALE N/A
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

A3	DRAWING NO.	SHEET	REV.
	123A90–DDL–IN–DG–40015	030	01

File Name : 123A90-DDL-IN-DG-40015_Rev.01

E33



MATERIALS

POS.	Q.TY	DESCRIPTION	NOTES
1	1	A4 STAINLESS STEEL BOLT COMPLETE WITH NUT AND WASHERS	
2	1	Y/G INSULATING COPPER CONDUCTOR - 6mm²	
3	1	COMPRESSION TYPE LUG FOR INSULATING COPPER CONDUCTOR	
4	1	EARTHING BAR / PLATE / THREADED STUD	(1)

NOTE:
1) FOR DETAIL OF EARTHING PLATE, EARTHING BOSS AND THREADED STUD SEE TYP. E11A/C/D/E

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DD-20090**

REV.:	DATE:	SIGNATURE:
2_I	07/11/24	G.Randi

ROSETTI MARINO SpA

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	26/08/24	GRA	AMA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/06/24	SPS	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS-EARTHING SYSTEM
EARTHING FOR GENERIC INSTRUMENT

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : NTS

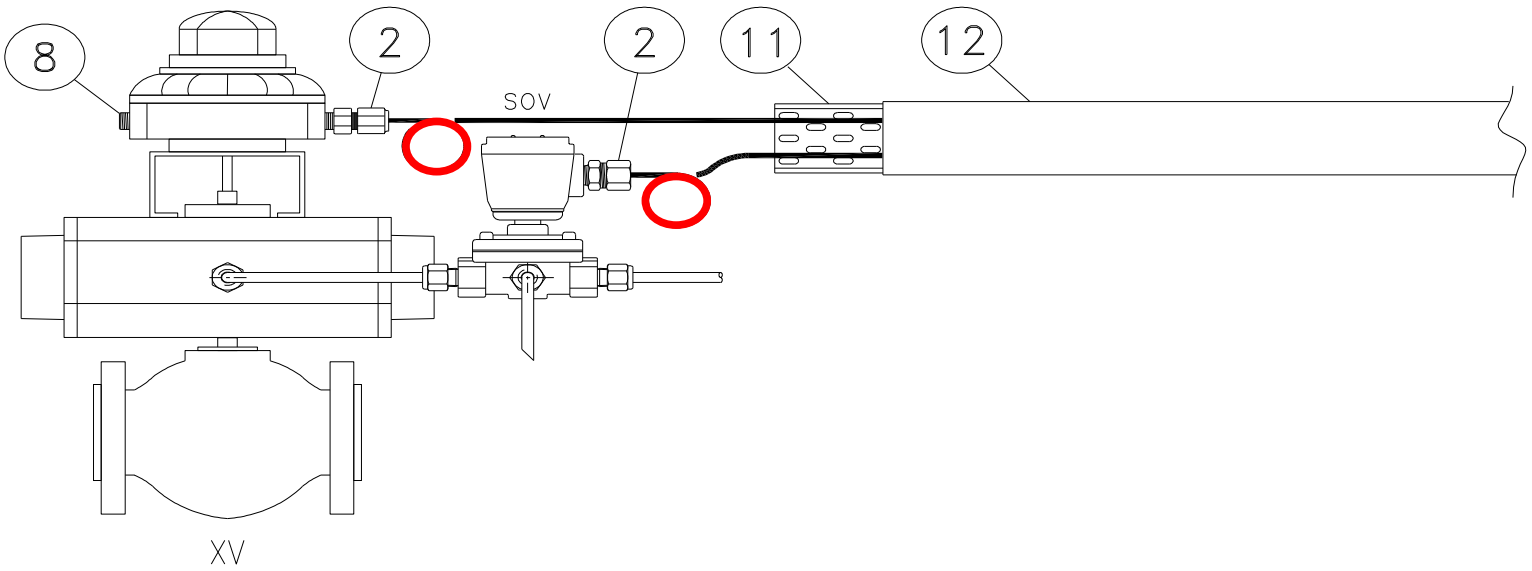
A3 | DRAWING NO. 123A90-DDL-EL-DD-20090 | SHEET 027 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DD-20090 REV.02.DWG

CROSSWIND	HOLLANDSE KUST NOORD WIND PARK Project Contract No. CW-I-WP4-2023-05	ROSETTI MARINO
Document Title:	Instrument Electrical Hook-Ups	Sh. 15 of 37 Date: 27/09/2024 Rev. 02

ELECTRICAL HOOK-UP FOR XV (N.1 SOLENOID VALVE + 2 LIMIT SWITCH)



INSTRUMENT TAG	
1	25-XV-004
2	25-XV-006
3	25-XV-008
4	25-XV-009
5	25-XV-011
6	25-XV-012
7	25-XV-014
8	25-XV-015
9	25-XV-017
10	25-XV-018
11	25-XV-020
12	25-XV-021
13	25-XV-024
14	50-XV-001
15	50-XV-002
16	50-XV-003
17	50-XV-004
18	80-XV-001
19	50-XV-005
20	
21	
22	
23	
24	
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26	
27	
28	
29	
30	

NOTE:

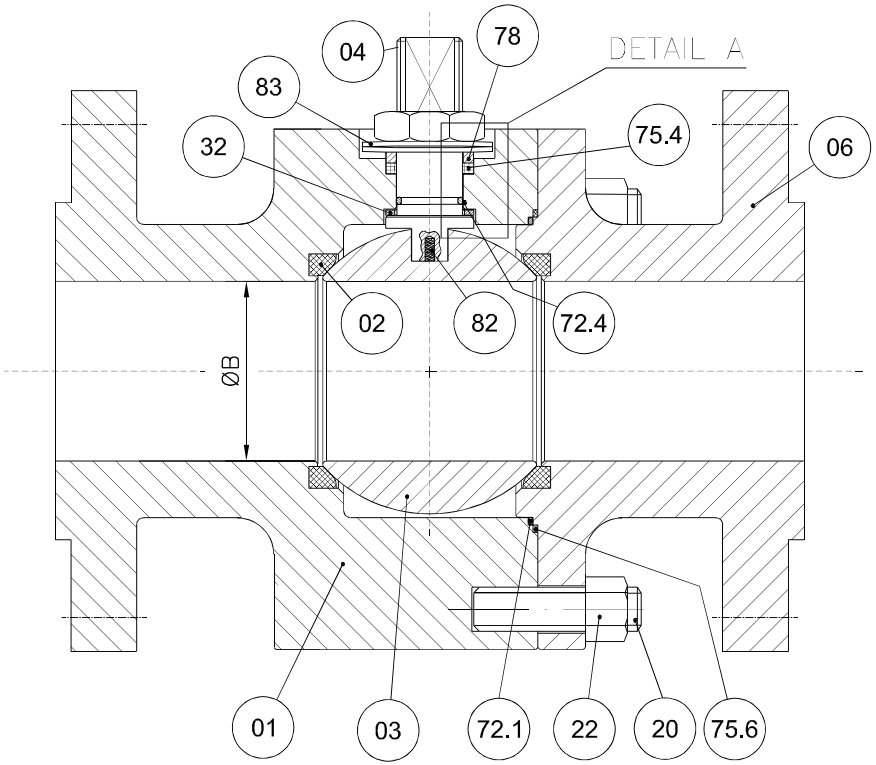
VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-HD-40079**

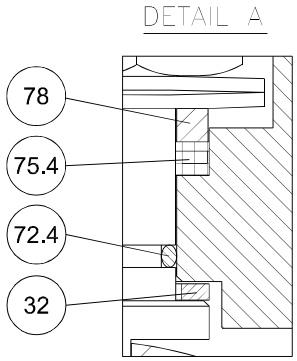
REV.:	DATE:	SIGNATURE:
2_G	20/12/24	V.Ramponi

ROSETTI MARINO SpA

POS.	NORM/STD CODE	DESCRIPTION	SIZE/ CONNECTION TYPE	Q.TY
12		Cover for cable tray, FRP, Grey Color	50 W x 10 H x 5 THK	3 mt
11		Perforated cable tray, FRP, Grey Color	50 W x 50 H x 5 THK	3 mt
8		Nickel Plated Brass Plug Ex-d/e IIC (or IIB + H2) T1	M20	1
2		Nickel Plated Brass Double Compression Cable Gland Ex-d/e IIC (or IIB + H2) T1	M20	2

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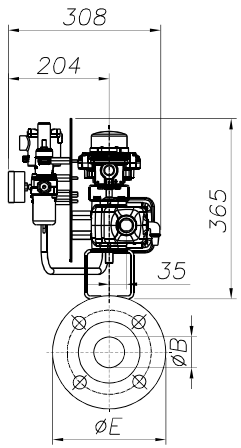


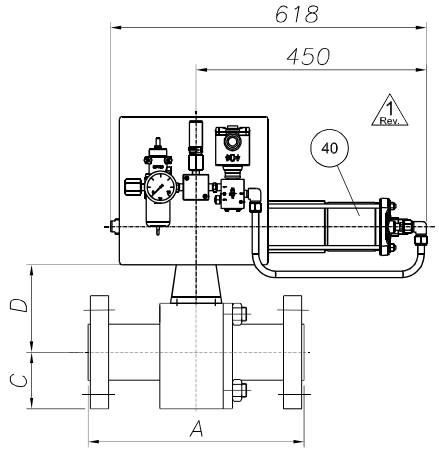


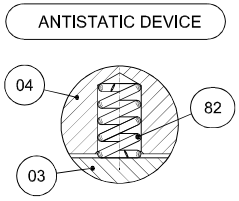
POS.	PART. NAME	MATERIAL
01	BODY	A182 F53
02	SEAT	RPTFE
03	BALL	A182 F53
04	STEM	API 6A CRA UNS N07718
06	CLOSURE	A182 F53
20	STUD	A193 B7+HDG (1)
22	NUT	A194 Gr.2H+HDG (1)
32	THRUST BEARING	RPTFE
40	PNEUMATIC ACTUATOR	MFR. STD.
72.1	FLANGE O-RING	VITON GLT/AED
72.4	STEM O-RING	VITON GLT/AED
75.4	STEM GASKET	GRAPHITE
75.6	FLANGE GASKET	GRAPHITE
78	PACKING RING	A479 Tp.316
82	ANTISTATIC DEVICE	INCONEL X750
83	BELLEVILLE WASHER	AISI 301

NOTE:

(1) HDG: Hot Dip Galvanised (ASTM A153)







REMARKS:

- Dimensions are in mm
- Design acc. to API 6D
- Face to face acc. to ASME B16.10/API 6D
- Flange connection acc. to ANSI B16.5
- Antistatic device acc. to API 6D

(*): To Be Confirmed

POS:	ITEM:	DATA SHEET:	TAG:	Q.TY:	SIZE:	CLASS:	ENDS:	A	ØB	C	D(*)	ØE	Valve Weight (kg):	Actuator Weight (kg):	Total Weight (kg):
25	250	BS01F01RF	50-XV-002	1	1"	150	RF	127	25	54	95	108	6	34	40
27	270	BS01F01RF	50-XV-004	1	1"	150	RF	127	25	54	95	108	6	34	40

1 Rev.

2 Rev.

CUSTOMER :	ROSETTI MARINO S.p.A.
P.O. N. :	1724000204 123A90A/REV.1
JOB N. :	240062

Rev.	DESCRIPTION	DRAWN	DATE	CHK'D	DATE	APPV'D	DATE
3							
2	ISSUED FOR APPROVAL	S.Madahar	22/04/2024	D.Barcella	22/04/2024	L.Mora	22/04/2024
1	ISSUED FOR APPROVAL	S.Madahar	15/04/2024	D.Barcella	15/04/2024	L.Mora	15/04/2024
0	FIRST ISSUE	S.Madahar	26/02/2024	D.Barcella	26/02/2024	L.Mora	26/02/2024

DRAWING NOT IN SCALE

Fluitek Valves

DESCRIPTION: GENERAL ASSEMBLY DRAWING

VALVE TYPE: SPLIT BODY FLOATING BALL VALVE

DRAWN: S.Madahar	DATE: 26/02/2024	
CHK'D: D.Barcella	DATE: 26/02/2024	
APPV'D: L.Mora	DATE: 26/02/2024	
SIZE: A3	SCALE: N.A.	ALL RIGHTS OF THIS DRAWING ARE RESERVED.

DRAWING NAME: D240062-25-27

Rev.: 2

GENERAL	1	Tag Number		Location		50-XV-004		50
	2	Service				SEA WATER P-50001B INLET		
	3	P&ID Number		Area Classification		123A90-DDL-PR-PID-80021		Zone 2, Gas Group IIC (or IIB+H2), Class T1
PIPELINE	4	Line Number				1"-SWS-147-01SD-E		
	5	Line Size and Schedule	Inlet		Outlet	1" / 3.38 mm		1" / 3.38 mm
	6	Line Material		Line Insulation		ASTM A790 UNS S32760		ELECTRICALLY HEAT TRACED (35)
PROCESS DATA	7	Fluid				SEA WATER SUPPLY		
	8	Fluid State		Phase		LIQUID		LIQUID
	9	Operating Pressure Norm/Min/Max			[barg]	-	ATM	15
	10	Design Pressure		Full Vacuum	[barg]	17.7		
	11	Operating Temperature Norm/Min/Max			[°C]	-	-	-
	12	Design Temperature		Minimum	Maxi [°C]	-29		100
	13	Max. Diff. Pressure for Actuator Size			[bar]	17.7		
	14							
	15							
	16	Speed of		Design		Close : (12)		Open : (12)
	17	Operation (seconds)		Actual		Close : 0.3 minimum		Open : -
	18							
	19							
VALVE BODY (34)	20	Body Type				BALL VALVE (FLOATING BALL) - SPLIT BODY (BS01F01RF)		
	21	Body Size		Body Form		1"		FULL BORE
	22	Body Material		Bonnet Type		ASTM A182 F53		(*)
	23	Connections		Rating		FLANGED ASME B16.5		#150
	24	Flange Finish		Gasket Material		RF		Inside the valve (*) (38)
	25	Packing		Lubrication & Isolation		PTFE (*)		(*)
	26	Bolting				A193 B7 +HDG / A194 Gr. 2H + HDG		
	27	Trim Material	Ball	Stem	Seat	ASTM A182 F53	ASTM A182 F53	RPTFE
	28	Leakage Class				(1)		
	29	Fire Safe				(2)		
ACTUATOR	30	Manufacturer		Type		Rotork		Spring Return
	31	Model No.		Size		CP/S		035-100A/BA
	32	Actuator Orientation		Actuator Form		Horizontal		Cylinder
	33	Ingress Protection		Certification		IP-66		II 2 G Ex h IIC T5 Gb
	34	Air Supply		Min	Max Design	4 barg	10 barg	11 barg
	35	Action on Air Failure		Action on Power Failure		CLOSE		CLOSE
	36	Fireproofing				NOT APPLICABLE		
	37	Solenoid Valve				50-XY-004 (9, 14, 15, 16) - Bifold FP06P		
	38	Limit Switch Closed		Limit Switch Open		50-ZSL-004 (9, 17) - Soldo SS		50-ZSH-004 (9, 17) - Soldo SS
	39	Elect. Reset Pushbutton (Actuator mounted)				NOT REQUIRED		
	40	Air Set		Handwheel		(*)		NOT REQUIRED
	41	Mounting Position				HORIZONTAL / VERTICAL		
	42	Partial Stroke Test Facility				-		
	43	Control Type				-		
	44	Electrical Connection		Electrical Class		No. (*) / M20		H
EMERGENCY A/S VESSEL	45	Capacity		Fabrication Code		-	-	-
	46	No of Strokes Per Capacity				-		
	47	Safety Valve		Model		-		-
	48	Check Valve		Mounting		-		-
PURCHASE	49	Manufacturer				FLUITEK		
	50	Model				FB3		
	51	Purchase Order Number				1724000204		

NOTE
(1) N.1 PSV INSTALLED DOWNSTREAM THE AIR FILTER REGULATOR, SIZE 1/4", SS, set 4.7 barg.

No.	Date	By	Chkd	Appr	Description
03	06/12/24	VBA	LCA	DLO	Accepted for Construction (AFC)
02	28/08/24	VBA	LCA	DLO	Accepted for Construction (AFC)
01	20/12/23	VBA	LCA	DLO	Issued for Review (IFR)
00	06/11/23	VBA	LCA	DLO	Issued for Review (IFR)

INSTRUMENT DATASHEET

SDV/BDV and Tight Shut-Off XV Valves

CROSSWIND

ROSETTI MARINO

Code : Dwg. No.: 123A90-DDL-IN-DS-40030 Rev.03

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ITEM	Tag	50-ZSHL-001	: Limit Switch box - Sea Water from Pump P-50001A			Dwg	123A90-DDL-PR-PID-80021
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10002019		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Instrumental Form CJX00		Miscellaneous

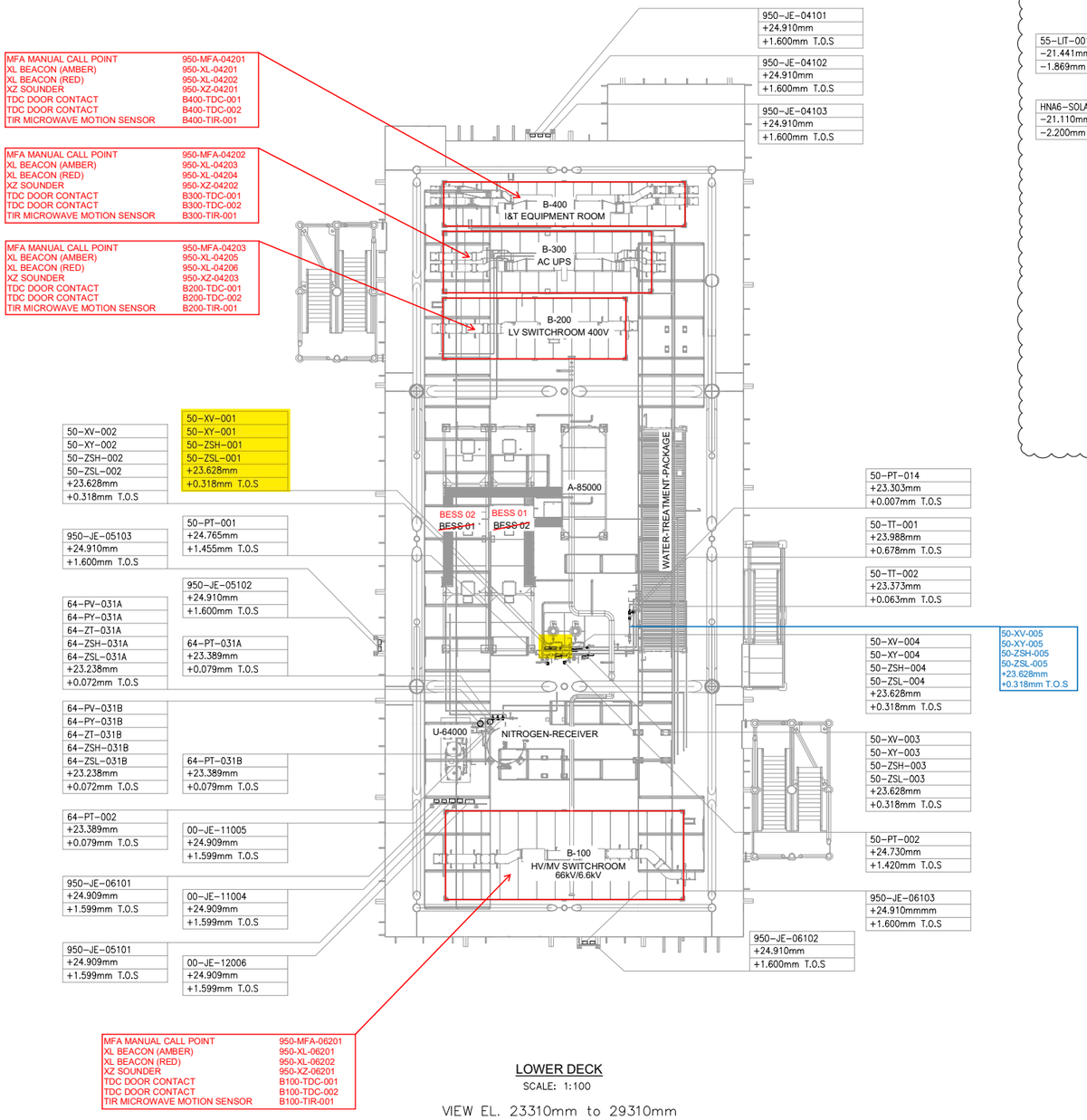
1	Check for mechanical damage.	OK
2	Check installed equipment is suitable and conforms to specification.	OK
3	Check installation conforms to P&ID and hook-up drawing.	OK
4	Check tube fittings manufacturer is the one chosen for the plant.	OK
5	Check that piping connections provide the block & bleed facility (if required).	NA
6	Check that all stop plugs are properly installed	OK
7	Check identification (tag number, tag plates).	OK
8	Check supporting and protection against vibrations.	OK
9	Check the conformity of earthing as per specification (I.P.E. or I.E.)	OK
10	If required produce Red Line Mark Up for "AS BUILT"	

Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Alessio Polo	
Date	2025-02-05	2025-02-10	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-05T10:19:03.828Z	PROVERLIS Digitaly signed by Alessio Polo 2025-02-10T10:01:59.512Z	

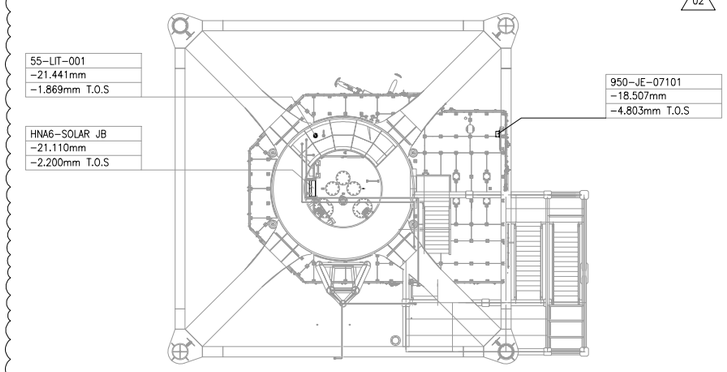
DRAWING NO. 123A90-DDL-IN-DL-40080

REV. 02

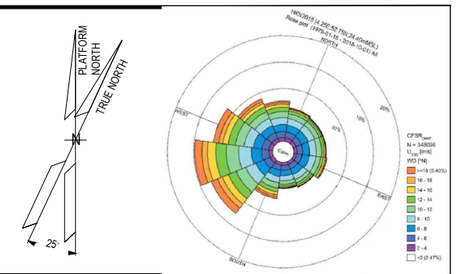


LOWER DECK
SCALE: 1:100
VIEW EL. 23310mm to 29310mm

02



TRANSITION PIECE
SCALE: 1:100
VIEW EL. 17050mm to 23310mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40081	INSTRUMENT LAYOUT - UPPER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-UPPER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DL-40080**

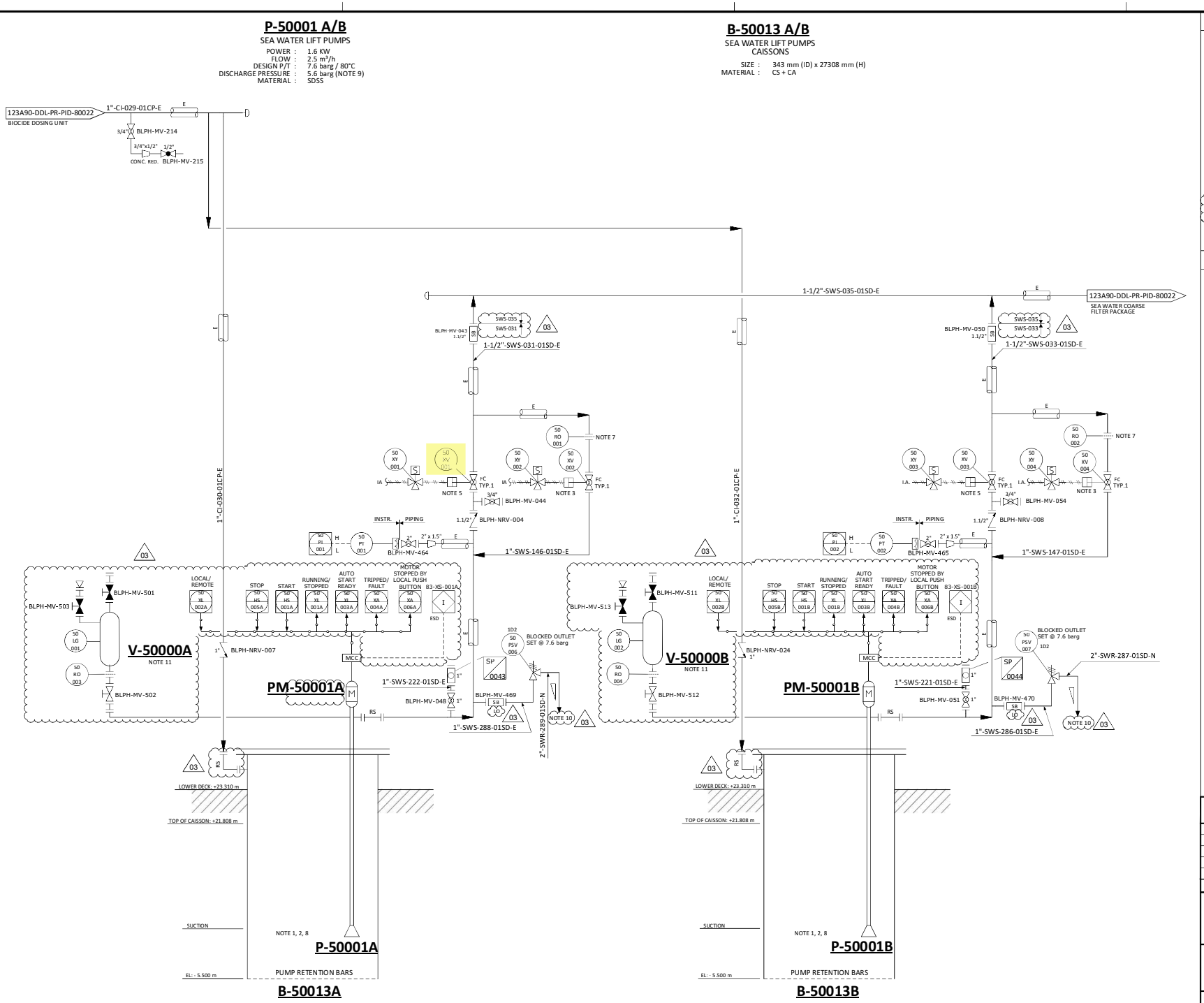
REV.:	DATE:	SIGNATURE:
2_C	06/11/24	G.Randi

ROSETTI MARINO SpA

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–LOWER DECK
TOS EL. 23.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90–DDL–IN–DL–40080	SHEET 001	REV. 02

File Name : 123A90-DDL-IN-DL-40080 REV02.dwg



NOTES

1. SEAWATER LIFT PUMPS ARE RATED 2 X 100%
2. AUTO START OF DESIGNATED STANDBY PUMP ON LOSS OF RUNNING STATUS AND DISCHARGE LOW PRESSURE ALARM OF DUTY PUMP.
3. VALVE TO BE OPENED WHEN PUMP IS OFFLINE TO DOSE CAISSON WITH TREATED SEAWATER TO PREVENT BIOLOGICAL GROWTH.
4. DELETED.
5. SOFTWARE INTERLOCK PREVENTS PUMPS FROM STARTING IN CASE THE RELEVANT XV VALVE IS FULLY CLOSED. 03
6. DELETED.
7. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "123A90-DDL-IN-DS-40054 - TECHNICAL DATASHEET FOR RESTRICTION ORIFICE".
8. LOGIC FOR CONTROL OF P-5001A/B THAT PREVENTS SIMULTANEOUS RUNNING OF A AND B PUMP IS PROVIDED.
9. DISCHARGE PRESSURE REFERS TO THE FLANGE DISCHARGE OF THE PUMP AT LOWER DECK.
10. ROUTED TO THE SEA.
11. VESSELS V-50000A/B ARE INSULATED AND HEAT TRACED. 03

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.
5. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
SEA-WATER INTAKE SYSTEM SHEET 1

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80021	SHEET 001	REV. 03

DRAWING NO. DRAWING_NO.
REV. REV.
File Name : FILE_NAME

DRAWING NO. 123A90-DDL-IN-DG-40015

REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 00-JE-12006	No.	MARSHALLING CABINET B400-PCS-002

<01>

ON-OFF VALVE LIMIT SWITCHES BOX (SOLDO)
- 50-ZSL-001 (1, 2) WH BK → PR1
- 50-ZSH-001 (5, 6) WH BK → PR2
- NOTE-2
- C-50-XV-001/00-JE-12006
- 2x2x0.75mm2,Sh+ShT+ARM,F.Ret,GREY,NIS

ON-OFF VALVE LIMIT SWITCHES BOX (SOLDO)
- 50-ZSL-002 (1, 2) WH BK → PR1
- 50-ZSH-002 (5, 6) WH BK → PR2
- NOTE-2
- C-50-XV-002/00-JE-12006
- 2x2x0.75mm2,Sh+ShT+ARM,F.Ret,GREY,NIS

ON-OFF VALVE LIMIT SWITCHES BOX (SOLDO)
- 50-ZSL-003 (1, 2) WH BK → PR1
- 50-ZSH-003 (5, 6) WH BK → PR2
- NOTE-2
- C-50-XV-003/00-JE-12006
- 2x2x0.75mm2,Sh+ShT+ARM,F.Ret,GREY,NIS

ON-OFF VALVE LIMIT SWITCHES BOX (SOLDO)
- 50-ZSL-004 (1, 2) WH BK → PR1
- 50-ZSH-004 (5, 6) WH BK → PR2
- NOTE-2
- C-50-XV-004/00-JE-12006
- 2x2x0.75mm2,Sh+ShT+ARM,F.Ret,GREY,NIS

ON-OFF VALVE LIMIT SWITCHES BOX (SOLDO)
- 50-ZSL-005 (1, 2) WH BK → PR1
- 50-ZSH-005 (5, 6) WH BK → PR2
- NOTE-2
- C-50-XV-005/00-JE-12006
- 2x2x0.75mm2,Sh+ShT+ARM,F.Ret,GREY,NIS

TB-1

WH BK	1	PR1
	2	
	SH	
WH BK	3	PR2
	4	
	SH	
WH BK	5	PR3
	6	
	SH	
WH BK	7	PR4
	8	
	SH	
WH BK	9	PR5
	10	
	SH	
WH BK	11	PR6
	12	
	SH	
WH BK	13	PR7
	14	
	SH	
WH BK	15	PR8
	16	
	SH	
WH BK	17	PR9
	18	
	SH	
WH BK	19	PR10
	20	
	SH	
SPARE	21	PR11
	22	
	SH	
SPARE	23	PR12
	24	
	SH	
	OS	

00-JE-12006_1/B400-PCS-002

12x2x0.75mm2,Sh+ShT+ARM,F.Ret,GREY,NIS

TB-00-JE-12006

PR1 WH BK	1	50-ZSL-001
Shield Bar	2	
PR2 WH BK	3	50-ZSH-001
Shield Bar	4	
PR3 WH BK	5	50-ZSL-002
Shield Bar	6	
PR4 WH BK	7	50-ZSH-002
Shield Bar	8	
PR5 WH BK	9	50-ZSL-003
Shield Bar	10	
PR6 WH BK	11	50-ZSH-003
Shield Bar	12	
PR7 WH BK	13	50-ZSL-004
Shield Bar	14	
PR8 WH BK	15	50-ZSH-004
Shield Bar	16	
PR9 WH BK	17	50-ZSL-005
Shield Bar	18	
PR10 WH BK	19	50-ZSH-005
Shield Bar	20	
PR11 WH BK	21	SPARE
Shield Bar	22	
PR12 WH BK	23	SPARE
	24	

Shield Bar

I.E.

VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_I	29/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
00–JE–12006–SH.1 OF 2

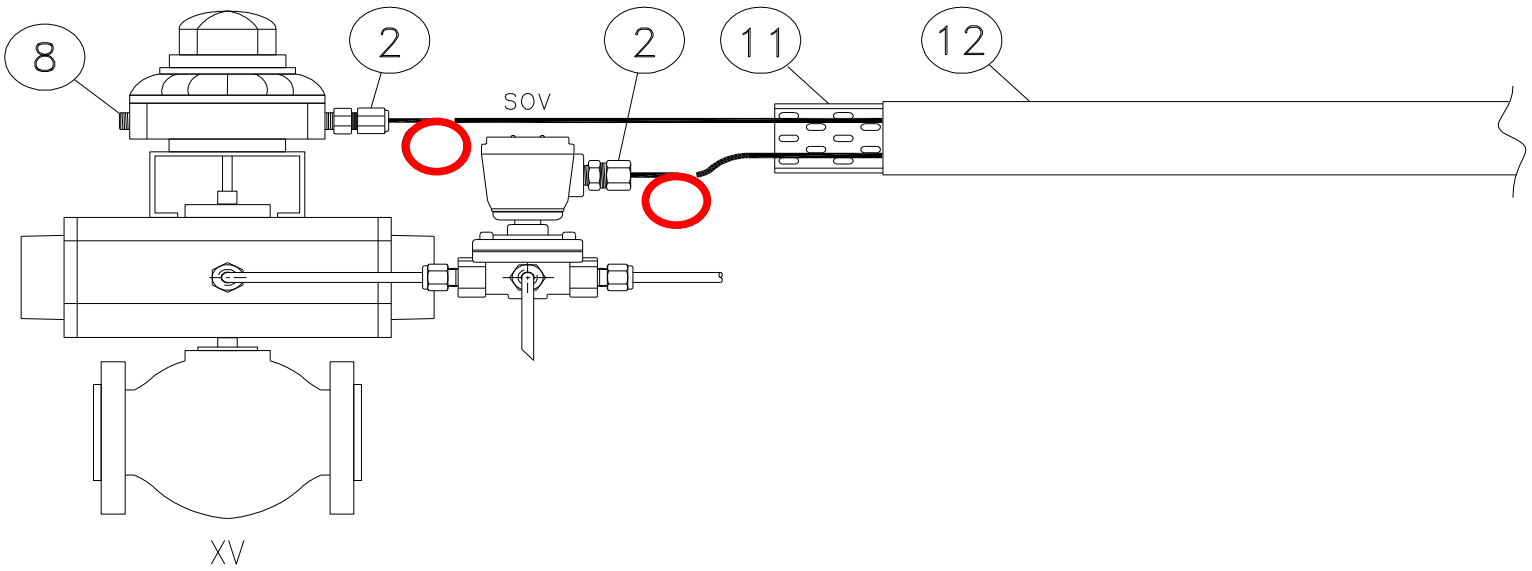
CONTRACT NO./TITLE			SCALE N/A
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024

A3	DRAWING NO.	SHEET	REV.
	123A90–DDL–IN–DG–40015	022	01

File Name : 123A90-DDL-IN-DG-40015_Rev.01

CROSSWIND	HOLLANDSE KUST NOORD WIND PARK Project Contract No. CW-I-WP4-2023-05	ROSETTI MARINO
Document Title:	Instrument Electrical Hook-Ups	Sh. 15 of 37 Date: 27/09/2024 Rev. 02

ELECTRICAL HOOK-UP FOR XV (N.1 SOLENOID VALVE + 2 LIMIT SWITCH)



INSTRUMENT TAG	
1	25-XV-004
2	25-XV-006
3	25-XV-008
4	25-XV-009
5	25-XV-011
6	25-XV-012
7	25-XV-014
8	25-XV-015
9	25-XV-017
10	25-XV-018
11	25-XV-020
12	25-XV-021
13	25-XV-024
14	50-XV-001
15	50-XV-002
16	50-XV-003
17	50-XV-004
18	80-XV-001
19	50-XV-005
20	
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29	
30	

NOTE:

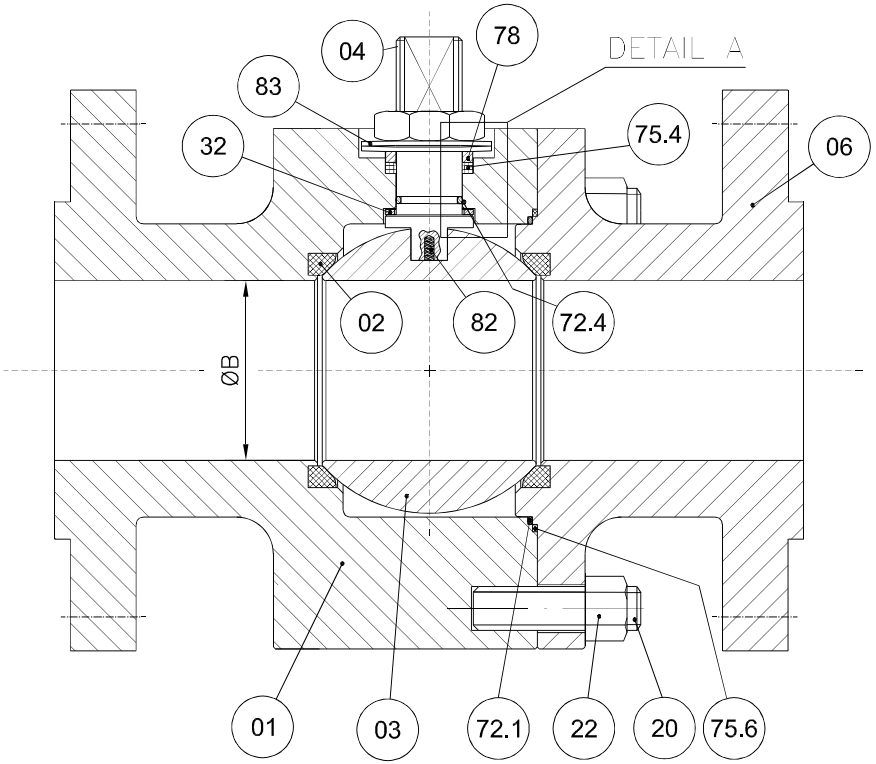
VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-HD-40079**

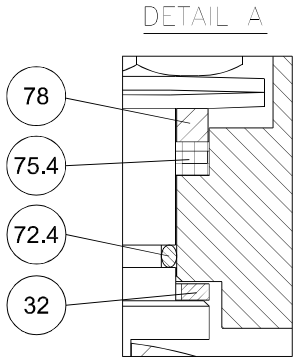
REV.:	DATE:	SIGNATURE:
2_G	20/12/24	V.Ramponi

ROSETTI MARINO SpA

POS.	NORM/STD CODE	DESCRIPTION	SIZE/ CONNECTION TYPE	Q.TY
12		Cover for cable tray, FRP, Grey Color	50 W x 10 H x 5 THK	3 mt
11		Perforated cable tray, FRP, Grey Color	50 W x 50 H x 5 THK	3 mt
8		Nickel Plated Brass Plug Ex-d/e IIC (or IIB + H2) T1	M20	1
2		Nickel Plated Brass Double Compression Cable Gland Ex-d/e IIC (or IIB + H2) T1	M20	2

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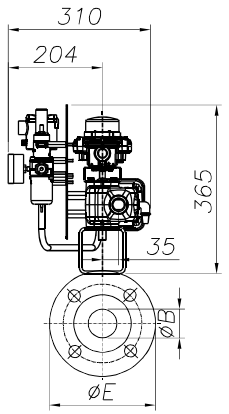


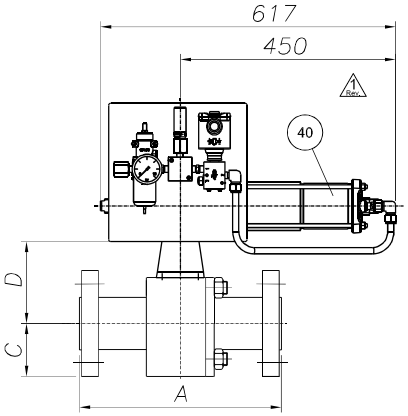


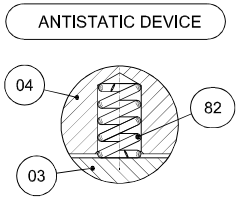
POS.	PART. NAME	MATERIAL
01	BODY	A182 F53
02	SEAT	RPTFE
03	BALL	A182 F53
04	STEM	A182 F53
06	CLOSURE	A182 F53
20	STUD	A193 B7+HDG (1)
22	NUT	A194 Gr.2H+HDG (1)
32	THRUST BEARING	RPTFE
40	PNEUMATIC ACTUATOR	MFR. STD.
72.1	FLANGE O-RING	VITON GLT/AED
72.4	STEM O-RING	VITON GLT/AED
75.4	STEM GASKET	GRAPHITE
75.6	FLANGE GASKET	GRAPHITE
78	PACKING RING	A479 Tp.316
82	ANTISTATIC DEVICE	INCONEL X750
83	BELLEVILLE WASHER	AISI 301

NOTE:

(1) HDG: Hot Dip Galvanised (ASTM A153)







REMARKS:

- Dimensions are in mm
- Design acc. to API 6D
- Face to face acc. to ASME B16.10/API 6D
- Flange connection acc. to ANSI B16.5
- Antistatic device acc. to API 6D

(*): To Be Confirmed

POS:	ITEM:	DATA SHEET:	TAG:	Q.TY:	SIZE:	CLASS:	ENDS:	A	ØB	C	D(*)	ØE	Valve Weight (kg): 1 Rev.	Actuator Weight (kg): 1 Rev.	Tot. Weight (kg):
24	240	BS01F01RF	50-XV-001	1	1-1/2"	150	RF	165	38	64	105	127	18	36	2 Rev. 54
26	260	BS01F01RF	50-XV-003	1	1-1/2"	150	RF	165	38	64	105	127	18	36	2 Rev. 54

CUSTOMER :	ROSETTI MARINO S.p.A.
P.O. N. :	1724000204 123A90A/REV.1
JOB N. :	240062

Rev.	DESCRIPTION	DRAWN	DATE	CHK'D	DATE	APPV'D	DATE
3							
2	ISSUED FOR APPROVAL	S.Madahar	22/04/2024	D.Barcella	22/04/2024	L.Mora	22/04/2024
1	ISSUED FOR APPROVAL	S.Madahar	15/04/2024	D.Barcella	15/04/2024	L.Mora	15/04/2024
0	FIRST ISSUE	S.Madahar	26/02/2024	D.Barcella	26/02/2024	L.Mora	26/02/2024

DRAWING NOT IN SCALE

Fluitek Valves

DESCRIPTION: GENERAL ASSEMBLY DRAWING

VALVE TYPE:

SPLIT BODY FLOATING BALL VALVE

DRAWN: S.Madahar	DATE: 26/02/2024	
CHK'D: D.Barcella	DATE: 26/02/2024	
APPV'D: L.Mora	DATE: 26/02/2024	
SIZE: A3	SCALE: N.A.	ALL RIGHTS OF THIS DRAWING ARE RESERVED.

DRAWING NAME: D240062-24-26

Rev.: 2

GENERAL	1	Tag Number	Location			50-XV-001	50	
	2	Service				SEA WATER P-50001A DISCHARGE		
	3	P&ID Number	Area Classification			123A90-DDL-PR-PID-80021	Zone 2, Gas Group IIC (or IIB+H2), Class T1	
PIPELINE	4	Line Number				1-1/2"-SWS-031-01SD-E		
	5	Line Size and Schedule	Inlet	Outlet		1-1/2" / 3.68 mm	1-1/2" / 3.68 mm	
	6	Line Material	Line Insulation			ASTM A790 UNS S32760	ELECTRICALLY HEAT TRACED (35)	
PROCESS DATA	7	Fluid				SEA WATER SUPPLY		
	8	Fluid State	Phase			LIQUID	LIQUID	
	9	Operating Pressure Norm/Min/Max			[barg]	15	-	-
	10	Design Pressure	Full Vacuum		[barg]	17.7		
	11	Operating Temperature Norm/Min/Max			[°C]	22	-	-
	12	Design Temperature	Minimum	Maxi	[°C]	-29	100	
	13	Max. Diff. Pressure for Actuator Size			[bar]	17.7		
	14							
	15							
	16	Speed of	Design			Close : (12)	Open : (12)	
	17	Operation (seconds)	Actual			Close : 0.3 minimum	Open : -	
	18							
	19							
VALVE BODY (34)	20	Body Type				BALL VALVE (FLOATING BALL) - SPLIT BODY (BS01F01RF)		
	21	Body Size	Body Form			1-1/2"	FULL BORE	
	22	Body Material	Bonnet Type			ASTM A182 F53	(*)	
	23	Connections	Rating			FLANGED ASME B16.5	#150	
	24	Flange Finish	Gasket Material			RF	Inside the valve (*) (38)	
	25	Packing	Lubrication & Isolation			PTFE (*)	(*)	
	26	Bolting				A193 B7 +HDG / A194 Gr. 2H + HDG		
	27	Trim Material	Ball	Stem	Seat	ASTM A182 F53	ASTM A182 F53	RPTFE
	28	Leakage Class				(1)		
	29	Fire Safe				(2)		
ACTUATOR	30	Manufacturer	Type			Rotork	Spring Return	
	31	Model No.	Size			CP/S	035-100A/BA	
	32	Actuator Orientation	Actuator Form			Horizontal	Cylinder	
	33	Ingress Protection	Certification			IP-66	II 2 G Ex h IIC T5 Gb	
	34	Air Supply	Min	Max	Design	4 barg	10 barg	11 barg
	35	Action on Air Failure	Action on Power Failure			CLOSE	CLOSE	
	36	Fireproofing				NOT APPLICABLE		
	37	Solenoid Valve				50-XY-001 (9, 14, 15, 16) - Bifold FP06P		
	38	Limit Switch Closed	Limit Switch Open			50-ZSL-001 (9, 17) - Soldo SS	50-ZSH-001 (9, 17) - Soldo SS	
	39	Elect. Reset Pushbutton (Actuator mounted)				NOT REQUIRED		
	40	Air Set	Handwheel			(*)	NOT REQUIRED	
	41	Mounting Position				HORIZONTAL / VERTICAL		
	42	Partial Stroke Test Facility				-		
	43	Control Type				-		
	44	Electrical Connection	Electrical Class			No. (*) / M20	H	
EMERGENCY A/S VESSEL	45	Capacity	Fabrication Code			-	-	-
	46	No of Strokes Per Capacity				-		
	47	Safety Valve	Model			-	-	
	48	Check Valve	Mounting			-	-	
PURCHASE	49	Manufacturer				FLUITEK		
	50	Model				FB3		
	51	Purchase Order Number				1724000204		

NOTE
(1) N.1 PSV INSTALLED DOWNSTREAM THE AIR FILTER REGULATOR, SIZE 1/4", SS, set 4.7 barg.

No.	Date	By	Chkd	Appr	Description
03	06/12/24	VBA	LCA	DLO	Accepted for Construction (AFC)
02	28/08/24	VBA	LCA	DLO	Accepted for Construction (AFC)
01	20/12/23	VBA	LCA	DLO	Issued for Review (IFR)
00	06/11/23	VBA	LCA	DLO	Issued for Review (IFR)

INSTRUMENT DATASHEET

SDV/BDV and Tight Shut-Off XV Valves

CROSSWIND

ROSETTI MARINO

Code : Dwg. No.: 123A90-DDL-IN-DS-40030 Rev.03

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ITEM	Tag	50-ZSHL-002	: Limit Switch box - Sea Water Recirculation from Pump P-50001A			Dwg	123A90-DDL-PR-PID-80021
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10002020	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Instrumental Form CJX00		Miscellaneous

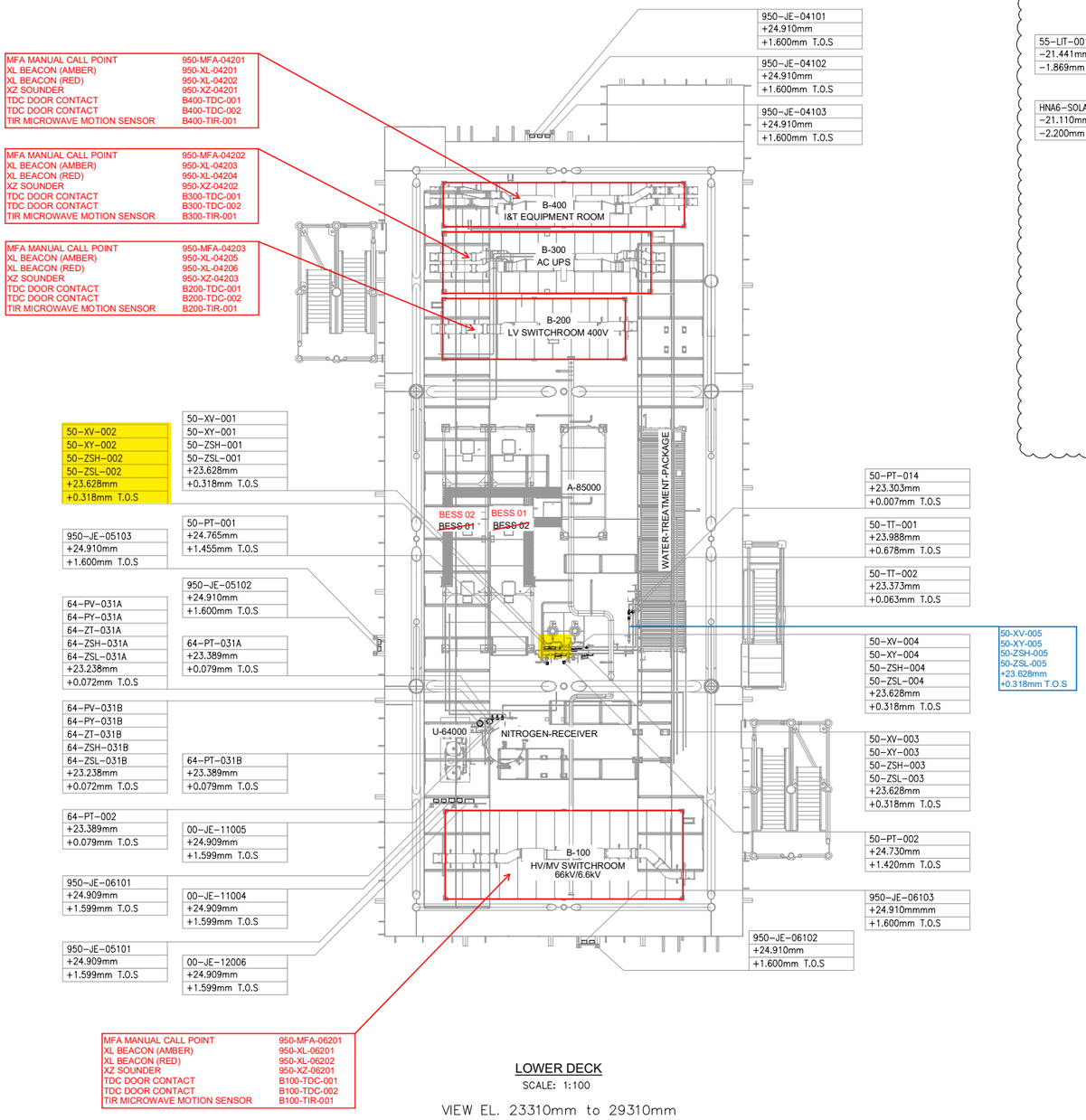
1	Check for mechanical damage.	OK
2	Check installed equipment is suitable and conforms to specification.	OK
3	Check installation conforms to P&ID and hook-up drawing.	OK
4	Check tube fittings manufacturer is the one chosen for the plant.	OK
5	Check that piping connections provide the block & bleed facility (if required).	NA
6	Check that all stop plugs are properly installed	OK
7	Check identification (tag number, tag plates).	OK
8	Check supporting and protection against vibrations.	OK
9	Check the conformity of earthing as per specification (I.P.E. or I.E.)	OK
10	If required produce Red Line Mark Up for "AS BUILT"	

Comments:

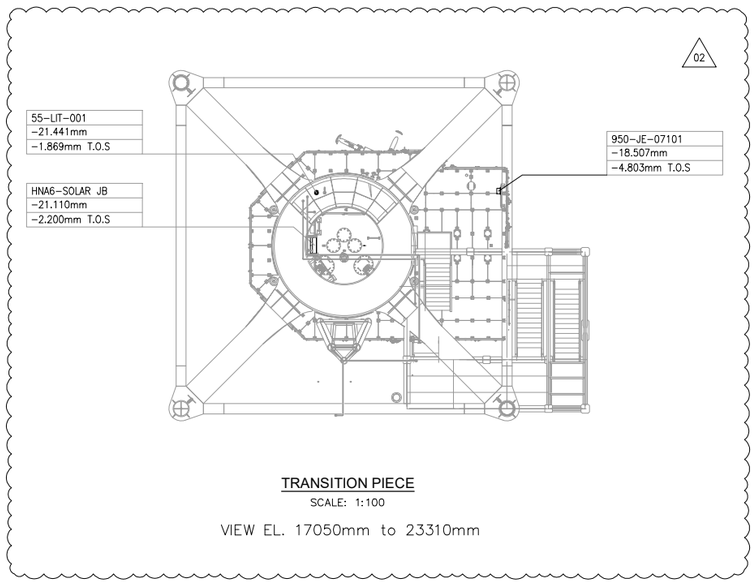
	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Alessio Polo	
Date	2025-02-05	2025-02-10	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-05T10:19:26.732Z	PROVERLIS Digitaly signed by Alessio Polo 2025-02-10T10:20:49.615Z	

DRAWING NO. 123A90-DDL-IN-DL-40080

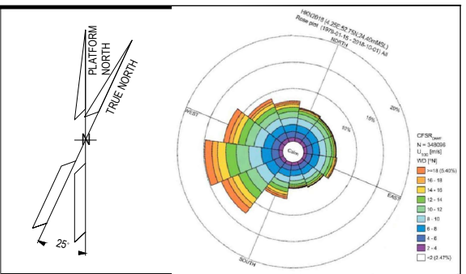
REV. 02



LOWER DECK
SCALE: 1:100
VIEW EL. 23310mm to 29310mm



TRANSITION PIECE
SCALE: 1:100
VIEW EL. 17050mm to 23310mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40081	INSTRUMENT LAYOUT - UPPER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-UPPER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DL-40080**

REV.:	DATE:	SIGNATURE:
2_C	06/11/24	G.Randi

ROSETTI MARINO SpA

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–LOWER DECK
TOS EL. 23.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90–DDL–IN–DL–40080	SHEET 001	REV. 02

File Name : 123A90-DDL-IN-DL-40080 REV02.dwg

DRAWING NO. DRAWING_NO.

REV. REV.

P-50001 A/B

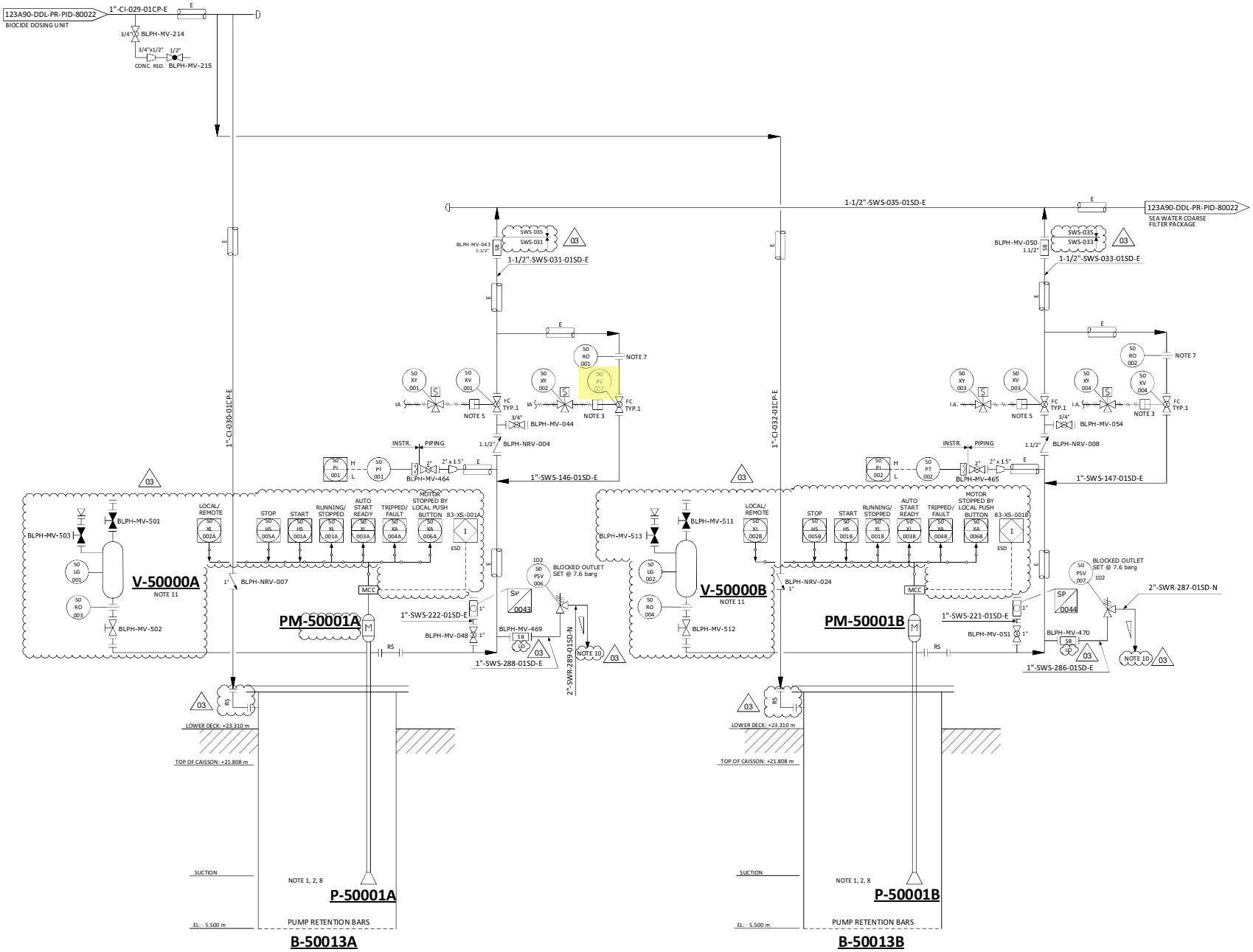
SEA WATER LIFT PUMPS

POWER :	1.6 KW
FLOW :	2.5 m³/h
DESIGN P/T :	7.6 barg / 80°C
DISCHARGE PRESSURE :	5.6 barg (NOTE 9)
MATERIAL :	SDSS

B-50013 A/B

SEA WATER LIFT PUMPS CAISSONS

SIZE :	343 mm (ID) x 27308 mm (H)
MATERIAL :	CS + CA



NOTES

1. SEAWATER LIFT PUMPS ARE RATED 2 X 100%
2. AUTO START OF DESIGNATED STANDBY PUMP ON LOSS OF RUNNING STATUS AND DISCHARGE LOW PRESSURE ALARM OF DUTY PUMP.
3. VALVE TO BE OPENED WHEN PUMP IS OFFLINE TO DOSE CAISSON WITH TREATED SEAWATER TO PREVENT BIOLOGICAL GROWTH.
4. DELETED.
5. SOFTWARE INTERLOCK PREVENTS PUMPS FROM STARTING IN CASE THE RELEVANT XV VALVE IS FULLY CLOSED. 03
6. DELETED.
7. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "123A90-DDL-IN-DS-40054 - TECHNICAL DATASHEET FOR RESTRICTION ORIFICE".
8. LOGIC FOR CONTROL OF P-5001A/B THAT PREVENTS SIMULTANEOUS RUNNING OF A AND B PUMP IS PROVIDED.
9. DISCHARGE PRESSURE REFERS TO THE FLANGE DISCHARGE OF THE PUMP AT LOWER DECK.
10. ROUTED TO THE SEA.
11. VESSELS V-50000A/B ARE INSULATED AND HEAT TRACED. 03

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.
5. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :

BLPH PIPING AND INSTRUMENTATION DIAGRAM
SEA-WATER INTAKE SYSTEM SHEET 1

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80021	SHEET 001	REV. 03

File Name : FILE_NAME

DRAWING NO. 123A90-DDL-IN-DG-40015

REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 00-JE-12006	No.	MARSHALLING CABINET B400-PCS-002

<01>

ON-OFF VALVE LIMIT SWITCHES BOX (SOLDO)
- 50-ZSL-001 (1, 2) WH/BK → PR1
- 50-ZSH-001 (5, 6) WH/BK → PR2
- NOTE-2
- C-50-XV-001/00-JE-12006
  2x2x0.75mm2,Sh+ShT+ARM,F.Ret,GREY,NIS
- TB-1: 1 WH/BK → PR1; 2 SH; 3 WH/BK → PR2; 4 SH

ON-OFF VALVE LIMIT SWITCHES BOX (SOLDO)
- 50-ZSL-002 (1, 2) WH/BK → PR1
- 50-ZSH-002 (5, 6) WH/BK → PR2
- NOTE-2
- C-50-XV-002/00-JE-12006
  2x2x0.75mm2,Sh+ShT+ARM,F.Ret,GREY,NIS
- TB-1: 5 WH/BK → PR3; 6 SH; 7 WH/BK → PR4; 8 SH

ON-OFF VALVE LIMIT SWITCHES BOX (SOLDO)
- 50-ZSL-003 (1, 2) WH/BK → PR1
- 50-ZSH-003 (5, 6) WH/BK → PR2
- NOTE-2
- C-50-XV-003/00-JE-12006
  2x2x0.75mm2,Sh+ShT+ARM,F.Ret,GREY,NIS
- TB-1: 9 WH/BK → PR5; 10 SH; 11 WH/BK → PR6; 12 SH

ON-OFF VALVE LIMIT SWITCHES BOX (SOLDO)
- 50-ZSL-004 (1, 2) WH/BK → PR1
- 50-ZSH-004 (5, 6) WH/BK → PR2
- NOTE-2
- C-50-XV-004/00-JE-12006
  2x2x0.75mm2,Sh+ShT+ARM,F.Ret,GREY,NIS
- TB-1: 13 WH/BK → PR7; 14 SH; 15 WH/BK → PR8; 16 SH

ON-OFF VALVE LIMIT SWITCHES BOX (SOLDO)
- 50-ZSL-005 (1, 2) WH/BK → PR1
- 50-ZSH-005 (5, 6) WH/BK → PR2
- NOTE-2
- C-50-XV-005/00-JE-12006
  2x2x0.75mm2,Sh+ShT+ARM,F.Ret,GREY,NIS
- TB-1: 17 WH/BK → PR9; 18 SH; 19 WH/BK → PR10; 20 SH; SPARE 21 WH/BK → PR11; 22 SH; SPARE 23 WH/BK → PR12; 24 SH; OS

00-JE-12006_1/B400-PCS-002
12x2x0.75mm2,Sh+ShT+ARM,F.Ret,GREY,NIS

TB-00-JE-12006
- PR1 (Shield Bar) WH/BK 1 → 50-ZSL-001
- PR2 (Shield Bar) WH/BK 3 → 50-ZSH-001
- PR3 (Shield Bar) WH/BK 5 → 50-ZSL-002
- PR4 (Shield Bar) WH/BK 7 → 50-ZSH-002
- PR5 (Shield Bar) WH/BK 9 → 50-ZSL-003
- PR6 (Shield Bar) WH/BK 11 → 50-ZSH-003
- PR7 (Shield Bar) WH/BK 13 → 50-ZSL-004
- PR8 (Shield Bar) WH/BK 15 → 50-ZSH-004
- PR9 (Shield Bar) WH/BK 17 → 50-ZSL-005
- PR10 (Shield Bar) WH/BK 19 → 50-ZSH-005
- PR11 (Shield Bar) WH/BK 21 → SPARE
- PR12 (Shield Bar) WH/BK 23 → SPARE
- Shield Bar → I.E.

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_I	29/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

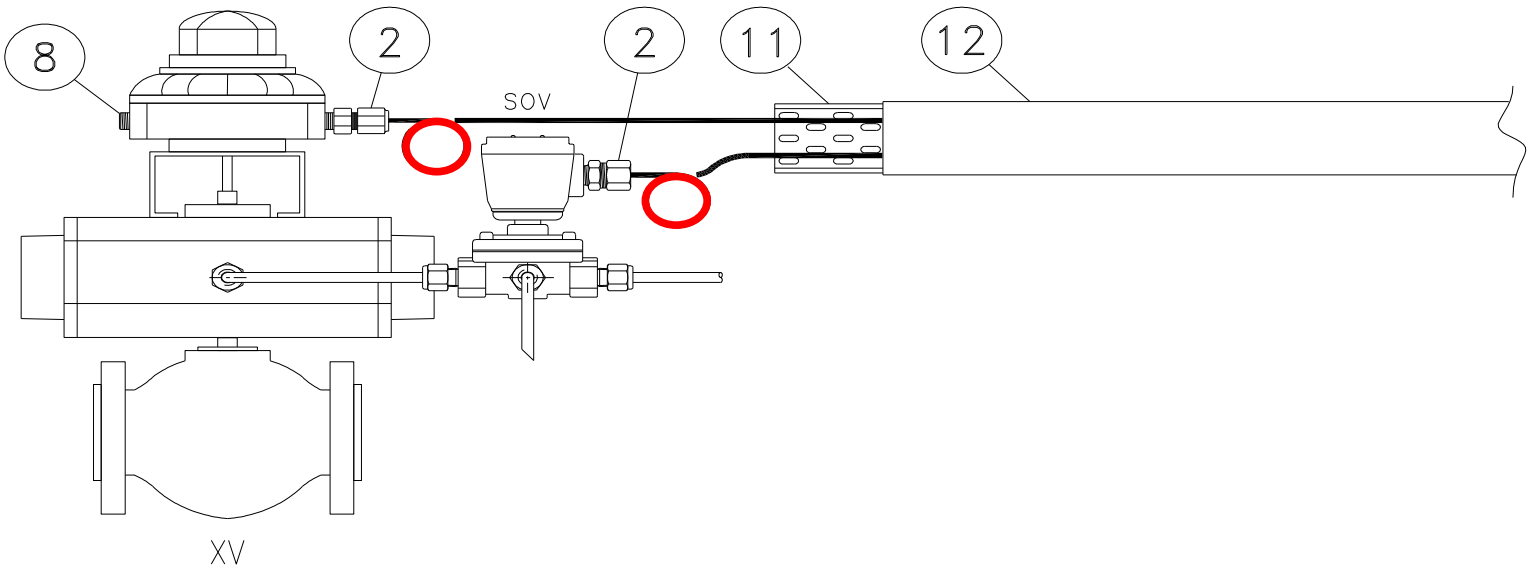
TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
00–JE–12006–SH.1 OF 2

CONTRACT NO./TITLE			SCALE N/A
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024
A3	DRAWING NO. 123A90–DDL–IN–DG–40015	SHEET 022	REV. 01

File Name : 123A90-DDL-IN-DG-40015_Rev.01

CROSSWIND	HOLLANDSE KUST NOORD WIND PARK Project Contract No. CW-I-WP4-2023-05	ROSETTI MARINO
Document Title:	Instrument Electrical Hook-Ups	Sh. 15 of 37 Date: 27/09/2024 Rev. 02

ELECTRICAL HOOK-UP FOR XV (N.1 SOLENOID VALVE + 2 LIMIT SWITCH)



INSTRUMENT TAG	
1	25-XV-004
2	25-XV-006
3	25-XV-008
4	25-XV-009
5	25-XV-011
6	25-XV-012
7	25-XV-014
8	25-XV-015
9	25-XV-017
10	25-XV-018
11	25-XV-020
12	25-XV-021
13	25-XV-024
14	50-XV-001
15	50-XV-002
16	50-XV-003
17	50-XV-004
18	80-XV-001
19	50-XV-005
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	

NOTE:

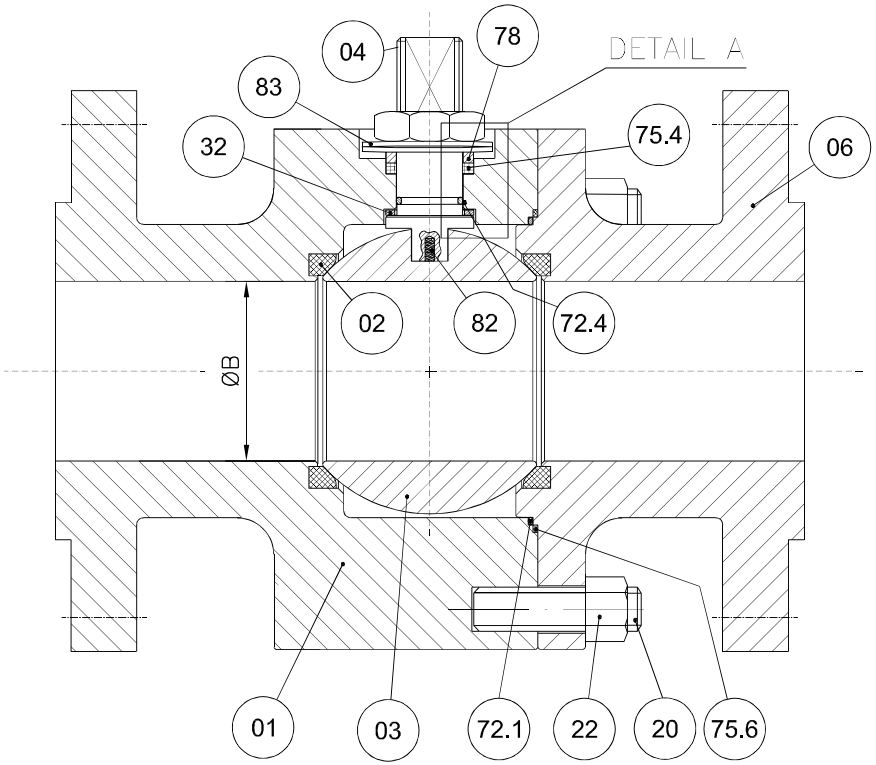
VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-HD-40079**

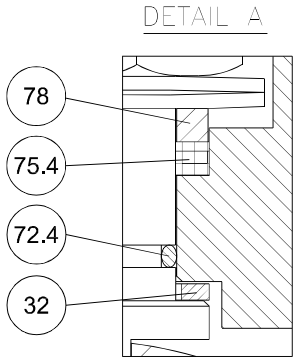
REV.:	DATE:	SIGNATURE:
2_G	20/12/24	V.Ramponi

ROSETTI MARINO SpA

POS.	NORM/STD CODE	DESCRIPTION	SIZE/ CONNECTION TYPE	Q.TY
12		Cover for cable tray, FRP, Grey Color	50 W x 10 H x 5 THK	3 mt
11		Perforated cable tray, FRP, Grey Color	50 W x 50 H x 5 THK	3 mt
8		Nickel Plated Brass Plug Ex-d/e IIC (or IIB + H2) T1	M20	1
2		Nickel Plated Brass Double Compression Cable Gland Ex-d/e IIC (or IIB + H2) T1	M20	2

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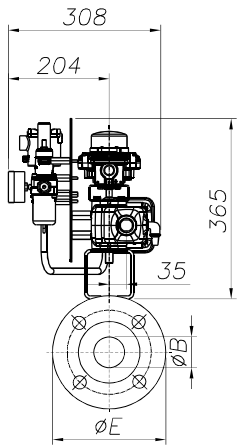


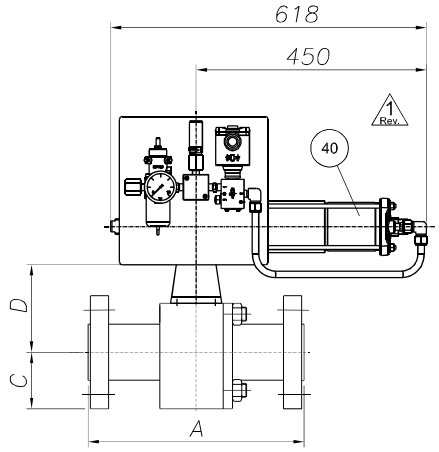


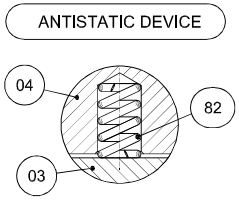
POS.	PART. NAME	MATERIAL
01	BODY	A182 F53
02	SEAT	RPTFE
03	BALL	A182 F53
04	STEM	API 6A CRA UNS N07718
06	CLOSURE	A182 F53
20	STUD	A193 B7+HDG (1)
22	NUT	A194 Gr.2H+HDG (1)
32	THRUST BEARING	RPTFE
40	PNEUMATIC ACTUATOR	MFR. STD.
72.1	FLANGE O-RING	VITON GLT/AED
72.4	STEM O-RING	VITON GLT/AED
75.4	STEM GASKET	GRAPHITE
75.6	FLANGE GASKET	GRAPHITE
78	PACKING RING	A479 Tp.316
82	ANTISTATIC DEVICE	INCONEL X750
83	BELLEVILLE WASHER	AISI 301

NOTE:

(1) HDG: Hot Dip Galvanised (ASTM A153)







REMARKS:

- Dimensions are in mm
- Design acc. to API 6D
- Face to face acc. to ASME B16.10/API 6D
- Flange connection acc. to ANSI B16.5
- Antistatic device acc. to API 6D

(*): To Be Confirmed

POS:	ITEM:	DATA SHEET:	TAG:	Q.TY:	SIZE:	CLASS:	ENDS:	A	ØB	C	D(*)	ØE	Valve Weight (kg):	Actuator Weight (kg):	Total Weight (kg):
25	250	BS01F01RF	50-XV-002	1	1"	150	RF	127	25	54	95	108	6	34	40
27	270	BS01F01RF	50-XV-004	1	1"	150	RF	127	25	54	95	108	6	34	40

1 Rev.

2 Rev.

CUSTOMER :	ROSETTI MARINO S.p.A.
P.O. N. :	1724000204 123A90A/REV.1
JOB N. :	240062

Rev.	DESCRIPTION	DRAWN	DATE	CHK'D	DATE	APPV'D	DATE
3							
2	ISSUED FOR APPROVAL	S.Madahar	22/04/2024	D.Barcella	22/04/2024	L.Mora	22/04/2024
1	ISSUED FOR APPROVAL	S.Madahar	15/04/2024	D.Barcella	15/04/2024	L.Mora	15/04/2024
0	FIRST ISSUE	S.Madahar	26/02/2024	D.Barcella	26/02/2024	L.Mora	26/02/2024

DRAWING NOT IN SCALE

Fluitek Valves

DESCRIPTION: GENERAL ASSEMBLY DRAWING

VALVE TYPE: SPLIT BODY FLOATING BALL VALVE

DRAWN:	DATE:
S.Madahar	26/02/2024
CHK'D: D.Barcella	DATE: 26/02/2024
APPV'D: L.Mora	DATE: 26/02/2024

SIZE: A3 | SCALE: N.A.

ALL RIGHTS OF THIS DRAWING ARE RESERVED.

DRAWING NAME: D240062-25-27

Rev.: 2

GENERAL	1	Tag Number	Location			50-XV-002		50
	2	Service				SEA WATER P-50001A INLET		
	3	P&ID Number	Area Classification			123A90-DDL-PR-PID-80021		Zone 2, Gas Group IIC (or IIB+H2), Class T1
PIPELINE	4	Line Number				1"-SWS-146-01SD-E		
	5	Line Size and Schedule	Inlet	Outlet		1" / 3.38 mm		1" / 3.38 mm
	6	Line Material	Line Insulation			ASTM A790 UNS S32760		ELECTRICALLY HEAT TRACED (35)
PROCESS DATA	7	Fluid				SEA WATER SUPPLY		
	8	Fluid State	Phase			LIQUID		LIQUID
	9	Operating Pressure Norm/Min/Max			[barg]	-	ATM	15
	10	Design Pressure	Full Vacuum		[barg]	17.7		
	11	Operating Temperature Norm/Min/Max			[°C]	-	-	-
	12	Design Temperature	Minimum	Maxi	[°C]	-29		100
	13	Max. Diff. Pressure for Actuator Size			[bar]	17.7		
	14							
	15							
	16	Speed of	Design			Close :	(12)	Open : (12)
	17	Operation (seconds)	Actual			Close :	0.3 minimum	Open : -
	18							
	19							
VALVE BODY (34)	20	Body Type				BALL VALVE (FLOATING BALL) - SPLIT BODY (BS01F01RF)		
	21	Body Size	Body Form			1"		FULL BORE
	22	Body Material	Bonnet Type			ASTM A182 F53		(*)
	23	Connections	Rating			FLANGED ASME B16.5		#150
	24	Flange Finish	Gasket Material			RF		Inside the valve (*) (38)
	25	Packing	Lubrication & Isolation			PTFE (*)		(*)
	26	Bolting				A193 B7 +HDG / A194 Gr. 2H + HDG		
	27	Trim Material	Ball	Stem	Seat	ASTM A182 F53	ASTM A182 F53	RPTFE
	28	Leakage Class				(1)		
	29	Fire Safe				(2)		
ACTUATOR	30	Manufacturer	Type			Rotork		Spring Return
	31	Model No.	Size			CP/S		035-100A/BA
	32	Actuator Orientation	Actuator Form			Horizontal		Cylinder
	33	Ingress Protection	Certification			IP-66		II 2 G Ex h IIC T5 Gb
	34	Air Supply	Min	Max	Design	4 barg	10 barg	11 barg
	35	Action on Air Failure	Action on Power Failure			CLOSE		CLOSE
	36	Fireproofing				NOT APPLICABLE		
	37	Solenoid Valve				50-XY-002 (9, 14, 15, 16) - Bifold FP06P		
	38	Limit Switch Closed	Limit Switch Open			50-ZSL-002 (9, 17) - Soldo SS		50-ZSH-002 (9, 17) - Soldo SS
	39	Elect. Reset Pushbutton (Actuator mounted)				NOT REQUIRED		
	40	Air Set	Handwheel			(*)		NOT REQUIRED
	41	Mounting Position				HORIZONTAL / VERTICAL		
	42	Partial Stroke Test Facility				-		
	43	Control Type				-		
	44	Electrical Connection	Electrical Class			No. (*) / M20		H
EMERGENCY A/S VESSEL	45	Capacity	Fabrication Code			-	-	-
	46	No of Strokes Per Capacity				-		
	47	Safety Valve	Model			-		-
	48	Check Valve	Mounting			-		-
PURCHASE	49	Manufacturer				FLUITEK		
	50	Model				FB3		
	51	Purchase Order Number				1724000204		

NOTE
(1) N.1 PSV INSTALLED DOWNSTREAM THE AIR FILTER REGULATOR, SIZE 1/4", SS, set 4.7 barg.

No.	Date	By	Chkd	Appr	Description
03	06/12/24	VBA	LCA	DLO	Accepted for Construction (AFC)
02	28/08/24	VBA	LCA	DLO	Accepted for Construction (AFC)
01	20/12/23	VBA	LCA	DLO	Issued for Review (IFR)
00	06/11/23	VBA	LCA	DLO	Issued for Review (IFR)

INSTRUMENT DATASHEET

SDV/BDV and Tight Shut-Off XV Valves

CROSSWIND

ROSETTI MARINO

Code : Dwg. No.: 123A90-DDL-IN-DS-40030 Rev.03

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ITEM	Tag	50-ZSHL-003	: Limit Switch box - Sea Water from Pump P-50001B			Dwg	123A90-DDL-PR-PID-80021
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10002021		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Instrumental	Form	CJX00 Miscellaneous

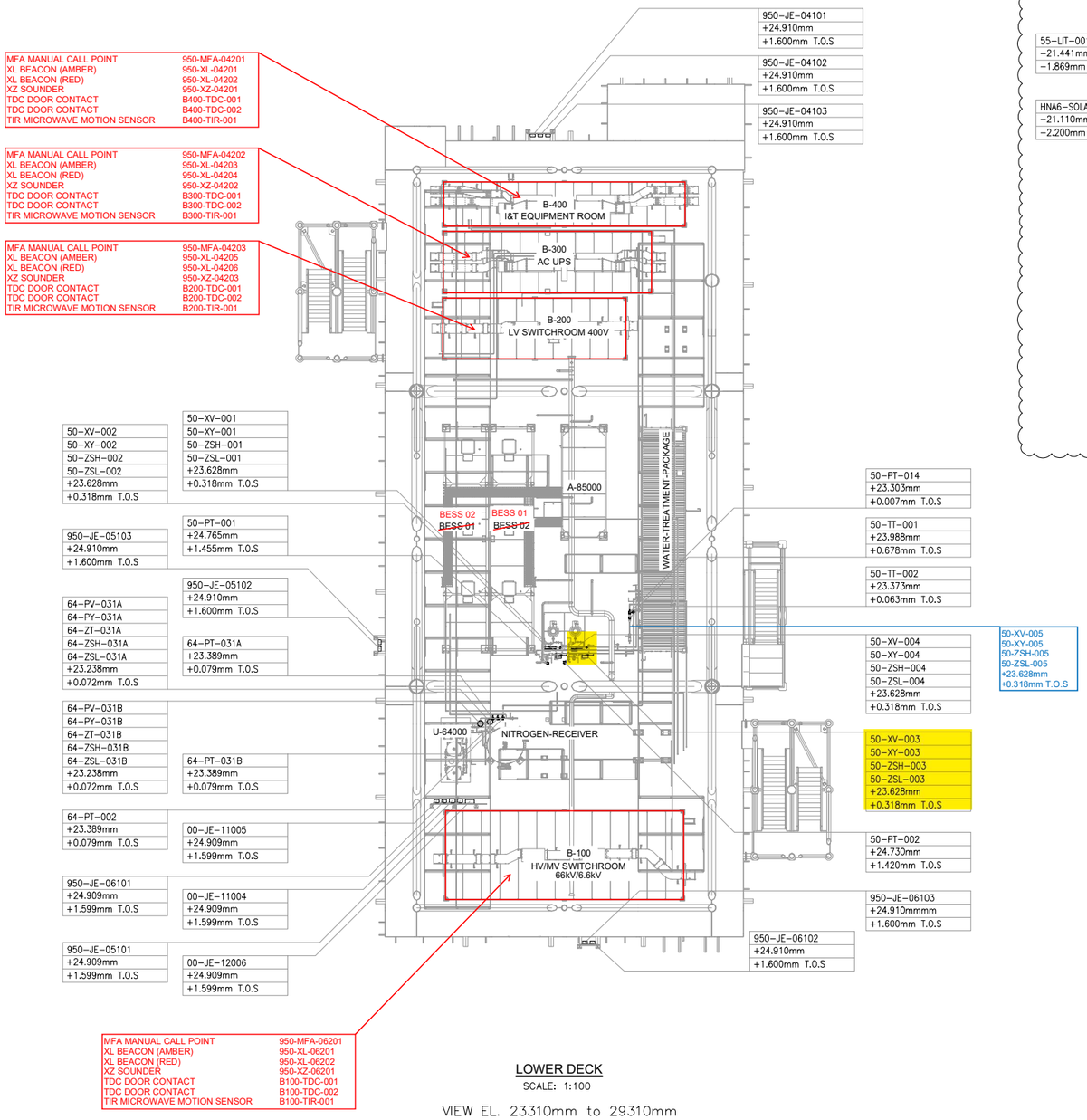
1	Check for mechanical damage.	OK
2	Check installed equipment is suitable and conforms to specification.	OK
3	Check installation conforms to P&ID and hook-up drawing.	OK
4	Check tube fittings manufacturer is the one chosen for the plant.	NA
5	Check that piping connections provide the block & bleed facility (if required).	NA
6	Check that all stop plugs are properly installed	OK
7	Check identification (tag number, tag plates).	OK
8	Check supporting and protection against vibrations.	OK
9	Check the conformity of earthing as per specification (I.P.E. or I.E.)	NA
10	If required produce Red Line Mark Up for "AS BUILT"	

Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICSIMPANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Alessio Polo	
Date	2025-02-06	2025-02-08	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-06T16:43:01.470Z	PROVERLIS Digitaly signed by Alessio Polo 2025-02-08T11:57:46.786Z	

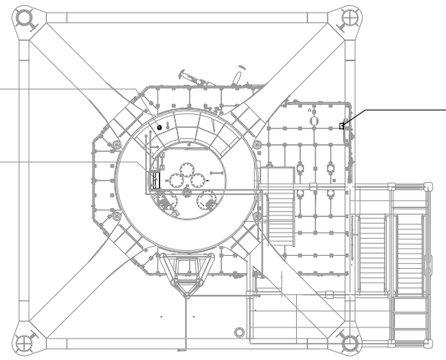
DRAWING NO. 123A90-DDL-IN-DL-40080

REV. 02

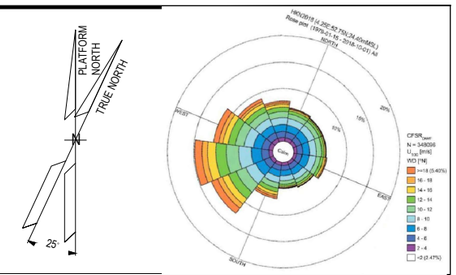


LOWER DECK
SCALE: 1:100
VIEW EL. 23310mm to 29310mm

02



TRANSITION PIECE
SCALE: 1:100
VIEW EL. 17050mm to 23310mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40081	INSTRUMENT LAYOUT - UPPER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-UPPER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DL-40080**

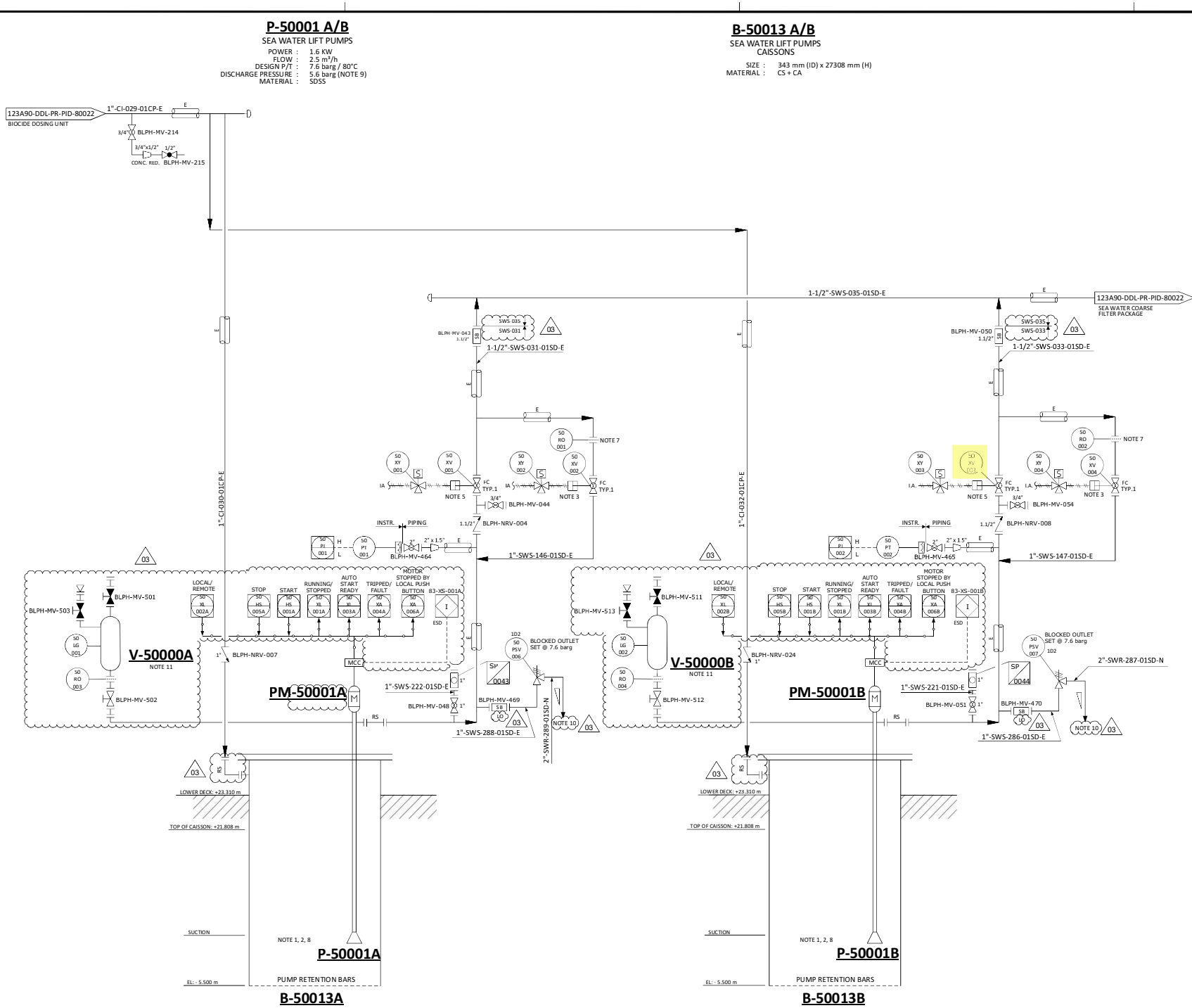
REV.:	DATE:	SIGNATURE:
2_C	06/11/24	G.Randi

ROSETTI MARINO SpA

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–LOWER DECK
TOS EL. 23.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90–DDL–IN–DL–40080	SHEET 001	REV. 02

File Name : 123A90-DDL-IN-DL-40080 REV02.dwg



NOTES

1. SEAWATER LIFT PUMPS ARE RATED 2 X 100%
2. AUTO START OF DESIGNATED STANDBY PUMP ON LOSS OF RUNNING STATUS AND DISCHARGE LOW PRESSURE ALARM OF DUTY PUMP.
3. VALVE TO BE OPENED WHEN PUMP IS OFFLINE TO DOSE CAISSON WITH TREATED SEAWATER TO PREVENT BIOLOGICAL GROWTH.
4. DELETED.
5. SOFTWARE INTERLOCK PREVENTS PUMPS FROM STARTING IN CASE THE RELEVANT XV VALVE IS FULLY CLOSED. 03
6. DELETED.
7. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "123A90-DDL-IN-DS-40054 - TECHNICAL DATASHEET FOR RESTRICTION ORIFICE".
8. LOGIC FOR CONTROL OF P-5001A/B THAT PREVENTS SIMULTANEOUS RUNNING OF A AND B PUMP IS PROVIDED.
9. DISCHARGE PRESSURE REFERS TO THE FLANGE DISCHARGE OF THE PUMP AT LOWER DECK.
10. ROUTED TO THE SEA.
11. VESSELS V-50000A/B ARE INSULATED AND HEAT TRACED. 03

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.
5. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
SEA-WATER INTAKE SYSTEM SHEET 1

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE	
A1	DRAWING NO. 123A90-DDL-PR-PID-80021		SHEET 001	REV. 03

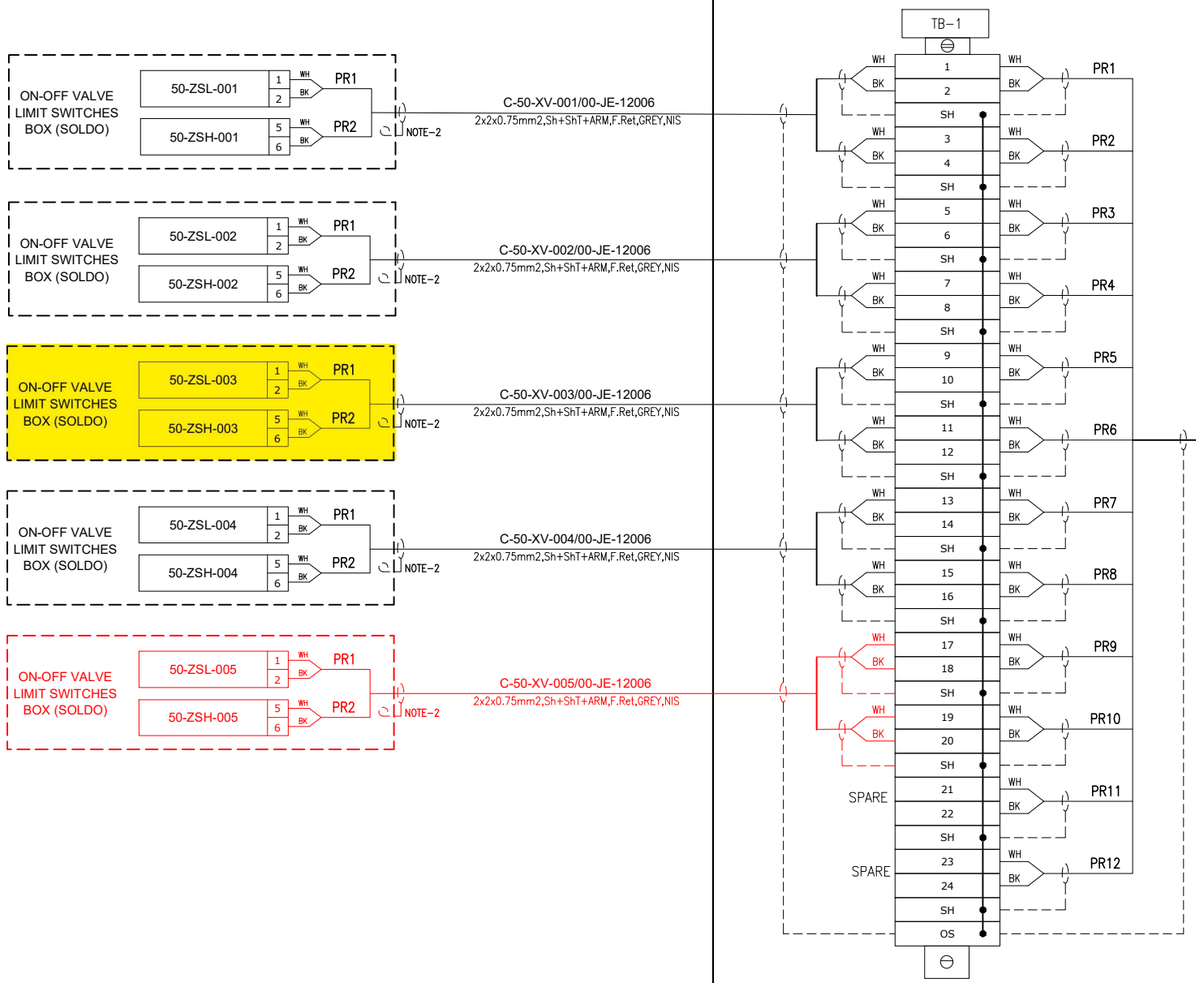
DRAWING NO. DRAWING_NO.
REV. REV.
File Name : FILE_NAME

DRAWING NO. 123A90-DDL-IN-DG-40015

REV. 01

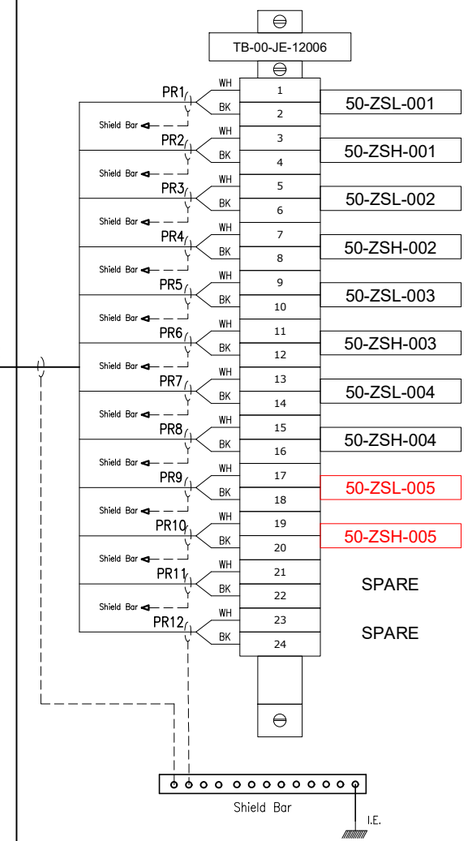
FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 00-JE-12006	No.	MARSHALLING CABINET B400-PCS-002

<01>



00-JE-12006_1/B400-PCS-002

12x2x0.75mm2,Sh+ShT+ARM,F.Ret,GREY,NIS



VALID FOR CONSTRUCTION

FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_I	29/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

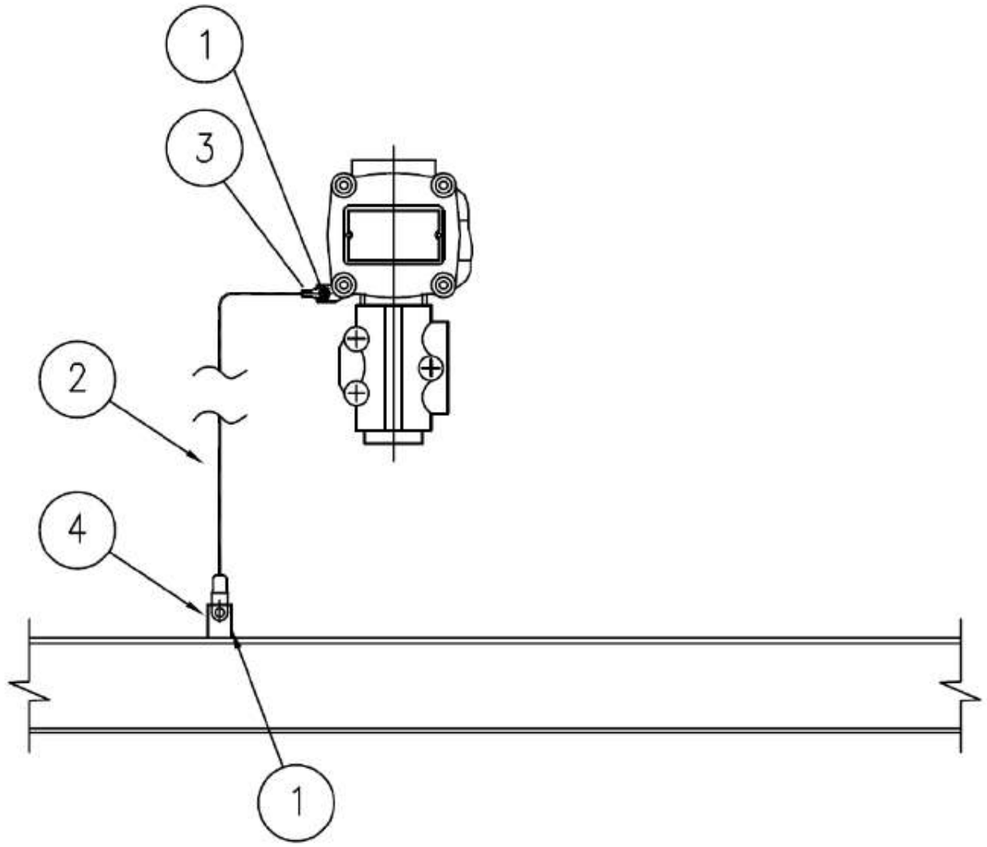
TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
00–JE–12006–SH.1 OF 2

CONTRACT NO./TITLE			SCALE N/A
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024
A3	DRAWING NO. 123A90–DDL–IN–DG–40015	SHEET 022	REV. 01

File Name : 123A90-DDL-IN-DG-40015_Rev.01

E33



MATERIALS

POS.	Q.TY	DESCRIPTION	NOTES
1	1	A4 STAINLESS STEEL BOLT COMPLETE WITH NUT AND WASHERS	
2	1	Y/G INSULATING COPPER CONDUCTOR - 6mm²	
3	1	COMPRESSION TYPE LUG FOR INSULATING COPPER CONDUCTOR	
4	1	EARTHING BAR / PLATE / THREADED STUD	(1)

NOTE:
1) FOR DETAIL OF EARTHING PLATE, EARTHING BOSS AND THREADED STUD SEE TYP. E11A/C/D/E

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DD-20090**

REV.:	DATE:	SIGNATURE:
2_I	07/11/24	G.Randi

ROSETTI MARINO SpA

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	26/08/24	GRA	AMA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/06/24	SPS	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS-EARTHING SYSTEM
EARTHING FOR GENERIC INSTRUMENT

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : NTS

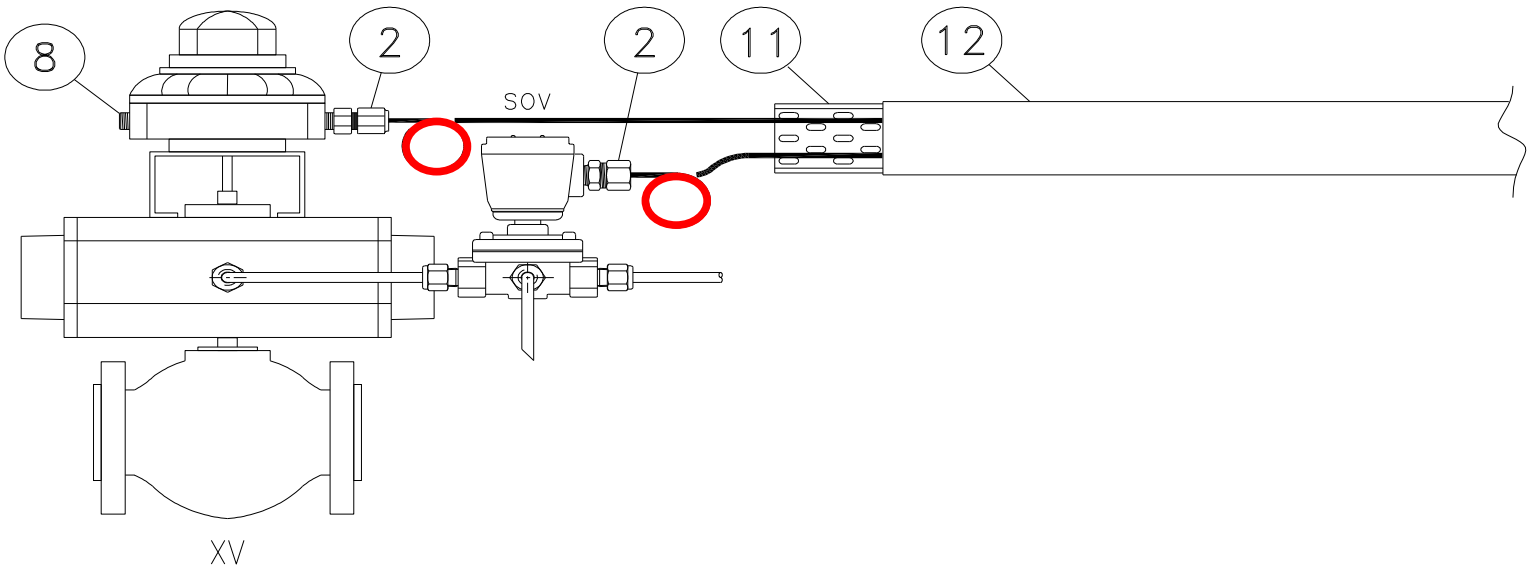
A3 | DRAWING NO. 123A90-DDL-EL-DD-20090 | SHEET 027 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DD-20090 REV.02.DWG

CROSSWIND	HOLLANDSE KUST NOORD WIND PARK Project Contract No. CW-I-WP4-2023-05	ROSETTI MARINO
Document Title:	Instrument Electrical Hook-Ups	Sh. 15 of 37 Date: 27/09/2024 Rev. 02

ELECTRICAL HOOK-UP FOR XV (N.1 SOLENOID VALVE + 2 LIMIT SWITCH)



INSTRUMENT TAG	
1	25-XV-004
2	25-XV-006
3	25-XV-008
4	25-XV-009
5	25-XV-011
6	25-XV-012
7	25-XV-014
8	25-XV-015
9	25-XV-017
10	25-XV-018
11	25-XV-020
12	25-XV-021
13	25-XV-024
14	50-XV-001
15	50-XV-002
16	50-XV-003
17	50-XV-004
18	80-XV-001
19	50-XV-005
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	

NOTE:

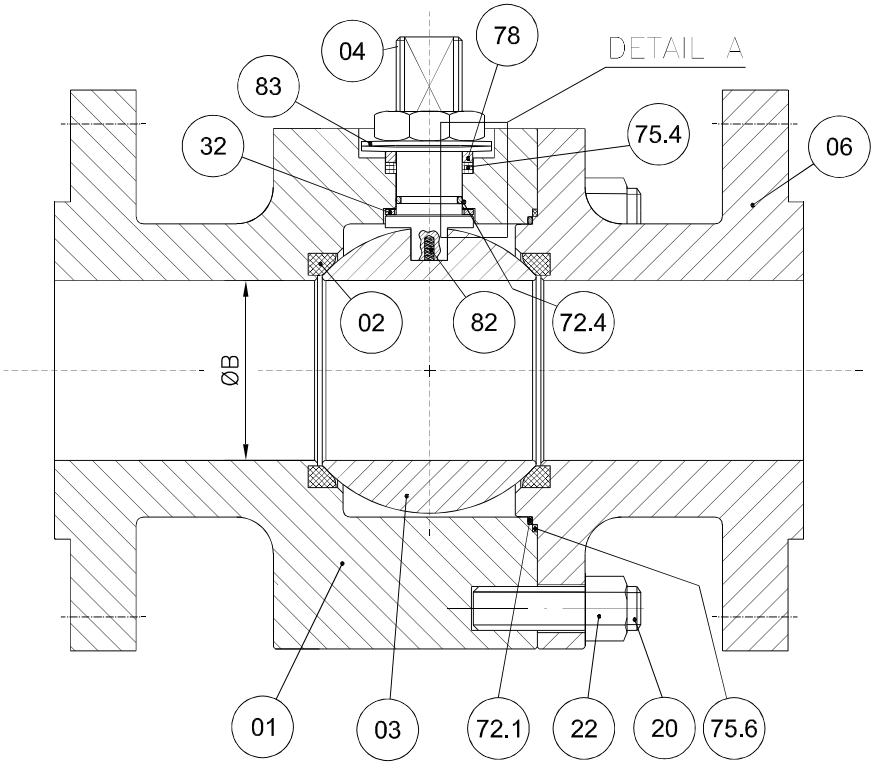
VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-HD-40079**

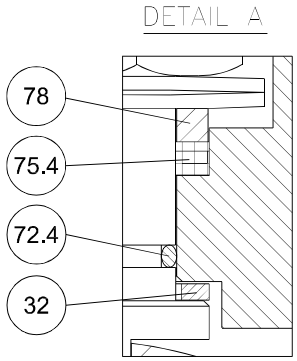
REV.:	DATE:	SIGNATURE:
2_G	20/12/24	V.Ramponi

ROSETTI MARINO SpA

POS.	NORM/STD CODE	DESCRIPTION	SIZE/ CONNECTION TYPE	Q.TY
12		Cover for cable tray, FRP, Grey Color	50 W x 10 H x 5 THK	3 mt
11		Perforated cable tray, FRP, Grey Color	50 W x 50 H x 5 THK	3 mt
8		Nickel Plated Brass Plug Ex-d/e IIC (or IIB + H2) T1	M20	1
2		Nickel Plated Brass Double Compression Cable Gland Ex-d/e IIC (or IIB + H2) T1	M20	2

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Its distribution is electronically controlled. Once printed shall be considered as "NOT CONTROLLED" copy

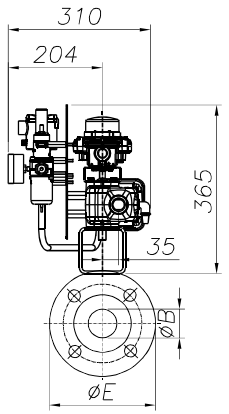


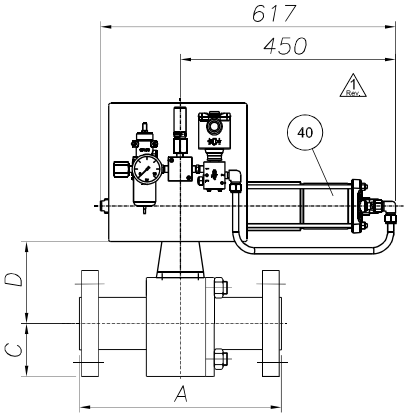


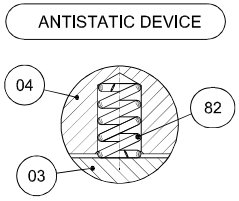
POS.	PART. NAME	MATERIAL
01	BODY	A182 F53
02	SEAT	RPTFE
03	BALL	A182 F53
04	STEM	A182 F53
06	CLOSURE	A182 F53
20	STUD	A193 B7+HDG (1)
22	NUT	A194 Gr.2H+HDG (1)
32	THRUST BEARING	RPTFE
40	PNEUMATIC ACTUATOR	MFR. STD.
72.1	FLANGE O-RING	VITON GLT/AED
72.4	STEM O-RING	VITON GLT/AED
75.4	STEM GASKET	GRAPHITE
75.6	FLANGE GASKET	GRAPHITE
78	PACKING RING	A479 Tp.316
82	ANTISTATIC DEVICE	INCONEL X750
83	BELLEVILLE WASHER	AISI 301

NOTE:

(1) HDG: Hot Dip Galvanised (ASTM A153)







REMARKS:

- Dimensions are in mm
- Design acc. to API 6D
- Face to face acc. to ASME B16.10/API 6D
- Flange connection acc. to ANSI B16.5
- Antistatic device acc. to API 6D

(*): To Be Confirmed

POS:	ITEM:	DATA SHEET:	TAG:	Q.TY:	SIZE:	CLASS:	ENDS:	A	ØB	C	D(*)	ØE	Valve Weight (kg):	Actuator Weight (kg):	Tot. Weight (kg):
24	240	BS01F01RF	50-XV-001	1	1-1/2"	150	RF	165	38	64	105	127	18	36	2 54
26	260	BS01F01RF	50-XV-003	1	1-1/2"	150	RF	165	38	64	105	127	18	36	2 54

CUSTOMER :	ROSETTI MARINO S.p.A.
P.O. N. :	1724000204 123A90A/REV.1
JOB N. :	240062

Rev.	DESCRIPTION	DRAWN	DATE	CHK'D	DATE	APPV'D	DATE
3							
2	ISSUED FOR APPROVAL	S.Madahar	22/04/2024	D.Barcella	22/04/2024	L.Mora	22/04/2024
1	ISSUED FOR APPROVAL	S.Madahar	15/04/2024	D.Barcella	15/04/2024	L.Mora	15/04/2024
0	FIRST ISSUE	S.Madahar	26/02/2024	D.Barcella	26/02/2024	L.Mora	26/02/2024

DRAWING NOT IN SCALE

Fluitek Valves

DESCRIPTION: GENERAL ASSEMBLY DRAWING

VALVE TYPE:

SPLIT BODY FLOATING BALL VALVE

DRAWN:	DATE:
S.Madahar	26/02/2024
CHK'D: D.Barcella	DATE: 26/02/2024
APPV'D: L.Mora	DATE: 26/02/2024

SIZE: A3 | SCALE: N.A.

ALL RIGHTS OF THIS DRAWING ARE RESERVED.

DRAWING NAME: D240062-24-26

Rev.: 2

GENERAL	1	Tag Number	Location			50-XV-003	50
	2	Service				SEA WATER P-50001B DISCHARGE	
	3	P&ID Number	Area Classification			123A90-DDL-PR-PID-80021	Zone 2, Gas Group IIC (or IIB+H2), Class T1
PIPELINE	4	Line Number				1-1/2"-SWS-033-01SD-E	
	5	Line Size and Schedule	Inlet	Outlet		1-1/2" / 3.68 mm	1-1/2" / 3.68 mm
	6	Line Material	Line Insulation			ASTM A790 UNS S32760	ELECTRICALLY HEAT TRACED (35)
PROCESS DATA	7	Fluid				SEA WATER SUPPLY	
	8	Fluid State	Phase			LIQUID	LIQUID
	9	Operating Pressure Norm/Min/Max			[barg]	15 -	-
	10	Design Pressure	Full Vacuum		[barg]	17.7	
	11	Operating Temperature Norm/Min/Max			[°C]	22 -	-
	12	Design Temperature	Minimum	Maxi	[°C]	-29	100
	13	Max. Diff. Pressure for Actuator Size			[bar]	17.7	
	14						
	15						
	16	Speed of	Design			Close : (12)	Open : (12)
	17	Operation (seconds)	Actual			Close : 0.3 minimum	Open : -
	18						
	19						
VALVE BODY (34)	20	Body Type				BALL VALVE (FLOATING BALL) - SPLIT BODY (BS01F01RF)	
	21	Body Size	Body Form			1-1/2"	FULL BORE
	22	Body Material	Bonnet Type			ASTM A182 F53	(*)
	23	Connections	Rating			FLANGED ASME B16.5	#150
	24	Flange Finish	Gasket Material			RF	Inside the valve (*) (38)
	25	Packing	Lubrication & Isolation			PTFE (*)	(*)
	26	Bolting				A193 B7 +HDG / A194 Gr. 2H + HDG	
	27	Trim Material	Ball	Stem	Seat	ASTM A182 F53	ASTM A182 F53 RPTFE
	28	Leakage Class				(1)	
	29	Fire Safe				(2)	
ACTUATOR	30	Manufacturer	Type			Rotork	Spring Return
	31	Model No.	Size			CP/S	035-100A/BA
	32	Actuator Orientation	Actuator Form			Horizontal	Cylinder
	33	Ingress Protection	Certification			IP-66	II 2 G Ex h IIC T5 Gb
	34	Air Supply	Min	Max	Design	4 barg 10 barg	11 barg
	35	Action on Air Failure	Action on Power Failure			CLOSE	CLOSE
	36	Fireproofing				NOT APPLICABLE	
	37	Solenoid Valve				50-XY-003 (9, 14, 15, 16) - Bifold FP06P	
	38	Limit Switch Closed	Limit Switch Open			50-ZSL-003 (9, 17) - Soldo SS	50-ZSH-003 (9, 17) - Soldo SS
	39	Elect. Reset Pushbutton (Actuator mounted)				NOT REQUIRED	
	40	Air Set	Handwheel			(*)	NOT REQUIRED
	41	Mounting Position				HORIZONTAL / VERTICAL	
	42	Partial Stroke Test Facility				-	
	43	Control Type				-	
	44	Electrical Connection	Electrical Class			No. (*) / M20	H
EMERGENCY A/S VESSEL	45	Capacity	Fabrication Code			-	- -
	46	No of Strokes Per Capacity				-	
	47	Safety Valve	Model			-	-
	48	Check Valve	Mounting			-	-
PURCHASE	49	Manufacturer				FLUITEK	
	50	Model				FB3	
	51	Purchase Order Number				1724000204	

NOTE
(1) N.1 PSV INSTALLED DOWNSTREAM THE AIR FILTER REGULATOR, SIZE 1/4", SS, set 4.7 barg.

No.	Date	By	Chkd	Appr	Description
03	06/12/24	VBA	LCA	DLO	Accepted for Construction (AFC)
02	28/08/24	VBA	LCA	DLO	Accepted for Construction (AFC)
01	20/12/23	VBA	LCA	DLO	Issued for Review (IFR)
00	06/11/23	VBA	LCA	DLO	Issued for Review (IFR)

INSTRUMENT DATASHEET

SDV/BDV and Tight Shut-Off XV Valves

CROSSWIND

ROSETTI MARINO

Code : Dwg. No.: 123A90-DDL-IN-DS-40030 Rev.03

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ITEM	Tag	50-ZSHL-004	: Limit Switch box - Sea Water Recirculation from Pump P-50001B			Dwg	123A90-DDL-PR-PID-80021
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10002022	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Instrumental	Form CJX00	Miscellaneous

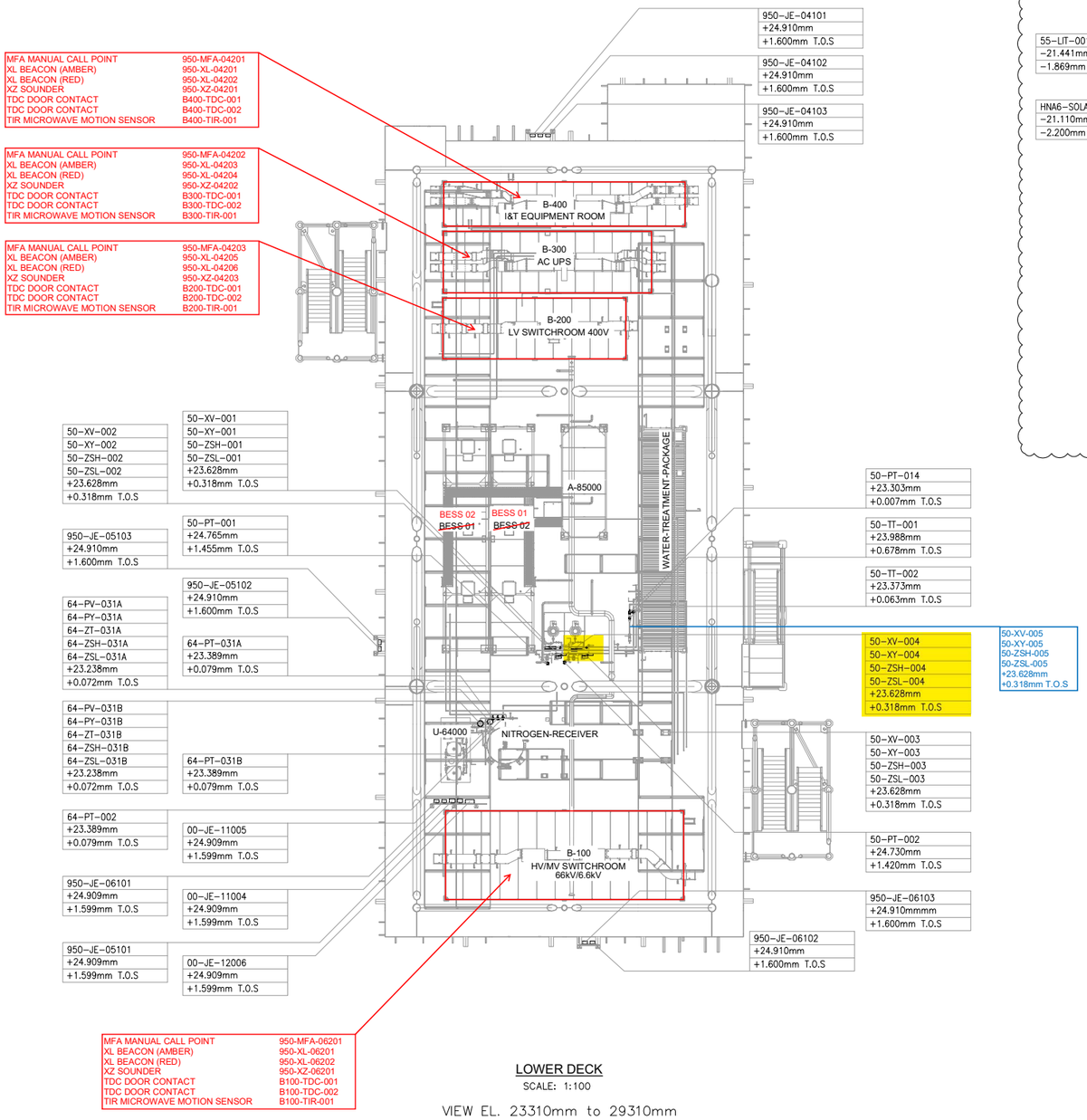
1	Check for mechanical damage.	OK
2	Check installed equipment is suitable and conforms to specification.	OK
3	Check installation conforms to P&ID and hook-up drawing.	OK
4	Check tube fittings manufacturer is the one chosen for the plant.	OK
5	Check that piping connections provide the block & bleed facility (if required).	NA
6	Check that all stop plugs are properly installed	OK
7	Check identification (tag number, tag plates).	OK
8	Check supporting and protection against vibrations.	OK
9	Check the conformity of earthing as per specification (I.P.E. or I.E.)	OK
10	If required produce Red Line Mark Up for "AS BUILT"	

Comments:

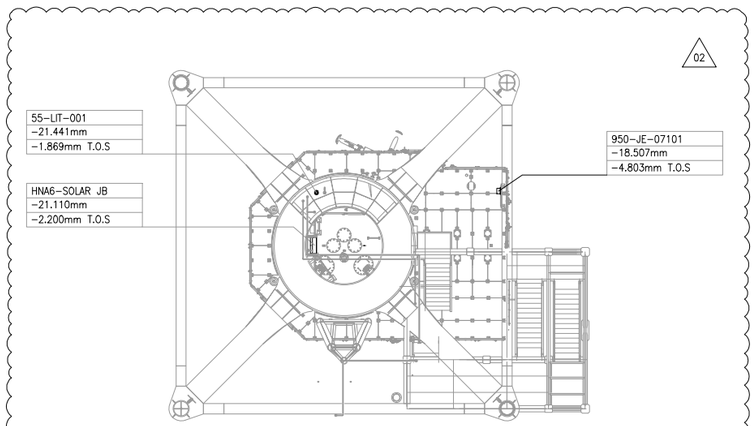
	Performed by	☉ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICSIMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Alessio Polo	
Date	2025-02-06	2025-02-10	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-06T16:43:17.155Z	PROVERLIS Digitaly signed by Alessio Polo 2025-02-10T11:01:14.833Z	

DRAWING NO. 123A90-DDL-IN-DL-40080

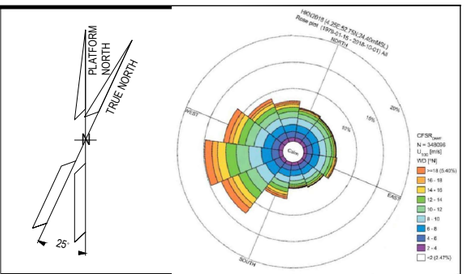
REV. 02



LOWER DECK
SCALE: 1:100
VIEW EL. 23310mm to 29310mm



TRANSITION PIECE
SCALE: 1:100
VIEW EL. 17050mm to 23310mm



NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DRAWING IS VALID ONLY FOR INSTRUMENT LOCATION LAYOUT.

LEGEND

- INSTRUMENT JUNCTION BOX
- ELECTRONIC INSTRUMENT
- CONTROL / ON-OFF VALVE

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-IN-DL-40081	INSTRUMENT LAYOUT - UPPER DECK
123A90-DDL-IN-LIS-40091	INSTRUMENT CABLE LIST
123A90-DDL-IN-DG-40015	INSTRUMENT-CCS WIRING DIAGRAMS
123A90-DDL-IN-DG-40016	INSTRUMENT-SAFETY SYSTEM WIRING DIAGRAMS
123A90-DDL-IN-DL-40083	INSTRUMENT MAIN CABLES ROUTING-UPPER DECK

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	04/10/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	26/08/24	VBA	LCA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	22/12/23	VBA	LCA	DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DL-40080**

REV.:	DATE:	SIGNATURE:
2_C	06/11/24	G.Randi

ROSETTI MARINO SpA

TITLE :
BASE LOAD POWER HUB (BLPH)
INSTRUMENT LOCATION LAYOUT–LOWER DECK
TOS EL. 23.310M

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 04/10/24
A1	DRAWING NO. 123A90–DDL–IN–DL–40080	SHEET 001	REV. 02

File Name : 123A90-DDL-IN-DL-40080 REV02.dwg

DRAWING NO. DRAWING_NO.

REV. REV.

P-50001 A/B

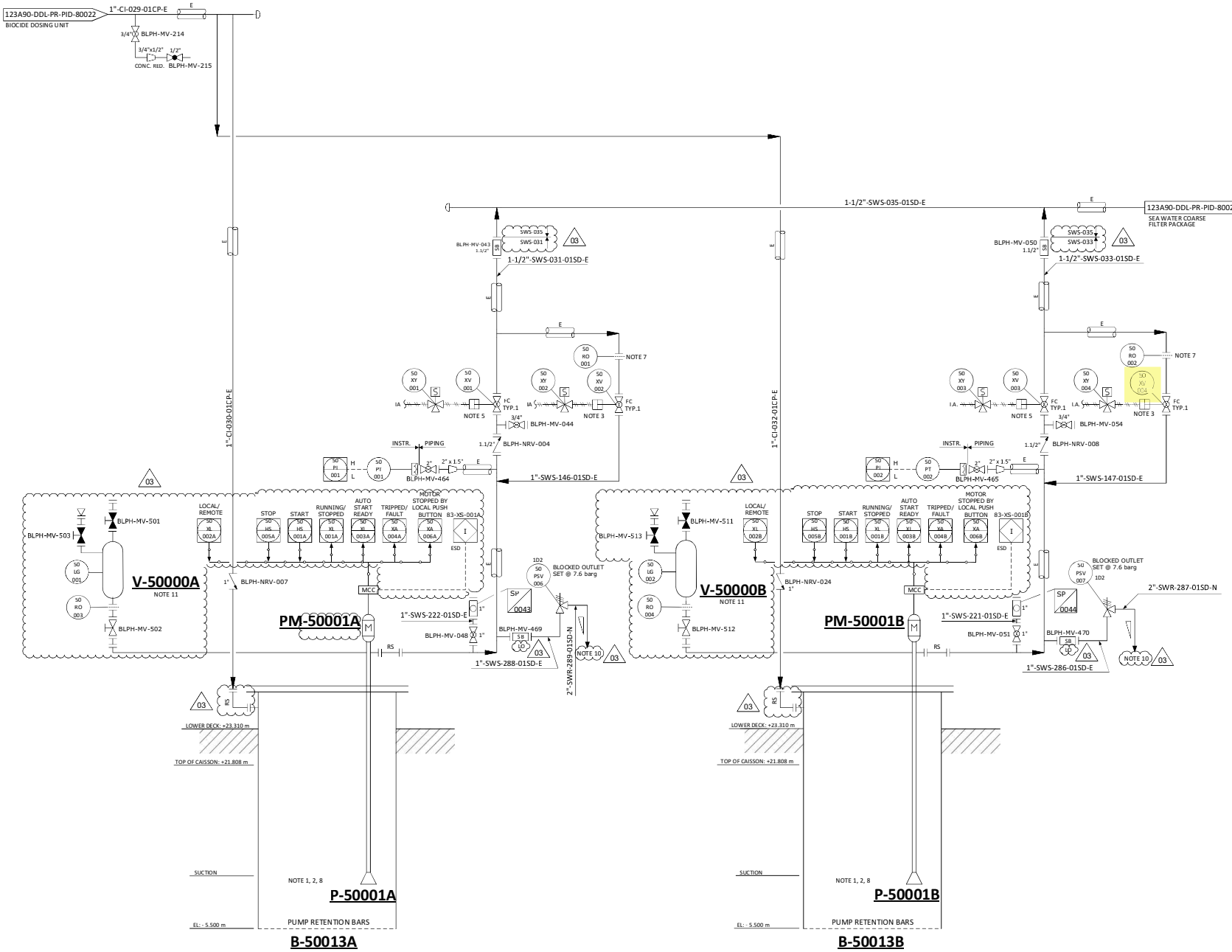
SEA WATER LIFT PUMPS

POWER :	1.6 KW
FLOW :	2.5 m³/h
DESIGN P/T :	7.6 barg / 80°C
DISCHARGE PRESSURE :	5.6 barg (NOTE 9)
MATERIAL :	SDSS

B-50013 A/B

SEA WATER LIFT PUMPS CAISSONS

SIZE :	343 mm (ID) x 27308 mm (H)
MATERIAL :	CS + CA



NOTES

1. SEAWATER LIFT PUMPS ARE RATED 2 X 100%
2. AUTO START OF DESIGNATED STANDBY PUMP ON LOSS OF RUNNING STATUS AND DISCHARGE LOW PRESSURE ALARM OF DUTY PUMP.
3. VALVE TO BE OPENED WHEN PUMP IS OFFLINE TO DOSE CAISSON WITH TREATED SEAWATER TO PREVENT BIOLOGICAL GROWTH.
4. DELETED.
5. SOFTWARE INTERLOCK PREVENTS PUMPS FROM STARTING IN CASE THE RELEVANT XV VALVE IS FULLY CLOSED. 03
6. DELETED.
7. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "123A90-DDL-IN-DS-40054 - TECHNICAL DATASHEET FOR RESTRICTION ORIFICE".
8. LOGIC FOR CONTROL OF P-5001A/B THAT PREVENTS SIMULTANEOUS RUNNING OF A AND B PUMP IS PROVIDED.
9. DISCHARGE PRESSURE REFERS TO THE FLANGE DISCHARGE OF THE PUMP AT LOWER DECK.
10. ROUTED TO THE SEA.
11. VESSELS V-50000A/B ARE INSULATED AND HEAT TRACED. 03

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.
5. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :

BLPH PIPING AND INSTRUMENTATION DIAGRAM
SEA-WATER INTAKE SYSTEM SHEET 1

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80021	SHEET 001	REV. 03

File Name : FILE_NAME

DRAWING NO. 123A90-DDL-IN-DG-40015

REV. 01

FIELD		MULTICABLE	I&T EQUIPMENT ROOM (ITER)
INSTRUMENTS	JUNCTION BOX 00-JE-12006	No.	MARSHALLING CABINET B400-PCS-002

<01>

ON-OFF VALVE LIMIT SWITCHES BOX (SOLDO)
- 50-ZSL-001 (1, 2) WH/BK → PR1
- 50-ZSH-001 (5, 6) WH/BK → PR2
- NOTE-2
- C-50-XV-001/00-JE-12006
- 2x2x0.75mm2,Sh+ShT+ARM,F.Ret,GREY,NIS

ON-OFF VALVE LIMIT SWITCHES BOX (SOLDO)
- 50-ZSL-002 (1, 2) WH/BK → PR1
- 50-ZSH-002 (5, 6) WH/BK → PR2
- NOTE-2
- C-50-XV-002/00-JE-12006
- 2x2x0.75mm2,Sh+ShT+ARM,F.Ret,GREY,NIS

ON-OFF VALVE LIMIT SWITCHES BOX (SOLDO)
- 50-ZSL-003 (1, 2) WH/BK → PR1
- 50-ZSH-003 (5, 6) WH/BK → PR2
- NOTE-2
- C-50-XV-003/00-JE-12006
- 2x2x0.75mm2,Sh+ShT+ARM,F.Ret,GREY,NIS

ON-OFF VALVE LIMIT SWITCHES BOX (SOLDO)
- 50-ZSL-004 (1, 2) WH/BK → PR1
- 50-ZSH-004 (5, 6) WH/BK → PR2
- NOTE-2
- C-50-XV-004/00-JE-12006
- 2x2x0.75mm2,Sh+ShT+ARM,F.Ret,GREY,NIS

ON-OFF VALVE LIMIT SWITCHES BOX (SOLDO)
- 50-ZSL-005 (1, 2) WH/BK → PR1
- 50-ZSH-005 (5, 6) WH/BK → PR2
- NOTE-2
- C-50-XV-005/00-JE-12006
- 2x2x0.75mm2,Sh+ShT+ARM,F.Ret,GREY,NIS

TB-1

1	WH/BK	PR1
2		
SH		
3	WH/BK	PR2
4		
SH		
5	WH/BK	PR3
6		
SH		
7	WH/BK	PR4
8		
SH		
9	WH/BK	PR5
10		
SH		
11	WH/BK	PR6
12		
SH		
13	WH/BK	PR7
14		
SH		
15	WH/BK	PR8
16		
SH		
17	WH/BK	PR9
18		
SH		
19	WH/BK	PR10
20		
SH		
SPARE 21	WH/BK	PR11
22		
SH		
SPARE 23	WH/BK	PR12
24		
SH		
OS		

00-JE-12006_1/B400-PCS-002

12x2x0.75mm2,Sh+ShT+ARM,F.Ret,GREY,NIS

TB-00-JE-12006

PR1	WH/BK	1
Shield Bar		2
PR2	WH/BK	3
Shield Bar		4
PR3	WH/BK	5
Shield Bar		6
PR4	WH/BK	7
Shield Bar		8
PR5	WH/BK	9
Shield Bar		10
PR6	WH/BK	11
Shield Bar		12
PR7	WH/BK	13
Shield Bar		14
PR8	WH/BK	15
Shield Bar		16
PR9	WH/BK	17
Shield Bar		18
PR10	WH/BK	19
Shield Bar		20
PR11	WH/BK	21
Shield Bar		22
PR12	WH/BK	23
		24

- 1 → 50-ZSL-001
- 2 → 50-ZSH-001
- 3 → 50-ZSL-002
- 4 → 50-ZSH-002
- 5 → 50-ZSL-003
- 6 → 50-ZSH-003
- 7 → 50-ZSL-004
- 8 → 50-ZSH-004
- 9 → 50-ZSL-005
- 10 → 50-ZSH-005
- 11 → SPARE
- 12 → SPARE

Shield Bar → I.E.

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-DG-40015**

REV.:	DATE:	SIGNATURE:
1_I	29/01/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

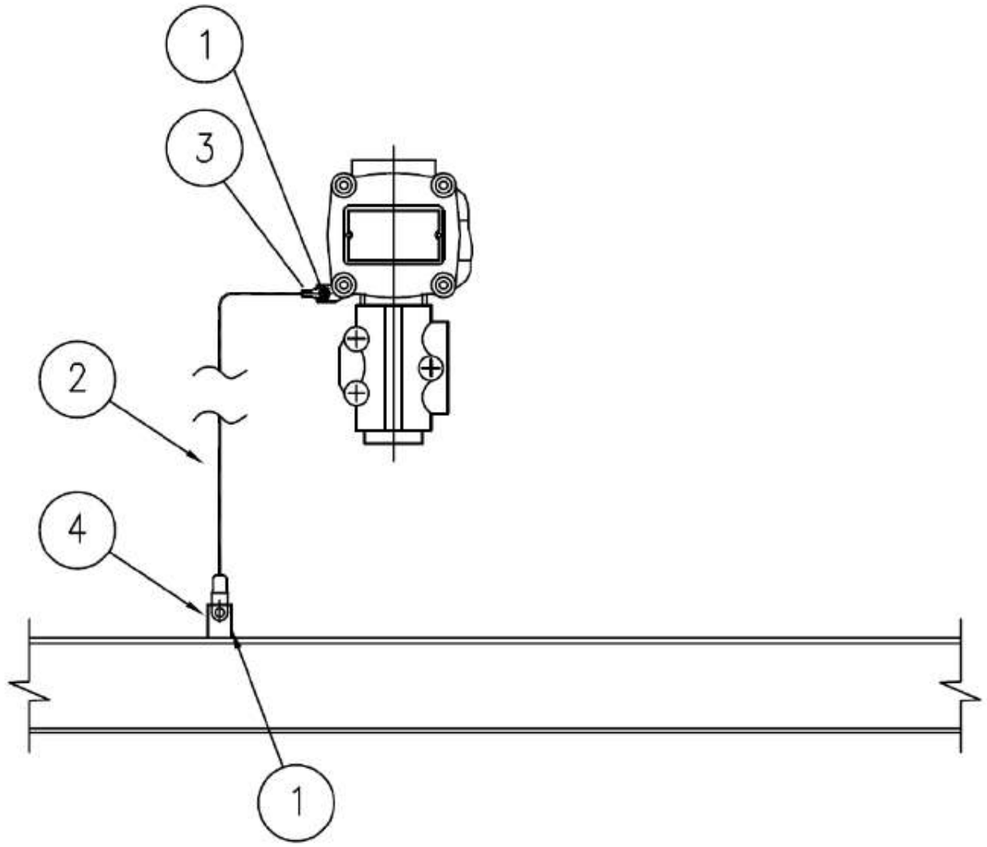
TITLE :

BASE LOAD POWER HUB (BLPH)
INSTRUMENT – PCS WIRING DIAGRAMS
00–JE–12006–SH.1 OF 2

CONTRACT NO./TITLE			SCALE N/A
DRAWN VBA	CHECKED LCA	APPROVED DLO	DATE 23/02/2024
A3	DRAWING NO. 123A90–DDL–IN–DG–40015	SHEET 022	REV. 01

File Name : 123A90-DDL-IN-DG-40015_Rev.01

E33



MATERIALS

POS.	Q.TY	DESCRIPTION	NOTES
1	1	A4 STAINLESS STEEL BOLT COMPLETE WITH NUT AND WASHERS	
2	1	Y/G INSULATING COPPER CONDUCTOR - 6mm²	
3	1	COMPRESSION TYPE LUG FOR INSULATING COPPER CONDUCTOR	
4	1	EARTHING BAR / PLATE / THREADED STUD	(1)

NOTE:
1) FOR DETAIL OF EARTHING PLATE, EARTHING BOSS AND THREADED STUD SEE TYP. E11A/C/D/E

VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DD-20090**

REV.:	DATE:	SIGNATURE:
2_I	07/11/24	G.Randi

ROSETTI MARINO SpA

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	26/08/24	GRA	AMA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/06/24	SPS	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS-EARTHING SYSTEM
EARTHING FOR GENERIC INSTRUMENT

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : NTS

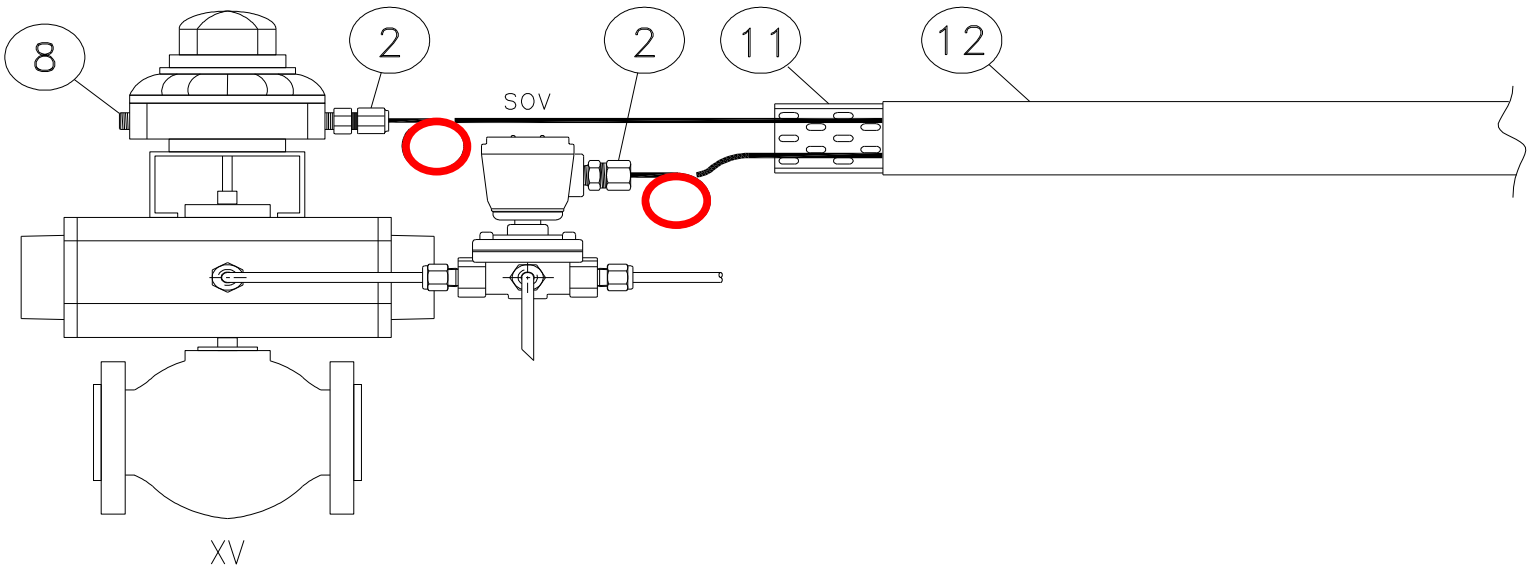
A3 | DRAWING NO. 123A90-DDL-EL-DD-20090 | SHEET 027 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DD-20090 REV.02.DWG

CROSSWIND	HOLLANDSE KUST NOORD WIND PARK Project Contract No. CW-I-WP4-2023-05	ROSETTI MARINO
Document Title:	Instrument Electrical Hook-Ups	Sh. 15 of 37 Date: 27/09/2024 Rev. 02

ELECTRICAL HOOK-UP FOR XV (N.1 SOLENOID VALVE + 2 LIMIT SWITCH)



INSTRUMENT TAG	
1	25-XV-004
2	25-XV-006
3	25-XV-008
4	25-XV-009
5	25-XV-011
6	25-XV-012
7	25-XV-014
8	25-XV-015
9	25-XV-017
10	25-XV-018
11	25-XV-020
12	25-XV-021
13	25-XV-024
14	50-XV-001
15	50-XV-002
16	50-XV-003
17	50-XV-004
18	80-XV-001
19	50-XV-005
20	
21	
22	
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24	
25	
26	
27	
28	
29	
30	

NOTE:

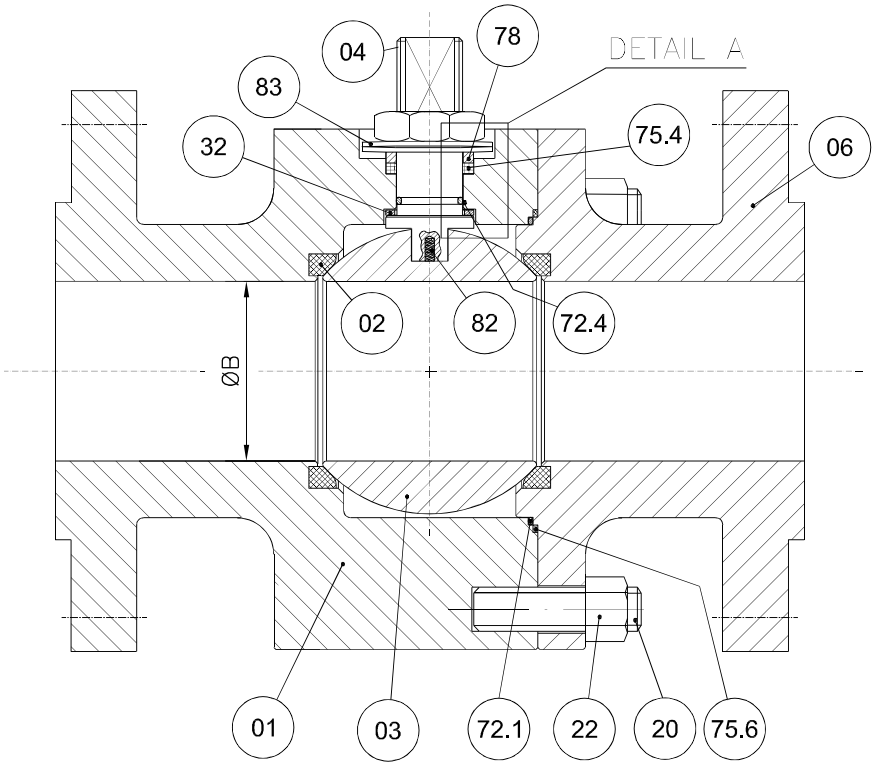
VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-IN-HD-40079**

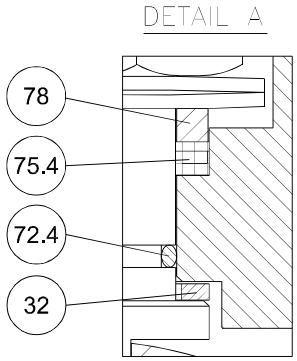
REV.:	DATE:	SIGNATURE:
2_G	20/12/24	V.Ramponi

ROSETTI MARINO SpA

POS.	NORM/STD CODE	DESCRIPTION	SIZE/ CONNECTION TYPE	Q.TY
12		Cover for cable tray, FRP, Grey Color	50 W x 10 H x 5 THK	3 mt
11		Perforated cable tray, FRP, Grey Color	50 W x 50 H x 5 THK	3 mt
8		Nickel Plated Brass Plug Ex-d/e IIC (or IIB + H2) T1	M20	1
2		Nickel Plated Brass Double Compression Cable Gland Ex-d/e IIC (or IIB + H2) T1	M20	2

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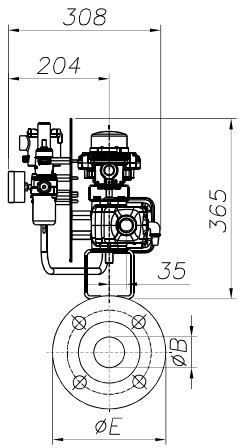


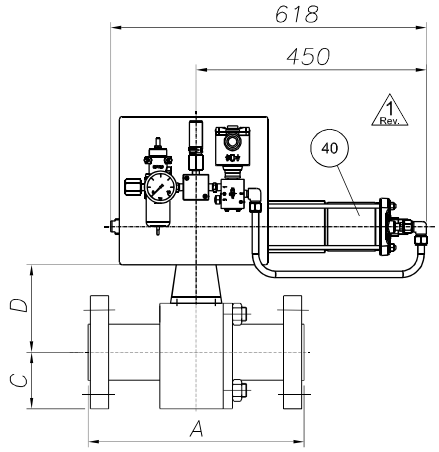


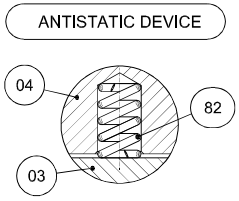
POS.	PART. NAME	MATERIAL
01	BODY	A182 F53
02	SEAT	RPTFE
03	BALL	A182 F53
04	STEM	API 6A CRA UNS N07718
06	CLOSURE	A182 F53
20	STUD	A193 B7+HDG (1)
22	NUT	A194 Gr.2H+HDG (1)
32	THRUST BEARING	RPTFE
40	PNEUMATIC ACTUATOR	MFR. STD.
72.1	FLANGE O-RING	VITON GLT/AED
72.4	STEM O-RING	VITON GLT/AED
75.4	STEM GASKET	GRAPHITE
75.6	FLANGE GASKET	GRAPHITE
78	PACKING RING	A479 Tp.316
82	ANTISTATIC DEVICE	INCONEL X750
83	BELLEVILLE WASHER	AISI 301

NOTE:

(1) HDG: Hot Dip Galvanised (ASTM A153)







REMARKS:

- Dimensions are in mm
- Design acc. to API 6D
- Face to face acc. to ASME B16.10/API 6D
- Flange connection acc. to ANSI B16.5
- Antistatic device acc. to API 6D

(*): To Be Confirmed

POS:	ITEM:	DATA SHEET:	TAG:	Q.TY:	SIZE:	CLASS:	ENDS:	A	ØB	C	D(*)	ØE	Valve Weight (kg):	Actuator Weight (kg):	Total Weight (kg):
25	250	BS01F01RF	50-XV-002	1	1"	150	RF	127	25	54	95	108	6	34	40
27	270	BS01F01RF	50-XV-004	1	1"	150	RF	127	25	54	95	108	6	34	40

1 Rev.

2 Rev.

CUSTOMER :	ROSETTI MARINO S.p.A.
P.O. N. :	1724000204 123A90A/REV.1
JOB N. :	240062

Rev.	DESCRIPTION	DRAWN	DATE	CHK'D	DATE	APPV'D	DATE
3							
2	ISSUED FOR APPROVAL	S.Madahar	22/04/2024	D.Barcella	22/04/2024	L.Mora	22/04/2024
1	ISSUED FOR APPROVAL	S.Madahar	15/04/2024	D.Barcella	15/04/2024	L.Mora	15/04/2024
0	FIRST ISSUE	S.Madahar	26/02/2024	D.Barcella	26/02/2024	L.Mora	26/02/2024

DRAWING NOT IN SCALE

Fluitek Valves

DESCRIPTION: GENERAL ASSEMBLY DRAWING

VALVE TYPE: SPLIT BODY FLOATING BALL VALVE

DRAWN: S.Madahar	DATE: 26/02/2024	
CHK'D: D.Barcella	DATE: 26/02/2024	
APPV'D: L.Mora	DATE: 26/02/2024	
SIZE: A3	SCALE: N.A.	ALL RIGHTS OF THIS DRAWING ARE RESERVED.

DRAWING NAME: D240062-25-27

Rev.: 2

GENERAL	1	Tag Number		Location		50-XV-004		50
	2	Service				SEA WATER P-50001B INLET		
	3	P&ID Number		Area Classification		123A90-DDL-PR-PID-80021		Zone 2, Gas Group IIC (or IIB+H2), Class T1
PIPELINE	4	Line Number				1"-SWS-147-01SD-E		
	5	Line Size and Schedule	Inlet		Outlet	1" / 3.38 mm		1" / 3.38 mm
	6	Line Material		Line Insulation		ASTM A790 UNS S32760		ELECTRICALLY HEAT TRACED (35)
PROCESS DATA	7	Fluid				SEA WATER SUPPLY		
	8	Fluid State		Phase		LIQUID		LIQUID
	9	Operating Pressure Norm/Min/Max			[barg]	-	ATM	15
	10	Design Pressure		Full Vacuum	[barg]	17.7		
	11	Operating Temperature Norm/Min/Max			[°C]	-	-	-
	12	Design Temperature		Minimum	Maxi [°C]	-29		100
	13	Max. Diff. Pressure for Actuator Size			[bar]	17.7		
	14							
	15							
	16	Speed of		Design		Close : (12)		Open : (12)
	17	Operation (seconds)		Actual		Close : 0.3 minimum		Open : -
	18							
	19							
VALVE BODY (34)	20	Body Type				BALL VALVE (FLOATING BALL) - SPLIT BODY (BS01F01RF)		
	21	Body Size		Body Form		1"		FULL BORE
	22	Body Material		Bonnet Type		ASTM A182 F53		(*)
	23	Connections		Rating		FLANGED ASME B16.5		#150
	24	Flange Finish		Gasket Material		RF		Inside the valve (*) (38)
	25	Packing		Lubrication & Isolation		PTFE (*)		(*)
	26	Bolting				A193 B7 +HDG / A194 Gr. 2H + HDG		
	27	Trim Material	Ball	Stem	Seat	ASTM A182 F53	ASTM A182 F53	RPTFE
	28	Leakage Class				(1)		
	29	Fire Safe				(2)		
ACTUATOR	30	Manufacturer		Type		Rotork		Spring Return
	31	Model No.		Size		CP/S		035-100A/BA
	32	Actuator Orientation		Actuator Form		Horizontal		Cylinder
	33	Ingress Protection		Certification		IP-66		II 2 G Ex h IIC T5 Gb
	34	Air Supply		Min	Max Design	4 barg	10 barg	11 barg
	35	Action on Air Failure		Action on Power Failure		CLOSE		CLOSE
	36	Fireproofing				NOT APPLICABLE		
	37	Solenoid Valve				50-XY-004 (9, 14, 15, 16) - Bifold FP06P		
	38	Limit Switch Closed		Limit Switch Open		50-ZSL-004 (9, 17) - Soldo SS		50-ZSH-004 (9, 17) - Soldo SS
	39	Elect. Reset Pushbutton (Actuator mounted)				NOT REQUIRED		
	40	Air Set		Handwheel		(*)		NOT REQUIRED
	41	Mounting Position				HORIZONTAL / VERTICAL		
	42	Partial Stroke Test Facility				-		
	43	Control Type				-		
	44	Electrical Connection		Electrical Class		No. (*) / M20		H
EMERGENCY A/S VESSEL	45	Capacity		Fabrication Code		-	-	-
	46	No of Strokes Per Capacity				-		
	47	Safety Valve		Model		-		-
	48	Check Valve		Mounting		-		-
PURCHASE	49	Manufacturer				FLUITEK		
	50	Model				FB3		
	51	Purchase Order Number				1724000204		

NOTE
(1) N.1 PSV INSTALLED DOWNSTREAM THE AIR FILTER REGULATOR, SIZE 1/4", SS, set 4.7 barg.

No.	Date	By	Chkd	Appr	Description
03	06/12/24	VBA	LCA	DLO	Accepted for Construction (AFC)
02	28/08/24	VBA	LCA	DLO	Accepted for Construction (AFC)
01	20/12/23	VBA	LCA	DLO	Issued for Review (IFR)
00	06/11/23	VBA	LCA	DLO	Issued for Review (IFR)

INSTRUMENT DATASHEET

SDV/BDV and Tight Shut-Off XV Valves

CROSSWIND

ROSETTI MARINO

Code : Dwg. No.: 123A90-DDL-IN-DS-40030 Rev.03

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ITEM	Tag	50-PSV-011	: Pressure Safety Valve			Dwg	123A90-DDL-PR-PID-80022
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10004480		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Instrumental Form CJX03		Relief Valve

1	Check for mechanical damage.	OK
2	Check installed equipment is suitable and conforms to specification.	OK
3	Check installation conforms to P&ID and hook-up drawing.	OK
4	Check valve orientation is correclty installed	OK
5	Check identification (tag number, tag plate with SN, setting value, setting date…etc).	OK
6	Check calibration certificate and date against tag plate values.	OK
7	Check supporting and protection against vibrations.	OK
8	Check accessibility conforms to specifications, with platforming where necessary.	OK
9	If required produce Red Line Mark Up for "AS BUILT"	

Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Luca Mussi	
Date	2025-02-08	2025-02-28	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-08T09:40:50.437Z	PROVERLIS Digitaly signed by Luca Mussi 2025-02-28T15:36:41.234Z	

DRAWING NO. DRAWING_NO.

REV. REV

A-50000
WATER TREATMENT PACKAGE
CAPACITY : 2.5 m³/hr

GAS CONFIRMED 50 XA 001 — F&G
SMOKE CONFIRMED 50 XA 002 — F&G
FAULT PACKAGE 50 XA 003 — ESD
50-XS-001 SHUT-DOWN — ESD
NOTE 6

CONTRACTOR | SUPPLIER

FOR CONTINUATION SEE DOC N. 123A90-DDL-PR-PID-80023

123A90-DDL-PR-PID-80025
TO 50-TDI-002
50 TI 001
BLOCKED OUTLET SET @ 6 barg
50 PSV 011 1D2
2"-SWR-291-01SD-N
50 TT 001
50 TE 001
03
BLPH-MV-471
SR
LO
NOTE 7
1"-SWS-290-01SD-E
1.1/2"
TP 017
50
E
4"x1.1/2"
4"x1.1/2"
ECC. RED.
ECC. RED.
123A90-DDL-PR-PID-80021
FROM SEA WATER LIFT PUMP
1-1/2"-SWS-035-01SD-E
BLPH-MV-241
3/4"

A-50000
WATER TREATMENT PACKAGE
SEE VENDOR DRAWING
DOC. N. 1724000448-PR-PID-00013

FOR CONTINUATION SEE DOC N. 123A90-DDL-PR-PID-80023

E
TP 005
50
03
123A90-DDL-PR-PID-80021
TO SEA WATER LIFT PUMP AND LIFT PUMP CAISSONS
1"-CI-029-01CP-E

1"-CI-043-01CP-E
TP 006
50
03
DECK
HOOK-UP 003
123A90-DDL-PR-PID-80026
TO WASTE WATER TANK

SUPPLIER | CONTRACTOR

TP 003
50
03
1.1/2"x1"
3"x1.1/2"
1"-SWR-045-01CS-H
123A90-DDL-PR-PID-80025
TO BRINE DISCHARGE CAISSON

TP 007
50
03
1.1/2"x1"
1"-WW-038-01CS-H
123A90-DDL-PR-PID-80026
TO WASTE WATER TANK

NOTES

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.
5. DELETED.
6. SERIAL COMMUNICATION WITH CONTROL SYSTEM.
7. ROUTED TO THE SEA. 03

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.
5. DELETED.
6. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

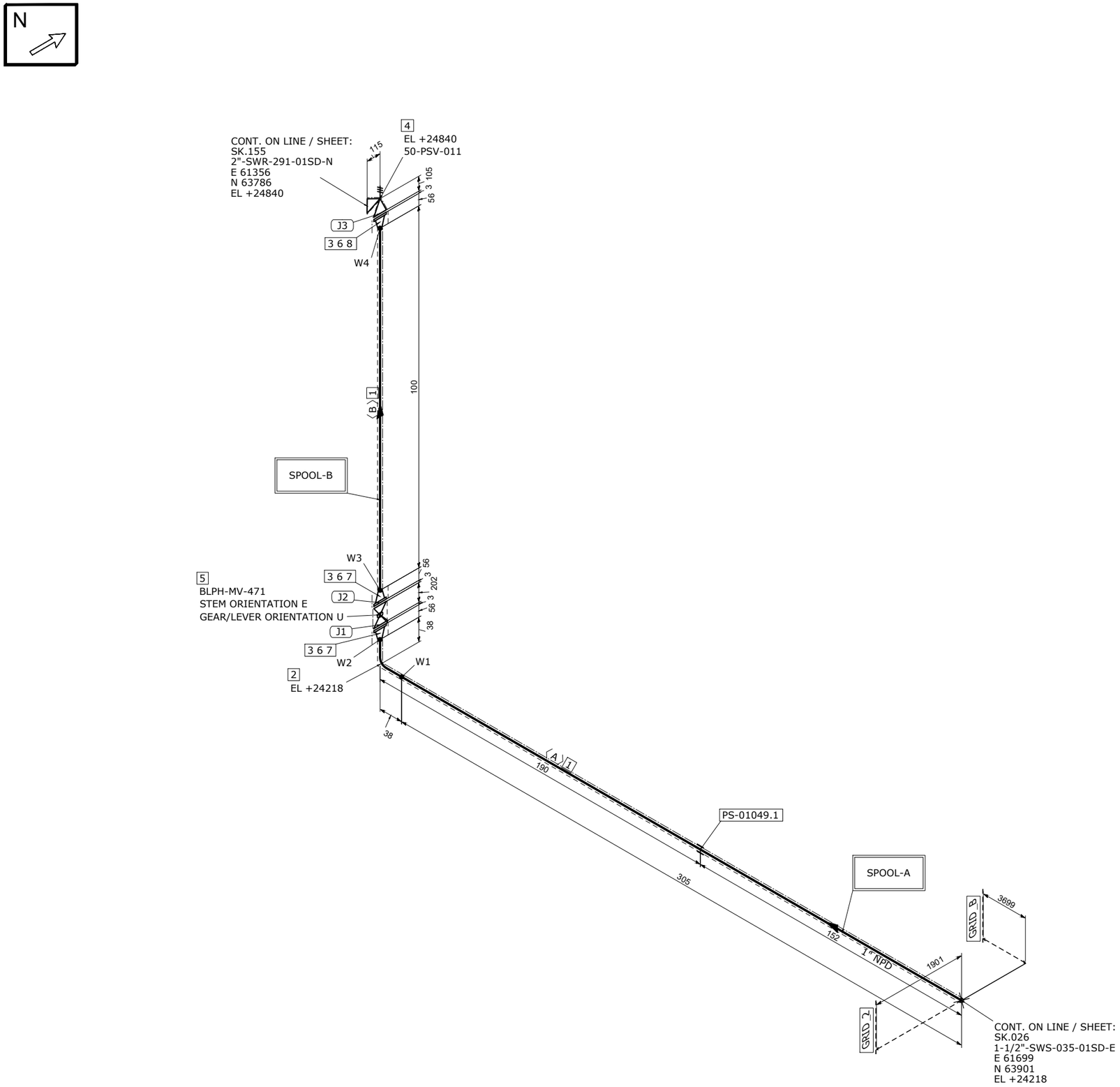
ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
SEA-WATER INTAKE SYSTEM SHEET 2

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE

A1	DRAWING NO.	SHEET	REV.
	123A90-DDL-PR-PID-80022	001	03

File Name : FILE_NAME



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPESD02850100	Pipe ASME B36.19M PE 3,38 SML ASTM A790 UNS S32760	0.4M	1.0
2	1	E90RSD01640100	90 Deg Elbow Long Radius ASME B16.9 BW 3,38 WRS ASTM A815 UNS S32760	1	0.1
3	1	FLW0SD01240100	Flange WN ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	3	4.3

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
4	2X1		SAFETY VALVE FLG.150/150#RF	1	15.0
5	1	VLBLNN01370100	Block & Bleed Valve API 6D FLG 150LB RF BS01F01RFS	1	12.5
6	1	GFL3GK15970100	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	3	0.2
7	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.0
8	1/2	SB20BO34450200	105 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.7

FABRICATION WEIGHT [kg]	5.4
ERECTION WEIGHT [kg]	29.4
OVERALL WEIGHT [kg]	34.8

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1	BW
W2	1	BW
W3	1	BW
W4	1	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1	305	BEVEL	BEVEL
B	1	100	BEVEL	BEVEL

SUPPORT LIST

PS-01049.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	2	2.3
B	2	3.1
MONT	0	29.4

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 1"-SWS-290-01SD-E

SK.154

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE: N/A

DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 27-08-2024

FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00154 | SHEET / OF: 1/1 | REV.: 00

LINE DATA

NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3				
PAINTING	SYSTEM N/A	BASE RAL N/A	FLUID PHASE	Liquid				
INSULATION	TYPE H	THICKNESS 20 [mm]	DESIGN	PRESS. 6 [barg]	TEMP. -29 / 100 [°C]			
HEAT TRACING	Yes		TEST	PRESS. 9 [barg]	TEMP. AMB	MEDIUM Water		

REFERENCE DOCUMENTS

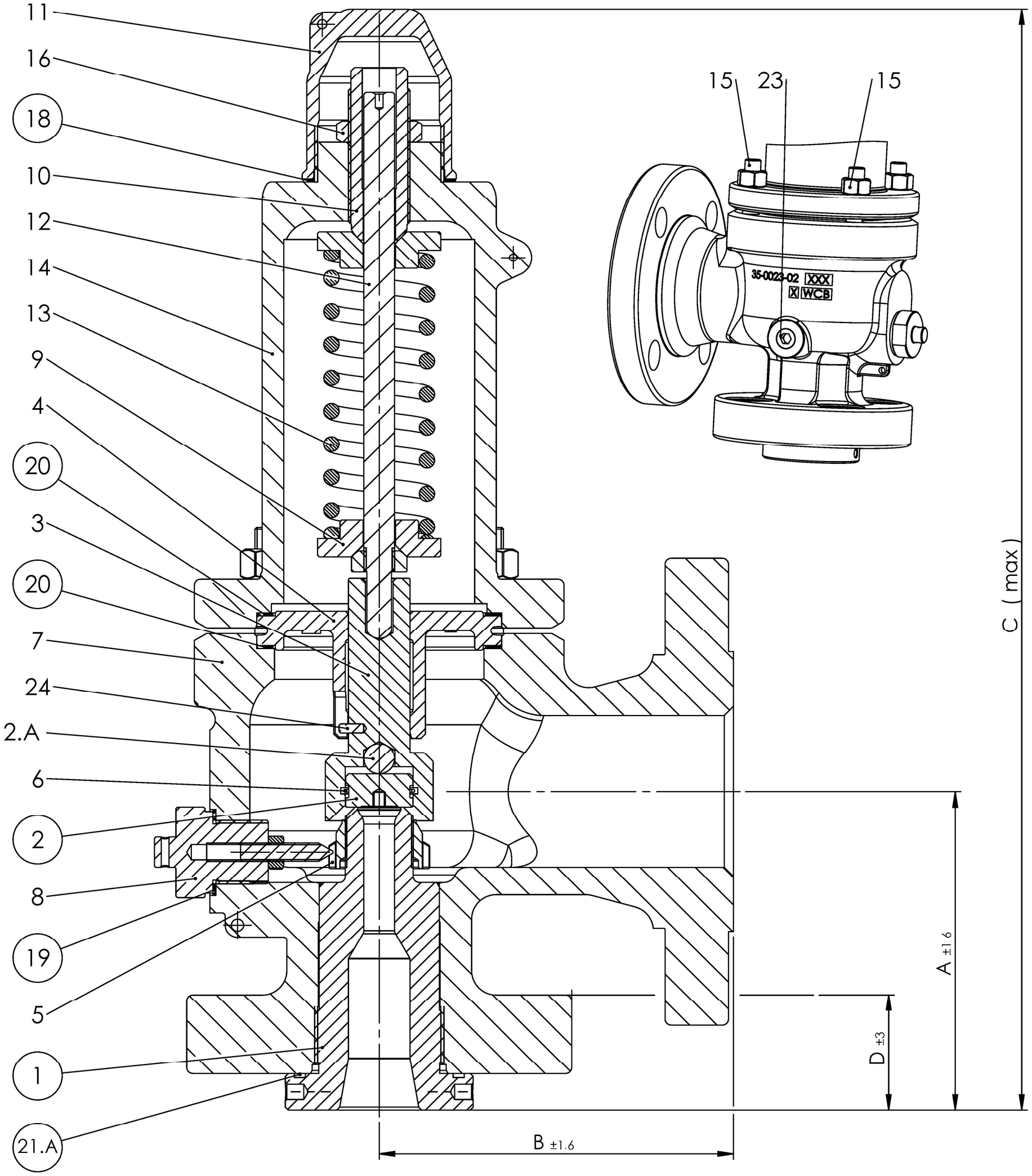
P&ID	123A90-DDL-PR-PID-80022
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

MASTER

○ recommended spare parts

Overall dimensions in accordance with API 526



Flange dimensions as per ASME B16.5 except for inlet flange thickness that may be higher than minimun specified.

	Connections ASME B16.5			Dimensions (mm)						Orifice / area cm²	Weight
	INLET	OUTLET	RF	A	B	C max	D	E	F	D	kg
	1" 150 RF	2" 150 RF		105	115	380	37.5			0.785	15
	Model 320-D10-F1			Tag 50-PSV-011						Job. n° 24/3962	
	Customer ROSETTI MARINO spa			Order. n° 1724000518 123A90A						Doc. n° 24/3962_DWG_9	
0	19/06/2024	ISSUED for ORDER						DI VIRGILIO L.		TESA C.	BIANCHI R.
Rev.	Date	Description						Prepared		Checked	Approved

techNical VIGNATE - MI - ITALY

Type: D1 1" 150 RF

jpg : 320-D10

ITALIAN VALVES MANUFACTURER SINCE 1973	Safety valve - 30000 Series - Bill of material	Job. n° 24/3962
	Model 320-D10-F1 / Tag 50-PSV-011	SPT-075

Quantity	Peening	DESCRIZIONE / PART DESCRIPTION	MATERIALE / PART MATERIAL
		LANGUAGE: IT/EN	TYPE: 320 — Accessori: 0
		MATERIAL CLASS: F1 -	SPRING: 36 — AISI 316
	1	Boccaglio / Nozzle	A479 S32750
	2	Otturatore / Disc	A479 S32750
	2a	Sfera / Ball	SS 316
	3	Portaotturatore / Disc-holder	A995 5A / SAF 2507
	4	Guida / Liner	A995 5A / SAF 2507
	5	Anello Blowdown / Blowdown ring	SS 316L
	6	Anello otturatore / Disc ring	SS 316
	7	Corpo / Body	A995 5A
	8	Vite blowdown / Blowdown screw	SAF 2507
	9	Piattello molla / Spring washer	STAINLESS STEEL
	10	Vite taratura / Adjusting screw	SAF 2507
	11	Cappello / Cap	A995 5A
	12	Stelo / Stem	SS 316L
	13	Molla / Spring	AISI 316
	14	Coperchio / Bonnet	A995 5A
	15	Tiranteria / Bolting - nut	A193 B8M / A194 8M
	16	Controdado / Lock nut	SS 316L
	18	Guarnizione / Gasket	ARMED GRAPHITE
	19	Guarnizione / Gasket	ARMED GRAPHITE
	20	Guarnizione / Gasket	ARMED GRAPHITE
	21a	Guarnizione boccaglio / Nozzle gasket	ARMED GRAPHITE
	23	Tappo drenaggio / Drain plug	SS 316
	24	Spina / Pin	SS 316

Note / Remarks

Rev.	Date	Description	Prepared	Checked	Approved
0	19/06/2024	ISSUED for ORDER	DI VIRGILIO L.	TESA C.	BIANCHI R.

GENERAL	1	Tag Number		50-PSV-011	
	2	Service		SEA WATER TO WATER TREATMENT PACKAGE	
	3	P&ID Number	Equipment No.	123A90-DDL-PR-PID-80022	-
	4	Nozzle (Full, Semi)	Line No.	-	1 1/2"-SWS-035-01SD-E
	5	Design Safety, Relief, Safety-Relief		SAFETY-RELIEF (14)	
	6	Type Conventional, Bellow, Pilot Operated		Conventional	
	7	Bonnet Type		Closed	
	8	Design Conditions		17.7 barg @ 100°C	
PROCESS CONDITIONS	9	Fluid	State	SEA WATER	LIQUID
	10	Required Capacity	kg/hr	2500	
	11	Molecular Mass			
	12	Oper. Pressure	Set Pressure	4-5 barg	6 barg
	13	Oper. Temperature	RelievingTemperature	20 °C	20 °C
	14	Back Pressure	Constant	0 barg	
	15		Variable	0.1 barg	
	16		Total	0.1 barg	
	17	% Allowable Overpressure		10	
	18	Overpressure Factor			
	19	Compressibility Factor			
	20	Latent Heat of Vaporization			
	21	Ratio of Specific Heats			
	22	Relief Density	kg/m3	1000	
	23	Relief Viscosity	cP	1	
	24	Barometric Pressure		as per design basis	
	25				
BASIS AND SELECTION	26	Design Code		API STD 526	
	27	Sizing Basis		API STD 520 (blocked outlet)	
	28	Calculated Area		0.2683 (8, 22)	
	29	Selected Area		0.785 cm2 (8, 22)	
	30	Orifice Designation		D (8, 22)	
	31				
CONNECTIONS	32	Inlet Size, Rating & Style		Flanged ASME B16.5 / 1" / #150	
	33	Outlet Size, Rating & Style		Flanged ASME B16.5 / 2" / #150	
MATERIALS	34	Body and Bonnet		A995 5A	
	35	Seat and Rings		A995 5A (15)	
	36	Resilient Seat Seal		Vendor to advise for non metallic seal	
	37	Guide and Rings		A995 5A (15)	
	38	Spring		AISI 316 (15)	
	39	Bellows		-	
	40				
	41				
OPTIONS	42	Cap: Screwed or Bolted		Screwed	
	43	Lever: Plain or Packed		-	
	44	Test Gag		-	
	45				
	46				
PURCHASE	47	Manufacturer		Technical	
	48	Model		320-D10-f1	
	49	Purchase Order Number		1724000518 123A90A	
	50				

Notes:

No.	Date	By	Chkd	Appr	Description
01	28/08/24	VB	LC	DL	Accepted for Construction

INSTRUMENT DATASHEET

Pressure Safety Valves

CROSSWIND

ROSETTI MARINO

Sheet 13 of 13

Code: Dwg. No.: Rev 01

COMPANY WITH QUALITY SYSTEM CERTIFIED BY DNV ISO 9001

DICHIARAZIONE DI COSTRUZIONE PER VALVOLE DI SICUREZZA SERIE 30.000N

CONSTRUCTION DECLARATION FOR SAFETY VALVES SERIAL 30.000N

n° 23/3962-24-61 — PROCEDURA/PROCEDURE N°IL 42

Matricola/Serial:	293112	Anno/Year:	2024
Cod. o Mod:	320-D10-F1	Classe:	F1
Ingresso/Inlet:	1" 150RF	Press. eser./Operating press.:	5 Barg
Uscita/Outlet:	2" 150RF	Temp. d'eser./Operating temp.:	25 °C
Orifizio/Orifice:	10 mm	Area:	0,785 cm²
Taratura/Set Press.:	6 barg	Contropres./Back pressure:	
Quantità/Quantity:	1	Imp.Variabile/Imp.Variable:	0,1 barg
Sigla/Tag:	50-PSV-011	Generata/Generated:	

materiale/material		access.	vern./paint.
Corpo/Body:	A995 5A		-
Boccaglio/Nozzle:	A479 S32750		note
Otturature/Disc:	A479 S32750		
Molla/Spring:	AISI 316		

Sovrappressione 10% - Scarto chiusura 15÷21%	Overpressure 10% - Blowdown 15÷21%
Alzata mm. 2,5 - Fluido SEA WATER	Lift mm. 2,5 - Fluid SEA WATER
Regolazione molla ±5% della taratura.	Spring regulation ±5% of set pressure.

COLLAUDO BANCO DI PROVA a temperatura ambiente

Hydrostatic Pressure
Corpo/Body 30 bar
Bocc./Nozzle 30 bar

TEST ON BENCH ambient temperature

Pressione taratura
Set pressure: 5,9 bar

Strumento utilizzato per la verifica
Pressure gauge: C23-003-08

Taratura,tenuta sede/Set pressure,seat tightness(API 527): POSITIVO/SATISFACTORY

Controllo dimensionale/Dimensional check (IL 42 Procedure): POSITIVO/SATISFACTORY

Ordine n° / Order n°	Cliente / Customer	Ispettore / Inspector	Ispettore / Inspector
1724000518 123A90A	ROSETTI MARINO Spa	x CROSSWIND 13/09/24 W/R	

Mod. Prg. 005 - 01:18

DICHIARAZIONE DI CONFORMITÀ EU *CONFORMITY DECLARATION*

Il fabbricante *The supplier* technical srl dichiara sotto la sua responsabilità che l'accessorio di sicurezza descritto sopra *declares under the sole responsibility that the mentioned safety device*

è conforme alle disposizioni legislative che traspongono *suits the provisions of the law that transposes the* **Directive 2014/68/EU**

MARCATURA - *MARK* CE 0496 Modulo - *Module* H1

CERTIFICATO GARANZIA QUALITÀ TOTALE - FULL QUALITY ASSURANCE CERTIFICATE CE PED. N. 124433-2012-CE-ITA-ACCREDIA

ENTE NOTIFICATO DI SORVEGLIANZA - *NOTIFIED BODY* DNV Business Assurance Italy S.r.l.

NORMATIVE ARMONIZZATE APPLICATE - APPLIED HARMONIZED STANDARDS: EN ISO 4126-1; EN ISO 4126-7

VIGNATE (MI) - ITALY

DATA - *DATE*

2024-set-12

technical srl

Authorised Representative
Enrica Brenna

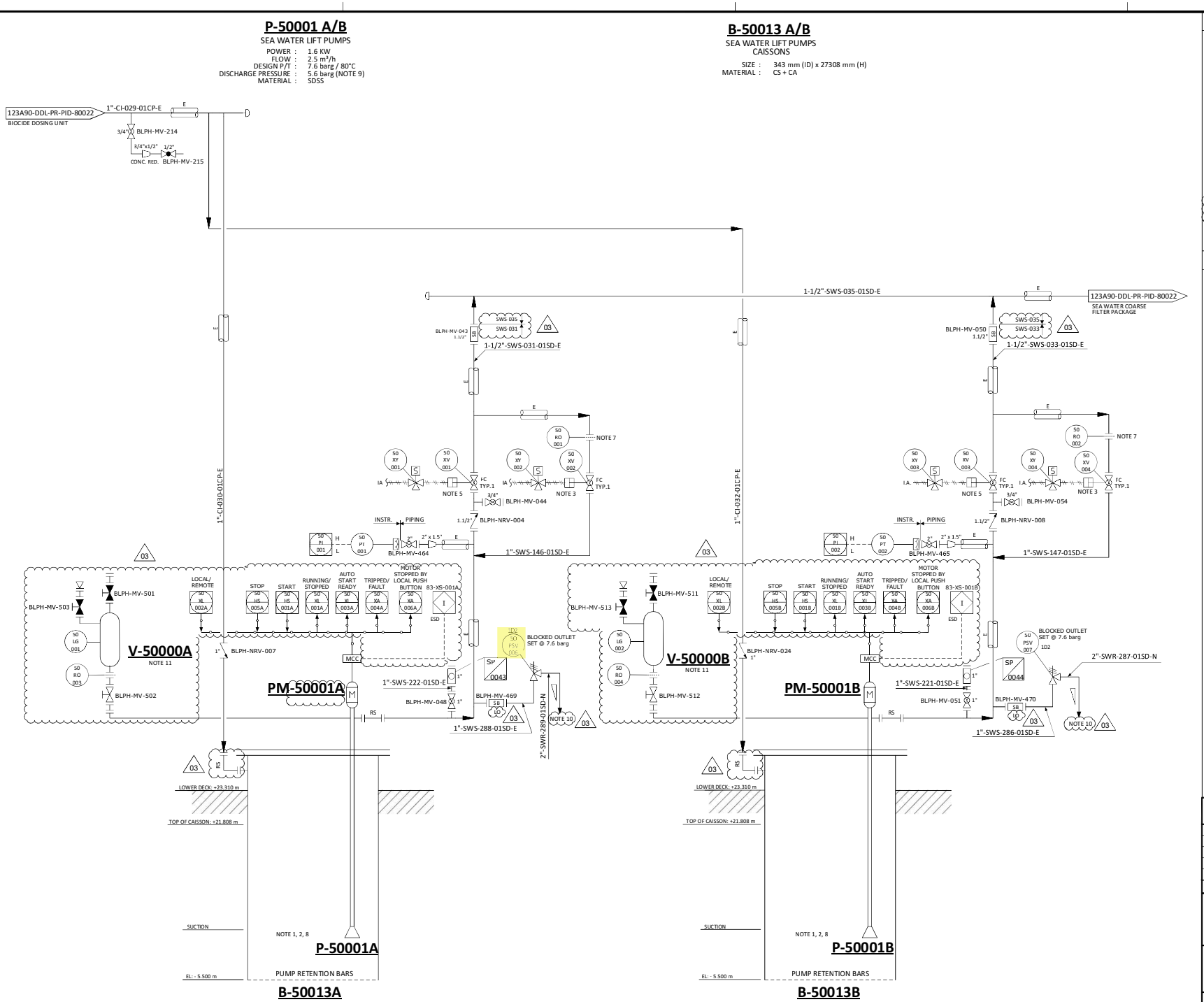
technical srl - Sede Legale, Stab. ed Uffici: Via Toscana, 9 -20052 Vignate (Mi) Italy
Telefono ++39-0295361240 - Telefax ++39-029560273
E-mail: sales@technical.it - Web site: www.technical.it

ITEM	Tag	50-PSV-006	: Pressure Safety Valve			Dwg	123A90-DDL-PR-PID-80021
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10004536		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Instrumental Form CJX03		Relief Valve

1	Check for mechanical damage.	OK
2	Check installed equipment is suitable and conforms to specification.	OK
3	Check installation conforms to P&ID and hook-up drawing.	OK
4	Check valve orientation is correclty installed	OK
5	Check identification (tag number, tag plate with SN, setting value, setting date…etc).	OK
6	Check calibration certificate and date against tag plate values.	OK
7	Check supporting and protection against vibrations.	OK
8	Check accessibility conforms to specifications, with platforming where necessary.	OK
9	If required produce Red Line Mark Up for "AS BUILT"	

Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Luca Mussi	
Date	2025-02-08	2025-02-28	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-08T09:41:08.838Z	PROVERLIS Digitaly signed by Luca Mussi 2025-02-28T15:37:59.198Z	



NOTES

1. SEAWATER LIFT PUMPS ARE RATED 2 X 100%
2. AUTO START OF DESIGNATED STANDBY PUMP ON LOSS OF RUNNING STATUS AND DISCHARGE LOW PRESSURE ALARM OF DUTY PUMP.
3. VALVE TO BE OPENED WHEN PUMP IS OFFLINE TO DOSE CAISSON WITH TREATED SEAWATER TO PREVENT BIOLOGICAL GROWTH.
4. DELETED.
5. SOFTWARE INTERLOCK PREVENTS PUMPS FROM STARTING IN CASE THE RELEVANT XV VALVE IS FULLY CLOSED. 03
6. DELETED.
7. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "123A90-DDL-IN-DS-40054 - TECHNICAL DATASHEET FOR RESTRICTION ORIFICE".
8. LOGIC FOR CONTROL OF P-5001A/B THAT PREVENTS SIMULTANEOUS RUNNING OF A AND B PUMP IS PROVIDED.
9. DISCHARGE PRESSURE REFERS TO THE FLANGE DISCHARGE OF THE PUMP AT LOWER DECK.
10. ROUTED TO THE SEA.
11. VESSELS V-50000A/B ARE INSULATED AND HEAT TRACED. 03

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.
5. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

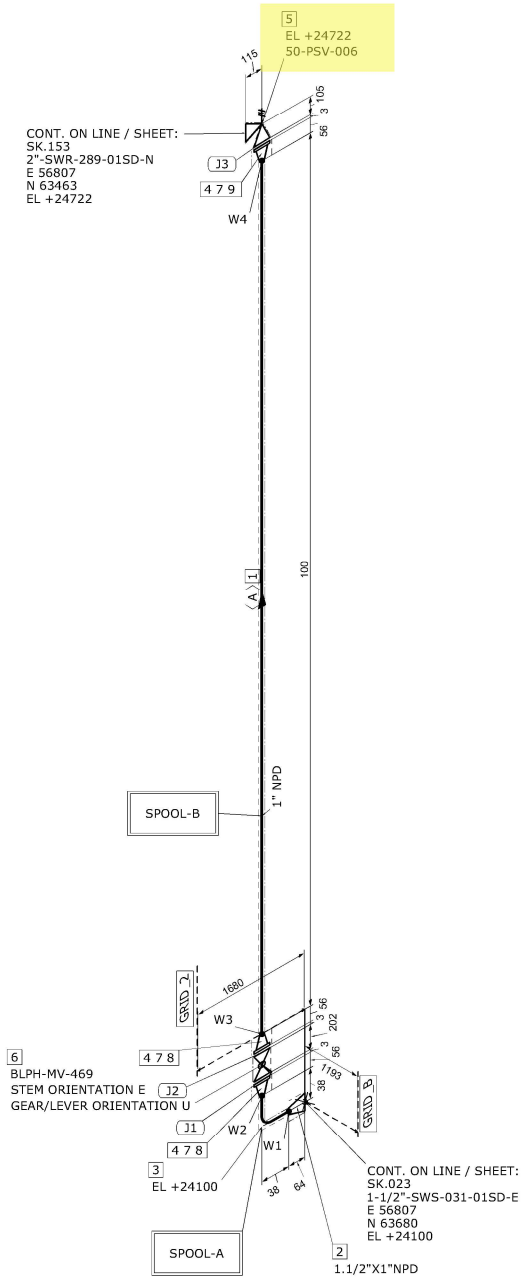
CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
SEA-WATER INTAKE SYSTEM SHEET 1

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE	
A1	DRAWING NO. 123A90-DDL-PR-PID-80021		SHEET 001	REV. 03

DRAWING NO. DRAWING_NO.
REV. REV.
File Name : FILE_NAME



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPESD02850100	Pipe ASME B36.19M PE 3,38 SML ASTM A790 UNS S32760	0.1M	0.3
2	1.1/2X1	REC0SD08001H01	Reducer Concentric ASME B16.9 BW 3,68x3,38 WRS ASTM A815 UNS S32760	1	0.3
3	1	E90RSD01640100	90 Deg Elbow Long Radius ASME B16.9 BW 3,38 WRS ASTM A815 UNS S32760	1	0.1
4	1	FLW0SD01240100	Flange WN ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	3	4.3

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
5	2X1		SAFETY VALVE FLG.150/150#RF	1	15.0
6	1	VLBLNN01370100	Block & Bleed Valve API 6D FLG 150LB RF BS01F01RFS	1	12.5
7	1	GFL3GK15970100	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	3	0.2
8	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.0
9	1/2	SB20BO34450200	105 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.7

FABRICATION WEIGHT [kg]	5.0
ERECTION WEIGHT [kg]	29.4
OVERALL WEIGHT [kg]	34.4

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1	BW
W2	1	BW
W3	1	BW
W4	1	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1	100	BEVEL	BEVEL

SUPPORT LIST

SPOOL

SPOOL	WELD [inches]	WEIGHT [kg]
A	2	1.8
B	2	3.1
MONT	0	29.4

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 1"-SWS-288-01SD-E

SK.152

LINE DATA

NDT INSPECTION CATEGORY	2	PED CATEGORY	Art. 4, par. 3		
PAINTING	SYSTEM N/A	BASE RAL N/A	FLUID PHASE	Liquid	
INSULATION	TYPE H	THICKNESS 20 [mm]	DESIGN	PRESS. 7.6 [barg] TEMP. -29 / 100 [°C]	
HEAT TRACING	Yes		TEST	PRESS. 11.4 [barg] TEMP. AMB MEDIUM Water	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80021
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

MASTER

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	N/A
DRAWN STAFF SRL	CHECKED RT	APPROVED LM	DATE 27-08-2024
FORMAT A3	DRAWING NO. 123A90-FDL-PP-DI-00152	SHEET / OF 1/1	REV. 00

Serie: 3000W

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PRESSURE RELIEF VALVE CALCULATION SHEET

LIQUIDS IN ABSENCE OF CAVITATION OR FLASHING
(According to EN ISO 4126-1)

$$A = \frac{Q_v}{B_9 F_{dr} K F_V} \sqrt{\frac{G}{P_1 - P_2}}$$

$$Re = B_{14} \frac{Q_m}{\mu \sqrt{A'}}$$

TAI Ref.	Item Ref.
24/8637	50-PSV-006/007
Customer	**Sheet No.**
PCM EUROPE	3 of 4
Order No.	**dated**
Customer Ref.	**dated**
GIAN-392481	29/03/2024

Tag
01
02
03
04
05
06
07
08
09
10

DIMENSION

01	MEDIUM	Sea Water			15	SPECIFIC VOLUME		**v**	0.00097 [m³/kg]
02	COEFFICIENT B7		**B_7**	---	16	SPECIFIC GRAVITY (H20=1)		**G**	1.03
03	COEFFICIENT B8		**B_8**	---	17	KINEMATIC VISCOSITY		ν	[ctsk]
04	COEFFICIENT B9		**B_9**	0.05091	18	DYNAMIC VISCOSITY		μ	0.9 [cpoise]
05	COEFFICIENT B13		**B_{13}**	---	19	REQUIRED	MASS FLOW RATE	**Q_m**	2575 [kg/h]
06	COEFFICIENT B14		**B_{14}**	313.4			VOL. FLOW RATE	**Q_v**	2.5 [m³/h]
07	DISCHARGE COEFFICIENT		**K**	0.87	20	CALCULATED AREA(1)		**A**	22.014 [mm²]
08	DE-RATING FACTOR		**F_{dr}**	0.9	21	QTY. OF VALVES		**n**	1
09	OPERATING PRESSURE			[bar g]	22	SELECTED AREA		**A'**	78.5 [mm²]
10	SET PRESSURE			7.6 [bar g]	23	REYNOLDS NUMBER		**Re**	101204
11	OVERPRESSURE			10 [%]	24	LOW TURB. CORR. FACTOR		**Fv'**	1
12	RELIEVING PRESSURE		**P_1**	8.36 [bar g]	25	Fv' * n * A'/A (OK if >= 1)			3.566
13	BACK PRESSURE		**P_2**	0 [bar g]	26	ORIFICE			D
14	TEMPERATURE AT P1		**T_1**	293.2 [K]	27	CAPACITY			8.915 [m³/h]
			t_1	20.2 [°C]	28				

NOTES

(1) Fv assumed as equal to 1

REV.	DATE	COM / BY	DESCRIPTION
10			
09			
08			
07			
06			
05			
04			
03	06/06/2024	LV	
02	17/04/2024	LV	
01	03/04/2024	LV	First issue

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DIMENSIONAL OUTLINE DRAWING WITH MATERIAL LIST AND VALVE DATA

TAI Ref.	Item Ref.	Quantity
24/8637	50-PSV-006/007	2
Customer		**Sheet No.**
PCM EUROPE		4 of 4
Order No.		**dated**
Customer Ref.		**dated**
GIAN-392481		29/03/2024

Tag
01
02
03
04
05
06
07
08
09
10

VALVE DATA

Series	Valve	Size	Spring	Accessories
3000W	3111W	1" X 2"	S	

Orifice	Area [mm²]	Cold differential test pressure [bar g]	Set pressure [bar g]	Overpressure [%]	Total backpressure [bar g]
D	78.5	7.6	7.6	10	0

Superimposed backpressure [bar g]	Relieving temperature [°C]	Minimum temperature [°C]	Maximum temperature [°C]	Service G	L	S	M
0	20.2	-29	100		X		

Inlet connection

Code	Size	Class/PN	Facing	Finish
ASME	1"	150	RF	125 AARH

Outlet connection

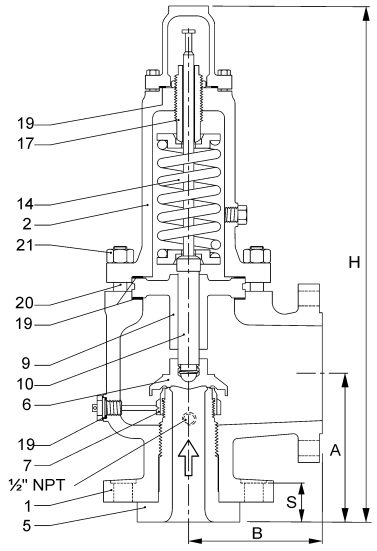
Code	Size	Class/PN	Facing	Finish
ASME	2"	150	RF	125 AARH

PARTS AND MATERIAL LIST

Our material class: L1 /11 /30 /X3 /X7 /X9 /X13

001	Body	A352-LCC		020	Body studs	A320-L7 HDG	
002	Bonnet	A352-LCC		021	Body nuts	A194-7 HDG	
005	Nozzle	UNS S32760	/X3		Cap	A352-LCC	/X13
006	Disc	UNS N07718					
007	Blowdown adjusting ring	A351-CF8M					
009	Guide bushing	A351-CF8M					
010	Spindle	UNS N07718	/X7				
014	Spring	AISI 316					
017	Spring adj. screw	UNS N07718	/X9				
019	Set of gaskets	PTFE					

DRAWING



NOTES

Preliminary dimensions [mm] A	B	S	H	Mass [kg]
105	114	33	465	22

REV.	DATE	COM / BY	DESCRIPTION
05			
04			
03	06/06/2024	LV	
02	17/04/2024	LV	
01	03/04/2024	LV	First issue

Printed by: LVarisco
Print date: 06/06/2024 08:46:45
Document: 24/8637-001-DAA R02

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VAT Registration N. IT00753440155 - Share Capital € 516.000
Chamber of Commerce Registration N. 533341

CERTIFICATE OF IDENTITY, TEST AND CONFORMITY TO DIRECTIVE 2014/68/EU ANNEX IV SERIES 3000W SPRING LOADED SAFETY VALVE

Job	Customer	Order
24/2428	**ENOLIA**	**CF2406-4511**

YEAR:	2024	SERIAL No:	200145
SERIES:	3000W	ORIFICE AREA: mm²	78.5
INLET:	1" ASME 150 RF 125 AARH		
OUTLET:	2" ASME 150 RF 125 AARH		
COLD DIFFERENTIAL TEST PRESSURE:	bar 7.6		
SET PRESSURE:	bar 7.6		
OVERPRESSURE:	% 10	K_{dr}(*):	0.783-L
LIFT:	mm 2	T: °C	-29 ÷ 100
TAG:	---		

(*): At atmospheric backpressure

MODEL: 3111W-1D2-S

ACCESSORIES

ORIFICE DIAMETER:	10 mm
SUPERIMPOSED BACKPRESSURE:	bar
BLOWDOWN:	7 %
SUITABLE FOR:	L
SPRING COLD DIFFERENTIAL TEST PRESSURE ADJUSTMENT RANGE:	7.09 ÷ 7.68 bar

MANUFACTURED IN ACCORDANCE WITH THESE DATA:

24/2428-001A-DSE R00	320110.00000	---
MATERIALS CLASS:	S1 /11 /30 /X3 /X7 /X9 /X13	
BODY MATERIAL:	A216-WCB	

SPARE PART CODE

GASKETS:	340120.23120.PAZZ
BELLOWS:	---
SPRING:	000003.25160.XJZM
DISC:	426382.10120.MKDZ
NOZZLE:	W21140.08130.XWZZ

SATISFACTORY TEST AT TEST BENCH:

VISUAL EXAMINATION AND DIMENSIONAL CHECK

HYDROSTATIC TEST	BODY:	30 bar
	NOZZLE:	30 bar
COLD DIFFERENTIAL TEST PRESSURE (*):		7.37 bar
TIGHTNESS TEST PRESSURE	VALVE SEAT (**):	6.64 bar
	BACKPRESSURE (***):	6 bar

(*) Test medium: air; the cold differential test pressure is reduced by ~3% in order to insure the required set pressure for liquid service.
(**) Test medium: air
(***) Test medium: air

NOTES:

Cold differential test pressure is the inlet gauge pressure at which a safety valve is set to begin to open on the test bench.
This test pressure includes corrections for service condictions.
TAI Milano S.p.A. uses pressure gauges with scale in bar.
Values shown in different units have been obtained by conversion.

	TAI MILANO S.p.A. Ivan Brandinali	01 OCTOBER 2024	TAI MILANO S.p.A. Lo Presti Alessandro
INSPECTOR'S SIGNATURE	PREPARED BY	FINAL TESTS DATE	PERFORMED BY

We hereby declare that the design, manufactoring and inspection of this safety valve meet the requirement of the pressure equipement directive 2014/68/UE, Category IV. Conformity Assessment Procedures: EU type examination; Production Quality Assurance: (Modules B + D)

MODULE	CERTIFICATE No	NOTIFIED BODY Name and address	No
B	PED 008 AT 330 REV.5	ITALCERT V.le Sarca 336 - 20126 Milano - ITALY	0426
D	PED 008 AD 002 REV.42	ITALCERT V.le Sarca 336 - 20126 Milano - ITALY	0426

Tecnical Standard Used: EN/ISO 4126-1; EN 12516 part 2
ASME/ANSI B16.34

01 OCTOBER 2024	TAI MILANO S.p.A.	Fabio Corradi	TAI MILANO S.p.A. Quality Assurance Manager
DATE	STAMP	SIGNATURE	POSITION TITLE

ITEM	Tag	50-PSV-007	: Pressure Safety Valve			Dwg	123A90-DDL-PR-PID-80021
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10004537		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Instrumental Form CJX03		Relief Valve

1	Check for mechanical damage.	OK
2	Check installed equipment is suitable and conforms to specification.	OK
3	Check installation conforms to P&ID and hook-up drawing.	OK
4	Check valve orientation is correclty installed	OK
5	Check identification (tag number, tag plate with SN, setting value, setting date…etc).	OK
6	Check calibration certificate and date against tag plate values.	OK
7	Check supporting and protection against vibrations.	OK
8	Check accessibility conforms to specifications, with platforming where necessary.	OK
9	If required produce Red Line Mark Up for "AS BUILT"	

Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	ICS IMPIANTI	RM(ROSETTI MARINO)	
Name	Michele Tartaglia	Luca Mussi	
Date	2025-02-08	2025-02-28	
Signature	PROVERLIS Digitaly signed by Michele Tartaglia 2025-02-08T09:41:18.133Z	PROVERLIS Digitaly signed by Luca Mussi 2025-02-28T15:38:54.011Z	

DRAWING NO. DRAWING_NO.

REV. REV.

P-50001 A/B

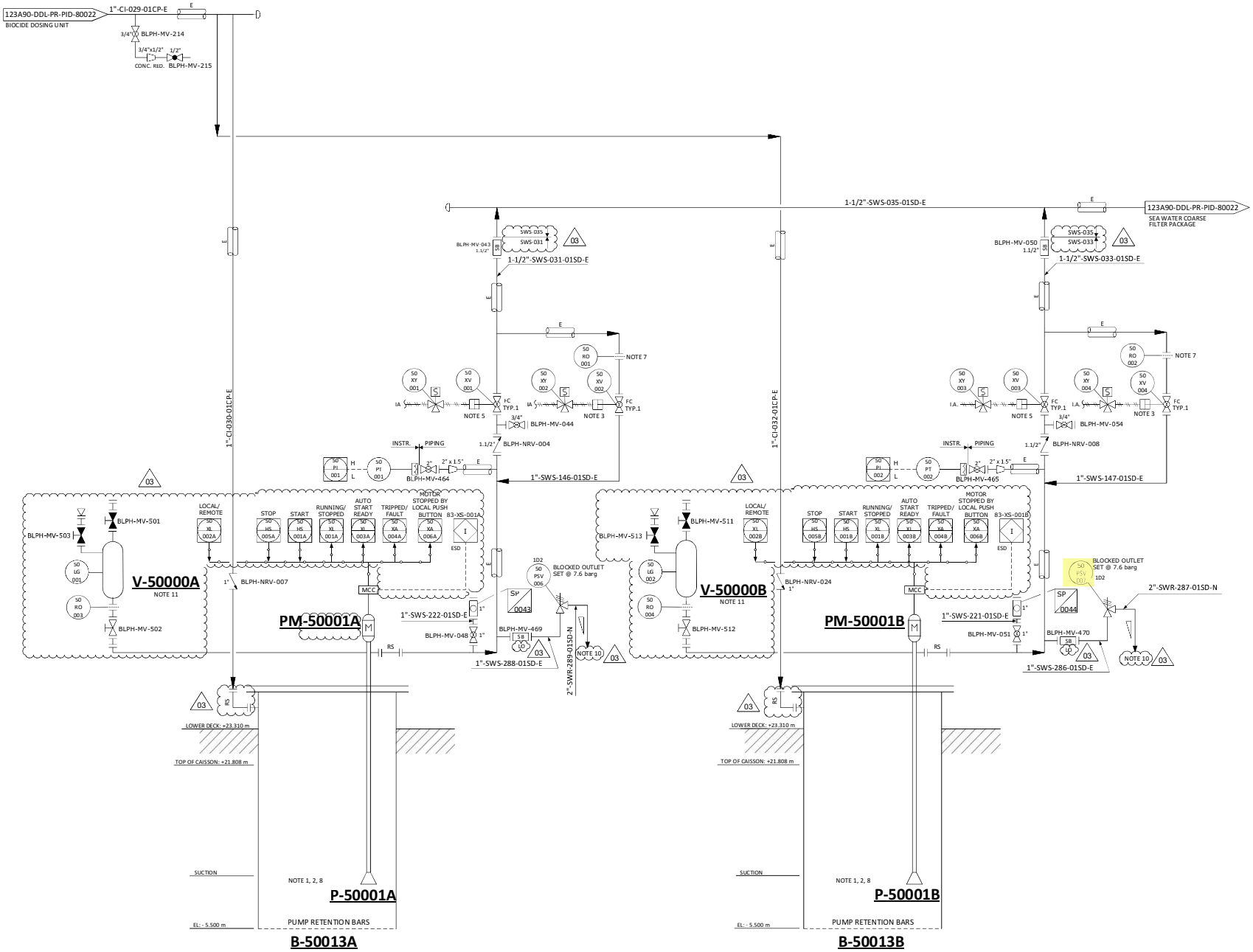
SEA WATER LIFT PUMPS

POWER :	1.6 KW
FLOW :	2.5 m³/h
DESIGN P/T :	7.6 barg / 80°C
DISCHARGE PRESSURE :	5.6 barg (NOTE 9)
MATERIAL :	SDSS

B-50013 A/B

SEA WATER LIFT PUMPS CAISSONS

SIZE :	343 mm (ID) x 27308 mm (H)
MATERIAL :	CS + CA



NOTES

1. SEAWATER LIFT PUMPS ARE RATED 2 X 100%
2. AUTO START OF DESIGNATED STANDBY PUMP ON LOSS OF RUNNING STATUS AND DISCHARGE LOW PRESSURE ALARM OF DUTY PUMP.
3. VALVE TO BE OPENED WHEN PUMP IS OFFLINE TO DOSE CAISSON WITH TREATED SEAWATER TO PREVENT BIOLOGICAL GROWTH.
4. DELETED.
5. SOFTWARE INTERLOCK PREVENTS PUMPS FROM STARTING IN CASE THE RELEVANT XV VALVE IS FULLY CLOSED. 03
6. DELETED.
7. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "123A90-DDL-IN-DS-40054 - TECHNICAL DATASHEET FOR RESTRICTION ORIFICE".
8. LOGIC FOR CONTROL OF P-5001A/B THAT PREVENTS SIMULTANEOUS RUNNING OF A AND B PUMP IS PROVIDED.
9. DISCHARGE PRESSURE REFERS TO THE FLANGE DISCHARGE OF THE PUMP AT LOWER DECK.
10. ROUTED TO THE SEA.
11. VESSELS V-50000A/B ARE INSULATED AND HEAT TRACED. 03

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.
5. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

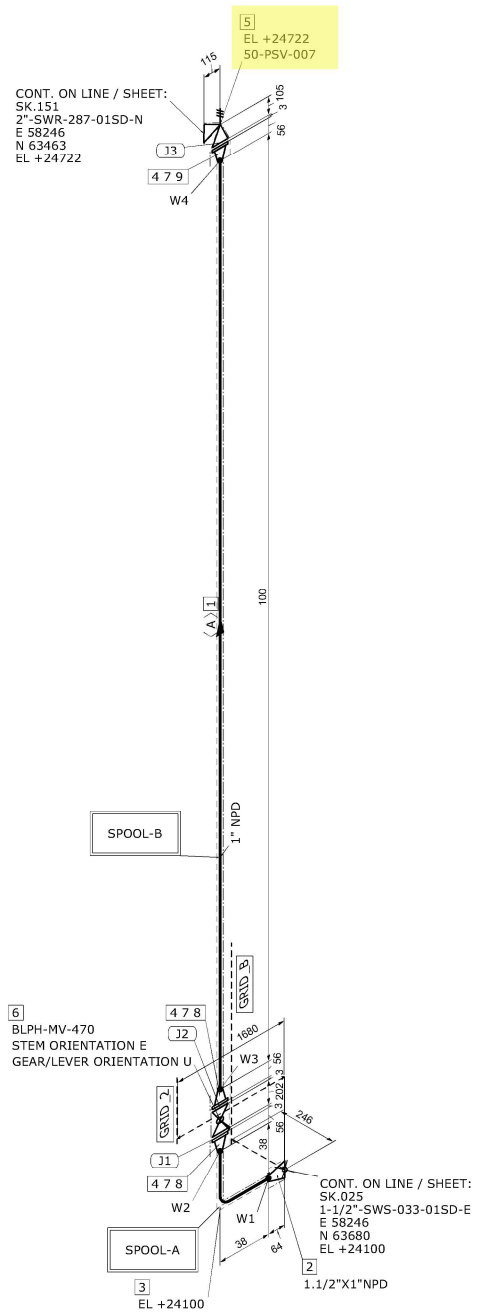
ROSETTI MARINO

TITLE :

BLPH PIPING AND INSTRUMENTATION DIAGRAM
SEA-WATER INTAKE SYSTEM SHEET 1

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80021	SHEET 001	REV. 03

File Name : FILE_NAME



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPESD02850100	Pipe ASME B36.19M PE 3,38 SML ASTM A790 UNS S32760	0.1M	0.3
2	1.1/2X1	REC0SD08001H01	Reducer Concentric ASME B16.9 BW 3,68x3,38 WRS ASTM A815 UNS S32760	1	0.3
3	1	E90RSD01640100	90 Deg Elbow Long Radius ASME B16.9 BW 3,38 WRS ASTM A815 UNS S32760	1	0.1
4	1	FLW0SD01240100	Flange WN ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	3	4.3

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
5	2X1		SAFETY VALVE FLG.150/150#RF	1	15.0
6	1	VLBLNN01370100	Block & Bleed Valve API 6D FLG 150LB RF BS01F01RFS	1	12.5
7	1	GFL3GK15970100	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	3	0.2
8	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.0
9	1/2	SB20BO34450200	105 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.7

FABRICATION WEIGHT [kg]	5.0
ERECTION WEIGHT [kg]	19.4
OVERALL WEIGHT [kg]	34.4

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1	BW
W2	1	BW
W3	1	BW
W4	1	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1	100	BEVEL	BEVEL

SUPPORT LIST

SPOOL	WELD [inches]	WEIGHT [kg]
A	2	1.8
B	2	3.1
MONT	0	29.4

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 1"-SWS-286-01SD-E

SK.150

LINE DATA							
NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3			
PAINTING	SYSTEM N/A	BASE RAL N/A	FLUID PHASE	Liquid			
INSULATION	TYPE H	THICKNESS 20 [mm]	DESIGN	PRESS. 7.6 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	Yes		TEST	PRESS. 11.4 [barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS	
P&ID	123A90-DDL-PR-PID-80021
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

MASTER

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	N/A
DRAWN STAFF SRL	CHECKED RT	APPROVED LM	DATE 27-08-2024
FORMAT A3	DRAWING NO. 123A90-FDL-PP-DI-00150	SHEET / OF 1/1	REV. 00

Serie: 3000W

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PRESSURE RELIEF VALVE CALCULATION SHEET

LIQUIDS IN ABSENCE OF CAVITATION OR FLASHING
(According to EN ISO 4126-1)

$$A = \frac{Q_v}{B_9 F_{dr} K F_V} \sqrt{\frac{G}{P_1 - P_2}}$$

$$Re = B_{14} \frac{Q_m}{\mu \sqrt{A'}}$$

TAI Ref.	Item Ref.
24/8637	50-PSV-006/007
Customer	**Sheet No.**
PCM EUROPE	3 of 4
Order No.	**dated**
Customer Ref.	**dated**
GIAN-392481	29/03/2024

Tag
01
02
03
04
05
06
07
08
09
10

DIMENSION

01	MEDIUM	Sea Water			15	SPECIFIC VOLUME		**v**	0.00097 [m³/kg]
02	COEFFICIENT B7		**B_7**	---	16	SPECIFIC GRAVITY (H20=1)		**G**	1.03
03	COEFFICIENT B8		**B_8**	---	17	KINEMATIC VISCOSITY		ν	[ctsk]
04	COEFFICIENT B9		**B_9**	0.05091	18	DYNAMIC VISCOSITY		μ	0.9 [cpoise]
05	COEFFICIENT B13		**B_{13}**	---	19	REQUIRED	MASS FLOW RATE	**Q_m**	2575 [kg/h]
06	COEFFICIENT B14		**B_{14}**	313.4			VOL. FLOW RATE	**Q_v**	2.5 [m³/h]
07	DISCHARGE COEFFICIENT		**K**	0.87	20	CALCULATED AREA(1)		**A**	22.014 [mm²]
08	DE-RATING FACTOR		**F_{dr}**	0.9	21	QTY. OF VALVES		**n**	1
09	OPERATING PRESSURE			[bar g]	22	SELECTED AREA		**A'**	78.5 [mm²]
10	SET PRESSURE			7.6 [bar g]	23	REYNOLDS NUMBER		**Re**	101204
11	OVERPRESSURE			10 [%]	24	LOW TURB. CORR. FACTOR		**Fv'**	1
12	RELIEVING PRESSURE		**P_1**	8.36 [bar g]	25	Fv' * n * A'/A (OK if >= 1)			3.566
13	BACK PRESSURE		**P_2**	0 [bar g]	26	ORIFICE			D
14	TEMPERATURE AT P1		**T_1**	293.2 [K]	27	CAPACITY			8.915 [m³/h]
			t_1	20.2 [°C]	28				

NOTES

(1) Fv assumed as equal to 1

REV.	DATE	COM / BY	DESCRIPTION
10			
09			
08			
07			
06			
05			
04			
03	06/06/2024	LV	
02	17/04/2024	LV	
01	03/04/2024	LV	First issue

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DIMENSIONAL OUTLINE DRAWING WITH MATERIAL LIST AND VALVE DATA

TAI Ref.	Item Ref.	Quantity
24/8637	50-PSV-006/007	2
Customer		**Sheet No.**
PCM EUROPE		4 of 4
Order No.		**dated**
Customer Ref.		**dated**
GIAN-392481		29/03/2024

Tag
01
02
03
04
05
06
07
08
09
10

VALVE DATA

Series	Valve	Size	Spring	Accessories
3000W	3111W	1" X 2"	S	

Orifice	Area [mm²]	Cold differential test pressure [bar g]	Set pressure [bar g]	Overpressure [%]	Total backpressure [bar g]
D	78.5	7.6	7.6	10	0

Superimposed backpressure [bar g]	Relieving temperature [°C]	Minimum temperature [°C]	Maximum temperature [°C]	Service G	L	S	M
0	20.2	-29	100		X		

Inlet connection

Code	Size	Class/PN	Facing	Finish
ASME	1"	150	RF	125 AARH

Outlet connection

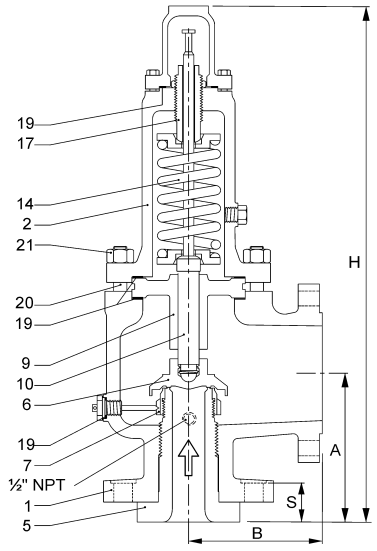
Code	Size	Class/PN	Facing	Finish
ASME	2"	150	RF	125 AARH

PARTS AND MATERIAL LIST

Our material class: L1 /11 /30 /X3 /X7 /X9 /X13

001	Body	A352-LCC		020	Body studs	A320-L7 HDG	
002	Bonnet	A352-LCC		021	Body nuts	A194-7 HDG	
005	Nozzle	UNS S32760	/X3		Cap	A352-LCC	/X13
006	Disc	UNS N07718					
007	Blowdown adjusting ring	A351-CF8M					
009	Guide bushing	A351-CF8M					
010	Spindle	UNS N07718	/X7				
014	Spring	AISI 316					
017	Spring adj. screw	UNS N07718	/X9				
019	Set of gaskets	PTFE					

DRAWING



NOTES

Preliminary dimensions [mm] A	B	S	H	Mass [kg]
105	114	33	465	22

REV.	DATE	COM / BY	DESCRIPTION
05			
04			
03	06/06/2024	LV	
02	17/04/2024	LV	
01	03/04/2024	LV	First issue

Printed by: LVarisco
Print date: 06/06/2024 08:46:45
Document: 24/8637-001-DAA R02

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Tel.: +39 02 29525941 - Fax: +39 02 29404417 - email: tai@taimilano.it
VAT Registration N. IT00753440155 - Share Capital € 516.000
Chamber of Commerce Registration N. 533341

CERTIFICATE OF IDENTITY, TEST AND CONFORMITY TO DIRECTIVE 2014/68/EU ANNEX IV SERIES 3000W SPRING LOADED SAFETY VALVE

Job	Customer	Order
24/2428	**ENOLIA**	**CF2406-4511**

YEAR:	2024	SERIAL No:	200146
SERIES:	3000W	ORIFICE AREA: mm²	78.5
INLET:	1" ASME 150 RF 125 AARH		
OUTLET:	2" ASME 150 RF 125 AARH		
COLD DIFFERENTIAL TEST PRESSURE:	bar 7.6		
SET PRESSURE:	bar 7.6		
OVERPRESSURE:	% 10	K_{dr}(*):	0.783-L
LIFT:	mm 2	T: °C	-29 ÷ 100
TAG:	---		

(*): At atmospheric backpressure

MODEL: 3111W-1D2-S

ACCESSORIES

ORIFICE DIAMETER:	10 mm
SUPERIMPOSED BACKPRESSURE:	bar
BLOWDOWN:	7 %
SUITABLE FOR:	L
SPRING COLD DIFFERENTIAL TEST PRESSURE ADJUSTMENT RANGE:	7.09 ÷ 7.68 bar

MANUFACTURED IN ACCORDANCE WITH THESE DATA:

24/2428-001A-DSE R00	320110.00000	---
MATERIALS CLASS:	S1 /11 /30 /X3 /X7 /X9 /X13	
BODY MATERIAL:	A216-WCB	

SPARE PART CODE

GASKETS:	340120.23120.PAZZ
BELLOWS:	---
SPRING:	000003.25160.XJZM
DISC:	426382.10120.MKDZ
NOZZLE:	W21140.08130.XWZZ

SATISFACTORY TEST AT TEST BENCH:

VISUAL EXAMINATION AND DIMENSIONAL CHECK

HYDROSTATIC TEST	BODY:	30 bar
	NOZZLE:	30 bar
COLD DIFFERENTIAL TEST PRESSURE (*):		7.37 bar
TIGHTNESS TEST PRESSURE	VALVE SEAT (**):	6.64 bar
	BACKPRESSURE (***):	6 bar

(*) Test medium: air; the cold differential test pressure is reduced by ~3% in order to insure the required set pressure for liquid service.
(**) Test medium: air
(***) Test medium: air

NOTES:

Cold differential test pressure is the inlet gauge pressure at which a safety valve is set to begin to open on the test bench.
This test pressure includes corrections for service condictions.
TAI Milano S.p.A. uses pressure gauges with scale in bar.
Values shown in different units have been obtained by conversion.

	TAI MILANO S.p.A. Ivan Brandinali	01 OCTOBER 2024	TAI MILANO S.p.A. Lo Presti Alessandro
INSPECTOR'S SIGNATURE	PREPARED BY	FINAL TESTS DATE	PERFORMED BY

We hereby declare that the design, manufactoring and inspection of this safety valve meet the requirement of the pressure equipement directive 2014/68/UE, Category IV. Conformity Assessment Procedures: EU type examination; Production Quality Assurance: (Modules B + D)

MODULE	CERTIFICATE No	NOTIFIED BODY Name and address	No
B	PED 008 AT 330 REV.5	ITALCERT V.le Sarca 336 - 20126 Milano - ITALY	0426
D	PED 008 AD 002 REV.42	ITALCERT V.le Sarca 336 - 20126 Milano - ITALY	0426

Tecnical Standard Used: EN/ISO 4126-1; EN 12516 part 2
ASME/ANSI B16.34

01 OCTOBER 2024	TAI MILANO S.p.A.	Fabio Corradi	TAI MILANO S.p.A. Quality Assurance Manager
DATE	STAMP	SIGNATURE	POSITION TITLE

Section 7 MECHANICAL COMPLETION STATUS INDEX - MECHANICAL DISCIPLINE

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 50-00 & process: MC & discipline : M

Mechanical	50-00 Seawater Intake System (Lifting Pumps)						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
P-50001A	Sea Water Pump A	ONSHORE	C10002365	CGX01	100	2025-03-12	-
		OFFSHORE	C10004930	CGX01	0	-	-
P-50001B	Sea Water Pump B	ONSHORE	C10002366	CGX01	100	2025-03-01	-
		OFFSHORE	C10004931	CGX01	0	-	-
V-50000A	Vessel - pump A	OFFSHORE	C10004853	CDX01	0	-	-
V-50000B	Vessel - pump B	OFFSHORE	C10004854	CDX01	0	-	-

ITEM	Tag	P-50001A	: Sea Water Pump A		Dwg	123A90-DDL-PR-PID-80021	
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)		Module	LD	
TASK	code	C10002365	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline Mechanical	Form	CGX01	Pump

1	Nameplates are in specified language(s) and details correct, in accordance with drawings.	PL
2	Check that the holding down arrangements are correct.	OK
3	Check for mechanical damages.	OK
4	Check lubrication system. - Ensure correct quantity & grade of lubricant is installed.	PL
5	Pump case vent / drain installed in accordance with drawings.	Note
6	Suction / Discharge nozzles installed in accordance with drawings. No misalignment of pipe / pump case flanges.	PL
7	Mechanical seal system installed in accordance with drawings and flushed.	PL
8	Instruments / Valves / Strainers as per vendor P&ID.	PL
9	Electrical grounding boss installed per drawings.	Note
10	Check direction / rotation mark manually & labeled arrow card	Note
11	Confirm operating and / or safety instruction tags / labels are correct.	OK
12	Check base frame drains / pumps drains are correctly connected (if applicable).	NA
13	Check any damages of coupling, engine, motor.	OK
14	If required produce Red Line Mark Up for "AS BUILT".	

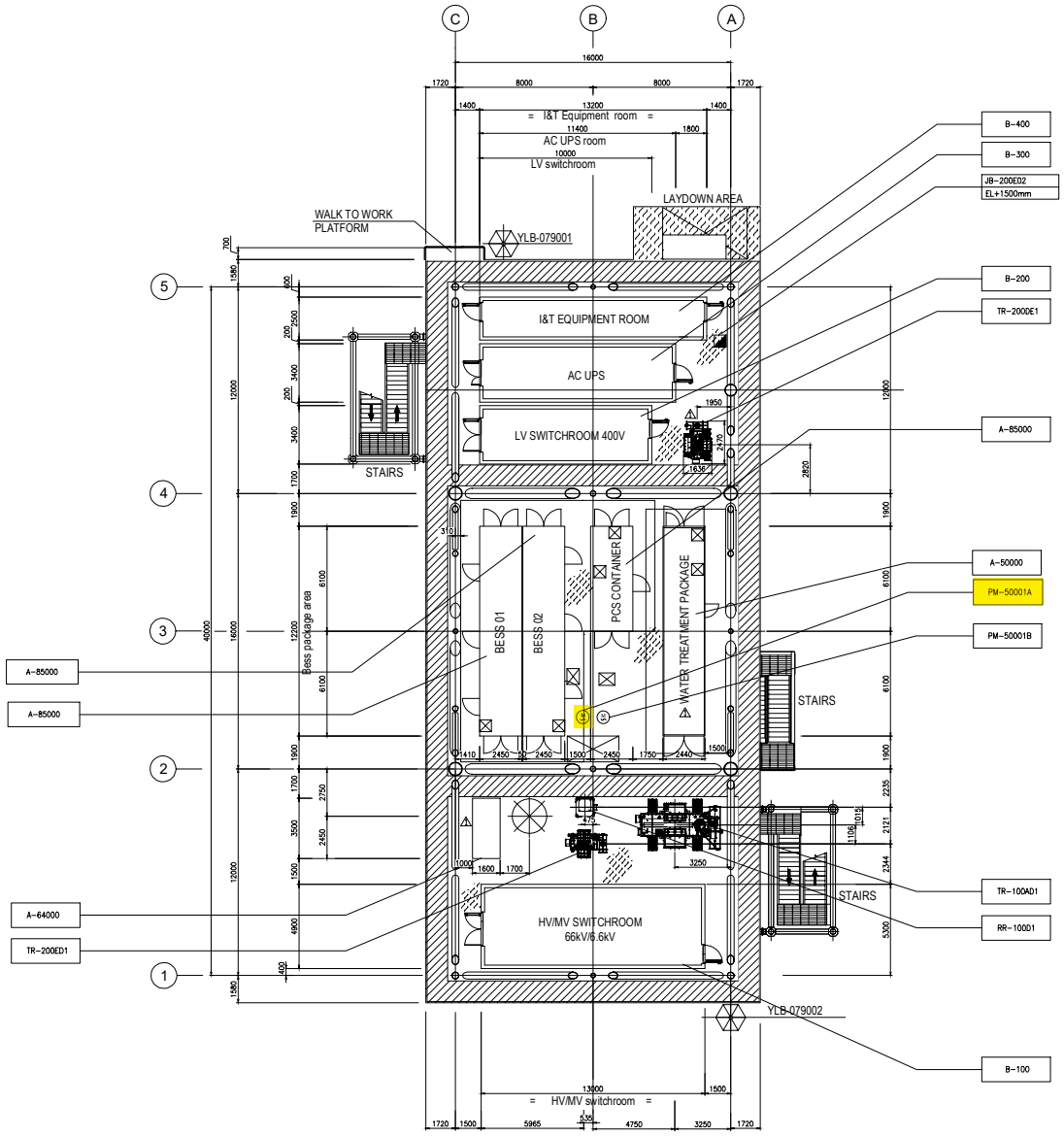
Comments

1. Nameplate of Pump is correct. Nameplate of Gearbox is correct (but pinned upside down). Nameplate of motor has PL.
4. Not possible to control lubricant system at this stage. All the carters have been closed around the pump case. Seal system not installed.
5. Vent of Gearbox OK. Not possible to check other vents/drain. All the carters have been closed around the pump case. Seal system not installed.
6. Discharge nozzle aligned and conforming to drawing.
8. See punch of seal system. Other items installed correctly.
9. Earthing point on pump case is correct. Not bonded to earth because the pump shall be dismantled and reinstalled at sea.
10. Rotation of shaft not possible to verify because the pump case carters are closed. Arrow direction on motor label present.
13. Check performed where possible.

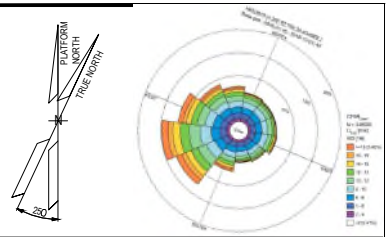
	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Lorenzo Novaga	
Date	2025-02-18	2025-03-12	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-02-18T12:48:24.261Z	PROVERLIS Digitaly signed by Lorenzo Novaga 2025-03-12T15:30:04.932Z	

DRAWING NO. 123A90-DDL-EL-DL-20101

REV. 01



PLAN ON LOWER DECK
EL+23.310 T.O.S.



NOTES

1. ALL DIMENSIONS IN MM UNLESS NOTED OTHERWISE.
2. ALL ELEVATIONS IN METERS. UNLESS NOTED OTHERWISE.
3. ELEVATIONS REFER TO T.O.S.
4. FOR ELECTRICAL EQUIPMENT LAYOUT OF CONTAINERS B-100, B-200, B-300, B-400 REFER TO THE RESPECTIVE LAYOUTS.

LEGEND

- ELECTRIC MOTOR – LOW VOLTAGE
- INTERFACE PANEL
- JUNCTION BOX
- JB-200E2 / EL+500mm — TAG ITEM / REFERED ELEVATION TO T.O.S. (TOP OF STEEL)

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-EL-DL-20106	ELECTRICAL EQUIPMENT LAYOUT UPSs & BATTERIES SWITCHROOM
123A90-DDL-IN-DL-40012	ITER EQUIPMENT LAYOUT
123A90-DDL-EL-DL-20104	ELECTRICAL EQUIPMENT LAYOUT HV & MV SWITCHROOM
123A90-DDL-EL-DL-20105	LV SWITCHGEAR ROOM EQUIPMENT LAYOUT

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	06/05/24	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	04/03/24	SAM	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND | ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
ELECTRICAL EQUIPMENT LAYOUT
LOWER DECK

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE 1:150

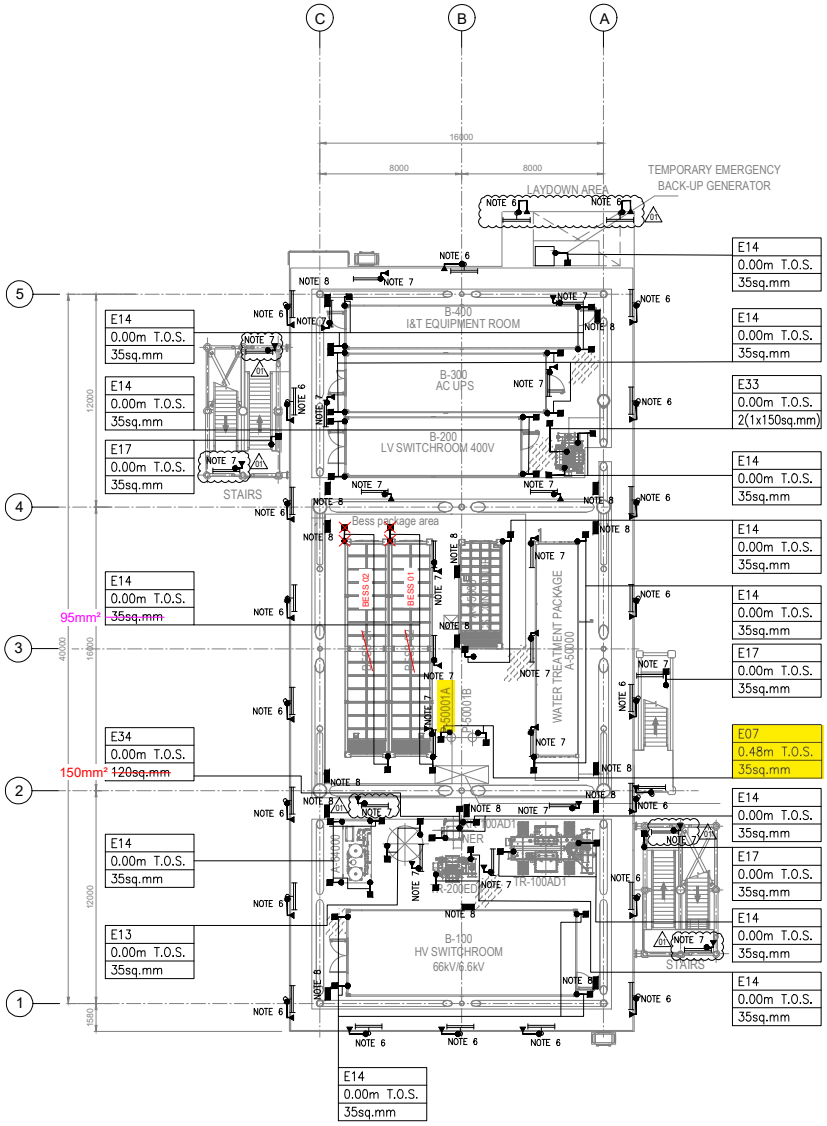
DRAWN SAM | CHECKED FMA/AMA | APPROVED FPA/DLO | DATE 04/03/24

A1 | DRAWING NO. 123A90-DDL-EL-DL-20101 | SHEET 001 | REV. 01

File Name : - 123A90-DDL-EL-DL-20101-Electrical Equipment Layout - Lower Deck

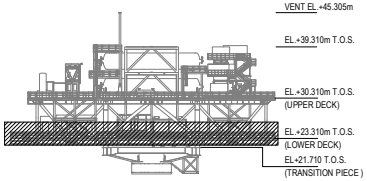
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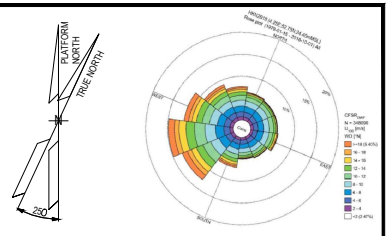
REV. 01



PLAN ON LOWER DECK
EL+23.310 T.O.S.

KEY PLAN





NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DOCUMENT IS ONLY VALID FOR EARTHING LAYOUT.
4. ALL ELECTRICAL EQUIPMENT NOT DIRECTLY WELDED TO SKID FRAME SHALL BE BONDED TO STEEL TO THE STRUCTURE OF SKID BASEFRAME.
5. FOR LIGHTNING PROTECTION SYSTEM SURGE PROTECTIVE DEVICES (SPD), REFER TO THE DOCUMENT 123A90-DDL-EL-RE-20154.
6. ALL NON-WELDED POLES WILL BE EARTHED AS PER TYPICAL E05 AND E24.
7. ALL LINEAR LIGHTING FIXTURE WILL BE EARTHED AS PER TYPICAL E32.
8. EARTH BAR WILL BE FIXED TO THE PRIMARY BEAMS OF THE UPPER DECK. COMPLETE EARTHING INCLUDING WITH 2 THREADED STUDS. ALL EARTH BAR WILL BE EARTHED AS PER TYPICAL E03D / 6.00M T.O.S. / 35 SQ MM.
9. EQUIPOTENTIAL BONDING GROUPING FOR BOLTED HANDRAILS ARE PROVIDED EVERY 3M FOR THE ENTIRE PERIMETER AS TYPICAL E16 AND WILL BE DEFINED DURING ASSEMBLY PHASE

LEGEND

- LIGHTING FIXTURE POLE MOUNTED
- LINEAR LIGHTING FIXTURE
- EARTHING BOSS AISI316L
- COMPRESSION TYPE LUG TINNED COPPER
- THREADED STUD FOR EARTHING CONNECTION
- Exx EARTHING TYPICAL CODE
- EARTHING BAR

TYP.	TYPICAL
ELE	ELEVATION
SIZE	

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-EL-DD-20090	ELECTRICAL TYPICAL INSTALLATION DETAILS - EARTHING SYSTEM
123A90-DDL-EL-RE-20154	LIGHTNING PROTECTION SYSTEM CALCULATION REPORT
123A90-DDL-EL-DL-20119	LIGHTING & SOCKET LAYOUT - LOWER DECK
123A90-DDL-EL-DL-20101	ELECTRICAL EQUIPMENT LAYOUT - LOWER DECK

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	25/07/24	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	29/05/24	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
EARTHING & LIGHTNING LAYOUT
LOWER DECK

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN SPS	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 25/07/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20133	SHEET 001	REV. 01

SHEET 001 OF 002

VALID FOR CONSTRUCTION

REV.:	DATE:	SIGNATURE:
1_D	12/12/24	C.Pilato

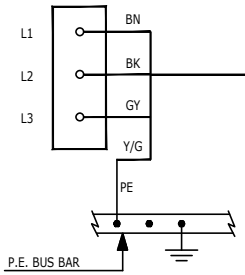
ROSETTI MARINO SpA

File Name : 123A90-DDL-EL-DL-20133

FROM	TO

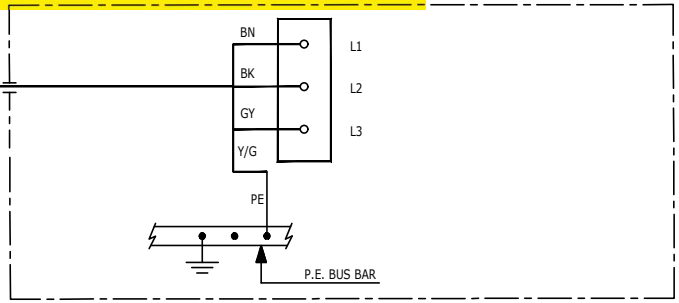
DESCRIPTION: LV SWITCHGEAR
TAG NUMBER: SG-200N1

COLUMN/CUBIC.: A7/+01

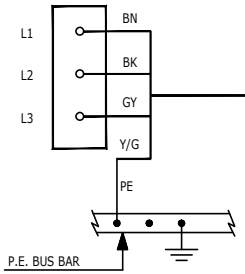


83018-CEL
4G4 mm²

DESCRIPTION: SEA WATER INTAKE PUMP A
TAG NUMBER: PM-50001 A

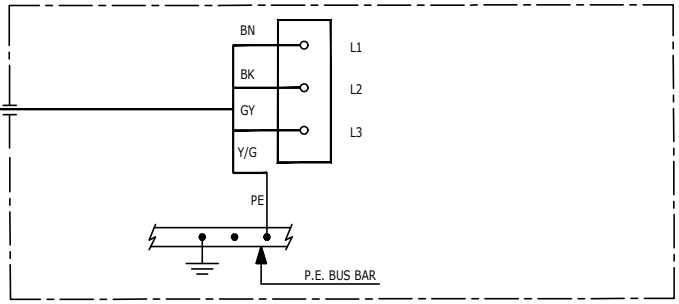


COLUMN/CUBIC.: A6/+01

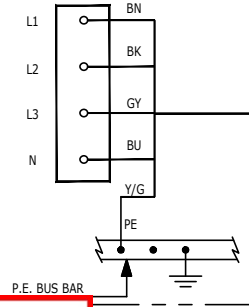


83019-CEL
4G4 mm²

DESCRIPTION: SEA WATER INTAKE PUMP B
TAG NUMBER: PM-50001 B



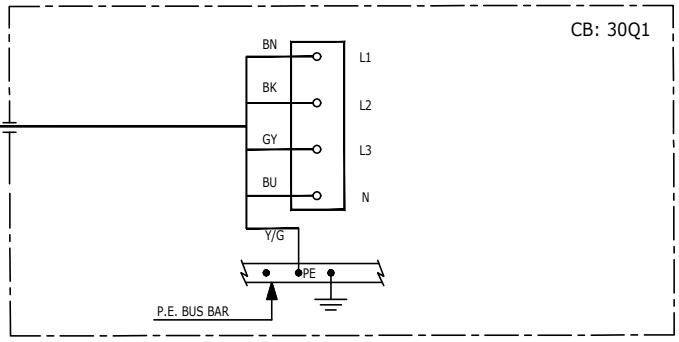
COLUMN/CUBIC.: A3/+04



83020-CEL
5G16 mm²

DESCRIPTION: CRANE
TAG NUMBER: JB-200E3

CB: 30Q1



VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DG-20149**

REV.:	DATE:	SIGNATURE:
2_K	12/02/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	19/11/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	16/10/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	SAI	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL INTERCONNECTING WIRING DIAGRAM
LV SWITCHGEAR SG-200N1

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE : 1:X

A3

DRAWING NO. 123A90-DDL-EL-DG-20149

SHEET 024

REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DG-20149 Rev. 02

DRAWING NO. DRAWING_NO.

REV. REV

P-50001 A/B

SEA WATER LIFT PUMPS

POWER : 1.6 KW
FLOW : 2.5 m³/h
DESIGN P/T : 7.6 barg / 80°C
DISCHARGE PRESSURE : 5.6 barg (NOTE 9)
MATERIAL : SDSS

B-50013 A/B

SEA WATER LIFT PUMPS
CAISSONS

SIZE : 343 mm (ID) x 27308 mm (H)
MATERIAL : CS + CA

123A90-DDL-PR-PID-80022
BIOCIDE DOSING UNIT
1"-CI-029-01CP-E
3/4" BLPH-MV-214
3/4"x1/2" 1/2"
CONC. RED. BLPH-MV-215

1-1/2"-SWS-035-01SD-E
123A90-DDL-PR-PID-80022
SEA WATER COARSE FILTER PACKAGE

1"-CI-030-01CP-E
1"-CI-032-01CP-E

BLPH-MV-043 1.1/2"
SWS-035
SWS-031
1-1/2"-SWS-031-01SD-E

BLPH-MV-050 1.1/2"
SWS-035
SWS-033
1-1/2"-SWS-033-01SD-E

50 XY 001 / 50 XV 001 — IA — NOTE 5 — FC TYP.1
50 XY 002 / 50 XV 002 — IA — NOTE 3 — FC TYP.1
50 RO 001 — NOTE 7
3/4" BLPH-MV-044
1.1/2" BLPH-NRV-004
INSTR. PIPING
50 PI 001 / 50 PT 001 — H L — 2" — 2" x 1.5" — E
BLPH-MV-464
1"-SWS-146-01SD-E

50 XY 003 / 50 XV 003 — I.A. — NOTE 5 — FC TYP.1
50 XY 004 / 50 XV 004 — I.A. — NOTE 3 — FC TYP.1
50 RO 002 — NOTE 7
3/4" BLPH-MV-054
1.1/2" BLPH-NRV-008
INSTR. PIPING
50 PI 002 / 50 PT 002 — H L — 2" — 2" x 1.5" — E
BLPH-MV-465
1"-SWS-147-01SD-E

03

BLPH-MV-501
BLPH-MV-503
50 LG 001
50 RO 003
BLPH-MV-502
V-50000A
NOTE 11

LOCAL/REMOTE 50 XI 002A
STOP 50 HS 005A
START 50 HS 001A
RUNNING/STOPPED 50 XI 001A
AUTO START READY 50 XI 003A
TRIPPED/FAULT 50 XA 004A
MOTOR STOPPED BY LOCAL PUSH BUTTON 50 XA 006A
83-XS-001A
ESD

1" BLPH-NRV-007
MCC
PM-50001A
M
RS

1D2 50 PSV 006 BLOCKED OUTLET SET @ 7.6 barg
SP 0043
1"-SWS-222-01SD-E
BLPH-MV-048 1"
BLPH-MV-469
SB LO
1"-SWS-288-01SD-E
2"-SWR-289-01SD-N
NOTE 10

BLPH-MV-511
BLPH-MV-513
50 LG 002
50 RO 004
BLPH-MV-512
V-50000B
NOTE 11

LOCAL/REMOTE 50 XI 002B
STOP 50 HS 005B
START 50 HS 001B
RUNNING/STOPPED 50 XI 001B
AUTO START READY 50 XI 003B
TRIPPED/FAULT 50 XA 004B
MOTOR STOPPED BY LOCAL PUSH BUTTON 50 XA 006B
83-XS-001B
ESD

BLPH-NRV-024 1"
MCC
PM-50001B
M
RS

1D2 50 PSV 007 BLOCKED OUTLET SET @ 7.6 barg
SP 0044
2"-SWR-287-01SD-N
1"-SWS-221-01SD-E
BLPH-MV-051 1"
BLPH-MV-470
SB LO
1"-SWS-286-01SD-E
NOTE 10

LOWER DECK: +23.310 m
TOP OF CAISSON: +21.808 m
SUCTION
NOTE 1, 2, 8
P-50001A
PUMP RETENTION BARS
EL: - 5.500 m
B-50013A

LOWER DECK: +23.310 m
TOP OF CAISSON: +21.808 m
SUCTION
NOTE 1, 2, 8
P-50001B
PUMP RETENTION BARS
EL: - 5.500 m
B-50013B

NOTES

1. SEAWATER LIFT PUMPS ARE RATED 2 X 100%
2. AUTO START OF DESIGNATED STANDBY PUMP ON LOSS OF RUNNING STATUS AND DISCHARGE LOW PRESSURE ALARM OF DUTY PUMP.
3. VALVE TO BE OPENED WHEN PUMP IS OFFLINE TO DOSE CAISSON WITH TREATED SEAWATER TO PREVENT BIOLOGICAL GROWTH.
4. DELETED.
5. SOFTWARE INTERLOCK PREVENTS PUMPS FROM STARTING IN CASE THE RELEVANT XV VALVE IS FULLY CLOSED. 03
6. DELETED.
7. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "123A90-DDL-IN-DS-40054 - TECHNICAL DATASHEET FOR RESTRICTION ORIFICE".
8. LOGIC FOR CONTROL OF P-5001A/B THAT PREVENTS SIMULTANEOUS RUNNING OF A AND B PUMP IS PROVIDED.
9. DISCHARGE PRESSURE REFERS TO THE FLANGE DISCHARGE OF THE PUMP AT LOWER DECK.
10. ROUTED TO THE SEA.
11. VESSELS V-50000A/B ARE INSULATED AND HEAT TRACED. 03

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.
5. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

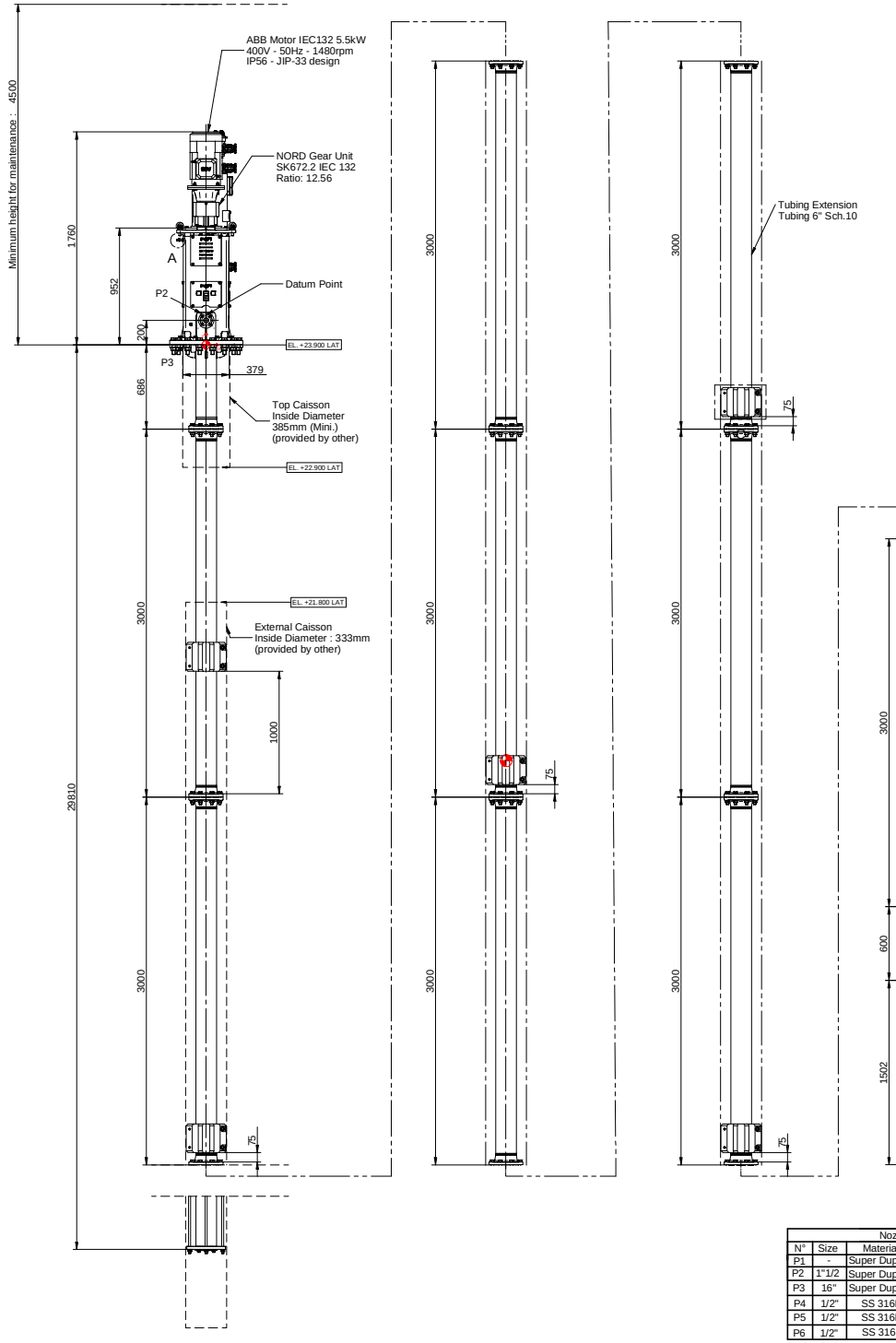
CROSSWIND

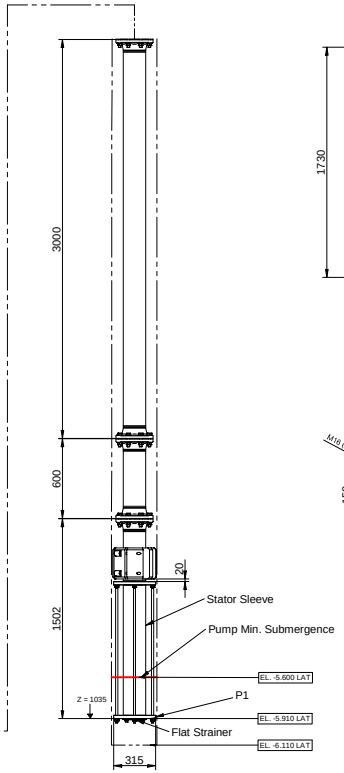
ROSETTI MARINO

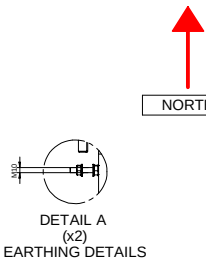
TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
SEA-WATER INTAKE SYSTEM SHEET 1

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80021	SHEET 001	REV. 03

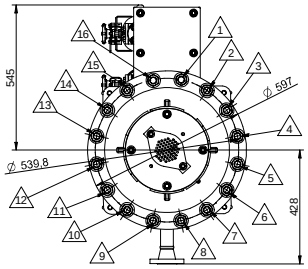
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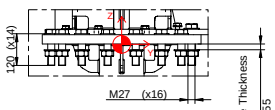




DETAIL A
(x2)
EARTHING DETAILS

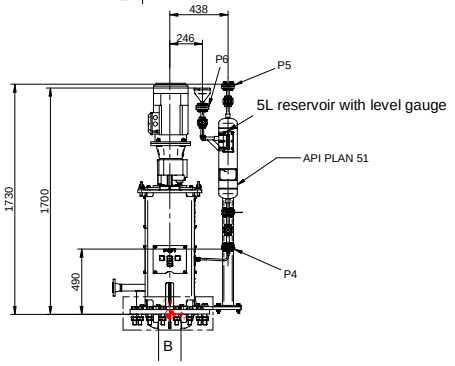


BOTTOM VIEW

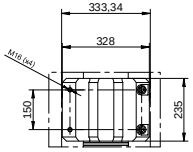


DETAIL B
MOUNTING DETAILS

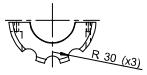
	Foundation Loads (N)
1	2510 (Compression)
2	2510 (Compression)
3	2510 (Compression)
4	2510 (Compression)
5	2510 (Compression)
6	2510 (Compression)
7	2510 (Compression)
8	2510 (Compression)
9	2510 (Compression)
10	2510 (Compression)
11	2510 (Compression)
12	2510 (Compression)
13	2510 (Compression)
14	2510 (Compression)
15	2510 (Compression)
16	2510 (Compression)



SEAL SYSTEM API PLAN 51



DETAIL C
CENTRALIZERS (x6)



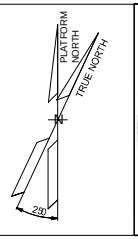
Note :
Grooves to allow
byocide entry.

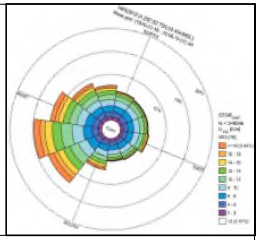
	C.O.G
X	7
Y	-1
Z	-12398

WEIGHT	
Total dry	1967 kg
Operating	4072 kg
Details for maintenance	
Pump Casing	230 kg
Pump Trunk	242 kg
Pump Extensions (x9)	130 kg
Pump Shaft Line	30 kg
Motor	81 kg
Gearbox	26 kg
Stator	33 kg
Rotor	16 kg
Coupling	25 kg
Seal System + Stand	54 kg
Centralizers (x6)	10 kg

Nozzle list					Allowable Nozzle Load (API 676)					
					Forces (kN)			Moments (N.m)		
N°	Size	Material	Rating	Service	Fx	Fy	Fz	Mx	My	Mz
P1	-	Super Duplex	strainer	Suction	-	-	-	-	-	-
P2	1"1/2	Super Duplex	**150# RF**	Discharge	0.65	0.65	0.65	350	350	350
P3	16"	Super Duplex	150# RF	Mounting	5.20	5.20	5.20	2800	2800	2800
P4	1/2"	SS 316L	300# RF	To Quench	-	-	-	-	-	-
P5	1/2"	SS 316L	300# RF	P51 Fill	-	-	-	-	-	-
P6	1/2"	SS 316L	300# RF	P51 Vent	-	-	-	-	-	-

PCM keep it moving
N° (Manufacturing Unique Serial Number)
Item 317873
Cyl 462 cm3 Rpm 118 Bar 5.9
Mod 25A24 2024
Ref P-5001A/B
6 boulevard Bineau - 92300 Levallois-Perret - FRANCE
Manufacturer: PCM EUROPE SAS
www.pcm.eu
CE Made in France





NOTES

Dimensions tolerances as per ISO2768 vK.

API Plan 13 is provided to vent the mechanical seal of vertical pumps. Tubing made in Stainless Steel 316L.

LEGEND

Z = Minimum distance for stator dismantling.

HOLDS

REV	DATE	DRN	CHKD	APPD	DESCRIPTION
03	17/09/24	ARS	SBI	ARH	ISSUED FOR CONSTRUCTION (IFC)
02	15/08/24	ARS	SBI	ARH	ISSUED FOR CLIENT REVIEW (IFR)
01	15/07/24	ARS	CLL	ARH	ISSUED FOR CLIENT REVIEW (IFR)
00	12/06/24	VAP	CLL	ARH	ISSUED FOR CLIENT REVIEW (IFR)

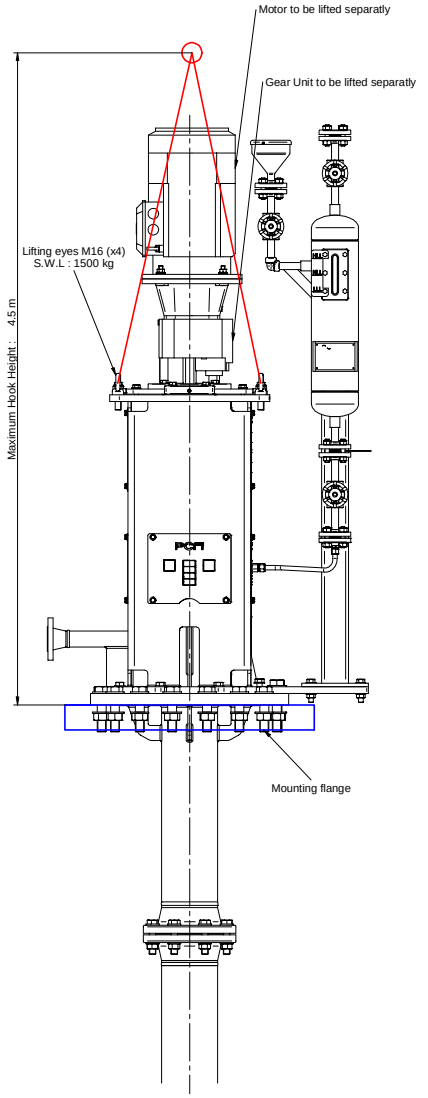
CROSSWIND
ROSETTI MARINO

TITLE
BASE LOAD POWER HUB (BLPH)
GENERAL ARRANGEMENT AND DIMENSIONAL OUTLINE DRAWINGS

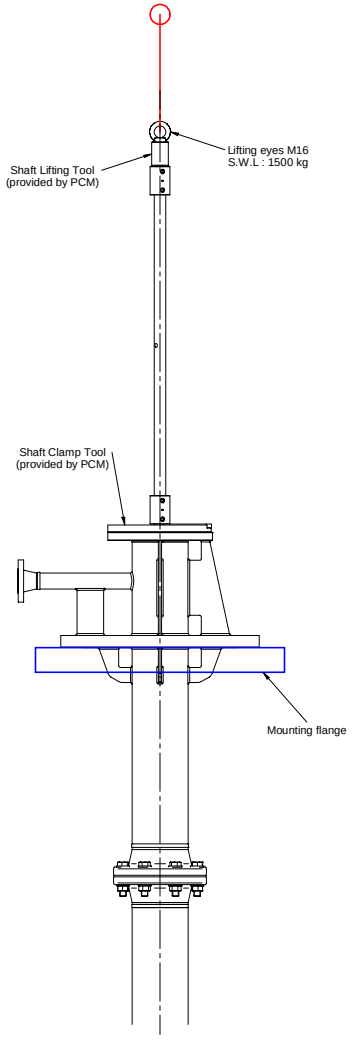
CONTRACT NO. 172400036-MAC-DA-00004 SCALE 1:20
DRAWN ARS CHECKED SBI APPROVED CLL DATE 17/09/24
A1 DRAWING NO. 172400036-MAC-DA-00004 SHEET 03 REV. 03

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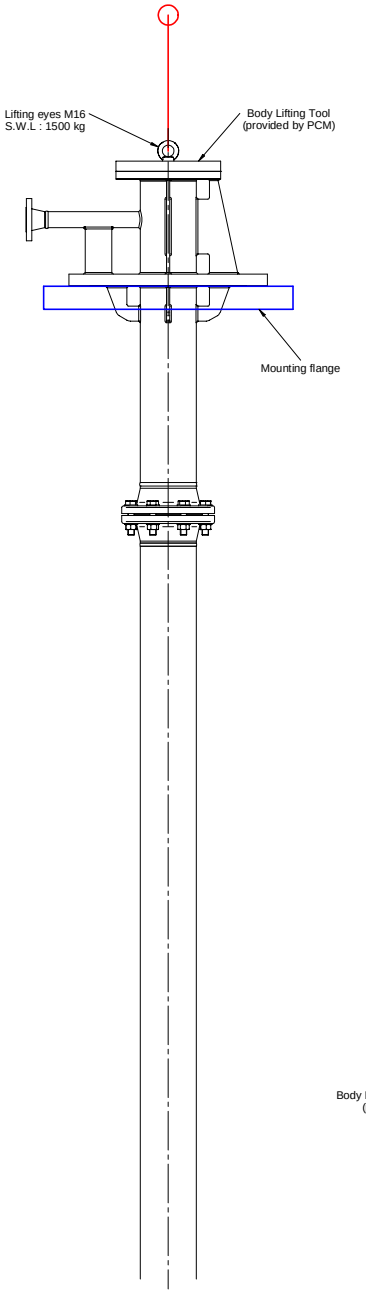
LIFTING DETAILS :
TRUNK

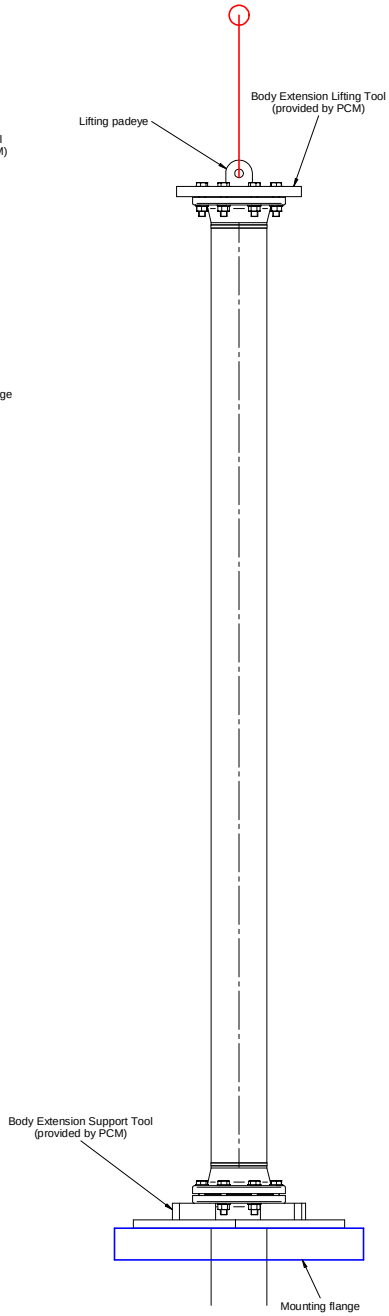


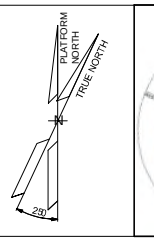
LIFTING DETAILS :
SHAFT EXTENSION

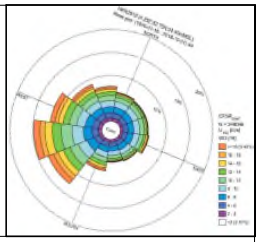


LIFTING DETAILS :
BODY & BODY EXTENSION









NOTES

Document Reference:
INSTALLATION, OPERATING AND MAINTENANCE MANUAL (PUMP AND MOTOR, INCLUDING SITE ERECTION INSTRUCTIONS AND PROCEDURES)

Document number: 1724000936-MAC-MAN-00031

LEGEND

HOLDS

REV	DATE	DRN	CHKD	APPD	DESCRIPTION
03	17/09/24	AFS	SH	AHH	ISSUED FOR CONSTRUCTION (IFC)
02	13/08/24	AFS	SH	AHH	ISSUED FOR CLIENT REVIEW (IFR)
01	15/07/24	AFS	SH	AHH	ISSUED FOR CLIENT REVIEW (IFR)
00	17/06/24	AFS	SH	AHH	ISSUED FOR CLIENT REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE
BASE LOAD POWER HUB (BLPH)
GENERAL ARRANGEMENT AND DIMENSIONAL OUTLINE DRAWINGS

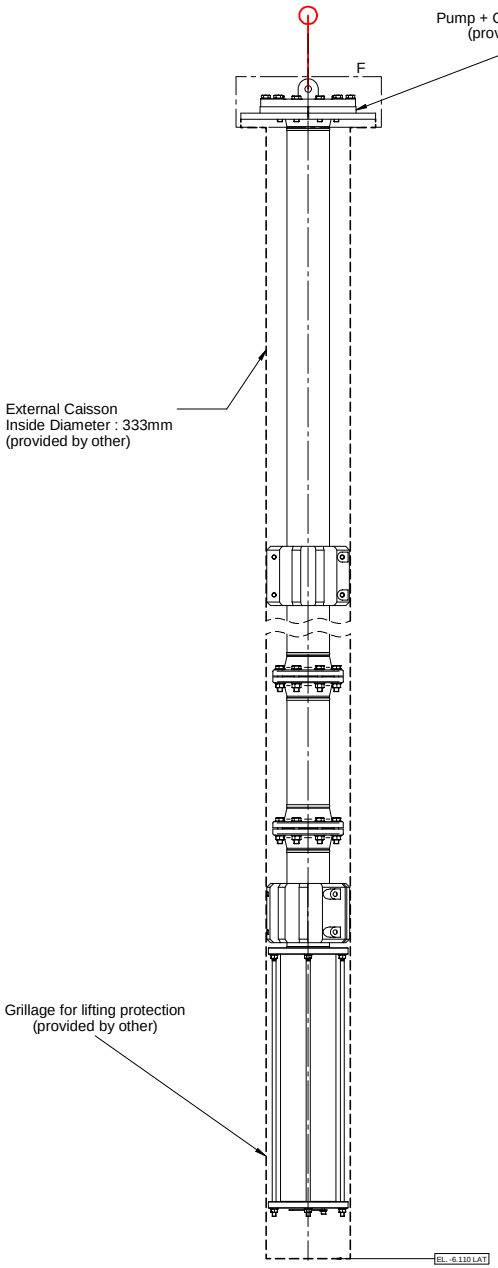
CONTRACT NO. TITLE OR PROJECT/DRAWING NOT NEEDED AND N/A | SCALE 1:8

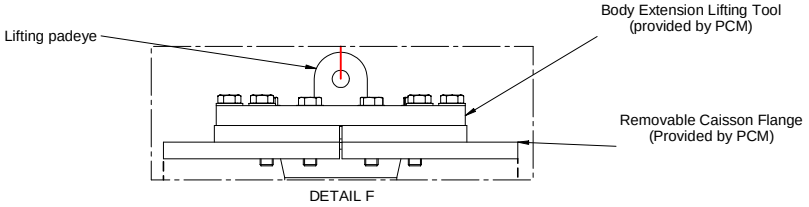
DRAWN AFS | CHECKED SH | APPROVED AHH | DATE 17.09.24

A1 | DRAWING NO. 1724000936-MAC-DA-00004 | SHEET 04 | REV. 03

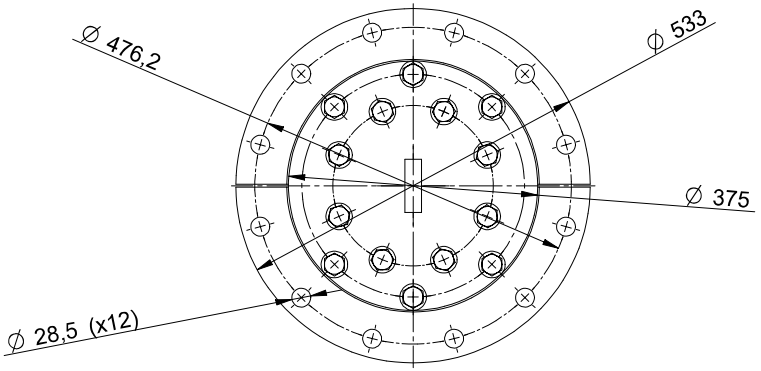
1724000936-MAC-DA-00004 rev. 03

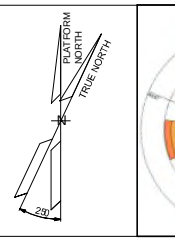
LIFTING DETAILS :
PUMP + CAISSON

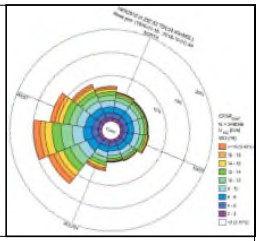




DETAIL F







NOTES

Document Reference:
INSTALLATION, OPERATING AND MAINTENANCE MANUAL (PUMP AND MOTOR, INCLUDING SITE ERECTION INSTRUCTIONS AND PROCEDURES)

Document number: 1724000936-MAC-MAN-00031

LEGEND

HOLDS

REV	DATE	DRN	CHKD	APPD	DESCRIPTION
03	17/09/24	AFS	SH	AHH	ISSUED FOR CONSTRUCTION (IFC)
02	13/08/24	AFS	SH	AHH	ISSUED FOR CLIENT REVIEW (IFR)
01	15/07/24	AFS	SH	AHH	ISSUED FOR CLIENT REVIEW (IFR)
00	12/06/24	AFS	SH	AHH	ISSUED FOR CLIENT REVIEW (IFR)

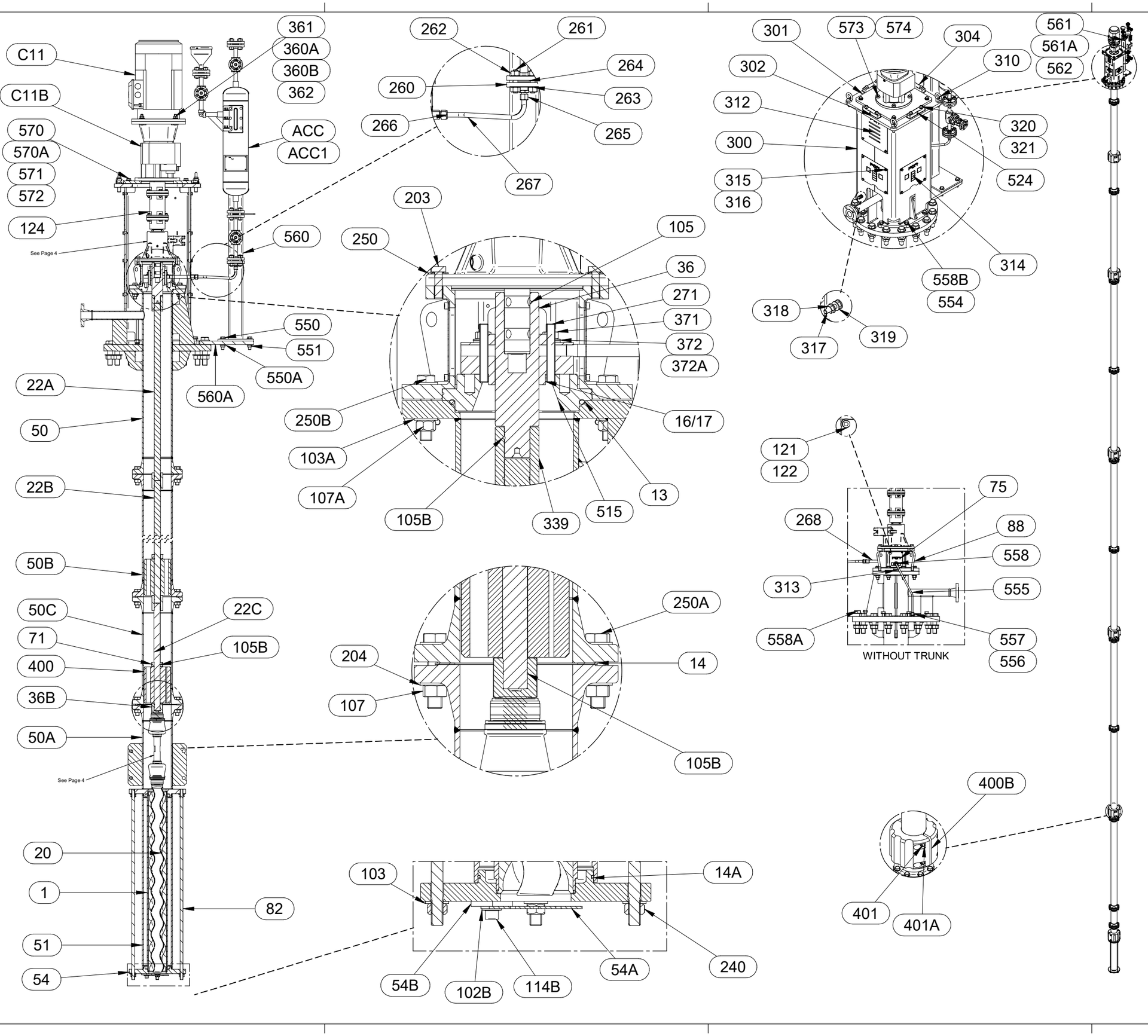
CROSSWIND

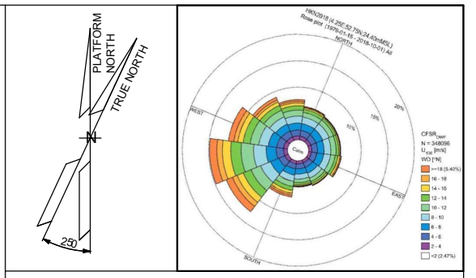
ROSETTI MARINO

TITLE
BASE LOAD POWER HUB (BLPH)
GENERAL ARRANGEMENT AND DIMENSIONAL OUTLINE DRAWINGS

DRAWN: AFS	CHECKED: SH	APPROVED: AHH	DATE: 17/09/24
A1	DRAWING NO. 1724000936-MAC-DA-00004	SHEET 05	REV. 03

1724000936-MAC-DA-00004 rev. 03





NOTES

LEGEND

HOLDS

PCM keep it moving

REV.	DATE	DRN	CHKD	APPD.	DESCRIPTION
01	23/08/24	APD	GLL	AHN	ISSUE FOR INFORMATION (IFI)
00	24/07/24	APD	GLL	AHN	ISSUE FOR CLIENT REVIEW (ICR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
PUMP CROSS SECTIONAL DRAWING AND BILL OF MATERIAL
(INCLUDING SPEED REDUCER)

CONTRACT NO./TITLE : CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE

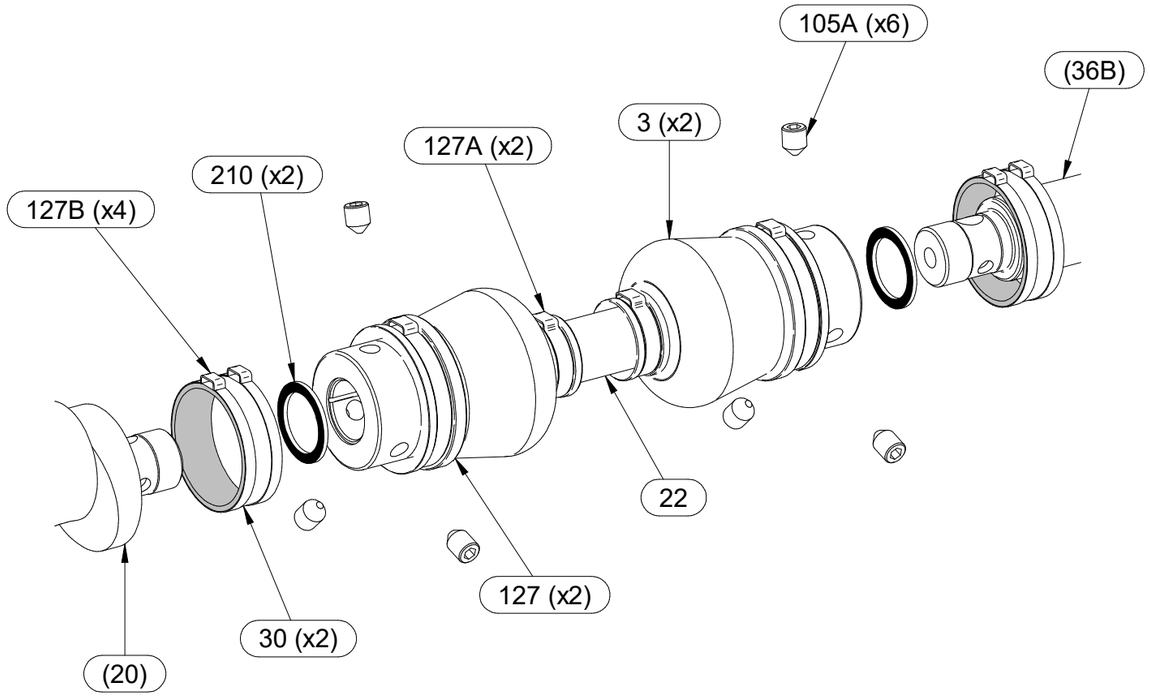
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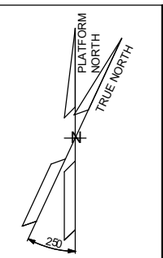
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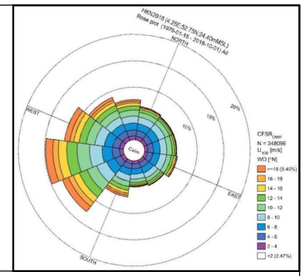
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DRAWING NO.: 1724000936-MAC-DD-0000

REV.: 01



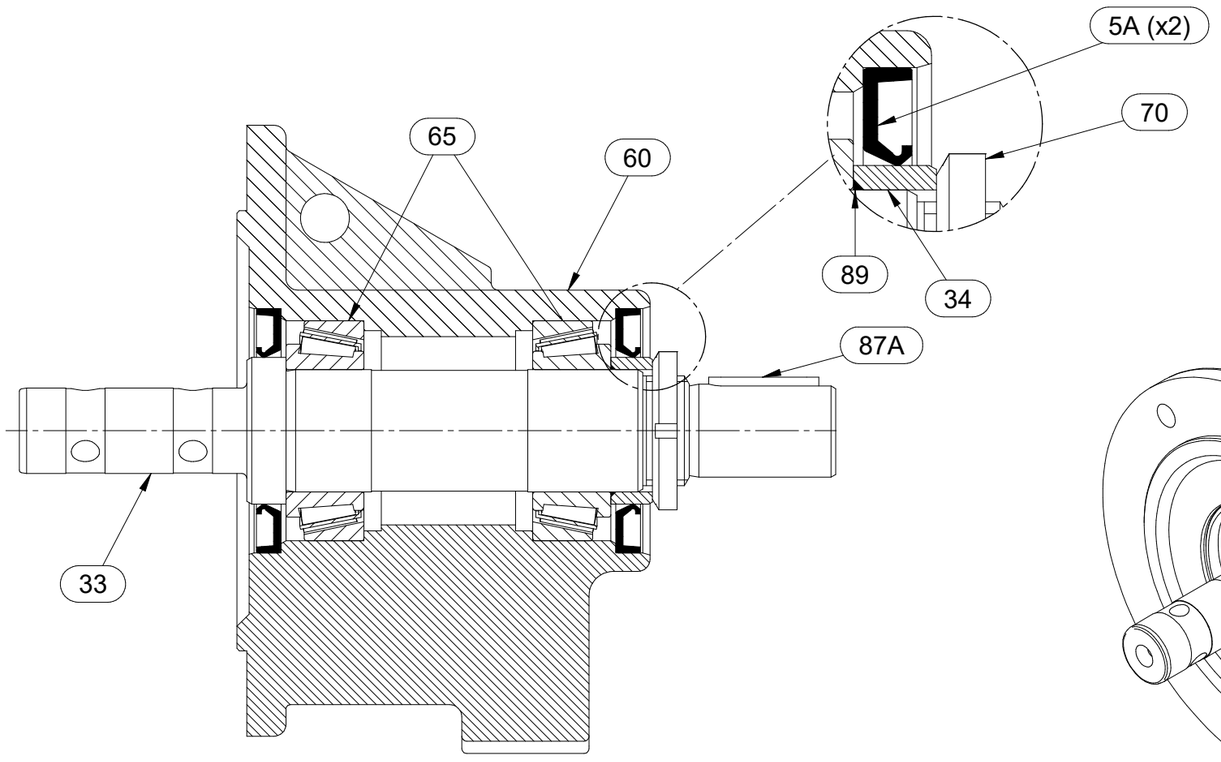


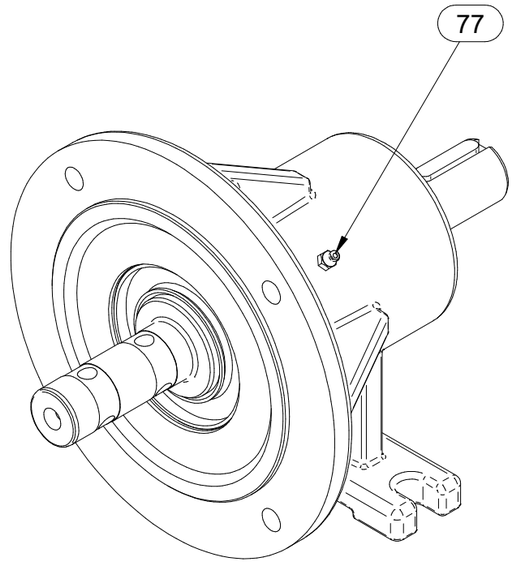


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LEGEND

HOLDS





REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
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00	24/07/24	APD	GLL	AHN	ISSUE FOR CLIENT REVIEW (ICR)

PCM keep it moving

CROSSWIND

ROSETTI MARINO

TITLE :

BASE LOAD POWER HUB (BLPH)

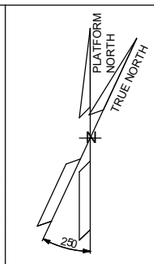
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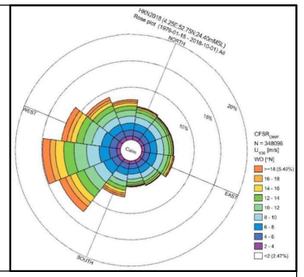
(INCLUDING SPEED REDUCER)

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE
DRAWN APD	CHECKED GLL	APPROVED AHN		DATE 23/08/24
A1	DRAWING NO. 1724000936-MAC-DD-00006		SHEET	REV. 01

File Name: - 1724000936-MAC-DD-00006

N°	Reference	Designation	Material	Qty	Spare parts code
1	77418-1646	STATOR 20I16 25700	NBR	1	STA00071
3	T030004160	SHEATH C6 C7 M6 M7 160	NBR	2	NM-1374-PR
5A	C09070P160	ROTARY SEAL A 60X100X10	NBR	2	-
13	40687-160	O-RING 170.82X6.99	NBR	1	NM-2893-PR
14	C09002T118	FLANGE GASKET 6 CL150	Synthetic Fiber + NBR	11	-
14A	45892-160	O RING 152X3.53	NBR	2	NM-4290-PR
16/17	DIGIAN-392481-01	MECHANICAL SEAL	DSS S31803 - NBR	1	DIGIAN-392481-01
20	M-001931A257TS	ROTOR 25-4P-E10 R1 C M	SDSS - UNS S32760	1	M-001931A257
22	NM-1363	N006LA C7M E-CTFE NBR	NBR / Halar	1	NM-1363-PR
22A	W-008209257	EXTENSION FIX D35 988 AV7	SDSS - UNS S32760	1	-
22B	W-004958300257	EXTENSION SHAFT D35 AV7	SDSS - UNS S32760	9	-
22C	W-004958060257	EXTENSION SHAFT D35 AV7	SDSS - UNS S32760	1	-
30	M-002023209	SHEATH OF PROTECTION C6C7	NBR	2	NM-3384-PR
33	M-001300018	BEARING SHAFT C6C7 D35D38	SS431	1	-
34	28093-043	SHAFT RING D50	Steel C35E	1	-
36	W-004571020	DRIVING SHAFT D60 AV6-7	DSS - S31803	1	-
36B	W-004946257	REDUCED DRIVING SHAFT AV7	SDSS - UNS S32760	1	-
50	W-008202257WP	BODY 6IN AV7	SDSS - UNS S32760	1	-
50A	W-008199257WP	STATOR PIPING 25AV24	SDSS - UNS S32760	1	-
50B	W-004942300257WP	EXTENSION BODY 6IN AV7	SDSS - UNS S32760	9	-
50C	W-004942060257WP	EXTENSION BODY 6IN AV7	SDSS - UNS S32760	1	-
51	W-008200257	STATOR CASING 25AV24	SDSS - UNS S32760	1	-
54	W-008198257	PIPE STATOR 25AV24	SDSS - UNS S32760	1	-
54A	W-008189257T	FLAT STRAINER 25AV AV7	SDSS - UNS S32760	1	-
54B	N-108928257T	PLAT PERCE 7MM	SDSS - UNS S32760	2	-
60	T600004051	BEARING HOUSING F215 M6M7	Cast iron	1	-
65	40121-000	BEARING 33210A	-	2	-
70	40102-043	NUT KM M45	Steel C35E	1	-
71	W-004947257	CENTERING END STOP D35	SDSS - UNS S32760	11	-
75	W-007587014	GUARD AV7	SS316L	4	-
77	C10002C000	GREASE ZERK M8X1.25	-	1	-
82	C06177W257T	STUD M16 BM40-1023	SDSS - UNS S32550	4	-
87A	40751-046	KEY A SHAPE 10X8X45	Steel C45E	1	-
88	W-007527274	STRONG SPACER AV7	CS A570 gr. 50	1	-
89	C09035C160	O-RING 50X2.5	NBR	1	-
102B	C06029G257T	WASHER CS12 M	SDSS - UNS S32550	2	-
103	C06001I257T	WASHER M16 200HV	SDSS - UNS S32550	8	-
103A	C06001I014	WASHER M16 200HV	SS316L (A4-70 fatsener)	16	-
105	C06125C020	SCREW HC M12-16 TR	DSS - S31803	3	-
105A	C06125C014	SCREW HC M12-16 TR	SS316L (A4-70 fatsener)	6	NM-1374-PR
105B	C06125C257T	SCREW HC M12-16 TR	SDSS - UNS S32550	81	-
107	C06002J257	HEX NUT H M20	SDSS - UNS S32550	88	-
107A	C06002I014	HEX NUT H M16	SS316L (A4-70 fatsener)	8	-
114B	C06016D257TS	SCREW CHC M12-30	SDSS - UNS S32550	2	-
114C	C06240E257	SCREW HC M12-25 CU	SDSS - UNS S32550	2	-
121	C06162C087	CAPTIVE WASHER M5	PETP	16	-
122	C06004F010	SCREW CHC M5-10	SS304 (A2-70 fatsener)	16	-
124	C15099J000	CPG. API610 38X60 35X70	-	1	-
127	C01042Z014	EAR CLAMP D78.3-81.5	SS316L	2	NM-1374-PR
127A	C01042P014	EAR CLAMP D42.3-45.5	SS316L	2	NM-1374-PR
127B	C01042U014	EAR CLAMP D66.3-69.5	SS316L	4	NM-3384-PR
203	C06015E014	SCREW H M12-35	SS316L (A4-70 fatsener)	4	-
204	C06001J257	WASHER M20 200HV	SDSS - UNS S32550	176	-
210	M-002022NBR	GASKET D36XD46X2	NBR	2	NM-3384-PR
240	C06002I257T	HEX NUT H M16	SDSS - UNS S32550	8	-
250	C06029G014	WASHER CS12 M	SS316L (A4-70 fatsener)	4	-
250A	C06203J257TS	SCREW H M20-90	SDSS - UNS S32550	88	-
250B	40371-014	SCREW H M16-80	SS316L (A4-70 fatsener)	8	-
260	N-104597014	FLANGE 1-2 300 3-8 NPT	SS316L	1	-
261	W-007229014	THREADED STUD M12 X 80	SS316L (A4-70 fatsener)	4	-
262	C06002G014	HEX NUT H M12	SS316L (A4-70 fatsener)	8	-
263	C06001G014	WASHER M12 200HV	SS316L (A4-70 fatsener)	8	-
264	C09131A014	SPIRAL WOUND GASKET 1-2IN	SS316L	1	-
265	C14259S014T	UNION MALE 3-8NPT - 1-2IN	SS316L	1	-
266	C14260S014T	UNION FEM. 3-8NPT - 1-2IN	SS316L	1	-
267	F-000335014T	TUBE 1-2IN OD 316L	SS316L	-	-
268	W-003825014	NIPPLE 3-8 NPT	SS316L	1	-
271	W-007229014	THREADED STUD M12 X 80	SS316L (A4-70 fatsener)	4	-
300	W-008268046	TRUNK AV6/7 SHAFT 16IN	CS C15	1	-
301	W-008089014	GEARBOX PLATE AV6/7 D250	SS316L	1	-
302	W-007034014T	SETTING SHIMS AV5	SS316L	4	-
304	W-007035014T	STOP SETTING AV5	SS316L	4	-
310	C02004K014	LIFTING EYE BOLT M16-L46	SS316L	4	-
312	W-008091073	SUP TRUNK COVER AV7	Brass	2	-
313	C06176E014	SCREW HC M5-12 TR	SS316L (A4-70 fatsener)	2	-
314	W-008092073	MS TRUNK COVER AV7	Brass	4	-
315	C06029E014	WASHER CS8 M	SS316L (A4-70 fatsener)	24	-
316	C06032A014	SCREW H M8-20	SS316L (A4-70 fatsener)	24	-
317	W-003790014	THREADED STUD M10 X 55	SS316L (A4-70 fatsener)	2	-
318	C06002F014	HEX NUT H M10	SS316L (A4-70 fatsener)	4	-
319	C06001F014	WASHER M10 200HV	SS316L (A4-70 fatsener)	6	-
320	C06001G014	WASHER M12 200HV	SS316L (A4-70 fatsener)	8	-
321	C06015G014	SCREW H M12-45-30	SS316L (A4-70 fatsener)	8	-
339	W-004945257	EXTENSION JUNCTIOND35 AV7	SDSS - UNS S32760	11	-
360A	C06001G014	WASHER M12 200HV	SS316L (A4-70 fatsener)	4	-
360B	C06029G014	WASHER CS12 M	SS316L (A4-70 fatsener)	4	-
361	W-005833014	THREADED STUD M12 X 60	SS316L (A4-70 fatsener)	4	-
362	C06002G014	HEX NUT H M12	SS316L (A4-70 fatsener)	4	-
371	C06002G014	HEX NUT H M12	SS316L (A4-70 fatsener)	4	-
372	C06001G014	WASHER M12 200HV	SS316L (A4-70 fatsener)	4	-
372A	C06029G014	WASHER CS12 M	SS316L (A4-70 fatsener)	4	-
400	W-004957078	CENTRALIZER D35 AV7	POM H	11	-
400B	N-108969099	EXTERNAL CENTRALIZER AV7	PA 66	12	-
401	C06034P257T	SCREW CHC M16-90-44	SDSS - UNS S32760	24	-
401A	C06001I257T	WASHER M16 200HV	SDSS - UNS S32550	24	-
515	W-008207257	MS SUPORT D90 AV7	SDSS - UNS S32760	1	-
524	C06106H014	SCREW HC M12-40	SS316L (A4-70 fatsener)	4	-
550	C06095C014	SCREW H M14-60-34	SS316L (A4-70 fatsener)	4	-
550A	C06001H014T	WASHER M14 200HV	SS316L (A4-70 fatsener)	8	-
551	C06002H014T	HEX NUT H M14	SS316L (A4-70 fatsener)	4	-
554	C06001I014	WASHER M16 200HV	SS316L (A4-70 fatsener)	8	-
555	45868-014T	TUBE D10 EP.1	SS316L (A4-70 fatsener)	-	-
556	W-004064014	FLOW RESTRICTION 2MM	SS316L (A4-70 fatsener)	1	-
557	C14259B014	UNION MALE 3-8NPT - D10	SS316L (A4-70 fatsener)	1	-
558	C14260B014	UNION FEM. 3-8NPT - D10	SS316L (A4-70 fatsener)	1	-
558A	C06131K014	SCREW H M16-60	SS316L (A4-70 fatsener)	2	-
558B	C06131H014	SCREW H M16-50	SS316L (A4-70 fatsener)	6	-
560	W-008269014	API PLAN 51 SUPPORT	SS316L	1	-
560A	W-008270014	API PLAN 51 FOOT SUPPORT	SS316L	1	-
561	W-007229014	THREADED STUD M12 X 80	SS316L (A4-70 fatsener)	2	-
561A	C06001G014	WASHER M12 200HV	SS316L (A4-70 fatsener)	4	-
562	C06002G014	HEX NUT H M12	SS316L (A4-70 fatsener)	4	-
570	C06001G014	WASHER M12 200HV	SS316L (A4-70 fatsener)	8	-
570A	C06029G014	WASHER CS12 M	SS316L (A4-70 fatsener)	4	-
571	C06002G014	HEX NUT H M12	SS316L (A4-70 fatsener)	4	-
572	C06015K014	SCREW H M12-65-30	SS316L (A4-70 fatsener)	4	-
573	C06001G014	WASHER M12 200HV	SS316L (A4-70 fatsener)	4	-
574	C06015F014	SCREW H M12-40	SS316L (A4-70 fatsener)	4	-
ACC	DI317873-02	API PLAN 51	SS316L (A4-70 fatsener)	1	-
ACC1	DI317873-03	HEATING JACKET P51	-	1	-
C11B	FGAHXCG1256CEAA	RED SK672.1F 132	Cast Aluminum	1	-
C11	DI317873-01	MOTOR 5.5KW	Cast iron	1	-





NOTES

LEGEND

HOLDS

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	23/08/24	APD	GLL	AHN	ISSUE FOR INFORMATION (IFI)
00	24/07/24	APD	GLL	AHN	ISSUE FOR CLIENT REVIEW (ICR)

PCM keep it moving

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
PUMP CROSS SECTIONAL DRAWING AND BILL OF MATERIAL
(INCLUDING SPEED REDUCER)

CONTRACT NO./TITLE : CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE :
DRAWN APD | CHECKED GLL | APPROVED AHN | DATE 23/08/24
A1 | DRAWING NO. 1724000936-MAC-DD-00006 | SHEET | REV. 01

DRAWING NO. 1724000936-MAC-DD-0000 REV. 01

File Name = 1724000936-MAC-DD-00006

Base Load Power Hub (BLPH)

SHAFT SEAL DRAWING AND BILLS OF MATERIAL
(INCLUDING FLUSHING PLAN 51)
For Sea Water Lift Progressive Cavity Pumps (P-50001 A/B)

Document Number: 1724000936-MAC-DD-00007

Document Class: 3

03	17/10/2024	Issue for Information (IFI)	APD	GLL	AHN
02	05/09/2024	Issue for Information (IFI)	APD	GLL	AHN
01	06/08/2024	Issue for Information (IFI)	APD	GLL	AHN
00	18/07/2024	Issue for Information (IFI)	APD	GLL	AHN
Rev.	Date	Description	Prepared	Reviewed	Approved

PCM | keep it moving

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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)

HOLDS LIST

No.	Description
1	
2	
3	
4	

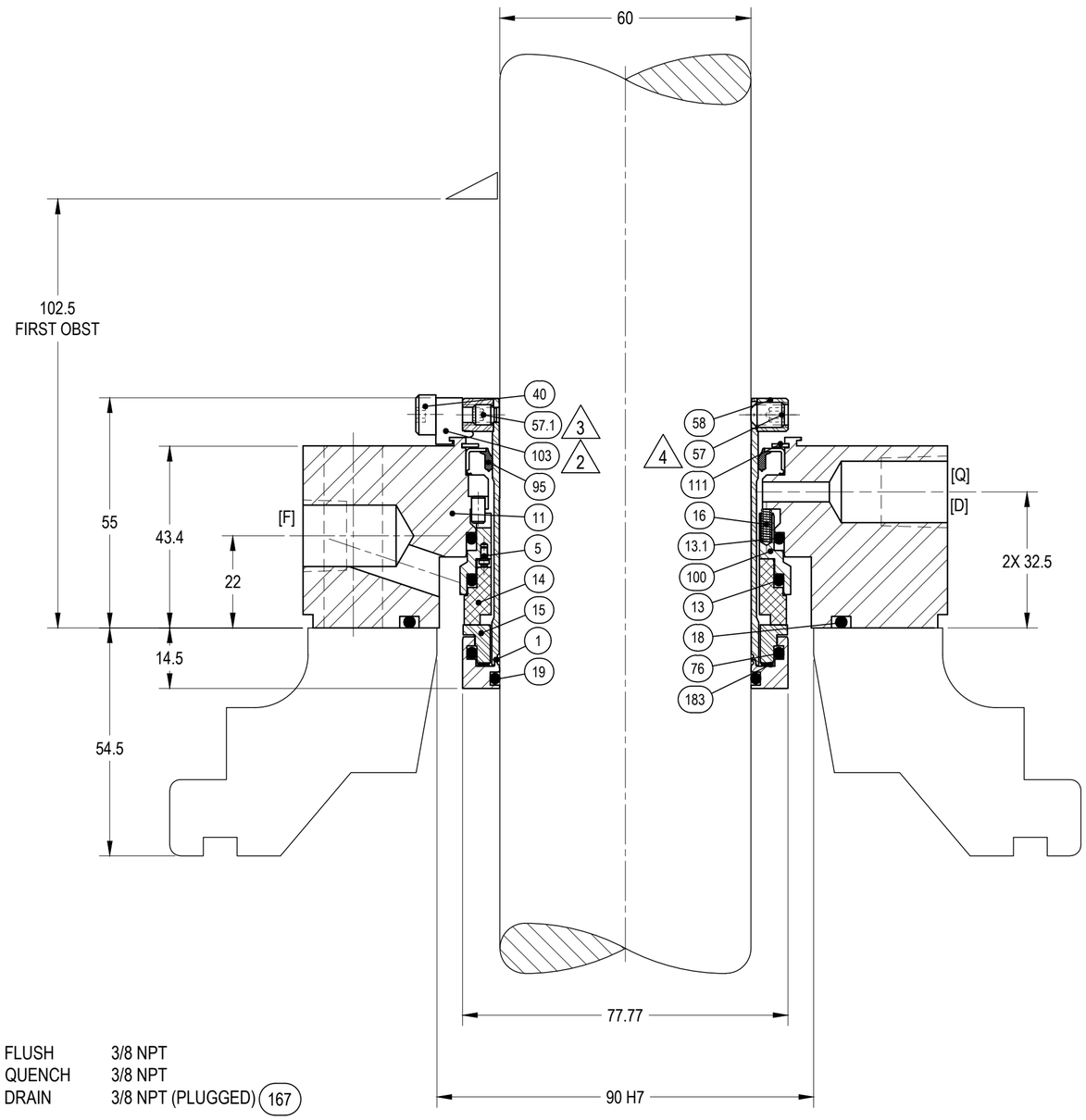
This document undergoes an issuance cycle within EDMS Fusionlive". Its distribution is electronically controlled. Once printed shall be considered as "NOT CONTROLLED" copy

JAN2022

BILL OF MATERIAL NO: C100033781

SPARE PARTS: [1] STARTUP
[2] 2 YEAR [3] CAPITAL/CRITICAL

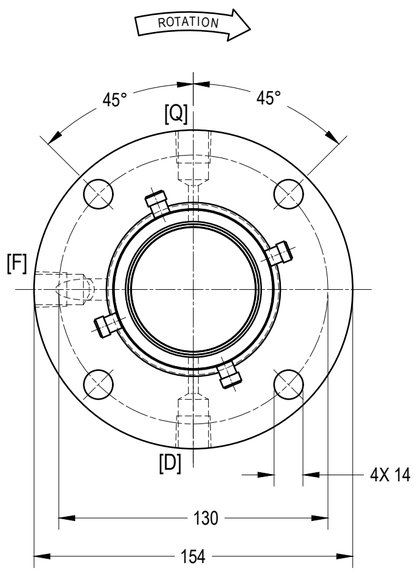
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5	C0012107NL	3	PIN, BUTTON-HEAD	ALLOY C-276	1
11	C100036104	1	GLAND, SEAL	DUPLEX 255	
13	568149GU	1	O-RING, OTHER	FLUOROELASTOMER (FKM)	1
13.1	568149GU	1	O-RING, OTHER	FLUOROELASTOMER (FKM)	1
14	C0011933KR3	1	FACE, SEAL	CARBON-GRAPHITE, RESIN IMPREGNATED	1
15	K23C2375C33	1	FACE, SEAL	DIRECT SINTERED SILICON CARBIDE	1
16	MIAX88403CM	18	SPRING, COIL	ALLOY C-276	1
18	568242GU	1	O-RING, OTHER	FLUOROELASTOMER (FKM)	1
19	568142GU	1	O-RING, OTHER	FLUOROELASTOMER (FKM)	1
40	C0032674CK	4	SCREW, CAP	18-8	1
57	4N01857X902	4	SCREW, SET	17-4 PH COND H900	1
57.1	MLA36788233	2	SCREW, SET	ALLOY C-276	1
58	C100036236	1	DRIVE COLLAR, STYLE 2	DUPLEX 2205	
76	568149GU	1	O-RING, OTHER	FLUOROELASTOMER (FKM)	1
95	MNAX9078470	1	SEAL, LIP	MULTIPLE MATERIAL	1
100	C0011995ZB	1	SUPPORT, FACE	DUPLEX 255	1
103	C0012106CK	4	SETTING DEVICE, NOTCH	18-8	1
111	UR300CK	1	RING, SNAP	18-8	1
167	4R3000X953	1	END FITTING, PIPE	ASME SA-479 TYPE 316/316L	
183	C0012057QF	1	GASKET, FLAT	FLEXIBLE GRAPHITE	1

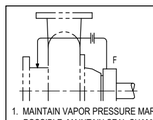


[F] FLUSH 3/8 NPT
[Q] QUENCH 3/8 NPT
[D] DRAIN 3/8 NPT (PLUGGED) (167)

NOTES:

1. FOR INSTALLATION AND OPERATING INSTRUCTIONS SEE APPROPRIATE FLOWSERVE INSTALLATION SHEET (FIS).
2. REMOVE SETTING DEVICES (#103) BEFORE START-UP.
3. DO NOT TORQUE DOG POINT SET SCREWS (#10-24).
4. TIGHTEN(M6) SETSCREWS EQUALLY, CROSSWISE, IN 4 STEPS. FINAL TORQUE: 8.5 Nm.
5. PARTS #1 & #11 MUST BE SUPPLIED WITH 3.1 CERTS.





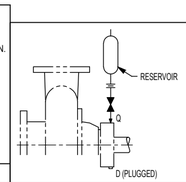
API PLAN 13

RECIRCULATION FROM SEAL THROUGH FLOW CONTROL ORIFICE TO PUMP SUCTION.

1. MAINTAIN VAPOR PRESSURE MARGIN NOT LESS THAN 3.5 BAR [50 PSI]. IF NOT POSSIBLE, MAINTAIN SEAL CHAMBER PRESSURE NOT LESS THAN 30% ABOVE VAPOR PRESSURE AT PUMPING TEMPERATURE.
2. ORIFICE DIAMETER Ø 3.0 MM [.118 INCH].

FLUSH RATE: 9 LPM [3.4 GPM]

PIPING REQUIREMENTS



API PLAN 51

EXTERNAL RESERVOIR PROVIDING DEAD-ENDED BLANKET TO QUENCH CONNECTION OF GLAND.

PIPING REQUIREMENTS

OPERATING DATA

PRODUCT: SEA WATER, FEW PARTICLES
TEMP: 25.0 °C Max
SEAL CHAMBER PRES: 5.9 barG Max
VISCOSITY: 0.9 cP Max
RPM (MIN): 118
SUCTION PRES: 0 barG Max
DISCHARGE PRES: 5.9 barG Max
API PLAN: 13/51

CUSTOMER DATA

CUSTOMER: PCM MANUFACTURING FRANCE SAS
ADDRESS: CHAMPTOCE-SUR-LOIRE FRANCE
ULTIMATE USER: CROSSWIND (JV SHELL + ENECO)
ADDRESS: THE NETHERLANDS
CUSTOMER P.O.: PO070-24-07869

SEAL DATA

MATL CODE: DZ4T
EQUIP MFG: PCM MANUFACTURING FRANCE SAS
EQUIP MODEL: 60
EQUIP DRAWING: W-004921 REVB
INSTR: FIS 190

GENERAL DATA

REF DWG: D0110893

JOB NUMBER 400370175-000100

DRWN: AjSr
DATE: 03-Sep-2024
CHKD: MuMa
DATE: 04-Sep-2024
APVD: MuMa
DATE: 04-Sep-2024

FLOWSERVE
AMSS Seals & Systems

DRAWING TITLE
MECHANICAL SEAL - ASSEMBLY

ISC2-PX - 60MM

ALL DIMENSIONS ARE REFERENCE UNLESS OTHERWISE SPECIFIED

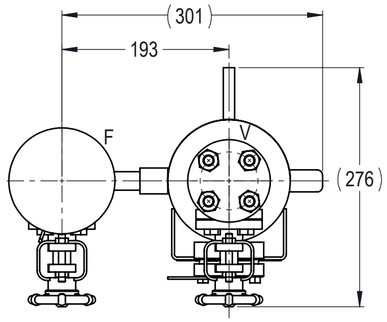
3rd ANGLE

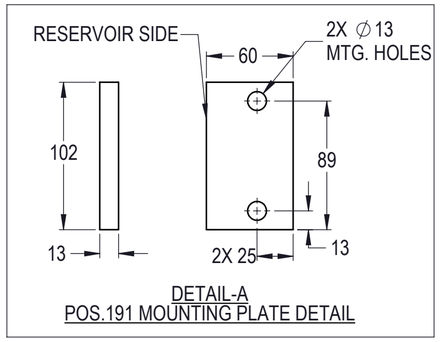
SIZE A2 | DRAWING NUMBER F001604380 | REV. 0

SCALE: TO SCALE | UNITS: mm | SHEET: 1 OF: 1

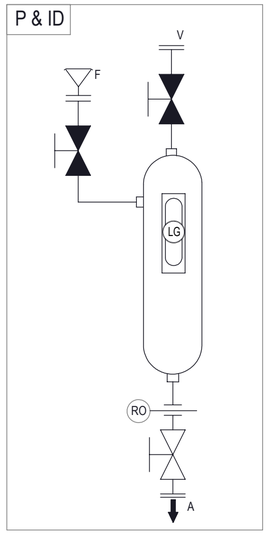
REV.	CHG NO.	DATE	REVD	CHKD	APVD
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	DESC: ----				

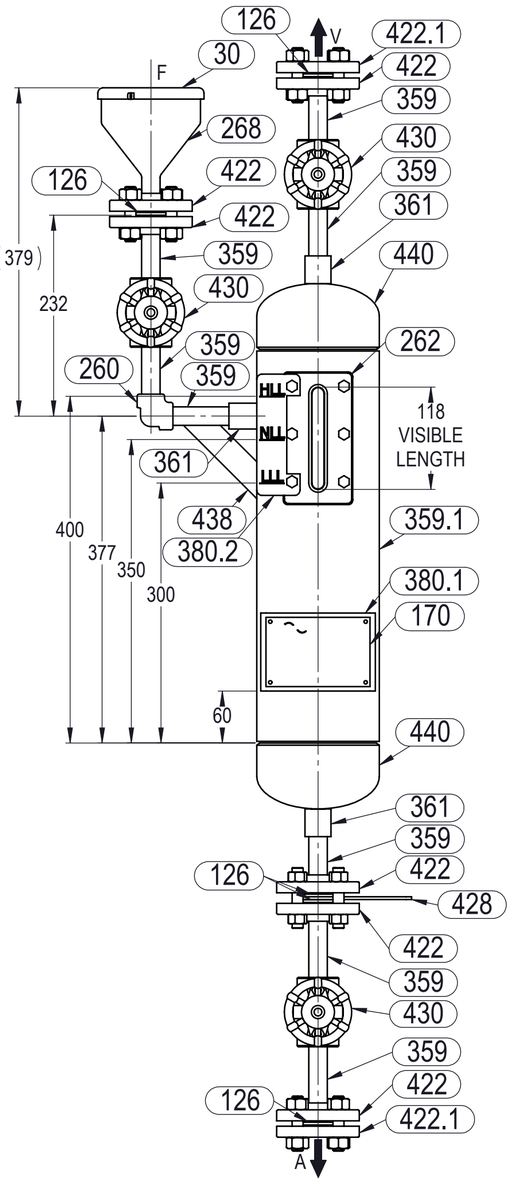
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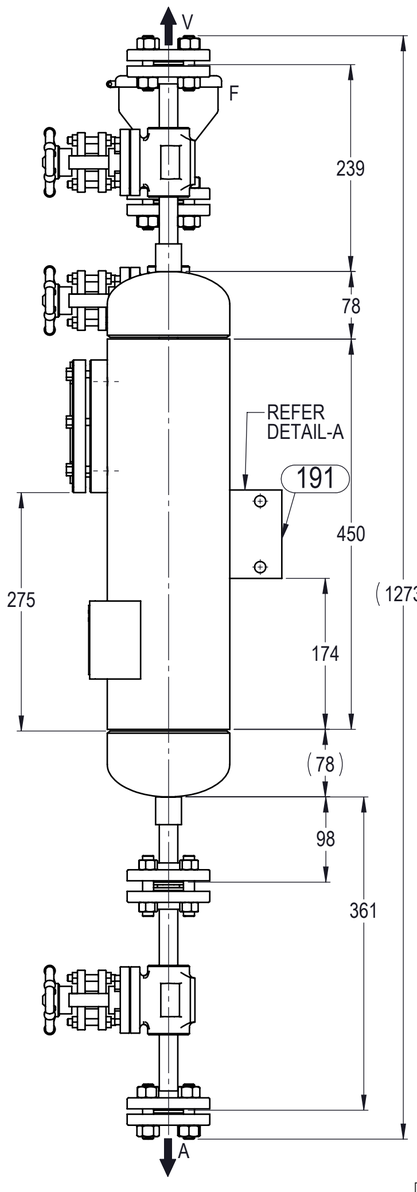


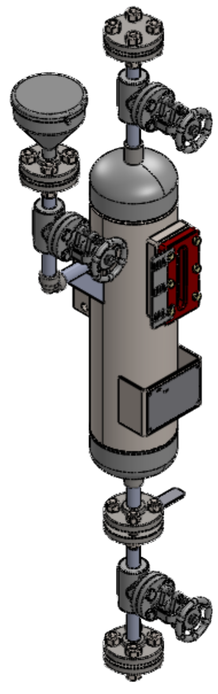


DETAIL-A
POS.191 MOUNTING PLATE DETAIL









DESIGN CONDITIONS

		UNIT
QUENCH FLUID	WATER	
DESIGN PRESSURE	12	BARG
DESIGN TEMPERATURE	-10 TO 93	°C
OPERATING PRESSURE	ATMOSPHERIC	BARG
OPERATING TEMPERATURE	MAX.80	°C
DESIGN CODE (VESSEL)	ASME VIII DIV 1	
DESIGN CODE (PIPING)	ASME B31.3	
EC DIRECTIVE	PED 2014/68/EU	
PED CATEGORY	SEP	
TOTAL VOLUME	7	LITER
VOLUME AT NLL	5	LITER
WEIGHT EMPTY	~40	KG

N.D. TESTING / INSPECTION

HYDROTEST PRESSURE	18	BARG
RADIOGRAPHY	NONE	
DYE-PENETRANT	100%	
MATERIAL CERTIFICATES	REFER NOTE 3	
INSPECTION	FLOWSERVE	

WELDING

WPS & PQR IN ACCORDANCE WITH ASME IX.

REMARKS

STAINLESS STEEL SURFACES SHALL NOT BE PAINTED.
CLEANING IN ACCORDANCE WITH RSD-SP-ENG-089E.
BOLTHOLES STRADDLE TO CENTERLINE.
STAINLESS STEEL WELDS TO BE PICKLED & PASSIVATED OR GLASS-PEARL CLEANED.
DO NOT USE TEFLON TAPE, BUT USE LOCTITE 577.

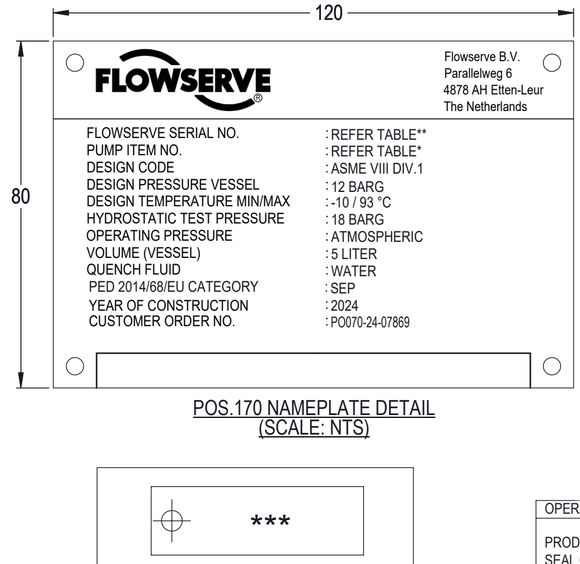
CONNECTIONS

NO.	NAME	SIZE
A	TO SEAL	1/2 IN 300# RF + BLIND
F	FILLING	4 IN FUNNEL
V	VENT	1/2 IN 300# RF + BLIND

BILL OF MATERIAL NO: C100033782

SPARE PARTS: [1] STARTUP [2] 2 YEAR [3] CAPITAL/CRITICAL

NO	PART CODE	QTY	DESCRIPTION	MATERIAL
30	C0538533ZZ-Q2	1	CAP, OTHER - DUST, 4 IN WITH CHAIN	GRADE 316/316L
126	C0111934ZZ	5	GASKET, SPIRAL WOUND -CL 300, 1/2 IN, SPIRAL WOUND	STAINLESS STEEL 316 + GRAPHITE
170	C100032896	1	PLATE, NAME - FOR AUXILIARY PLAN 51	316
191	C0243841ZZ-Q1	1	PLATE, MOUNTING - 102 X 60X 13 MM THK.	316
260	C0216202X941	1	ELBOW FITTING, PIPE - 1/2 IN, SOCKET WELD, CL 3000, 90 DEG	ASME SA-182 GRADE F316/F316L
262	C0560271ZZ	1	INDICATOR, LEVEL - GAUGE, WELD ON TYPE, VISIBLE LENGTH : 118 MM, BOROSILICATE GLASS	GRADE 316/316L
268	C0405667X941	1	STRAIGHT FITTING, PIPE - SWAGE, 4 IN X 1/2 IN, SCH 40, PBE, SMLS	ASME SA-182 GRADE F316/F316L
359	C0063392X951	1	PIPE, OTHER - SCH.80, 1/2 IN, SEAMLESS, PLAIN BOTH END	ASME SA-312 GRADE TP316/316L
359.1	C0172048X951	1	PIPE, OTHER - 5 IN X 450 MM LG, SCH 40, SMLS, BBE	ASME SA-312 GRADE TP316/316L
361	C0215993X941	3	STRAIGHT FITTING, PIPE - HALF COUPLING, 1/2 IN SW, CL. 3000	ASME SA-182 GRADE F316/F316L
380	4R124140ZZ-Q1	2	PLATE, NAME - FOR INSTRUMENT	ASME SA-240 GRADE 316/316L
380.1	C0234657ZZ-Q1	1	PLATE, NAME - BRACKET FOR NAMEPLATE	316
380.2	C0538973ZZ-Q2	1	PLATE, NAME - FOR LEVEL INDICATION, SIZE 2	316
422	C0362295X941	6	FLANGE, PIPE - 1/2 IN, CL 300, RFSW	ASME SA-182 GRADE F316/F316L
422.1	C0363170X941	2	FLANGE, PIPE - BLIND 1/2 IN CL 300	ASME SA-182 GRADE F316/F316L
428	C0095396ZZ	1	PLATE, ORIFICE - 1/2 IN, CL 300, 3.2 MM ORIFICE	316
430	C0369816ZZ	3	VALVE, GATE CL 800,1/2 IN SOCKET WELD,SCH 80,BOLTED BONNET,REDUCED BORE	316
438	C0493357X944-Q2	1	GUSSET, OTHER - 6 MM THK X 30 MM WIDE	ASME SA-240 GRADE 316/316L
440	C0489371X947	2	HEAD, RESERVOIR - CAP, 5 IN BUTT WELD, SCH 40	ASME SA-403 GRADE WP316/316L



POS.170 NAMEPLATE DETAIL
(SCALE: NTS)

POS 380 FIXED WITH SS WIRE AT THE INSTRUMENTS

NOTES:
1. ALL VALUES IN () ARE REFERENCE DIMENSIONS.
2. CARBON STEEL STUDS(ASME SA-193 GR B7) & NUTS(ASME SA 194 GR 2H) WITH HOT-DIP GALVANIZED. ALL MISCELLANEOUS FASTENERS MUST BE 316 SS.
3. MATERIAL CERTIFICATE OF ALL PRESSURE CONTAINING PARTS (PIPES/FLANGES/PIPE FITTINGS) REQUIRES EN 10204 3.1. EN 10204 2.2 FOR NON-PRESSURE CONTAINING PARTS.

* PUMP ITEM NO.	** FLOSERVE SERIAL NO.	*** INSTRUMENT TAG NUMBER					
		LG	RO	FUNNEL VALVE	VENT VALVE	OUTLET VALVE	SEAL POT
50001 A	400370175-000200-001	50-LG-001	50-RO-003	BLPH-MV-503	BLPH-MV-503	BLPH-MV-503	V-50000 A
50001B	400370175-000200-002	50-LG-002	50-RO-004	BLPH-MV-503	BLPH-MV-503	BLPH-MV-503	V-50000 B

REV.	CHG NO.	DATE	REVD	CHKD	APVD
0	00210008	21-Aug-2024	HaMa	LoSh	HaSc
	DESC: RELEASE TO MANUFACTURE				

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DIM TOLERANCES (UNLESS SPECIFIED)
X. = ± 5 ANGLE = ± 0.5°
X.X = ± 2.5

ALL DIMENSIONS ARE REFERENCES UNLESS OTHERWISE SPECIFIED

OPERATING DATA
PRODUCT: SEA WATER
SEAL CHAMBER PRES: 5.9 barG Max
BARRIER FLUID: WATER
DISCHARGE PRES: 5.9 barG Max
API PLAN: 13/51

CUSTOMER DATA
CUSTOMER: PCM MANUFACTURING FRANCE SAS
ADDRESS: CHAMPTOCE-SUR-LOIRE FRANCE
ULTIMATE USER: CROSSWIND (JV SHELL + ENECO)
ADDRESS: THE NETHERLANDS
CUSTOMER P.O.: PO070-24-07869

SEAL DATA
MATL CODE: ----

JOB NUMBER	400370175-000200
DRWN	LoSh
DATE	23-Jul-2024
CHKD	LoSh
DATE	23-Jul-2024
APVD	HaSc
DATE	24-Jul-2024
3D MODEL NO. / REV.	F001614989 / 0
≈ WEIGHT ( )	64.95 lb (29 kg)

FLOWSERVE AMSS Seals & Systems

DRAWING TITLE
SEAL SYSTEM - GENERAL ARRANGEMENT
PLAN 51 -

3rd ANGLE | SIZE A2 | DRAWING NUMBER F001615657 | REV. 0

SCALE: 1:1 | DIM. UNITS: mm | SHEET: 1 OF: 1

TEMPLATE VERSION 4.5.10 JAN 2024

PCM
keep it moving

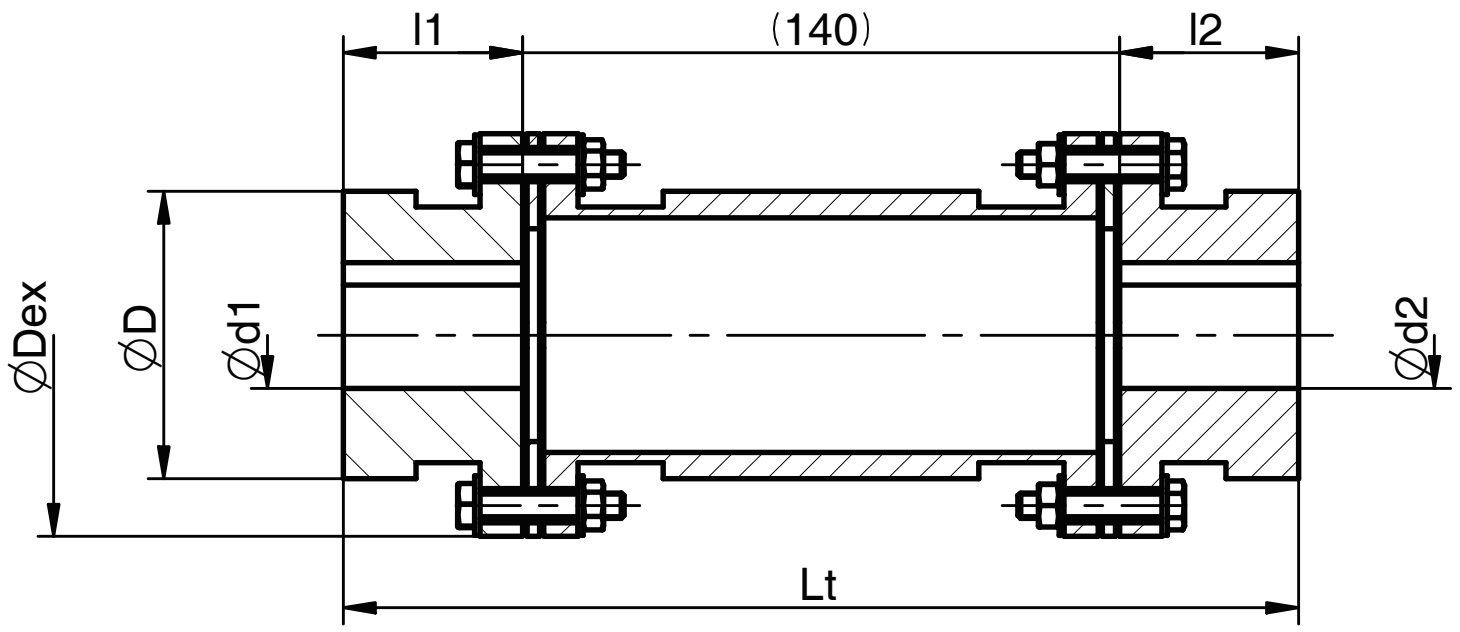
Rue René Moineau
49 123 Champtocé/Loire
FRANCE
Phone : +33 (0)1.77.68.31.00
www.pcm.eu

STANDARD TECHNIQUE REFERENCE

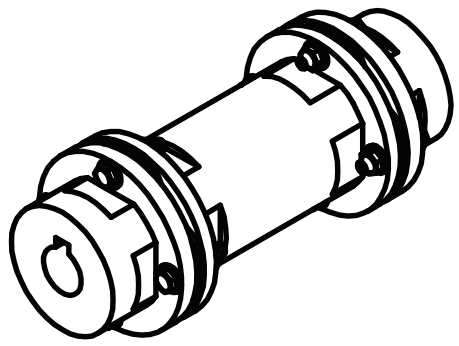
C15099X

ACCOUPLEMENT API 610

COUPLING API 610



Code X	Ød1	l1	Øarbre palier / Ø bearing shaft	Ød2	l2	Øarbre moteur / Ø drive shaft	ØD	ØDex	Lt
A	20	33	20x40	20	33	20x40	41.4	63	206
B	20	38	20x40	20	38	20x40	49.4	74	216
C	20	38	20x40	25	38	25x50	49.4	74	216
D	20	38	20x40	35	38	35x70	49.4	74	216
E	28	42	28x50	25	42	25x50	67.4	94.5	224
F	28	42	28x50	35	42	35x70	67.4	94.5	224
G	28	42	28x50	40	42	40x80	67.4	94.5	224
H	28	42	28x50	50	42	50x100	67.4	94.5	224
J	38	62	38x6	35	62	35x70	86.4	120	264
K	38	62	38x60	40	62	40x80	86.4	120	264
L	38	62	38x60	50	62	50x100	86.4	120	264
M	38	62	38x60	60	62	60x120	86.4	120	264
N	55	75	55x105	50	75	50x100	103	145	290
P	55	75	55x105	60	75	60x120	103	145	290
Q	55	75	55x105	65	75	65x130	103	145	290
R	55	75	55x105	75	75	75x140	103	145	290
S	55	90	55x105	50	90	50x100	125	172	320
T	55	90	55x105	60	90	60x120	125	172	320
U	55	90	55x105	65	90	65x130	125	172	320
V	55	90	55x105	75	90	75x140	125	172	320
W	55	75	55x105	45	90	45x90	103	145	290
Y	55	75	55x105	40	80	40x80	103	145	290
Z	55	75	55x105	55	110	55x110	103	145	290



Specifications

serie L

Fournisseur / *Supplier* :		Par / *By* : **THOMAS**	Le / *On* : **24/08/2015**
Exemple / *Example* :	**John Crane**	Indice / *Revision* : **F**	Par / *By* : **GPE**
Mat :	**Voir Ordre Achat / *See Purchasing Order***	Vérifié par / *Checked by* : **GPE**	Le / *On* : **10/11/2023**

L SERIES

METAL MEMBRANE COUPLING L SERIES

Technical Specification

A – Stainless steel flexible membranes

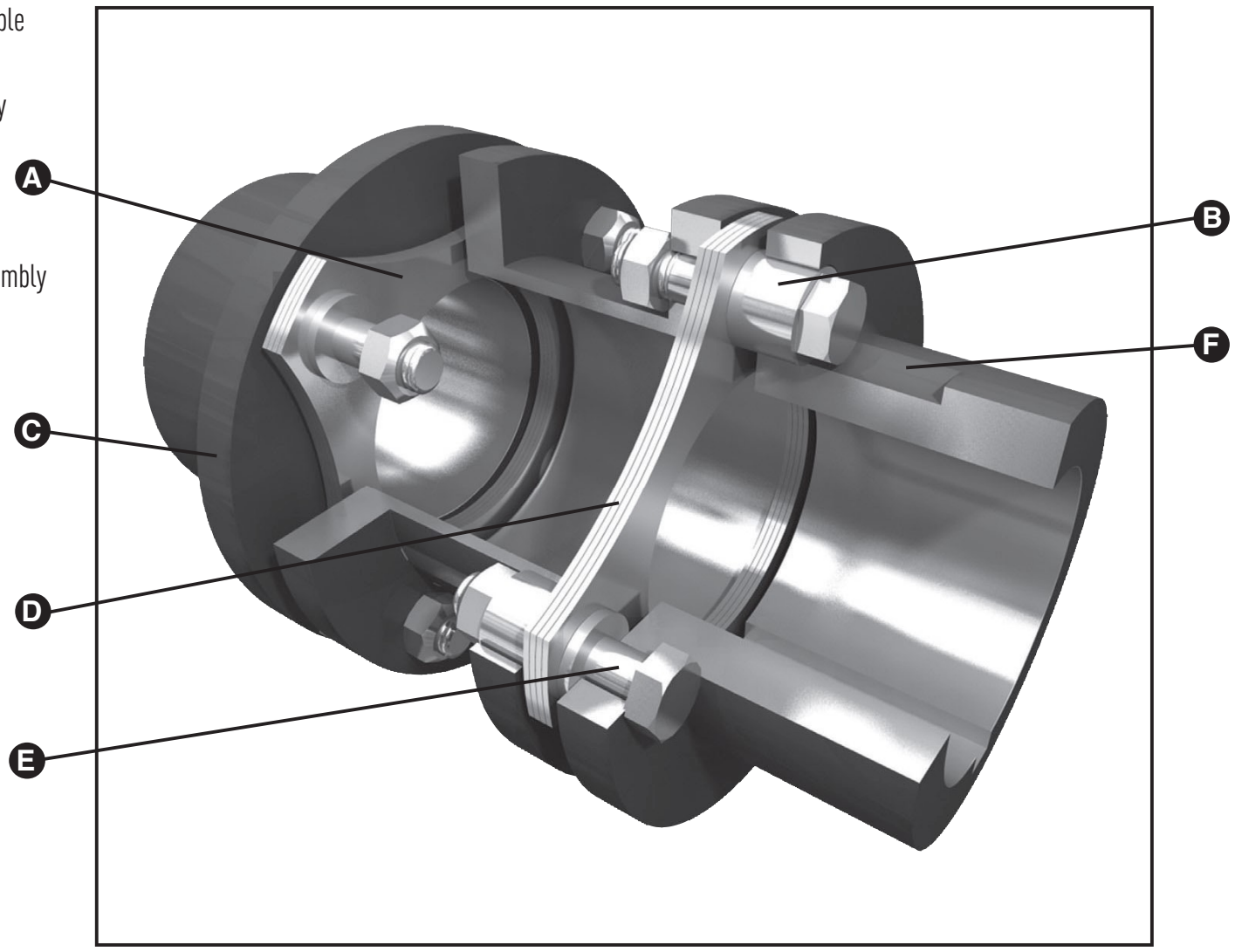
B – Overload and anti-fly protection collars

C – Anti-corrosion treatment

D – Membrane unit assembly for ease of fitting

E – Fitted bolts for balance integrity

F – Scalloped hubs to maximize bore



Product Description

John Crane's Metastream L Series range of membrane couplings has been specifically designed to provide a cost-effective solution for demanding industrial applications. The couplings are selected by their torque capacity, with the scalloped hub providing the right size for the shaft.

- Easy to install
- Operates in either direction
- A hubs supplied either finish machined or solid
- Coated carbon steel hardware for corrosion protection
- Choice of hub configuration to suit the shaft diameter
- ATEX compliant

Design Features

- **Fit and forget** – Designed for infinite life and, with correct machinery alignment, will often outlast the machines it connects
- **Overload protection** — Fitted with overload collars to protect the membranes in the event of severe torsional overload
- **Low imposed loads** — Designed to optimize torque capability while minimizing reaction forces due to misalignment, maximizing the life of the machines connected
- **Zero maintenance** — Requires no lubrication or routine maintenance
- **No backlash** — Torsionally stiff design ensures there is zero backlash, making coupling ideal for drives where constant speed is crucial

L SERIES

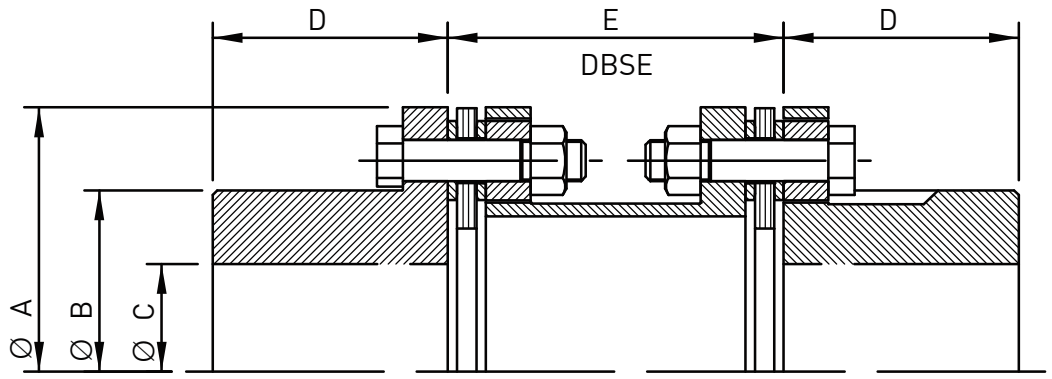
METAL MEMBRANE COUPLING L SERIES

Technical Specification

L Series Technical Data (Imperial)

Coupling Size	Rating	Max. Continuous Torque	Peak Overload Torque	Max. Unbalanced Speed	Max. Balanced Speed	Weight Coupling		Weight Unbored Hub
	HP/100 rpm	lb.in.	lb.in.	rpm	rpm	Min.Std DBSE lb.	Extra DBSE lb./in.	lb.
LDES-0007	0.9	620	1,239	7,000	22,000	4.01	0.11	0.93
LDES-0014	1.9	1,150	2,301	6,500	20,000	4.41	0.13	1.45
LDES-0028	3.7	2,390	4,868	6,000	18,000	8.6	0.27	2.98
LSES-0045	6	3,806	7,965	6,000	18,000	9.7	0.27	3.48
LSES-0090	12	7,611	15,045	5,200	15,000	18.9	0.39	6.99
LSES-0175	23	14,602	29,205	4,800	12,300	33.1	0.63	12.1
LSES-0265	35	22,125	44,250	4,400	10,800	55.6	0.79	21.2
LSES-0525	70	44,250	88,500	4,200	9,000	87.5	1.4	32.4
LSES-0810	109	68,145	137,175	4,000	7,800	123	1.9	45.4
LSES-1150	154	97,350	194,700	3,800	7,000	170	2.5	63.9
LSES-1560	209	132,750	265,500	3,700	6,000	234	3	86
LLES-1850	248	155,760	309,750	2,500	5,500	229	2.5	79.4
LLES-3000	402	253,110	504,450	2,250	5,200	364	3.5	132
LLES-4200	563	354,000	708,000	2,100	4,700	518	4	192
LLES-6000	805	504,450	1,017,750	2,000	4,200	754	5.3	267
LLES-9009	1,207	761,100	1,504,550	1,750	3,600	1,135	8.3	412
LLES-9012	1,609	1,017,750	2,035,500	1,600	3,200	1,488	10.2	540
LLES-9015	2,012	1,239,000	2,478,000	1,500	3,000	1,852	12.6	701
LLES-9025	3,353	2,079,750	4,159,500	1,400	2,600	3,153	12.9	1,224

L Series Typical Arrangement



L Series Imperial Dimensional Data (Inches)

Coupling Size	A in	B in	(1) C Max Bore in	D in	E - DBSE (3)						
					Absolute Min (in)	Preferred Min ((in)	3.5 in	4.38 in	5 in	7 in	9 in
LDES-0007	2.48	1.63	1.18	1.3	1.57	1.57	x	x	x		
LDES-0014	2.91	1.94	1.38	1.5	1.57	1.57	x	x	x		
LDES-0028	3.72	2.65	1.89	1.65	1.69	1.69	x	x	x	x	
LSES-0045	3.72	2.61	1.85	2.05	1.69	1.69	x	x	x	x	
LSES-0090	4.72	3.4	2.44	2.44	2.13	2.13	x	x	x	x	
LSES-0175	5.71	4.07	2.95	2.95	2.52	2.52			x	x	
LSES-0265	6.77	4.94	3.54	3.54	2.91	2.91			x	x	
LSES-0525	7.76	5.65	4.06	4.13	3.35	3.35				x	x
LSES-0810	8.74	6.36	4.53	4.57	3.82	3.82				x	X
LSES-1150	9.72	7.12	5.08	5.12	4.21	4.21				x	x
LSES-1560	10.71	7.83	5.59	5.71	4.76	4.76					x
LLES-1850	11.5	7.56	5.39	5.39	5.47	7.09					x
LLES-3000	13.43	9.02	6.42	6.42	6.1	7.09					x
LLES-4200	15.12	10.24	7.28	7.32	6.69	7.09					
LLES-6000	16.89	11.38	8.11	8.11	7.76	9.84					
LLES-9009	19.13	13.23	9.41	9.45	8.58	9.84					
LLES-9012	21.06	14.45	10.31	10.31	9.37	9.84					
LLES-9015	22.48	15.87	11.3	11.34	9.76	9.84					
LLES-9025	26.89	19.13	13.62	13.66	10.87	11.81					

Notes:

1 Maximum bores shown are based on standard ANSI/AGMA square key dimensions for sizes 0007 through 3000 and rectangular key dimensions for sizes 4200 through 9025.

2 Dimensions should not be used for construction. Certified dimensions furnished upon request.

3 **X** These distance between shaft end (DBSE) sizes are more readily available. Other lengths to suit specific shaft separations are available.

L SERIES

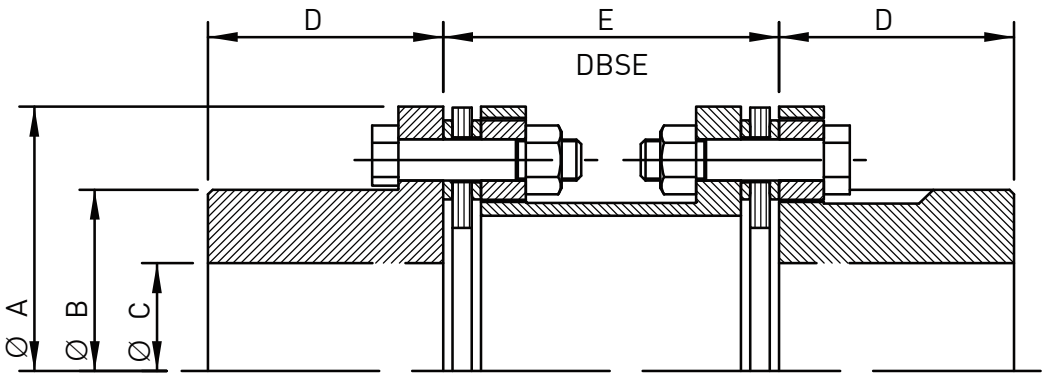
METAL MEMBRANE COUPLING L SERIES

Technical Specification

L Series Technical Data (Metric)

Coupling Size	Rating	Max. Continuous Torque	Peak Overload Torque	Max. Unbalanced Speed	Max. Balanced Speed	Weight Coupling		Weight Unbored Hub
	kW/1000 rpm	kNm	kNm	rpm	rpm	Min.Std DBSE Kg.	Extra DBSE Kg/m.	Kg.
LDES-0007	7	0.07	0.14	7,000	22,000	1.82	7.14	0.42
LDES-0014	14	0.13	0.26	6,500	20,000	2	2.31	0.66
LDES-0028	28	0.27	0.54	6,000	18,000	3.9	4.8	1.35
LSES-0045	45	0.43	0.86	6,000	18,000	4.4	4.8	1.58
LSES-0090	90	0.86	1.7	5,200	15,000	8.6	7	3.17
LSES-0175	175	1.65	3.3	4,800	12,300	15	11.3	5.5
LSES-0265	265	2.5	5	4,400	10,800	25.2	14.2	9.6
LSES-0525	525	5	10	4,200	9,000	39.7	24.8	14.7
LSES-0810	810	7.7	15.5	4,000	7,800	55.8	34.3	20.6
LSES-1150	1,150	11	22	3,800	7,000	77	44	29
LSES-1560	1,560	15	30	3,700	6,000	106	54	39
LLES-1850	1,850	17.6	35	2,500	5,500	104	45	36
LLES-3000	3,000	28.6	57	2,250	5,200	165	62	60
LLES-4200	4,200	40.1	80	2,100	4,700	235	71	87
LLES-6000	6,000	57.3	115	2,000	4,200	342	95	121
LLES-9009	9,000	86	172	1,750	3,600	515	149	187
LLES-9012	12,000	115	230	1,600	3,200	675	183	245
LLES-9015	15,000	143	286	1,500	3,000	840	225	318
LLES-9025	25,000	238	476	1,400	2,600	1,430	230	555

L Series Typical Arrangement



L Series Dimensional Data (mm)

Coupling Size	A mm	B mm	(1) C Max Bore mm	D mm	E - DBSE (3)					
					Absolute Min (mm)	Preferred Min (mm)	(Min.) mm	100 mm	140 mm	180 mm
LDES-0007	63	41	30	33	40	100	x	x	x	
LDES-0014	74	49	35	38	40	100	x	x	x	x
LDES-0028	95	67	48	42	43	100	x	x	x	x
LSES-0045	95	66	47	52	43	100	x	x	x	x
LSES-0090	120	86	62	62	54	100	x	x	x	x
LSES-0175	145	103	75	75	64	100	x	x	x	x
LSES-0265	172	125	90	90	74	100		x	x	x
LSES-0525	197	144	103	105	85	140			x	x
LSES-0810	222	162	115	116	97	140			x	x
LSES-1150	247	181	129	130	107	140			x	x
LSES-1560	272	199	142	145	121	180				x
LLES-1850	292	192	137	137	139	180				
LLES-3000	341	229	163	163	155	180				
LLES-4200	384	260	185	186	170	180				
LLES-6000	429	289	206	206	197	250				
LLES-9009	486	336	239	240	218	250				
LLES-9012	535	367	262	262	238	250				
LLES-9015	571	403	287	288	248	250				
LLES-9025	683	486	346	347	276	300				

Notes:

1 Maximum bores shown are based on standard DIN/BS rectangular keys.

2 Dimensions should not be used for construction. Certified dimensions furnished upon request.

3 **X** These distance between shaft end (DBSE) sizes are more readily available. Other lengths to suit specific shaft separations are available.

L SERIES

METAL MEMBRANE COUPLING L SERIES

Technical Specification

Selection Procedure (Metric)

1. Select appropriate service factor (SF)
2. Calculate the coupling rating R from:

$$R = \frac{kW \times 1000 \times SF}{N} \quad (kW/1{,}000\ rpm)$$

Where:

kW = rated power for driven equipment (kW)

N = speed (rpm)

3. Select a coupling with the same or higher rating.
4. Check distance between shaft ends (DBSE).
5. Check the hub bore capacity is suitable. If not, select a larger size coupling.
6. Check peak torque capability is suitable for application.
7. Check speed capability is suitable.
8. Specify DBSE as appropriate.

Selection Procedure (Imperial)

1. Select appropriate service factor (SF)
2. Calculate the coupling rating R from:

$$R = \frac{HP \times 100 \times SF}{N} \quad (HP/100\ rpm)$$

Where:

HP = rated power for driven equipment (HP)

N = speed (rpm)

3. Select a coupling with the same or higher rating.
4. Check distance between shaft ends (DBSE).
5. Check the hub bore capacity is suitable. If not, select a larger size coupling.
6. Check peak torque capability is suitable for application.
7. Check speed capability is suitable.
8. Specify DBSE as appropriate.

Service Factor (SF)

Suggested service factors for electric motor, steam turbine and gas turbine drivers are given below.

Torque Variation	Typical Application	Service Factor
Constant torque	Centrifugal pump Centrifugal compressor Axial compressor Centrifugal blower	1.0*
Slight torque fluctuation	Screw compressor gear lobe and vane pumps Forced draft fan Medium duty mixer Lobe blower	1.5
Substantial torque fluctuations	Reciprocating pumps Heavy duty mixers Induced draft fans	2.0

*Use a minimum service factor of 1.25 on electric motor drives through a gearbox.

*Use a minimum service factor of 1.75 on electric motor drives with VFD coupled to high inertia driven machines.

The examples given are for typical machines and are empirically based guidelines. Knowledge of actual torque characteristics may indicate a different service factor. Consult John Crane for advice.

KSelect is an internet based selection program for L Series. This selection program provides all necessary technical data, including inertias and torsional stiffness.

Visit www.johncrane.com

Available Options

- Spark-resistant couplings for hazardous zone operation.
- Special materials for low-temperature applications and/or higher corrosion resistance
- Electrical insulation

Consult John Crane for any other special requirements. John Crane couplings can be adapted to suit virtually all power transmission coupling needs.

L SERIES

METAL MEMBRANE COUPLING L SERIES

Technical Specification

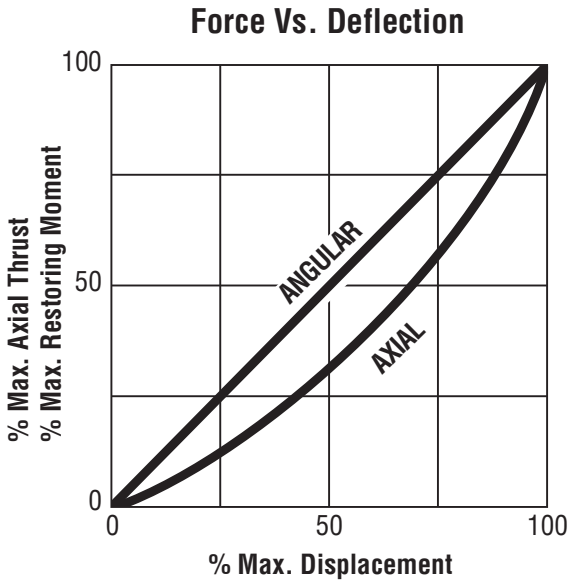
Coupling Alignment

Correct installation and alignment of shafts are essential for reliable machinery performance.

The angular and axial restoring forces in the table below are given at maximum deflections. The chart can be used to determine forces across the full deflection range. The nonlinear characteristics of axial stiffness can dampen a system to prevent high-amplitude axial vibration.

L Series – Metric Misalignment Capabilities					
Coupling Size	Max. Axial ± mm Equivalent Thrust	Equivalent Thrust kN	(2) Max. Angular Degrees	Restoring Moment at Max. Angle Nm	(3) Max. Parallel mm
0007	1.5	0.14	1	0.55	0.5
0014	1.5	0.15	1	0.65	0.7
0028	1.8	0.15	1	1.22	0.9
0045	1.2	0.28	0.8	3.64	0.7
0090	1.5	0.39	0.8	6.96	0.9
0175	2	0.77	0.8	14.6	1.2
0265	2.5	1.43	0.8	26.4	1.2
0525	2.7	1.74	0.8	48	1.6
0810	3.2	2.43	0.8	84	1.6
1150	3.7	3.04	0.8	112	1.6
1560	4.2	4.25	0.8	136	2
1850	3	2	0.5	77.5	1.4
3000	4	3.85	0.5	110	1.4
4200	4.4	4.5	0.5	160	1.3
6000	5	5.6	0.5	208	1.9
9009	6	7.5	0.5	300	1.9
9012	6.8	8.6	0.5	390	1.9
9015	7.5	9.8	0.5	435	1.9
9025	8.8	11.3	0.5	510	2.3

L Series – Imperial Misalignment Capabilities					
Coupling Size	Max. Axial ± in	Equivalent Thrust lbf	(2) Max. Angular Degrees	Restoring Moment at Max. Angle lb.in	(3) Max. Parallel in
0007	0.06	31.5	1	4.87	0.02
0014	0.06	34.2	1	5.75	0.027
0028	0.07	33.3	1	10.8	0.035
0045	0.05	62.9	0.8	32.2	0.027
0090	0.06	87.9	0.8	61.6	0.035
0175	0.08	172	0.8	130	0.047
0265	0.1	322	0.8	234	0.047
0525	0.11	390	0.8	425	0.063
0810	0.13	547	0.8	743	0.063
1150	0.15	683	0.8	991	0.063
1560	0.17	955	0.8	1204	0.078
1850	0.12	450	0.5	686	0.055
3000	0.16	866	0.5	974	0.055
4200	0.17	1012	0.5	1416	0.055
6000	0.2	1259	0.5	1837	0.059
9009	0.24	1686	0.5	2655	0.059
9012	0.27	1933	0.5	3452	0.075
9015	0.3	2203	0.5	3850	0.075
9025	0.35	2540	0.5	4514	0.09

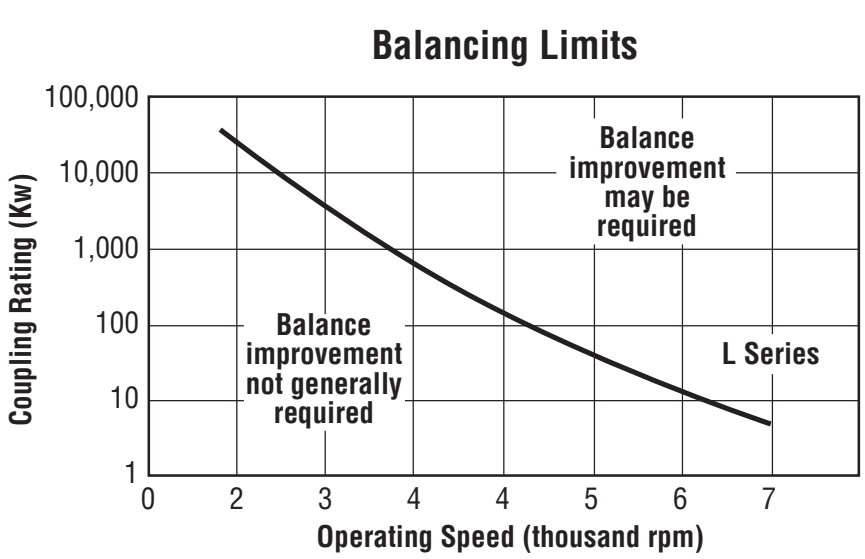


(1) These values are maximums for each type of misalignment. It is recommended that the coupling is initially aligned to 10% of these values to allow for inevitable movement during the life of the machines

(2) The values given are for each membrane bank.

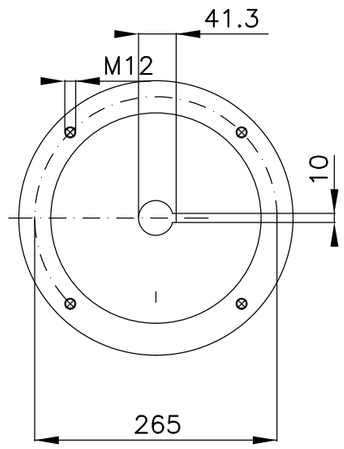
(3) These values are based on the standard minimum distance between shaft ends. (Min).

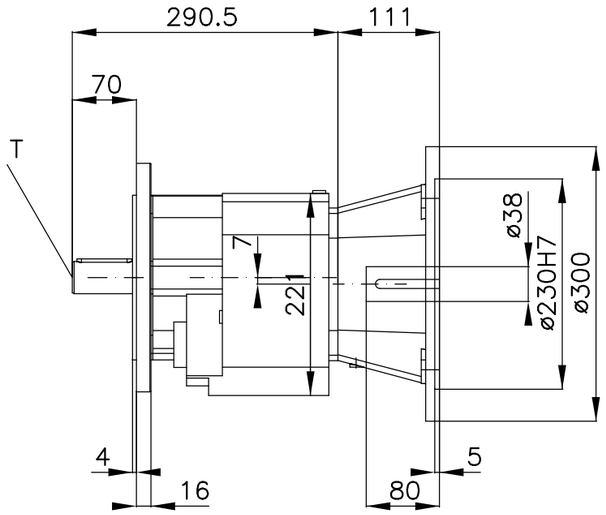
Balance Condition

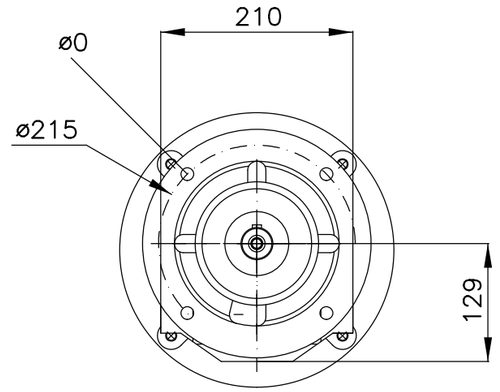


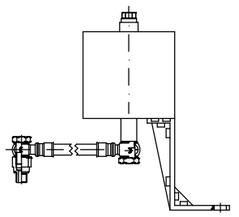
These couplings are designed with a high inherent balance, due to the precision of the manufacturing process. It is important that all parts are carefully stored and fitted to maintain this integrity.

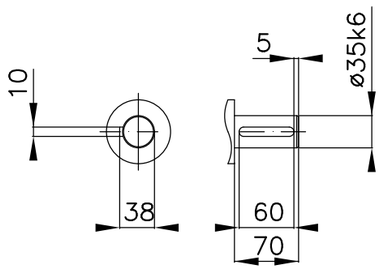
The inherent balance of the L Series meets AGMA standard 9000-C90 class 8. The maximum operating speeds listed in the tables are on the basis of this AGMA class 8 characteristic to provide a general guide to maximum permissible speed. If higher speeds are required, contact John Crane for an alternative coupling selection.

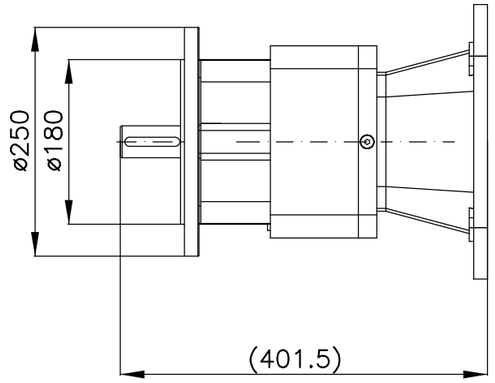


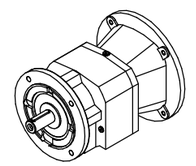


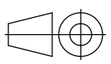










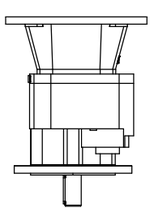


Center Hole acc. to DIN 332 part 2 form D

General tolerances DIN ISO 8062–3 – DCTG 9–12

This drawing is created with NORDCAD 9.3.1.1 SAP – Technical changes reserved!

Document number : 1724000936-MAC-DD-00009 page 3 of 5

Einbaulage/Mounting Pos.: M4	Angewandte Normen	Applied Standards
	Vollwellen bis ø50 nach ISO k6 Vollwellen ?ber ø50 nach ISO m6 Hohlwellen nach ISO H7 Passfedern nach DIN6885 Zentriergewinde nach DIN 332/2 Flanschzentrierung bis ø230 nach ISO j6 Flanschzentrierung ?ber ø230 nach ISO h6	Shafts up to ø50 according to ISO k6 Shafts above ø50 according to ISO m6 Hollow shafts according to ISO H7 Keyways according to DIN 6885 Center Hole Thread according to DIN 332/2 Flange centering up to ø230 according to ISO j6 Flange centering above ø230 according to ISO h6
	Motor:	Skizze / Outline:

Getriebebau NORD
GmbH & Co. KG
Getriebebau–Nord–Stra?e 1
D–22941 Bargteheide
Tel. 04532/289–0 – Fax. 04532/289–2253 – www.nord.com

DRIVESYSTEMS

Observe protection note according to ISO 16016

Rev.	Change	Date	Name

	Date	Name
Creat.	08.07.2024	SYSTEM
Check.		

Unmachined–No./Pre–fab–No.:

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Status:

SK 672.1F – IEC132K – B5 A300

Documentnumber: NC240708112851VV_D

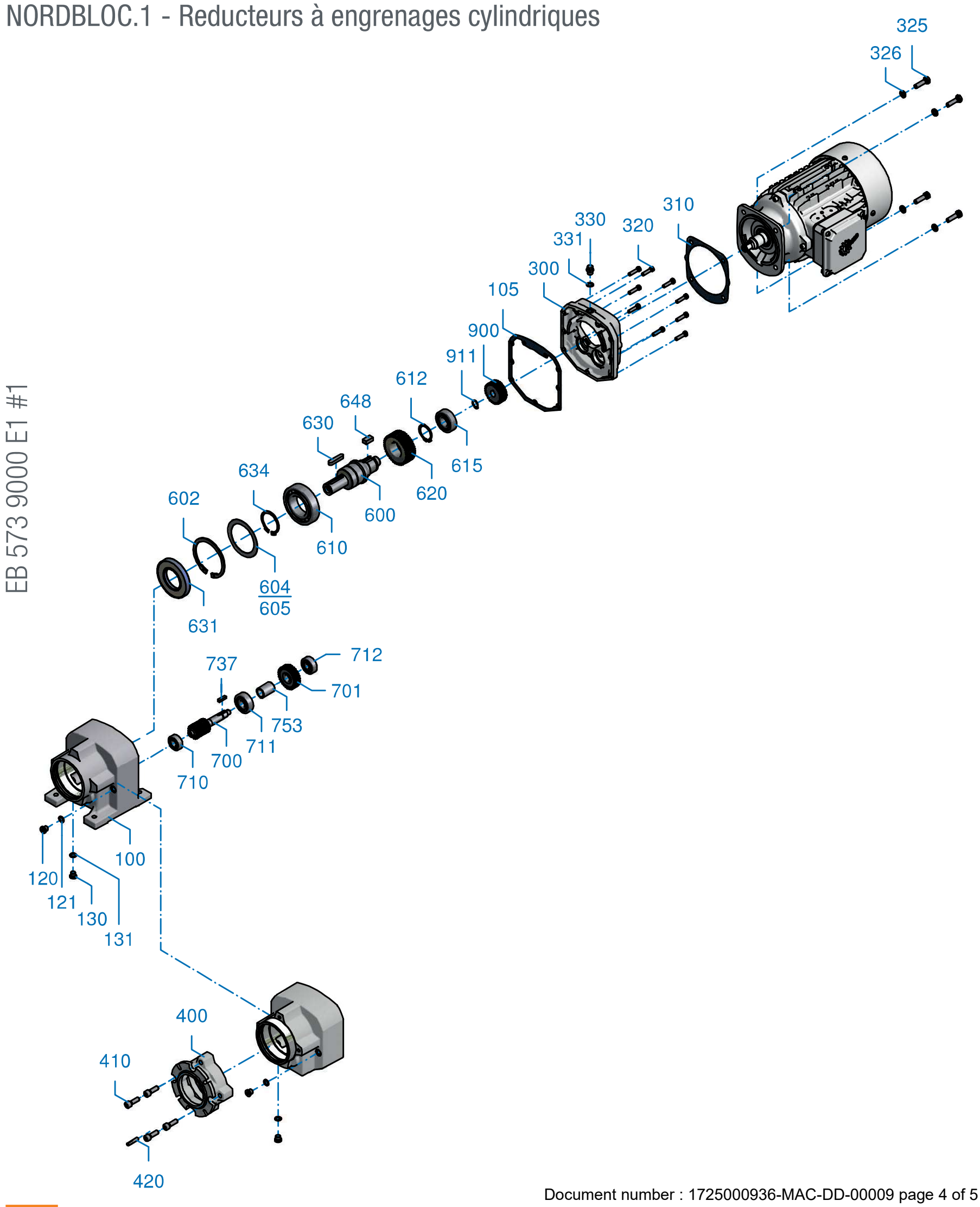
Revision

T–Task:

SK 072.1 - SK 672.1



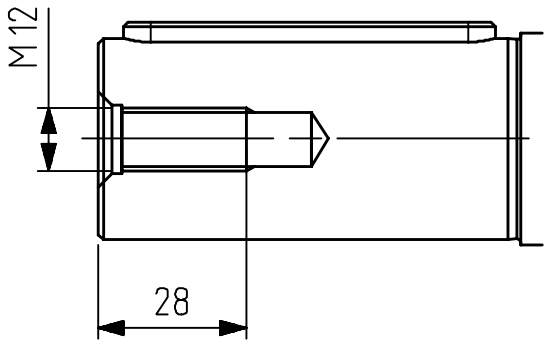
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NORDBLOC.1 - Helical Gear Unit
NORDBLOC.1 - Reducteurs à engrenages cylindriques

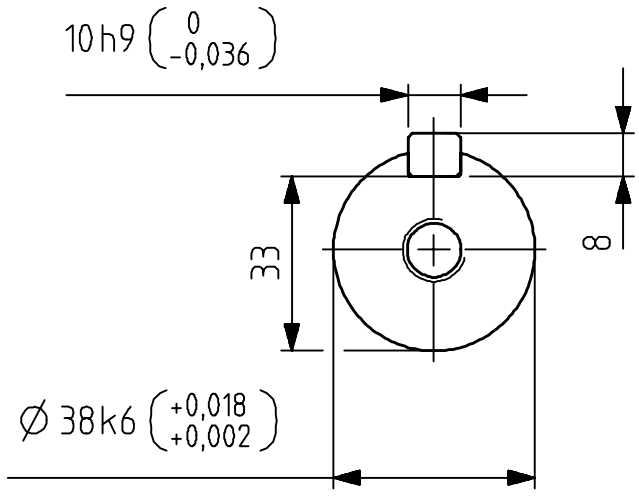


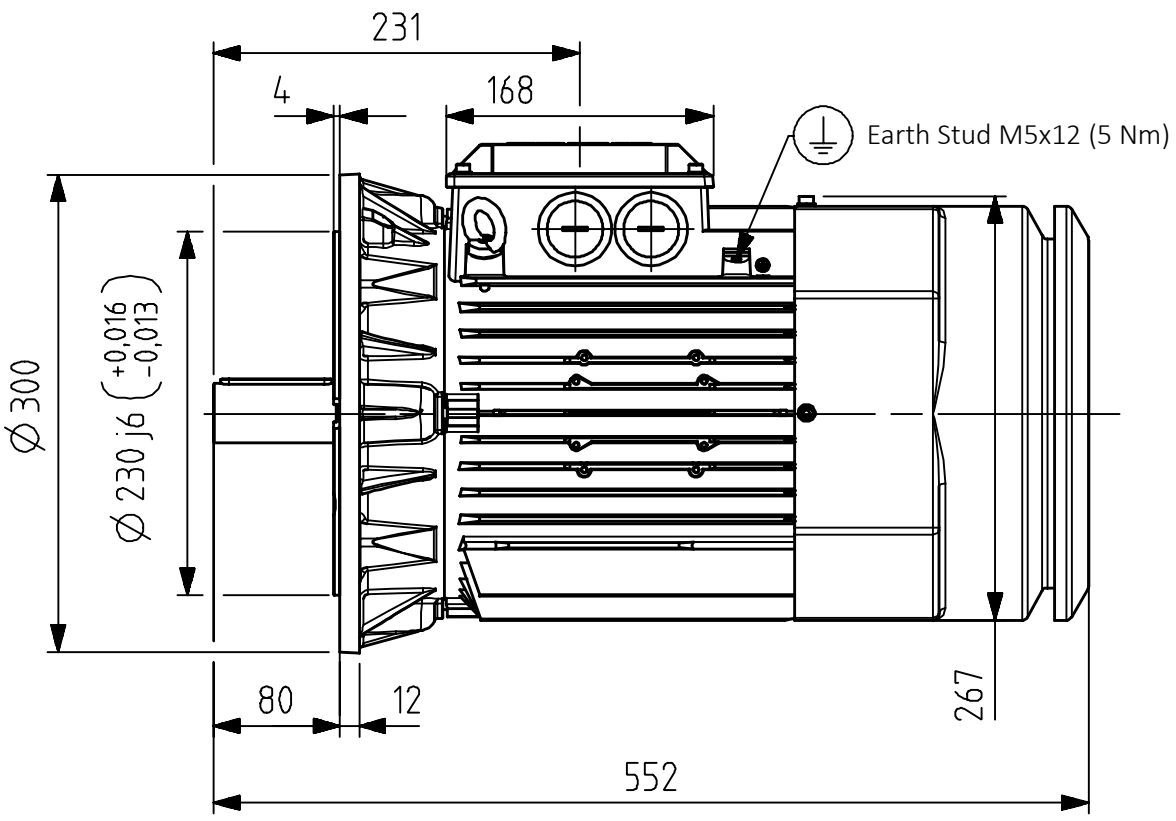


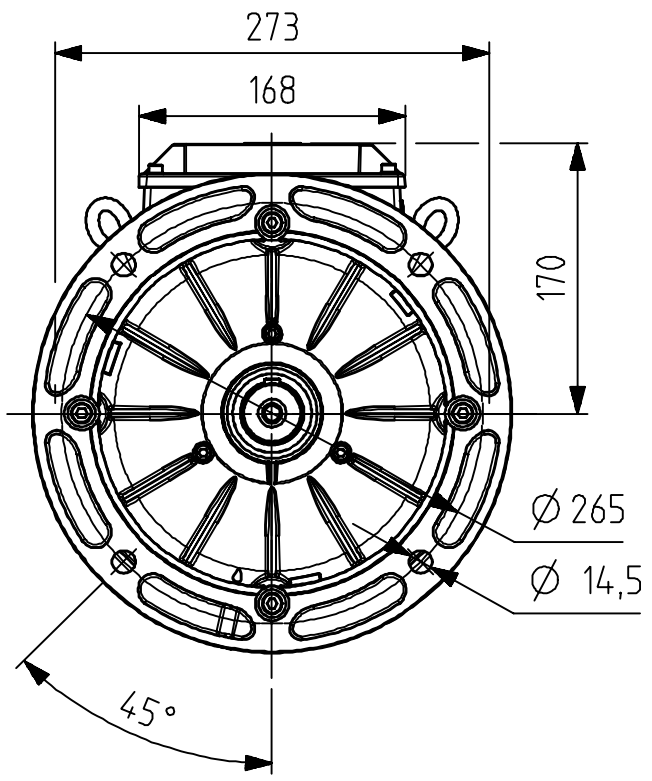
SK 072.1 - SK 672.1

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100	Gehäuse	100	Housing	100	Boîtier
105	Dichtung	105	Seal	105	Bague d‘étanchéité
120	Schraube	120	Screw	120	Vis
121	Dichtung	121	Seal	121	Bague d‘étanchéité
130	Schraube	130	Screw	130	Vis
131	Dichtung	131	Seal	131	Bague d‘étanchéité
300	Getriebedeckel	300	Gear unit cover	300	Couvercle du réducteur
310	Dichtung	310	Seal	310	Bague d‘étanchéité
320	Schraube	320	Screw	320	Vis
325	Schraube	325	Screw	325	Vis
326	Federring	326	Lock washer	326	Rondelle élastique
330	Schraube	330	Screw	330	Vis
331	Dichtung	331	Seal	331	Bague d‘étanchéité
400	Flansch	400	Flange	400	Bride
410	Schraube	410	Screw	410	Vis
420	Stift	420	Pin	420	Goupille
600	Abtriebswelle	600	Output shaft	600	Arbre de sortie
602	Sicherungsring	602	Circlip	602	Circlip
604	Passscheibe	604	Shim	604	Rondelles d‘ajustage
605	Passscheibe	605	Shim	605	Rondelles d‘ajustage
610	Wälzlager	610	Roller bearing	610	Palier
612	Sicherungsring	612	Circlip	612	Circlip
615	Wälzlager	615	Roller bearing	615	Palier
620	Abtriebsrad	620	Output gear	620	Roue de sortie
630	Passfeder	630	Key	630	Clavette
631	Wellendichtring	631	Radial shaft seal	631	Bague d‘étanchéité de l‘arbre
634	Sicherungsring	634	Circlip	634	Circlip
648	Passfeder	648	Key	648	Clavette
700	Ritzelwelle	700	Pinion shaft	700	Arbre de pignon
701	Antreibsrad	701	Drive gear	701	Roue d‘entrée
710	Wälzlager	710	Roller bearing	710	Palier
711	Wälzlager	711	Roller bearing	711	Palier
712	Wälzlager	712	Roller bearing	712	Palier
737	Passfeder	737	Key	737	Clavette
753	Buchse	753	Socket	753	Douille
900	Antriebsritzel	900	Driving pinion	900	Pignon d‘entrée
911	Sicherungsring	911	Circlip	911	Circlip



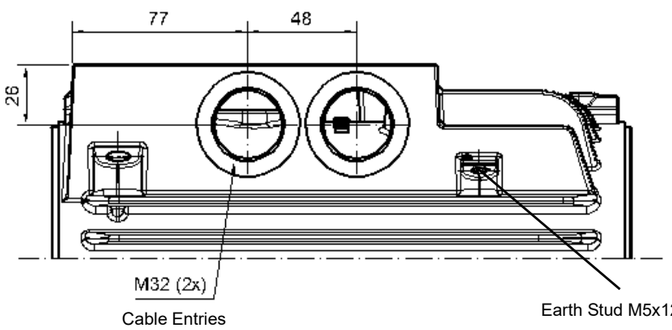


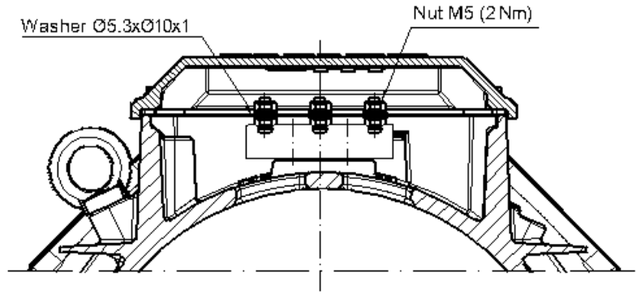


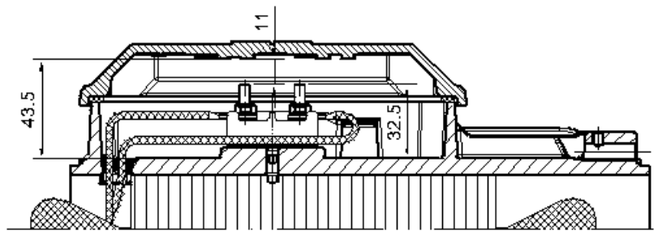


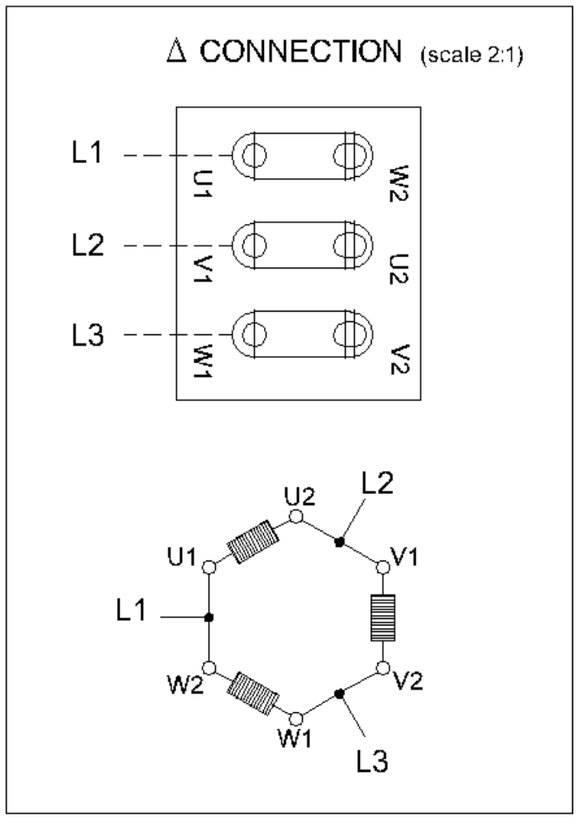
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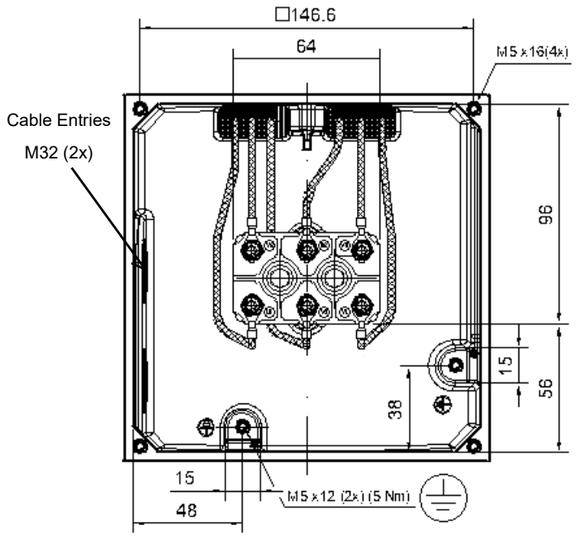
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Description: SQUIRREL CAGE MOTOR WITH PROTECTIVE ROOF		
Unit: IEC LV Motors Date: 06.Nov.2021	Issued by: J. Hautala Approved by: A. Härmänmaa	Replaces: Replaced by:
ABB	Customer Reference:	

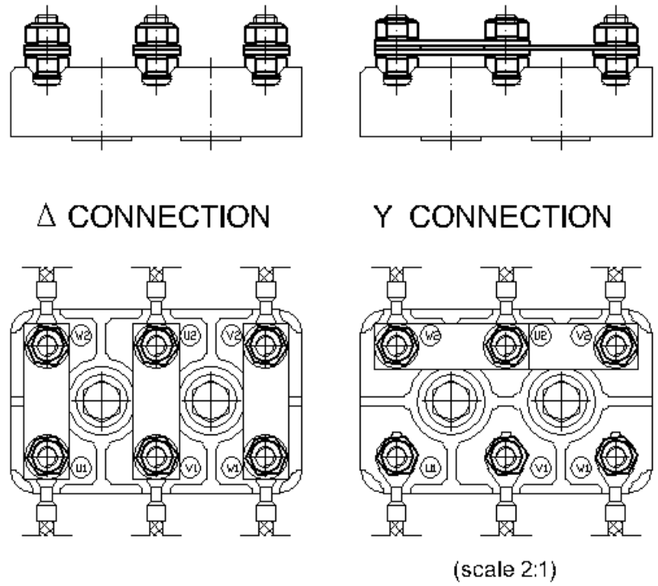










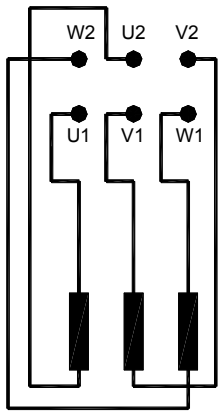


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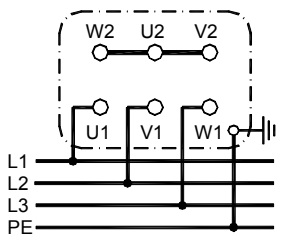
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Description: TERMINAL BOX WITH EARTHINGS SHOWN		
Unit: IEC LV Motors Date: 05.Jul.2021	Issued by: J. Helin Approved by: A. Härmänmaa	Replaces: Replaced by:
ABB	Customer Reference:	

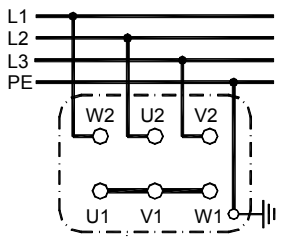
Diagram of connection
Anschluss-Schema
Schema de branchement

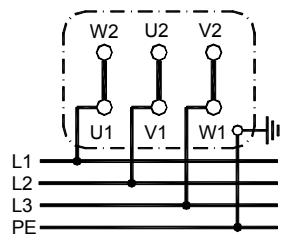


Connection of terminals
Anschluss des Motors
Branchement des bornes

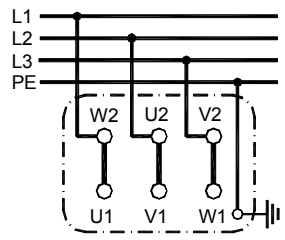


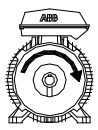
Y-connection
Y-Schaltung
Connection etoile



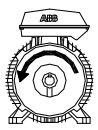


D-connection
D-Schaltung
Connection triangle





Direction of rotation with phase sequence shown in picture
Drehrichtung nach Schaltbild
Direction de rotation avec branchement ci-dessus



Direction of rotation with reversed phase sequence
Drehrichtung mit umgekehrter Phasenfolge
Direction de rotation avec sequence de phase reversée

Motor No
Maschine Nr
No du moteur

ABB Oy, Motors

3GZF321100-1 E

Connection Diagram

Document No:
3GZF321100-1 E

Description: 3-PHASE SQUIRREL-CAGE MOTOR

Unit:	Motors	Issued by:	M Prusi	Replaces:
Date:	21.09.2005	Approved by:	Jari Raittila	Replaced by:

ABB Oy

Customer Reference:

CROSSWIND	HOLLANDSE KUST NOORD WIND PARK Project Contract No. CW-I-WP4-2023-05	ROSETTI MARINO
Document Title:	PUMP DATA SHEETS	Sh. 3 of 7 Date : 01/10/2024 Rev. 02

NOTE: ○ INDICATES INFORMATION TO BE COMPLETED BY PURCHASER ☐ BY MANUFACTURER

GENERAL

NO. MOTORS DRIVEN	2 (TWO)	OTHER DRIVER TYPE			
PUMP ITEM NO'S	P-5001A/B	PUMP ITEM NO'S			
MOTOR ITEM NO'S	PM-5001A/B	DRIVER ITEM NO'S		GEAR ITEM NO'S	
MOTOR PROVIDED BY	ABB	DRIVER PROVIDED BY	N/A	GEAR PROVIDED BY	NORD
MOTOR MOUNTED BY	PUMP VENDOR	DRIVER MOUNTED BY	N/A	GEAR MOUNTED BY	PUMP VENDOR
MOTOR DATA SHEET NO.	1724000936-MAC-DS-00014	DRIVER DATA SHEET NO.		GEAR DATA SHEET NO.	

● OPERATING CONDITIONS

- ● CAPACITY @ PT (m³/h):
  - @ MAXIMUM VISCOSITY
  - @ MIN. VISCOSITY **2,5**
- ● DISCHARGE PRESSURE (kPa)(BARG):
  - MAXIMUM **5.3 (note 3)**
  - MINIMUM
- ● SUCTION PRESSURE (kPa)(BARG):
  - MAXIMUM
  - MINIMUM **Flooded (note 1)**
- ● DIFFERENTIAL PRESSURE (kPa)(BARG)
  - MAXIMUM
  - MINIMUM **(note 3)**
- ● NPSH AVAILABLE (m) **>7 @ level +0,00 (note 1)**
- ○ HYDRAULIC kW

PSV Set Value : 7.6 barg

● LIQUID

- ● TYPE OR NAME OF LIQUID **SEA WATER**
- ● PUMPING TEMPERATURE (°C):
  - NORMAL **20**
  - MAX
  - MIN **1,3**
- ● SPECIFIC GRAVITY **1,03**
  - MAXIMUM **1,02**
  - MINIMUM
- ○ SPECIFIC HEAT
  - Cp (kJ/kg °C)
- ● VISCOSITY (Cp) **0,9**
  - MINIMUM
  - MAXIMUM
- ● CORROSIVE/EROSIVE AGENTS **SAND/SALT PARTICLES**
- ● CHLORIDE CONCENTRATION (PPM) max 35,000 ppm
- ○ H_2S CONCENTRATION (PPM)

LIQUID ○ TOXIC ○ FLAMMABLE ○ OTHER

Fluid considered with no H2S / C02 / BTEX and TSS < 5%

■ PERFORMANCE

RATED CAPACITY (m³/h)	**2,5**
NPSH REQUIRED (m)	**0.56 mH2O**
RATED SPEED (RPM)	**118**
DISPLACEMENT (m³/h)	**3,3**
VOLUMETRIC EFFICIENCY (%)	**81,6**
MECHANICAL EFFICIENCY (%)	**56,7**
kW @ MAXIMUM VISCOSITY	**1,45**
kW @ RELIEF VALVE SETTING	**1,55**
MAXIMUM ALLOWABLE SPEED (RPM)	**450**
MINIMUM ALLOWABLE SPEED (RPM)	**100**

■ CONSTRUCTION

	SIZE	ANSI RATING	FACING	POSITION
CONNECTIONS				
SUCTION				**BOTTOM**
DISCHARGE	**1" 1/2**	**150#**	**RF**	**SIDE**
MOUNTING	**16"**	**150#**	**RF**	
DRAINS				
VENTS				
JACKET				

PUMP TYPE:

☐ INTRN'L GEAR ☐ TWIN-SCREW ☐ VANE

☐ EXTRN'L GEAR ☐ 3-SCREW ■ PROGRESSING CAVITY

GEAR TYPE

☐ SPUR ■ HELICAL

☐ OTHER

● SITE AND UTILITY DATA

LOCATION ○ INDOOR ● OUTDOOR

○ HEATED ● UNHEATED ○ UNDER ROOF

○ ELECTRICAL AREA CLASS SAFE GROUP DIV

○ WINTERIZATION REQD ○ TROPICALIZATION REQD

SITE DATA

○ RANGE OF AMBIENT TEMPS:MIN/MAX -8 / 25 °C

UNUSUAL CONDITIONS

○ DUST ○ FUMES ● SALT ATMOSPHERE

○ OTHER

○ UTILITY CONDITIONS

ELECTRICITY	DRIVERS	HEATING	CONTROL	SHUTDOWN
VOLTAGE	**400**			
HERTZ	**5**			
PHASE	**50**			

COOLING WATER	INLET	RETURN	DESIGN	MAX Δ
TEMP °C		MAX		
PRESS. (BARG)		MIN		
SOURCE				

INSTRUMENT AIR MAX MIN

PRESSURE (kPa)(BARG)

APPLICABLE SPECIFICATIONS:

API 676 POSITIVE DISPLACEMENT PUMPS - ROTARY

○ GOVERNING SPECIFICATION (IF DIFFERENT) **(5)**

REMARKS:

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CONSTRUCTION (CONTINUED)

CASING

- MAXIMUM ALLOWABLE PRESSURE: 20 (BARG) 20 °C
- HYDROSTATIC TEST PRESSURE: 30 (BARG)
- STEAM JACKET PRESSURE: (BARG) °C
- ROTOR MOUNT ☐ BTWN. BEARINGS ■ OVERHUNG
- TIMING GEARS ☐ YES ☐ NO
- BEARING TYPE: ■ RADIAL TIMKEN (1) ☐ THRUST
- LUBRICATION TYPE: ○ CONSTANT LEVEL OILERS
- ☐ PUMPED FLUID ☐ RING OIL ☐ OIL MIST
- ☐ EXTERNAL ☐ OIL FLOOD ■ GREASE
- ■ LUBRICANT TYPE Fuchs Renolin CLP 220
- ● MECHANICAL SEALS
- ■ MANUFACTURER AND MODEL Flowserve / ISC2-PX
- ■ MANUFACTURER CODE 1CW-FX
- ● API 610 SEAL FLUSH PLAN API PLAN 51
- ■ API 610 SEAL CODE 21A-FFQ-060-13/51
- ○ PACKING: ○ LANTERN RING
- ☐ MFR. AND TYPE ☐ NO. OF RINGS

DRIVE MECHANISM

- ○ DIRECT-COUPLED ○ V-BELT ■ GEAR
- ■ COUPLING MANUFACTURER John Crane

DRIVERS

- ● MOTOR:
- ■ MANUFACTURER ABB
- ■ TYPE 4 poles, safe area induction motor
- ■ FRAME NO. IEC 132
- ● CONSTANT SPEED
- ○ VARIABLE SPEED
- ■ kW 5,5 RPM 1463
- ● VOLTS 400 PHASE 3
- ● HERTZ 50 SERVICE FACTOR S1
- ● ENCLOSURE TEFC
- ○
- ○ STEAM TURBINE
- ○ OTHER (SEE SEPARATE DATA SHEETS)

OTHER PURCHASER REQUIREMENTS

NAMEPLATE UNITS ○ U.S. CUSTOMARY ● SI

- ● RELIEF VALVES BY PUMP MFRG ● INTERNAL ○ EXTRNL.

PIPING FOR SEAL FLUSH FURNISHED BY:

- ● PUMP VENDOR (2) ○ OTHERS

PIPING FOR COOLING/HEATING FURNISHED BY:

- ○ PUMP VENDOR ○ OTHERS
- ● PROVIDE TECHNICAL DATA MANUAL (3)

MATERIALS

- ■ CASING Super Duplex SS (25%Cr)
- ■ STATOR NBR
- ■ END PLATES N/A
- ■ ROTOR (S) Super Duplex SS (25%Cr)
- ■ VANES N/A
- ■ SHAFT Super Duplex SS (25%Cr)
- ■ SLEEVE (S) Super Duplex SS (25%Cr)
- ■ GLAND (S) Super Duplex SS (25%Cr)
- ■ BEARING HOUSING Cast Iron
- ■ MOTOR Cast Iron
- ○ SPECIAL MATERIAL TESTS
- ○ LOW AMBIENT TEMP. MATERIALS TESTS

QA INSPECTION AND TEST

- ● COMPLIANCE WITH INSPECTORS CHECK LIST
- ● CERTIFICATION OF MATERIALS (Material certificate 3.1)
- ● FINAL ASSEMBLY CLEARANCES
- ● SURFACE AND SUBSURFACE EXAMINATIONS
- ○ RADIOGRAPHY
- ○ ULTRASONIC
- ○ MAGNETIC PARTICLE
- ● LIQUID PENETRANT 100 % of welds
- ● CLEANLINESS PRIOR TO FINAL ASSEMBLY
- ○ HARDNESS OF PARTS, WELDS & HEAT AFFECTED ZONES
- ○ FURNISH PROCEDURES FOR OPTIONAL TESTS

TESTS	REQ'D	WIT	OBS
HYDROSTATIC	○	●	○
MEHANICAL RUN	○	●	○
PERFORMANCE	○	●	○
NPSH	○	○	○

PREPARATION FOR SHIPMENT

- ● DOMESTIC ○ EXPORT ○ EXPORT BOXING REQ'D
- ○ OUTDOOR STORAGE MORE THAN 6 MONTHS

WEIGHTS (kg)

■ PUMP 1836 ☐ BASE 0 ■ GEAR 26 ■ MOTOR 81

BASEPLATE

- ● BY PUMP MANUFACTURER ○ SUITABLE FOR EPOXY GROUT
- ○ EXTENDED FOR
- ● SUBSOLE PLATES BY PUMP MANUFACTURER
- ○ DRAIN-RIM ○ DRAIN-PAN

REMARKS

(1) Shaft sleeves hardnedned in correspondence of plain bearings

(2) Plan 51 will be mounted on the pump assembly and connected to the seal with SS316L tubing and fitting.

Plan 51 is to be filled with clean fresh water. I t needs to be maintained at positive temperature.

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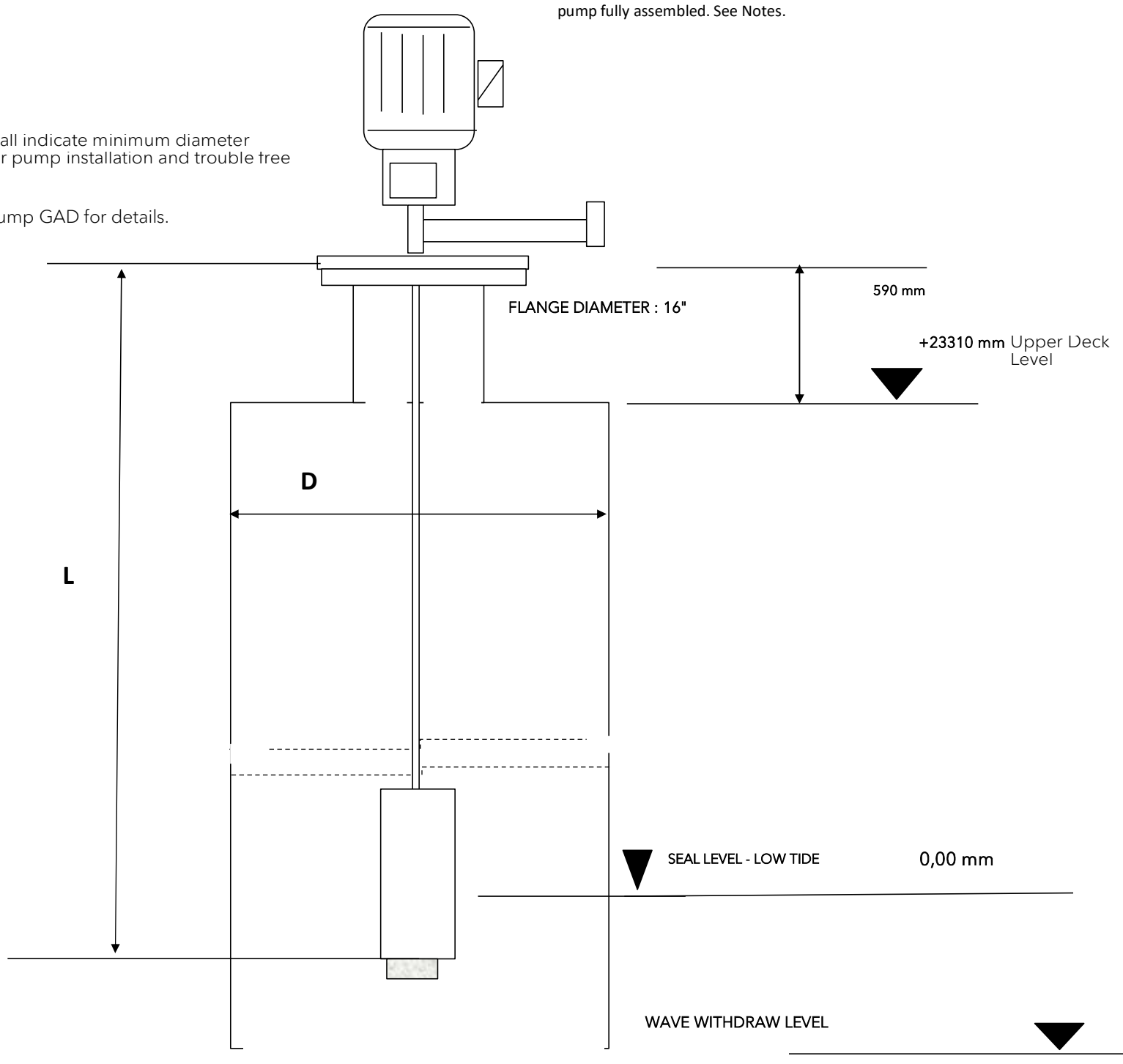
L 29.81 m

D 333.34 mm

NOTE:
Vendor shall indicate minimum diameter suitable for pump installation and trouble free operation

Refer to pump GAD for details.

Vendor to declare the mounting/dismountig clearance considering the pump fully assembled. See Notes.



OPEN CAISSON

Expected wave withdraw is 5.4 meters below low tide level (-5,40 m)
Pump lenght shall be defined to consider the above

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CROSSWIND	HOLLANDSE KUST NOORD WIND PARK Project Contract No. CW-I-WP4-2023-05	ROSETTI MARINO
Document Title:	PUMP DATA SHEETS	Sh. 6 of 7 Date : 01/10/2024 Rev. 02

NOTES

1) For NPSHA vendor to consider 1bara at minimum seawater level (+ 0,00 mm)

2) Pump lenght to be calculated by vendor according to a reliable margin (VTA) between NPSHA vs NPSHR and minimum submergence
Vendor to advise the suction nozzle depth, according to the above sentence

3) Discharge pressure / head is referred to pump battery limit (i.e. dicharge nozzle)

4) Suction strainer to be provided by vendor.
Mesh size is 7mm diameter as per PCM standard design for the selected pumps.
Mesh size shall be minimized without jeopardizing suction condition.

5) Full compliance to API Std 676 is not strictly mandatory. Vendor to submit a list of deviation supported by reference list
Please refer to attached list of technical clarifications & deviations, including API 676.

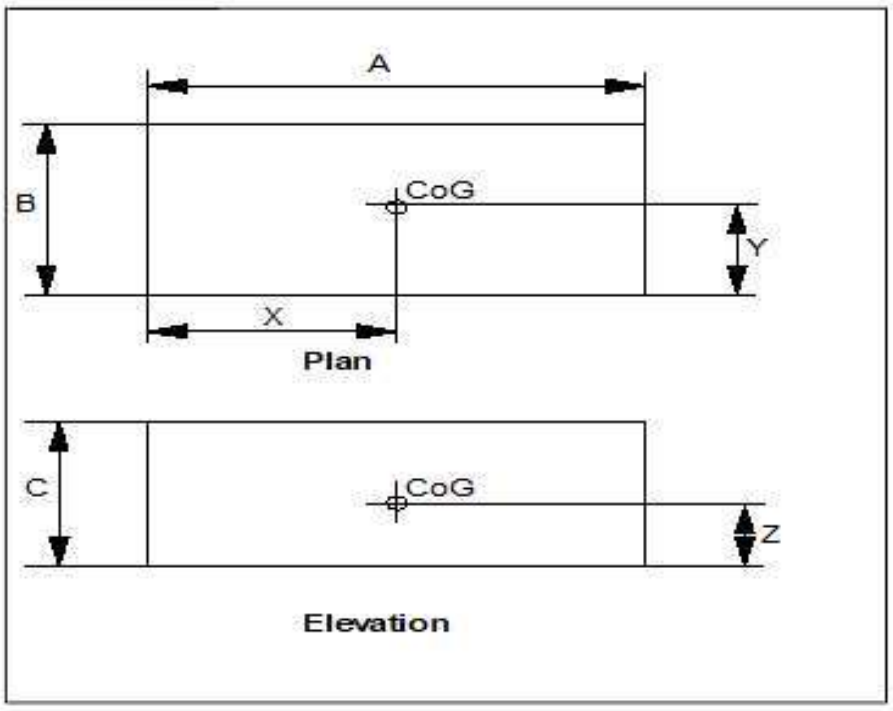
6) Vendor to declare mounting/dismantling clearance considerinf full assmbled pump
For full assembled pump mounting/ dismantling, the required minimum vertical clearance will be the total length of the equipment (including motor & all casing extensions : approx 35 m estimated), plus the required length for slings, depending on the lifting equipment to be used.
This clearance will be required above the supporting flange elevation.

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WEIGHT DATA (kg)

		Areas for input by Supplier	
Dry Weight	(I)	1943	kg
Content	(II)	2150	kg
Operating Weight	(I+II)	4093	kg
Auxiliaries' weight, included in I (specify under Notes)			kg
Test weight, i.e. filled with water			kg
Transport weight		1943	kg

CENTRE OF GRAVITY (CoG) DATA FOR INSTALLED DRY CONDITION



Overall dimensions		
A =	971	mm
B =	597	mm
C =	32170	mm

CoG location (mm)		
X =	7	mm
Y =	-1	mm
Z =	-12398	mm

NOTES

Datum point considered to locate the C.O.G of the pump is the center of the mounting flange.

WEIGHT AND CoG STATUS (TICK OFF AS APPROPRIATE)

☐ Estimated ☐ Calculated

☐ Catalogue data ☐ Weighed

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IEC LV Motors	Technical Data Sheet - DOL			
	HOLLANDSE KUST NOORD WIND PARK Project		Location: Netherlands	
Department/Author: Rakesh Purushohama	Customer name: PCM		Customer ref: GIAN-392481	Item name: PM-50001 A/B
Our ref.: CQ813220	Rev/Changed by: C	Date of issue: 07/06/2024	Saving ident: cq813220.xlsm	Pages: 3(4)

No.	Definition	Data	Unit	Remarks	
1	Product	***TEFC, 3-phase, squirrel cage induction motor***			
2	Product code	***3GBP 132 260-BDK***		Calc. ref.	3GZF021013-1094
3	Type/Frame	***M3BP 132SMF 4***			
4	Mounting	***IM3011, V1(flange)***			
5	Rated output P_N	***5,5***	kW		
6	Service factor	***1***			
7	Type of duty	***S1(IEC) 100%***			
8	Rated voltage U_N	***400***	VD	± 5 % (IEC 60034-1)	
9	Rated frequency f_N	***50***	Hz	± 2 % (IEC 60034-1)	
10	Rated speed n_N	***1463***	r/min		
11	Rated current I_N	***11,9***	A		
12	No-load current	***5,8***	A		
13	Starting current I_s/I_N	***7,6***		Meet IEC 60034-12, N,(H at 60 Hz)	
14	Nominal torque T_N	***36***	Nm		
15	Locked rotor torque T_S/T_N	***2,8***			
16	Maximum torque T_{max}/T_N	***3,5***			
17	Minimum torque T_{min}/T_N	***2,5***			
18	Speed at minimum torque	***255***	r/min		
	Load characteristics (IEC 60034-2-1:2014)	Load %	Current A	Efficiency %	Power factor
19	PLL determined from residual loss	*100*	**11,9**	**89.6 / IE3**	**0,74**
20		*75*	**9,8**	**89,8**	**0,68**
21		*50*	**8**	**88,7**	**0,56**
22		*Start*	**90**		**0,43**
23	Maximum starting time from hot	***12***	s		
24	Maximum starting time from cold	***21***	s		
25	Insulation class / Temperature class	***F / B***			
26	Ambient temperature	***40***	°C		
27	Altitude	***1000***	m.a.s.l.		
28	Enclosure	***IP56***			
29	Cooling system	***IC411 self ventilated***			
30	Bearing DE/NDE	***6208-2Z/C3 - 6208-2Z/C3***			
31	Type of Grease				
32	Sound pressure level (LP dB(A) 1m)	***70***	dB(A)	at load	
33	Moment of inertia J = ¼ GD2	***0,0295***	kg-m2		
34	Balancing				
35	Vibration class				
36	Position of terminal box	***Top***			
37	Terminal box entries; no, dimens.	***2 x M25***			
38	Number of power terminals	***6 x M5***			
39	Direction of rotation	***CW or CCW***			
40	Weight of rotor	***21***	kg		
41	Total weight of motor	***81***	kg		
42	Dimension drawing no.				
43					
44					
45					
Ex-motors (N/A)					
46					
47					
48					

Option Variant Codes / Definition

49	+066 Modified for non-standard mounting position
50	+403 Degree of protection IP56. Applicable to Motor and Terminal Box
51	
52	

Remarks:

Data based on situation 3/7/2024
All data subject to tolerances in accordance with IEC
Guaranteed values on request

CROSSWIND	9 E AA% C 0 Q2#@TQS#C E E P0 #Z £C 0 #M% P@#Mf£{nj‡ . £ ¡ #£aj #C £ #. Z ÐÆZ M . Ð ˜ ¨ ° Ð ´	ROSETTI MARINO
0 £ j · ~ n ¡ #Sv‡hø	2A2 . SP :. #B E SE P#D % S% #Q9 22S	Qu #, #E S#, Date : 16/10/2024 Rev. 03

Applicable to : Proposal Purchase As Built PAGE ____ OF ____ REQ'N NO. NA

DESIGN, MANUFACTURE & TESTING SHALL CONFORM TO SPECIFICATION : 123A90-DDL-EL-SP-20084 - Technical Specification for LV Motors

FOR CROSSWIND UNIT

SITE BLPH - Hollandse Kust Noord (HKN)

SERVICE SEA WATER LIFT DRIVEN EQUIPMENT TYPE PUMP DRIVEN EQUIP. ITEM NO.: P-50001 A/B QUANTITY: 2

MANUFACTURER ABB MODEL: 3GBP 132 260-BDK SERIAL NO. TBC FRAME NO: IEC 132

NOTE: INFORMATION TO BE COMPLETED BY: PURCHASER MANUFACTURER PURCHASER OR MANUFACTURER

OPERATING CONDITIONS (1)

Site Data: HOLLANDSE KUST NOORD WIND PARK

Altitude: Less than 1000 Other ____ (m)

Ambient Temperature: Min/Max -8 / 25 (°C)

Electrical Characteristics:

Volts 400 Phase 3 Hertz 50

Starting Voltage: Full Reduced ____ %

Volt Dip +10/-20' % Loaded Unloaded

Installation: Indoor Outdoor YES

Operating Mode Continuous Standby Intermittent YES Alter.

Electrical Area Classification ____ Unclassified YES

Class ____ Group ____ Division ____

Unusual Conditions Dust Fumes

Gasses/Vapours ____

Ignition Temp ____ (°C) Temperature Code ____

PERFORMANCE

Nameplate Power 5,5 (kW) 1463 (rpm)

No Load Current: 5,8 (A)

Load	Current (AMPS)	Efficiency	Power Factor
Full	11,9	89,6	0,74
75%	9,8	89,8	0,68
50%	8	88,7	0,56
Locked Rotor	90		0,43

Starts per Hour: 2 Hot 2 Cold

Full Load Torque: 36 (N-m)

L. R. Torque: 280 %FLT

Breakdown Torque: 350 %FLT

Acceleration Time: 0,1 (sec)

CONSTRUCTION FEATURES

Enclosure TEFC YES WP1 WP2

Explosion Proof Other SAFE AREA

Insulation Class B YES F YES Other

Non-Hygroscopic Tropicalized

Temperature Rise: ____ (°C) Above ____ (°C)

By: ____ @ ____ S.F.

NEMA Torque Design A B C D

Locked rotor kVA Code ____

Mounting

Horizontal Foot Mounted Flange Mounted YES

Vertical YES Shaft Up Shaft Down YES With Canopy YES

Coupling

Supplied By John Crane Mounted By PCM

Suitable for Belt Drive N/A

Bearing type Ball YES Roller Sleeve

Bearing Lubrication Grease YES Ring Oil Oil Mist

Grease Fitting Plugged Alemite Other YES

Bearing Shielding Single Double Sealed for Life

Motor Rotation (facing end opposite shaft extension) YES

CW CCW Bidirectional YES

Fan Reversible Unidirectional

Non-Sparking YES Aluminium Non-Metallic YES

Main Terminal Box Location TOP F-1 F-2

Space Heater (2) N/A (kW)

Volts 230 Phase 1P+N+PE Hertz 50

Max. Sheath Temperature ____ (°C)

Winding Temperature Detectors (not mandatory but provided as standard)

No. per Phase ____ Type: ____

Bearing temperature Detectors

Location N/A Type: N/A

Separate JB for Space Heaters, Winding/Bearing Detectors

Adjustable Frequency Drive

Speed range: From N/A (rpm) to: N/A (rpm)

Materials of Construction

Frame Cast Iron

Junction Box Cast Iron

Copper Bar Rotor

Stainless Steel Filters

Differential Pressure Switch for Inlet Filters

Vertical Jackscrews

Ground Connection

Drilled and tapped Hole in Conduit Box

Ground Lug Size M6 (mm)

Motor Thrust Load None N/A (N)

Thrust Direction Toward Away

Motor Thrust Rating

Nameplate Material 316 SS YES Other

TESTING & MISCELLANEOUS

Testing Required Witness

Routine Test

Complete Test YES

Noise Test

Certified Results

Weight Net ____ (kg) Shipping ____ (kg)

Painting Mfr. Std. Other IEEE 841

Noise Design

Max sound Pressure Level @ ____ (m) ____ dBA

Expected Sound Pressure Level @ ____ (m) ____ dBA

Notes:

(1) Refer to pump DS - Document Number : 1724000936-MAC-DS-00012

(2) space heater NOT necessary according to enviromental conditions (Ref. IOGP S-703 par. 11.3.6.1)

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ITEM	Tag	P-50001B	: Sea Water Pump B		Dwg	123A90-DDL-PR-PID-80021	
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)		Module	LD	
TASK	code	C10002366	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline Mechanical	Form	CGX01	Pump

1	Nameplates are in specified language(s) and details correct, in accordance with drawings.	PL
2	Check that the holding down arrangements are correct.	OK
3	Check for mechanical damages.	OK
4	Check lubrication system. - Ensure correct quantity & grade of lubricant is installed.	PL
5	Pump case vent / drain installed in accordance with drawings.	Note
6	Suction / Discharge nozzles installed in accordance with drawings. No misalignment of pipe / pump case flanges.	PL
7	Mechanical seal system installed in accordance with drawings and flushed.	PL
8	Instruments / Valves / Strainers as per vendor P&ID.	PL
9	Electrical grounding boss installed per drawings.	Note
10	Check direction / rotation mark manually & labeled arrow card	Note
11	Confirm operating and / or safety instruction tags / labels are correct.	OK
12	Check base frame drains / pumps drains are correctly connected (if applicable).	NA
13	Check any damages of coupling, engine, motor.	OK
14	If required produce Red Line Mark Up for "AS BUILT".	

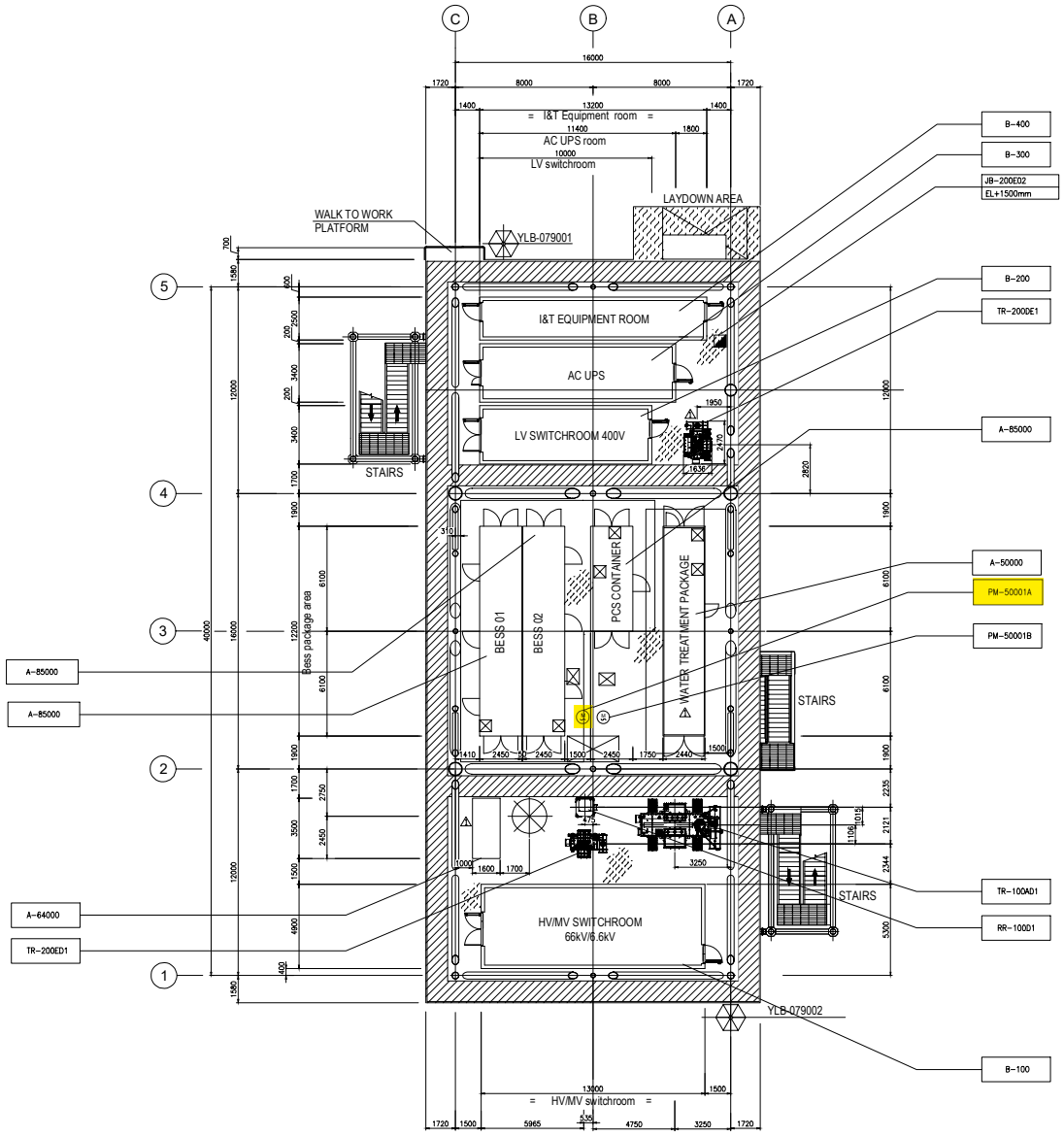
Comments

1. Nameplate of Pump is correct. Nameplate of Gearbox is correct (but pinned upside down). Nameplate of motor has PL.
4. Not possible to control lubricant system at this stage. All the carters have been closed around the pump case. Seal system not installed.
5. Vent of Gearbox OK. Not possible to check other vents/drain. All the carters have been closed around the pump case. Seal system not installed.
6. Discharge nozzle aligned and conforming to drawing.
8. See punch of seal system. Other items installed correctly.
9. Earthing point on pump case is correct. Not bonded to earth because the pump shall be dismantled and reinstalled at sea.
10. Rotation of shaft not possible to verify because the pump case carters are closed. Arrow direction on motro label present.
13. Check performed where possible.

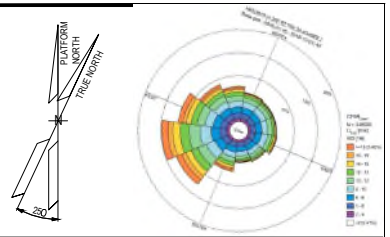
	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (Rosetti Marino)	
Name	Emanuele Delfino	Kangi Albonetti	
Date	2025-02-19	2025-03-01	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-02-19T09:01:41.999Z	PROVERLIS Digitaly signed by Kangi Albonetti 2025-03-01T10:29:03.415Z	

DRAWING NO. 123A90-DDL-EL-DL-20101

REV. 01



PLAN ON LOWER DECK
EL+23.310 T.O.S.



NOTES

1. ALL DIMENSIONS IN MM UNLESS NOTED OTHERWISE.
2. ALL ELEVATIONS IN METERS. UNLESS NOTED OTHERWISE.
3. ELEVATIONS REFER TO T.O.S.
4. FOR ELECTRICAL EQUIPMENT LAYOUT OF CONTAINERS B-100, B-200, B-300, B-400 REFER TO THE RESPECTIVE LAYOUTS.

LEGEND

- ELECTRIC MOTOR – LOW VOLTAGE
- INTERFACE PANEL
- JUNCTION BOX
- JB-200E2 / EL+500mm — TAG ITEM / REFERED ELEVATION TO T.O.S. (TOP OF STEEL)

HOLDS

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-EL-DL-20106	ELECTRICAL EQUIPMENT LAYOUT UPSs & BATTERIES SWITCHROOM
123A90-DDL-IN-DL-40012	ITER EQUIPMENT LAYOUT
123A90-DDL-EL-DL-20104	ELECTRICAL EQUIPMENT LAYOUT HV & MV SWITCHROOM
123A90-DDL-EL-DL-20105	LV SWITCHGEAR ROOM EQUIPMENT LAYOUT

INSERT SUBCONTRACTOR / VENDOR LOGO HERE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	06/05/24	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	04/03/24	SAM	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND | ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
ELECTRICAL EQUIPMENT LAYOUT
LOWER DECK

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE 1:150

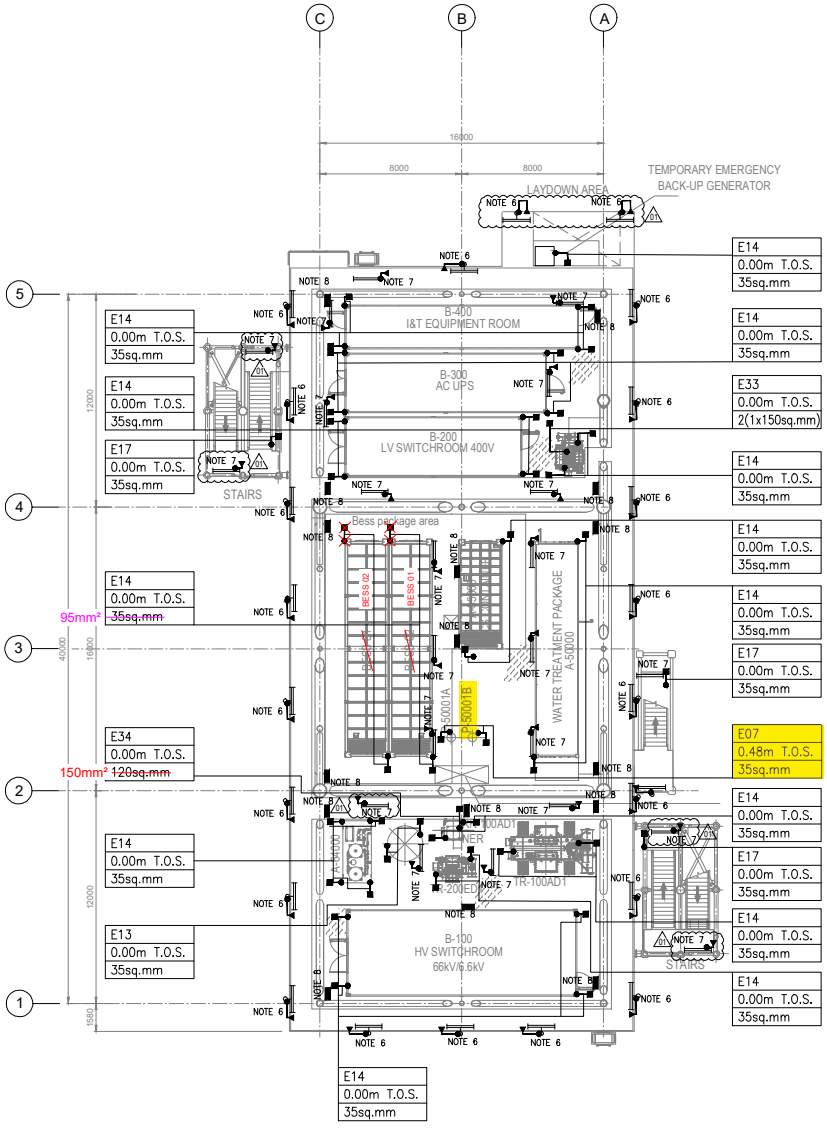
DRAWN SAM | CHECKED FMA/AMA | APPROVED FPA/DLO | DATE 04/03/24

A1 | DRAWING NO. 123A90-DDL-EL-DL-20101 | SHEET 001 | REV. 01

File Name : - 123A90-DDL-EL-DL-20101-Electrical Equipment Layout - Lower Deck

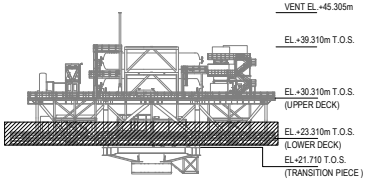
DRAWING NO. 123A90-DDL-EL-DL-20133

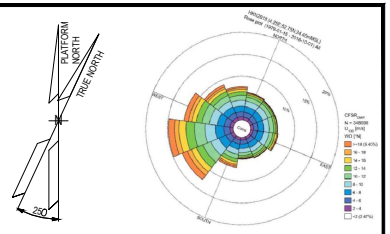
REV. 01



PLAN ON LOWER DECK
EL+23.310 T.O.S.

KEY PLAN





NOTES

1. ALL DIMENSIONS AND ELEVATIONS ARE GIVEN IN mm UNLESS OTHERWISE NOTED.
2. ELEVATIONS REFER TO T.O.S.
3. THIS DOCUMENT IS ONLY VALID FOR EARTHING LAYOUT.
4. ALL ELECTRICAL EQUIPMENT NOT DIRECTLY WELDED TO SKID FRAME SHALL BE BONDED TO STEEL TO THE STRUCTURE OF SKID BASEFRAME.
5. FOR LIGHTNING PROTECTION SYSTEM SURGE PROTECTIVE DEVICES (SPD), REFER TO THE DOCUMENT 123A90-DDL-EL-RE-20154.
6. ALL NON-WELDED POLES WILL BE EARTHED AS PER TYPICAL E05 AND E24.
7. ALL LINEAR LIGHTING FIXTURE WILL BE EARTHED AS PER TYPICAL E32.
8. EARTH BAR WILL BE FIXED TO THE PRIMARY BEAMS OF THE UPPER DECK. COMPLETE EARTHING INCLUDING WITH 2 THREADED STUDS. ALL EARTH BAR WILL BE EARTHED AS PER TYPICAL E03D / 6.00M T.O.S. / 35 SQ MM.
9. EQUIPOTENTIAL BONDING GROUPING FOR BOLTED HANDRAILS ARE PROVIDED EVERY 3M FOR THE ENTIRE PERIMETER AS TYPICAL E16 AND WILL BE DEFINED DURING ASSEMBLY PHASE

LEGEND

- LIGHTING FIXTURE POLE MOUNTED
- LINEAR LIGHTING FIXTURE
- EARTHING BOSS AISI316L
- COMPRESSION TYPE LUG TINNED COPPER
- THREADED STUD FOR EARTHING CONNECTION
- Exx EARTHING TYPICAL CODE
- EARTHING BAR

TYP.	TYPICAL
ELE	ELEVATION
SIZE	

REFERENCE DOCUMENTS

123A90-DDL-PP-DL-70070	PLOT PLAN - LOWER & UPPER DECK
123A90-DDL-EL-DD-20090	ELECTRICAL TYPICAL INSTALLATION DETAILS - EARTHING SYSTEM
123A90-DDL-EL-RE-20154	LIGHTNING PROTECTION SYSTEM CALCULATION REPORT
123A90-DDL-EL-DL-20119	LIGHTING & SOCKET LAYOUT - LOWER DECK
123A90-DDL-EL-DL-20101	ELECTRICAL EQUIPMENT LAYOUT - LOWER DECK

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	25/07/24	SAM	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	29/05/24	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
EARTHING & LIGHTNING LAYOUT
LOWER DECK

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1:150
DRAWN SPS	CHECKED FMA/AMA	APPROVED FPA/DLO	DATE 25/07/24
A1	DRAWING NO. 123A90-DDL-EL-DL-20133	SHEET 001	REV. 01

SHEET 001 OF 002

VALID FOR CONSTRUCTION

REV.:	DATE:	SIGNATURE:
1_D	12/12/24	C.Pilato

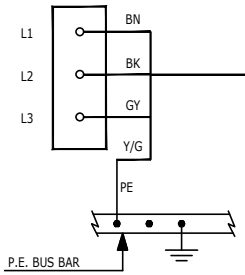
ROSETTI MARINO SpA

File Name : 123A90-DDL-EL-DL-20133

FROM	TO

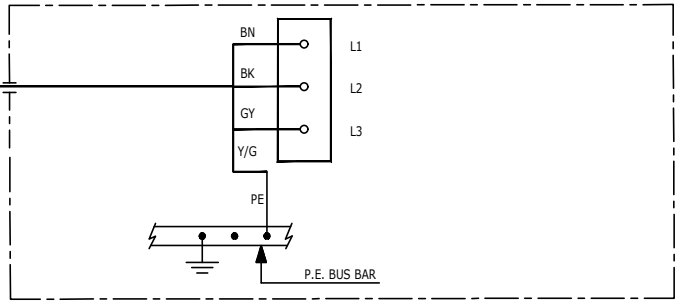
DESCRIPTION: LV SWITCHGEAR
TAG NUMBER: SG-200N1

COLUMN/CUBIC.: A7/+01

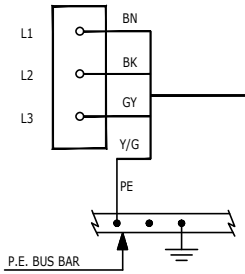


83018-CEL
4G4 mm²

DESCRIPTION: SEA WATER INTAKE PUMP A
TAG NUMBER: PM-50001 A

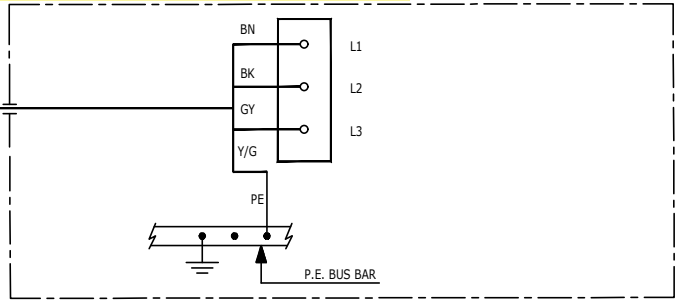


COLUMN/CUBIC.: A6/+01

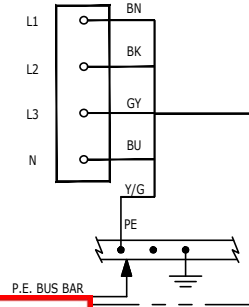


83019-CEL
4G4 mm²

DESCRIPTION: SEA WATER INTAKE PUMP B
TAG NUMBER: PM-50001 B



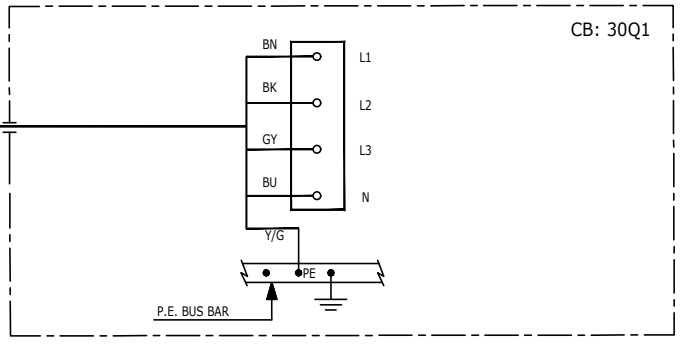
COLUMN/CUBIC.: A3/+04



83020-CEL
5G16 mm²

DESCRIPTION: CRANE
TAG NUMBER: JB-200E3

CB: 30Q1



VALID FOR CONSTRUCTION
FDL DWG: **123A90-FDL-EL-DG-20149**

REV.:	DATE:	SIGNATURE:
2_K	12/02/25	G.Randi

ROSETTI MARINO SpA

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	19/11/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	16/10/24	SAI	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	08/07/24	SAI	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL INTERCONNECTING WIRING DIAGRAM
LV SWITCHGEAR SG-200N1

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE : 1:X

A3

DRAWING NO. 123A90-DDL-EL-DG-20149

SHEET 024

REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DG-20149 Rev. 02

DRAWING NO. DRAWING_NO.

REV. REV

P-50001 A/B

SEA WATER LIFT PUMPS

POWER : 1.6 KW
FLOW : 2.5 m³/h
DESIGN P/T : 7.6 barg / 80°C
DISCHARGE PRESSURE : 5.6 barg (NOTE 9)
MATERIAL : SDSS

B-50013 A/B

SEA WATER LIFT PUMPS
CAISSONS

SIZE : 343 mm (ID) x 27308 mm (H)
MATERIAL : CS + CA

123A90-DDL-PR-PID-80022
BIOCIDE DOSING UNIT
1"-CI-029-01CP-E
3/4" BLPH-MV-214
3/4"x1/2" 1/2"
CONC. RED. BLPH-MV-215

1-1/2"-SWS-035-01SD-E
123A90-DDL-PR-PID-80022
SEA WATER COARSE FILTER PACKAGE

1"-CI-030-01CP-E
1"-CI-032-01CP-E

BLPH-MV-043 1.1/2"
SWS-035
SWS-031
1-1/2"-SWS-031-01SD-E

BLPH-MV-050 1.1/2"
SWS-035
SWS-033
1-1/2"-SWS-033-01SD-E

50 XY 001 / 50 XV 001 — IA — NOTE 5 — FC TYP.1
50 XY 002 / 50 XV 002 — IA — NOTE 3 — FC TYP.1
50 RO 001 — NOTE 7
3/4" BLPH-MV-044
1.1/2" BLPH-NRV-004
INSTR. PIPING
50 PI 001 / 50 PT 001 — H L — 2" — 2" x 1.5" — E
BLPH-MV-464
1"-SWS-146-01SD-E

50 XY 003 / 50 XV 003 — I.A. — NOTE 5 — FC TYP.1
50 XY 004 / 50 XV 004 — I.A. — NOTE 3 — FC TYP.1
50 RO 002 — NOTE 7
3/4" BLPH-MV-054
1.1/2" BLPH-NRV-008
INSTR. PIPING
50 PI 002 / 50 PT 002 — H L — 2" — 2" x 1.5" — E
BLPH-MV-465
1"-SWS-147-01SD-E

03

BLPH-MV-501
BLPH-MV-503
50 LG 001
50 RO 003
BLPH-MV-502
V-50000A
NOTE 11

LOCAL/REMOTE 50 XI 002A
STOP 50 HS 005A
START 50 HS 001A
RUNNING/STOPPED 50 XI 001A
AUTO START READY 50 XI 003A
TRIPPED/FAULT 50 XA 004A
MOTOR STOPPED BY LOCAL PUSH BUTTON 50 XA 006A
83-XS-001A
ESD

1" BLPH-NRV-007
MCC
PM-50001A
M
RS

1D2 50 PSV 006 BLOCKED OUTLET SET @ 7.6 barg
SP 0043
1"-SWS-222-01SD-E
BLPH-MV-048 1"
BLPH-MV-469
SB LO
1"-SWS-288-01SD-E
2"-SWR-289-01SD-N
NOTE 10

BLPH-MV-511
BLPH-MV-513
50 LG 002
50 RO 004
BLPH-MV-512
V-50000B
NOTE 11

LOCAL/REMOTE 50 XI 002B
STOP 50 HS 005B
START 50 HS 001B
RUNNING/STOPPED 50 XI 001B
AUTO START READY 50 XI 003B
TRIPPED/FAULT 50 XA 004B
MOTOR STOPPED BY LOCAL PUSH BUTTON 50 XA 006B
83-XS-001B
ESD

BLPH-NRV-024 1"
MCC
PM-50001B
M
RS

1D2 50 PSV 007 BLOCKED OUTLET SET @ 7.6 barg
SP 0044
2"-SWR-287-01SD-N
1"-SWS-221-01SD-E
BLPH-MV-051 1"
BLPH-MV-470
SB LO
1"-SWS-286-01SD-E
NOTE 10

LOWER DECK: +23.310 m
TOP OF CAISSON: +21.808 m
SUCTION
NOTE 1, 2, 8
P-50001A
PUMP RETENTION BARS
EL: - 5.500 m
B-50013A

LOWER DECK: +23.310 m
TOP OF CAISSON: +21.808 m
SUCTION
NOTE 1, 2, 8
P-50001B
PUMP RETENTION BARS
EL: - 5.500 m
B-50013B

NOTES

1. SEAWATER LIFT PUMPS ARE RATED 2 X 100%
2. AUTO START OF DESIGNATED STANDBY PUMP ON LOSS OF RUNNING STATUS AND DISCHARGE LOW PRESSURE ALARM OF DUTY PUMP.
3. VALVE TO BE OPENED WHEN PUMP IS OFFLINE TO DOSE CAISSON WITH TREATED SEAWATER TO PREVENT BIOLOGICAL GROWTH.
4. DELETED.
5. SOFTWARE INTERLOCK PREVENTS PUMPS FROM STARTING IN CASE THE RELEVANT XV VALVE IS FULLY CLOSED. 03
6. DELETED.
7. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "123A90-DDL-IN-DS-40054 - TECHNICAL DATASHEET FOR RESTRICTION ORIFICE".
8. LOGIC FOR CONTROL OF P-5001A/B THAT PREVENTS SIMULTANEOUS RUNNING OF A AND B PUMP IS PROVIDED.
9. DISCHARGE PRESSURE REFERS TO THE FLANGE DISCHARGE OF THE PUMP AT LOWER DECK.
10. ROUTED TO THE SEA.
11. VESSELS V-50000A/B ARE INSULATED AND HEAT TRACED. 03

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.
5. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

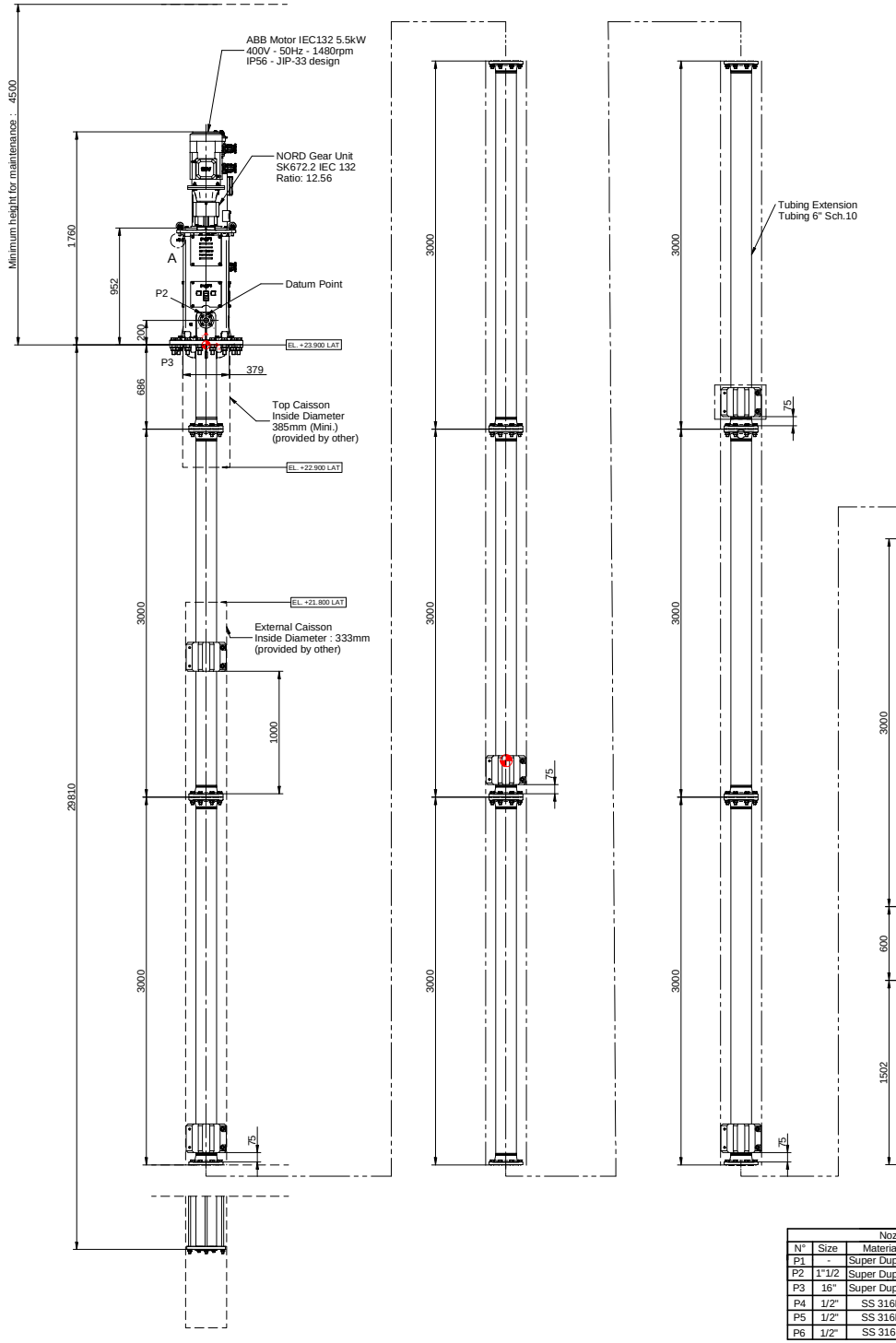
CROSSWIND

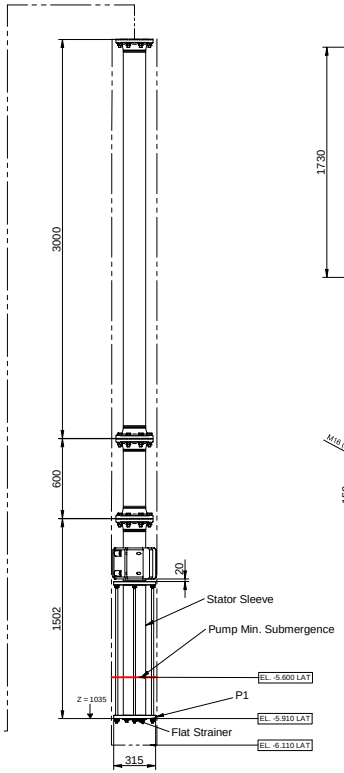
ROSETTI MARINO

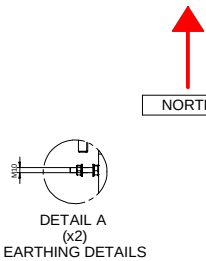
TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
SEA-WATER INTAKE SYSTEM SHEET 1

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80021	SHEET 001	REV. 03

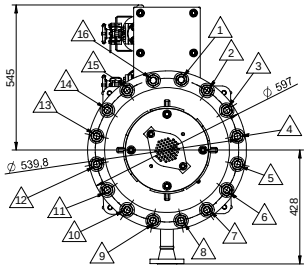
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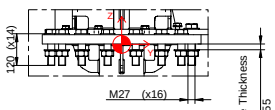




DETAIL A
(x2)
EARTHING DETAILS

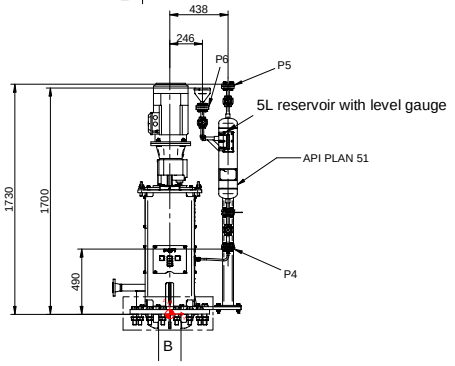


BOTTOM VIEW

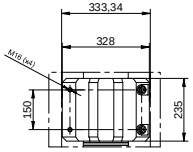


DETAIL B
MOUNTING DETAILS

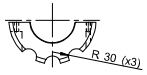
	Foundation Loads (N)
1	2510 (Compression)
2	2510 (Compression)
3	2510 (Compression)
4	2510 (Compression)
5	2510 (Compression)
6	2510 (Compression)
7	2510 (Compression)
8	2510 (Compression)
9	2510 (Compression)
10	2510 (Compression)
11	2510 (Compression)
12	2510 (Compression)
13	2510 (Compression)
14	2510 (Compression)
15	2510 (Compression)
16	2510 (Compression)



SEAL SYSTEM API PLAN 51



DETAIL C
CENTRALIZERS (x6)



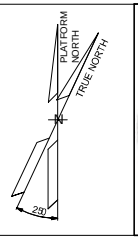
Note :
Grooves to allow
byocide entry.

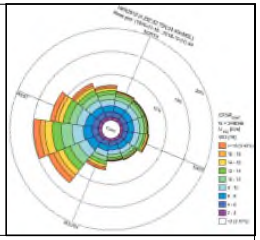
	C.O.G
X	7
Y	-1
Z	-12398

WEIGHT	
Total dry	1967 kg
Operating	4072 kg
Details for maintenance	
Pump Casing	230 kg
Pump Trunk	242 kg
Pump Extensions (x9)	130 kg
Pump Shaft Line	30 kg
Motor	81 kg
Gearbox	26 kg
Stator	33 kg
Rotor	16 kg
Coupling	25 kg
Seal System + Stand	54 kg
Centralizers (x6)	10 kg

Nozzle list					Allowable Nozzle Load (API 676)					
					Forces (kN)			Moments (N.m)		
N°	Size	Material	Rating	Service	Fx	Fy	Fz	Mx	My	Mz
P1	-	Super Duplex	strainer	Suction	-	-	-	-	-	-
P2	1"1/2	Super Duplex	**150# RF**	Discharge	0.65	0.65	0.65	350	350	350
P3	16"	Super Duplex	150# RF	Mounting	5.20	5.20	5.20	2800	2800	2800
P4	1/2"	SS 316L	300# RF	To Quench	-	-	-	-	-	-
P5	1/2"	SS 316L	300# RF	P51 Fill	-	-	-	-	-	-
P6	1/2"	SS 316L	300# RF	P51 Vent	-	-	-	-	-	-

PCM keep it moving
N° (Manufacturing Unique Serial Number)
Item 317873
Cyl 462 cm3 Rpm 118 Bar 5.9
Mod 25A24 2024
Ref P-5001A/B
6 boulevard Bineau - 92300 Levallois-Perret - FRANCE
Manufacturer: PCM EUROPE SAS
www.pcm.eu
CE Made in France





NOTES

Dimensions tolerances as per ISO2768 vK.

API Plan 13 is provided to vent the mechanical seal of vertical pumps. Tubing made in Stainless Steel 316L.

LEGEND

Z = Minimum distance for stator dismantling.

HOLDS

REV	DATE	DRN	CHKD	APPD	DESCRIPTION
03	17/09/24	ARS	SBI	ARH	ISSUED FOR CONSTRUCTION (IFC)
02	15/08/24	ARS	SBI	ARH	ISSUED FOR CLIENT REVIEW (IFR)
01	15/07/24	ARS	CLL	ARH	ISSUED FOR CLIENT REVIEW (IFR)
00	12/06/24	VAP	CLL	ARH	ISSUED FOR CLIENT REVIEW (IFR)

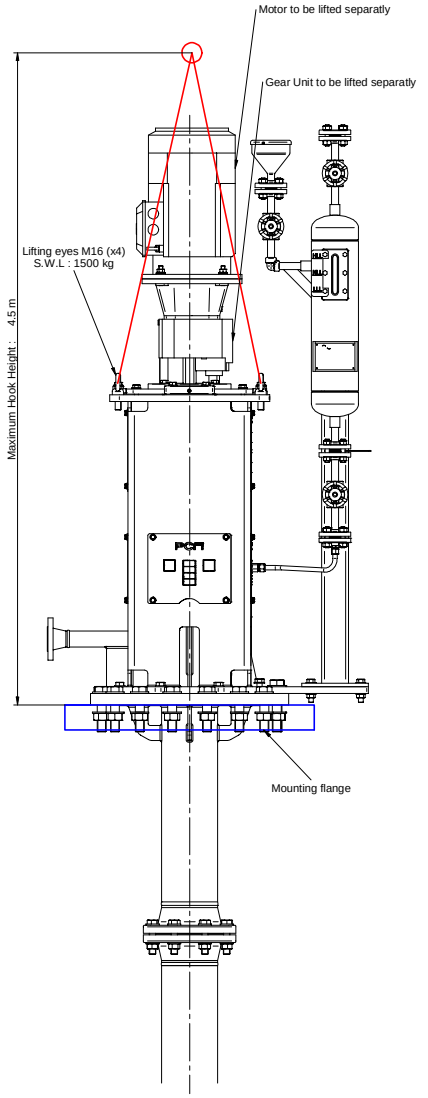
CROSSWIND
ROSETTI MARINO

TITLE
BASE LOAD POWER HUB (BLPH)
GENERAL ARRANGEMENT AND DIMENSIONAL OUTLINE DRAWINGS

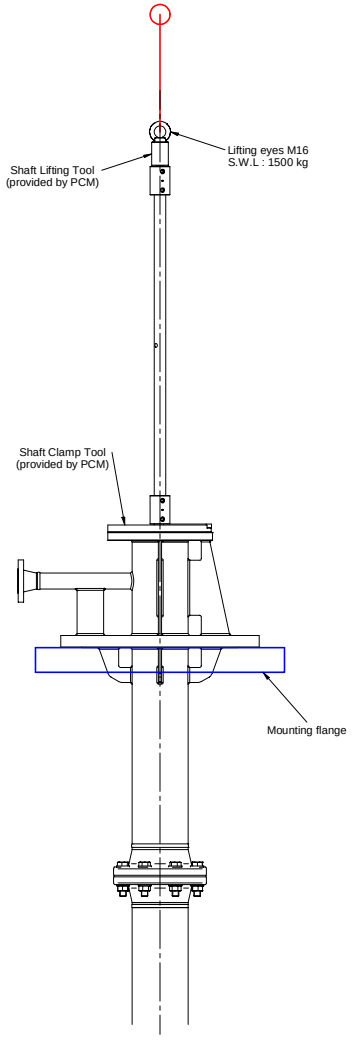
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DRAWN ARS CHECKED SBI APPROVED CLL DATE 17/09/24
A1 DRAWING NO. 172400036-MAC-DA-00004 SHEET 03 REV. 03

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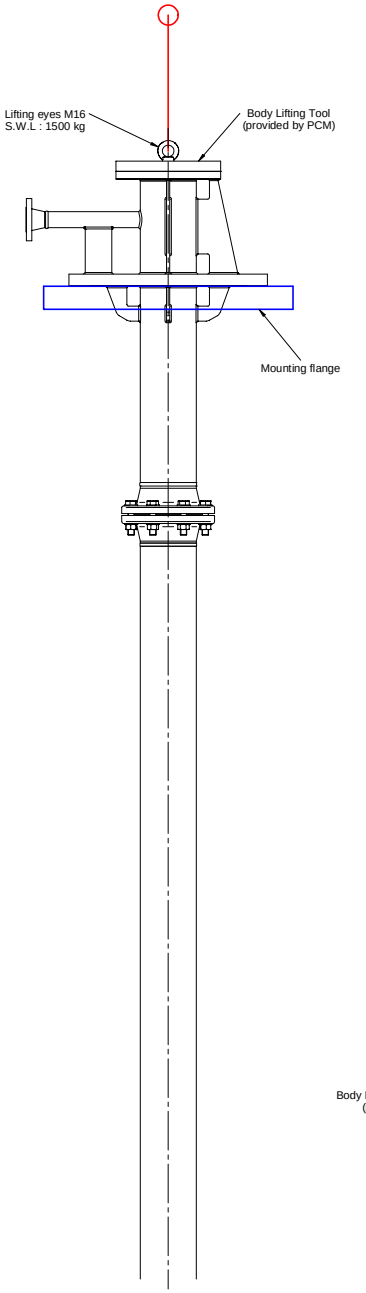
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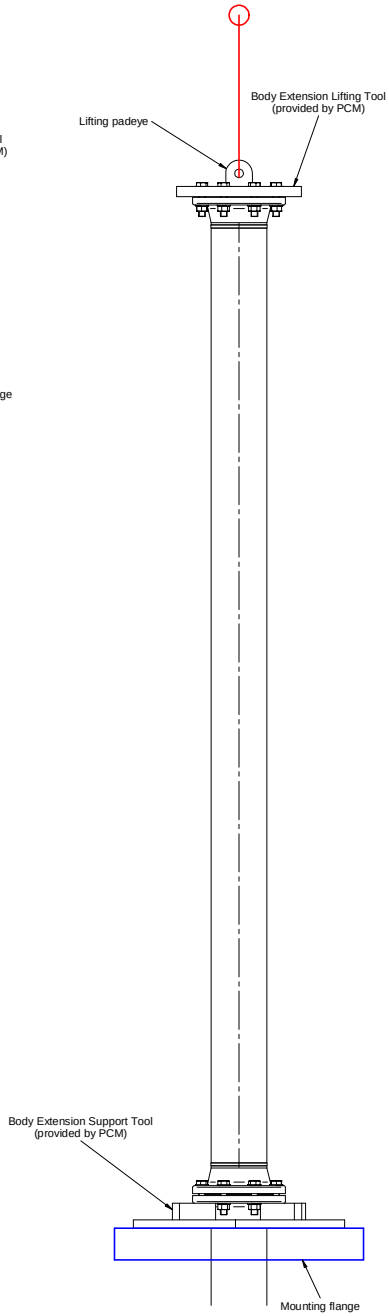


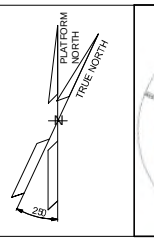
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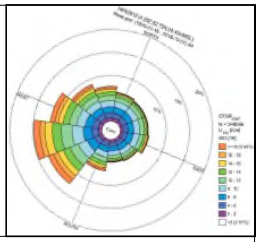


LIFTING DETAILS :
BODY & BODY EXTENSION









NOTES

Document Reference:
INSTALLATION, OPERATING AND MAINTENANCE MANUAL (PUMP AND MOTOR, INCLUDING SITE ERECTION INSTRUCTIONS AND PROCEDURES)

Document number: 1724000936-MAC-MAN-00031

LEGEND

HOLDS

REV	DATE	DRN	CHKD	APPD	DESCRIPTION
03	17/09/24	AFS	SH	AHH	ISSUED FOR CONSTRUCTION (IFC)
02	13/08/24	AFS	SH	AHH	ISSUED FOR CLIENT REVIEW (IFR)
01	15/07/24	AFS	SH	AHH	ISSUED FOR CLIENT REVIEW (IFR)
00	17/06/24	AFS	SH	AHH	ISSUED FOR CLIENT REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE
BASE LOAD POWER HUB (BLPH)
GENERAL ARRANGEMENT AND DIMENSIONAL OUTLINE DRAWINGS

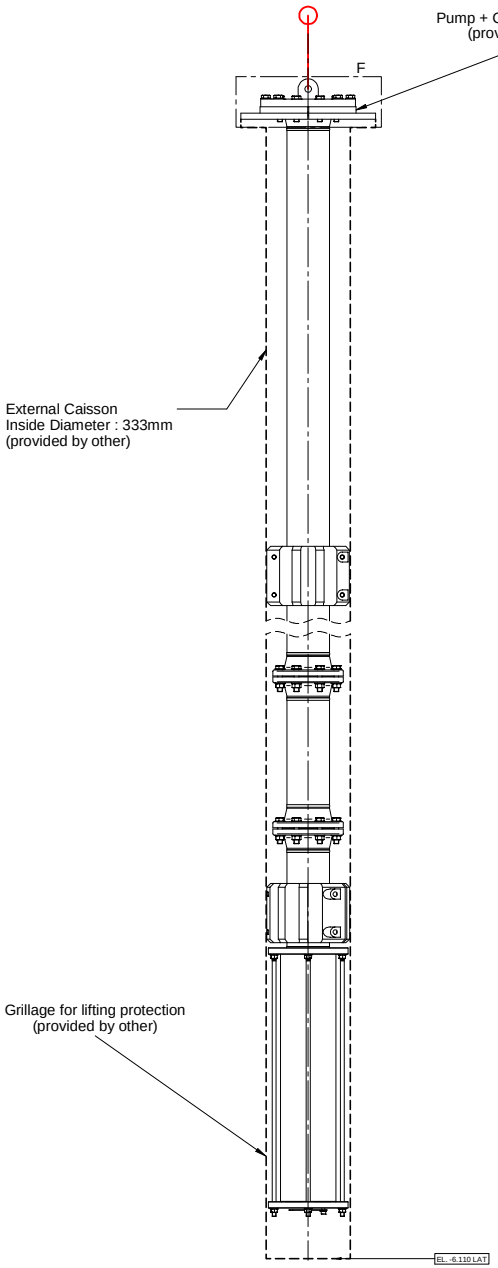
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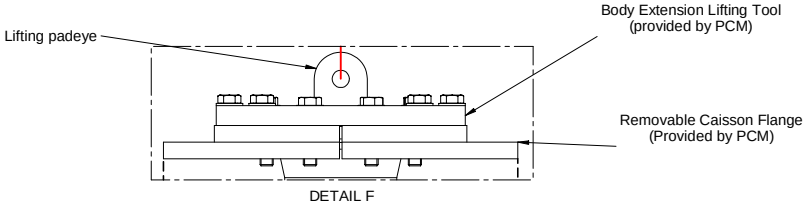
DRAWN AFS | CHECKED SH | APPROVED AHH | DATE 17.09.24

A1 | DRAWING NO. 1724000936-MAC-DA-00004 | SHEET 04 | REV. 03

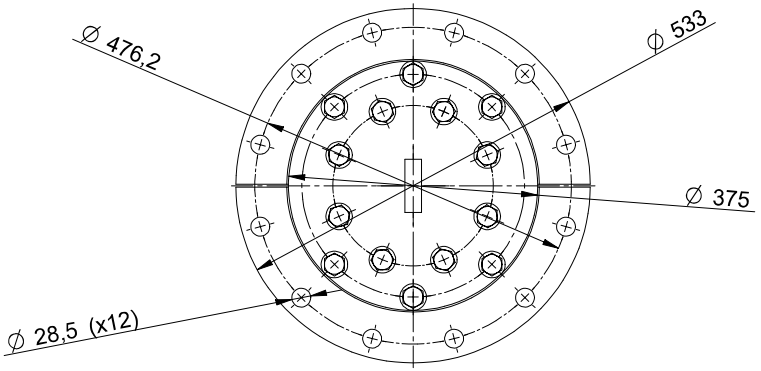
1724000936-MAC-DA-00004 rev. 03

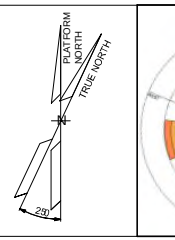
LIFTING DETAILS :
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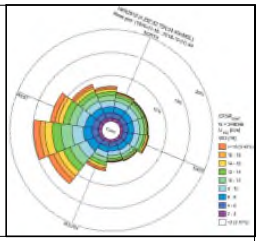




DETAIL F







NOTES

Document Reference:
INSTALLATION, OPERATING AND MAINTENANCE MANUAL (PUMP AND MOTOR, INCLUDING SITE ERECTION INSTRUCTIONS AND PROCEDURES)

Document number: 1724000936-MAC-MAN-00031

LEGEND

HOLDS

REV	DATE	DRN	CHKD	APPD	DESCRIPTION
03	17/09/24	AFS	SH	AHH	ISSUED FOR CONSTRUCTION (IFC)
02	13/08/24	AFS	SH	AHH	ISSUED FOR CLIENT REVIEW (IFR)
01	15/07/24	AFS	SH	AHH	ISSUED FOR CLIENT REVIEW (IFR)
00	12/06/24	AFS	SH	AHH	ISSUED FOR CLIENT REVIEW (IFR)

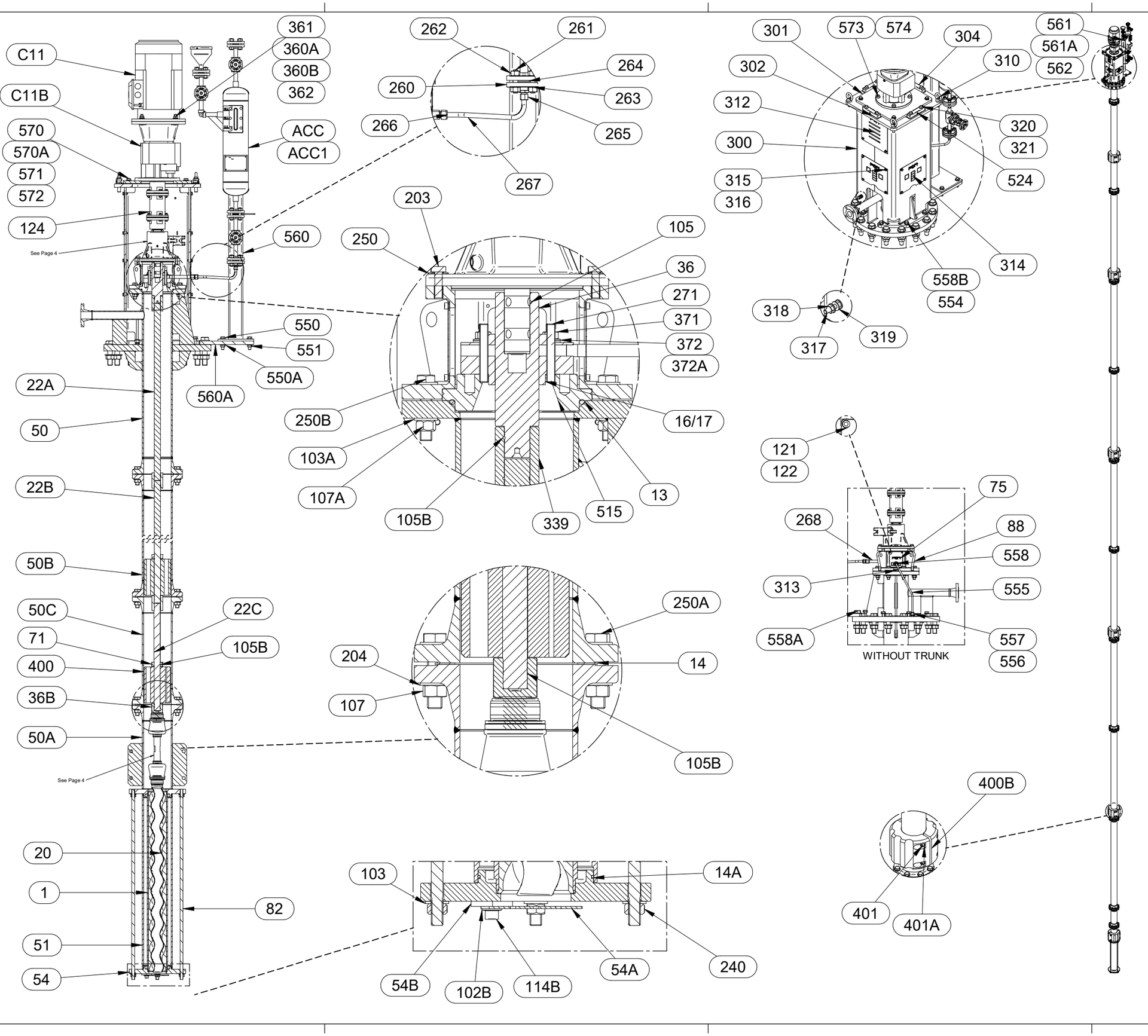
CROSSWIND

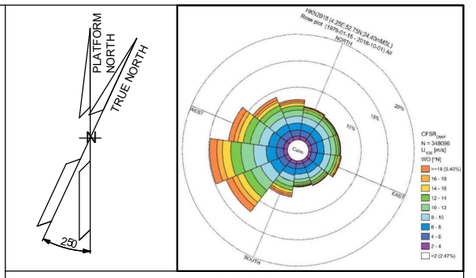
ROSETTI MARINO

TITLE
BASE LOAD POWER HUB (BLPH)
GENERAL ARRANGEMENT AND DIMENSIONAL OUTLINE DRAWINGS

DRAWN: AFS	CHECKED: SH	APPROVED: AHH	DATE: 17/09/24
A1	DRAWING NO. 1724000936-MAC-DA-00004	SHEET 05	REV. 03

1724000936-MAC-DA-00004 rev. 03





NOTES

LEGEND

HOLDS

PCM keep it moving

REV.	DATE	DRN	CHKD	APPD.	DESCRIPTION
01	23/08/24	APD	GLL	AHN	ISSUE FOR INFORMATION (IFI)
00	24/07/24	APD	GLL	AHN	ISSUE FOR CLIENT REVIEW (ICR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
PUMP CROSS SECTIONAL DRAWING AND BILL OF MATERIAL
(INCLUDING SPEED REDUCER)

CONTRACT NO./TITLE : CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE

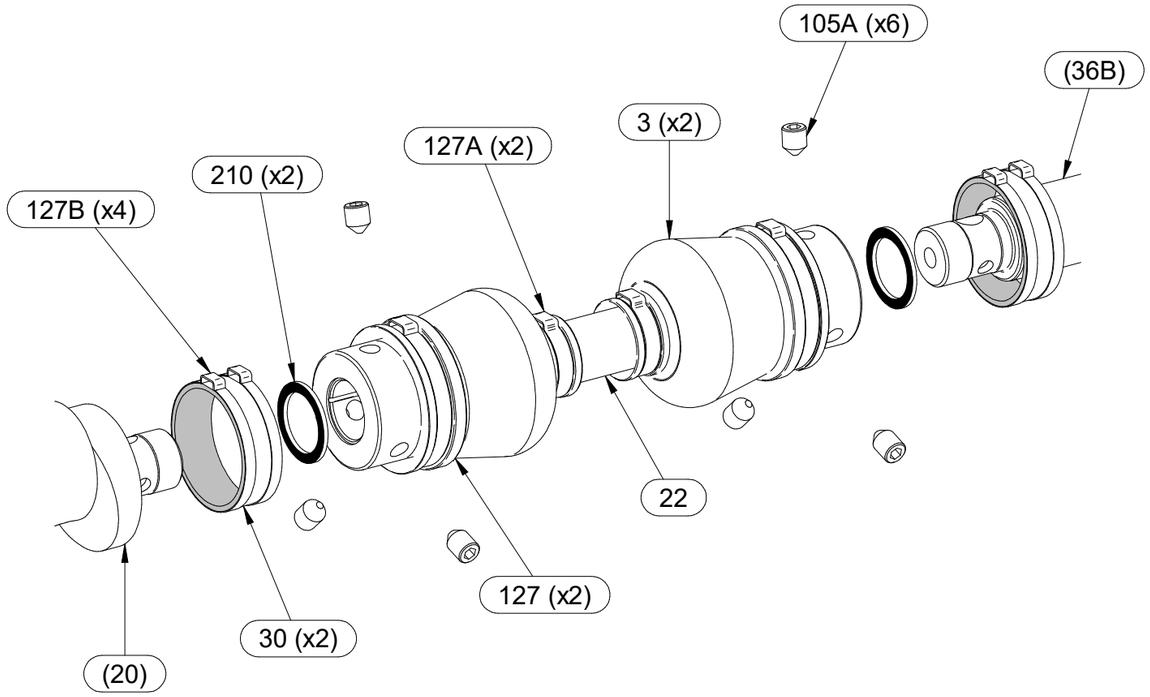
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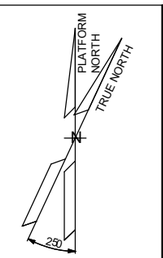
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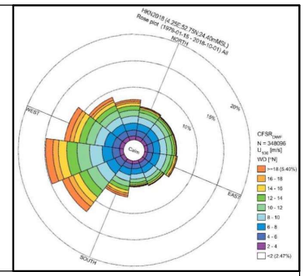
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REV.: 01



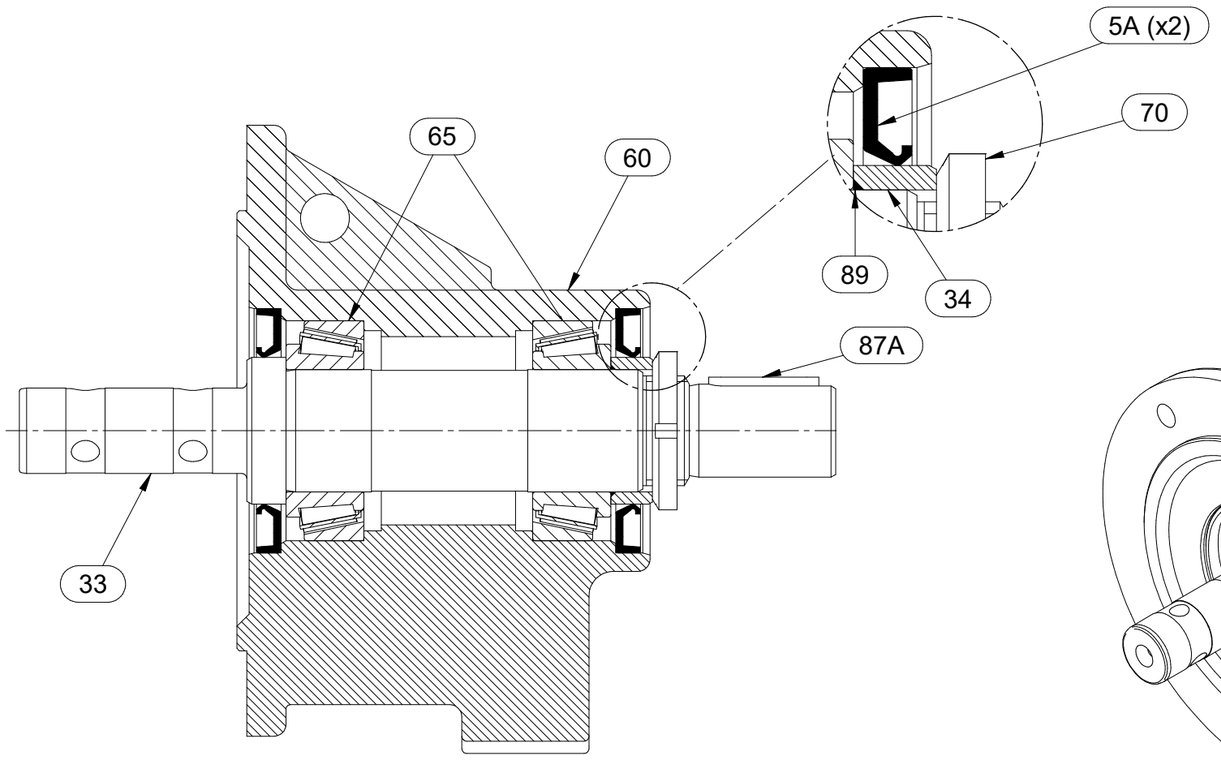


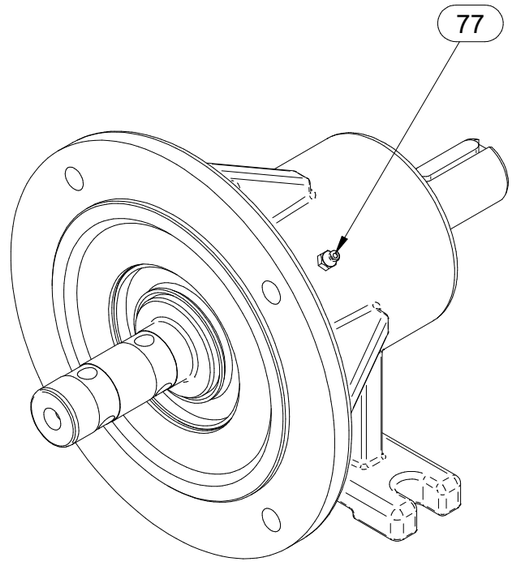


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LEGEND

HOLDS





REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	23/08/24	APD	GLL	AHN	ISSUE FOR INFORMATION (IFI)
00	24/07/24	APD	GLL	AHN	ISSUE FOR CLIENT REVIEW (ICR)

PCM keep it moving

CROSSWIND

ROSETTI MARINO

TITLE :

BASE LOAD POWER HUB (BLPH)

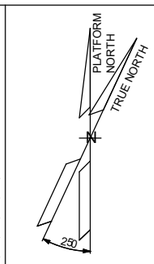
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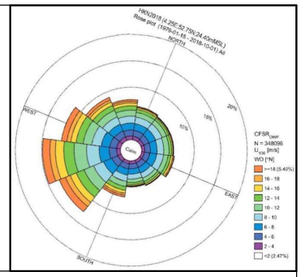
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DRAWN APD	CHECKED GLL	APPROVED AHN		DATE 23/08/24
A1	DRAWING NO. 1724000936-MAC-DD-00006		SHEET	REV. 01

File Name: - 1724000936-MAC-DD-00006

N°	Reference	Designation	Material	Qty	Spare parts code
1	77418-1646	STATOR 20I16 25700	NBR	1	STA00071
3	T030004160	SHEATH C6 C7 M6 M7 160	NBR	2	NM-1374-PR
5A	C09070P160	ROTARY SEAL A 60X100X10	NBR	2	-
13	40687-160	O-RING 170.82X6.99	NBR	1	NM-2893-PR
14	C09002T118	FLANGE GASKET 6 CL150	Synthetic Fiber + NBR	11	-
14A	45892-160	O RING 152X3.53	NBR	2	NM-4290-PR
16/17	DIGIAN-392481-01	MECHANICAL SEAL	DSS S31803 - NBR	1	DIGIAN-392481-01
20	M-001931A257TS	ROTOR 25-4P-E10 R1 C M	SDSS - UNS S32760	1	M-001931A257
22	NM-1363	N006LA C7M E-CTFE NBR	NBR / Halar	1	NM-1363-PR
22A	W-008209257	EXTENSION FIX D35 988 AV7	SDSS - UNS S32760	1	-
22B	W-004958300257	EXTENSION SHAFT D35 AV7	SDSS - UNS S32760	9	-
22C	W-004958060257	EXTENSION SHAFT D35 AV7	SDSS - UNS S32760	1	-
30	M-002023209	SHEATH OF PROTECTION C6C7	NBR	2	NM-3384-PR
33	M-001300018	BEARING SHAFT C6C7 D35D38	SS431	1	-
34	28093-043	SHAFT RING D50	Steel C35E	1	-
36	W-004571020	DRIVING SHAFT D60 AV6-7	DSS - S31803	1	-
36B	W-004946257	REDUCED DRIVING SHAFT AV7	SDSS - UNS S32760	1	-
50	W-008202257WP	BODY 6IN AV7	SDSS - UNS S32760	1	-
50A	W-008199257WP	STATOR PIPING 25AV24	SDSS - UNS S32760	1	-
50B	W-004942300257WP	EXTENSION BODY 6IN AV7	SDSS - UNS S32760	9	-
50C	W-004942060257WP	EXTENSION BODY 6IN AV7	SDSS - UNS S32760	1	-
51	W-008200257	STATOR CASING 25AV24	SDSS - UNS S32760	1	-
54	W-008198257	PIPE STATOR 25AV24	SDSS - UNS S32760	1	-
54A	W-008189257T	FLAT STRAINER 25AV AV7	SDSS - UNS S32760	1	-
54B	N-108928257T	PLAT PERCE 7MM	SDSS - UNS S32760	2	-
60	T600004051	BEARING HOUSING F215 M6M7	Cast iron	1	-
65	40121-000	BEARING 33210A	-	2	-
70	40102-043	NUT KM M45	Steel C35E	1	-
71	W-004947257	CENTERING END STOP D35	SDSS - UNS S32760	11	-
75	W-007587014	GUARD AV7	SS316L	4	-
77	C10002C000	GREASE ZERK M8X1.25	-	1	-
82	C06177W257T	STUD M16 BM40-1023	SDSS - UNS S32550	4	-
87A	40751-046	KEY A SHAPE 10X8X45	Steel C45E	1	-
88	W-007527274	STRONG SPACER AV7	CS A570 gr. 50	1	-
89	C09035C160	O-RING 50X2.5	NBR	1	-
102B	C06029G257T	WASHER CS12 M	SDSS - UNS S32550	2	-
103	C06001I257T	WASHER M16 200HV	SDSS - UNS S32550	8	-
103A	C06001I014	WASHER M16 200HV	SS316L (A4-70 fatsener)	16	-
105	C06125C020	SCREW HC M12-16 TR	DSS - S31803	3	-
105A	C06125C014	SCREW HC M12-16 TR	SS316L (A4-70 fatsener)	6	NM-1374-PR
105B	C06125C257T	SCREW HC M12-16 TR	SDSS - UNS S32550	81	-
107	C06002J257	HEX NUT H M20	SDSS - UNS S32550	88	-
107A	C06002I014	HEX NUT H M16	SS316L (A4-70 fatsener)	8	-
114B	C06016D257TS	SCREW CHC M12-30	SDSS - UNS S32550	2	-
114C	C06240E257	SCREW HC M12-25 CU	SDSS - UNS S32550	2	-
121	C06162C087	CAPTIVE WASHER M5	PETP	16	-
122	C06004F010	SCREW CHC M5-10	SS304 (A2-70 fatsener)	16	-
124	C15099J000	CPG. API610 38X60 35X70	-	1	-
127	C01042Z014	EAR CLAMP D78.3-81.5	SS316L	2	NM-1374-PR
127A	C01042P014	EAR CLAMP D42.3-45.5	SS316L	2	NM-1374-PR
127B	C01042U014	EAR CLAMP D66.3-69.5	SS316L	4	NM-3384-PR
203	C06015E014	SCREW H M12-35	SS316L (A4-70 fatsener)	4	-
204	C06001J257	WASHER M20 200HV	SDSS - UNS S32550	176	-
210	M-002022NBR	GASKET D36XD46X2	NBR	2	NM-3384-PR
240	C06002I257T	HEX NUT H M16	SDSS - UNS S32550	8	-
250	C06029G014	WASHER CS12 M	SS316L (A4-70 fatsener)	4	-
250A	C06203J257TS	SCREW H M20-90	SDSS - UNS S32550	88	-
250B	40371-014	SCREW H M16-80	SS316L (A4-70 fatsener)	8	-
260	N-104597014	FLANGE 1-2 300 3-8 NPT	SS316L	1	-
261	W-007229014	THREADED STUD M12 X 80	SS316L (A4-70 fatsener)	4	-
262	C06002G014	HEX NUT H M12	SS316L (A4-70 fatsener)	8	-
263	C06001G014	WASHER M12 200HV	SS316L (A4-70 fatsener)	8	-
264	C09131A014	SPIRAL WOUND GASKET 1-2IN	SS316L	1	-
265	C14259S014T	UNION MALE 3-8NPT - 1-2IN	SS316L	1	-
266	C14260S014T	UNION FEM. 3-8NPT - 1-2IN	SS316L	1	-
267	F-000335014T	TUBE 1-2IN OD 316L	SS316L	-	-
268	W-003825014	NIPPLE 3-8 NPT	SS316L	1	-
271	W-007229014	THREADED STUD M12 X 80	SS316L (A4-70 fatsener)	4	-
300	W-008268046	TRUNK AV6/7 SHAFT 16IN	CS C15	1	-
301	W-008089014	GEARBOX PLATE AV6/7 D250	SS316L	1	-
302	W-007034014T	SETTING SHIMS AV5	SS316L	4	-
304	W-007035014T	STOP SETTING AV5	SS316L	4	-
310	C02004K014	LIFTING EYE BOLT M16-L46	SS316L	4	-
312	W-008091073	SUP TRUNK COVER AV7	Brass	2	-
313	C06176E014	SCREW HC M5-12 TR	SS316L (A4-70 fatsener)	2	-
314	W-008092073	MS TRUNK COVER AV7	Brass	4	-
315	C06029E014	WASHER CS8 M	SS316L (A4-70 fatsener)	24	-
316	C06032A014	SCREW H M8-20	SS316L (A4-70 fatsener)	24	-
317	W-003790014	THREADED STUD M10 X 55	SS316L (A4-70 fatsener)	2	-
318	C06002F014	HEX NUT H M10	SS316L (A4-70 fatsener)	4	-
319	C06001F014	WASHER M10 200HV	SS316L (A4-70 fatsener)	6	-
320	C06001G014	WASHER M12 200HV	SS316L (A4-70 fatsener)	8	-
321	C06015G014	SCREW H M12-45-30	SS316L (A4-70 fatsener)	8	-
339	W-004945257	EXTENSION JUNCTIOND35 AV7	SDSS - UNS S32760	11	-
360A	C06001G014	WASHER M12 200HV	SS316L (A4-70 fatsener)	4	-
360B	C06029G014	WASHER CS12 M	SS316L (A4-70 fatsener)	4	-
361	W-005833014	THREADED STUD M12 X 60	SS316L (A4-70 fatsener)	4	-
362	C06002G014	HEX NUT H M12	SS316L (A4-70 fatsener)	4	-
371	C06002G014	HEX NUT H M12	SS316L (A4-70 fatsener)	4	-
372	C06001G014	WASHER M12 200HV	SS316L (A4-70 fatsener)	4	-
372A	C06029G014	WASHER CS12 M	SS316L (A4-70 fatsener)	4	-
400	W-004957078	CENTRALIZER D35 AV7	POM H	11	-
400B	N-108969099	EXTERNAL CENTRALIZER AV7	PA 66	12	-
401	C06034P257T	SCREW CHC M16-90-44	SDSS - UNS S32760	24	-
401A	C06001I257T	WASHER M16 200HV	SDSS - UNS S32550	24	-
515	W-008207257	MS SUPORT D90 AV7	SDSS - UNS S32760	1	-
524	C06106H014	SCREW HC M12-40	SS316L (A4-70 fatsener)	4	-
550	C06095C014	SCREW H M14-60-34	SS316L (A4-70 fatsener)	4	-
550A	C06001H014T	WASHER M14 200HV	SS316L (A4-70 fatsener)	8	-
551	C06002H014T	HEX NUT H M14	SS316L (A4-70 fatsener)	4	-
554	C06001I014	WASHER M16 200HV	SS316L (A4-70 fatsener)	8	-
555	45868-014T	TUBE D10 EP.1	SS316L (A4-70 fatsener)	-	-
556	W-004064014	FLOW RESTRICTION 2MM	SS316L (A4-70 fatsener)	1	-
557	C14259B014	UNION MALE 3-8NPT - D10	SS316L (A4-70 fatsener)	1	-
558	C14260B014	UNION FEM. 3-8NPT - D10	SS316L (A4-70 fatsener)	1	-
558A	C06131K014	SCREW H M16-60	SS316L (A4-70 fatsener)	2	-
558B	C06131H014	SCREW H M16-50	SS316L (A4-70 fatsener)	6	-
560	W-008269014	API PLAN 51 SUPPORT	SS316L	1	-
560A	W-008270014	API PLAN 51 FOOT SUPPORT	SS316L	1	-
561	W-007229014	THREADED STUD M12 X 80	SS316L (A4-70 fatsener)	2	-
561A	C06001G014	WASHER M12 200HV	SS316L (A4-70 fatsener)	4	-
562	C06002G014	HEX NUT H M12	SS316L (A4-70 fatsener)	4	-
570	C06001G014	WASHER M12 200HV	SS316L (A4-70 fatsener)	8	-
570A	C06029G014	WASHER CS12 M	SS316L (A4-70 fatsener)	4	-
571	C06002G014	HEX NUT H M12	SS316L (A4-70 fatsener)	4	-
572	C06015K014	SCREW H M12-65-30	SS316L (A4-70 fatsener)	4	-
573	C06001G014	WASHER M12 200HV	SS316L (A4-70 fatsener)	4	-
574	C06015F014	SCREW H M12-40	SS316L (A4-70 fatsener)	4	-
ACC	DI317873-02	API PLAN 51	SS316L (A4-70 fatsener)	1	-
ACC1	DI317873-03	HEATING JACKET P51	-	1	-
C11B	FGAHXCG1256CEAA	RED SK672.1F 132	Cast Aluminum	1	-
C11	DI317873-01	MOTOR 5.5KW	Cast iron	1	-





NOTES

LEGEND

HOLDS

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	23/08/24	APD	GLL	AHN	ISSUE FOR INFORMATION (IFI)
00	24/07/24	APD	GLL	AHN	ISSUE FOR CLIENT REVIEW (ICR)

PCM keep it moving

CROSSWIND

ROSETTI MARINO

TITLE :
BASE LOAD POWER HUB (BLPH)
PUMP CROSS SECTIONAL DRAWING AND BILL OF MATERIAL
(INCLUDING SPEED REDUCER)

CONTRACT NO./TITLE : CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE :
DRAWN APD | CHECKED GLL | APPROVED AHN | DATE 23/08/24
A1 | DRAWING NO. 1724000936-MAC-DD-00006 | SHEET | REV. 01

DRAWING NO. 1724000936-MAC-DD-0000 REV. 01

File Name = 1724000936-MAC-DD-00006

Base Load Power Hub (BLPH)

SHAFT SEAL DRAWING AND BILLS OF MATERIAL
(INCLUDING FLUSHING PLAN 51)
For Sea Water Lift Progressive Cavity Pumps (P-50001 A/B)

Document Number: 1724000936-MAC-DD-00007

Document Class: 3

03	17/10/2024	Issue for Information (IFI)	APD	GLL	AHN
02	05/09/2024	Issue for Information (IFI)	APD	GLL	AHN
01	06/08/2024	Issue for Information (IFI)	APD	GLL	AHN
00	18/07/2024	Issue for Information (IFI)	APD	GLL	AHN
Rev.	Date	Description	Prepared	Reviewed	Approved

PCM | keep it moving

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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)

HOLDS LIST

No.	Description
1	
2	
3	
4	

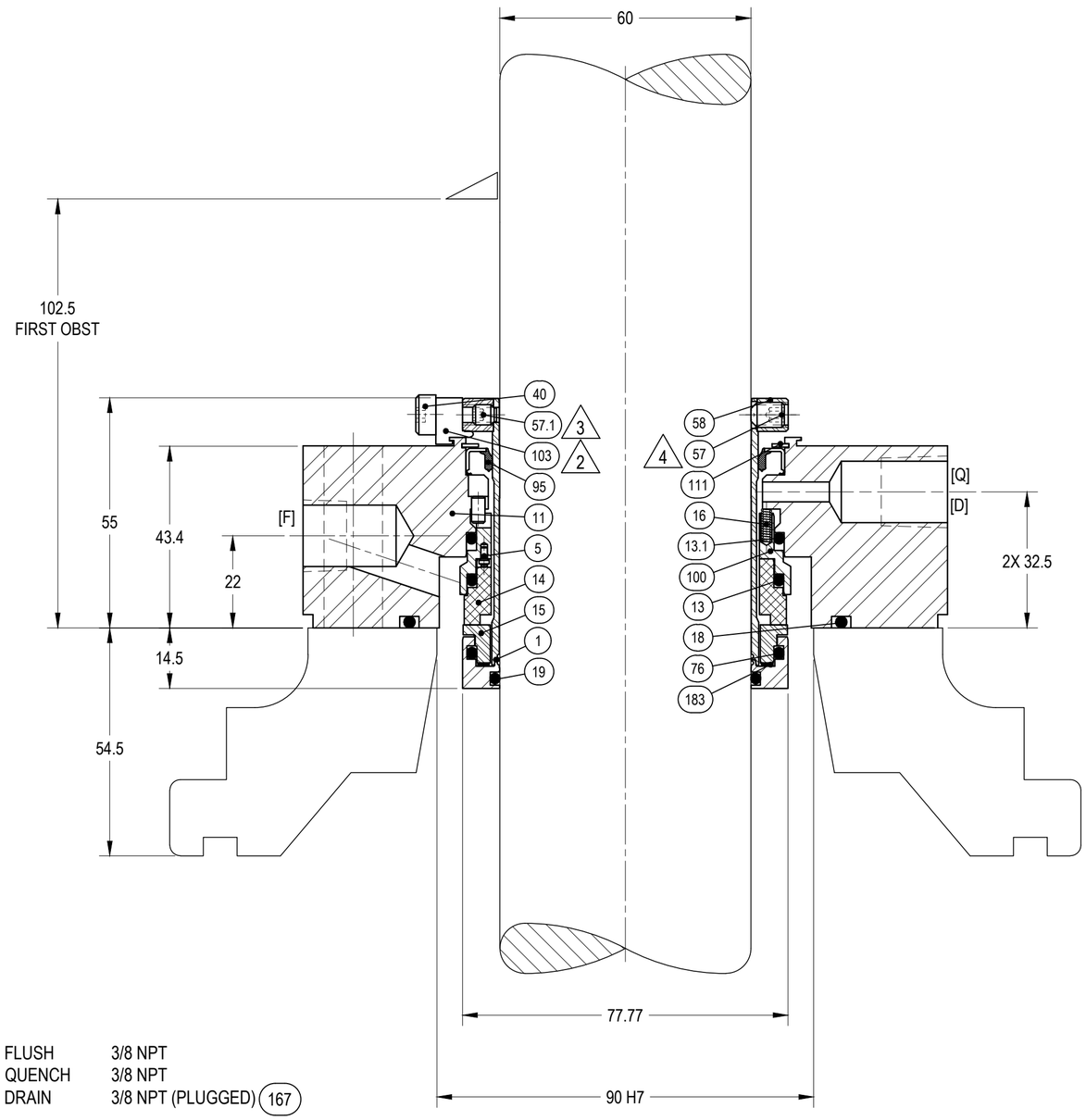
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JAN2022

BILL OF MATERIAL NO: C100033781

SPARE PARTS: [1] STARTUP
[2] 2 YEAR [3] CAPITAL/CRITICAL

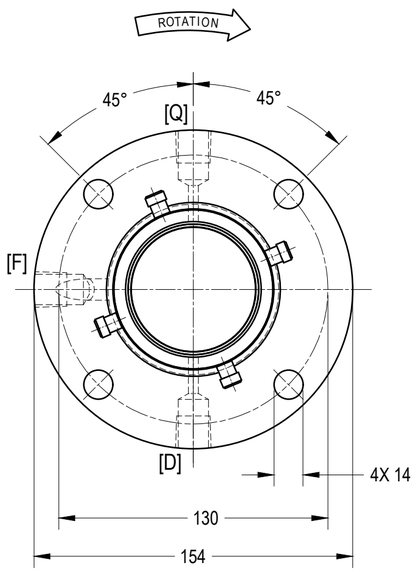
NO	PART CODE	QTY	DESCRIPTION	MATERIAL	
1	C100036102	1	SLEEVE, SEAL	DUPLEX 255	
5	C0012107NL	3	PIN, BUTTON-HEAD	ALLOY C-276	1
11	C100036104	1	GLAND, SEAL	DUPLEX 255	
13	568149GU	1	O-RING, OTHER	FLUOROELASTOMER (FKM)	1
13.1	568149GU	1	O-RING, OTHER	FLUOROELASTOMER (FKM)	1
14	C0011933KR3	1	FACE, SEAL	CARBON-GRAPHITE, RESIN IMPREGNATED	1
15	K23C2375C33	1	FACE, SEAL	DIRECT SINTERED SILICON CARBIDE	1
16	MIAX88403CM	18	SPRING, COIL	ALLOY C-276	1
18	568242GU	1	O-RING, OTHER	FLUOROELASTOMER (FKM)	1
19	568142GU	1	O-RING, OTHER	FLUOROELASTOMER (FKM)	1
40	C0032674CK	4	SCREW, CAP	18-8	1
57	4N01857X902	4	SCREW, SET	17-4 PH COND H900	1
57.1	MLA36788233	2	SCREW, SET	ALLOY C-276	1
58	C100036236	1	DRIVE COLLAR, STYLE 2	DUPLEX 2205	
76	568149GU	1	O-RING, OTHER	FLUOROELASTOMER (FKM)	1
95	MNAX9078470	1	SEAL, LIP	MULTIPLE MATERIAL	1
100	C0011995ZB	1	SUPPORT, FACE	DUPLEX 255	1
103	C0012106CK	4	SETTING DEVICE, NOTCH	18-8	1
111	UR300CK	1	RING, SNAP	18-8	1
167	4R3000X953	1	END FITTING, PIPE	ASME SA-479 TYPE 316/316L	
183	C0012057QF	1	GASKET, FLAT	FLEXIBLE GRAPHITE	1

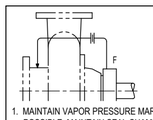


[F] FLUSH 3/8 NPT
[Q] QUENCH 3/8 NPT
[D] DRAIN 3/8 NPT (PLUGGED) (167)

NOTES:

1. FOR INSTALLATION AND OPERATING INSTRUCTIONS SEE APPROPRIATE FLOWSERVE INSTALLATION SHEET (FIS).
2. REMOVE SETTING DEVICES (#103) BEFORE START-UP.
3. DO NOT TORQUE DOG POINT SET SCREWS (#10-24).
4. TIGHTEN(M6) SETSCREWS EQUALLY, CROSSWISE, IN 4 STEPS. FINAL TORQUE: 8.5 Nm.
5. PARTS #1 & #11 MUST BE SUPPLIED WITH 3.1 CERTS.





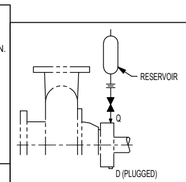
API PLAN 13

RECIRCULATION FROM SEAL THROUGH FLOW CONTROL ORIFICE TO PUMP SUCTION.

1. MAINTAIN VAPOR PRESSURE MARGIN NOT LESS THAN 3.5 BAR [50 PSI]. IF NOT POSSIBLE, MAINTAIN SEAL CHAMBER PRESSURE NOT LESS THAN 30% ABOVE VAPOR PRESSURE AT PUMPING TEMPERATURE.
2. ORIFICE DIAMETER Ø 3.0 MM [.118 INCH].

FLUSH RATE: 9 LPM [3.4 GPM]

PIPING REQUIREMENTS



API PLAN 51

EXTERNAL RESERVOIR PROVIDING DEAD-ENDED BLANKET TO QUENCH CONNECTION OF GLAND.

PIPING REQUIREMENTS

OPERATING DATA

PRODUCT: SEA WATER, FEW PARTICLES
TEMP: 25.0 °C Max
SEAL CHAMBER PRES: 5.9 barG Max
VISCOSITY: 0.9 cP Max
RPM (MIN): 118
SUCTION PRES: 0 barG Max
DISCHARGE PRES: 5.9 barG Max
API PLAN: 13/51

CUSTOMER DATA

CUSTOMER: PCM MANUFACTURING FRANCE SAS
ADDRESS: CHAMPTOCE-SUR-LOIRE FRANCE
ULTIMATE USER: CROSSWIND (JV SHELL + ENECO)
ADDRESS: THE NETHERLANDS
CUSTOMER P.O.: PO070-24-07869

SEAL DATA

MATL CODE: DZ4T
EQUIP MFG: PCM MANUFACTURING FRANCE SAS
EQUIP MODEL: 60
EQUIP DRAWING: W-004921 REVB
INSTR: FIS 190

GENERAL DATA

REF DWG: D0110893

JOB NUMBER 400370175-000100

DRWN: AjSr
DATE: 03-Sep-2024
CHKD: MuMa
DATE: 04-Sep-2024
APVD: MuMa
DATE: 04-Sep-2024

FLOWSERVE
AMSS Seals & Systems

DRAWING TITLE
MECHANICAL SEAL - ASSEMBLY

ISC2-PX - 60MM

ALL DIMENSIONS ARE REFERENCE UNLESS OTHERWISE SPECIFIED

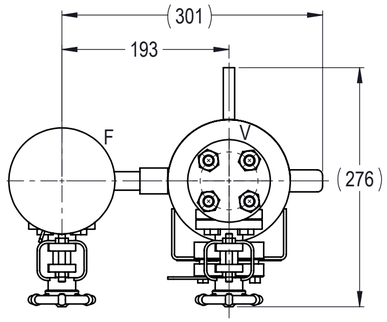
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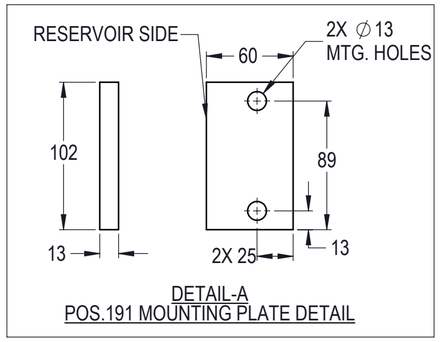
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SCALE: TO SCALE | UNITS: mm | SHEET: 1 OF: 1

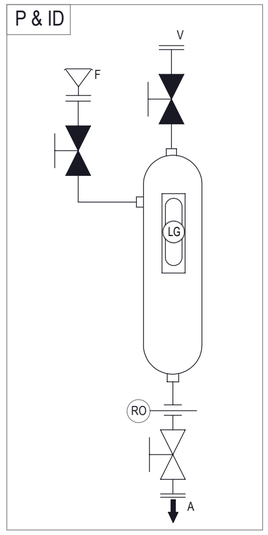
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	DESC: ----				

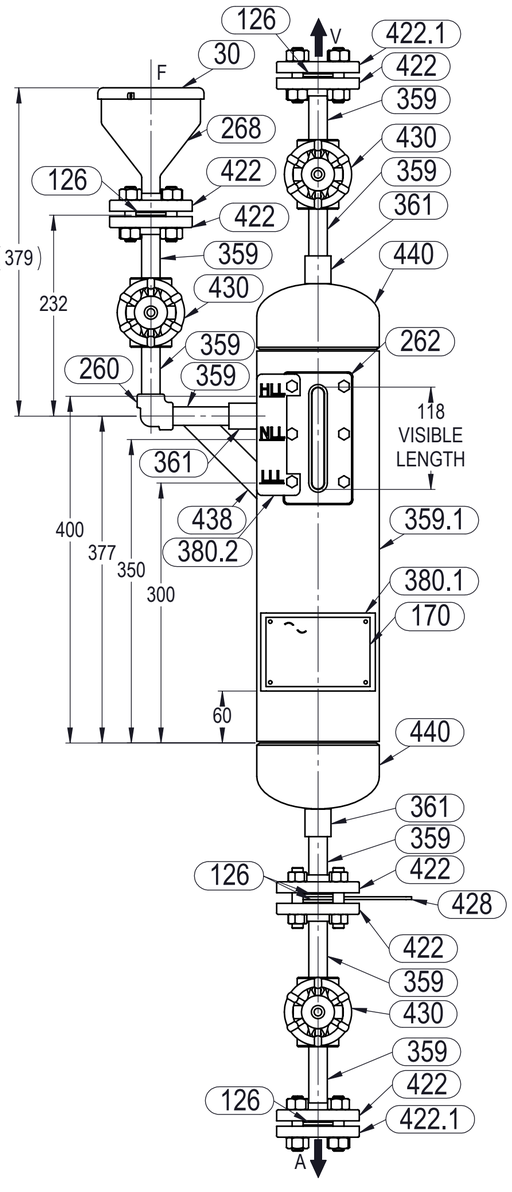
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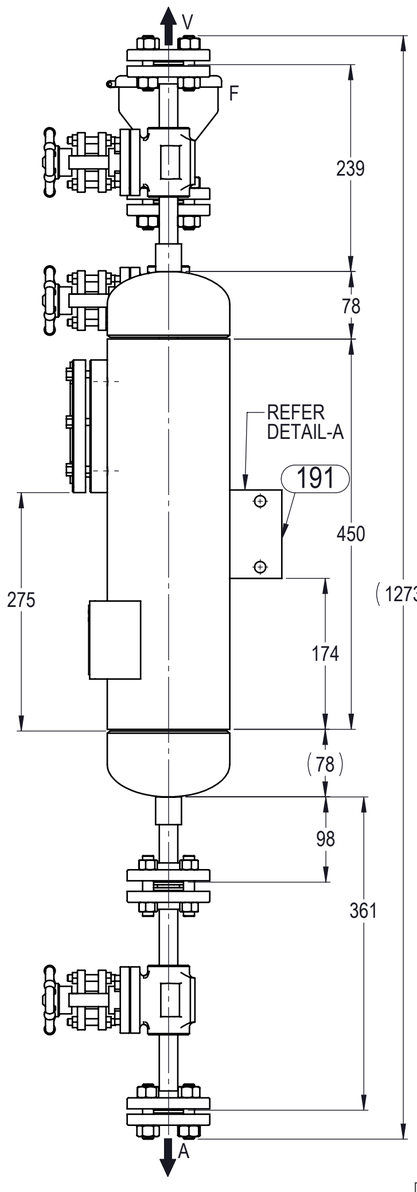


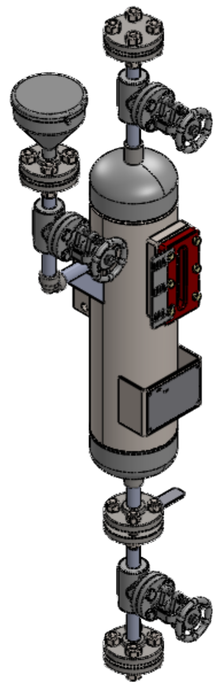


DETAIL-A
POS.191 MOUNTING PLATE DETAIL









DESIGN CONDITIONS

		UNIT
QUENCH FLUID	WATER	
DESIGN PRESSURE	12	BARG
DESIGN TEMPERATURE	-10 TO 93	°C
OPERATING PRESSURE	ATMOSPHERIC	BARG
OPERATING TEMPERATURE	MAX.80	°C
DESIGN CODE (VESSEL)	ASME VIII DIV 1	
DESIGN CODE (PIPING)	ASME B31.3	
EC DIRECTIVE	PED 2014/68/EU	
PED CATEGORY	SEP	
TOTAL VOLUME	7	LITER
VOLUME AT NLL	5	LITER
WEIGHT EMPTY	~40	KG

N.D. TESTING / INSPECTION

HYDROTEST PRESSURE	18	BARG
RADIOGRAPHY	NONE	
DYE-PENETRANT	100%	
MATERIAL CERTIFICATES	REFER NOTE 3	
INSPECTION	FLOWSERVE	

WELDING

WPS & PQR IN ACCORDANCE WITH ASME IX.

REMARKS

STAINLESS STEEL SURFACES SHALL NOT BE PAINTED.
CLEANING IN ACCORDANCE WITH RSD-SP-ENG-089E.
BOLTHOLES STRADDLE TO CENTERLINE.
STAINLESS STEEL WELDS TO BE PICKLED & PASSIVATED OR GLASS-PEARL CLEANED.
DO NOT USE TEFLON TAPE, BUT USE LOCTITE 577.

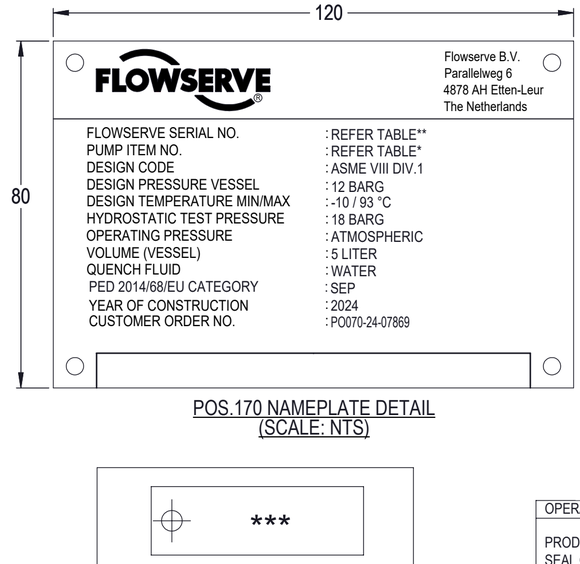
CONNECTIONS

NO.	NAME	SIZE
A	TO SEAL	1/2 IN 300# RF + BLIND
F	FILLING	4 IN FUNNEL
V	VENT	1/2 IN 300# RF + BLIND

BILL OF MATERIAL NO: C100033782

SPARE PARTS: [1] STARTUP [2] 2 YEAR [3] CAPITAL/CRITICAL

NO	PART CODE	QTY	DESCRIPTION	MATERIAL
30	C0538533ZZ-Q2	1	CAP, OTHER - DUST, 4 IN WITH CHAIN	GRADE 316/316L
126	C0111934ZZ	5	GASKET, SPIRAL WOUND -CL 300, 1/2 IN, SPIRAL WOUND	STAINLESS STEEL 316 + GRAPHITE
170	C100032896	1	PLATE, NAME - FOR AUXILIARY PLAN 51	316
191	C0243841ZZ-Q1	1	PLATE, MOUNTING - 102 X 60X 13 MM THK.	316
260	C0216202X941	1	ELBOW FITTING, PIPE - 1/2 IN, SOCKET WELD, CL 3000, 90 DEG	ASME SA-182 GRADE F316/F316L
262	C0560271ZZ	1	INDICATOR, LEVEL - GAUGE, WELD ON TYPE, VISIBLE LENGTH : 118 MM, BOROSILICATE GLASS	GRADE 316/316L
268	C0405667X941	1	STRAIGHT FITTING, PIPE - SWAGE, 4 IN X 1/2 IN, SCH 40, PBE, SMLS	ASME SA-182 GRADE F316/F316L
359	C0063392X951	1	PIPE, OTHER - SCH.80, 1/2 IN, SEAMLESS, PLAIN BOTH END	ASME SA-312 GRADE TP316/316L
359.1	C0172048X951	1	PIPE, OTHER - 5 IN X 450 MM LG, SCH 40, SMLS, BBE	ASME SA-312 GRADE TP316/316L
361	C0215993X941	3	STRAIGHT FITTING, PIPE - HALF COUPLING, 1/2 IN SW, CL. 3000	ASME SA-182 GRADE F316/F316L
380	4R124140ZZ-Q1	2	PLATE, NAME - FOR INSTRUMENT	ASME SA-240 GRADE 316/316L
380.1	C0234657ZZ-Q1	1	PLATE, NAME - BRACKET FOR NAMEPLATE	316
380.2	C0538973ZZ-Q2	1	PLATE, NAME - FOR LEVEL INDICATION, SIZE 2	316
422	C0362295X941	6	FLANGE, PIPE - 1/2 IN, CL 300, RFSW	ASME SA-182 GRADE F316/F316L
422.1	C0363170X941	2	FLANGE, PIPE - BLIND 1/2 IN CL 300	ASME SA-182 GRADE F316/F316L
428	C0095396ZZ	1	PLATE, ORIFICE - 1/2 IN, CL 300, 3.2 MM ORIFICE	316
430	C0369816ZZ	3	VALVE, GATE CL 800,1/2 IN SOCKET WELD,SCH 80,BOLTED BONNET,REDUCED BORE	316
438	C0493357X944-Q2	1	GUSSET, OTHER - 6 MM THK X 30 MM WIDE	ASME SA-240 GRADE 316/316L
440	C0489371X947	2	HEAD, RESERVOIR - CAP, 5 IN BUTT WELD, SCH 40	ASME SA-403 GRADE WP316/316L



POS.170 NAMEPLATE DETAIL
(SCALE: NTS)

POS 380 FIXED WITH SS WIRE AT THE INSTRUMENTS

NOTES:
1. ALL VALUES IN () ARE REFERENCE DIMENSIONS.
2. CARBON STEEL STUDS(ASME SA-193 GR B7) & NUTS(ASME SA 194 GR 2H) WITH HOT-DIP GALVANIZED. ALL MISCELLANEOUS FASTENERS MUST BE 316 SS.
3. MATERIAL CERTIFICATE OF ALL PRESSURE CONTAINING PARTS (PIPES/FLANGES/PIPE FITTINGS) REQUIRES EN 10204 3.1. EN 10204 2.2 FOR NON-PRESSURE CONTAINING PARTS.

* PUMP ITEM NO.	** FLOSERVE SERIAL NO.	*** INSTRUMENT TAG NUMBER					
		LG	RO	FUNNEL VALVE	VENT VALVE	OUTLET VALVE	SEAL POT
50001 A	400370175-000200-001	50-LG-001	50-RO-003	BLPH-MV-503	BLPH-MV-503	BLPH-MV-503	V-50000 A
50001B	400370175-000200-002	50-LG-002	50-RO-004	BLPH-MV-503	BLPH-MV-503	BLPH-MV-503	V-50000 B

REV.	CHG NO.	DATE	REVD	CHKD	APVD
0	00210008	21-Aug-2024	HaMa	LoSh	HaSc
	DESC: RELEASE TO MANUFACTURE				

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DIM TOLERANCES (UNLESS SPECIFIED)
X. = ± 5 ANGLE = ± 0.5°
X.X = ± 2.5

ALL DIMENSIONS ARE REFERENCES UNLESS OTHERWISE SPECIFIED

OPERATING DATA
PRODUCT: SEA WATER
SEAL CHAMBER PRES: 5.9 barG Max
BARRIER FLUID: WATER
DISCHARGE PRES: 5.9 barG Max
API PLAN: 13/51

CUSTOMER DATA
CUSTOMER: PCM MANUFACTURING FRANCE SAS
ADDRESS: CHAMPTOCE-SUR-LOIRE FRANCE
ULTIMATE USER: CROSSWIND (JV SHELL + ENECO)
ADDRESS: THE NETHERLANDS
CUSTOMER P.O.: PO070-24-07869

SEAL DATA
MATL CODE: ----

JOB NUMBER	400370175-000200
DRWN	LoSh
DATE	23-Jul-2024
CHKD	LoSh
DATE	23-Jul-2024
APVD	HaSc
DATE	24-Jul-2024
3D MODEL NO. / REV.	F001614989 / 0
≈ WEIGHT ( )	64.95 lb (29 kg)

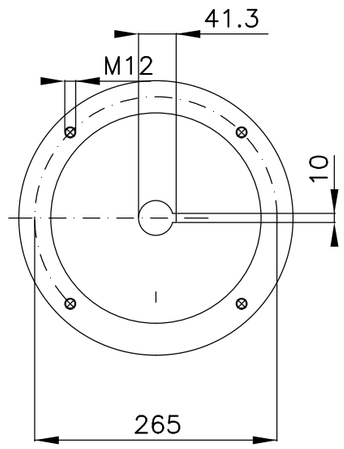
FLOWSERVE AMSS Seals & Systems

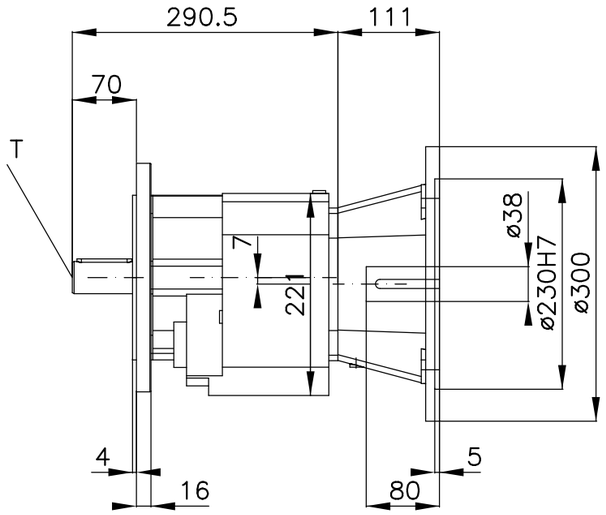
DRAWING TITLE
SEAL SYSTEM - GENERAL ARRANGEMENT
PLAN 51 -

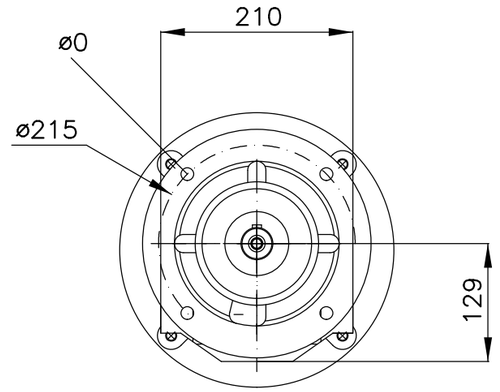
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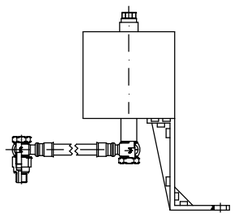
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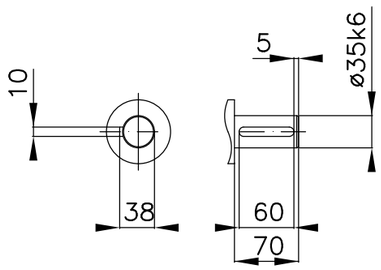
TEMPLATE VERSION 4.5.10 JAN 2024

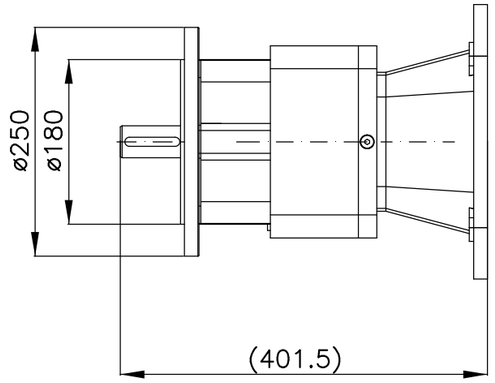


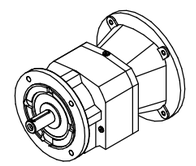


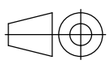










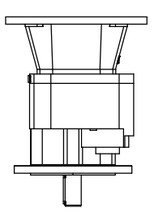


Center Hole acc. to DIN 332 part 2 form D

General tolerances DIN ISO 8062–3 – DCTG 9–12

This drawing is created with NORDCAD 9.3.1.1 SAP – Technical changes reserved!

Document number : 1724000936-MAC-DD-00009 page 3 of 5

Einbaulage/Mounting Pos.: M4	Angewandte Normen	Applied Standards
	Vollwellen bis ø50 nach ISO k6 Vollwellen ?ber ø50 nach ISO m6 Hohlwellen nach ISO H7 Passfedern nach DIN6885 Zentriergewinde nach DIN 332/2 Flanschzentrierung bis ø230 nach ISO j6 Flanschzentrierung ?ber ø230 nach ISO h6	Shafts up to ø50 according to ISO k6 Shafts above ø50 according to ISO m6 Hollow shafts according to ISO H7 Keyways according to DIN 6885 Center Hole Thread according to DIN 332/2 Flange centering up to ø230 according to ISO j6 Flange centering above ø230 according to ISO h6
	Motor:	Skizze / Outline:

Getriebebau NORD
GmbH & Co. KG
Getriebebau–Nord–Stra?e 1
D–22941 Bargteheide
Tel. 04532/289–0 – Fax. 04532/289–2253 – www.nord.com

DRIVESYSTEMS

Observe protection note according to ISO 16016

Rev.	Change	Date	Name

	Date	Name
Creat.	08.07.2024	SYSTEM
Check.		

Unmachined–No./Pre–fab–No.:

Scale: 1:1 | Format: A3 | Page 1 of 1

Status:

SK 672.1F – IEC132K – B5 A300

Documentnumber: NC240708112851VV_D

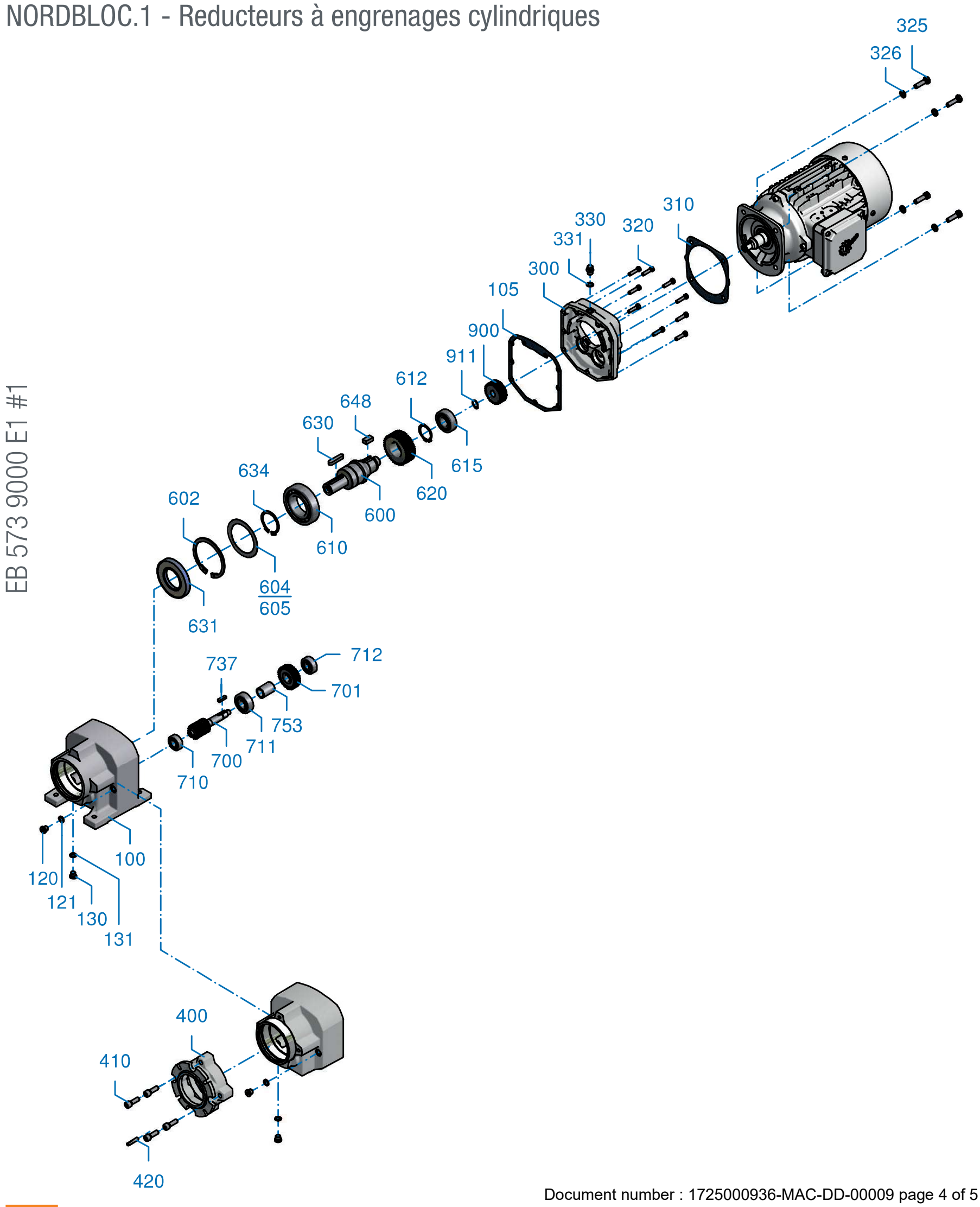
Revision

T–Task:

SK 072.1 - SK 672.1



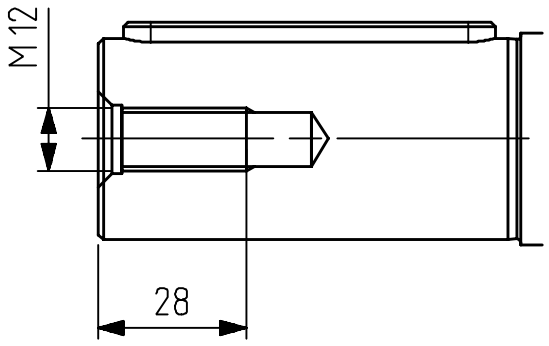
NORDBLOC.1 - Stirnradgetriebe
NORDBLOC.1 - Helical Gear Unit
NORDBLOC.1 - Reducteurs à engrenages cylindriques

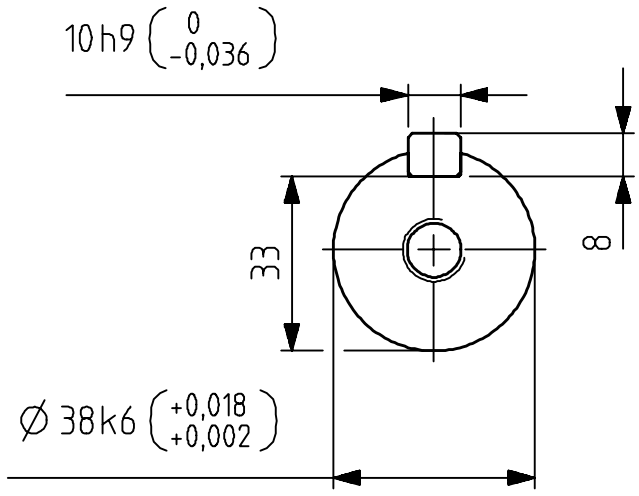


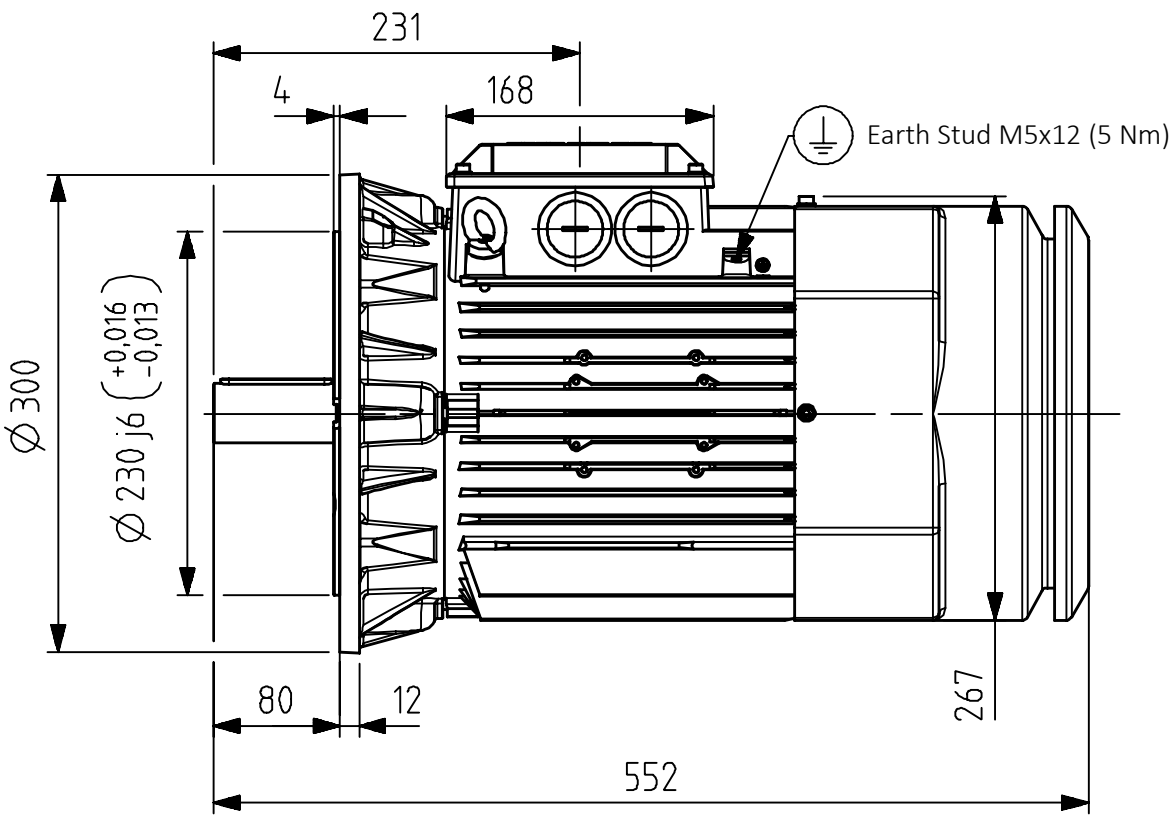


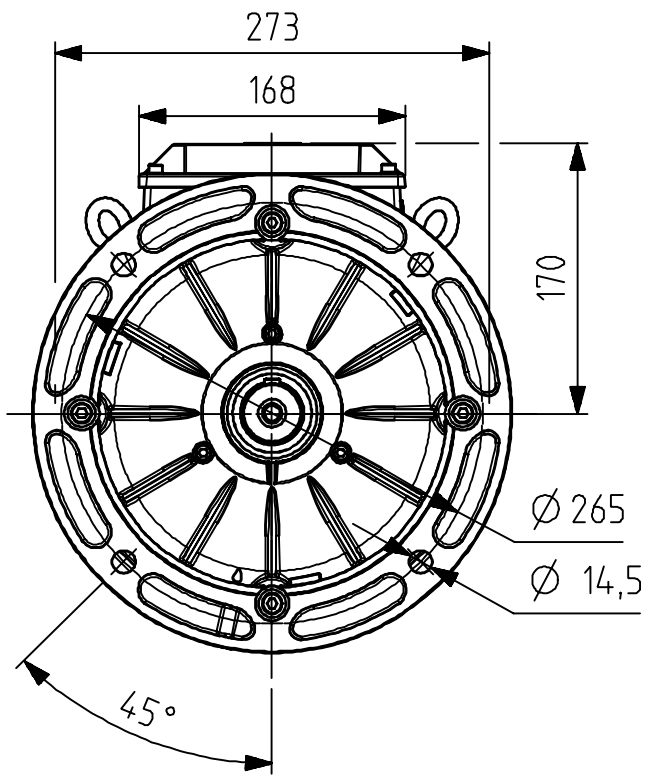
SK 072.1 - SK 672.1

DE		EN		FR	
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105	Dichtung	105	Seal	105	Bague d‘étanchéité
120	Schraube	120	Screw	120	Vis
121	Dichtung	121	Seal	121	Bague d‘étanchéité
130	Schraube	130	Screw	130	Vis
131	Dichtung	131	Seal	131	Bague d‘étanchéité
300	Getriebedeckel	300	Gear unit cover	300	Couvercle du réducteur
310	Dichtung	310	Seal	310	Bague d‘étanchéité
320	Schraube	320	Screw	320	Vis
325	Schraube	325	Screw	325	Vis
326	Federring	326	Lock washer	326	Rondelle élastique
330	Schraube	330	Screw	330	Vis
331	Dichtung	331	Seal	331	Bague d‘étanchéité
400	Flansch	400	Flange	400	Bride
410	Schraube	410	Screw	410	Vis
420	Stift	420	Pin	420	Goupille
600	Abtriebswelle	600	Output shaft	600	Arbre de sortie
602	Sicherungsring	602	Circlip	602	Circlip
604	Passscheibe	604	Shim	604	Rondelles d‘ajustage
605	Passscheibe	605	Shim	605	Rondelles d‘ajustage
610	Wälzlager	610	Roller bearing	610	Palier
612	Sicherungsring	612	Circlip	612	Circlip
615	Wälzlager	615	Roller bearing	615	Palier
620	Abtriebsrad	620	Output gear	620	Roue de sortie
630	Passfeder	630	Key	630	Clavette
631	Wellendichtring	631	Radial shaft seal	631	Bague d‘étanchéité de l‘arbre
634	Sicherungsring	634	Circlip	634	Circlip
648	Passfeder	648	Key	648	Clavette
700	Ritzelwelle	700	Pinion shaft	700	Arbre de pignon
701	Antreibsrad	701	Drive gear	701	Roue d‘entrée
710	Wälzlager	710	Roller bearing	710	Palier
711	Wälzlager	711	Roller bearing	711	Palier
712	Wälzlager	712	Roller bearing	712	Palier
737	Passfeder	737	Key	737	Clavette
753	Buchse	753	Socket	753	Douille
900	Antriebsritzel	900	Driving pinion	900	Pignon d‘entrée
911	Sicherungsring	911	Circlip	911	Circlip



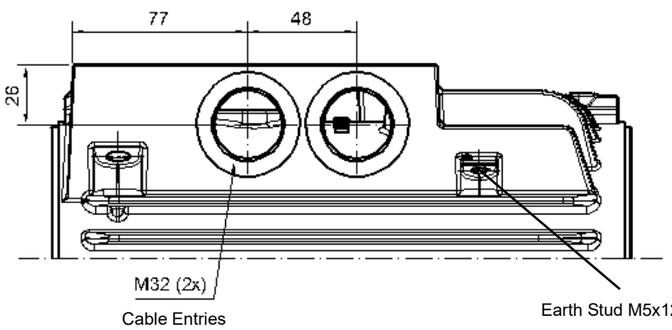


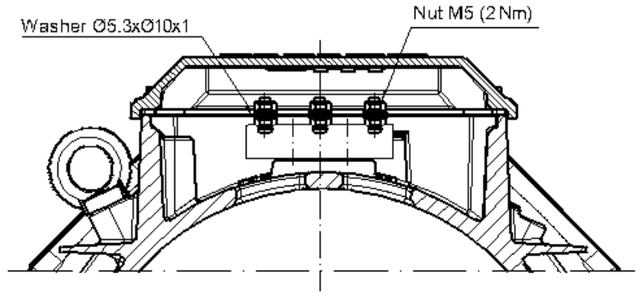


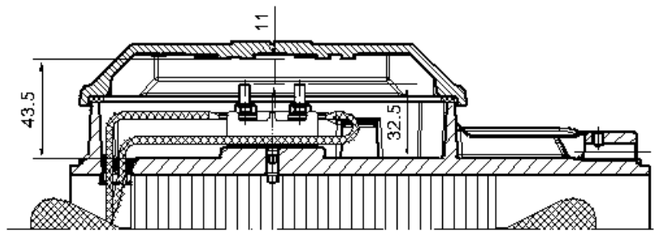


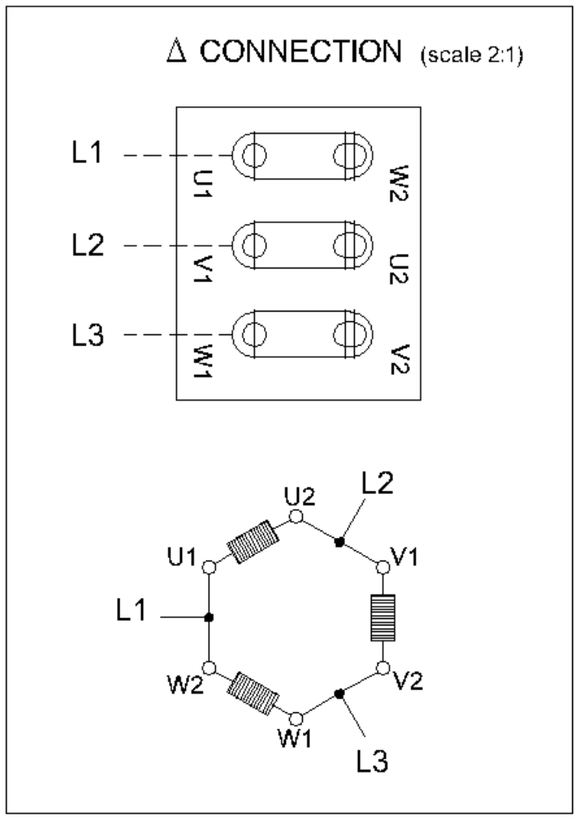
Additional information:

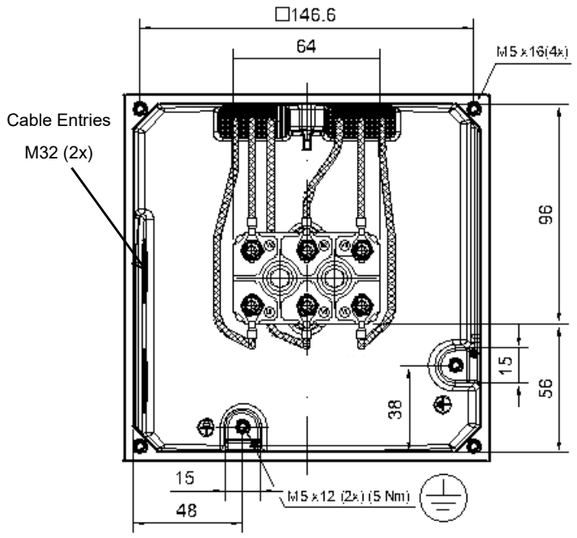
Dimension Print	Motor Type: M3BP/GP (B,K,L) 132SM_2-8; B5, V1 FF265	Document No: 3GZF500013-44 E
Description: SQUIRREL CAGE MOTOR WITH PROTECTIVE ROOF		
Unit: IEC LV Motors Date: 06.Nov.2021	Issued by: J. Hautala Approved by: A. Härmänmaa	Replaces: Replaced by:
ABB	Customer Reference:	

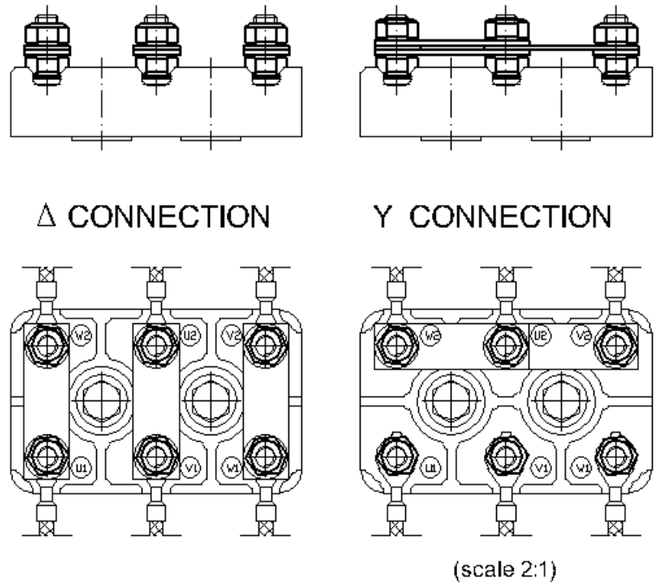










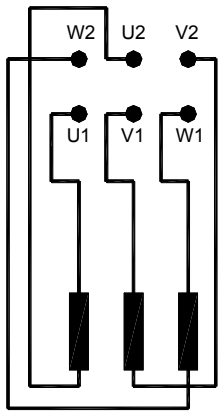


Comment:

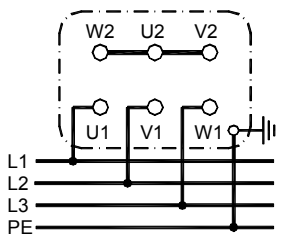
- All unused threaded holes of the terminal box are plugged.

Dimension Print	Motor Type: M3BP/GP (K/L) 112 M3BP/GP (B/K/L) 132	Document No: 3GZF500711-15 B
Description: TERMINAL BOX WITH EARTHINGS SHOWN		
Unit: IEC LV Motors Date: 05.Jul.2021	Issued by: J. Helin Approved by: A. Härmänmaa	Replaces: Replaced by:
ABB	Customer Reference:	

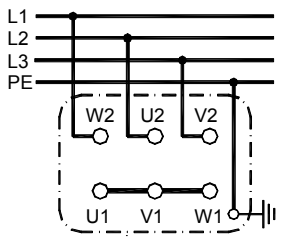
Diagram of connection
Anschluss-Schema
Schema de branchement

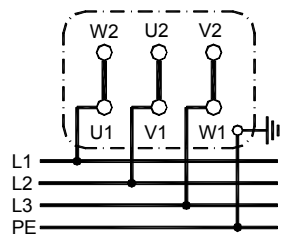


Connection of terminals
Anschluss des Motors
Branchement des bornes

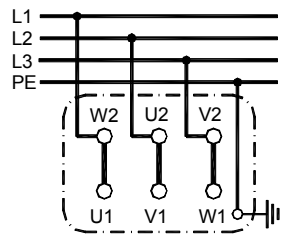


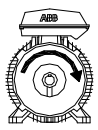
Y-connection
Y-Schaltung
Connection etoile



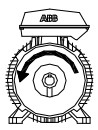


D-connection
D-Schaltung
Connection triangle





Direction of rotation with phase sequence shown in picture
Drehrichtung nach Schaltbild
Direction de rotation avec branchement ci-dessus



Direction of rotation with reversed phase sequence
Drehrichtung mit umgekehrter Phasenfolge
Direction de rotation avec sequence de phase reversée

Motor No
Maschine Nr
No du moteur

ABB Oy, Motors

3GZF321100-1 E

Connection Diagram

Document No:
3GZF321100-1 E

Description: 3-PHASE SQUIRREL-CAGE MOTOR

Unit:	Motors	Issued by:	M Prusi	Replaces:
Date:	21.09.2005	Approved by:	Jari Raittila	Replaced by:

ABB Oy

Customer Reference:

CROSSWIND	HOLLANDSE KUST NOORD WIND PARK Project Contract No. CW-I-WP4-2023-05	ROSETTI MARINO
Document Title:	PUMP DATA SHEETS	Sh. 3 of 7 Date : 01/10/2024 Rev. 02

NOTE: ○ INDICATES INFORMATION TO BE COMPLETED BY PURCHASER ☐ BY MANUFACTURER

GENERAL

NO. MOTORS DRIVEN	2 (TWO)	OTHER DRIVER TYPE			
PUMP ITEM NO'S	P-5001A/B	PUMP ITEM NO'S			
MOTOR ITEM NO'S	PM-5001A/B	DRIVER ITEM NO'S		GEAR ITEM NO'S	
MOTOR PROVIDED BY	ABB	DRIVER PROVIDED BY	N/A	GEAR PROVIDED BY	NORD
MOTOR MOUNTED BY	PUMP VENDOR	DRIVER MOUNTED BY	N/A	GEAR MOUNTED BY	PUMP VENDOR
MOTOR DATA SHEET NO.	1724000936-MAC-DS-00014	DRIVER DATA SHEET NO.		GEAR DATA SHEET NO.	

● OPERATING CONDITIONS

- ● CAPACITY @ PT (m³/h):
  - @ MAXIMUM VISCOSITY
  - @ MIN. VISCOSITY **2,5**
- ● DISCHARGE PRESSURE (kPa)(BARG):
  - MAXIMUM **5.3 (note 3)**
  - MINIMUM
- ● SUCTION PRESSURE (kPa)(BARG):
  - MAXIMUM
  - MINIMUM **Flooded (note 1)**
- ● DIFFERENTIAL PRESSURE (kPa)(BARG)
  - MAXIMUM
  - MINIMUM **(note 3)**
- ● NPSH AVAILABLE (m) **>7 @ level +0,00 (note 1)**
- ○ HYDRAULIC kW

PSV Set Value : 7.6 barg

● LIQUID

- ● TYPE OR NAME OF LIQUID **SEA WATER**
- ● PUMPING TEMPERATURE (°C):
  - NORMAL **20**
  - MAX
  - MIN **1,3**
- ● SPECIFIC GRAVITY **1,03**
  - MAXIMUM **1,02**
  - MINIMUM
- ○ SPECIFIC HEAT
  - Cp (kJ/kg °C)
- ● VISCOSITY (Cp) **0,9**
  - MINIMUM
  - MAXIMUM
- ● CORROSIVE/EROSIVE AGENTS **SAND/SALT PARTICLES**
- ● CHLORIDE CONCENTRATION (PPM) max 35,000 ppm
- ○ H_2S CONCENTRATION (PPM)

LIQUID ○ TOXIC ○ FLAMMABLE ○ OTHER

Fluid considered with no H2S / C02 / BTEX and TSS < 5%

■ PERFORMANCE

RATED CAPACITY (m³/h)	**2,5**
NPSH REQUIRED (m)	**0.56 mH2O**
RATED SPEED (RPM)	**118**
DISPLACEMENT (m³/h)	**3,3**
VOLUMETRIC EFFICIENCY (%)	**81,6**
MECHANICAL EFFICIENCY (%)	**56,7**
kW @ MAXIMUM VISCOSITY	**1,45**
kW @ RELIEF VALVE SETTING	**1,55**
MAXIMUM ALLOWABLE SPEED (RPM)	**450**
MINIMUM ALLOWABLE SPEED (RPM)	**100**

■ CONSTRUCTION

	SIZE	ANSI RATING	FACING	POSITION
CONNECTIONS				
SUCTION				**BOTTOM**
DISCHARGE	**1" 1/2**	**150#**	**RF**	**SIDE**
MOUNTING	**16"**	**150#**	**RF**	
DRAINS				
VENTS				
JACKET				

PUMP TYPE:

☐ INTRN'L GEAR ☐ TWIN-SCREW ☐ VANE

☐ EXTRN'L GEAR ☐ 3-SCREW ■ PROGRESSING CAVITY

GEAR TYPE

☐ SPUR ■ HELICAL

☐ OTHER

● SITE AND UTILITY DATA

LOCATION ○ INDOOR ● OUTDOOR

○ HEATED ● UNHEATED ○ UNDER ROOF

○ ELECTRICAL AREA CLASS SAFE GROUP DIV

○ WINTERIZATION REQD ○ TROPICALIZATION REQD

SITE DATA

○ RANGE OF AMBIENT TEMPS:MIN/MAX -8 / 25 °C

UNUSUAL CONDITIONS

○ DUST ○ FUMES ● SALT ATMOSPHERE

○ OTHER

○ UTILITY CONDITIONS

ELECTRICITY	DRIVERS	HEATING	CONTROL	SHUTDOWN
VOLTAGE	**400**			
HERTZ	**5**			
PHASE	**50**			

COOLING WATER	INLET	RETURN	DESIGN	MAX Δ
TEMP °C		MAX		
PRESS. (BARG)		MIN		
SOURCE				

INSTRUMENT AIR MAX MIN

PRESSURE (kPa)(BARG)

APPLICABLE SPECIFICATIONS:

API 676 POSITIVE DISPLACEMENT PUMPS - ROTARY

○ GOVERNING SPECIFICATION (IF DIFFERENT) **(5)**

REMARKS:

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CONSTRUCTION (CONTINUED)

CASING

- MAXIMUM ALLOWABLE PRESSURE: 20 (BARG) 20 °C
- HYDROSTATIC TEST PRESSURE: 30 (BARG)
- STEAM JACKET PRESSURE: (BARG) °C
- ROTOR MOUNT ☐ BTWN. BEARINGS ■ OVERHUNG
- TIMING GEARS ☐ YES ☐ NO
- BEARING TYPE: ■ RADIAL TIMKEN (1) ☐ THRUST
- LUBRICATION TYPE: ○ CONSTANT LEVEL OILERS
- ☐ PUMPED FLUID ☐ RING OIL ☐ OIL MIST
- ☐ EXTERNAL ☐ OIL FLOOD ■ GREASE
- ■ LUBRICANT TYPE Fuchs Renolin CLP 220
- ● MECHANICAL SEALS
- ■ MANUFACTURER AND MODEL Flowserve / ISC2-PX
- ■ MANUFACTURER CODE 1CW-FX
- ● API 610 SEAL FLUSH PLAN API PLAN 51
- ■ API 610 SEAL CODE 21A-FFQ-060-13/51
- ○ PACKING: ○ LANTERN RING
- ☐ MFR. AND TYPE ☐ NO. OF RINGS

DRIVE MECHANISM

- ○ DIRECT-COUPLED ○ V-BELT ■ GEAR
- ■ COUPLING MANUFACTURER John Crane

DRIVERS

- ● MOTOR:
- ■ MANUFACTURER ABB
- ■ TYPE 4 poles, safe area induction motor
- ■ FRAME NO. IEC 132
- ● CONSTANT SPEED
- ○ VARIABLE SPEED
- ■ kW 5,5 RPM 1463
- ● VOLTS 400 PHASE 3
- ● HERTZ 50 SERVICE FACTOR S1
- ● ENCLOSURE TEFC
- ○
- ○ STEAM TURBINE
- ○ OTHER (SEE SEPARATE DATA SHEETS)

OTHER PURCHASER REQUIREMENTS

NAMEPLATE UNITS ○ U.S. CUSTOMARY ● SI

- ● RELIEF VALVES BY PUMP MFRG ● INTERNAL ○ EXTRNL.

PIPING FOR SEAL FLUSH FURNISHED BY:

- ● PUMP VENDOR (2) ○ OTHERS

PIPING FOR COOLING/HEATING FURNISHED BY:

- ○ PUMP VENDOR ○ OTHERS
- ● PROVIDE TECHNICAL DATA MANUAL (3)

MATERIALS

- ■ CASING Super Duplex SS (25%Cr)
- ■ STATOR NBR
- ■ END PLATES N/A
- ■ ROTOR (S) Super Duplex SS (25%Cr)
- ■ VANES N/A
- ■ SHAFT Super Duplex SS (25%Cr)
- ■ SLEEVE (S) Super Duplex SS (25%Cr)
- ■ GLAND (S) Super Duplex SS (25%Cr)
- ■ BEARING HOUSING Cast Iron
- ■ MOTOR Cast Iron
- ○ SPECIAL MATERIAL TESTS
- ○ LOW AMBIENT TEMP. MATERIALS TESTS

QA INSPECTION AND TEST

- ● COMPLIANCE WITH INSPECTORS CHECK LIST
- ● CERTIFICATION OF MATERIALS (Material certificate 3.1)
- ● FINAL ASSEMBLY CLEARANCES
- ● SURFACE AND SUBSURFACE EXAMINATIONS
- ○ RADIOGRAPHY
- ○ ULTRASONIC
- ○ MAGNETIC PARTICLE
- ● LIQUID PENETRANT 100 % of welds
- ● CLEANLINESS PRIOR TO FINAL ASSEMBLY
- ○ HARDNESS OF PARTS, WELDS & HEAT AFFECTED ZONES
- ○ FURNISH PROCEDURES FOR OPTIONAL TESTS

TESTS	REQ'D	WIT	OBS
HYDROSTATIC	○	●	○
MEHANICAL RUN	○	●	○
PERFORMANCE	○	●	○
NPSH	○	○	○

PREPARATION FOR SHIPMENT

- ● DOMESTIC ○ EXPORT ○ EXPORT BOXING REQ'D
- ○ OUTDOOR STORAGE MORE THAN 6 MONTHS

WEIGHTS (kg)

■ PUMP 1836 ☐ BASE 0 ■ GEAR 26 ■ MOTOR 81

BASEPLATE

- ● BY PUMP MANUFACTURER ○ SUITABLE FOR EPOXY GROUT
- ○ EXTENDED FOR
- ● SUBSOLE PLATES BY PUMP MANUFACTURER
- ○ DRAIN-RIM ○ DRAIN-PAN

REMARKS

(1) Shaft sleeves hardnedned in correspondence of plain bearings

(2) Plan 51 will be mounted on the pump assembly and connected to the seal with SS316L tubing and fitting.

Plan 51 is to be filled with clean fresh water. I t needs to be maintained at positive temperature.

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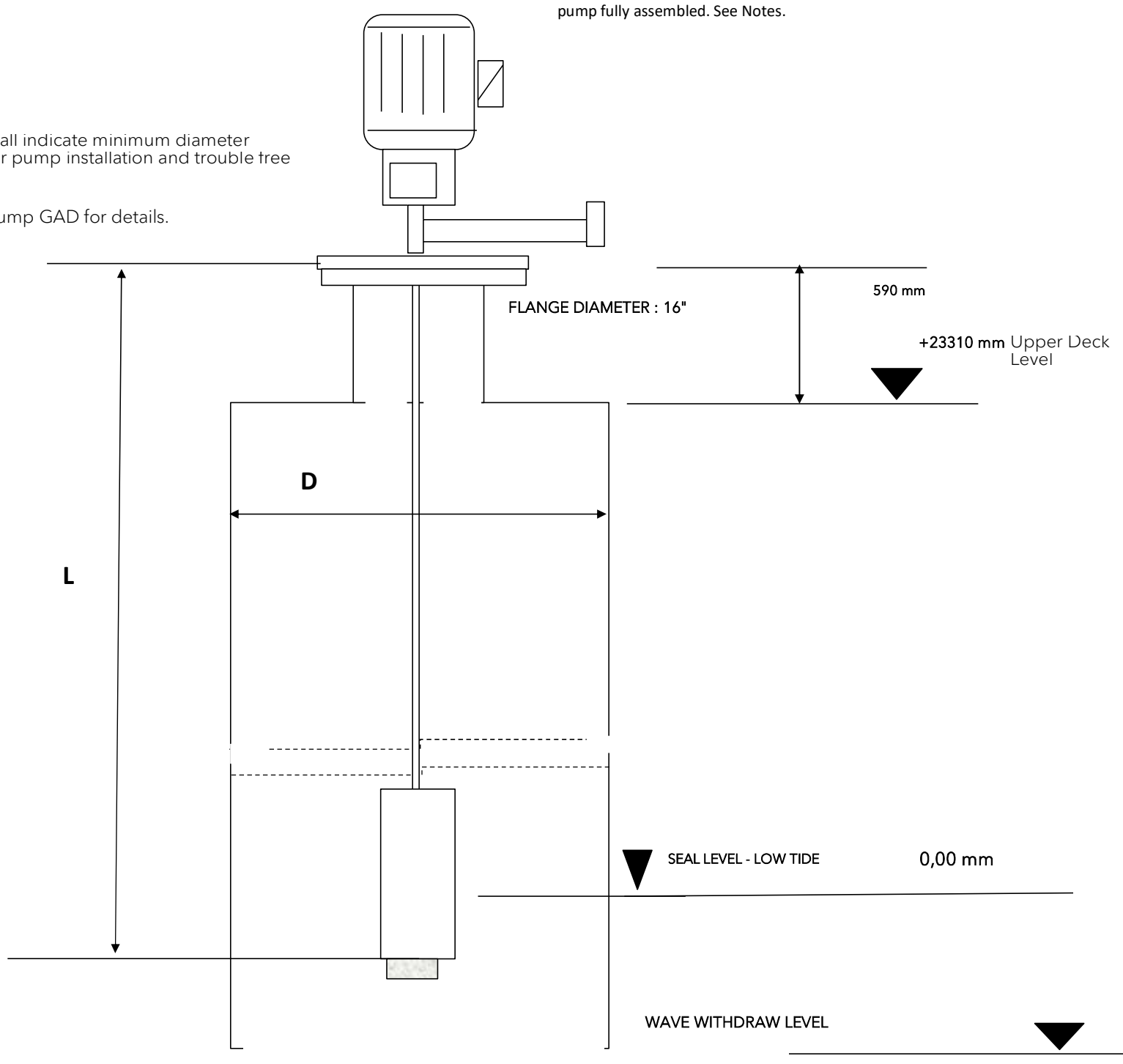
L 29.81 m

D 333.34 mm

NOTE:
Vendor shall indicate minimum diameter suitable for pump installation and trouble free operation

Refer to pump GAD for details.

Vendor to declare the mounting/dismountig clearance considering the pump fully assembled. See Notes.



OPEN CAISSON

Expected wave withdraw is 5.4 meters below low tide level (-5,40 m)
Pump lenght shall be defined to consider the above

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CROSSWIND	HOLLANDSE KUST NOORD WIND PARK Project Contract No. CW-I-WP4-2023-05	ROSETTI MARINO
Document Title:	PUMP DATA SHEETS	Sh. 6 of 7 Date : 01/10/2024 Rev. 02

NOTES

1) For NPSHA vendor to consider 1bara at minimum seawater level (+ 0,00 mm)

2) Pump lenght to be calculated by vendor according to a reliable margin (VTA) between NPSHA vs NPSHR and minimum submergence
Vendor to advise the suction nozzle depth, according to the above sentence

3) Discharge pressure / head is referred to pump battery limit (i.e. dicharge nozzle)

4) Suction strainer to be provided by vendor.
Mesh size is 7mm diameter as per PCM standard design for the selected pumps.
Mesh size shall be minimized without jeopardizing suction condition.

5) Full compliance to API Std 676 is not strictly mandatory. Vendor to submit a list of deviation supported by reference list
Please refer to attached list of technical clarifications & deviations, including API 676.

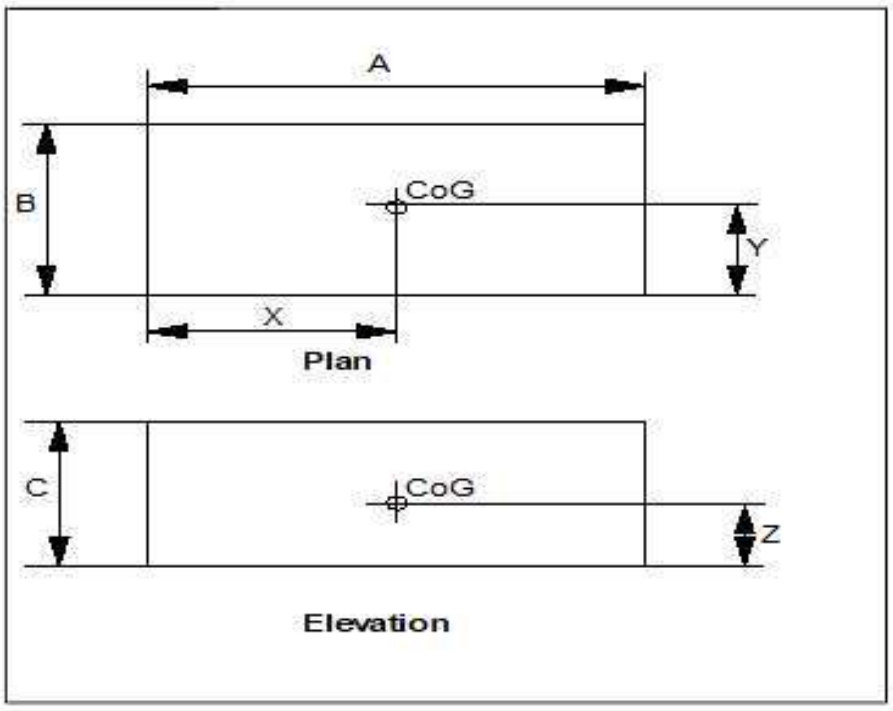
6) Vendor to declare mounting/dismantling clearance considerinf full assmbled pump
For full assembled pump mounting/ dismantling, the required minimum vertical clearance will be the total length of the equipment (including motor & all casing extensions : approx 35 m estimated), plus the required length for slings, depending on the lifting equipment to be used.
This clearance will be required above the supporting flange elevation.

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WEIGHT DATA (kg)

		Areas for input by Supplier	
Dry Weight	(I)	1943	kg
Content	(II)	2150	kg
Operating Weight	(I+II)	4093	kg
Auxiliaries' weight, included in I (specify under Notes)			kg
Test weight, i.e. filled with water			kg
Transport weight		1943	kg

CENTRE OF GRAVITY (CoG) DATA FOR INSTALLED DRY CONDITION



Overall dimensions		
A =	971	mm
B =	597	mm
C =	32170	mm

CoG location (mm)		
X =	7	mm
Y =	-1	mm
Z =	-12398	mm

NOTES

Datum point considered to locate the C.O.G of the pump is the center of the mounting flange.

WEIGHT AND CoG STATUS (TICK OFF AS APPROPRIATE)

☐ Estimated ☐ Calculated

☐ Catalogue data ☐ Weighed

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IEC LV Motors	Technical Data Sheet - DOL			
	HOLLANDSE KUST NOORD WIND PARK Project		Location: Netherlands	
Department/Author: Rakesh Purushohama	Customer name: PCM		Customer ref: GIAN-392481	Item name: PM-50001 A/B
Our ref.: CQ813220	Rev/Changed by: C	Date of issue: 07/06/2024	Saving ident: cq813220.xlsm	Pages: 3(4)

No.	Definition	Data	Unit	Remarks	
1	Product	***TEFC, 3-phase, squirrel cage induction motor***			
2	Product code	***3GBP 132 260-BDK***		Calc. ref.	3GZF021013-1094
3	Type/Frame	***M3BP 132SMF 4***			
4	Mounting	***IM3011, V1(flange)***			
5	Rated output P_N	***5,5***	kW		
6	Service factor	***1***			
7	Type of duty	***S1(IEC) 100%***			
8	Rated voltage U_N	***400***	VD	± 5 % (IEC 60034-1)	
9	Rated frequency f_N	***50***	Hz	± 2 % (IEC 60034-1)	
10	Rated speed n_N	***1463***	r/min		
11	Rated current I_N	***11,9***	A		
12	No-load current	***5,8***	A		
13	Starting current I_s/I_N	***7,6***		Meet IEC 60034-12, N,(H at 60 Hz)	
14	Nominal torque T_N	***36***	Nm		
15	Locked rotor torque T_S/T_N	***2,8***			
16	Maximum torque T_{max}/T_N	***3,5***			
17	Minimum torque T_{min}/T_N	***2,5***			
18	Speed at minimum torque	***255***	r/min		
	Load characteristics (IEC 60034-2-1:2014)	Load %	Current A	Efficiency %	Power factor
19	PLL determined from residual loss	*100*	**11,9**	**89.6 / IE3**	**0,74**
20		*75*	**9,8**	**89,8**	**0,68**
21		*50*	**8**	**88,7**	**0,56**
22		*Start*	**90**		**0,43**
23	Maximum starting time from hot	***12***	s		
24	Maximum starting time from cold	***21***	s		
25	Insulation class / Temperature class	***F / B***			
26	Ambient temperature	***40***	°C		
27	Altitude	***1000***	m.a.s.l.		
28	Enclosure	***IP56***			
29	Cooling system	***IC411 self ventilated***			
30	Bearing DE/NDE	***6208-2Z/C3 - 6208-2Z/C3***			
31	Type of Grease				
32	Sound pressure level (LP dB(A) 1m)	***70***	dB(A)	at load	
33	Moment of inertia J = ¼ GD2	***0,0295***	kg-m2		
34	Balancing				
35	Vibration class				
36	Position of terminal box	***Top***			
37	Terminal box entries; no, dimens.	***2 x M25***			
38	Number of power terminals	***6 x M5***			
39	Direction of rotation	***CW or CCW***			
40	Weight of rotor	***21***	kg		
41	Total weight of motor	***81***	kg		
42	Dimension drawing no.				
43					
44					
45					
Ex-motors (N/A)					
46					
47					
48					

Option Variant Codes / Definition

49	+066 Modified for non-standard mounting position
50	+403 Degree of protection IP56. Applicable to Motor and Terminal Box
51	
52	

Remarks:

Data based on situation 3/7/2024
All data subject to tolerances in accordance with IEC
Guaranteed values on request

CROSSWIND	9 E AA% C 0 Q2#@TQS#C E E P0 #Z £C 0 #M% P@#Mf£{nj‡ . £ ¡ #£aj #C £ #. Z ÐÆZ M . Ð ˜ ¨ ° Ð ´	ROSETTI MARINO
0 £ j · ~ n ¡ #Sv‡hø	2A2 . SP :. #B E SE P#D % S% #Q9 22S	Qu #, #E S#, Date : 16/10/2024 Rev. 03

Applicable to : Proposal Purchase As Built PAGE ____ OF ____ REQ'N NO. NA

DESIGN, MANUFACTURE & TESTING SHALL CONFORM TO SPECIFICATION : 123A90-DDL-EL-SP-20084 - Technical Specification for LV Motors

FOR CROSSWIND UNIT

SITE BLPH - Hollandse Kust Noord (HKN)

SERVICE SEA WATER LIFT DRIVEN EQUIPMENT TYPE PUMP DRIVEN EQUIP. ITEM NO.: P-50001 A/B QUANTITY: 2

MANUFACTURER ABB MODEL: 3GBP 132 260-BDK SERIAL NO. TBC FRAME NO: IEC 132

NOTE: INFORMATION TO BE COMPLETED BY: PURCHASER MANUFACTURER PURCHASER OR MANUFACTURER

OPERATING CONDITIONS (1)

Site Data: HOLLANDSE KUST NOORD WIND PARK

Altitude: Less than 1000 Other ____ (m)

Ambient Temperature: Min/Max -8 / 25 (°C)

Electrical Characteristics:

Volts 400 Phase 3 Hertz 50

Starting Voltage: Full Reduced ____ %

Volt Dip +10/-20' % Loaded Unloaded

Installation: Indoor Outdoor YES

Operating Mode Continuous Standby Intermittent YES Alter.

Electrical Area Classification ____ Unclassified YES

Class ____ Group ____ Division ____

Unusual Conditions Dust Fumes

Gasses/Vapours ____

Ignition Temp ____ (°C) Temperature Code ____

PERFORMANCE

Nameplate Power 5,5 (kW) 1463 (rpm)

No Load Current: 5,8 (A)

Load	Current (AMPS)	Efficiency	Power Factor
Full	11,9	89,6	0,74
75%	9,8	89,8	0,68
50%	8	88,7	0,56
Locked Rotor	90		0,43

Starts per Hour: 2 Hot 2 Cold

Full Load Torque: 36 (N-m)

L. R. Torque: 280 %FLT

Breakdown Torque: 350 %FLT

Acceleration Time: 0,1 (sec)

CONSTRUCTION FEATURES

Enclosure TEFC YES WP1 WP2

Explosion Proof Other SAFE AREA

Insulation Class B YES F YES Other

Non-Hygroscopic Tropicalized

Temperature Rise: ____ (°C) Above ____ (°C)

By: ____ @ ____ S.F.

NEMA Torque Design A B C D

Locked rotor kVA Code ____

Mounting

Horizontal Foot Mounted Flange Mounted YES

Vertical YES Shaft Up Shaft Down YES With Canopy YES

Coupling

Supplied By John Crane Mounted By PCM

Suitable for Belt Drive N/A

Bearing type Ball YES Roller Sleeve

Bearing Lubrication Grease YES Ring Oil Oil Mist

Grease Fitting Plugged Alemite Other YES

Bearing Shielding Single Double Sealed for Life

Motor Rotation (facing end opposite shaft extension) YES

CW CCW Bidirectional YES

Fan Reversible Unidirectional

Non-Sparking YES Aluminium Non-Metallic YES

Main Terminal Box Location TOP F-1 F-2

Space Heater (2) N/A (kW)

Volts 230 Phase 1P+N+PE Hertz 50

Max. Sheath Temperature ____ (°C)

Winding Temperature Detectors (not mandatory but provided as standard)

No. per Phase ____ Type: ____

Bearing temperature Detectors

Location N/A Type: N/A

Separate JB for Space Heaters, Winding/Bearing Detectors

Adjustable Frequency Drive

Speed range: From N/A (rpm) to: N/A (rpm)

Materials of Construction

Frame Cast Iron

Junction Box Cast Iron

Copper Bar Rotor

Stainless Steel Filters

Differential Pressure Switch for Inlet Filters

Vertical Jackscrews

Ground Connection

Drilled and tapped Hole in Conduit Box

Ground Lug Size M6 (mm)

Motor Thrust Load None N/A (N)

Thrust Direction Toward Away

Motor Thrust Rating

Nameplate Material 316 SS YES Other

TESTING & MISCELLANEOUS

Testing Required Witness

Routine Test

Complete Test YES

Noise Test

Certified Results

Weight Net ____ (kg) Shipping ____ (kg)

Painting Mfr. Std. Other IEEE 841

Noise Design

Max sound Pressure Level @ ____ (m) ____ dBA

Expected Sound Pressure Level @ ____ (m) ____ dBA

Notes:

(1) Refer to pump DS - Document Number : 1724000936-MAC-DS-00012

(2) space heater NOT necessary according to enviromental conditions (Ref. IOGP S-703 par. 11.3.6.1)

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ITEM	Tag	V-50000A	: Vessel - pump A			Dwg	123A90-DDL-PR-PID-80021
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10004853		Location	Offshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Mechanical Form CDX01		Storage Tank

1 Check that the nameplate details are correct.

2 Check the location, elevation, orientation and that the vessel is level.

3 Check that the holding down arrangements are correct.

4 Check for any installation damage.

5 Check the vessel internals are as per approved drawings.

6 Check the vessel internally for cleanliness.

7 Check all platforms and ladders are installed as per approved drawings. Also man ways are accessible and suitable for operation.

8 Check out the painting, insulation and the lining for damage.

9 Check the earthing and bonding are as per Project Specifications.

10 Check that the pipe supports are in accordance with the approved design.

11 Check the disconnected pipework flanges against the nozzle flanges for correct alignment.

12 Atmospheric Transportable Drain Vessel to be equipped with Breathing / Vacuum breaker valve.

13 Check Flame Arrestor (if any).

14 If required produce Red Line Mark Up for "AS BUILT".

Comments:

	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company			
Name			
Date			
Signature			

ITEM	Tag	V-50000B	: Vessel - pump B			Dwg	123A90-DDL-PR-PID-80021
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10004854		Location	Offshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Mechanical	Form	CDX01 Storage Tank

1 Check that the nameplate details are correct.

2 Check the location, elevation, orientation and that the vessel is level.

3 Check that the holding down arrangements are correct.

4 Check for any installation damage.

5 Check the vessel internals are as per approved drawings.

6 Check the vessel internally for cleanliness.

7 Check all platforms and ladders are installed as per approved drawings. Also man ways are accessible and suitable for operation.

8 Check out the painting, insulation and the lining for damage.

9 Check the earthing and bonding are as per Project Specifications.

10 Check that the pipe supports are in accordance with the approved design.

11 Check the disconnected pipework flanges against the nozzle flanges for correct alignment.

12 Atmospheric Transportable Drain Vessel to be equipped with Breathing / Vacuum breaker valve.

13 Check Flame Arrestor (if any).

14 If required produce Red Line Mark Up for "AS BUILT".

Comments:

	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company			
Name			
Date			
Signature			

ITEM	Tag	P-50001A	: Sea Water Pump A		Dwg	123A90-DDL-PR-PID-80021	
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)		Module	LD	
TASK	code	C10004930	Location	Offshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline	Mechanical	Form CGX01	Pump

1	Nameplates are in specified language(s) and details correct, in accordance with drawings.
2	Check that the holding down arrangements are correct.
3	Check for mechanical damages.
4	Check lubrication system. - Ensure correct quantity & grade of lubricant is installed.
5	Pump case vent / drain installed in accordance with drawings.
6	Suction / Discharge nozzles installed in accordance with drawings. No misalignment of pipe / pump case flanges.
7	Mechanical seal system installed in accordance with drawings and flushed.
8	Instruments / Valves / Strainers as per vendor P&ID.
9	Electrical grounding boss installed per drawings.
10	Check direction / rotation mark manually & labeled arrow card
11	Confirm operating and / or safety instruction tags / labels are correct.
12	Check base frame drains / pumps drains are correctly connected (if applicable).
13	Check any damages of coupling, engine, motor.
14	If required produce Red Line Mark Up for "AS BUILT".

Comments

	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company			
Name			
Date			
Signature			

ITEM	Tag	P-50001B	: Sea Water Pump B			Dwg	123A90-DDL-PR-PID-80021
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10004931		Location	Offshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Mechanical	Form	CGX01 Pump

1	Nameplates are in specified language(s) and details correct, in accordance with drawings.
2	Check that the holding down arrangements are correct.
3	Check for mechanical damages.
4	Check lubrication system. - Ensure correct quantity & grade of lubricant is installed.
5	Pump case vent / drain installed in accordance with drawings.
6	Suction / Discharge nozzles installed in accordance with drawings. No misalignment of pipe / pump case flanges.
7	Mechanical seal system installed in accordance with drawings and flushed.
8	Instruments / Valves / Strainers as per vendor P&ID.
9	Electrical grounding boss installed per drawings.
10	Check direction / rotation mark manually & labeled arrow card
11	Confirm operating and / or safety instruction tags / labels are correct.
12	Check base frame drains / pumps drains are correctly connected (if applicable).
13	Check any damages of coupling, engine, motor.
14	If required produce Red Line Mark Up for "AS BUILT".

Comments

	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company			
Name			
Date			
Signature			

Section 8 MECHANICAL COMPLETION STATUS INDEX - TELECOMMUNICATION DISCIPLINE

NOT APPLICABLE

Section 9 MECHANICAL COMPLETION STATUS INDEX - HVAC DISCIPLINE

NOT APPLICABLE

Section 10 MECHANICAL COMPLETION STATUS INDEX - PIPING DISCIPLINE

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 50-00 & process: MC & discipline : P

Piping	50-00 Seawater Intake System (Lifting Pumps)						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
023-1-J1	Joint 023-1-J1	OFFSHORE	C10004181	TMX27	0	-	-
023-1-J10	Joint 023-1-J10	ONSHORE	C10004182	TMX27	100	2025-01-28	RFC 1
023-1-J11	Joint 023-1-J11	ONSHORE	C10004183	TMX27	100	2025-01-28	RFC 1
023-1-J2	Joint 023-1-J2	ONSHORE	C10004184	TMX27	100	2025-01-29	RFC 1
023-1-J3	Joint 023-1-J3	ONSHORE	C10004185	TMX27	100	2025-01-28	RFC 1
023-1-J4	Joint 023-1-J4	ONSHORE	C10004186	TMX27	100	2025-01-29	RFC 1
023-1-J5	Joint 023-1-J5	ONSHORE	C10004187	TMX27	100	2025-01-28	RFC 1
023-1-J6	Joint 023-1-J6	ONSHORE	C10004188	TMX27	100	2025-01-28	RFC 1
023-1-J7	Joint 023-1-J7	ONSHORE	C10004189	TMX27	100	2025-01-29	RFC 1
023-1-J8	Joint 023-1-J8	ONSHORE	C10004190	TMX27	100	2025-01-29	RFC 1
023-1-J9	Joint 023-1-J9	ONSHORE	C10004191	TMX27	100	2025-01-28	RFC 1
025-1-J1	Joint 025-1-J1	OFFSHORE	C10004192	TMX27	0	-	-
025-1-J10	Joint 025-1-J10	ONSHORE	C10004193	TMX27	100	2025-01-29	RFC 1
025-1-J11	Joint 025-1-J11	ONSHORE	C10004194	TMX27	100	2025-01-29	RFC 1
025-1-J2	Joint 025-1-J2	ONSHORE	C10004195	TMX27	100	2025-01-29	RFC 1
025-1-J3	Joint 025-1-J3	ONSHORE	C10004196	TMX27	100	2025-01-29	RFC 1
025-1-J4	Joint 025-1-J4	ONSHORE	C10004197	TMX27	100	2025-01-29	RFC 1
025-1-J5	Joint 025-1-J5	ONSHORE	C10004198	TMX27	100	2025-01-29	RFC 1
025-1-J6	Joint 025-1-J6	ONSHORE	C10004199	TMX27	100	2025-01-29	RFC 1
025-1-J7	Joint 025-1-J7	ONSHORE	C10004200	TMX27	100	2025-01-29	RFC 1
025-1-J8	Joint 025-1-J8	ONSHORE	C10004201	TMX27	100	2025-01-29	RFC 1
025-1-J9	Joint 025-1-J9	ONSHORE	C10004202	TMX27	100	2025-01-29	RFC 1
026-1-J1	Joint 026-1-J1	ONSHORE	C10004203	TMX27	100	2025-01-29	RFC 1
026-1-J2	Joint 026-1-J2	ONSHORE	C10004204	TMX27	100	2025-01-29	RFC 1
026-2-J3	Joint 026-2-J3	ONSHORE	C10004205	TMX27	100	2025-01-15	RFC 1
026-2-J4	Joint 026-2-J4	ONSHORE	C10004206	TMX27	100	2025-01-15	RFC 1
026-2-J5	Joint 026-2-J5	ONSHORE	C10004207	TMX27	0	-	-
026-2-J6	Joint 026-2-J6	ONSHORE	C10004208	TMX27	100	2025-03-14	RFC 1
059-1-J1	Joint 059-1-J1	ONSHORE	C10004236	TMX27	100	2025-02-21	RFC 1

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 50-00 & process: MC & discipline : P

Piping	50-00 Seawater Intake System (Lifting Pumps)						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
059-1-J2	Joint 059-1-J2	ONSHORE	C10004237	TMX27	100	2025-02-21	RFC 1
059-1-J3	Joint 059-1-J3	ONSHORE	C10004238	TMX27	100	2025-02-21	RFC 1
060-1-J1	Joint 060-1-J1	ONSHORE	C10004239	TMX27	100	2025-02-21	RFC 1
060-1-J2	Joint 060-1-J2	ONSHORE	C10004240	TMX27	100	2025-02-21	RFC 1
060-1-J3	Joint 060-1-J3	ONSHORE	C10004241	TMX27	100	2025-02-21	RFC 1
117-1-J1	Joint 117-1-J1	ONSHORE	C10004284	TMX27	100	2025-01-29	RFC 1
117-1-J2	Joint 117-1-J2	ONSHORE	C10004285	TMX27	100	2025-01-29	RFC 1
118-1-J1	Joint 118-1-J1	ONSHORE	C10004286	TMX27	100	2025-01-29	RFC 1
118-1-J2	Joint 118-1-J2	ONSHORE	C10004287	TMX27	100	2025-01-29	RFC 1
150-1-J1	Joint 150-1-J1	ONSHORE	C10004303	TMX27	100	2025-01-30	RFC 1
150-1-J2	Joint 150-1-J2	ONSHORE	C10004304	TMX27	100	2025-01-30	RFC 1
150-1-J3	Joint 150-1-J3	ONSHORE	C10004305	TMX27	100	2025-02-14	RFC 1
151-1-J1	Joint 151-1-J1	ONSHORE	C10004306	TMX27	100	2025-02-14	RFC 1
152-1-J1	Joint 152-1-J1	ONSHORE	C10004307	TMX27	100	2025-01-30	RFC 1
152-1-J2	Joint 152-1-J2	ONSHORE	C10004308	TMX27	100	2025-01-30	RFC 1
152-1-J3	Joint 152-1-J3	ONSHORE	C10004309	TMX27	100	2025-02-14	RFC 1
153-1-J1	Joint 153-1-J1	ONSHORE	C10004310	TMX27	100	2025-02-14	RFC 1
154-1-J1	Joint 154-1-J1	ONSHORE	C10004311	TMX27	100	2025-01-15	RFC 1
154-1-J2	Joint 154-1-J2	ONSHORE	C10004312	TMX27	100	2025-01-15	RFC 1
154-1-J3	Joint 154-1-J3	ONSHORE	C10004313	TMX27	100	2025-02-21	RFC 1
155-1-J1	Joint 155-1-J1	ONSHORE	C10004314	TMX27	100	2025-02-21	RFC 1
50-00-TP-001	Test Pack 50-00-TP-001	ONSHORE	C10003233	CLX02A	100	2025-01-21	RFC 1
		ONSHORE	C10003234	CLX02B	100	2025-02-25	RFC 1
		ONSHORE	C10003235	CXX01	100	2025-04-02	RFC 1
		ONSHORE	C10003236	TMX03	100	2025-01-25	RFC 1
		ONSHORE	C10003237	TMX05	100	2025-01-25	RFC 1
		ONSHORE	C10003239	TPLX05	100	2025-01-25	RFC 1

CROSSWIND

ROSETTI MARINO

Project CROSSWIND

STATUS INDEX DETAIL

Filtered on subsystem: 50-00 & process: MC & discipline : P

Piping	50-00 Seawater Intake System (Lifting Pumps)						
ITEM		TASK					
Code	Description	Location	Code	Form	Progress	Date	Certificate
50-00-TP-028	Test Pack 50-00-TP-028	ONSHORE	C10003443	CLX02A	100	2025-01-15	RFC 1
		ONSHORE	C10003444	CLX02B	100	2025-03-10	RFC 1
		ONSHORE	C10003445	CXX01	100	2025-04-02	RFC 1
		ONSHORE	C10003446	TMX03	100	2025-01-15	RFC 1
		ONSHORE	C10003447	TMX05	100	2025-01-15	RFC 1
		ONSHORE	C10003449	TPLX05	100	2025-01-15	RFC 1
50-00-TP-045	Test Pack 50-00-TP-045	ONSHORE	C10003577	CLX02A	100	2024-12-18	RFC 1
		ONSHORE	C10003578	CLX02B	100	2025-03-06	RFC 1
		ONSHORE	C10003579	CXX01	100	2025-03-25	RFC 1

ITEM	Tag	50-00-TP-001	: Test Pack 50-00-TP-001			Dwg	123A90-DDL-PR-PID-80021
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10003233		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	CLX02A Pipework Before Test

1	Check for each line of the Test Pack the NDT clearance.	OK
2	Confirm that materials conforms to the line specifications (ref. to the last issued revision of the isometric material table)	OK
3	Check the installation of all pipe – supports are in accordance with the specifications and drawings.	PL
4	Check that pipework at pump and vessel nozzles are free from spring.	PL
5	Check that the pipe flanges have been mounted square to each other. Also that the bolting and gaskets are correct (all TMX27 are complete, if necessary).	PL
6	Check bolt tightening and flange management (excluded battery limit joints).	PL
7	Check that the flow direction of the valves and check – valve is in the correct sense / direction (ball valves to be set at half open).	Note
8	Check that the removed equipment is in accordance with the agreed list of fragile devices. Check valve should be removed or flappers locked.	OK
9	Check that spool pieces or other substitution means have been put in place instead of the removed fragile device.	OK
10	Check the Blind list.	NA
11	Check that all the temporary material to perform the task are conforms to the procedure & suitable pressure rating.	OK
12	If required produce Red Line Mark Up for "AS BUILT".	

Comments: Visual check of the TP performed on spools not assembled in erection.
Inspection point n.7 impossible to check due the fact that all the valves are going to be installed only after test.
Valves BLPH-MV-469 and 470 gave not been installed before test differently from TP documentation.

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-01-17	2025-01-21	
Signature	Digitaly signed by Emanuele Delfino 2025-01-17T14:22:50.762Z	Digitaly signed by Massimo Bruschi 2025-01-21T15:04:16.778Z	

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	50-00-TP-001	: Test Pack 50-00-TP-001			Dwg	123A90-DDL-PR-PID-80021
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10003234		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	CLX02B Pipework After Test

1	Check that the pipework and equipment are drained as per procedure.	OK
2	Check if all temporary equipment (test spades, filters ,spool pieces..etc) have been removed.	OK
3	All plugs installed on vents and drains for test have been removed.	OK
4	Check that all removed devices and valves have been re-installed.	OK
5	Check that the new gaskets have been installed after pipework and equipment reinstallation.	OK
6	All specific blinds and / or spectacle blinds have been correctly installed as per P&ID.	NA
7	Check that the pipework, valves , check valves are undamaged. Also check the ancillaries and any other components.	OK
8	After the (re) installation of a valve check that it operates freely.	OK
9	Check that the flow direction of the valves and check – valve is in correct sense /direction in correct open/closed position as per P&ID.	PL
10	Check all locking device.	OK
11	Check that the valves have been correctly lubricated and that they have the correct spindle packing.	NA
12	Check that all the bolts and fasteners are suitably lubricated inline with the flange management procedure.	OK
13	Check that the bolts have been tightned at opened joints.	OK
14	Check that all golden welds (final tie-ins without hydrotest) have been performed as per procedure.	NA
15	Check for the correct tagging, labeling and colour coding of pipework and equipment (only for bare pipe lines).	NA
16	Check that the pipework and equipment (re) installation conforms to the specifications, drawings and to the P&ID's.	PL
17	If required produce Red Line Mark Up for "AS BUILT".	

Comments: Joints 023-1-J1 and 25-1-J1 will be tight OFFSHORE.

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Lorenzo Novaga	
Date	2025-02-06	2025-02-25	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-02-06T15:27:51.073Z	PROVERLIS Digitaly signed by Lorenzo Novaga 2025-02-25T16:23:06.713Z	

ITEM	Tag	50-00-TP-001	: Test Pack 50-00-TP-001		Dwg	123A90-DDL-PR-PID-80021	
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)		Module	LD	
TASK	code	C10003235	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity CCK	Discipline Piping	Form	CXX01	Thermal Insulation

1	Ensure CLX02B Pipework After Test (reinstatement) check completed.	OK
2	Ensure CXX02 "Painting Line" check (for the concerned insulated lines) completed.	OK
3	Ensure CPX22A "Heat tracing Before Insulation" check completed.	OK
4	Check that the insulation and cladding materials conform to the specifications.	PL
5	Check that the insulation is compatible with the Heat tracing system.	OK
6	Check that the surface condition prior to the application of the insulation	OK
7	Check the installation of wire mesh	OK
8	Check the overlap of the metal cladding.	OK
9	Check that each joint is sealed with a suitable sealant specified for water proofing.	PL
10	Check the staggering of the metal cladding joints and verify that they have been applied as per the specifications.	OK
11	Control that the locking devices boxes opretated satisfactorily.	PL
12	Check the blinds, the spectacles and the instruments are visible.	PL
13	Check the flange accessibility without damaging the insulation.	PL
14	Check that color coding/line marking/flow direction are correct	OK

Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RM_CONSTR (ROSETTI MARINO)	RM (ROSETTI MARINO)	
Name	Gianluca De Maglie	Lorenzo Novaga	
Date	2025-03-21	2025-04-02	
Signature	PROVERLIS Digitaly signed by Gianluca De Maglie 2025-03-21T15:22:21.662Z GDM	PROVERLIS Digitaly signed by Lorenzo Novaga 2025-04-02T12:20:08.837Z LN	

ITEM	Tag	50-00-TP-001	: Test Pack 50-00-TP-001		Dwg	123A90-DDL-PR-PID-80021	
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)		Module	LD	
TASK	code	C10003236	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity PIP	Discipline Piping	Form	TMX03	Cleaning

CLEANING MEDIUM

Air		Water	●	Steam		Oil		Other		Mechanical	

Component	NA					
Chemical treatment	No	NA	Filtration	No	Screen size	NA

EQUIPMENTS

Equipment **removed**	Yes	Agreed list of removed fragile devices to be attached to this Test Sheet	NA
Excepted removed equipments, pipework installation is conform to the specifications & PID's			OK
Equipment **added**	No	Exhaustive list to be attached (temporary filters, spools…etc)	NA

TEST RESULTS

Test date	22/01/2025	Start time	13:00	End time	13:15
Flow rate	NA	Duration	15 min	Medium T°	NA

Operation Description

Connected the water source to the lowest point of the piping system.
Maintained a high flow rate to help dislodging and carry away debrises.
Flushing flow kept until the water exiting the system was clear and free of visible contaminants. Expelled water inspected for any debris to be noted.

Safety Precautions

Restricting access to the area.

Result and comments

Water has been found clear of solid debris. All contaminants have been expelled.

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-01-20	2025-01-25	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-20T05:50:18.269Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-01-25T06:59:20.908Z	

ITEM	Tag	50-00-TP-001	: Test Pack 50-00-TP-001			Dwg	123A90-DDL-PR-PID-80021
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10003237		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX05 Pressure Test

TEST DATA

Reference procedure	123A90-PML-QHSE-PRO-00092				
Design pressure	7.6 barg	Max test pressure	11.40 barg	Min hold period	30 min

TEST PREPARATION

Check all equipments used for the test are safe for use under pressure (valide certificate)	Yes
Pressure relief devices are installed and in line and set to correct pressure (calibration certificate)	Yes

Medium

Test medium	WATER

TEST RESULTS

Test date	See attachment	Start time	See attachment	End time	See attachment
Ambient temperature is recorded	NA			Test medium temperature is recorded	Yes
Pressure recorded during test hold period	Min See attachment	Max See attachment		Variation	See attachment
Line has been depressurised to	NA			At maximum of bar/min	See attachment
Pressure test completed sucessfully and approved	Yes			Temperature and pressure disc chart attached	NA
Instrument calibration certificates attached	Yes			Dead-weight tester log attached	NA
Record of failures and corrective action attached	No			Battery limits of the test attached	Yes
If required produce Red Line Mark Up for "AS BUILT".					

Comments:

Page 1/1	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-01-20	2025-01-25	
Signature	Digitaly signed by Emanuele Delfino 2025-01-20T05:50:29.745Z	Digitaly signed by Massimo Bruschi 2025-01-25T07:00:10.524Z	

Logger protocol

Protocollo di acquisizione elenco dati

Log no. *N. elenco dati*	123A90-50-00TP001_1

Instrument

Strumento

Electrical pressure gauge *Misuratore di pressione elettronico*	
Model *Modello*	CPG1500
Serial number *Numero di serie*	1A014ILNH2N
Log temperature *Registrazioni di Temperatura*	Active *Attivo*
Scale range *Campo scala*	(0 ... 1000) bar a
Accuracy *Accuratezza*	0.1 % FS
Tag number *Numero tag*	
Communication *Comunicazione*	Wireless (00:13:43:85:E0:AF)

Measurement conditions

Condizioni di misura

Settings *Impostazioni*	
Mode *Modalità*	Automatic *Automatico*
Interval (ms) *Intervallo (ms)*	60000
Duration (hh:mm:ss) *Durata (hh:mm:ss)*	00:50:20
Start time (hh:mm:ss) *Tempo di avvio (hh:mm:ss)*	01:20:22 pm

Logger protocol

Protocollo di acquisizione elenco dati

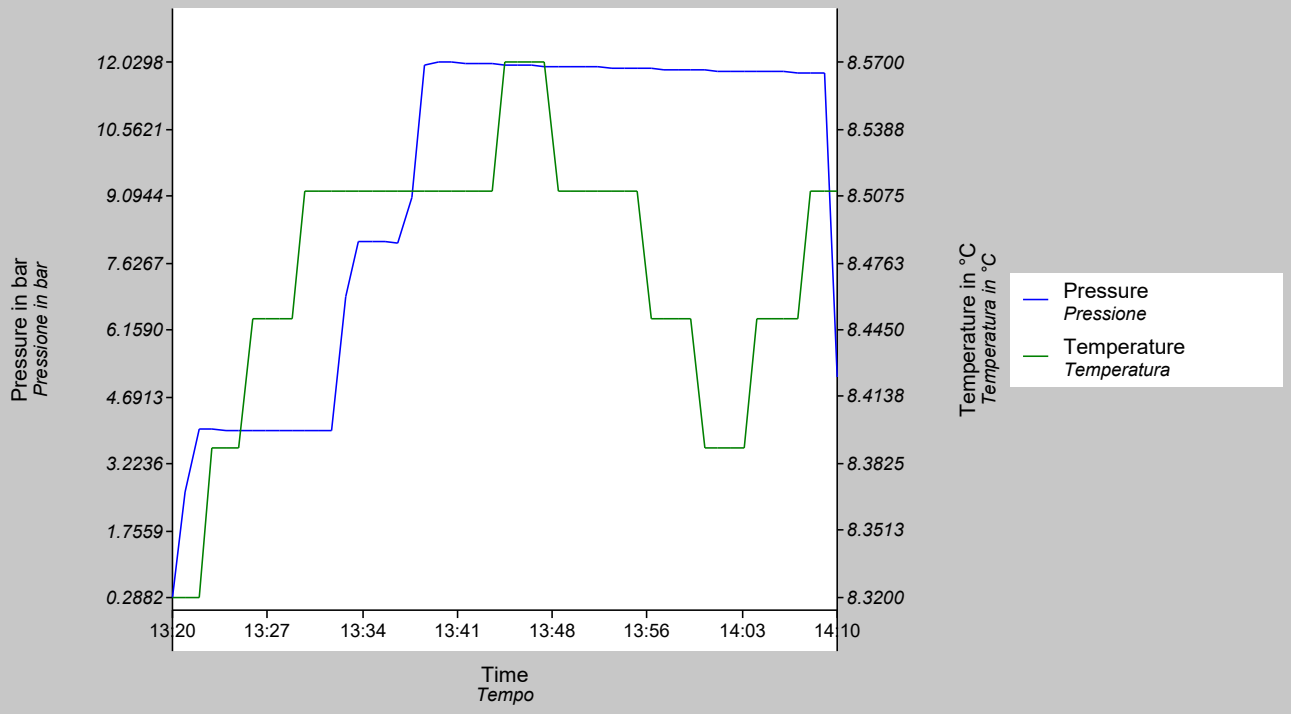
ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	123A90-50-00TP001_1

Measurement results

Risultati della misura

Graphical representation of progression
Rappresentazione grafica dell'andamento



Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
01/22/2025 13:20:22.000	0.2882	8.3200
01/22/2025 13:21:22.000	2.5913	8.3200
01/22/2025 13:22:22.000	3.9830	8.3200
01/22/2025 13:23:22.000	3.9675	8.3900
01/22/2025 13:24:22.000	3.9649	8.3900
01/22/2025 13:25:22.000	3.9650	8.3900
01/22/2025 13:26:22.000	3.9627	8.4500
01/22/2025 13:27:22.000	3.9596	8.4500
01/22/2025 13:28:22.000	3.9595	8.4500
01/22/2025 13:29:22.000	3.9604	8.4500
01/22/2025 13:30:22.000	3.9565	8.5100
01/22/2025 13:31:22.000	3.9549	8.5100
01/22/2025 13:32:22.000	3.9518	8.5100
01/22/2025 13:33:22.000	6.8937	8.5100
01/22/2025 13:34:22.000	8.0915	8.5100
01/22/2025 13:35:22.000	8.0834	8.5100
01/22/2025 13:36:22.000	8.0773	8.5100

Logger protocol

Protocollo di acquisizione elenco dati

ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	123A90-50-00TP001_1

Measurement results

Risultati della misura

Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
01/22/2025 13:37:22.000	8.0751	8.5100
01/22/2025 13:38:22.000	9.0532	8.5100
01/22/2025 13:39:22.000	11.9760	8.5100
01/22/2025 13:40:22.000	12.0298	8.5100
01/22/2025 13:41:22.000	12.0198	8.5100
01/22/2025 13:42:22.000	12.0041	8.5100
01/22/2025 13:43:22.000	11.9866	8.5100
01/22/2025 13:44:22.000	11.9837	8.5100
01/22/2025 13:45:22.000	11.9761	8.5700
01/22/2025 13:46:22.000	11.9648	8.5700
01/22/2025 13:47:22.000	11.9556	8.5700
01/22/2025 13:48:22.000	11.9428	8.5700
01/22/2025 13:49:22.000	11.9305	8.5100
01/22/2025 13:50:22.000	11.9274	8.5100
01/22/2025 13:51:22.000	11.9196	8.5100
01/22/2025 13:52:22.000	11.9120	8.5100
01/22/2025 13:53:22.000	11.9047	8.5100
01/22/2025 13:54:22.000	11.8945	8.5100
01/22/2025 13:55:22.000	11.8880	8.5100
01/22/2025 13:56:22.000	11.8747	8.4500
01/22/2025 13:57:22.000	11.8637	8.4500
01/22/2025 13:58:22.000	11.8552	8.4500
01/22/2025 13:59:22.000	11.8469	8.4500
01/22/2025 14:00:22.000	11.8409	8.3900
01/22/2025 14:01:22.000	11.8352	8.3900
01/22/2025 14:02:22.000	11.8320	8.3900
01/22/2025 14:03:22.000	11.8251	8.3900
01/22/2025 14:04:22.000	11.8210	8.4500
01/22/2025 14:05:22.000	11.8173	8.4500
01/22/2025 14:06:22.000	11.8101	8.4500
01/22/2025 14:07:22.000	11.8048	8.4500
01/22/2025 14:08:22.000	11.7964	8.5100
01/22/2025 14:09:22.000	11.7871	8.5100
01/22/2025 14:10:22.000	5.1091	8.5100

Kalibrierschein / Calibration Certificate

gem. DIN EN ISO/IEC 17025:2018 / acc. DIN EN ISO/IEC 17025:2018

erstellt durch das Kalibrierlaboratorium
issued by the calibration laboratory

WIKA Alexander Wiegand SE & Co. KG
Alexander-Wiegand-Straße 30
63911 Klingenberg

DAkkS Deutsche Akkreditierungsstelle D-K-15105-01-00

Mitglied im Deutschen Kalibrierdienst
Member of the Deutscher Kalibrierdienst

Kalibrierzeichen
Calibration mark

C01107773144
D-K-15105-01-00
2024-06

Gegenstand *Object*	Elektrisches Druckmessgerät Electrical pressure gauge
Hersteller *Manufacturer*	WIKA Alexander-Wiegand-Straße 30 DE-63911 Klingenberg
Typ *Type*	CPG1500
Fabrikat/Serien-Nr. *Serial number*	1A037FOOB2N
Auftraggeber *Customer*	ROSETTI MARINO SPA Via Del Marchesato, 37 Marina di Ravenna (RA) IT 48122 Ravenna
Auftragsnummer *Order No.*	S000343115/1
Anzahl der Seiten des Kalibrierscheines *Number of pages of the certificate*	4
Datum der Kalibrierung *Date of calibration*	18.06.2024

Dieser Kalibrierschein dokumentiert die metrologische Rückführbarkeit auf nationale Normale zur Darstellung der Einheiten in Übereinstimmung mit dem Internationalen Einheitensystem (SI).
Die DAkkS ist Unterzeichner der multilateralen Übereinkommen der European co-operation for Accreditation (EA) und der International Laboratory Accreditation Cooperation (ILAC) zur gegenseitigen Anerkennung der Kalibrierscheine.
Für die Einhaltung einer angemessenen Frist zur Wiederholung der Kalibrierung ist der Benutzer verantwortlich.

This calibration certificate documents the metrological traceability to national standards, which realize the units of measurement according to the International System of Units (SI).
The DAkkS is signatory to the multilateral agreements of the European co-operation for Accreditation (EA) and of the International Laboratory Accreditation Cooperation (ILAC) for the mutual recognition of calibration certificates.
The user is obliged to have the object recalibrated at appropriate intervals.

Dieser Kalibrierschein darf nur vollständig und unverändert weiterverbreitet werden. Auszüge oder Änderungen bedürfen der Genehmigung des ausstellenden Kalibrierlaboratoriums. Kalibrierscheine ohne Unterschrift haben keine Gültigkeit.

This calibration certificate may not be reproduced other than in full except with the permission of the issuing laboratory. Calibration certificates without signature are not valid.

Datum *Date*	Stellv. Leiter des Kalibrierlaboratoriums *Ass. head of calibration laboratory*	Bearbeiter *Person in charge*
18.06.2024	Roland Schüßler	Christian Wunder

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WIKA Alexander Wiegand SE & Co. KG

C01107773144
D-K-15105-01-00
2024-06

Kalibriergegenstand (KG)
Device under test (DUT)

Elektrisches Druckmessgerät *Electrical pressure gauge*	
Typ *Model*	CPG1500
Seriennummer *Serial number*	1A037FOOB2N
Anzeigebereich *Scale range*	(0 ... 1000) bar g
Genauigkeit *Accuracy*	0,1 % FS
Auflösung (Skalenwert) *Resolution (scale division)*	0,1 bar
Messstellen-Nr. *Tag number*	

Kalibrierverfahren
Calibration procedure

Die Kalibrierung erfolgte nach der Richtlinie DKD-R 6-1 "Kalibrierung von Druckmessgeräten" (Ausgabe 03/2014) Ablauf B, durch direkten Vergleich der Messwerte des Kalibriergegenstandes mit denen des Bezugs- oder Gebrauchsnormales. Der Kalibrierschein wurde mit WIKA-Cal Version 2.11.0.213 erstellt.
Calibration was carried out according to DKD-R 6-1 "Kalibrierung von Druckmessgeräten" (Ausgabe 03/2014) procedure B, by comparing the measured values of the calibration item with those of the reference or working standard. The calibration certificate has been created with WIKA-Cal version 2.11.0.213.

Ort der Kalibrierung
Place of calibration

Klingenberg Kalibrierlabor 2 *Klingenberg calibration laboratory 2*	g = (9,8100531 ± 0,00002) m/s²

Messbedingungen
Measurement conditions

Gebrauchsnormal (GN) Druckcontroller *Working standard (WS) Pressure controller*	
Typ *Model*	CPC8000
Kalibrierzeichen *Calibration mark*	07072415
Anzeigebereich *Scale range*	(0 ... 1000) bar g
Genauigkeit *Accuracy*	0,01 % FS

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WIKA Alexander Wiegand SE & Co. KG

C01107773144
D-K-15105-01-00
2024-06

Aufbau *Assembly*	
Druckübertragungsmedium *Pressure transmission medium*	Wasser *water*
Bezugsebene (für Referenzwert) *Reference height (for reference value)*	Dichtfläche KG *Sealing face DUT*
Lage bei der Kalibrierung *Position during calibration*	senkrecht *vertical*

Umgebungsbedingungen
Ambient conditions

Temperatur *Temperature*	(23,6 ± 0,5) °C
Atmosphärischer Luftdruck *Atmospheric pressure*	(997,7 ± 0,1) hPa
rel. Luftfeuchte *rel. humidity*	(40 ± 5) %

Messergebnisse
Measurement results

Referenzwert GN *Reference value WS* bar	Ablesung KG *Reading DUT* bar		
	↑	↓	↑
0,00	0,0	0,0	0,0
125,00	125,0	125,1	125,0
250,00	250,1	250,1	250,1
375,00	375,0	375,2	375,0
500,00	500,1	500,1	500,0
625,00	625,0	625,0	625,0
750,00	749,9	750,0	749,9
875,00	874,9	874,8	874,9
1000,00	999,9	999,9	999,9

Messunsicherheit
Measurement uncertainty

Referenzwert GN *Reference value WS* bar	Mittelwert *Mean value* bar	Messabweichung *Deviation* bar	Wiederholbarkeit *Repeatability* bar	Hysterese *Hysteresis* bar	Messunsicherheit *Meas. uncertainty* bar
0,00	0,0	0,0	0,0	0,0	0,40
125,00	125,1	0,1	0,0	0,1	0,40
250,00	250,1	0,1	0,0	0,0	0,40
375,00	375,1	0,1	0,0	0,2	0,40
500,00	500,1	0,1	0,1	0,0	0,40
625,00	625,0	0,0	0,0	0,0	0,40
750,00	750,0	0,0	0,0	0,1	0,40
875,00	874,9	-0,1	0,0	0,1	0,40
1000,00	999,9	-0,1	0,0	0,0	0,40

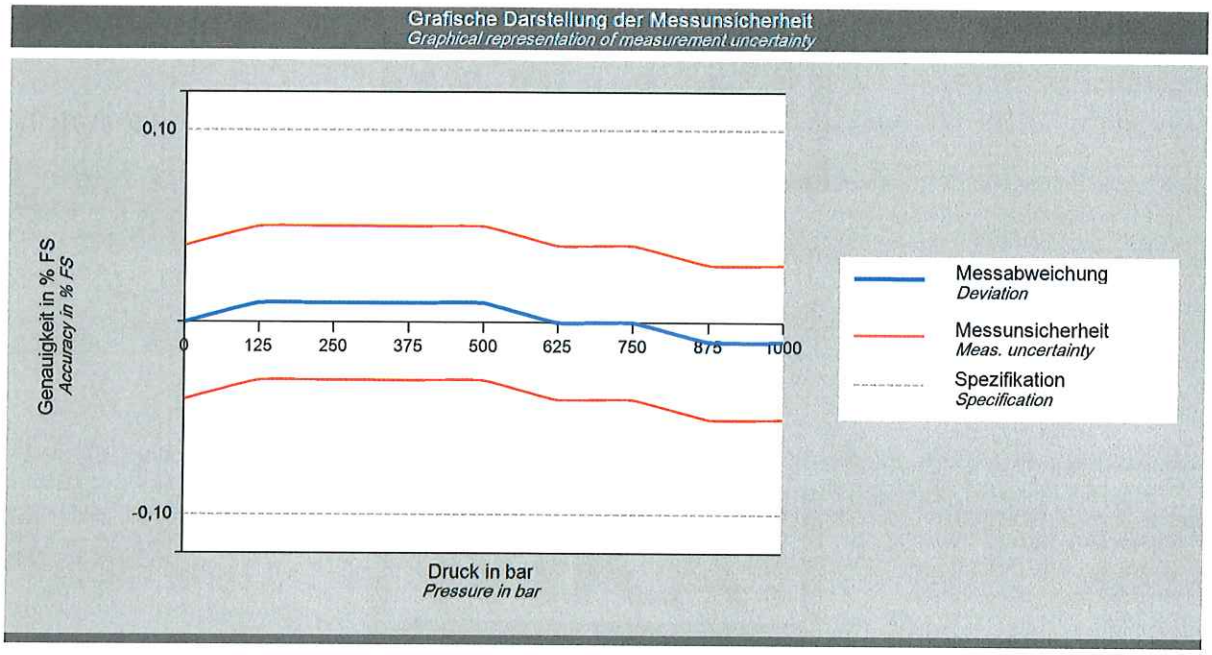
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WIKA Alexander Wiegand SE & Co. KG

C01107773144
D-K-15105-01-00
2024-06

Angegeben ist die erweiterte Messunsicherheit, die sich aus der Standardmessunsicherheit durch Multiplikation mit dem Erweiterungsfaktor k = 2 ergibt. Sie wurde gemäß EA-4/02 M ermittelt. Der Wert der Messgröße liegt mit einer Wahrscheinlichkeit von etwa 95 % im zugeordneten Werteintervall.
The uncertainty stated is the expanded uncertainty obtained by multiplying the standard uncertainty by the coverage factor k = 2. It has been determined in accordance with EA-4/02 M. The value of the measurand lies within the assigned range of values with a probability of approx. 95 %.



Die Genauigkeit des KG beträgt 0,50 bar
The accuracy of the DUT is 0.50 bar

Konformitätsaussage
Statement of compliance

Der Kalibriergegenstand hält die geforderte Spezifikation ein!
The calibration item keeps the required specification!

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Base Load Power Hub (BLPH)

TEST PACK

N°50-00-TP-001
SUB-SYSTEM N° 50-00

System	50
Sub-System	50-00
Test Pressure	11.40 barg
Test Fluid	WATER
Test Duration	30 min

Rev.	Date	Prepared by	Checked by
0	27/09/2024	J.Q.	L.M.

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1. COLOURED MARKED P&IDs
2. PIPING TEST 3D CIRCUIT
3. MATERIAL LIST FOR TEST
4. EXTRACT OF LINE LIST
5. ISOMETRIC RED-MARKED DRAWINGS & EXTRACT OF ISO LIST
6. EXTRACT OF SUPPORT LIST AND DETAILS
7. WELDING REGISTER & MATERIAL TRACEABILITY RECORD
8. PIPING & VESSEL PRE-COMMISSIONING CONFORMITY CHECKS & TESTS:
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   - 8.2 CLX02B - Pipework After Test
   - 8.3 CXX01 - Thermal insulation
   - 8.4 CXX02 – Painting Line -NOT APPLICABLE
   - 8.5 TMX03 – Cleaning
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   - 8.9 TPLX05 – Drying

1. COLOURED MARKED P&IDs

DRAWING NO. DRAWING_NO.

REV. REV

P-50001 A/B

SEA WATER LIFT PUMPS

POWER : 1.6 KW
FLOW : 2.5 m³/h
DESIGN P/T : 7.6 barg / 80°C
DISCHARGE PRESSURE : 5.6 barg (NOTE 9)
MATERIAL : SDSS

B-50013 A/B

SEA WATER LIFT PUMPS
CAISSONS

SIZE : 343 mm (ID) x 27308 mm (H)
MATERIAL : CS + CA

123A90-DDL-PR-PID-80022
BIOCIDE DOSING UNIT
1"-CI-029-01CP-E
3/4" BLPH-MV-214
3/4"x1/2" 1/2"
CONC. RED. BLPH-MV-215

1"-CI-030-01CP-E
1"-CI-032-01CP-E

1-1/2"-SWS-035-01SD-E
123A90-DDL-PR-PID-80022
SEA WATER COARSE FILTER PACKAGE

BLPH-MV-043 1.1/2" SB SWS-035 SWS-031 03
1-1/2"-SWS-031-01SD-E
BLPH-MV-050 1.1/2" SB SWS-035 SWS-033 03
1-1/2"-SWS-033-01SD-E

50 XY 001 / 50 XV 001 — IA — FC TYP.1 — NOTE 5
50 XY 002 / 50 XV 002 — IA — FC TYP.1 — NOTE 3
50 RO 001 — NOTE 7
50 XY 003 / 50 XV 003 — I.A. — FC TYP.1 — NOTE 5
50 XY 004 / 50 XV 004 — I.A. — FC TYP.1 — NOTE 3
50 RO 002 — NOTE 7

3/4" BLPH-MV-044
INSTR. PIPING 1.1/2" BLPH-NRV-004
50 PI 001 H L / 50 PT 001 — 2" — 2" x 1.5" BLPH-MV-464
1"-SWS-146-01SD-E

3/4" BLPH-MV-054
INSTR. PIPING 1.1/2" BLPH-NRV-008
50 PI 002 H L / 50 PT 002 — 2" — 2" x 1.5" BLPH-MV-465
1"-SWS-147-01SD-E

03

BLPH-MV-503 — BLPH-MV-501
50 LG 001 — V-50000A — NOTE 11
50 RO 003 — BLPH-MV-502

LOCAL/REMOTE 50 XL 002A
STOP 50 HS 005A — START 50 HS 001A — RUNNING/STOPPED 50 XL 001A — AUTO START READY 50 XL 003A — TRIPPED/FAULT 50 XA 004A — MOTOR STOPPED BY LOCAL PUSH BUTTON 50 XA 006A — 83-XS-001A — ESD

1" BLPH-NRV-007
MCC
PM-50001A
1"-SWS-222-01SD-E
BLPH-MV-048 1"
RS
1"-SWS-288-01SD-E

1D2 50 PSV 006 BLOCKED OUTLET SET @ 7.6 barg
SP 0043
BLPH-MV-469 SB LO
NOTE 10 03
2"-SWR-289-01SD-N

03 RS
LOWER DECK: +23.310 m
TOP OF CAISSON: +21.808 m
SUCTION
NOTE 1, 2, 8
P-50001A
EL: - 5.500 m
PUMP RETENTION BARS
B-50013A

BLPH-MV-513 — BLPH-MV-511
50 LG 002 — V-50000B — NOTE 11
50 RO 004 — BLPH-MV-512

LOCAL/REMOTE 50 XL 002B
STOP 50 HS 005B — START 50 HS 001B — RUNNING/STOPPED 50 XL 001B — AUTO START READY 50 XL 003B — TRIPPED/FAULT 50 XA 004B — MOTOR STOPPED BY LOCAL PUSH BUTTON 50 XA 006B — 83-XS-001B — ESD

BLPH-NRV-024 1"
MCC
PM-50001B
1"-SWS-221-01SD-E
BLPH-MV-051 1"
RS
1"-SWS-286-01SD-E

1D2 50 PSV 007 BLOCKED OUTLET SET @ 7.6 barg
SP 0044
BLPH-MV-470 SB LO
NOTE 10 03
2"-SWR-287-01SD-N

03 RS
LOWER DECK: +23.310 m
TOP OF CAISSON: +21.808 m
SUCTION
NOTE 1, 2, 8
P-50001B
EL: - 5.500 m
PUMP RETENTION BARS
B-50013B

50-00-TP-001
11.40 barg

NOTES

1. SEAWATER LIFT PUMPS ARE RATED 2 X 100%
2. AUTO START OF DESIGNATED STANDBY PUMP ON LOSS OF RUNNING STATUS AND DISCHARGE LOW PRESSURE ALARM OF DUTY PUMP.
3. VALVE TO BE OPENED WHEN PUMP IS OFFLINE TO DOSE CAISSON WITH TREATED SEAWATER TO PREVENT BIOLOGICAL GROWTH.
4. DELETED.
5. SOFTWARE INTERLOCK PREVENTS PUMPS FROM STARTING IN CASE THE RELEVANT XV VALVE IS FULLY CLOSED. 03
6. DELETED.
7. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "123A90-DDL-IN-DS-40054 - TECHNICAL DATASHEET FOR RESTRICTION ORIFICE".
8. LOGIC FOR CONTROL OF P-5001A/B THAT PREVENTS SIMULTANEOUS RUNNING OF A AND B PUMP IS PROVIDED.
9. DISCHARGE PRESSURE REFERS TO THE FLANGE DISCHARGE OF THE PUMP AT LOWER DECK.
10. ROUTED TO THE SEA.
11. VESSELS V-50000A/B ARE INSULATED AND HEAT TRACED. 03

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.
5. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

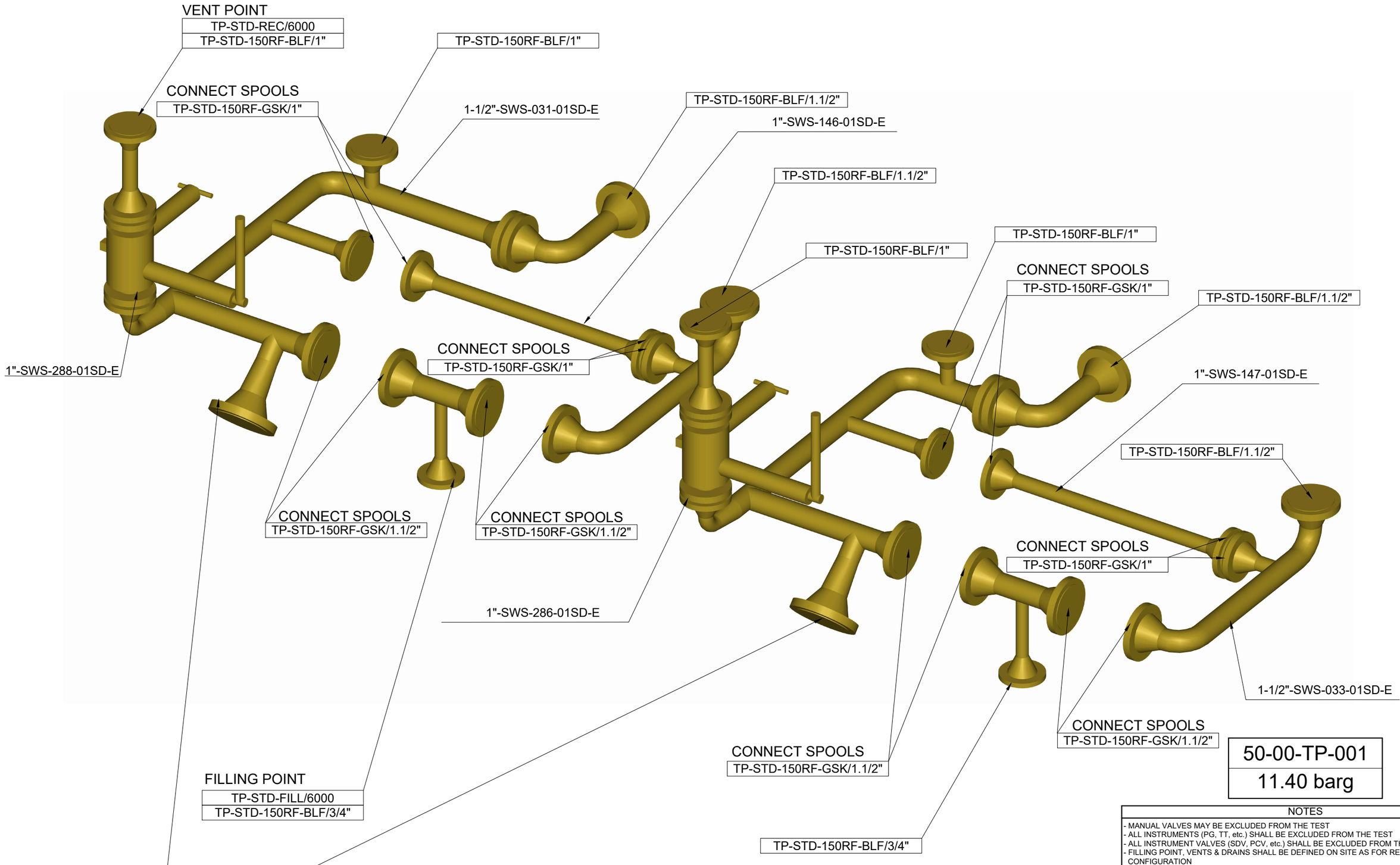
ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
SEA-WATER INTAKE SYSTEM SHEET 1

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE	
A1	DRAWING NO. 123A90-DDL-PR-PID-80021		SHEET 001	REV. 03

File Name : FILE_NAME

2. HYDROSTATIC TEST 3D CIRCUIT



50-00-TP-001

11.40 barg

NOTES

- MANUAL VALVES MAY BE EXCLUDED FROM THE TEST
- ALL INSTRUMENTS (PG, TT, etc.) SHALL BE EXCLUDED FROM THE TEST
- ALL INSTRUMENT VALVES (SDV, PCV, etc.) SHALL BE EXCLUDED FROM THE TEST
- FILLING POINT, VENTS & DRAINS SHALL BE DEFINED ON SITE AS FOR REAL TEST CIRCUIT CONFIGURATION

REV.	DATE	DESCRIPTION	DRN	CHKD	APPD
00	27-09-24	ISSUED FOR INFORMATION	J.Q.	T.L.	L.M.

CROSSWIND

ROSETTI MARINO

HOLLANDSE KUST NOORD WIND PARK

PIPING TEST 3D CIRCUIT
50-00-TP-001

FORMAT	SCALE	DRAWING N.	REV.	SHEET
A3	NTS	N/A	00	1 OF 1

3. MATERIAL LIST FOR TEST

CROSSWIND

ROSETTI MARINO

CONTRACTOR: Rosetti Marino SpA		JOB :	123A90
PROJECT: Base Load Power Hub (BLPH)		DATE :	20/09/2024
TITLE: MATERIAL LIST FOR HYDROSTATIC TEST		REV. :	00

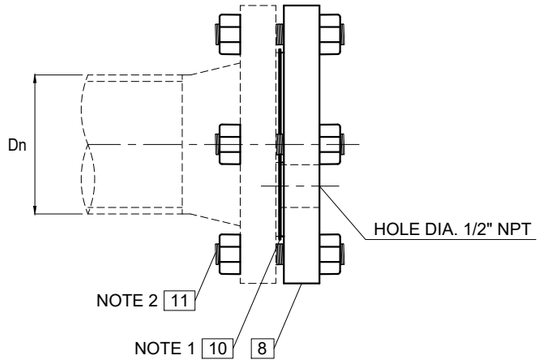
TEST REF.	TYPICAL ITEM CODE	ROSETTI CODE	ROSETTI DESCRIPTION	Q.TY X SINGLE STD	Q.TY STD X TP	Q.ty x TP	NOTES
ALL TEST	TP-STD-FILL/6000	1EQP252	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	5	1	5	
ALL TEST	TP-STD-FILL/6000	N100SS02660H00	Nipple L=100mm TBE ø1/2" Thk.4,78mm ASTM A312 Gr.TP316/316L	7	1	7	
ALL TEST	TP-STD-FILL/6000	TEEFSS00060H00	Tee THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	3	1	3	
ALL TEST	TP-STD-FILL/6000	1MECH069	Adapter THRD-M NPT x BSPP ø1/2" 400 bar ASTM A182 Gr.F316/316L	2	1	2	
ALL TEST	TP-STD-REC/6000	1EQP252	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	4	1	4	
ALL TEST	TP-STD-REC/6000	N100SS02660H00	Nipple L=100mm TBE ø1/2" Thk.4,78mm ASTM A312 Gr.TP316/316L	9	1	9	
ALL TEST	TP-STD-REC/6000	TEEFSS00060H00	Tee THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	2	1	2	
ALL TEST	TP-STD-REC/6000	CAPFSS00200H00	Cap Forged THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1	1	1	
ALL TEST	TP-STD-REC/6000	CPL0SS00240H00	Coupling THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1	1	1	
ALL TEST	TP-STD-REC/6000	E900SS00340H00	90 Deg Elbow THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1	1	1	
ALL TEST	TP-STD-PLGNPT/1/2"	PLGHSS00090H00	Plug Hex. Head THRD-M NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1	1	1	
TP-001	TP-STD-150RF-BLF/1"	FLBHCS0022010H	Flange Blind c/w NPT Hole ø1"x1/2" 150LB RF ASTM/ASME A/SA105	1	4	4	
TP-001	TP-STD-150RF-BLF/1"	GFL3GK15970100	Gasket Flat Thk. 3 mm ø1" 150LB RF NEOPRENE	1	4	4	
TP-001	TP-STD-150RF-BLF/1"	SB20BO00980200	Stud Bolt + 2 Heavy Nuts 1/2" L=80MM ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	4	16	
TP-001	TP-STD-150RF-BLF/1.1/2"	FLBHCS00241H0H	Flange Blind c/w NPT Hole ø1.1/2"x1/2" 150LB RF ASTM/ASME A/SA105	1	4	4	
TP-001	TP-STD-150RF-BLF/1.1/2"	GFL3GK15981H00	Gasket Flat Thk. 3 mm ø1.1/2" 150LB RF NEOPRENE	1	4	4	
TP-001	TP-STD-150RF-BLF/1.1/2"	SB20BO00980200	Stud Bolt + 2 Heavy Nuts 1/2" L=80MM ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	4	16	
TP-001	TP-STD-150RF-GSK/1"	GFL3GK15970100	Gasket Flat Thk. 3 mm ø1" 150LB RF NEOPRENE	1	4	4	
TP-001	TP-STD-150RF-GSK/1"	SB20BO00980200	Stud Bolt + 2 Heavy Nuts 1/2" L=80MM ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	4	16	
TP-001	TP-STD-150RF-GSK/1.1/2"	GFL3GK15981H00	Gasket Flat Thk. 3 mm ø1.1/2" 150LB RF NEOPRENE	1	4	4	
TP-001	TP-STD-150RF-GSK/1.1/2"	SB20BO00980200	Stud Bolt + 2 Heavy Nuts 1/2" L=80MM ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	4	16	
TP-001	TP-STD-150RF-BLF/2"	FLBHCS0007020H	Flange Blind c/w NPT Hole ø2"x1/2" 150LB RF ASTM/ASME A/SA105	1	2	2	
TP-001	TP-STD-150RF-BLF/2"	GFL3GK13230200	Gasket Flat Thk. 3 mm ø2" 150LB RF NEOPRENE	1	2	2	
TP-001	TP-STD-150RF-BLF/2"	SB20BO00680300	Stud Bolt + 2 Heavy Nuts 5/8" L=100MM ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	2	8	
TP-001	TP-STD-150RF-BLF/3/4"	FLBHCS01363Q0H	Flange Blind c/w NPT Hole ø3/4"x1/2" 150LB RF ASTM/ASME A/SA105	1	2	2	
TP-001	TP-STD-150RF-BLF/3/4"	GFL3GK15963Q00	Gasket Flat Thk. 3 mm ø3/4" 150LB RF NEOPRENE	1	2	2	
TP-001	TP-STD-150RF-BLF/3/4"	SB20BO00980200	Stud Bolt + 2 Heavy Nuts 1/2" L=80MM ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	2	8	

STD NAME	RATING	DESCRIPTION
TP-STD-150RF	150 RF	STANDARD FOR BLIND POINT

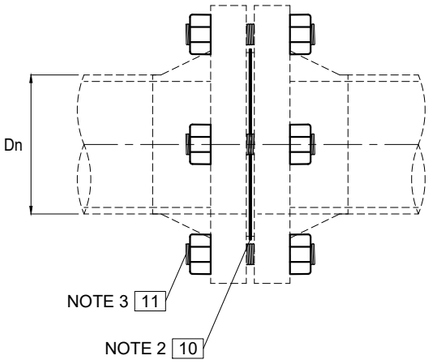
TP-STD-150RF-BLF/Dn
TP-STD-150RF-GSK/Dn

MATERIAL LIST

STD	POS.	DESCRIPTION	Q.TY
TP-STD-150RF-___/1/2"	8	Flange Blind c/w NPT Hole ø1/2"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø1/2" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1/2" L=60 MM	4
TP-STD-150RF-___/3/4"	8	Flange Blind c/w NPT Hole ø3/4"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø3/4" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1/2" L=65 MM	4
TP-STD-150RF-___/1"	8	Flange Blind c/w NPT Hole ø1"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø1" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1/2" L=65 MM	4
TP-STD-150RF-___/1.1/4"	8	Flange Blind c/w NPT Hole ø1.1/4"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø1.1/4" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1/2" L=70 MM	4
TP-STD-150RF-___/1.1/2"	8	Flange Blind c/w NPT Hole ø1.1/2"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø1.1/2" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1/2" L=70 MM	4
TP-STD-150RF-___/2"	8	Flange Blind c/w NPT Hole ø2"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø2" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 5/8" L=85 MM	4
TP-STD-150RF-___/2.1/2"	8	Flange Blind c/w NPT Hole ø2.1/2"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø2.1/2" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 5/8" L=90 MM	4
TP-STD-150RF-___/3"	8	Flange Blind c/w NPT Hole ø3"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø3" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 5/8" L=90 MM	4
TP-STD-150RF-___/4"	8	Flange Blind c/w NPT Hole ø4"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø4" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 5/8" L=90 MM	8
TP-STD-150RF-___/6"	8	Flange Blind c/w NPT Hole ø6"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø6" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 3/4" L=105 MM	8
TP-STD-150RF-___/8"	8	Flange Blind c/w NPT Hole ø8"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø8" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 3/4" L=110 MM	8
TP-STD-150RF-___/10"	8	Flange Blind c/w NPT Hole ø10"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø10" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 7/8" L=120 MM	12
TP-STD-150RF-___/12"	8	Flange Blind c/w NPT Hole ø12"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø12" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 7/8" L=125 MM	12
TP-STD-150RF-___/14"	8	Flange Blind c/w NPT Hole ø14"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø14" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1" L=135 MM	12
TP-STD-150RF-___/16"	8	Flange Blind c/w NPT Hole ø16"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø16" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1" L=140 MM	16
TP-STD-150RF-___/18"	8	Flange Blind c/w NPT Hole ø18"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø18" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1.1/8" L=150 MM	16
TP-STD-150RF-___/20"	8	Flange Blind c/w NPT Hole ø20"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø20" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1.1/8" L=160 MM	20
TP-STD-150RF-___/24"	8	Flange Blind c/w NPT Hole ø24"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø24" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1.1/4" L=175 MM	20



TP-STD-150RF-BLF/Dn
BLIND FLANGE



TP-STD-150RF-GSK/Dn
GASKET ONLY

NOTES

1. GASKET MATERIAL AS PER PIPING CLASS
2. STUD BOLTS AND NUTS MATERIAL AS PER TEST MTO

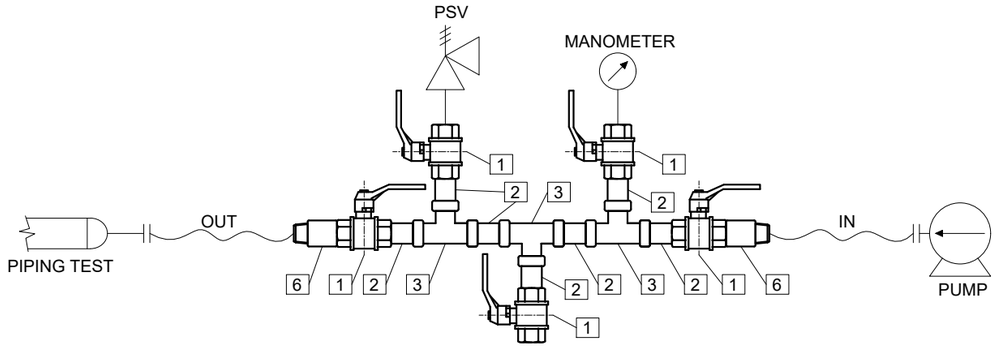
REV.	DATE	DESCRIPTION	DRN	CHKD	APPD
00	06-09-24	ISSUED FOR INFORMATION	J.Q.	T.L.	L.M.

ROSETTI MARINO

PIPING TEST STANDARD DRAWING
TP-STD-150RF
TP-STD-150RF-BLF/Dn
TP-STD-150RF-GSK/Dn

FORMAT	SCALE	DRAWING N.	REV.	SHEET
A3	NTS	TP_STD_150RF	00	1 OF 1

STD NAME	RATING	DESCRIPTION
TP-STD-FILL	3000 / 6000 / 9000	STANDARD FOR FILLING POINT
TP-STD-FILL/RATING		



TP-STD-FILL/RATING

FILLING POINT 3000/6000/9000

MATERIAL LIST

STD	POS.	DESCRIPTION	Q.TY
TP-STD-FILL/3000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	5
	2	Nipple L=100mm TBE ø1/2" Thk.3.73mm ASTM A312 Gr.TP316/316L	7
	3	Tee Forged THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	3
	6	Adapter THRD-M NPT x BSPP ø1/2" 400 bar ASTM A182 Gr.F316/316L	2
TP-STD-FILL/6000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	5
	2	Nipple L=100mm TBE ø1/2" Thk.4,78mm ASTM A312 Gr.TP316/316L	7
	3	Tee THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	3
	6	Adapter THRD-M NPT x BSPP ø1/2" 400 bar ASTM A182 Gr.F316/316L	2
TP-STD-FILL/9000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	5
	2	Nipple L=100mm TBE ø1/2" Thk.7,47mm ASTM A312 Gr.TP316/316L	7
	3	Tee Forged THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	3
	6	Adapter THRD-M NPT x BSPP ø1/2" 523 bar 304SS	2

NOTES

REV.	DATE	DESCRIPTION	DRN	CHKD	APPD
00	06-09-24	ISSUED FOR INFORMATION	J.Q.	T.L.	L.M.

ROSETTI MARINO

PIPING TEST STANDARD DRAWING

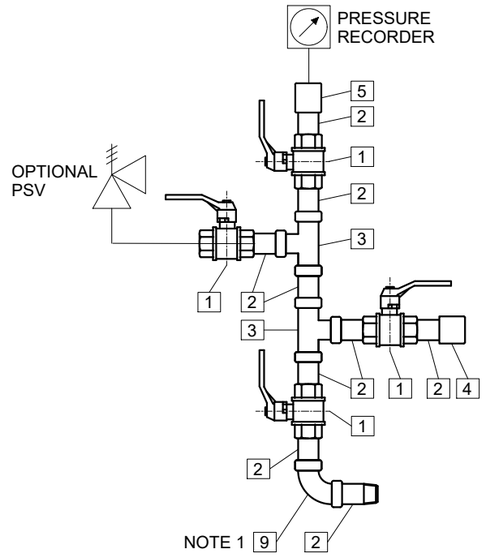
TP-STD-FILL

TP-STD-FILL/RATING

FORMAT	SCALE	DRAWING N.	REV.	SHEET
A3	NTS	TP_STD_FILL	00	1 OF 1

STD NAME	RATING	DESCRIPTION
TP-STD-REC	3000 / 6000 / 9000	STANDARD FOR RECORDING POINT

TP-STD-REC/RATING



TP-STD-REC/RATING
RECORDING POINT 3000/6000/9000

MATERIAL LIST

STD	POS.	DESCRIPTION	Q.TY
TP-STD-REC/3000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	4
	2	Nipple L=100mm TBE ø1/2" Thk.3.73mm ASTM A312 Gr.TP316/316L	9
	3	Tee Forged THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	2
	4	Cap Forged THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	1
	5	Coupling THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	1
	9	90 Deg Elbow THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	1
TP-STD-REC/6000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	4
	2	Nipple L=100mm TBE ø1/2" Thk.4,78mm ASTM A312 Gr.TP316/316L	9
	3	Tee THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	2
	4	Cap Forged THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1
	5	Coupling THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1
	9	90 Deg Elbow THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1
TP-STD-REC/9000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	4
	2	Nipple L=100mm TBE ø1/2" Thk.7,47mm ASTM A312 Gr.TP316/316L	9
	3	Tee Forged THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	2
	4	Cap Forged THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	1
	5	Coupling THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	1
	9	90 Deg Elbow THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	1

NOTES

1. 90 DEG ELBOW SHALL BE INSTALLED WHERE APPLICABLE ONLY

REV.	DATE	DESCRIPTION	DRN	CHKD	APPD
00	06-09-24	ISSUED FOR INFORMATION	J.Q.	T.L.	L.M.

ROSETTI MARINO

PIPING TEST STANDARD DRAWING
TP-STD-REC
TP-STD-REC/RATING

FORMAT	SCALE	DRAWING N.	REV.	SHEET
A3	NTS	TP_STD_REC	00	1 OF 1

4. EXTRACT OF LINE LIST

Isometric N°	Short Line N°	Sequential Number	Size [in]	Piping Class	Insulation Type	Pipe Wall Thicknes [mm]	Pipe Schedule	Tracing	Line Number	PID Number	Design Pressure [barg]	Commissioning System Code	Commissioning SubSystem Code	Test Pack N°	Test Fluid	Test Pressure [barg]	Fluid Service	Class Base Material	Line INF/SUP/TL	Ped Category	Painting System	Line Base Ral
23	SWS-031	031	1.1/2	01SD	E	3,68	40S	Yes	1-1/2"-SWS-031-01SD-E	123A90-DDL-PR-PID-80021	7,60	50	50-00	TP-001	Water	11.40	Sea Water Supply	Stainless Steel (Super Duplex)	INF	Art. 4, par. 3	N/A	N/A
25	SWS-033	033	1.1/2	01SD	E	3,68	40S	Yes	1-1/2"-SWS-033-01SD-E	123A90-DDL-PR-PID-80021	7,60	50	50-00	TP-001	Water	11.40	Sea Water Supply	Stainless Steel (Super Duplex)	INF	Art. 4, par. 3	N/A	N/A
59	SWS-146	146	1	01SD	E	3,38	40S	Yes	1"-SWS-146-01SD-E	123A90-DDL-PR-PID-80021	7,60	50	50-00	TP-001	Water	11.40	Sea Water Supply	Stainless Steel (Super Duplex)	INF	Art. 4, par. 3	N/A	N/A
60	SWS-147	147	1	01SD	E	3,38	40S	Yes	1"-SWS-147-01SD-E	123A90-DDL-PR-PID-80021	7,60	50	50-00	TP-001	Water	11.40	Sea Water Supply	Stainless Steel (Super Duplex)	INF	Art. 4, par. 3	N/A	N/A
150	SWS-286	286	1	01SD	E	3,38	40S	Yes	1"-SWS-286-01SD-E	123A90-DDL-PR-PID-80021	7,60	50	50-00	TP-001	Water	11.40	Sea Water Supply	Stainless Steel (Super Duplex)	INF	Art. 4, par. 3	N/A	N/A
152	SWS-288	288	1	01SD	E	3,38	40S	Yes	1"-SWS-288-01SD-E	123A90-DDL-PR-PID-80021	7,60	50	50-00	TP-001	Water	11.40	Sea Water Supply	Stainless Steel (Super Duplex)	INF	Art. 4, par. 3	N/A	N/A

5. ISOMETRIC RED MARKED DRAWING & EXTRACT OF ISO LIST

CROSSWIND

ROSETTI MARINO

PROJECT

BASE LOAD POWER HUB (BLPH)

JOB **123A90**

DOCUMENT NR **123A90-FDL-ST-LIS-00001**

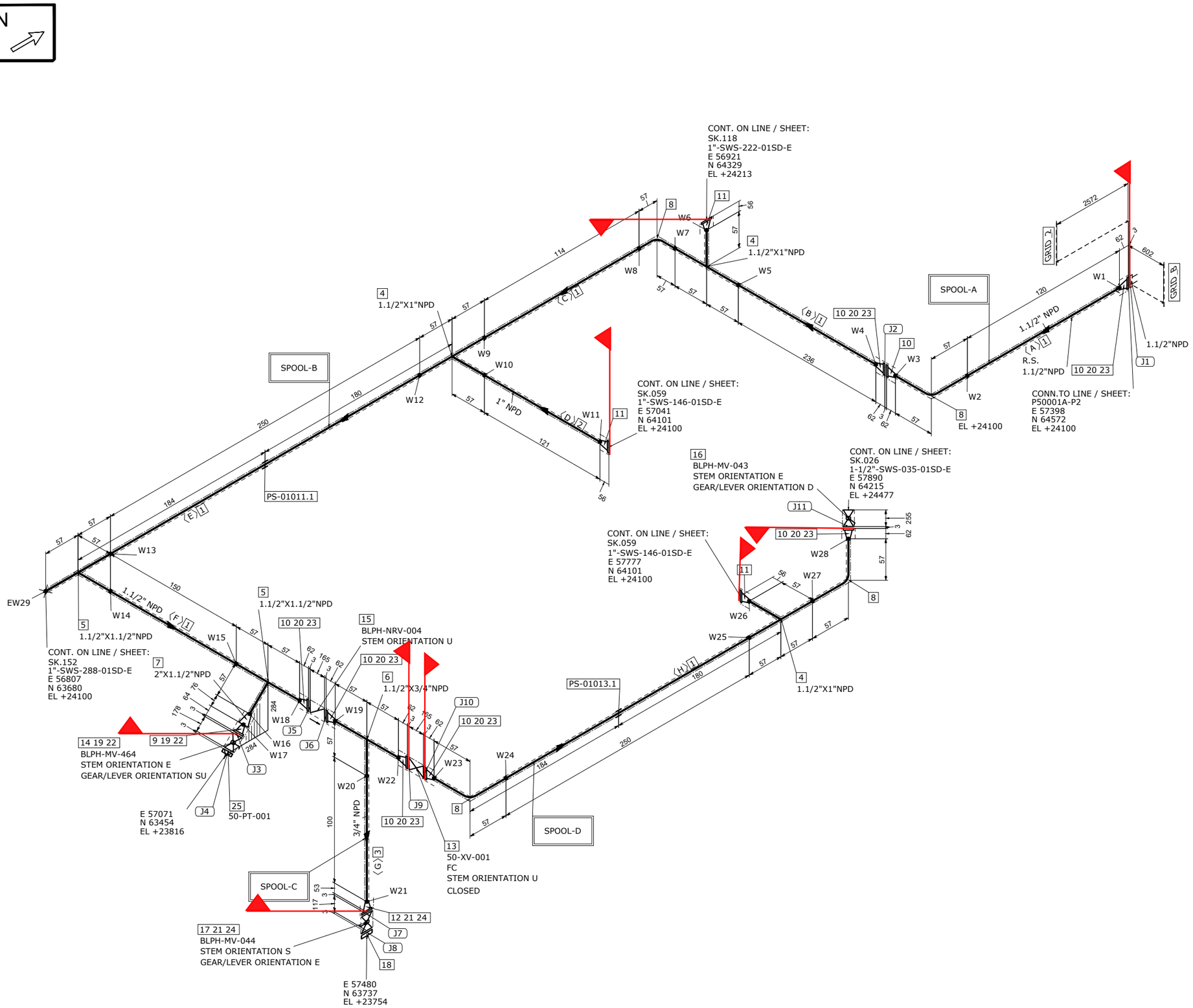
REV. **05**

TITLE

SHOP DRAWING ISOMETRIC LIST

DATE **17/09/2024**

POS.	DOCUMENT NR	ROSETTI SKETCH NR	SHEET	DOCUMENT TITLE	Rev. 00	Rev. 01	Rev. 02	Rev. 03	Rev. 04	Rev. 05	Rev. 06	Rev. 07	Rev. 08	Rev. 09	Rev. 10	Mark-up Rev.	Mark-up Data	LAST REV	LIST REV	NOTES	TEST PACK NR
29	123A90-FDL-PP-DI-00023-01	**023**	01	SHOP DRAWING ISOMETRIC - LINE NR 1-1/2"-SWS-031-01SD-E	27/08/2024													**00**	**03**		**TP-001**
31	123A90-FDL-PP-DI-00025-01	**025**	01	SHOP DRAWING ISOMETRIC - LINE NR 1-1/2"-SWS-033-01SD-E	27/08/2024													**00**	**03**		**TP-001**
80	123A90-FDL-PP-DI-00059-01	**059**	01	SHOP DRAWING ISOMETRIC - LINE NR 1"-SWS-146-01SD-E	27/08/2024													**00**	**03**		**TP-001**
81	123A90-FDL-PP-DI-00060-01	**060**	01	SHOP DRAWING ISOMETRIC - LINE NR 1"-SWS-147-01SD-E	27/08/2024													**00**	**03**		**TP-001**
187	123A90-FDL-PP-DI-00150-01	**150**	01	SHOP DRAWING ISOMETRIC - LINE NR 1"-SWS-286-01SD-E	27/08/2024													**00**	**03**		**TP-001**
189	123A90-FDL-PP-DI-00152-01	**152**	01	SHOP DRAWING ISOMETRIC - LINE NR 1"-SWS-288-01SD-E	27/08/2024													**00**	**03**		**TP-001**



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1.1/2	PIPESD04761H00	Pipe ASME B36.19M PE 3,68 SML ASTM A790 UNS S32760	1.1M	4.6
2	1	PIPESD02850100	Pipe ASME B36.19M PE 3,38 SML ASTM A790 UNS S32760	0.1M	0.3
3	3/4	PIPESD04753Q00	Pipe ASME B36.19M PE 2,87 SML ASTM A790 UNS S32760	0.1M	0.2
4	1.1/2X1	TER0SD09381H01	Tee Reducing ASME B16.9 BW 3,68x3,38 WRS ASTM A815 UNS S32760	3	2.3
5	1.1/2X1.1/2	TEE0SD02931H00	Tee ASME B16.9 BW 3,68 WRS ASTM A815 UNS S32760	2	1.7
6	1.1/2X3/4	TER0SD09371H3Q	Tee Reducing ASME B16.9 BW 3,68x2,87 WRS ASTM A815 UNS S32760	1	0.8
7	2X1.1/2	REC0SD0803021H	Reducer Concentric ASME B16.9 BW 2,77x3,68 WRS ASTM A815 UNS S32760	1	0.3
8	1.1/2	E90RSD03031H00	90 Deg Elbow Long Radius ASME B16.9 BW 3,68 WRS ASTM A815 UNS S32760	4	1.5
9	2	FLW0SD01250200	Flange WN ASME B16.5 150LB RF 2,77 FRG ASTM A182 Gr.F55	1	2.8
10	1.1/2	FLW0SD02861H00	Flange WN ASME B16.5 150LB RF 3,68 FRG ASTM A182 Gr.F55	8	14.7
11	1	FLW0SD01240100	Flange WN ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	3	4.3
12	3/4	FLW0SD02853Q00	Flange WN ASME B16.5 150LB RF 2,87 FRG ASTM A182 Gr.F55	1	0.9

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
13	1.1/2		ON/OFF Ball Actuator Valve - 150#RF Flanged	1	54.0
14	2	VBC0NN24460200	Ball Valve Split Body FB API 6D FLG 150LB RF BA01F01RF	1	19.2
15	1.1/2	VDRNNN02511H00	Check Valve Piston EN ISO 15761 FLG 150LB RF CH01F02RF	1	0.0
16	1.1/2	VLBLNN01381H00	Block & Bleed Valve API 6D FLG 150LB RF BS01F01RFS	1	28.0
17	3/4	VBC0NN24433Q00	Ball Valve Split Body FB API 6D FLG 150LB RF BS01F01RF	1	7.0
18	3/4	FLB0SD01843Q00	Flange Blind ASME B16.5 150LB RF FRG ASTM A182 Gr.F55	1	0.9
19	2	GFL3GK13230200	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	2	0.2
20	1.1/2	GFL3GK15981H00	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	7	0.4
21	3/4	GFL3GK15963Q00	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	2	0.1
22	5/8	SB20BO00660300	85 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.9
23	1/2	SB20BO00930200	70 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	28	3.4
24	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.0
25	2		Pressure Transmitter	1	2.0

FABRICATION WEIGHT [kg]	34.4
ERECTION WEIGHT [kg]	118.2
OVERALL WEIGHT [kg]	152.5

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1.1/2	BW
W2	1.1/2	BW
W3	1.1/2	BW
W4	1.1/2	BW
W5	1.1/2	BW
W6	1	BW
W7	1.1/2	BW
W8	1.1/2	BW
W9	1.1/2	BW
W10	1	BW
W11	1	BW
W12	1.1/2	BW
W13	1.1/2	BW
W14	1.1/2	BW
W15	1.1/2	BW
W16	1.1/2	BW
W17	2	BW
W18	1.1/2	BW
W19	1.1/2	BW
W20	3/4	BW
W21	3/4	BW
W22	1.1/2	BW
W23	1.1/2	BW
W24	1.1/2	BW
W25	1.1/2	BW
W26	1	BW
W27	1.1/2	BW
W28	1.1/2	BW
EW29	1.1/2	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1.1/2	121	BEVEL	BEVEL
B	1.1/2	236	BEVEL	BEVEL
C	1.1/2	114	BEVEL	BEVEL
D	1	121	BEVEL	BEVEL
E	1.1/2	250	BEVEL	BEVEL
F	1.1/2	150	BEVEL	BEVEL
G	3/4	100	BEVEL	BEVEL
H	1.1/2	250	BEVEL	BEVEL

SUPPORT LIST

PS-01011.1
PS-01013.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	4.5	4.6
B	21.5	16.6
C	4.5	5.5
D	8.5	7.7
MONT	1.5	118.2

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

50-00-TP-001

MASTER

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 1-1/2"-SWS-031-01SD-E
SK.023

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK
SCALE: N/A
DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 27-08-2024
FORMAT: A3
DRAWING NO.: 123A90-FDL-PP-DI-00023
SHEET / OF: 1/1
REV.: 00

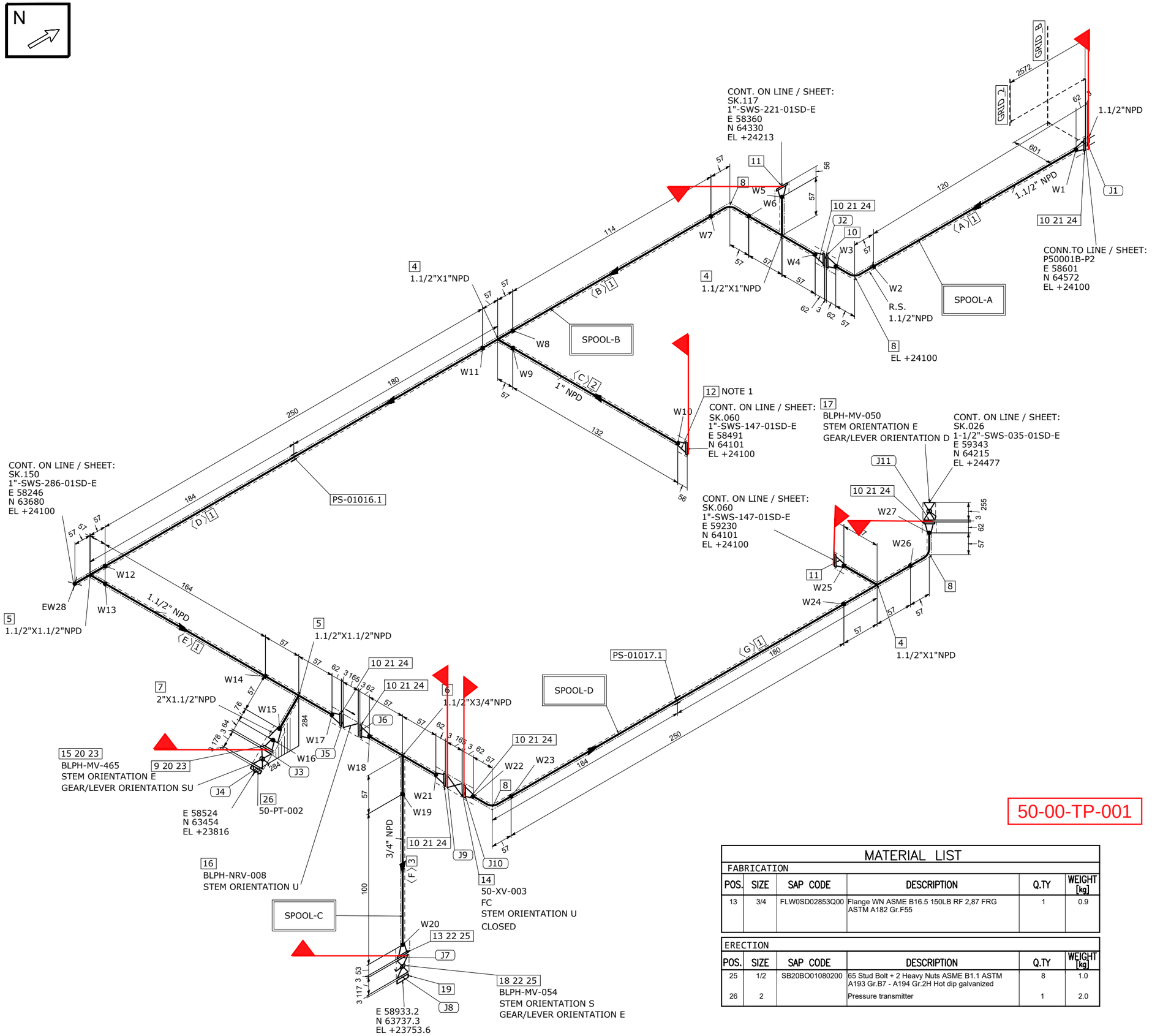
LINE DATA

NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3				
PAINTING	SYSTEM N/A	BASE RAL N/A	FLUID PHASE	Liquid				
INSULATION	TYPE H	THICKNESS 20 [mm]	DESIGN	PRESS. 7.6 [barg]	TEMP. -29 / 100 [°C]			
HEAT TRACING	Yes		TEST	PRESS. 11.4 [barg]	TEMP. AMB	MEDIUM Water		

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80021
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES



50-00-TP-001

MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1.1/2	PIPESD04761H00	Pipe ASME B36.19M PE 3,68 SML ASTM A790 UNS S32760	0.9M	3.7
2	1	PIPESD02850100	Pipe ASME B36.19M PE 3,38 SML ASTM A790 UNS S32760	0.1M	0.3
3	3/4	PIPESD04753Q00	Pipe ASME B36.19M PE 2,87 SML ASTM A790 UNS S32760	0.1M	0.2
4	1.1/2X1	TER0SD09381H01	Tee Reducing ASME B16.9 BW 3,68x3,38 WRS ASTM A815 UNS S32760	3	2.3
5	1.1/2X1.1/2	TEE0SD02931H00	Tee ASME B16.9 BW 3,68 WRS ASTM A815 UNS S32760	2	1.7
6	1.1/2X3/4	TER0SD09371H3Q	Tee Reducing ASME B16.9 BW 3,68x2,87 WRS ASTM A815 UNS S32760	1	0.8
7	2X1.1/2	REC0SD0803021H	Reducer Concentric ASME B16.9 BW 2,77x3,68 WRS ASTM A815 UNS S32760	1	0.3
8	1.1/2	E90RSD03031H00	90 Deg Elbow Long Radius ASME B16.9 BW 3,68 WRS ASTM A815 UNS S32760	4	1.5
9	2	FLW0SD01250200	Flange WN ASME B16.5 150LB RF 2,77 FRG ASTM A182 Gr.F55	1	2.8
10	1.1/2	FLW0SD02861H00	Flange WN ASME B16.5 150LB RF 3,68 FRG ASTM A182 Gr.F55	8	14.7
11	1	FLW0SD01240100	Flange WN ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	2	2.9
12	1	FLWDSD00300100	Flange WN For Jackscrews ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	1	1.4

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
14	1.1/2		ON/OFF Ball Actuator Valve - 150#RF Flanged	1	54.0
15	2	VBC0NN24460200	Ball Valve Split Body FB API 6D FLG 150LB RF BA01F01RF	1	19.2
16	1.1/2	VDRNNN02511H00	Check Valve Piston EN ISO 15761 FLG 150LB RF CH01F02RF	1	0.0
17	1.1/2	VLBLNN01381H00	Block & Bleed Valve API 6D FLG 150LB RF BS01F01RFS	1	28.0
18	3/4	VBC0NN24433Q00	Ball Valve Split Body FB API 6D FLG 150LB RF BS01F01RF	1	7.0
19	3/4	FLB0SD01843Q00	Flange Blind ASME B16.5 150LB RF FRG ASTM A182 Gr.F55	1	0.9
20	2	GFL3GK13230200	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	2	0.2
21	1.1/2	GFL3GK15981H00	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	7	0.4
22	3/4	GFL3GK15963Q00	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	2	0.1
23	5/8	SB20BO00660300	85 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.9
24	1/2	SB20BO00930200	70 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	28	3.4

FABRICATION WEIGHT [kg]	33.5
ERECTION WEIGHT [kg]	118.1
OVERALL WEIGHT [kg]	151.6

MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
13	3/4	FLW0SD02853Q00	Flange WN ASME B16.5 150LB RF 2,87 FRG ASTM A182 Gr.F55	1	0.9

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
25	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.0
26	2		Pressure transmitter	1	2.0

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1.1/2	BW
W2	1.1/2	BW
W3	1.1/2	BW
W4	1.1/2	BW
W5	1	BW
W6	1.1/2	BW
W7	1.1/2	BW
W8	1.1/2	BW
W9	1	BW
W10	1	BW
W11	1.1/2	BW
W12	1.1/2	BW
W13	1.1/2	BW
W14	1.1/2	BW
W15	1.1/2	BW
W16	2	BW
W17	1.1/2	BW
W18	1.1/2	BW
W19	3/4	BW
W20	3/4	BW
W21	1.1/2	BW
W22	1.1/2	BW
W23	1.1/2	BW
W24	1.1/2	BW
W25	1	BW
W26	1.1/2	BW
W27	1.1/2	BW
EW28	1.1/2	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1.1/2	120	BEVEL	BEVEL
B	1.1/2	115	BEVEL	BEVEL
C	1	132	BEVEL	BEVEL
D	1.1/2	250	BEVEL	BEVEL
E	1.1/2	164	BEVEL	BEVEL
F	3/4	100	BEVEL	BEVEL
G	1.1/2	250	BEVEL	BEVEL

SUPPORT LIST

PS-01016.1
PS-01017.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	4.5	4.6
B	20	15.7
C	4.5	5.5
D	8.5	7.7
MONT	1.5	118.1

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

LINE DATA

NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3			
PAINTING	SYSTEM N/A	BASE RAL N/A	FLUID PHASE	Liquid			
INSULATION	TYPE H	THICKNESS 20 [mm]	DESIGN	PRESS. 7.6 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	Yes		TEST	PRESS. 11.4 [barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80021
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

1.JACKSCREWS POSITION N/S

MASTER

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 1-1/2"-SWS-033-01SD-E

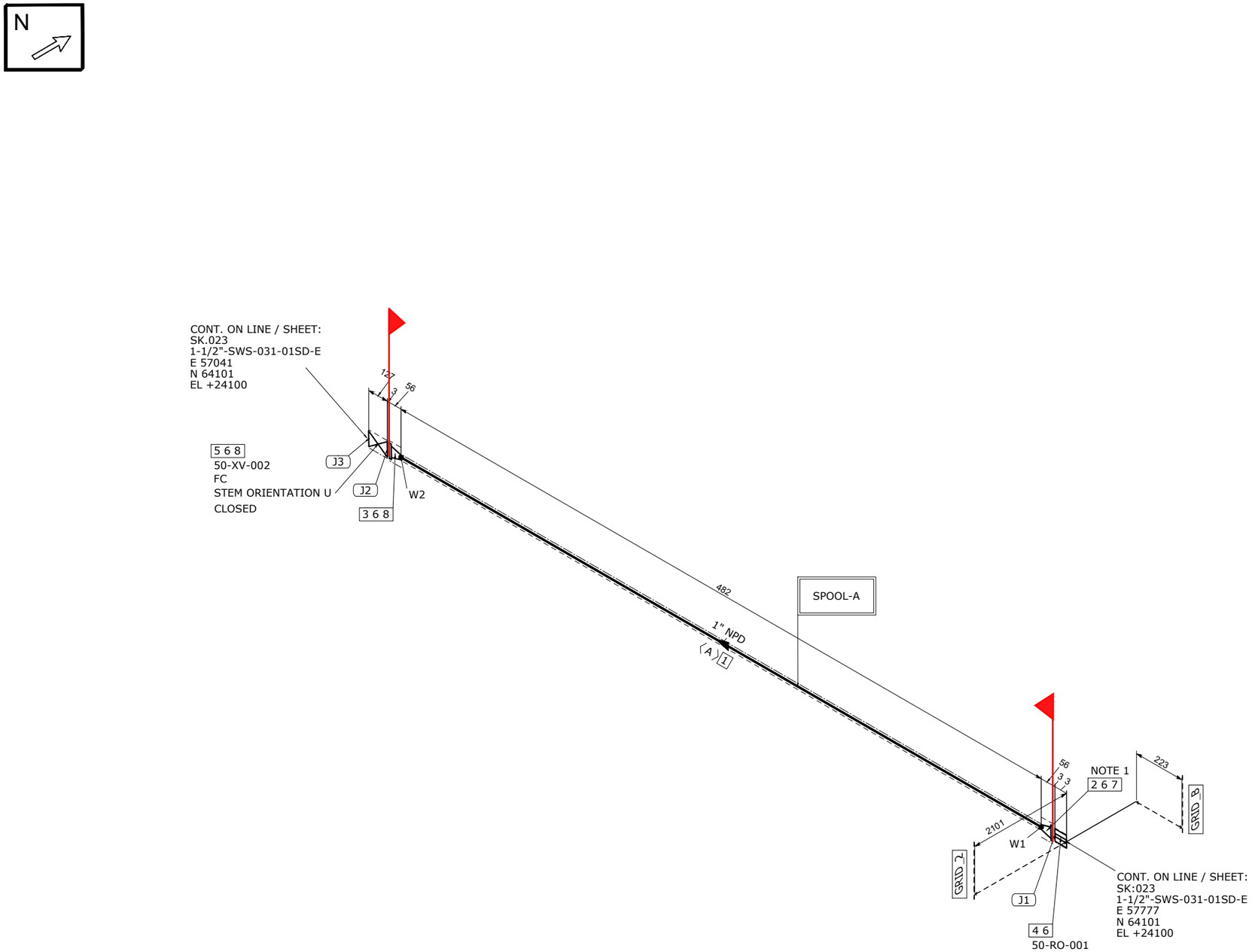
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CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE: N/A

DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 27-08-2024

FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00025 | SHEET / OF: 1/1 | REV.: 00



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPESD02850100	Pipe ASME B36.19M PE 3,38 SML ASTM A790 UNS S32760	0.5M	1.2
2	1	FLWDSD00300100	Flange WN For Jackscrews ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	1	1.4
3	1	FLW0SD01240100	Flange WN ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	1	1.4

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
4	1		Restriction Orifice 150#RF	1	1.0
5	1		ON/OFF Ball Actuator Valve - 150#RF Flanged	1	40.0
6	1	GFL3GK15970100	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	4	0.2
7	1/2	SB20BO00940200	75 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.5
8	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.0

FABRICATION WEIGHT [kg]	4.0
ERECTION WEIGHT [kg]	42.7
OVERALL WEIGHT [kg]	46.7

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1	BW
W2	1	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1	482	BEVEL	BEVEL

SUPPORT LIST

SPOOL	WELD [inches]	WEIGHT [kg]
A	2	4.1
MONT	0	42.7

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

50-00-TP-001

LINE DATA

NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3				
PAINTING	SYSTEM N/A	BASE RAL N/A	FLUID PHASE	Liquid				
INSULATION	TYPE H	THICKNESS 20 [mm]	DESIGN	PRESS. 7.6 [barg]	TEMP. -29 / 100 [°C]			
HEAT TRACING	Yes		TEST	PRESS. 11.4 [barg]	TEMP. AMB	MEDIUM Water		

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80021
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

1.JACKSCREWS POSITION N/S

MASTER

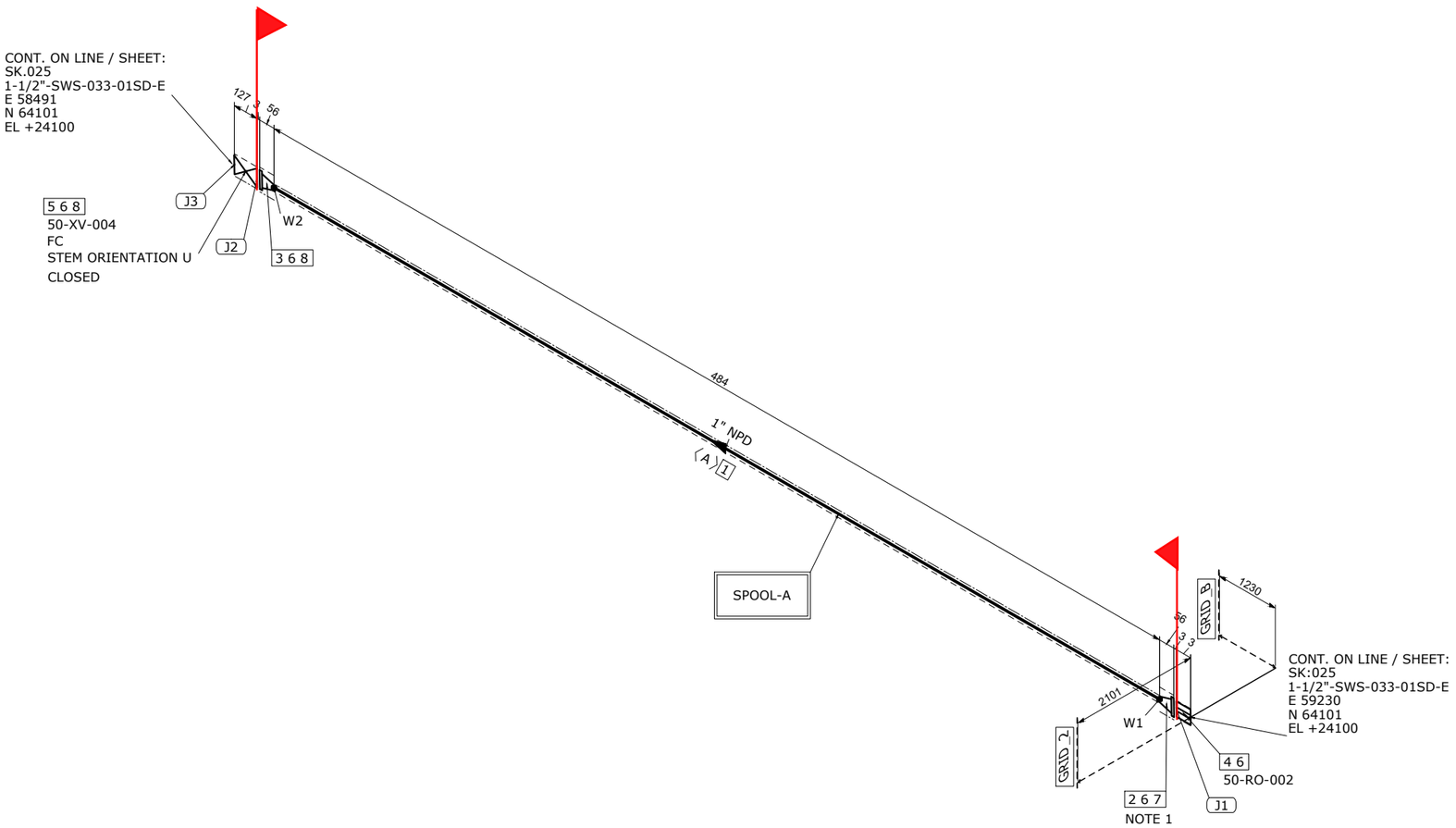
CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 1"-SWS-146-01SD-E

SK.059

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	N/A
DRAWN STAFF SRL	CHECKED RT	APPROVED LM	DATE 27-08-2024
FORMAT A3	DRAWING NO. 123A90-FDL-PP-DI-00059	SHEET / OF 1/1	REV. 00



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPESD02850100	Pipe ASME B36.19M PE 3,38 SML ASTM A790 UNS S32760	0.5M	1.2
2	1	FLWDSD00300100	Flange WN For Jackscrews ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	1	1.4
3	1	FLW0SD01240100	Flange WN ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	1	1.4

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
4	1		Restriction Orifice 150#RF	1	1.0
5	1		ON/OFF Ball Actuator Valve - 150#RF Flanged	1	40.0
6	1	GFL3GK15970100	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	4	0.2
7	1/2	SB20BO00940200	75 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.5
8	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.0

FABRICATION WEIGHT [kg]	4.0
ERECTION WEIGHT [kg]	42.7
OVERALL WEIGHT [kg]	46.7

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1	BW
W2	1	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1	485	BEVEL	BEVEL

SUPPORT LIST

SPOOL	WELD [inches]	WEIGHT [kg]
A	2	4.1
MONT	0	42.7

LINE DATA

NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3			
PAINTING	SYSTEM N/A	BASE RAL N/A	FLUID PHASE	Liquid			
INSULATION	TYPE H	THICKNESS 20 [mm]	DESIGN	PRESS. 7.6 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	Yes		TEST	PRESS. 11.4 [barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80021
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

1.JACKSCREWS POSITION N/S

50-00-TP-001

MASTER

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 1"-SWS-147-01SD-E

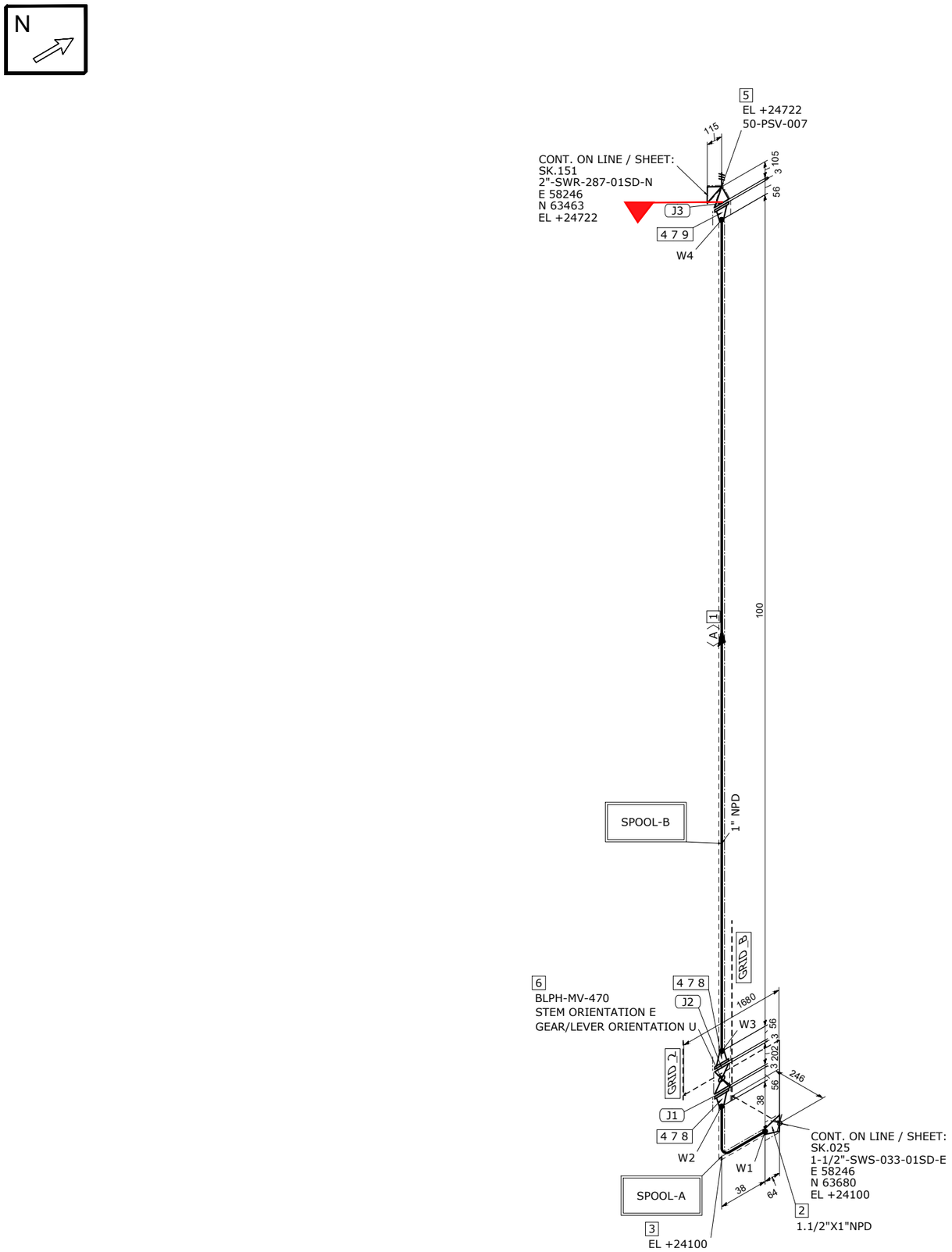
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CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE: N/A

DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 27-08-2024

FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00060 | SHEET / OF: 1/1 | REV.: 00



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPESD02850100	Pipe ASME B36.19M PE 3,38 SML ASTM A790 UNS S32760	0.1M	0.3
2	1.1/2X1	REC0SD08001H01	Reducer Concentric ASME B16.9 BW 3,68x3,38 WRS ASTM A815 UNS S32760	1	0.3
3	1	E90RSD01640100	90 Deg Elbow Long Radius ASME B16.9 BW 3,38 WRS ASTM A815 UNS S32760	1	0.1
4	1	FLW0SD01240100	Flange WN ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	3	4.3

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
5	2X1		SAFETY VALVE FLG.150/150#RF	1	15.0
6	1	VLBLNN01370100	Block & Bleed Valve API 6D FLG 150LB RF BS01F01RFS	1	12.5
7	1	GFL3GK15970100	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	3	0.2
8	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.0
9	1/2	SB20BO34450200	105 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.7

FABRICATION WEIGHT [kg]	5.0
ERECTION WEIGHT [kg]	19.4
OVERALL WEIGHT [kg]	34.4

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1	BW
W2	1	BW
W3	1	BW
W4	1	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1	100	BEVEL	BEVEL

SUPPORT LIST

SPOOL	WELD [inches]	WEIGHT [kg]
A	2	1.8
B	2	3.1
MONT	0	29.4

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

50-00-TP-001

MASTER

LINE DATA

NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3					
PAINTING	SYSTEM N/A	BASE RAL N/A	FLUID PHASE	Liquid					
INSULATION	TYPE H	THICKNESS 20 [mm]	DESIGN	PRESS. 7.6 [barg]	TEMP. -29 / 100 [°C]				
HEAT TRACING	Yes		TEST	PRESS. 11.4 [barg]	TEMP. AMB	MEDIUM Water			

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80021
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 1"-SWS-286-01SD-E

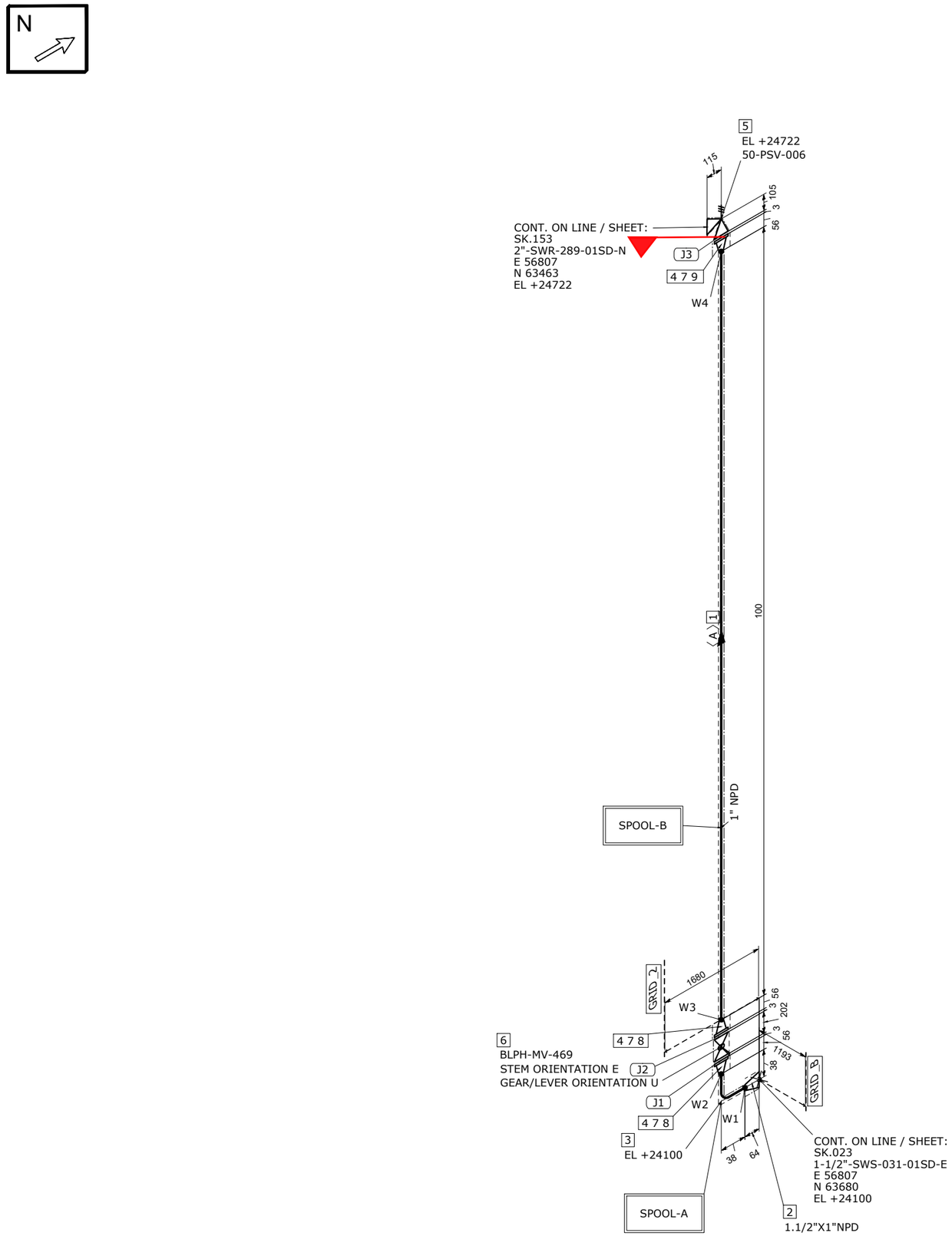
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CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE: N/A

DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 27-08-2024

FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00150 | SHEET / OF: 1/1 | REV.: 00



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPESD02850100	Pipe ASME B36.19M PE 3,38 SML ASTM A790 UNS S32760	0.1M	0.3
2	1.1/2X1	REC0SD08001H01	Reducer Concentric ASME B16.9 BW 3,68x3,38 WRS ASTM A815 UNS S32760	1	0.3
3	1	E90RSD01640100	90 Deg Elbow Long Radius ASME B16.9 BW 3,38 WRS ASTM A815 UNS S32760	1	0.1
4	1	FLW0SD01240100	Flange WN ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	3	4.3

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
5	2X1		SAFETY VALVE FLG.150/150#RF	1	15.0
6	1	VLBLNN01370100	Block & Bleed Valve API 6D FLG 150LB RF BS01F01RFS	1	12.5
7	1	GFL3GK15970100	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	3	0.2
8	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.0
9	1/2	SB20BO34450200	105 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.7

FABRICATION WEIGHT [kg]	5.0
ERECTION WEIGHT [kg]	29.4
OVERALL WEIGHT [kg]	34.4

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1	BW
W2	1	BW
W3	1	BW
W4	1	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1	100	BEVEL	BEVEL

SUPPORT LIST

SPOOL	WELD [inches]	WEIGHT [kg]
A	2	1.8
B	2	3.1
MONT	0	29.4

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

50-00-TP-001

MASTER

LINE DATA

NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3					
PAINTING	SYSTEM N/A	BASE RAL N/A	FLUID PHASE	Liquid					
INSULATION	TYPE H	THICKNESS 20 [mm]	DESIGN	PRESS. 7.6 [barg]	TEMP. -29 / 100 [°C]				
HEAT TRACING	Yes		TEST	PRESS. 11.4 [barg]	TEMP. AMB	MEDIUM Water			

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80021
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 1"-SWS-288-01SD-E

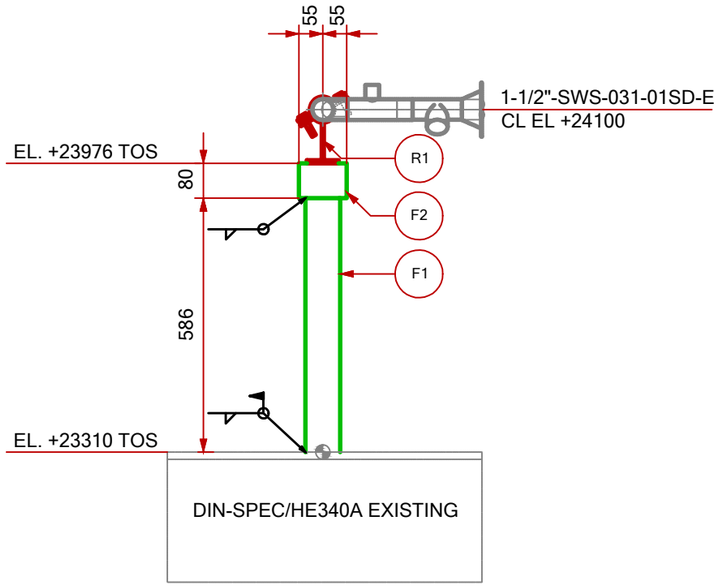
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CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE	N/A
DRAWN	STAFF SRL	CHECKED	RT	APPROVED	LM	DATE	27-08-2024
FORMAT	A3	DRAWING NO.	123A90-FDL-PP-DI-00152	SHEET / OF	1/1	REV.	00

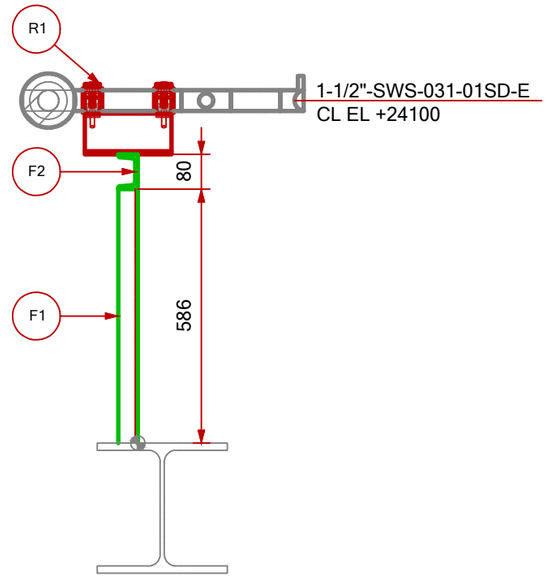
6. EXTRACT OF SUPPORT LIST & DETAILS

SUPPORT LIST

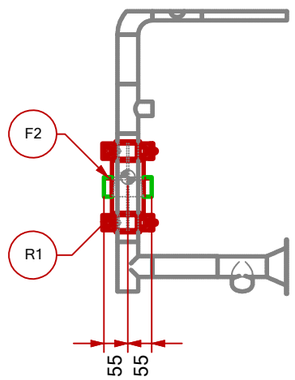
SUPPORT	SUFFIX	SERVICE	DECK IDENTIFICATION	SUB ASSEMBLY	LINE	SUPPORTS STANDARD	NDT CATEGORY	QUANTITY	TOT. WEIGTH (KG)	PAINTING SURFACE (SQM)	REV	DATE	STATUS	NOTES	Test Pack N°
PS-01011	B1	PIP	LOWER DECK		1-1/2"-SWS-031-01SD-E	S-64 - 1.1/2" - 100 - 200		1	3,999	0,108	00	19/08/2024	IFR		TP-001
PS-01013	B1	PIP	LOWER DECK		1-1/2"-SWS-031-01SD-E	S-64 - 1.1/2" - 100 - 200		1	3,999	0,108	00	19/08/2024	IFR		TP-001
PS-01016	B1	PIP	LOWER DECK		1-1/2"-SWS-033-01SD-E	S-64 - 1.1/2" - 100 - 200		1	3,999	0,108	00	19/08/2024	IFR		TP-001
PS-01017	B1	PIP	LOWER DECK		1-1/2"-SWS-033-01SD-E	S-64 - 1.1/2" - 100 - 200		1	3,999	0,108	00	19/08/2024	IFR		TP-001



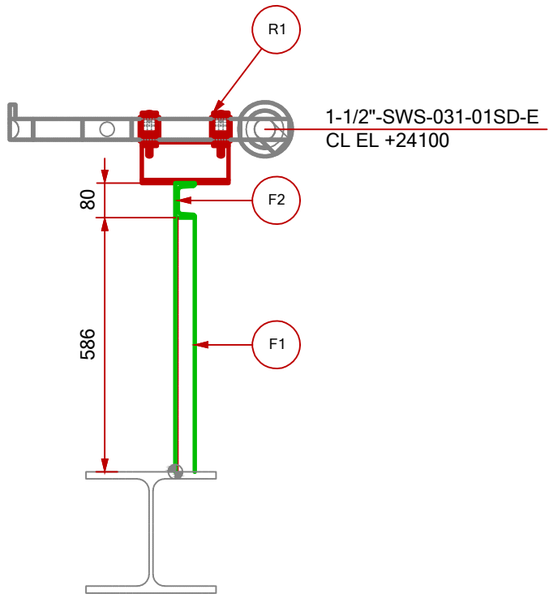
VIEW LOOKING NORTH



VIEW LOOKING WEST



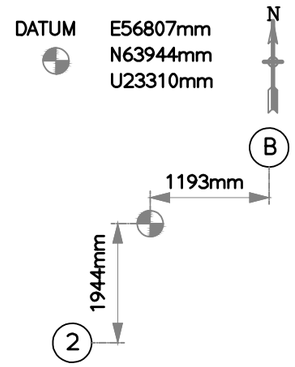
PLAN VIEW

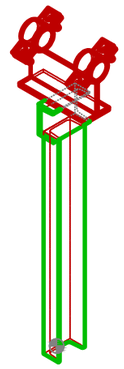


VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	S-64-1.1/2"-100-200	-	-	1	-	4.00	0.108
F1	BEAM	UPN80	Carbon Steel	586	1	8.66	5.08	0.186
F2	BEAM	UPN80	Carbon Steel	110	1	8.66	0.95	0.037
						TOTAL	10.0	0.33





REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

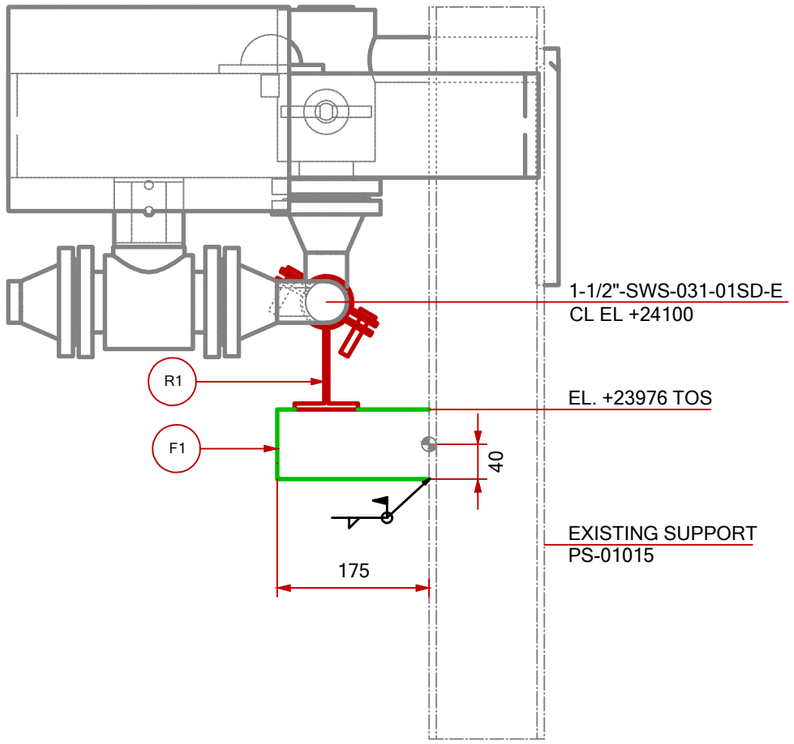
ROSETTI MARINO

TITLE :

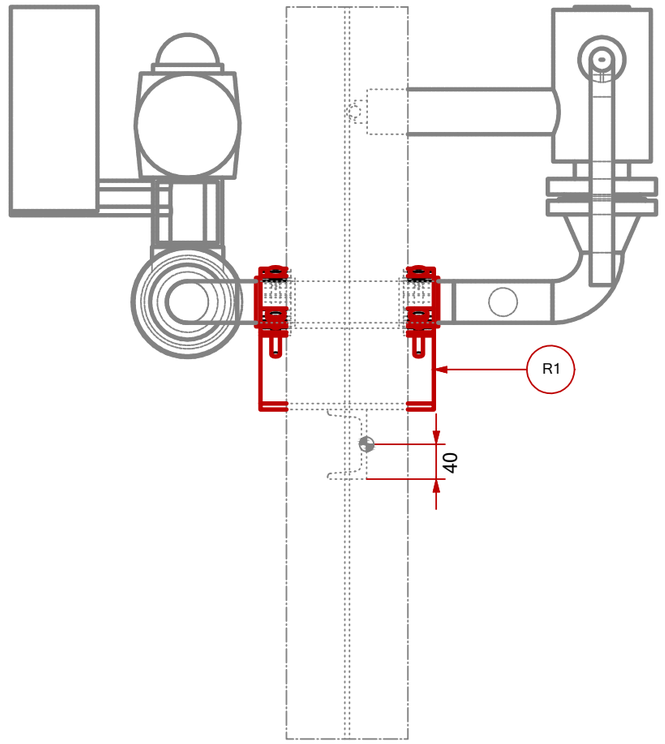
BASE LOAD POWER HUB (BLPH)
Support Drawings
PS-01011

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1 : 10
DRAWN	CHECKED	APPROVED	DATE 19/08/24
DRAWING NO. 123A90-DDL-PP-DD-72000			SHEET 1 of 1 / REV. 00

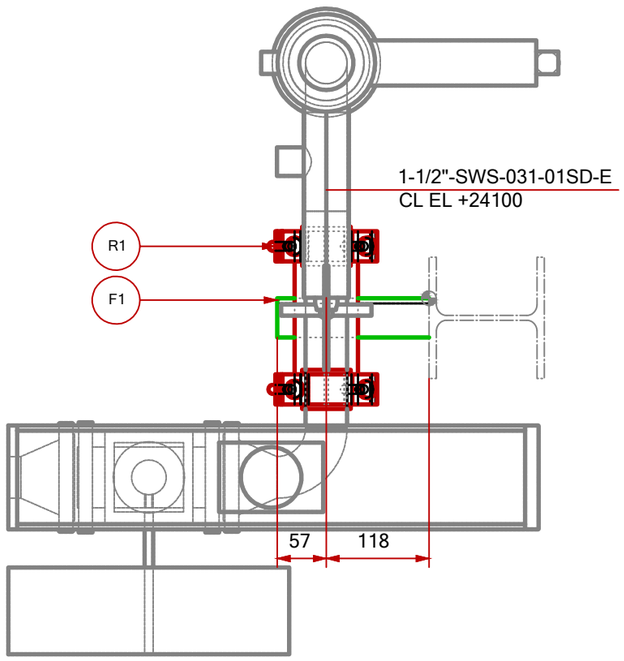
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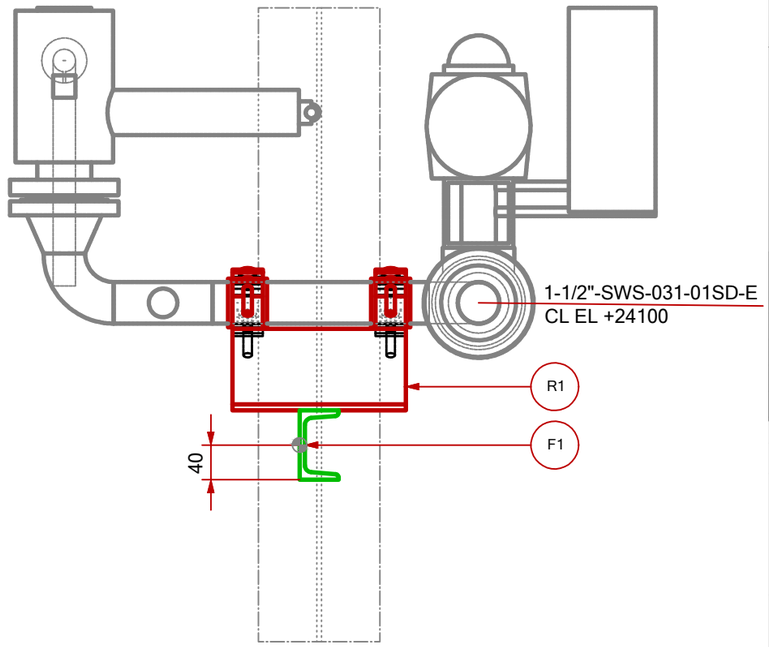
VIEW LOOKING NORTH



VIEW LOOKING WEST



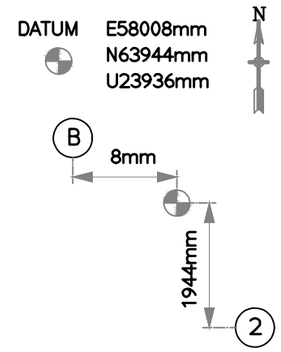
PLAN VIEW

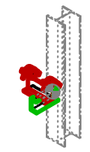


VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	S-64-1.1/2"-100-200	-	-	1	-	4.00	0.108
F1	BEAM	UPN80	Carbon Steel	175	1	8.66	1.52	0.057
						TOTAL	5.5	0.16





REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

ROSETTI MARINO

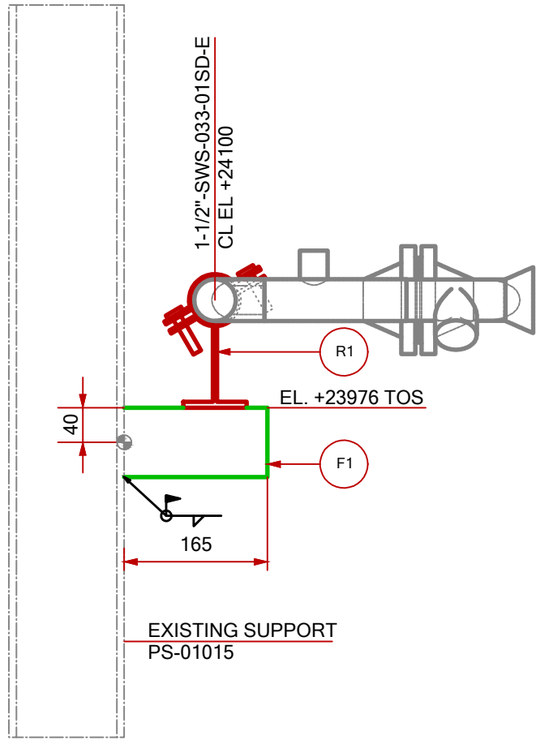
TITLE :

BASE LOAD POWER HUB (BLPH)
Support Drawings

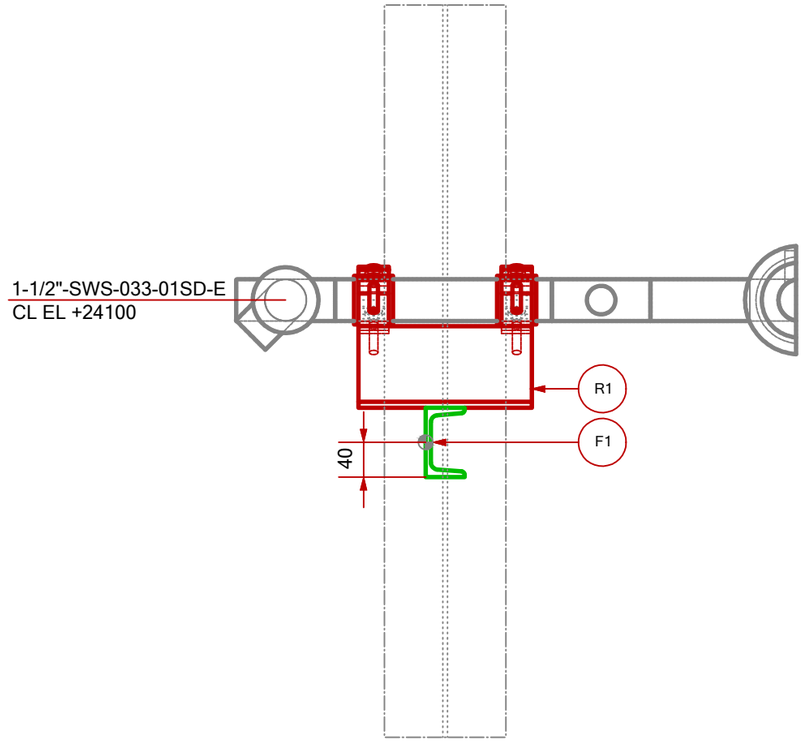
PS-01013

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1 : 5
DRAWN	CHECKED	APPROVED	DATE 19/08/24
	DRAWING NO. 123A90-DDL-PP-DD-72000		SHEET 1 of 1 / REV. 00

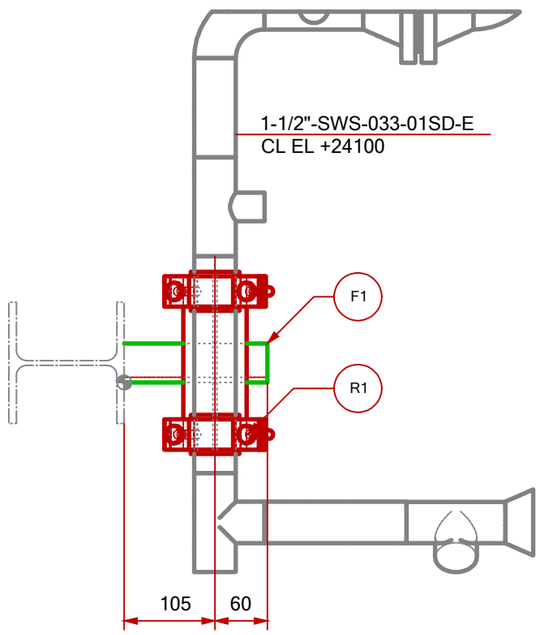
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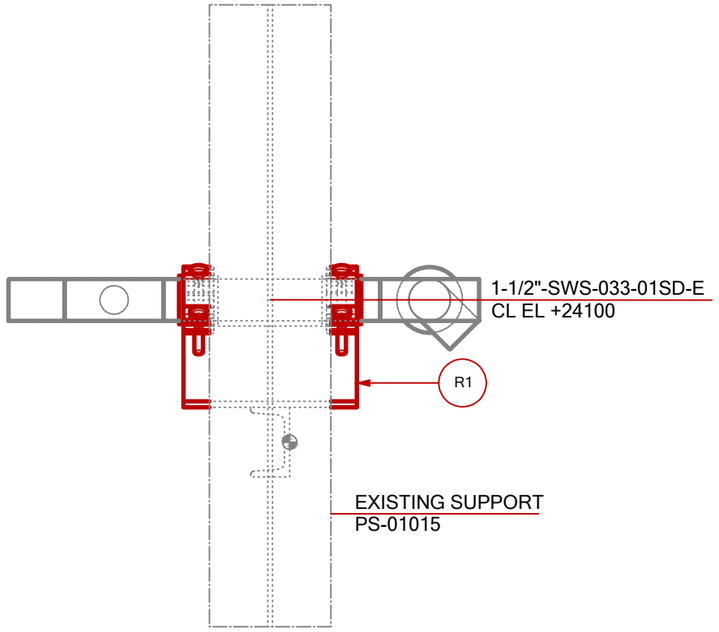
VIEW LOOKING NORTH



VIEW LOOKING WEST



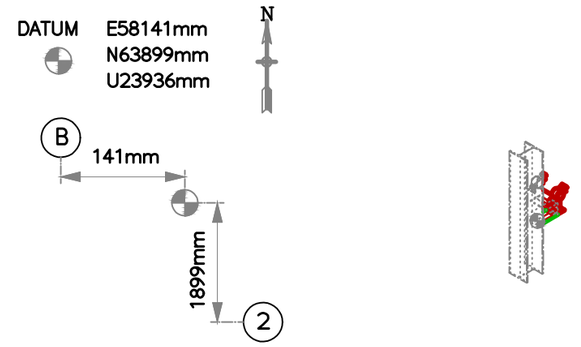
PLAN VIEW



VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	S-64-1.1/2"-100-200	-	-	1	-	4.00	0.108
F1	BEAM	UPN80	Carbon Steel	165	1	8.66	1.43	0.054
						TOTAL	5.4	0.16



REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

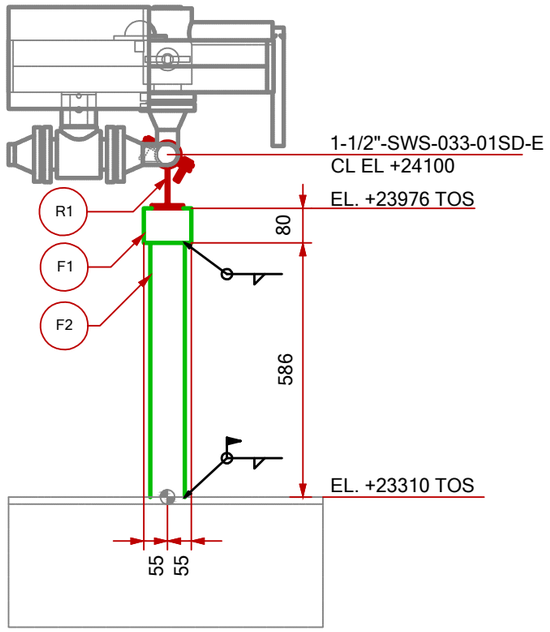
ROSETTI MARINO

TITLE :

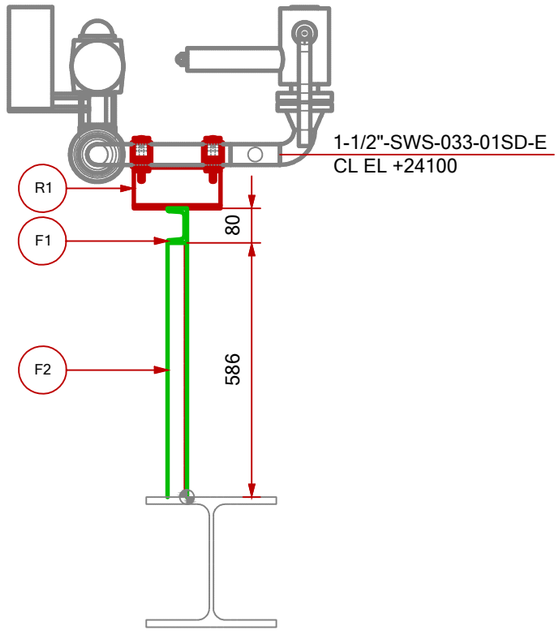
BASE LOAD POWER HUB (BLPH)
Support Drawings
PS-01016

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1 : 5
DRAWN	CHECKED	APPROVED	DATE 19/08/24
DRAWING NO. 123A90-DDL-PP-DD-72000			SHEET 1 of 1 / REV. 00

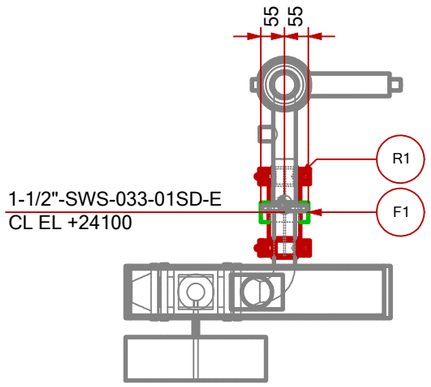
File Name :



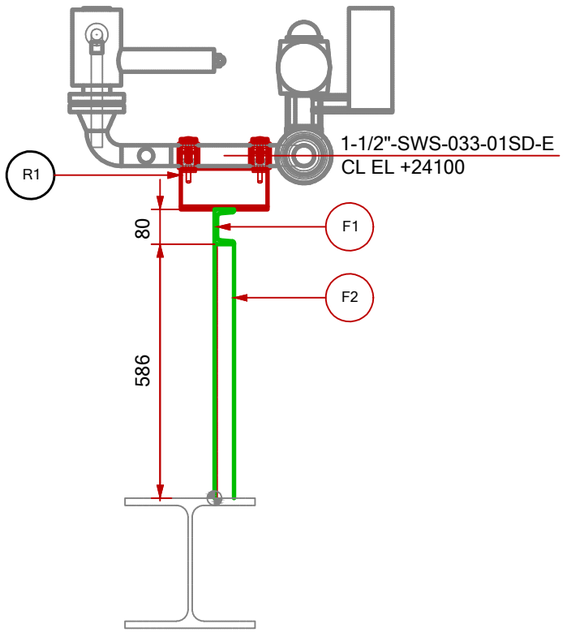
VIEW LOOKING NORTH



VIEW LOOKING WEST



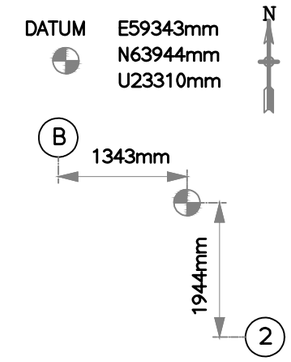
PLAN VIEW

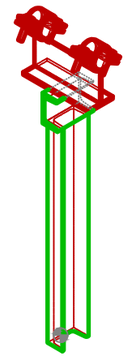


VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	S-64-1.1/2"-100-200	-	-	1	-	4.00	0.108
F1	BEAM	UPN80	Carbon Steel	110	1	8.66	0.95	0.037
F2	BEAM	UPN80	Carbon Steel	586	1	8.66	5.08	0.186
						TOTAL	10.0	0.33





REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

ROSETTI MARINO

TITLE :

BASE LOAD POWER HUB (BLPH)
Support Drawings

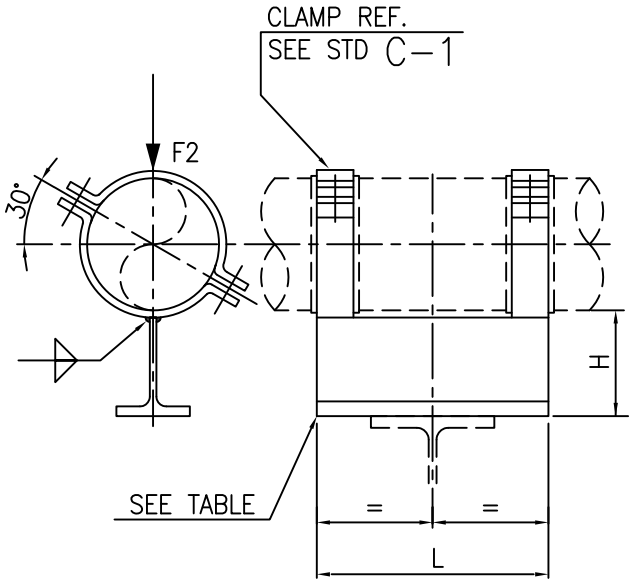
PS-01017

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1 : 10
DRAWN	CHECKED	APPROVED	DATE 19/08/24
	DRAWING NO. 123A90-DDL-PP-DD-72000		SHEET 1 of 1 / REV. 00

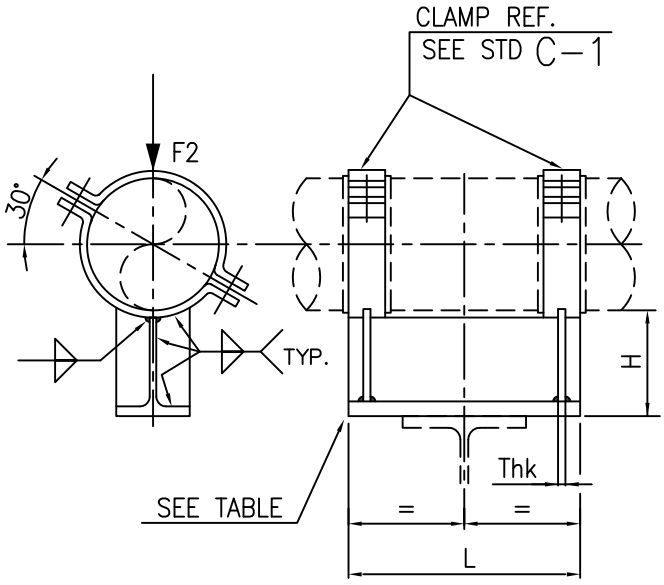
File Name :

	ROSETTI MARINO	Document Number: STD–PP–DD–0001
	STANDARD SPECIFICATION PIPE SUPPORT DETAIL STANDARD	Revision: 0 Date: –
SCARPETTA CLAMPATA PER TUBAZIONI C.S.–S.S. E ALLOY CLAMPED SHOE FOR C.S. – S.S. AND ALLOY PIPES		S–64

Example of designation : STD – PIPE ND" – H – L
(S–64 – 4" – 150 – 400)



PIPES ½" TO 4"



PIPES 6" TO 24"

PIPE		TEE CUT FROM	GUSSET Thk	"H" MAX	MAX LOAD (KN)
ND"	ND				F2
½"	15	IPE 140	–	120	2
3/4"	20	IPE 140	–		
1"	25	IPE 140	–		
1½"	40	IPE 140	–		
2"	50	IPE 220	–	190	4.5
3"	80	IPE 220	–		
4"	100	IPE 220	–		
6"	150	IPE 270	10	240	7.9
8"	200	IPE 270	10		
10"	250	HE220A	10	180	47
12"	300	HE220A	10		
14"	350	HE220A	10		
16"	400	HE220A	10		
18"	450	HE300A	15	230	64
20"	500	HE300A	15		
24"	600	HE300A	15		

ALLOWABLE RANGE FOR SHOE LENGTH		
ø PIPE	MIN. "L" mm	MAX. "L" mm
½" ÷ 6"	200	600
8" ÷ 24"	250	600

NOTES:

1– MATERIAL TO BE CARBON STEEL
2– ALL FILLET WELDING MUST HAVE THE EQUAL TO 0.8 OF THE MINIMUM THICKNESS TO BE WELDED EXCEPT WHERE OTHERWISE INDICATED.
3– VARIABLE WEIGHT ADDICTED TO THE "PIPE ND" SELECTED AND THE "L", "H" DIMENSIONS INDICATED.

Revision Number	Date	Description	DRAW	CHKD.	APPR.
00	–	ISSUED FOR REVIEW	SLO	GMA	MCO

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7. WELDING REGISTER & MATERIAL TRACEABILITY RECORD

Welding Register

Job	123A90	BASE LOAD POWER HUB (BLPH)			
From Discipline	PP	Piping			
To Discipline	PP	Piping			
Drawings		**From**	23	**To**	23
Sheet		**From**	0	**To**	0
Marks		**From**		**To**	
Location		**From**		**To**	
Material		**From**		**To**	
Welds Execution		**From**		**To**	
Welds Acceptance		**From**		**To**	
Report Date		**From**		**To**	
Prefabrication	All				
Welding Status	All				
ITEM					
ADDITIONAL PARAMETERS	**LINE**	**From**		**To**	
	SPOOL	**From**		**To**	
		From		**To**	

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH) Order Number CW-I-WP4-2023-05

Client CRWIND CROSSWIND

Discipline PP Piping ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Cont.	Accept. Date	Spool
1/23/1/_		**00**	**23-09-2024**	**17**	**AZ39**			**FWN**	**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**24-09-2024**	**A**
01SD	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable				24-09-2024				
		RT	FIN	Weld Completion				10 %			Acceptable								
2/23/1/_		**00**	**25-09-2024**	**18**	**AZ39**			**PIPE**	**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**26-09-2024**	**A**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				26-09-2024				
		RT	FIN	Weld Completion				10 %			Acceptable								
3/23/1/_		**00**	**23-09-2024**	**17**	**AZ39**			**ELB**	**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**24-09-2024**	**A**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable				24-09-2024				
		RT	FIN	Weld Completion				10 %			Acceptable								
4/23/1/_		**00**	**23-09-2024**	**17-85**	**AZ39**			**FWN**	**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**17-12-2024**	**B**
					AZ53	**After Cutting**													
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable				24-09-2024				
		RT	FIN	Weld Completion				10 %			Acceptable								
Cut 14-12-2024		VIS	C 1 DTA	After Cutting		123A90-PML-QHSE-PRO-00103 Rev 00	AGAVELLA	100 %	OK		Acceptable	B1A		GTAW	17-12-2024				
		RT	C 1 DTA	After Cutting				10 %			Acceptable								
5/23/1/_		**00**	**26-09-2024**	**19-84**	**AZ39**			**PIPE**	**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**18-12-2024**	**B**
					AZ53	**After Cutting**													
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				28-09-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	10 %	000112	3	Acceptable				04-10-2024				
Cut 16-12-2024		VIS	C 1 DTA	After Cutting		123A90-PML-QHSE-PRO-00103 Rev 00	AGAVELLA	100 %	OK		Acceptable	B1A		GTAW	17-12-2024				
		RT	C 1 DTA	After Cutting		IDL-QCI-RT 0036 00	AA	10 %	001075	3	Acceptable				18-12-2024				
6/23/1/_		**00**	**25-09-2024**	**18-84**	**AZ39**			**TEE**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**17-12-2024**	**B**
					AZ53	**After Cutting**													
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				26-09-2024				
		RT	FIN	Weld Completion				10 %			Acceptable								
Cut 16-12-2024		VIS	C 1 DTA	After Cutting		123A90-PML-QHSE-PRO-00103 Rev 00	AGAVELLA	100 %	OK		Acceptable	B1A		GTAW	17-12-2024				
		RT	C 1 DTA	After Cutting				10 %			Acceptable								
7/23/1/_		**00**	**25-09-2024**	**18-84**	**AZ39**			**TEE**	**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**17-12-2024**	**B**
					AZ53	**After Cutting**													
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				26-09-2024				
		RT	FIN	Weld Completion				10 %			Acceptable								
Cut 16-12-2024		VIS	C 1 DTA	After Cutting		123A90-PML-QHSE-PRO-00103 Rev 00	AGAVELLA	100 %	OK		Acceptable	B1A		GTAW	17-12-2024				

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Conn	Accept. Date	Spool
7/23/1/_		**00**	**25-09-2024**	**18-84**	**AZ39**			**TEE**	**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**17-12-2024**	**B**
					AZ53	**After Cutting**													
		RT	C 1 DTA	After Cutting				10 %			Acceptable								
8/23/1/_		**00**	**23-09-2024**	**17-85**	**AZ39**			**ELB**	**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**17-12-2024**	**B**
					AZ53	**After Cutting**													
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable					24-09-2024			
		RT	FIN	Weld Completion				10 %			Acceptable								
	Cut 14-12-2024	VIS	C 1 DTA	After Cutting		123A90-PML-QHSE-PRO-00103 Rev 00	AGAVELLA	100 %	OK		Acceptable B1A		GTAW			17-12-2024			
		RT	C 1 DTA	After Cutting				10 %			Acceptable								
9/23/1/_		**00**	**26-09-2024**	**19-84**	**AZ39**			**PIPE**	**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**17-12-2024**	**B**
					AZ53	**After Cutting**													
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					28-09-2024			
		RT	FIN	Weld Completion				10 %			Acceptable								
	Cut 16-12-2024	VIS	C 1 DTA	After Cutting		123A90-PML-QHSE-PRO-00103 Rev 00	AGAVELLA	100 %	OK		Acceptable B1A		GTAW			17-12-2024			
		RT	C 1 DTA	After Cutting				10 %			Acceptable								
10/23/1/_		**00**	**25-09-2024**	**18-84**	**AZ39**			**TEE**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**17-12-2024**	**B**
					AZ53	**After Cutting**													
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					26-09-2024			
		RT	FIN	Weld Completion				10 %			Acceptable								
	Cut 16-12-2024	VIS	C 1 DTA	After Cutting		123A90-PML-QHSE-PRO-00103 Rev 00	AGAVELLA	100 %	OK		Acceptable B1A		GTAW			17-12-2024			
		RT	C 1 DTA	After Cutting				10 %			Acceptable								
11/23/1/_		**00**	**25-09-2024**	**18-84**	**AZ39**			**PIPE**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**17-12-2024**	**B**
					AZ53	**After Cutting**													
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					26-09-2024			
		RT	FIN	Weld Completion				10 %			Acceptable								
	Cut 16-12-2024	VIS	C 1 DTA	After Cutting		123A90-PML-QHSE-PRO-00103 Rev 00	AGAVELLA	100 %	OK		Acceptable B1A		GTAW			17-12-2024			
		RT	C 1 DTA	After Cutting				10 %			Acceptable								
12/23/1/_		**00**	**25-09-2024**	**18-84**	**AZ39**			**TEE**	**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**18-12-2024**	**B**
					AZ53	**After Cutting**													
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					26-09-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	10 %	000113	3	Acceptable					04-10-2024			
	Cut 16-12-2024	VIS	C 1 DTA	After Cutting		123A90-PML-QHSE-PRO-00103 Rev 00	AGAVELLA	100 %	OK		Acceptable B1A		GTAW			17-12-2024			
		RT	C 1 DTA	After Cutting		IDL-QCI-RT 0036 00	AA	10 %	001074	3	Acceptable					18-12-2024			

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders / Work Instructions	Oper.	Item type / Exam. %	N. Rep	Dimension	Thickness	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Conn	Accept. Date	Spool
12/23/1/_		**00**	**25-09-2024**	**18-84**	**AZ39**		**TEE**		**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**18-12-2024**	**B**
					AZ53	**After Cutting**													
13/23/1/_		**00**	**25-09-2024**	**18-85**	**AZ39**		**PIPE**		**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**17-12-2024**	**B**
					AZ53	**After Cutting**													
2		VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK			Acceptable				26-09-2024				
		RT	FIN	Weld Completion			10 %				Acceptable								
Cut 14-12-2024		VIS	C 1 DTA	After Cutting	123A90-PML-QHSE-PRO-00103 Rev 00	AGAVELLA	100 %	OK			Acceptable	B1A	GTAW		17-12-2024				
		RT	C 1 DTA	After Cutting			10 %				Acceptable								
14/23/1/_		**00**	**23-09-2024**	**17-85**	**AZ39**		**TEE**		**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**17-12-2024**	**B**
					AZ53	**After Cutting**													
2		VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK			Acceptable				24-09-2024				
		RT	FIN	Weld Completion			10 %				Acceptable								
Cut 14-12-2024		VIS	C 1 DTA	After Cutting	123A90-PML-QHSE-PRO-00103 Rev 00	AGAVELLA	100 %	OK			Acceptable	B1A	GTAW		17-12-2024				
		RT	C 1 DTA	After Cutting			10 %				Acceptable								
15/23/1/_		**00**	**25-09-2024**	**18-84**	**AZ39**		**PIPE**		**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**17-12-2024**	**B**
					AZ53	**After Cutting**													
2		VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK			Acceptable				26-09-2024				
		RT	FIN	Weld Completion			10 %				Acceptable								
Cut 16-12-2024		VIS	C 1 DTA	After Cutting	123A90-PML-QHSE-PRO-00103 Rev 00	AGAVELLA	100 %	OK			Acceptable	B1A	GTAW		17-12-2024				
		RT	C 1 DTA	After Cutting			10 %				Acceptable								
16/23/1/_		**00**	**25-09-2024**	**18-84**	**AZ39**		**TEE**		**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**17-12-2024**	**B**
					AZ53	**After Cutting**													
2		VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK			Acceptable				26-09-2024				
		RT	FIN	Weld Completion			10 %				Acceptable								
Cut 16-12-2024		VIS	C 1 DTA	After Cutting	123A90-PML-QHSE-PRO-00103 Rev 00	AGAVELLA	100 %	OK			Acceptable	B1A	GTAW		17-12-2024				
		RT	C 1 DTA	After Cutting			10 %				Acceptable								
17/23/1/_		**00**	**25-09-2024**	**18-84**	**AZ39**		**RED**		**2,00 in**	**2,77 mm**	**V**	**0,189 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**17-12-2024**	**B**
					AZ53	**After Cutting**													
2		VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK			Acceptable				26-09-2024				
		RT	FIN	Weld Completion			10 %				Acceptable								
Cut 16-12-2024		VIS	C 1 DTA	After Cutting	123A90-PML-QHSE-PRO-00103 Rev 00	AGAVELLA	100 %	OK			Acceptable	B1A	GTAW		17-12-2024				
		RT	C 1 DTA	After Cutting			10 %				Acceptable								
18/23/1/_		**00**	**25-09-2024**	**18-84**	**AZ39**		**TEE**		**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**17-12-2024**	**B**

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Cons	Accept. Date	Spool
18/23/1/_		**00**	**25-09-2024**	**18-84**	**AZ39**			**TEE**	**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**17-12-2024**	**B**
					AZ53	**After Cutting**													
2		VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					26-09-2024			
		RT	FIN	Weld Completion				10 %			Acceptable								
Cut 16-12-2024		VIS	C 1 DTA	After Cutting		123A90-PML-QHSE-PRO-00103 Rev 00	AGAVELLA	100 %	OK		Acceptable	B1A	GTAW			17-12-2024			
		RT	C 1 DTA	After Cutting				10 %			Acceptable								
19/23/1/_		**00**	**26-09-2024**	**19-77**	**AZ39**	**Welding + Repair done**		**FWN**	**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**15-11-2024**	**C**
2		VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					28-09-2024			
		RT	FIN	Weld Completion				10 %			Acceptable								
Cut 12-11-2024		VIS	C 1 DTA	After Cutting		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable	B1A	GTAW			15-11-2024			
		RT	C 1 DTA	After Cutting				10 %			Acceptable								
20/23/1/_		**00**	**25-09-2024**	**18-72**	**AZ39**			**TEE**	**0,75 in**	**2,87 mm**	**V**	**0,083 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**12-11-2024**	**C**
					AZ36	**After Cutting**													
2		VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					26-09-2024			
		RT	FIN	Weld Completion				10 %			Acceptable								
Cut 08-11-2024		VIS	C 1 DTA	After Cutting		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable	B1A	GTAW			12-11-2024			
		RT	C 1 DTA	After Cutting				10 %			Acceptable								
21/23/1/_		**00**	**25-09-2024**	**18-72**	**AZ39**			**PIPE**	**0,75 in**	**2,87 mm**	**V**	**0,083 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**12-11-2024**	**C**
					AZ36	**After Cutting**													
2		VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					26-09-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	10 %	000171	4	Acceptable					06-10-2024			
Cut 08-11-2024		VIS	C 1 DTA	After Cutting		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable	B1A	GTAW			12-11-2024			
		RT	C 1 DTA	After Cutting				10 %			Acceptable								
22/23/1/_		**00**	**26-09-2024**	**19-77**	**AZ39**	**Welding + Repair done**		**TEE**	**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**15-11-2024**	**C**
2		VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					28-09-2024			
		RT	FIN	Weld Completion				10 %			Acceptable								
Cut 12-11-2024		VIS	C 1 DTA	After Cutting		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable	B1A	GTAW			15-11-2024			
		RT	C 1 DTA	After Cutting				10 %			Acceptable								
23/23/1/_		**00**	**23-09-2024**	**17**	**AZ39**			**FWN**	**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**26-09-2024**	**D**
2		VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable					24-09-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	10 %	000094	3	Acceptable					26-09-2024			
24/23/1/_		**00**	**26-09-2024**	**19**	**AZ39**			**ELB**	**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**28-09-2024**	**D**

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	N. Rep	Dimension	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Conn	Accept. Date	Spool
24/23/1/_		**00**	**26-09-2024**	**19**	**AZ39**			**ELB**		**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**28-09-2024**	**D**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK			Acceptable				28-09-2024				
		RT	FIN	Weld Completion				10 %				Acceptable								
25/23/1/_		**00**	**26-09-2024**	**19**	**AZ39**			**PIPE**		**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**28-09-2024**	**D**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK			Acceptable				28-09-2024				
		RT	FIN	Weld Completion				10 %				Acceptable								
26/23/1/_		**00**	**23-09-2024**	**17**	**AZ39**			**TEE**		**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**24-09-2024**	**D**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK			Acceptable				24-09-2024				
		RT	FIN	Weld Completion				10 %				Acceptable								
27/23/1/_		**00**	**26-09-2024**	**19**	**AZ39**			**TEE**		**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**28-09-2024**	**D**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK			Acceptable				28-09-2024				
		RT	FIN	Weld Completion				10 %				Acceptable								
28/23/1/_		**00**	**23-09-2024**	**17**	**AZ39**			**ELB**		**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**24-09-2024**	**D**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK			Acceptable				24-09-2024				
		RT	FIN	Weld Completion				10 %				Acceptable								
29/23/1/_		**00**	**02-01-2025**	**112**	**AX 453**			**TEE**		**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**M**	**S.D.**	**B1A**	**GTAW**	**BW**	**04-01-2025**	
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK			Acceptable				04-01-2025				
		RT	FIN	Weld Completion				10 %				Acceptable								

Totals per DWG	**23**	**Prefabrication**	**3,90 m**	**28 Nr. Welds**	**39,00 inch**
		Erection	**0,15 m**	**1 Nr. Welds**	**1,50 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**4,05 m**	**29 Nr. Welds**	**40,50 inch**
		Accepted	**4,05 m**	**29 Nr. Welds**	**40,50 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Discipline		**Prefabrication**	**3,90 m**	**28 Nr. Welds**	**39,00 inch**
		Erection	**0,15 m**	**1 Nr. Welds**	**1,50 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**4,05 m**	**29 Nr. Welds**	**40,50 inch**
		Accepted	**4,05 m**	**29 Nr. Welds**	**40,50 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05

ITEM

Weld Number		Rev.	Prod. Date	Prod. Sheet	Welders		Item type	Dimension	Thickness	Bevel	Weld Length	P/M	Material	WPS	Techn. Weld.	Type Conn.	Accept. Date	Spool
Class	Insp. Category	Cont.	Examination phase		Work Instructions	Oper.	Exam. %	N. Rep	Films n.	Result	WPS Rip.	Techn. Weld.		Defect length	CND date	NOTE		
29/23/1/_		**00**	**02-01-2025**	**112**	**AX 453**		**TEE**	**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**M**	**S.D.**		**B1A**	**GTAW**	**BW**	**04-01-2025**

Totals by Project			
Prefabrication	**3,90 m**	**28 Nr. Welds**	**39,00 inch**
Erection	**0,15 m**	**1 Nr. Welds**	**1,50 inch**
Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Performed	**4,05 m**	**29 Nr. Welds**	**40,50 inch**
Accepted	**4,05 m**	**29 Nr. Welds**	**40,50 inch**
Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**

Cliente/Contractor	**CROSSWIND**	Preparato da/Prepared by	Controllato da/Checked by	Approvato da/Approved by
SubContrattista/SubContractor	**ROSETTIMARINO/GROUPOFCOMPANY**	Nome/Name: Antonio Galesi	Nome/Name:	Nome/Name:
Progetto/Project	**Hollandse Kust Noord Wind Park Project**			
Commessa/Job	**123A90 - Piping**			
Disciplina/Discipline	**PIPING**			
TitoloDocumento/DocumentTitle	**Material Traceability Report**	StatoDocumento/Document Status:		Data/Date: 20/01/2025
RosettiDoc.Num.	**123A90MTR001**			

Sketch no.	Rev.	sheet	Spool	Piping Class	pos.	Q.ty (n° - m)	Description	Heat/Serial Number	PurchaseOrder	Pos. Order	Mat. Certificate	Weld Ref.	Note
23	00	1	A	01SD	8	1	90 Deg Elbow Long Radius BW ›1.1/2" Thk.3,68mm ASTM A815 UNS S32760	1023SA024	1724001267	00060	1023SA024	W2-W3	
23	00	1	A	01SD	10	1	Flange WN ›1.1/2" Thk.3,68mm 150LB RF ASTM A182 Gr.F55	E170081	1724000839	00900	770	W1	
23	00	1	A	01SD	10	1	Flange WN ›1.1/2" Thk.3,68mm 150LB RF ASTM A182 Gr.F55	E170081	1724000839	00900	770	W3	
23	00	1	A	01SD	1A	0,121	Pipe 48.3mm(1.1/2") thk.3,68mm ASTM A790 UNS S32760	556787	1724000839	00040	A/198-847363		
23	00	1	B	01SD	4	1	Tee Reducing BW ›1.1/2"x1" Thk.3,68mmx3,38mm ASTM A815 UNS S32760	1005SA022	1724000839	00520	1005SA022	W5-W6-W7	
23	00	1	B	01SD	4	1	Tee Reducing BW ›1.1/2"x1" Thk.3,68mmx3,38mm ASTM A815 UNS S32760	1005SA022	1724000839	00520	1005SA022	W9-W10-W12	
23	00	1	B	01SD	5	1	Tee BW ›1.1/2" Thk.3,68mm ASTM A815 UNS S32760	1157SA019	1724000839	00450	1157SA019	W13-W14	
23	00	1	B	01SD	5	1	Tee BW ›1.1/2" Thk.3,68mm ASTM A815 UNS S32760	1157SA019	1724000839	00450	1157SA019	W15-W16-W18	
23	00	1	B	01SD	7	1	Reducer Concentric BW ›2"x1.1/2" Thk.2,77mmx3,68mm ASTM A815 UNS S32760	1018SA019	1724000839	00320	1018SA019	W16-W17	
23	00	1	B	01SD	8	1	90 Deg Elbow Long Radius BW ›1.1/2" Thk.3,68mm ASTM A815 UNS S32760	1023SA024	1724001267	00060	1023SA024	W7-W8	
23	00	1	B	01SD	9	1	Flange WN ›2" Thk.2.77mm 150LB RF ASTM A182 Gr.F55	555304	1724000839	00880	770	W17	
23	00	1	B	01SD	10	1	Flange WN ›1.1/2" Thk.3,68mm 150LB RF ASTM A182 Gr.F55	E170081	1724000839	00900	770	W4	
23	00	1	B	01SD	10	1	Flange WN ›1.1/2" Thk.3,68mm 150LB RF ASTM A182 Gr.F55	E170081	1724000839	00900	770	W18	
23	00	1	B	01SD	11	1	Flange WN ›1" Thk.3.38mm 150LB RF ASTM A182 Gr.F55	407642	1724000839	00870	770	W6	
23	00	1	B	01SD	11	1	Flange WN ›1" Thk.3.38mm 150LB RF ASTM A182 Gr.F55	407642	1724000839	00870	770	W11	
23	00	1	B	01SD	1B	0,236	Pipe 48.3mm(1.1/2") thk.3,68mm ASTM A790 UNS S32760	556787	1724000839	00040	A/198-847363		
23	00	1	B	01SD	1C	0,114	Pipe 48.3mm(1.1/2") thk.3,68mm ASTM A790 UNS S32760	556787	1724000839	00040	A/198-847363		
23	00	1	B	01SD	1E	0,25	Pipe 48.3mm(1.1/2") thk.3,68mm ASTM A790 UNS S32760	556787	1724000839	00040	A/198-847363		
23	00	1	B	01SD	1F	0,15	Pipe 48.3mm(1.1/2") thk.3,68mm ASTM A790 UNS S32760	556787	1724000839	00040	A/198-847363		
23	00	1	B	01SD	2D	0,121	Pipe 33.4mm(1") thk.3.38mm ASTM A790 UNS S32760	556787	1724000839	00040	A/198-847363		
23	00	1	C	01SD	6	1	Tee Reducing BW ›1.1/2"x3/4" Thk.3,68mmx2,87mm ASTM A815 UNS S32760	1181SA05	1724000839	00510	1181SA05	W19-W20-W22	
23	00	1	C	01SD	10	1	Flange WN ›1.1/2" Thk.3,68mm 150LB RF ASTM A182 Gr.F55	E170081	1724000839	00900	770	W19	
23	00	1	C	01SD	10	1	Flange WN ›1.1/2" Thk.3,68mm 150LB RF ASTM A182 Gr.F55	E170081	1724000839	00900	770	W22	
23	00	1	C	01SD	12	1	Flange WN ›3/4" Thk.2,87mm 150LB RF ASTM A182 Gr.F55	407642	1724000839	00890	770	W21	
23	00	1	C	01SD	3G	0,1	Pipe 26.7mm(3/4") thk.2,87mm ASTM A790 UNS S32760	739859	1724000839	00030	4-24-00368-REV.01		
23	00	1	D	01SD	4	1	Tee Reducing BW ›1.1/2"x1" Thk.3,68mmx3,38mm ASTM A815 UNS S32760	1005SA022	1724000839	00520	1005SA022	W25-W26-W27	
23	00	1	D	01SD	8	1	90 Deg Elbow Long Radius BW ›1.1/2" Thk.3,68mm ASTM A815 UNS S32760	1023SA024	1724001267	00060	1023SA024	W27-W28	
23	00	1	D	01SD	4	1	Tee Reducing BW ›1.1/2"x1" Thk.3,68mmx3,38mm ASTM A815 UNS S32760	1005SA022	1724000839	00520	1005SA022	W25-W26-W27	
23	00	1	D	01SD	8	1	90 Deg Elbow Long Radius BW ›1.1/2" Thk.3,68mm ASTM A815 UNS S32760	1023SA024	1724001267	00060	1023SA024	W27-W28	
23	00	1	D	01SD	8	1	90 Deg Elbow Long Radius BW ›1.1/2" Thk.3,68mm ASTM A815 UNS S32760	1023SA024	1724001267	00060	1023SA024	W23-W24	
23	00	1	D	01SD	10	1	Flange WN ›1.1/2" Thk.3,68mm 150LB RF ASTM A182 Gr.F55	E170081	1724000839	00900	770	W23	
23	00	1	D	01SD	10	1	Flange WN ›1.1/2" Thk.3,68mm 150LB RF ASTM A182 Gr.F55	E170081	1724000839	00900	770	W28	
23	00	1	D	01SD	11	1	Flange WN ›1" Thk.3.38mm 150LB RF ASTM A182 Gr.F55	407642	1724000839	00870	770	W26	
23	00	1	D	01SD	1H	0,25	Pipe 48.3mm(1.1/2") thk.3,68mm ASTM A790 UNS S32760	556787	1724000839	00040	A/198-847363		

Rosetti Marino S.p.A.

Welding Register

Job	123A90	BASE LOAD POWER HUB (BLPH)			
From Discipline	PP	Piping			
To Discipline	PP	Piping			
Drawings		**From**	25	**To**	25
Sheet		**From**	0	**To**	0
Marks		**From**		**To**	
Location		**From**		**To**	
Material		**From**		**To**	
Welds Execution		**From**		**To**	
Welds Acceptance		**From**		**To**	
Report Date		**From**		**To**	
Prefabrication	All				
Welding Status	All				
	ITEM				
ADDITIONAL PARAMETERS	**LINE**	**From**		**To**	
	SPOOL	**From**		**To**	
		From		**To**	

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	N. Rep	Dimension	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Cons	Accept. Date	Spool
1/25/1/_		**00**	**23-09-2024**	**17**	**AZ39**			**FWN**		**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**24-09-2024**	**A**
01SD	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK			Acceptable					24-09-2024			
		RT	FIN	Weld Completion				10 %				Acceptable								
2/25/1/_		**00**	**25-09-2024**	**18**	**AZ39**			**PIPE**		**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**26-09-2024**	**A**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK			Acceptable					26-09-2024			
		RT	FIN	Weld Completion				10 %				Acceptable								
3/25/1/_		**00**	**23-09-2024**	**17**	**AZ39**			**ELB**		**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**24-09-2024**	**A**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK			Acceptable					24-09-2024			
		RT	FIN	Weld Completion				10 %				Acceptable								
4/25/1/_		**00**	**25-09-2024**	**18**	**AZ39**			**FWN**		**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**26-09-2024**	**B**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK			Acceptable					26-09-2024			
		RT	FIN	Weld Completion				10 %				Acceptable								
5/25/1/_		**00**	**23-09-2024**	**17**	**AZ39**			**TEE**		**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**26-09-2024**	**B**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK			Acceptable					24-09-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	10 %	000081		4	Acceptable					26-09-2024			
6/25/1/_		**00**	**25-09-2024**	**18**	**AZ39**			**TEE**		**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**26-09-2024**	**B**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK			Acceptable					26-09-2024			
		RT	FIN	Weld Completion				10 %				Acceptable								
7/25/1/_		**00**	**23-09-2024**	**17**	**AZ39**			**ELB**		**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**24-09-2024**	**B**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK			Acceptable					24-09-2024			
		RT	FIN	Weld Completion				10 %				Acceptable								
8/25/1/_		**00**	**26-09-2024**	**19**	**AZ39**			**PIPE**		**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**28-09-2024**	**B**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK			Acceptable					28-09-2024			
		RT	FIN	Weld Completion				10 %				Acceptable								
9/25/1/_		**00**	**23-09-2024**	**17**	**AZ39**			**TEE**		**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**24-09-2024**	**B**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK			Acceptable					24-09-2024			
		RT	FIN	Weld Completion				10 %				Acceptable								

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	N. Rep	Dimension	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Cons	Accept. Date	Spool
9/25/1/_		**00**	**23-09-2024**	**17**	**AZ39**			**TEE**		**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**24-09-2024**	**B**
10/25/1/_		**00**	**25-09-2024**	**18**	**AZ39**			**PIPE**		**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**26-09-2024**	**B**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK			Acceptable					26-09-2024			
		RT	FIN	Weld Completion				10 %				Acceptable								
11/25/1/_		**00**	**26-09-2024**	**19**	**AZ39**			**TEE**		**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**28-09-2024**	**B**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK			Acceptable					28-09-2024			
		RT	FIN	Weld Completion				10 %				Acceptable								
12/25/1/_		**00**	**26-09-2024**	**19**	**AZ39**			**PIPE**		**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**28-09-2024**	**B**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK			Acceptable					28-09-2024			
		RT	FIN	Weld Completion				10 %				Acceptable								
13/25/1/_		**00**	**23-09-2024**	**17**	**AZ39**			**TEE**		**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**24-09-2024**	**B**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK			Acceptable					24-09-2024			
		RT	FIN	Weld Completion				10 %				Acceptable								
14/25/1/_		**00**	**25-09-2024**	**18**	**AZ39**			**PIPE**		**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**26-09-2024**	**B**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK			Acceptable					26-09-2024			
		RT	FIN	Weld Completion				10 %				Acceptable								
15/25/1/_		**00**	**25-09-2024**	**18**	**AZ39**			**TEE**		**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**26-09-2024**	**B**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK			Acceptable					26-09-2024			
		RT	FIN	Weld Completion				10 %				Acceptable								
16/25/1/_		**00**	**25-09-2024**	**18**	**AZ39**			**RED**		**2,00 in**	**2,77 mm**	**V**	**0,189 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**26-09-2024**	**B**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK			Acceptable					26-09-2024			
		RT	FIN	Weld Completion				10 %				Acceptable								
17/25/1/_		**00**	**25-09-2024**	**18**	**AZ39**			**TEE**		**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**26-09-2024**	**B**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK			Acceptable					26-09-2024			
		RT	FIN	Weld Completion				10 %				Acceptable								
18/25/1/_		**00**	**26-09-2024**	**19-85**	**AZ39**			**FWN**		**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**17-12-2024**	**C**
					AZ53	**After Cutting**														

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Cont.	Accept. Date	Spool
18/25/1/_		**00**	**26-09-2024**	**19-85**	**AZ39**			**FWN**	**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**17-12-2024**	**C**
					AZ53	**After Cutting**													
2		VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				28-09-2024				
		RT	FIN	Weld Completion				10 %			Acceptable								
Cut 14-12-2024		VIS	C 1 DTA	After Cutting		123A90-PML-QHSE-PRO-00103 Rev 00	AGAVELLA	100 %	OK		Acceptable	B1A	GTAW		17-12-2024				
		RT	C 1 DTA	After Cutting				10 %			Acceptable								
19/25/1/_		**00**	**25-09-2024**	**18-84**	**AZ39**			**TEE**	**0,75 in**	**2,87 mm**	**V**	**0,083 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**17-12-2024**	**C**
					AZ53	**After Cutting**													
2		VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				26-09-2024				
		RT	FIN	Weld Completion				10 %			Acceptable								
Cut 16-12-2024		VIS	C 1 DTA	After Cutting		123A90-PML-QHSE-PRO-00103 Rev 00	AGAVELLA	100 %	OK		Acceptable	B1A	GTAW		17-12-2024				
		RT	C 1 DTA	After Cutting				10 %			Acceptable								
20/25/1/_		**00**	**25-09-2024**	**18-84**	**AZ39**			**PIPE**	**0,75 in**	**2,87 mm**	**V**	**0,083 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**18-12-2024**	**C**
					AZ53	**After Cutting**													
2		VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				26-09-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	10 %	000172	4	Acceptable				06-10-2024				
Cut 16-12-2024		VIS	C 1 DTA	After Cutting		123A90-PML-QHSE-PRO-00103 Rev 00	AGAVELLA	100 %	OK		Acceptable	B1A	GTAW		17-12-2024				
		RT	C 1 DTA	After Cutting		IDL-QCI-RT 0036 00	AA	10 %	001073	4	Acceptable				18-12-2024				
21/25/1/_		**00**	**26-09-2024**	**19-85**	**AZ39**			**TEE**	**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**17-12-2024**	**C**
					AZ53	**After Cutting**													
2		VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				28-09-2024				
		RT	FIN	Weld Completion				10 %			Acceptable								
Cut 14-12-2024		VIS	C 1 DTA	After Cutting		123A90-PML-QHSE-PRO-00103 Rev 00	AGAVELLA	100 %	OK		Acceptable	B1A	GTAW		17-12-2024				
		RT	C 1 DTA	After Cutting				10 %			Acceptable								
22/25/1/_		**00**	**23-09-2024**	**17**	**AZ39**			**FWN**	**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**24-09-2024**	**D**
2		VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable				24-09-2024				
		RT	FIN	Weld Completion				10 %			Acceptable								
23/25/1/_		**00**	**26-09-2024**	**19**	**AZ39**			**ELB**	**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**28-09-2024**	**D**
2		VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				28-09-2024				
		RT	FIN	Weld Completion				10 %			Acceptable								
24/25/1/_		**00**	**26-09-2024**	**19**	**AZ39**			**PIPE**	**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**28-09-2024**	**D**
2		VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				28-09-2024				

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	N. Rep	Dimension	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Conn	Accept. Date	Spool
24/25/1/_		**00**	**26-09-2024**	**19**	**AZ39**			**PIPE**		**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**28-09-2024**	**D**
		RT	FIN	Weld Completion				10 %				Acceptable								
25/25/1/_		**00**	**25-09-2024**	**18**	**AZ39**			**TEE**		**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**26-09-2024**	**D**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK			Acceptable					26-09-2024			
		RT	FIN	Weld Completion				10 %				Acceptable								
26/25/1/_		**00**	**26-09-2024**	**19**	**AZ39**			**TEE**		**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**28-09-2024**	**D**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK			Acceptable					28-09-2024			
		RT	FIN	Weld Completion				10 %				Acceptable								
27/25/1/_		**00**	**23-09-2024**	**17**	**AZ39**			**ELB**		**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**24-09-2024**	**D**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK			Acceptable					24-09-2024			
		RT	FIN	Weld Completion				10 %				Acceptable								
28/25/1/_		**00**	**30-12-2024**	**110**	**AX416**			**TEE**		**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**M**	**S.D.**	**B1A**	**GTAW**	**BW**	**31-12-2024**	
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK			Acceptable					31-12-2024			
		RT	FIN	Weld Completion				10 %				Acceptable								

Totals per DWG	**25**	**Prefabrication**	**3,75 m**	**27 Nr. Welds**	**37,50 inch**
		Erection	**0,15 m**	**1 Nr. Welds**	**1,50 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**3,90 m**	**28 Nr. Welds**	**39,00 inch**
		Accepted	**3,90 m**	**28 Nr. Welds**	**39,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Discipline		**Prefabrication**	**3,75 m**	**27 Nr. Welds**	**37,50 inch**
		Erection	**0,15 m**	**1 Nr. Welds**	**1,50 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**3,90 m**	**28 Nr. Welds**	**39,00 inch**
		Accepted	**3,90 m**	**28 Nr. Welds**	**39,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Project		**Prefabrication**	**3,75 m**	**27 Nr. Welds**	**37,50 inch**
		Erection	**0,15 m**	**1 Nr. Welds**	**1,50 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**3,90 m**	**28 Nr. Welds**	**39,00 inch**
		Accepted	**3,90 m**	**28 Nr. Welds**	**39,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**

Cliente/Contractor	**CROSSWIND**	Preparato da/Prepared by	Controllato da/Checked by	Approvato da/Approved by
SubContrattista/SubContractor	**ROSETTIMARINO/GROUPOFCOMPANY**	Nome/Name: Antonio Galesi	Nome/Name:	Nome/Name:
Progetto/Project	**Hollandse Kust Noord Wind Park Project**			
Commessa/Job	**123A90 - Piping**			
Disciplina/Discipline	**PIPING**			
TitoloDocumento/DocumentTitle	**Material Traceability Report**	StatoDocumento/Document Status:		Data/Date: 20/01/2025
RosettiDoc.Num.	**123A90MTR001**			

Sketch no.	Rev.	sheet	Spool	Piping Class	pos.	Q.ty (n° - m)	Description	Heat/Serial Number	PurchaseOrder	Pos. Order	Mat. Certificate	Weld Ref.	Note
25	00	1	A	01SD	8	1	90 Deg Elbow Long Radius BW ›1.1/2" Thk.3,68mm ASTM A815 UNS S32760	1023SA024	1724000839	00250	1023SA024	W2-W3	
25	00	1	A	01SD	10	1	Flange WN ›1.1/2" Thk.3,68mm 150LB RF ASTM A182 Gr.F55	E170081	1724000839	00900	770	W1	
25	00	1	A	01SD	10	1	Flange WN ›1.1/2" Thk.3,68mm 150LB RF ASTM A182 Gr.F55	E170081	1724000839	00900	770	W3	
25	00	1	A	01SD	1A	0,12	Pipe 48.3mm(1.1/2") thk.3,68mm ASTM A790 UNS S32760	556787	1724000839	00040	A/198-847363		
25	00	1	B	01SD	4	1	Tee Reducing BW ›1.1/2"x1" Thk.3,68mmx3,38mm ASTM A815 UNS S32760	1005SA022	1724000839	00520	1005SA022	W4-W5-W6	
25	00	1	B	01SD	4	1	Tee Reducing BW ›1.1/2"x1" Thk.3,68mmx3,38mm ASTM A815 UNS S32760	1005SA022	1724000839	00520	1005SA022	W8-W9-W11	
25	00	1	B	01SD	5	1	Tee BW ›1.1/2" Thk.3,68mm ASTM A815 UNS S32760	1157SA019	1724000839	00450	1157SA019	W12-W13	
25	00	1	B	01SD	5	1	Tee BW ›1.1/2" Thk.3,68mm ASTM A815 UNS S32760	1157SA019	1724000839	00450	1157SA019	W14-W15-W17	
25	00	1	B	01SD	7	1	Reducer Concentric BW ›2"x1.1/2" Thk.2,77mmx3,68mm ASTM A815 UNS S32760	1018SA019	1724000839	00320	1018SA019	W15-W16	
25	00	1	B	01SD	8	1	90 Deg Elbow Long Radius BW ›1.1/2" Thk.3,68mm ASTM A815 UNS S32760	1023SA024	1724000839	00250	1023SA024	W6-W7	
25	00	1	B	01SD	9	1	Flange WN ›2" Thk.2.77mm 150LB RF ASTM A182 Gr.F55	555304	1724000839	00880	770	W16	
25	00	1	B	01SD	10	1	Flange WN ›1.1/2" Thk.3,68mm 150LB RF ASTM A182 Gr.F55	E170081	1724000839	00900	770	W4	
25	00	1	B	01SD	10	1	Flange WN ›1.1/2" Thk.3,68mm 150LB RF ASTM A182 Gr.F55	E170081	1724000839	00900	770	W17	
25	00	1	B	01SD	11	1	Flange WN ›1" Thk.3.38mm 150LB RF ASTM A182 Gr.F55	407642	1724000839	00870	770	W5	
25	00	1	B	01SD	12	1	Flange WN For Jackscrews ›1" Thk.3,38mm 150LB RF ASTM A182 Gr.F55	407642	1724000839	01150	770	W10	
25	00	1	B	01SD	1B	0,115	Pipe 48.3mm(1.1/2") thk.3,68mm ASTM A790 UNS S32760	556787	1724000839	00040	A/198-847363		
25	00	1	B	01SD	1D	0,25	Pipe 48.3mm(1.1/2") thk.3,68mm ASTM A790 UNS S32760	556787	1724000839	00040	A/198-847363		
25	00	1	B	01SD	1E	0,164	Pipe 48.3mm(1.1/2") thk.3,68mm ASTM A790 UNS S32760	556787	1724000839	00040	A/198-847363		
25	00	1	B	01SD	2C	0,132	Pipe 33.4mm(1") thk.3.38mm ASTM A790 UNS S32760	556787	1724000839	00040	A/198-847363		
25	00	1	C	01SD	6	1	Tee Reducing BW ›1.1/2"x3/4" Thk.3,68mmx2,87mm ASTM A815 UNS S32760	1181SA05	1724000839	00510	1181SA05	W18-W19-W21	
25	00	1	C	01SD	10	1	Flange WN ›1.1/2" Thk.3,68mm 150LB RF ASTM A182 Gr.F55	E170081	1724000839	00900	770	W18	
25	00	1	C	01SD	10	1	Flange WN ›1.1/2" Thk.3,68mm 150LB RF ASTM A182 Gr.F55	E170081	1724000839	00900	770	W21	
25	00	1	C	01SD	13	1	Flange WN ›3/4" Thk.2,87mm 150LB RF ASTM A182 Gr.F55	407642	1724000839	00890	770	W20	
25	00	1	C	01SD	3F	0,1	Pipe 26.7mm(3/4") thk.2,87mm ASTM A790 UNS S32760	739859	1724000839	00030	4-24-00368-REV.01		
25	00	1	D	01SD	4	1	Tee Reducing BW ›1.1/2"x1" Thk.3,68mmx3,38mm ASTM A815 UNS S32760	1005SA022	1724000839	00520	1005SA022	W24-W25-W26	
25	00	1	D	01SD	8	1	90 Deg Elbow Long Radius BW ›1.1/2" Thk.3,68mm ASTM A815 UNS S32760	1023SA024	1724000839	00250	1023SA024	W22-W23	
25	00	1	D	01SD	8	1	90 Deg Elbow Long Radius BW ›1.1/2" Thk.3,68mm ASTM A815 UNS S32760	1023SA024	1724000839	00250	1023SA024	W26-W27	
25	00	1	D	01SD	10	1	Flange WN ›1.1/2" Thk.3,68mm 150LB RF ASTM A182 Gr.F55	E170081	1724000839	00900	770	W22	
25	00	1	D	01SD	10	1	Flange WN ›1.1/2" Thk.3,68mm 150LB RF ASTM A182 Gr.F55	E170081	1724000839	00900	770	W27	
25	00	1	D	01SD	11	1	Flange WN ›1" Thk.3.38mm 150LB RF ASTM A182 Gr.F55	407642	1724000839	00870	770	W25	
25	00	1	D	01SD	1G	0,25	Pipe 48.3mm(1.1/2") thk.3,68mm ASTM A790 UNS S32760	556787	1724000839	00040	A/198-847363		

Rosetti Marino S.p.A.

Welding Register

Job	123A90	BASE LOAD POWER HUB (BLPH)			
From Discipline	PP	Piping			
To Discipline	PP	Piping			
Drawings		**From**	59	**To**	59
Sheet		**From**	0	**To**	0
Marks		**From**		**To**	
Location		**From**		**To**	
Material		**From**		**To**	
Welds Execution		**From**		**To**	
Welds Acceptance		**From**		**To**	
Report Date		**From**		**To**	
Prefabrication	All				
Welding Status	All				
ITEM					
ADDITIONAL PARAMETERS	**LINE**	**From**		**To**	
	SPOOL	**From**		**To**	
		From		**To**	

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders / Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Cont.	Accept. Date	Spool
1/59/1/_		**00**	**26-09-2024**	**19**	**AZ39**		**FWN**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**28-09-2024**	**A**
01SD	2	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				28-09-2024				
		RT	FIN	Weld Completion			10 %			Acceptable								
2/59/1/_		**00**	**26-09-2024**	**19**	**AZ39**		**PIPE**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**28-09-2024**	**A**
	2	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				28-09-2024				
		RT	FIN	Weld Completion			10 %			Acceptable								

Totals per DWG	**59**	**Prefabrication**	**0,20 m**	**2 Nr. Welds**	**2,00 inch**
		Erection	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**0,20 m**	**2 Nr. Welds**	**2,00 inch**
		Accepted	**0,20 m**	**2 Nr. Welds**	**2,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Discipline		**Prefabrication**	**0,20 m**	**2 Nr. Welds**	**2,00 inch**
		Erection	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**0,20 m**	**2 Nr. Welds**	**2,00 inch**
		Accepted	**0,20 m**	**2 Nr. Welds**	**2,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Project		**Prefabrication**	**0,20 m**	**2 Nr. Welds**	**2,00 inch**
		Erection	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**0,20 m**	**2 Nr. Welds**	**2,00 inch**
		Accepted	**0,20 m**	**2 Nr. Welds**	**2,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**

CROSSWIND / ROSETTI MARINO	Cliente/Contractor	**CROSSWIND**	Preparato da/Prepared by	Controllato da/Checked by	Approvato da/Approved by
	SubContrattista/SubContractor	**ROSETTIMARINO/GROUPOFCOMPANY**	Nome/Name: Antonio Galesi	Nome/Name:	Nome/Name:
	Progetto/Project	**Hollandse Kust Noord Wind Park Project**			
	Commessa/Job	**123A90 - Piping**			
	Disciplina/Discipline	**PIPING**			
	TitoloDocumento/DocumentTitle	**Material Traceability Report**	StatoDocumento/Document Status:		Data/Date: 20/01/2025
	RosettiDoc.Num.	**123A90MTR001**			

Sketch no.	Rev.	sheet	Spool	Piping Class	pos.	Q.ty (n° - m)	Description	Heat/Serial Number	PurchaseOrder	Pos. Order	Mat. Certificate	Weld Ref.	Note
59	00	1	A	01SD	2	1	Flange WN For Jackscrews ›1" Thk.3,38mm 150LB RF ASTM A182 Gr.F55	407642	1724000839	01150	770	W1	
59	00	1	A	01SD	3	1	Flange WN ›1" Thk.3.38mm 150LB RF ASTM A182 Gr.F55	407642	1724000839	00870	770	W2	
59	00	1	A	01SD	1A	0,482	Pipe 33.4mm(1") thk.3.38mm ASTM A790 UNS S32760	BC2877	1724000839	00010	751007		

Rosetti Marino S.p.A.

Welding Register

Job	123A90	BASE LOAD POWER HUB (BLPH)			
From Discipline	PP	Piping			
To Discipline	PP	Piping			
Drawings		**From**	60	**To**	60
Sheet		**From**	0	**To**	0
Marks		**From**		**To**	
Location		**From**		**To**	
Material		**From**		**To**	
Welds Execution		**From**		**To**	
Welds Acceptance		**From**		**To**	
Report Date		**From**		**To**	
Prefabrication	All				
Welding Status	All				
ITEM					
ADDITIONAL PARAMETERS	**LINE**	**From**		**To**	
	SPOOL	**From**		**To**	
		From		**To**	

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders / Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Conn	Accept. Date	Spool
1/60/1/_		**00**	**26-09-2024**	**19**	**AZ39**		**FWN**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**28-09-2024**	**A**
01SD	2	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				28-09-2024				
		RT	FIN	Weld Completion			10 %			Acceptable								
2/60/1/_		**00**	**26-09-2024**	**19**	**AZ39**		**PIPE**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**28-09-2024**	**A**
	2	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				28-09-2024				
		RT	FIN	Weld Completion			10 %			Acceptable								

Totals per DWG	**60**	**Prefabrication**	**0,20 m**	**2 Nr. Welds**	**2,00 inch**
		Erection	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**0,20 m**	**2 Nr. Welds**	**2,00 inch**
		Accepted	**0,20 m**	**2 Nr. Welds**	**2,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Discipline		**Prefabrication**	**0,20 m**	**2 Nr. Welds**	**2,00 inch**
		Erection	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**0,20 m**	**2 Nr. Welds**	**2,00 inch**
		Accepted	**0,20 m**	**2 Nr. Welds**	**2,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Project		**Prefabrication**	**0,20 m**	**2 Nr. Welds**	**2,00 inch**
		Erection	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**0,20 m**	**2 Nr. Welds**	**2,00 inch**
		Accepted	**0,20 m**	**2 Nr. Welds**	**2,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**

CROSSWIND / ROSETTI MARINO	Cliente/Contractor	**CROSSWIND**	Preparato da/Prepared by	Controllato da/Checked by	Approvato da/Approved by
	SubContrattista/SubContractor	**ROSETTIMARINO/GROUPOFCOMPANY**	Nome/Name: Antonio Galesi	Nome/Name:	Nome/Name:
	Progetto/Project	**Hollandse Kust Noord Wind Park Project**			
	Commessa/Job	**123A90 - Piping**			
	Disciplina/Discipline	**PIPING**			
	TitoloDocumento/DocumentTitle	**Material Traceability Report**	StatoDocumento/Document Status:		Data/Date: 20/01/2025
	RosettiDoc.Num.	**123A90MTR001**			

Sketch no.	Rev.	sheet	Spool	Piping Class	pos.	Q.ty (n° - m)	Description	Heat/Serial Number	PurchaseOrder	Pos. Order	Mat. Certificate	Weld Ref.	Note
60	00	1	A	01SD	2	1	Flange WN For Jackscrews ›1" Thk.3,38mm 150LB RF ASTM A182 Gr.F55	407642	1724000839	01150	770	W1	
60	00	1	A	01SD	3	1	Flange WN ›1" Thk.3.38mm 150LB RF ASTM A182 Gr.F55	407642	1724000839	00870	770	W2	
60	00	1	A	01SD	1A	0,485	Pipe 33.4mm(1") thk.3.38mm ASTM A790 UNS S32760	BC2877	1724000839	00010	751007		

Rosetti Marino S.p.A.

Welding Register

Job	123A90	BASE LOAD POWER HUB (BLPH)			
From Discipline	PP	Piping			
To Discipline	PP	Piping			
Drawings		**From**	150	**To**	150
Sheet		**From**	0	**To**	0
Marks		**From**		**To**	
Location		**From**		**To**	
Material		**From**		**To**	
Welds Execution		**From**		**To**	
Welds Acceptance		**From**		**To**	
Report Date		**From**		**To**	
Prefabrication	All				
Welding Status	All				
ITEM					
ADDITIONAL PARAMETERS	**LINE**	**From**		**To**	
	SPOOL	**From**		**To**	
		From		**To**	

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Cont.	Accept. Date	Spool
1/150/1/_		**01**	**07-11-2024**	**70**	**AZ39**			**RED**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**12-11-2024**	**A**
01SD	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					12-11-2024			
		RT	FIN	Weld Completion				10 %			Acceptable								
2/150/1/_		**01**	**07-11-2024**	**70**	**AZ39**			**ELB**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**12-11-2024**	**A**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					12-11-2024			
		RT	FIN	Weld Completion				10 %			Acceptable								
3/150/1/_		**01**	**26-09-2024**	**19-73**	**AZ39**	**Welding + Repair done**		**FWN**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**12-11-2024**	**B**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					28-09-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	10 %	000152	4	Acceptable					06-10-2024			
Cut 07-11-2024		VIS	C 1 DTA	After Cutting		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable	B1A	GTAW			12-11-2024			
		RT	C 1 DTA	After Cutting				10 %			Acceptable								
4/150/1/_		**01**	**26-09-2024**	**19-73**	**AZ39**	**Welding + Repair done**		**PIPE**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**12-11-2024**	**B**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					28-09-2024			
		RT	FIN	Weld Completion				10 %			Acceptable								
Cut 07-11-2024		VIS	C 1 DTA	After Cutting		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable	B1A	GTAW			12-11-2024			
		RT	C 1 DTA	After Cutting				10 %			Acceptable								

Totals per DWG	**150**	**Prefabrication**	**0,40 m**	**4 Nr. Welds**	**4,00 inch**
		Erection	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**0,40 m**	**4 Nr. Welds**	**4,00 inch**
		Accepted	**0,40 m**	**4 Nr. Welds**	**4,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Discipline		**Prefabrication**	**0,40 m**	**4 Nr. Welds**	**4,00 inch**
		Erection	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**0,40 m**	**4 Nr. Welds**	**4,00 inch**
		Accepted	**0,40 m**	**4 Nr. Welds**	**4,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Project		**Prefabrication**	**0,40 m**	**4 Nr. Welds**	**4,00 inch**
		Erection	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**0,40 m**	**4 Nr. Welds**	**4,00 inch**
		Accepted	**0,40 m**	**4 Nr. Welds**	**4,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**

Cliente/Contractor	**CROSSWIND**	Preparato da/Prepared by	Controllato da/Checked by	Approvato da/Approved by
SubContrattista/SubContractor	**ROSETTIMARINO/GROUPOFCOMPANY**	Nome/Name:	Nome/Name:	Nome/Name:
Progetto/Project	**Hollandse Kust Noord Wind Park Project**			
Commessa/Job	**123A90 - Piping**			
Disciplina/Discipline	**PIPING**	Antonio Galesi		
TitoloDocumento/DocumentTitle	**Material Traceability Report**	StatoDocumento/Document Status:		Data/Date:
RosettiDoc.Num.	**123A90MTR001**			20/01/2025

Sketch no.	Rev.	sheet	Spool	Piping Class	pos.	Q.ty (n° - m)	Description	Heat/Serial Number	PurchaseOrder	Pos. Order	Mat. Certificate	Weld Ref.	Note
150	00	1	A	01SD	2	1	Reducer Concentric BW ›1.1/2"x1" Thk.3,68mmx3,38mm ASTM A815 UNS S32760	1004SA024	1724001828	00120	1004SA024	W1	
150	00	1	A	01SD	3	1	90 Deg Elbow Long Radius BW ›1" Thk.3.38mm ASTM A815 UNS S32760	1035SA022	1724000839	00240	1035SA022	W1-W2	
150	00	1	A	01SD	4	1	Flange WN ›1" Thk.3.38mm 150LB RF ASTM A182 Gr.F55	407642	1724000839	00870	770	W2	
150	00	1	B	01SD	4	1	Flange WN ›1" Thk.3.38mm 150LB RF ASTM A182 Gr.F55	407642	1724000839	00870	770	W3	
150	00	1	B	01SD	4	1	Flange WN ›1" Thk.3.38mm 150LB RF ASTM A182 Gr.F55	407642	1724000839	00870	770	W4	
150	00	1	B	01SD	1A	0,1	Pipe 33.4mm(1") thk.3.38mm ASTM A790 UNS S32760	BC2877	1724000839	00010	751007		
150	00	1	B	01SD	4	1	Flange WN ›1" Thk.3.38mm 150LB RF ASTM A182 Gr.F55	407642	1724000839	00870	770	W3	
150	00	1	B	01SD	4	1	Flange WN ›1" Thk.3.38mm 150LB RF ASTM A182 Gr.F55	407642	1724000839	00870	770	W4	
150	00	1	B	01SD	1A	0,1	Pipe 33.4mm(1") thk.3.38mm ASTM A790 UNS S32760	BC2877	1724000839	00010	751007		

Rosetti Marino S.p.A.

Welding Register

Job	123A90	BASE LOAD POWER HUB (BLPH)			
From Discipline	PP	Piping			
To Discipline	PP	Piping			
Drawings		**From**	152	**To**	152
Sheet		**From**	0	**To**	0
Marks		**From**		**To**	
Location		**From**		**To**	
Material		**From**		**To**	
Welds Execution		**From**		**To**	
Welds Acceptance		**From**		**To**	
Report Date		**From**		**To**	
Prefabrication	All				
Welding Status	All				
ITEM					
ADDITIONAL PARAMETERS	**LINE**	**From**		**To**	
	SPOOL	**From**		**To**	
		From		**To**	

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Conn	Accept. Date	Spool
1/152/1/_		**01**	**07-11-2024**	**70**	**AZ39**			**RED**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**13-11-2024**	**A**
01SD	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				12-11-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	10 %	000982	4	Acceptable				13-11-2024				
2/152/1/_		**01**	**07-11-2024**	**70**	**AZ39**			**ELB**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**13-11-2024**	**A**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				12-11-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	10 %	000983	4	Acceptable				13-11-2024				
3/152/1/_		**01**	**26-09-2024**	**19**	**AZ39**			**FWN**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**28-09-2024**	**B**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				28-09-2024				
		RT	FIN	Weld Completion				10 %			Acceptable								
4/152/1/_		**01**	**26-09-2024**	**19**	**AZ39**			**PIPE**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**28-09-2024**	**B**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				28-09-2024				
		RT	FIN	Weld Completion				10 %			Acceptable								

Totals per DWG	**152**	**Prefabrication**	**0,40 m**	**4 Nr. Welds**	**4,00 inch**
		Erection	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**0,40 m**	**4 Nr. Welds**	**4,00 inch**
		Accepted	**0,40 m**	**4 Nr. Welds**	**4,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Discipline		**Prefabrication**	**0,40 m**	**4 Nr. Welds**	**4,00 inch**
		Erection	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**0,40 m**	**4 Nr. Welds**	**4,00 inch**
		Accepted	**0,40 m**	**4 Nr. Welds**	**4,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Project		**Prefabrication**	**0,40 m**	**4 Nr. Welds**	**4,00 inch**
		Erection	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**0,40 m**	**4 Nr. Welds**	**4,00 inch**
		Accepted	**0,40 m**	**4 Nr. Welds**	**4,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**

Cliente/Contractor	**CROSSWIND**	Preparato da/Prepared by	Controllato da/Checked by	Approvato da/Approved by
SubContrattista/SubContractor	**ROSETTIMARINO/GROUPOFCOMPANY**	Nome/Name: Antonio Galesi	Nome/Name:	Nome/Name:
Progetto/Project	**Hollandse Kust Noord Wind Park Project**			
Commessa/Job	**123A90 - Piping**			
Disciplina/Discipline	**PIPING**			
TitoloDocumento/DocumentTitle	**Material Traceability Report**	StatoDocumento/Document Status:		Data/Date: 20/01/2025
RosettiDoc.Num.	**123A90MTR001**			

Sketch no.	Rev.	sheet	Spool	Piping Class	pos.	Q.ty (n° - m)	Description	Heat/Serial Number	PurchaseOrder	Pos. Order	Mat. Certificate	Weld Ref.	Note
152	00	1	A	01SD	2	1	Reducer Concentric BW ›1.1/2"x1" Thk.3,68mmx3,38mm ASTM A815 UNS S32760	1004SA024	1724001828	00120	1004SA024	W1	
152	00	1	A	01SD	3	1	90 Deg Elbow Long Radius BW ›1" Thk.3.38mm ASTM A815 UNS S32760	1035SA022	1724000839	00240	1035SA022	W1-W2	
152	00	1	A	01SD	4	1	Flange WN ›1" Thk.3.38mm 150LB RF ASTM A182 Gr.F55	407642	1724000839	00870	770	W2	
152	00	1	B	01SD	4	1	Flange WN ›1" Thk.3.38mm 150LB RF ASTM A182 Gr.F55	407642	1724000839	00870	770	W3	
152	00	1	B	01SD	4	1	Flange WN ›1" Thk.3.38mm 150LB RF ASTM A182 Gr.F55	407642	1724000839	00870	770	W4	
152	00	1	B	01SD	1A	0,1	Pipe 33.4mm(1") thk.3.38mm ASTM A790 UNS S32760	BC2877	1724000839	00010	751007		

8. PIPING & VESSEL PRE-COMMISSIONING CONFORMITY CHECKS & TESTS:

8.1 CLX02A - Pipework Before test

8.2 CLX02B - Pipework After Test

8.3 CXX01 - Thermal insulation

8.4 CXX02 – Painting Line - NOT APPLICABLE

8.5 TMX03 – Cleaning

8.6 TMX05 – Pressure test

8.7 TMX25 – Gross Air Leak Test - NOT APPLICABLE

8.8 TMX27 – Bolt Tensioning / Torquing

8.9 TPLX05 - Drying

ITEM	Tag	50-00-TP-001	: Test Pack 50-00-TP-001			Dwg	123A90-DDL-PR-PID-80021
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10003239		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity STS	Discipline	Piping	Form	TPLX05 Drying

1	Drying out method :	Drying with dry air.
2	Operation description :	Dried the system using a flow of dry air, ensuring all drains/vents (when present) were open to facilitate the removal of moisture. Continued the drying until no moisture remained in the system, particularly in areas that were difficult to reach. After drying, inlet and outlet points were closed with covers.
3	Temporary means :	Blind flanges and plugs, if necessary, to isolate inlet and outlet points during process. Covers to close all openings after the drying.
4	Dew point (obtain after soaking and nitrogen purging):	NA
5	Valve body cavity, branches, etc.. Have been drained form residual water	●
	Attachments	
6	Procedures	
7	Sketches and drawings	
8	Pressure records	
9	Records of failures	
10	SAFETY PRECAUTIONS:	Blind flanges and plugs, if necessary, to isolate inlet and outlet points during process. Covers to close all openings after the drying.
11	REMARKS:	None

Page 1/1	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-01-22	2025-01-25	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-22T05:24:13.495Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-01-25T06:59:46.588Z	

ITEM	Tag	50-00-TP-028	: Test Pack 50-00-TP-028			Dwg	123A90-DDL-PR-PID-80021-22
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10003443		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	CLX02A Pipework Before Test

1	Check for each line of the Test Pack the NDT clearance.	OK
2	Confirm that materials conforms to the line specifications (ref. to the last issued revision of the isometric material table)	OK
3	Check the installation of all pipe – supports are in accordance with the specifications and drawings.	PL
4	Check that pipework at pump and vessel nozzles are free from spring.	PL
5	Check that the pipe flanges have been mounted square to each other. Also that the bolting and gaskets are correct (all TMX27 are complete, if necessary).	PL
6	Check bolt tightening and flange management (excluded battery limit joints).	PL
7	Check that the flow direction of the valves and check – valve is in the correct sense / direction (ball valves to be set at half open).	Note
8	Check that the removed equipment is in accordance with the agreed list of fragile devices. Check valve should be removed or flappers locked.	OK
9	Check that spool pieces or other substitution means have been put in place instead of the removed fragile device.	OK
10	Check the Blind list.	NA
11	Check that all the temporary material to perform the task are conforms to the procedure & suitable pressure rating.	OK
12	If required produce Red Line Mark Up for "AS BUILT".	

Comments: BLPH-MV-471 has not been assembled before testing, differently from isometric and P&I.

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (Rosetti Marino)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-01-15	2025-01-15	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-15T06:21:47.633Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-01-15T07:05:27.383Z	

ITEM	Tag	50-00-TP-028	: Test Pack 50-00-TP-028			Dwg	123A90-DDL-PR-PID-80021-22
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10003444		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	CLX02B Pipework After Test

1	Check that the pipework and equipment are drained as per procedure.	OK
2	Check if all temporary equipment (test spades, filters ,spool pieces..etc) have been removed.	OK
3	All plugs installed on vents and drains for test have been removed.	OK
4	Check that all removed devices and valves have been re-installed.	OK
5	Check that the new gaskets have been installed after pipework and equipment reinstallation.	OK
6	All specific blinds and / or spectacle blinds have been correctly installed as per P&ID.	NA
7	Check that the pipework, valves , check valves are undamaged. Also check the ancillaries and any other components.	OK
8	After the (re) installation of a valve check that it operates freely.	OK
9	Check that the flow direction of the valves and check – valve is in correct sense /direction in correct open/closed position as per P&ID.	OK
10	Check all locking device.	OK
11	Check that the valves have been correctly lubricated and that they have the correct spindle packing.	NA
12	Check that all the bolts and fasteners are suitably lubricated inline with the flange management procedure.	OK
13	Check that the bolts have been tightned at opened joints.	OK
14	Check that all golden welds (final tie-ins without hydrotest) have been performed as per procedure.	NA
15	Check for the correct tagging, labeling and colour coding of pipework and equipment (only for bare pipe lines).	NA
16	Check that the pipework and equipment (re) installation conforms to the specifications, drawings and to the P&ID's.	PL
17	If required produce Red Line Mark Up for "AS BUILT".	

Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Lorenzo Novaga	
Date	2025-02-06	2025-03-10	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-02-06T15:30:06.514Z	PROVERLIS Digitaly signed by Lorenzo Novaga 2025-03-10T11:52:20.389Z	

ITEM	Tag	50-00-TP-028	: Test Pack 50-00-TP-028			Dwg	123A90-DDL-PR-PID-80021-22
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10003445		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Piping	Form	CXX01 Thermal Insulation

1	Ensure CLX02B Pipework After Test (reinstatement) check completed.	OK
2	Ensure CXX02 "Painting Line" check (for the concerned insulated lines) completed.	OK
3	Ensure CPX22A "Heat tracing Before Insulation" check completed.	OK
4	Check that the insulation and cladding materials conform to the specifications.	PL
5	Check that the insulation is compatible with the Heat tracing system.	OK
6	Check that the surface condition prior to the application of the insulation	OK
7	Check the installation of wire mesh	OK
8	Check the overlap of the metal cladding.	PL
9	Check that each joint is sealed with a suitable sealant specified for water proofing.	PL
10	Check the staggering of the metal cladding joints and verify that they have been applied as per the specifications.	PL
11	Control that the locking devices boxes opretated satisfactorily.	PL
12	Check the blinds, the spectacles and the instruments are visible.	PL
13	Check the flange accessibility without damaging the insulation.	PL
14	Check that color coding/line marking/flow direction are correct	OK

Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RM_CONSTR (ROSETTI MARINO)	RM (ROSETTI MARINO)	
Name	Gianluca De Maglie	Lorenzo Novaga	
Date	2025-03-21	2025-04-02	
Signature	PROVERLIS Digitaly signed by Gianluca De Maglie 2025-03-21T15:22:04.609Z	PROVERLIS Digitaly signed by Lorenzo Novaga 2025-04-02T07:40:37.787Z	

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	50-00-TP-028	: Test Pack 50-00-TP-028		Dwg	123A90-DDL-PR-PID-80021-22	
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)		Module	LD	
TASK	code	C10003446	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity PIP	Discipline Piping	Form	TMX03	Cleaning

CLEANING MEDIUM

Air		Water	●	Steam		Oil		Other		Mechanical	

Component

Chemical treatment: No — NA | Filtration: No | Screen size: NA

EQUIPMENTS

Equipment **removed**	Yes	Agreed list of removed fragile devices to be attached to this Test Sheet	NA
Excepted removed equipments, pipework installation is conform to the specifications & PID's			OK
Equipment **added**	No	Exhaustive list to be attached (temporary filters, spools…etc)	NA

TEST RESULTS

Test date	13/01/2024	Start time	11:00	End time	11:15
Flow rate	NA	Duration	15 min	Medium T°	NA

Operation Description

Connected the water source to the lowest point of the piping system.
Maintained a high flow rate to help dislodging and carry away debrises.
Flushing flow kept until the water exiting the system was clear and free of visible contaminants. Expelled water inspected for any debris to be noted.

Safety Precautions

Restricting access to the area.

Result and comments

Water has been found clear of solid debris. All contaminants have been expelled.

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-01-15	2025-01-15	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-15T06:21:58.971Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-01-15T09:08:08.526Z	

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	50-00-TP-028	: Test Pack 50-00-TP-028		Dwg	123A90-DDL-PR-PID-80021-22	
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)		Module	LD	
TASK	code	C10003447	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity PIP	Discipline Piping	Form	TMX05	Pressure Test

TEST DATA

Reference procedure: 123A90-PML-QHSE-PRO-00092

Design pressure: 7.6 barg | Max test pressure: 9 barg | Min hold period: 30 min

TEST PREPARATION

Check all equipments used for the test are safe for use under pressure (valide certificate)	Yes
Pressure relief devices are installed and in line and set to correct pressure (calibration certificate)	Yes

Medium

Test medium: WATER

TEST RESULTS

Test date: See attachment | Start time: See attachment | End time: See attachment

Ambient temperature is recorded	NA			Test medium temperature is recorded	Yes
Pressure recorded during test hold period	Min: See attachment	Max: See attachment		Variation	See attachment
Line has been depressurised to	NA			At maximum of bar/min	See attachment
Pressure test completed sucessfully and approved	Yes			Temperature and pressure disc chart attached	NA
Instrument calibration certificates attached	Yes			Dead-weight tester log attached	NA
Record of failures and corrective action attached	No			Battery limits of the test attached	Yes

If required produce Red Line Mark Up for "AS BUILT".

Comments: BLPH-MV-471 has not been installed in the line (differently as marked in P&I and isometric battery limit) before the pressure test.

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-01-15	2025-01-15	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-15T06:22:11.513Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-01-15T09:08:25.776Z	

Logger protocol

Protocollo di acquisizione elenco dati

	Log no. *N. elenco dati*	123A90-50-00-TP028

Instrument

Strumento

Electrical pressure gauge *Misuratore di pressione elettronico*	
Model *Modello*	CPG1500
Serial number *Numero di serie*	1A037FON32E
Log temperature *Registrazioni di Temperatura*	Active *Attivo*
Scale range *Campo scala*	(0 ... 1000) bar a
Accuracy *Accuratezza*	0.1 % FS
Tag number *Numero tag*	
Communication *Comunicazione*	Wireless (00:13:43:C5:19:D5)

Measurement conditions

Condizioni di misura

Settings *Impostazioni*	
Mode *Modalità*	Automatic *Automatico*
Interval (ms) *Intervallo (ms)*	60000
Duration (hh:mm:ss) *Durata (hh:mm:ss)*	00:49:24
Start time (hh:mm:ss) *Tempo di avvio (hh:mm:ss)*	11:33:19 am

Logger protocol

Protocollo di acquisizione elenco dati

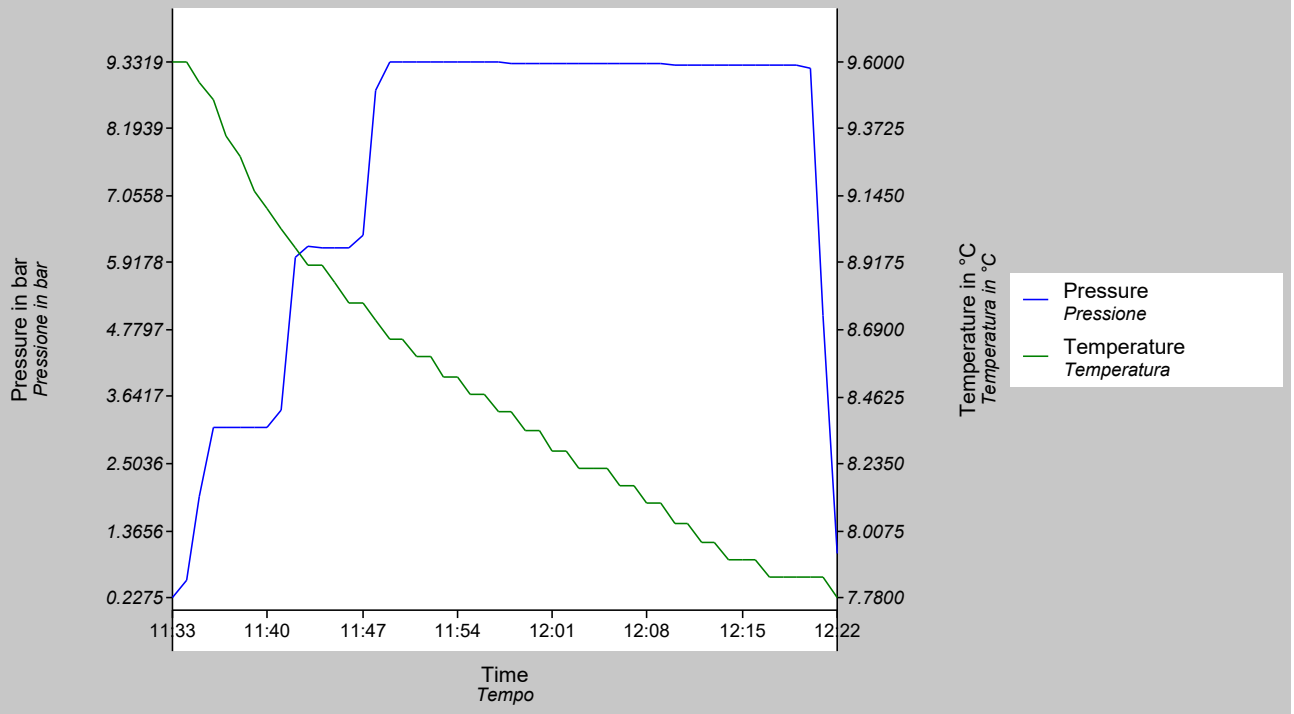
ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	123A90-50-00-TP028

Measurement results

Risultati della misura

Graphical representation of progression
Rappresentazione grafica dell'andamento



Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
01/13/2025 11:33:19.000	0.2275	9.6000
01/13/2025 11:34:19.000	0.5207	9.6000
01/13/2025 11:35:19.000	1.9391	9.5300
01/13/2025 11:36:19.000	3.1113	9.4700
01/13/2025 11:37:19.000	3.1135	9.3500
01/13/2025 11:38:19.000	3.1161	9.2800
01/13/2025 11:39:19.000	3.1182	9.1600
01/13/2025 11:40:19.000	3.1179	9.1000
01/13/2025 11:41:19.000	3.4183	9.0300
01/13/2025 11:42:19.000	6.0006	8.9700
01/13/2025 11:43:19.000	6.1856	8.9100
01/13/2025 11:44:19.000	6.1837	8.9100
01/13/2025 11:45:19.000	6.1825	8.8500
01/13/2025 11:46:19.000	6.1830	8.7800
01/13/2025 11:47:19.000	6.3944	8.7800
01/13/2025 11:48:19.000	8.8581	8.7200
01/13/2025 11:49:19.000	9.3311	8.6600

Logger protocol

Protocollo di acquisizione elenco dati

ROSETTI MARINO
Group of Companies

Log no. *N. elenco dati*	123A90-50-00-TP028

Measurement results

Risultati della misura

Timestamp *Data e ora*	Measured value *Valore misurato* bar	Measured value *Valore misurato* °C
01/13/2025 11:50:19.000	9.3319	8.6600
01/13/2025 11:51:19.000	9.3270	8.6000
01/13/2025 11:52:19.000	9.3268	8.6000
01/13/2025 11:53:19.000	9.3214	8.5300
01/13/2025 11:54:19.000	9.3198	8.5300
01/13/2025 11:55:19.000	9.3226	8.4700
01/13/2025 11:56:19.000	9.3208	8.4700
01/13/2025 11:57:19.000	9.3198	8.4100
01/13/2025 11:58:19.000	9.3154	8.4100
01/13/2025 11:59:19.000	9.3141	8.3500
01/13/2025 12:00:19.000	9.3102	8.3500
01/13/2025 12:01:19.000	9.3126	8.2800
01/13/2025 12:02:19.000	9.3075	8.2800
01/13/2025 12:03:19.000	9.3097	8.2200
01/13/2025 12:04:19.000	9.3048	8.2200
01/13/2025 12:05:19.000	9.3033	8.2200
01/13/2025 12:06:19.000	9.3003	8.1600
01/13/2025 12:07:19.000	9.2986	8.1600
01/13/2025 12:08:19.000	9.2956	8.1000
01/13/2025 12:09:19.000	9.2944	8.1000
01/13/2025 12:10:19.000	9.2879	8.0300
01/13/2025 12:11:19.000	9.2880	8.0300
01/13/2025 12:12:19.000	9.2868	7.9700
01/13/2025 12:13:19.000	9.2823	7.9700
01/13/2025 12:14:19.000	9.2808	7.9100
01/13/2025 12:15:19.000	9.2749	7.9100
01/13/2025 12:16:19.000	9.2761	7.9100
01/13/2025 12:17:19.000	9.2733	7.8500
01/13/2025 12:18:19.000	9.2701	7.8500
01/13/2025 12:19:19.000	9.2729	7.8500
01/13/2025 12:20:19.000	9.2311	7.8500
01/13/2025 12:21:19.000	5.0311	7.8500
01/13/2025 12:22:19.000	0.9829	7.7800

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Centro di Taratura LAT N°114
Calibration Centre
Laboratorio Accreditato di Taratura
Accredited Calibration Laboratory

LAT N° 114

CERTIFICATO DI TARATURA LAT 114 0580-SM-24

Certificate of Calibration

- data di emissione date of issue	2024-12-10
- cliente customer	FAST AUTOMATION SRL VIA DELLA PREVIDENZA SOCIALE, 8 IT-42124 REGGIO EMILIA (RE)
- destinatario receiver	ROSETTI MARINO SPA - YARD PIOMBONI VIA DEL MARCHESATO, 37 IT-48122 MARINA DI RAVENNA (RA)

Il presente certificato di taratura è emesso in base all'accreditamento LAT N. 114 rilasciato in accordo ai decreti attuativi della legge n. 273/1991 che ha istituito il Sistema Nazionale di Taratura (SNT). ACCREDIA attesta le capacità di misura e di taratura, le competenze metrologiche del Centro e la riferibilità delle tarature eseguite ai campioni nazionali ed internazionali delle unità del Sistema Internazionale delle Unità (SI).
Questo certificato non può essere riprodotto in modo parziale, salvo espressa autorizzazione scritta da parte del Centro.

Si riferisce a
referring to

- oggetto *item*	Misuratore di pressione elettronico Electrical pressure gauge
- costruttore *manufacturer*	WIKA
- modello *model*	CPG1500
- matricola *serial number*	1A037FON32E
- data di ricev. oggetto *date of receipt of item*	2024-11-29
- data delle misure *date of measurements*	2024-12-10
- registro di laboratorio *laboratory reference*	0580-SM-24

This certificate of calibration is issued in compliance with the accreditation LAT No.114 granted according to decrees connected with Italian law No. 273/1991 which has established the National Calibration System. ACCREDIA attests the calibration and measurement capability, metrological competence of the Centre and the traceability of calibration results to the national and International standards of the International System of Units (SI).
This certificate may not be partially reproduced, except with the prior written permission of the issuing Centre.

I risultati di misura riportati nel presente Certificato sono stati ottenuti applicando le procedure di taratura citate alla pagina seguente, dove sono specificati anche i campioni o gli strumenti che garantiscono la catena di riferibilità del Centro e i rispettivi certificati di taratura in corso di validità. Essi si riferiscono esclusivamente all'oggetto in taratura e sono validi nel momento e nelle condizioni di taratura, salvo diversamente specificato.

The measurement results reported in this Certificate were obtained following the calibration procedures given in the following page, where the reference standards or instruments are indicated which guarantee the traceability chain of the laboratory, and the related calibration certificates in the course of validity are indicated as well. They relate only to the calibrated item and they are valid for the time and conditions of calibration, unless otherwise specified.

Le incertezze di misura dichiarate in questo documento sono state determinate conformemente alla Guida ISO/IEC 98 e al documento EA-4/02. Solitamente sono espresse come incertezza estesa ottenuta moltiplicando l'incertezza tipo per il fattore di copertura k corrispondente ad un livello di fiducia di circa il 95 %. Normalmente tale fattore k vale 2.

The measurement uncertainties stated in this document have been determined according to the ISO/IEC Guide 98 and to EA-4/02. Usually, they have been estimated as expanded uncertainty obtained multiplying the standard uncertainty by the coverage factor k corresponding to a confidence level of about 95%. Normally, this factor k is 2.

Direzione Tecnica
(Approving Officer)

Enrico Reccagni

Enrico Reccagni

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LAT N° 114

CERTIFICATO DI TARATURA LAT 114 0580-SM-24
Certificate of calibration

CARATTERISTICHE DELLO STRUMENTO IN TARATURA/ Properties of devices under calibration

Misuratore di pressione elettronico *Electrical pressure gauge*	
Tipo *Model*	Misuratore di pressione elettronico Electrical pressure gauge
Numero di matricola *Serial No.*	1A037FON32E
Campo di misura *Scale range*	(0 ... 1000) bar g
Accuratezza dichiarata dal costruttore *Accuracy declared by the manufacturer*	0,1 % FS
Risoluzione *Resolution (scale division)*	0,1 bar
Tag. N. *Tag No.*	--

Procedura di taratura e catena di riferibilità
Calibration procedure and traceability chain

La taratura è stata effettuata in accordo alla linea guida DKD-R 6-1 "Taratura di strumenti di pressione" (versione 03/2014) procedura B, per confronto fra i valori dello strumento in taratura con quelli di riferimento dati dal campione di lavoro.

Calibration was carried out according to DKD-R 6-1 "Kalibrierung von Druckmessgeräten" (Ausgabe 03/2014) procedure B, by comparing the measured values of the calibration item with those of the reference or working standard.

I risultati riportati sono stati ottenuti applicando le procedure n° LMO-PT-01 rev.2

The results have been obtained using the procedures n° LMO-PT-01 rev.2

La catena di riferibilità ha inizio dai campioni di riferimento n° PM1-09

The traceability chain starts from the reference standards n° PM1-09

muniti di certificati validi di taratura, rispettivamente n° D21090

with the relevant valid calibration certificates n° D21090

Luogo di taratura
Place of calibration

Laboratorio WIKA ITALIA - Laboratorio di Modugno (BA)
WIKA ITALY Laboratory - Modugno (BA)

Campione di lavoro
Working Standard

Norma di riferimento (RS) Bilancia di pressione *Reference standard (RS) Dead-weight tester*	
Tipo *Model*	PM1-09
Certificato di taratura *Calibration mark*	D-K-15105/D21090
Campo di misura *Scale range*	(10 ... 2500) bar g
Accuratezza *Accuracy*	0,015 % della lettura + 255 Pa

Operatore
Technichian

Francesco Donatelli

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LAT N° 114

Condizioni di misura
Measurement conditions

Schema di collegamento *Assembly*	
Fluido utilizzato *Pressure medium*	Sebacate *Sebacate*
Livello di riferimento *Refence height (for reference value)*	Superficie di tenuta DUT *Sealing face DUT*
Posizione di montaggio *Position during calibration*	verticale *vertical*

Note di taratura
Calibration Note

Lo strumento è stato tarato e riconsegnato nelle stesse condizioni in cui è arrivato nel laboratorio, in accordo con il metodo "as found as left" / The device under test (DUT) was calibrated in the same conditions it was arrived in laboratory, according to the method "as found as left".

Condizioni Ambientali
Environmental conditions

Temperatura *Temperature*	(22 ± 1,5)	°C
Pressione atmoferica *Atmospheric pressure*	(1007,5 ± 0,2)	hPa
Umidità relativa *Rel. Humidity*	(50 ± 15)	% UR

I dati meteo sono stati acquisiti tramite stazione meteo WIKA CPU6000-W s/n.1A00VCX6GJ2

Weather data were acquired via the WIKA CPU6000-W weather station s/n.1A00VCX6GJ2

Misure rilevate
Measurement results

Valore di riferimento *Reference value RS* bar	**Letture** *Reading DUT* bar		
	M1	**M2**	**M3**
0,00	0,0	0,0	0,0
99,91	100,0	100,0	100,0
199,82	200,0	200,0	200,0
299,73	299,9	300,0	299,9
399,63	399,8	399,9	399,8
499,53	499,6	499,7	499,7
599,44	599,5	599,6	599,5
699,34	699,3	699,4	699,3
799,24	799,2	799,3	799,2
899,14	899,1	899,1	899,1
999,04	999,0	999,0	999,0

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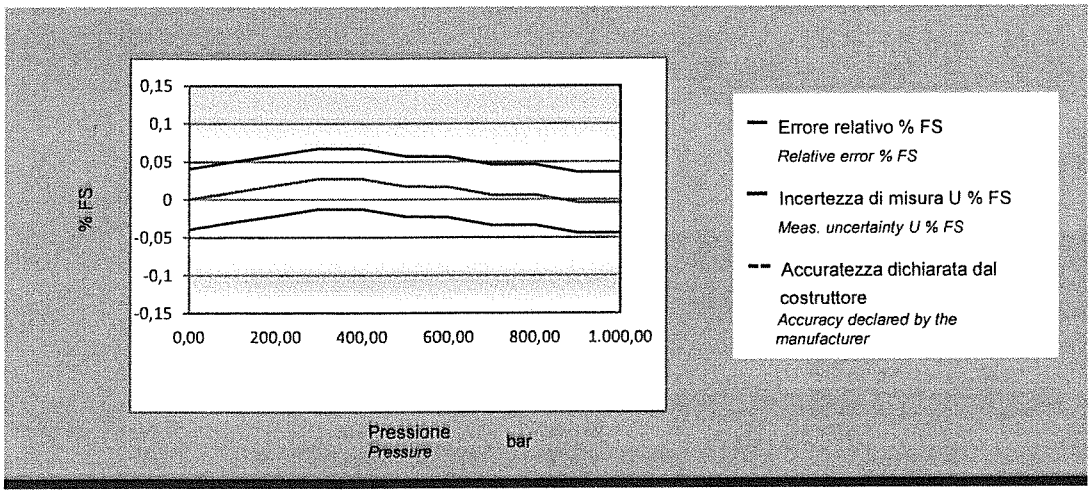
LAT N° 114

CERTIFICATO DI TARATURA LAT 114 0580-SM-24
Certificate of calibration

Incertezza di misura
Uncertainty of measurement

Valori di riferimento *Reference value RS* bar	Media delle misure *Mean value* bar	Errore *Error* bar	Ripetibilità *Repeatability* bar	Isteresi *Hysteresis* bar	Incertezza di misura *Meas. Uncertainty* bar
0,00	0,0	0,0	0,0	0,0	0,40
99,91	100,0	0,1	0,0	0,0	0,40
199,82	200,0	0,2	0,0	0,0	0,40
299,73	300,0	0,3	0,0	0,1	0,40
399,63	399,9	0,3	0,0	0,1	0,40
499,53	499,7	0,2	0,1	0,1	0,40
599,44	599,6	0,2	0,0	0,1	0,40
699,34	699,4	0,1	0,0	0,1	0,40
799,24	799,3	0,1	0,0	0,1	0,40
899,14	899,1	0,0	0,0	0,0	0,40
999,04	999,0	0,0	0,0	0,0	0,40

Grafico degli errori di misura
Graphical representation of measurement uncertainty



L'incertezza estesa senza correzione del DUT è pari a 0,7 bar
The expanded uncertainty of the DUT without correction is equal to

Questo dato è ottenuto come MAX{Incertezza_di_misura$_i$ + |Errore$_i$|} della tabella precedente
This data is obatined as MAX{Meas._uncertainty$_i$ + |Error$_i$|} of the previous table

Il presente certificato non rappresenta una dichiarazione di conformità a specifica
This certificate is not a statement of compliance

Base Load Power Hub (BLPH)

TEST PACK

N°50-00-TP-028
SUB-SYSTEM N° 50-00

System	50
Sub-System	50-00
Test Pressure	9 barg
Test Fluid	WATER
Test Duration	30 min

Rev.	Date	Prepared by	Checked by
0	27/09/2024	J.Q.	L.M.

List of Contents

1. COLOURED MARKED P&IDs
2. PIPING TEST 3D CIRCUIT
3. MATERIAL LIST FOR TEST
4. EXTRACT OF LINE LIST
5. ISOMETRIC RED-MARKED DRAWINGS & EXTRACT OF ISO LIST
6. EXTRACT OF SUPPORT LIST AND DETAILS
7. WELDING REGISTER & MATERIAL TRACEABILITY RECORD
8. PIPING & VESSEL PRE-COMMISSIONING CONFORMITY CHECKS & TESTS:
   - 8.1 CLX02A - Pipework Before test
   - 8.2 CLX02B - Pipework After Test
   - 8.3 CXX01 - Thermal insulation
   - 8.4 CXX02 – Painting Line – NOT APPLICABLE
   - 8.5 TMX03 – Cleaning
   - 8.6 TMX05 – Pressure test
   - 8.7 TMX25 – Gross Air Leak Test – NOT APPLICABLE
   - 8.8 TMX27 – Bolt Tensioning / Torquing
   - 8.9 TPLX05 - Drying

1. COLOURED MARKED P&IDs

DRAWING NO. DRAWING_NO.

REV. REV

P-50001 A/B

SEA WATER LIFT PUMPS

POWER : 1.6 KW
FLOW : 2.5 m³/h
DESIGN P/T : 7.6 barg / 80°C
DISCHARGE PRESSURE : 5.6 barg (NOTE 9)
MATERIAL : SDSS

B-50013 A/B

SEA WATER LIFT PUMPS
CAISSONS

SIZE : 343 mm (ID) x 27308 mm (H)
MATERIAL : CS + CA

50-00-TP-028
9.00 barg

123A90-DDL-PR-PID-80022
BIOCIDE DOSING UNIT
1"-CI-029-01CP-E
3/4" BLPH-MV-214
3/4"x1/2" 1/2"
CONC. RED. BLPH-MV-215

1"-CI-030-01CP-E
1"-CI-032-01CP-E

1-1/2"-SWS-035-01SD-E
123A90-DDL-PR-PID-80022
SEA WATER COARSE FILTER PACKAGE

BLPH-MV-043 1.1/2"
SWS-035
SWS-031
03
1-1/2"-SWS-031-01SD-E

BLPH-MV-050 1.1/2"
SWS-035
SWS-033
03
1-1/2"-SWS-033-01SD-E

50 RO 001
NOTE 7
50 XY 001
50 XV 001
50 XY 002
50 XV 002
IA
NOTE 5
FC TYP.1
NOTE 3
3/4"
BLPH-MV-044

50 RO 002
NOTE 7
50 XY 003
50 XV 003
50 XY 004
50 XV 004
I.A.
NOTE 5
FC TYP.1
NOTE 3
3/4"
BLPH-MV-054

INSTR. PIPING
1.1/2"
BLPH-NRV-004
50 PI 001
50 PT 001
2" x 1.5"
2"
BLPH-MV-464
1"-SWS-146-01SD-E

INSTR. PIPING
1.1/2"
BLPH-NRV-008
50 PI 002
50 PT 002
BLPH-MV-465
1"-SWS-147-01SD-E

03

BLPH-MV-501
BLPH-MV-503
50 LG 001
50 RO 003
BLPH-MV-502
V-50000A
NOTE 11

BLPH-MV-511
BLPH-MV-513
50 LG 002
50 RO 004
BLPH-MV-512
V-50000B
NOTE 11

LOCAL/ REMOTE 50 XI 002A
STOP 50 HS 005A
START 50 HS 001A
RUNNING/ STOPPED 50 XI 001A
AUTO START READY 50 XI 003A
TRIPPED/ FAULT 50 XA 004A
MOTOR STOPPED BY LOCAL PUSH BUTTON 50 XA 006A
83-XS-001A
ESD

LOCAL/ REMOTE 50 XI 002B
STOP 50 HS 005B
START 50 HS 001B
RUNNING/ STOPPED 50 XI 001B
AUTO START READY 50 XI 003B
TRIPPED/ FAULT 50 XA 004B
MOTOR STOPPED BY LOCAL PUSH BUTTON 50 XA 006B
83-XS-001B
ESD

1" BLPH-NRV-007
MCC
PM-50001A
M
RS
1"-SWS-222-01SD-E
BLPH-MV-048 1"
1"-SWS-288-01SD-E

1" BLPH-NRV-024
MCC
PM-50001B
M
RS
1"-SWS-221-01SD-E
BLPH-MV-051 1"
1"-SWS-286-01SD-E

1D2
50 PSV 006
BLOCKED OUTLET SET @ 7.6 barg
SP 0043
BLPH-MV-469
SB
LO
2"-SWR-289-01SD-N
NOTE 10

50 PSV 007
1D2
BLOCKED OUTLET SET @ 7.6 barg
SP 0044
2"-SWR-287-01SD-N
BLPH-MV-470
SB
LO
NOTE 10

LOWER DECK: +23.310 m
TOP OF CAISSON: +21.808 m
SUCTION
NOTE 1, 2, 8
EL: - 5.500 m
PUMP RETENTION BARS
P-50001A
B-50013A

LOWER DECK: +23.310 m
TOP OF CAISSON: +21.808 m
SUCTION
NOTE 1, 2, 8
EL: - 5.500 m
PUMP RETENTION BARS
P-50001B
B-50013B

NOTES

1. SEAWATER LIFT PUMPS ARE RATED 2 X 100%
2. AUTO START OF DESIGNATED STANDBY PUMP ON LOSS OF RUNNING STATUS AND DISCHARGE LOW PRESSURE ALARM OF DUTY PUMP.
3. VALVE TO BE OPENED WHEN PUMP IS OFFLINE TO DOSE CAISSON WITH TREATED SEAWATER TO PREVENT BIOLOGICAL GROWTH.
4. DELETED.
5. SOFTWARE INTERLOCK PREVENTS PUMPS FROM STARTING IN CASE THE RELEVANT XV VALVE IS FULLY CLOSED. 03
6. DELETED.
7. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "123A90-DDL-IN-DS-40054 - TECHNICAL DATASHEET FOR RESTRICTION ORIFICE".
8. LOGIC FOR CONTROL OF P-5001A/B THAT PREVENTS SIMULTANEOUS RUNNING OF A AND B PUMP IS PROVIDED.
9. DISCHARGE PRESSURE REFERS TO THE FLANGE DISCHARGE OF THE PUMP AT LOWER DECK.
10. ROUTED TO THE SEA.
11. VESSELS V-50000A/B ARE INSULATED AND HEAT TRACED. 03

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.
5. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
SEA-WATER INTAKE SYSTEM SHEET 1

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80021	SHEET 001	REV. 03

File Name : FILE_NAME

DRAWING NO. DRAWING_NO.

REV. REV

A-50000
WATER TREATMENT PACKAGE
CAPACITY : 2.5 m³/hr

GAS CONFIRMED 50 XA 001 — F&G
SMOKE CONFIRMED 50 XA 002 — F&G
FAULT PACKAGE 50 XA 003 — ESD
50-XS-001 SHUT-DOWN — ESD
NOTE 6

CONTRACTOR | SUPPLIER

FOR CONTINUATION SEE DOC N. 123A90-DDL-PR-PID-80023

123A90-DDL-PR-PID-80025
TO 50-TDI-002
50 TI 001
BLOCKED OUTLET SET @ 6 barg
50 PSV 011 1D2
2"-SWR-291-01SD-N
BLPH-MV-471 SB LO
03
NOTE 7
1"-SWS-290-01SD-E
50 TT 001
50 TE 001
03
1.1/2"
TP 017 50
E
4"x1.1/2" ECC. RED.
4"x1.1/2" ECC. RED.
123A90-DDL-PR-PID-80021
FROM SEA WATER LIFT PUMP
1-1/2"-SWS-035-01SD-E
BLPH-MV-241 3/4"

50-00-TP-028
9.00 barg

A-50000
WATER TREATMENT PACKAGE
SEE VENDOR DRAWING
DOC. N. 1724000448-PR-PID-00013

FOR CONTINUATION SEE DOC N. 123A90-DDL-PR-PID-80023

E
TP 005 50 03
123A90-DDL-PR-PID-80021
TO SEA WATER LIFT PUMP AND LIFT PUMP CAISSONS
1"-CI-029-01CP-E

1"-CI-043-01CP-E
TP 006 50 03
DECK
HOOK-UP 003
123A90-DDL-PR-PID-80026
TO WASTE WATER TANK

SUPPLIER | CONTRACTOR

TP 003 50 03
1.1/2"x1"
3"x1.1/2"
1"-SWR-045-01CS-H
123A90-DDL-PR-PID-80025
TO BRINE DISCHARGE CAISSON

TP 007 50 03
1.1/2"x1"
1"-WW-038-01CS-H
123A90-DDL-PR-PID-80026
TO WASTE WATER TANK

NOTES

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.
5. DELETED.
6. SERIAL COMMUNICATION WITH CONTROL SYSTEM.
7. ROUTED TO THE SEA 03

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.
5. DELETED.
6. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

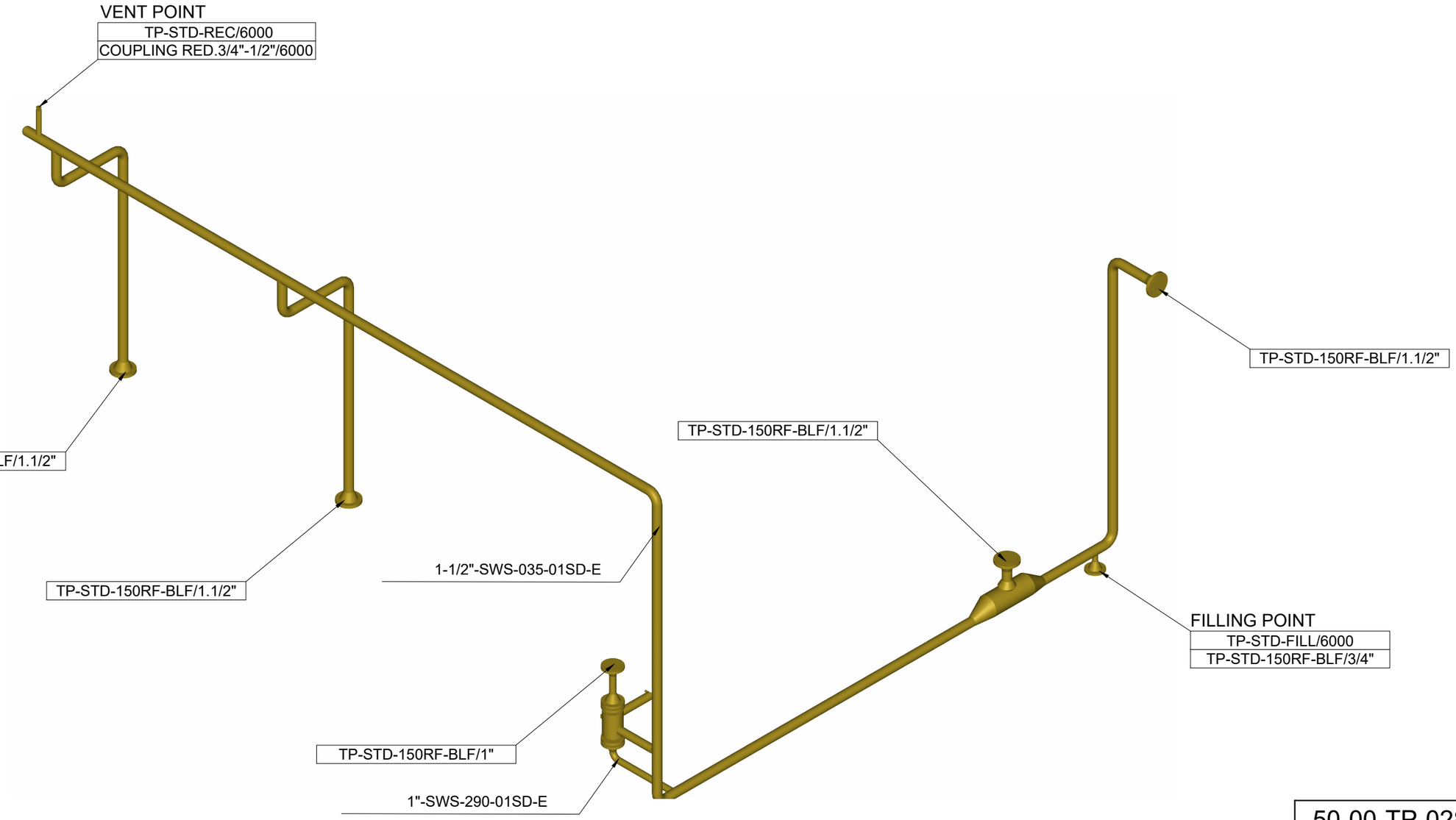
ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
SEA-WATER INTAKE SYSTEM SHEET 2

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE	
A1	DRAWING NO. 123A90-DDL-PR-PID-80022		SHEET 001	REV. 03

File Name : FILE_NAME

2. HYDROSTATIC TEST 3D CIRCUIT



50-00-TP-028

9 barg

NOTES

- MANUAL VALVES MAY BE EXCLUDED FROM THE TEST
- ALL INSTRUMENTS (PG, TT, etc.) SHALL BE EXCLUDED FROM THE TEST
- ALL INSTRUMENT VALVES (SDV, PCV, etc.) SHALL BE EXCLUDED FROM THE TEST
- FILLING POINT, VENTS & DRAINS SHALL BE DEFINED ON SITE AS FOR REAL TEST CIRCUIT CONFIGURATION

REV.	DATE	DESCRIPTION	DRN	CHKD	APPD
00	27-09-24	ISSUED FOR INFORMATION	J.Q.	T.L.	L.M.

CROSSWIND

ROSETTI MARINO

HOLLANDSE KUST NOORD WIND PARK

PIPING TEST 3D CIRCUIT
50-00-TP-028

FORMAT	SCALE	DRAWING N.	REV.	SHEET
A3	NTS	N/A	00	1 OF 1

3. MATERIAL LIST FOR TEST

CROSSWIND

ROSETTI MARINO

CONTRACTOR: Rosetti Marino SpA	JOB :	123A90
PROJECT: Base Load Power Hub (BLPH)	DATE :	20/09/2024
TITLE: MATERIAL LIST FOR HYDROSTATIC TEST	REV. :	00

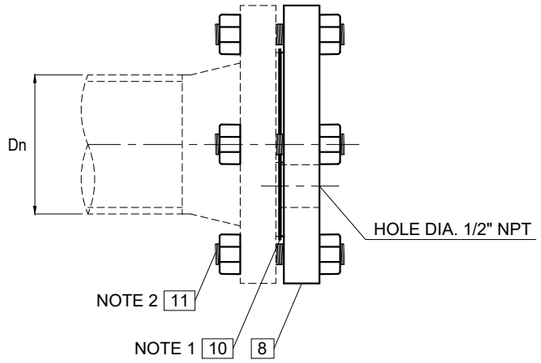
TEST REF.	TYPICAL ITEM CODE	ROSETTI CODE	ROSETTI DESCRIPTION	Q.TY X SINGLE STD	Q.TY STD X TP	Q.ty x TP	NOTES
ALL TEST	TP-STD-FILL/6000	1EQP252	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	5	1	5	
ALL TEST	TP-STD-FILL/6000	N100SS02660H00	Nipple L=100mm TBE ø1/2" Thk.4,78mm ASTM A312 Gr.TP316/316L	7	1	7	
ALL TEST	TP-STD-FILL/6000	TEEFSS00060H00	Tee THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	3	1	3	
ALL TEST	TP-STD-FILL/6000	1MECH069	Adapter THRD-M NPT x BSPP ø1/2" 400 bar ASTM A182 Gr.F316/316L	2	1	2	
ALL TEST	TP-STD-REC/6000	1EQP252	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	4	1	4	
ALL TEST	TP-STD-REC/6000	N100SS02660H00	Nipple L=100mm TBE ø1/2" Thk.4,78mm ASTM A312 Gr.TP316/316L	9	1	9	
ALL TEST	TP-STD-REC/6000	TEEFSS00060H00	Tee THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	2	1	2	
ALL TEST	TP-STD-REC/6000	CAPFSS00200H00	Cap Forged THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1	1	1	
ALL TEST	TP-STD-REC/6000	CPL0SS00240H00	Coupling THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1	1	1	
ALL TEST	TP-STD-REC/6000	E900SS00340H00	90 Deg Elbow THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1	1	1	
ALL TEST	TP-STD-PLGNPT/1/2"	PLGHSS00090H00	Plug Hex. Head THRD-M NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1	1	1	
TP-028	/	CPLRSS00233Q0H	Coupling Reducing ASME B16.11 THRD-F NPT 6000# FRG ASTM A182 Gr.F316/316L	-	-	1	
TP-028	TP-STD-150RF-BLF/3/4"	FLBHCS01363Q0H	Flange Blind c/w NPT Hole ø3/4"x1/2" 150LB RF ASTM/ASME A/SA105	1	1	1	
TP-028	TP-STD-150RF-BLF/3/4"	GFL3GK15963Q00	Gasket Flat Thk. 3 mm ø3/4" 150LB RF NEOPRENE	1	1	1	
TP-028	TP-STD-150RF-BLF/3/4"	SB20BO00980200	Stud Bolt + 2 Heavy Nuts 1/2" L=80MM ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1	4	
TP-028	TP-STD-150RF-BLF/1"	FLBHCS0022010H	Flange Blind c/w NPT Hole ø1"x1/2" 150LB RF ASTM/ASME A/SA105	1	1	1	
TP-028	TP-STD-150RF-BLF/1"	GFL3GK15970100	Gasket Flat Thk. 3 mm ø1" 150LB RF NEOPRENE	1	1	1	
TP-028	TP-STD-150RF-BLF/1"	SB20BO00980200	Stud Bolt + 2 Heavy Nuts 1/2" L=80MM ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1	4	
TP-028	TP-STD-150RF-BLF/1.1/2"	FLBHCS00241H0H	Flange Blind c/w NPT Hole ø1.1/2"x1/2" 150LB RF ASTM/ASME A/SA105	1	4	4	
TP-028	TP-STD-150RF-BLF/1.1/2"	GFL3GK15981H00	Gasket Flat Thk. 3 mm ø1.1/2" 150LB RF NEOPRENE	1	4	4	
TP-028	TP-STD-150RF-BLF/1.1/2"	SB20BO00980200	Stud Bolt + 2 Heavy Nuts 1/2" L=80MM ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	4	16	

STD NAME	RATING	DESCRIPTION
TP-STD-150RF	150 RF	STANDARD FOR BLIND POINT

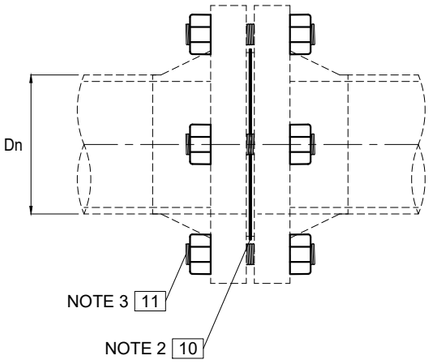
TP-STD-150RF-BLF/Dn
TP-STD-150RF-GSK/Dn

MATERIAL LIST

STD	POS.	DESCRIPTION	Q.TY
TP-STD-150RF-___/1/2"	8	Flange Blind c/w NPT Hole ø1/2"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø1/2" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1/2" L=60 MM	4
TP-STD-150RF-___/3/4"	8	Flange Blind c/w NPT Hole ø3/4"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø3/4" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1/2" L=65 MM	4
TP-STD-150RF-___/1"	8	Flange Blind c/w NPT Hole ø1"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø1" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1/2" L=65 MM	4
TP-STD-150RF-___/1.1/4"	8	Flange Blind c/w NPT Hole ø1.1/4"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø1.1/4" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1/2" L=70 MM	4
TP-STD-150RF-___/1.1/2"	8	Flange Blind c/w NPT Hole ø1.1/2"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø1.1/2" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1/2" L=70 MM	4
TP-STD-150RF-___/2"	8	Flange Blind c/w NPT Hole ø2"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø2" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 5/8" L=85 MM	4
TP-STD-150RF-___/2.1/2"	8	Flange Blind c/w NPT Hole ø2.1/2"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø2.1/2" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 5/8" L=90 MM	4
TP-STD-150RF-___/3"	8	Flange Blind c/w NPT Hole ø3"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø3" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 5/8" L=90 MM	4
TP-STD-150RF-___/4"	8	Flange Blind c/w NPT Hole ø4"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø4" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 5/8" L=90 MM	8
TP-STD-150RF-___/6"	8	Flange Blind c/w NPT Hole ø6"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø6" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 3/4" L=105 MM	8
TP-STD-150RF-___/8"	8	Flange Blind c/w NPT Hole ø8"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø8" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 3/4" L=110 MM	8
TP-STD-150RF-___/10"	8	Flange Blind c/w NPT Hole ø10"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø10" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 7/8" L=120 MM	12
TP-STD-150RF-___/12"	8	Flange Blind c/w NPT Hole ø12"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø12" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 7/8" L=125 MM	12
TP-STD-150RF-___/14"	8	Flange Blind c/w NPT Hole ø14"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø14" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1" L=135 MM	12
TP-STD-150RF-___/16"	8	Flange Blind c/w NPT Hole ø16"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø16" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1" L=140 MM	16
TP-STD-150RF-___/18"	8	Flange Blind c/w NPT Hole ø18"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø18" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1.1/8" L=150 MM	16
TP-STD-150RF-___/20"	8	Flange Blind c/w NPT Hole ø20"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø20" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1.1/8" L=160 MM	20
TP-STD-150RF-___/24"	8	Flange Blind c/w NPT Hole ø24"x1/2" 150LB RF ASTM/ASME A/SA105	1
	10	Gasket ø24" 150LB RF	1
	11	Stud Bolt + 2 Heavy Nuts 1.1/4" L=175 MM	20



TP-STD-150RF-BLF/Dn
BLIND FLANGE



TP-STD-150RF-GSK/Dn
GASKET ONLY

NOTES

1. GASKET MATERIAL AS PER PIPING CLASS
2. STUD BOLTS AND NUTS MATERIAL AS PER TEST MTO

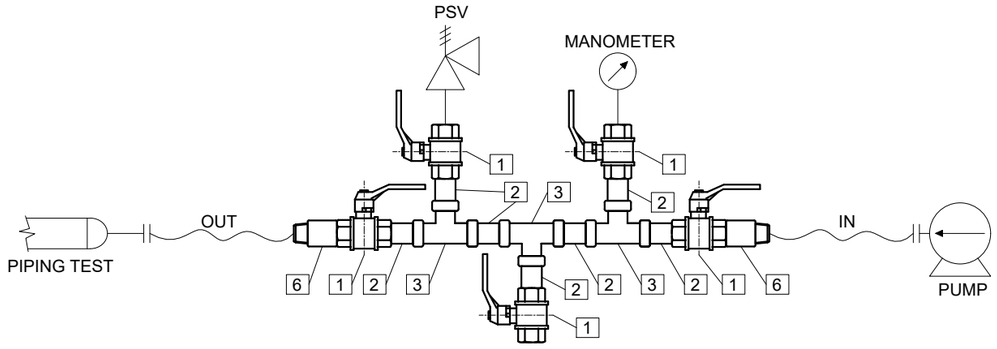
REV.	DATE	DESCRIPTION	DRN	CHKD	APPD
00	06-09-24	ISSUED FOR INFORMATION	J.Q.	T.L.	L.M.

ROSETTI MARINO

PIPING TEST STANDARD DRAWING
TP-STD-150RF
TP-STD-150RF-BLF/Dn
TP-STD-150RF-GSK/Dn

FORMAT	SCALE	DRAWING N.	REV.	SHEET
A3	NTS	TP_STD_150RF	00	1 OF 1

STD NAME	RATING	DESCRIPTION
TP-STD-FILL	3000 / 6000 / 9000	STANDARD FOR FILLING POINT
TP-STD-FILL/RATING		



TP-STD-FILL/RATING

FILLING POINT 3000/6000/9000

MATERIAL LIST

STD	POS.	DESCRIPTION	Q.TY
TP-STD-FILL/3000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	5
	2	Nipple L=100mm TBE ø1/2" Thk.3.73mm ASTM A312 Gr.TP316/316L	7
	3	Tee Forged THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	3
	6	Adapter THRD-M NPT x BSPP ø1/2" 400 bar ASTM A182 Gr.F316/316L	2
TP-STD-FILL/6000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	5
	2	Nipple L=100mm TBE ø1/2" Thk.4,78mm ASTM A312 Gr.TP316/316L	7
	3	Tee THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	3
	6	Adapter THRD-M NPT x BSPP ø1/2" 400 bar ASTM A182 Gr.F316/316L	2
TP-STD-FILL/9000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	5
	2	Nipple L=100mm TBE ø1/2" Thk.7,47mm ASTM A312 Gr.TP316/316L	7
	3	Tee Forged THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	3
	6	Adapter THRD-M NPT x BSPP ø1/2" 523 bar 304SS	2

NOTES

REV.	DATE	DESCRIPTION	DRN	CHKD	APPD
00	06-09-24	ISSUED FOR INFORMATION	J.Q.	T.L.	L.M.

ROSETTI MARINO

PIPING TEST STANDARD DRAWING

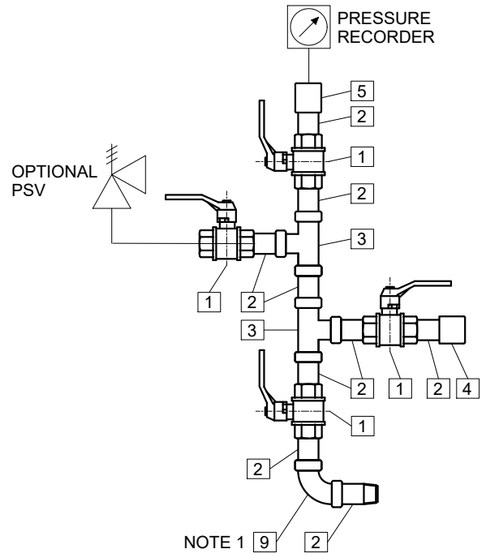
TP-STD-FILL

TP-STD-FILL/RATING

FORMAT	SCALE	DRAWING N.	REV.	SHEET
A3	NTS	TP_STD_FILL	00	1 OF 1

STD NAME	RATING	DESCRIPTION
TP-STD-REC	3000 / 6000 / 9000	STANDARD FOR RECORDING POINT

TP-STD-REC/RATING



TP-STD-REC/RATING
RECORDING POINT 3000/6000/9000

MATERIAL LIST

STD	POS.	DESCRIPTION	Q.TY
TP-STD-REC/3000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	4
	2	Nipple L=100mm TBE ø1/2" Thk.3.73mm ASTM A312 Gr.TP316/316L	9
	3	Tee Forged THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	2
	4	Cap Forged THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	1
	5	Coupling THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	1
	9	90 Deg Elbow THRD-F NPT ø1/2" 3000# ASTM A182 Gr.F316/316L	1
TP-STD-REC/6000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	4
	2	Nipple L=100mm TBE ø1/2" Thk.4,78mm ASTM A312 Gr.TP316/316L	9
	3	Tee THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	2
	4	Cap Forged THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1
	5	Coupling THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1
	9	90 Deg Elbow THRD-F NPT ø1/2" 6000# ASTM A182 Gr.F316/316L	1
TP-STD-REC/9000	1	Ball Valve THRD-F NPT ø1/2" 7250 psi 316L	4
	2	Nipple L=100mm TBE ø1/2" Thk.7,47mm ASTM A312 Gr.TP316/316L	9
	3	Tee Forged THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	2
	4	Cap Forged THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	1
	5	Coupling THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	1
	9	90 Deg Elbow THRD-F NPT ø1/2" 9000# ASTM A182 Gr.F316/316L	1

NOTES

1. 90 DEG ELBOW SHALL BE INSTALLED WHERE APPLICABLE ONLY

REV.	DATE	DESCRIPTION	DRN	CHKD	APPD
00	06-09-24	ISSUED FOR INFORMATION	J.Q.	T.L.	L.M.

ROSETTI MARINO

PIPING TEST STANDARD DRAWING
TP-STD-REC
TP-STD-REC/RATING

FORMAT	SCALE	DRAWING N.	REV.	SHEET
A3	NTS	TP_STD_REC	00	1 OF 1

4. EXTRACT OF LINE LIST

Isometric N°	Short Line N°	Sequential Number	Size [in]	Piping Class	Insulation Type	Pipe Wall Thicknes [mm]	Pipe Schedule	Tracing	Line Number	PID Number	Design Pressure [barg]	Commissioning System Code	Commissioning SubSystem Code	Test Pack N°	Test Fluid	Test Pressure [barg]	Fluid Service	Class Base Material	Line INF/SUP/TL	Ped Category	Painting System	Line Base Ral
26	SWS-035	035	1.1/2	01SD	E	3,68	40S	Yes	1-1/2"-SWS-035-01SD-E	123A90-DDL-PR-PID-80021	7,60	50	50-00	TP-028	Water	9.00	Sea Water Supply	Stainless Steel (Super Duplex)	INF	Art. 4, par. 3	N/A	N/A
154	SWS-290	290	1	01SD	E	3,38	40S	Yes	1"-SWS-290-01SD-E	123A90-DDL-PR-PID-80022	6,00	50	50-00	TP-028	Water	9.00	Sea Water Supply	Stainless Steel (Super Duplex)	INF	Art. 4, par. 3	N/A	N/A

5. ISOMETRIC RED MARKED DRAWING & EXTRACT OF ISO LIST

CROSSWIND

ROSETTI MARINO

PROJECT

BASE LOAD POWER HUB (BLPH)

JOB **123A90**

DOCUMENT NR **123A90-FDL-ST-LIS-00001**

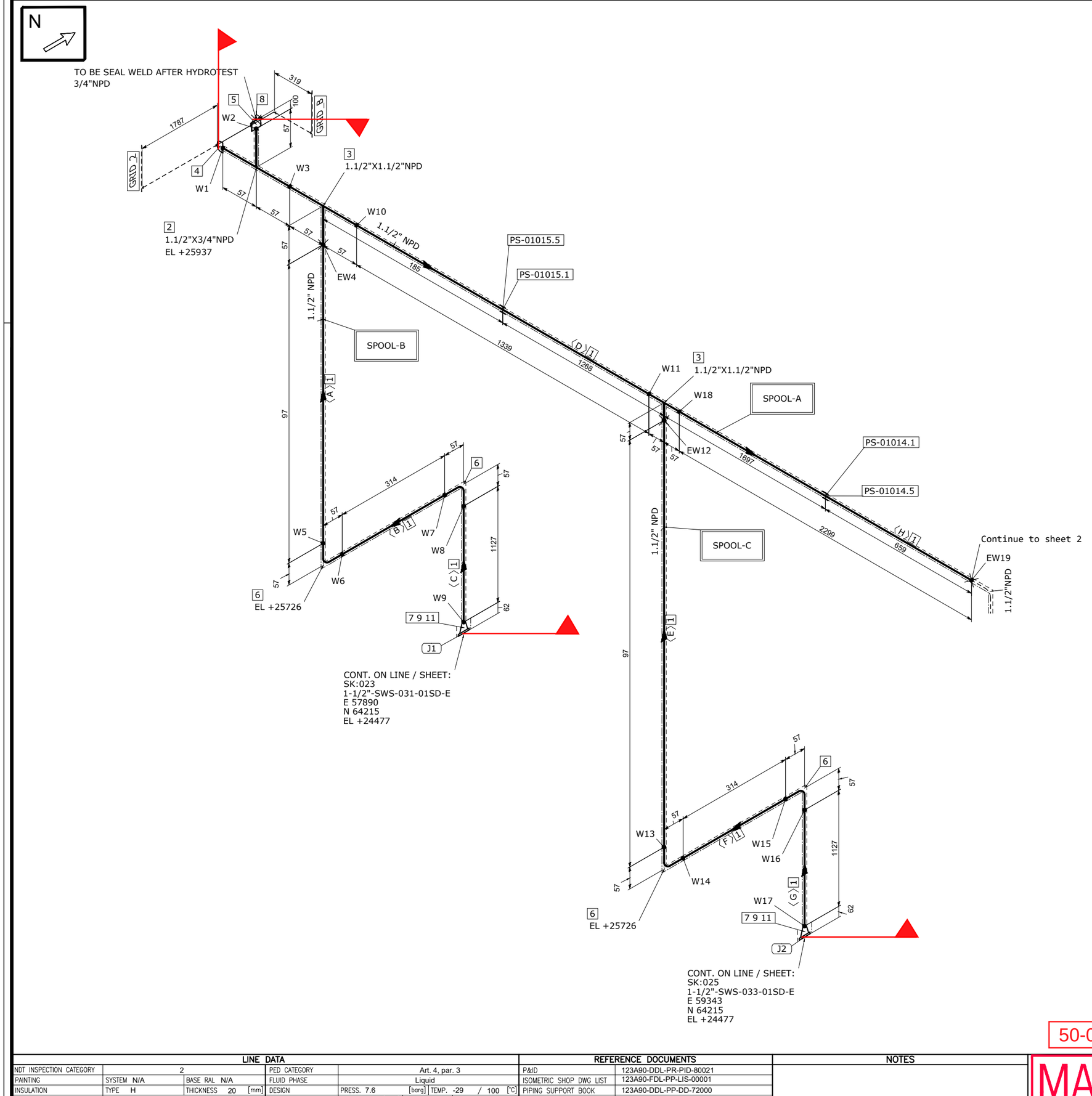
REV. **05**

TITLE

SHOP DRAWING ISOMETRIC LIST

DATE **17/09/2024**

DOCUMENT NR	ROSETTI SKETCH NR	SHEET	DOCUMENT TITLE	Rev. 00	Rev. 01	Rev. 02	Rev. 03	Rev. 04	Rev. 05	Rev. 06	Rev. 07	Rev. 08	Rev. 09	Rev. 10	Mark-up Rev.	Mark-up Data	LAST REV	LIST REV	NOTES	TEST PACK NR
123A90-FDL-PP-DI-00026-01	**026**	01	SHOP DRAWING ISOMETRIC - LINE NR 1-1/2"-SWS-035-01SD-E	27/08/2024													**00**	**03**		**TP-028**
123A90-FDL-PP-DI-00026-02	**026**	02	SHOP DRAWING ISOMETRIC - LINE NR 1-1/2"-SWS-035-01SD-E	27/08/2024													**00**	**03**		**TP-028**
123A90-FDL-PP-DI-00154-01	**154**	01	SHOP DRAWING ISOMETRIC - LINE NR 1"-SWS-290-01SD-E	27/08/2024													**00**	**03**		**TP-028**



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1.1/2	PIPESD04761H00	Pipe ASME B36.19M PE 3,68 SML ASTM A790 UNS S32760	6.7M	27.7
2	1.1/2X3/4	TER0SD09371H3Q	Tee Reducing ASME B16.9 BW 3,68x2,87 WRS ASTM A815 UNS S32760	1	0.8
3	1.1/2X1.1/2	TEE0SD02931H00	Tee ASME B16.9 BW 3,68 WRS ASTM A815 UNS S32760	2	1.7
4	1.1/2	CAP0SD02721H00	Cap ASME B16.9 BW 3,68 WRS ASTM A815 UNS S32760	1	0.2
5	3/4	N100SD00403Q00	Nipple L=100mm ASME B36.19M THRD-M NPT x PE 2,87 SML ASTM A790 UNS S32760	1	0.2
6	1.1/2	E90RSD03031H00	90 Deg Elbow Long Radius ASME B16.9 BW 3,68 WRS ASTM A815 UNS S32760	4	1.5
7	1.1/2	FLW0SD02861H00	Flange WN ASME B16.5 150LB RF 3,68 FRG ASTM A182 Gr.F55	2	3.7

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
8	3/4	CAPFSD00073Q00	Cap Forged ASME B16.11 THRD-F NPT 3000# FRG ASTM A182 Gr.F55	1	0.2
9	1.1/2	GFL3GK15981H00	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	2	0.1
11	1/2	SB20BO00930200	70 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.0

FABRICATION WEIGHT [kg]	35.8
ERECTION WEIGHT [kg]	1.3
OVERALL WEIGHT [kg]	37.1

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1.1/2	BW
W2	3/4	BW
W3	1.1/2	BW
EW4	1.1/2	BW
W5	1.1/2	BW
W6	1.1/2	BW
W7	1.1/2	BW
W8	1.1/2	BW
W9	1.1/2	BW
W10	1.1/2	BW
W11	1.1/2	BW
EW12	1.1/2	BW
W13	1.1/2	BW
W14	1.1/2	BW
W15	1.1/2	BW
W16	1.1/2	BW
W17	1.1/2	BW
W18	1.1/2	BW
EW19	1.1/2	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1.1/2	97	BEVEL	BEVEL
B	1.1/2	314	BEVEL	BEVEL
C	1.1/2	1127	BEVEL	BEVEL
D	1.1/2	1339	BEVEL	BEVEL
E	1.1/2	97	BEVEL	BEVEL
F	1.1/2	314	BEVEL	BEVEL
G	1.1/2	1127	BEVEL	BEVEL
H	1.1/2	2299	BEVEL	BEVEL

SUPPORT LIST

/PS-01015.5
/PS-01015.1
/PS-01014.1
/PS-01014.5

SPOOL	WELD [inches]	WEIGHT [kg]
A	8.25	17.8
B	7.5	9.0
C	7.5	9.0
MONT	4.5	1.3

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 1-1/2"-SWS-035-01SD-E

SK.026

50-00-TP-028

MASTER

LINE DATA

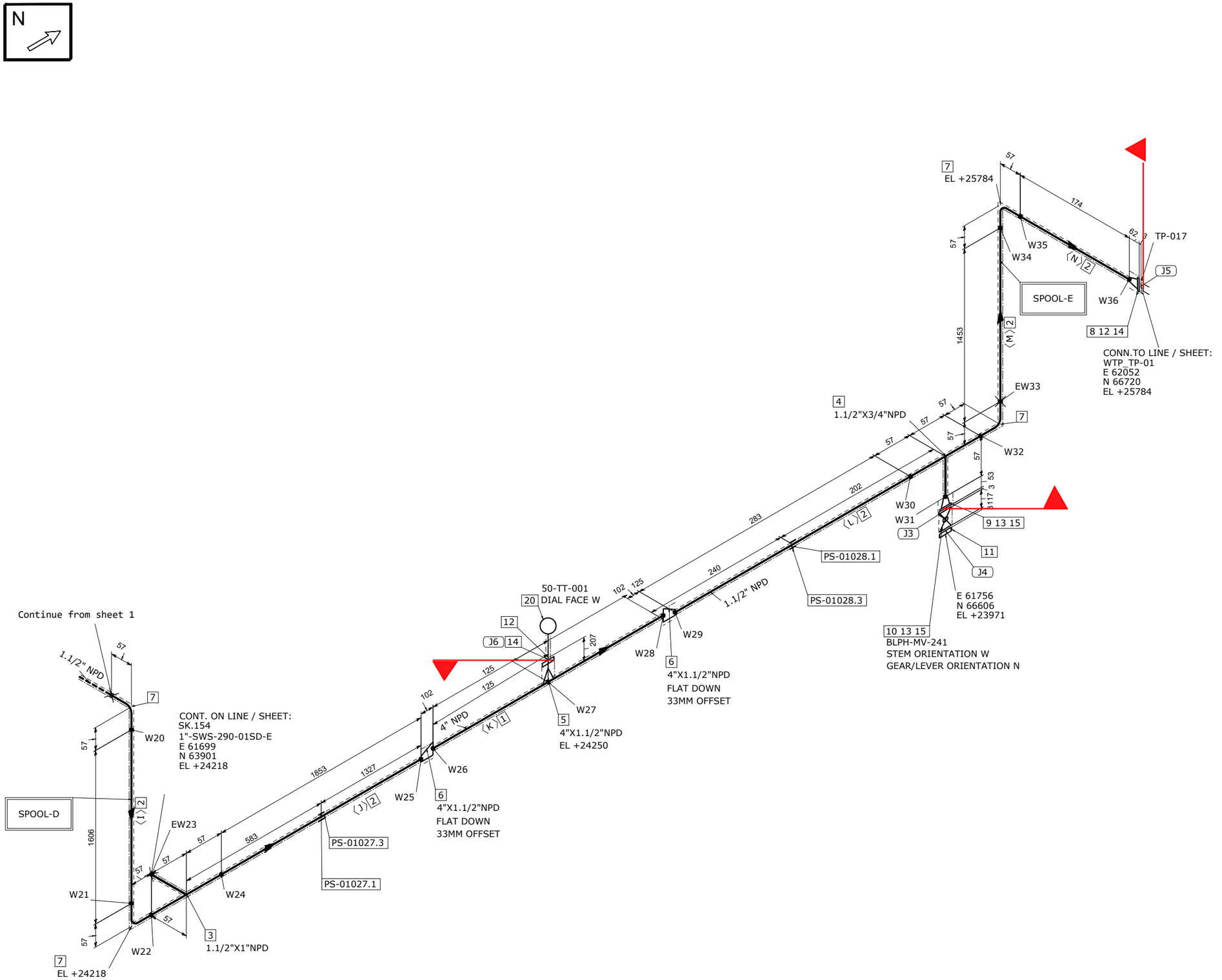
NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3			
PAINTING	SYSTEM N/A	BASE RAL N/A	FLUID PHASE	Liquid			
INSULATION	TYPE H	THICKNESS 20 [mm]	DESIGN	PRESS. 7.6 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	Yes		TEST	PRESS. 9 [barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80021
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	N/A
DRAWN STAFF SRL	CHECKED RT	APPROVED LM	DATE 27-08-2024
FORMAT A3	DRAWING NO. 123A90-FDL-PP-DI-00026	SHEET / OF 1/2	REV. 00



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	4	PIPESD02880400	Pipe ASME B36.19M PE 3,05 SML ASTM A790 UNS S32760	0.3M	2.1
2	1.1/2	PIPESD04761H00	Pipe ASME B36.19M PE 3,68 SML ASTM A790 UNS S32760	5.4M	22.2
3	1.1/2X1	TER0SD09381H01	Tee Reducing ASME B16.9 BW 3,68x3,38 WRS ASTM A815 UNS S32760	1	0.8
4	1.1/2X3/4	TER0SD09371H3Q	Tee Reducing ASME B16.9 BW 3,68x2,87 WRS ASTM A815 UNS S32760	1	0.8
5	4X1.1/2	ONFRSD02000041H	NipoFlange Reinforced Manuf.s STD 150LB RF 3,05x3,68 FRG ASTM A182 Gr.F55	1	3.3
6	4X1.1/2	REE0SD0809041H	Reducer Eccentric ASME B16.9 BW 3,05x3,68 WRS ASTM A815 UNS S32760	2	1.7
7	1.1/2	E90RSD03031H00	90 Deg Elbow Long Radius ASME B16.9 BW 3,68 WRS ASTM A815 UNS S32760	4	1.5
8	1.1/2	FLW0SD02861H00	Flange WN ASME B16.5 150LB RF 3,68 FRG ASTM A182 Gr.F55	1	1.8
9	3/4	FLW0SD02853Q00	Flange WN ASME B16.5 150LB RF 2,87 FRG ASTM A182 Gr.F55	1	0.9

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
10	3/4	VBC0NN24433Q00	Ball Valve Split Body FB API 6D FLG 150LB RF BS01F01RF	1	7.0
11	3/4	FLB0SD01843Q00	Flange Blind ASME B16.5 150LB RF FRG ASTM A182 Gr.F55	1	0.9
12	1.1/2	GFL3GK15981H00	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	2	0.1
13	3/4	GFL3GK15963Q00	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	2	0.1
14	1/2	SB20BO00930200	70 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.0
15	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.0
20	1.1/2		Temperature Trasmitter 150#	1	2.0

FABRICATION WEIGHT [kg]	35.1
ERECTION WEIGHT [kg]	12.1
OVERALL WEIGHT [kg]	47.2

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W20	1.1/2	BW
W21	1.1/2	BW
W22	1.1/2	BW
EW23	1	BW
W24	1.1/2	BW
W25	1.1/2	BW
W26	4	BW
W27	1.1/2	LET
W28	4	BW
W29	1.1/2	BW
W30	1.1/2	BW
W31	3/4	BW
W32	1.1/2	BW
EW33	1.1/2	BW
W34	1.1/2	BW
W35	1.1/2	BW
W36	1.1/2	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
I	1.1/2	1606	BEVEL	BEVEL
J	1.1/2	1854	BEVEL	BEVEL
K	4	250	BEVEL	BEVEL
L	1.1/2	283	BEVEL	BEVEL
M	1.1/2	1453	BEVEL	BEVEL
N	1.1/2	174	BEVEL	BEVEL

SUPPORT LIST

PS-01027.1
PS-01027.3
PS-01028.1
PS-01028.3

SPOOL	WELD [inches]	WEIGHT [kg]
D	22.25	26.1
E	4.5	8.9
MONT	2.5	12.1

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

LINE DATA

NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3				
PAINTING	SYSTEM N/A	BASE RAL N/A	FLUID PHASE	Liquid				
INSULATION	TYPE H	THICKNESS 20 [mm]	DESIGN	PRESS. 7.6 [barg]	TEMP. -29 / 100 [°C]			
HEAT TRACING	Yes		TEST	PRESS. 9 [barg]	TEMP. AMB	MEDIUM Water		

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80021
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

50-00-TP-028

MASTER

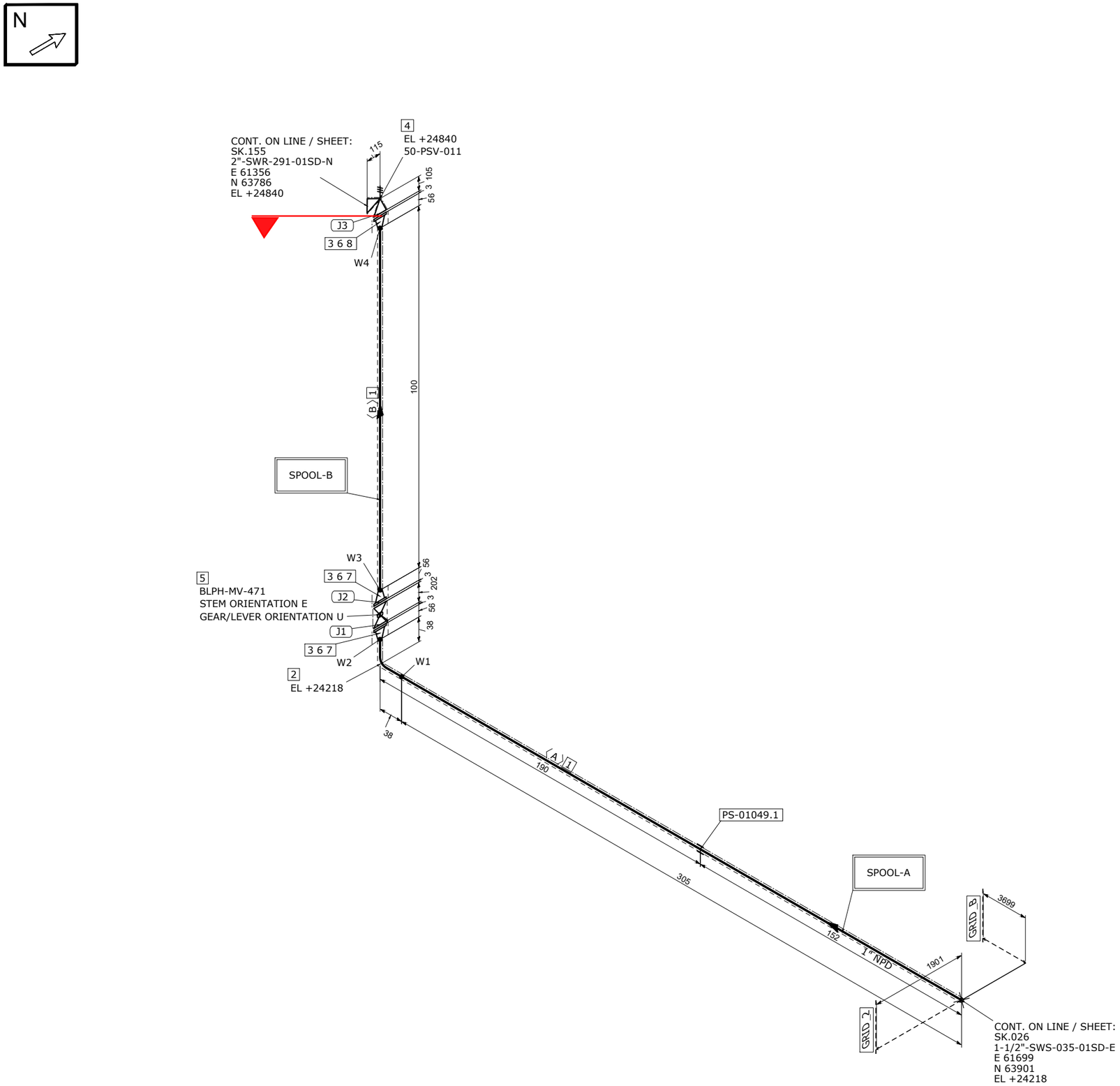
CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 1-1/2"-SWS-035-01SD-E

SK.026

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE	N/A
DRAWN	STAFF SRL	CHECKED	RT	APPROVED	LM	DATE	27-08-2024
FORMAT	A3	DRAWING NO.	123A90-FDL-PP-DI-00026	SHEET / OF	2/2	REV.	00



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPESD02850100	Pipe ASME B36.19M PE 3,38 SML ASTM A790 UNS S32760	0.4M	1.0
2	1	E90RSD01640100	90 Deg Elbow Long Radius ASME B16.9 BW 3,38 WRS ASTM A815 UNS S32760	1	0.1
3	1	FLW0SD01240100	Flange WN ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	3	4.3

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
4	2X1		SAFETY VALVE FLG.150/150#RF	1	15.0
5	1	VLBLNN01370100	Block & Bleed Valve API 6D FLG 150LB RF BS01F01RFS	1	12.5
6	1	GFL3GK15970100	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	3	0.2
7	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.0
8	1/2	SB20BO34450200	105 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.7

FABRICATION WEIGHT [kg]	5.4
ERECTION WEIGHT [kg]	29.4
OVERALL WEIGHT [kg]	34.8

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1	BW
W2	1	BW
W3	1	BW
W4	1	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1	305	BEVEL	BEVEL
B	1	100	BEVEL	BEVEL

SUPPORT LIST

PS-01049.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	2	2.3
B	2	3.1
MONT	0	29.4

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

50-00-TP-028

MASTER

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 1"-SWS-290-01SD-E

SK.154

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE: N/A

DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 27-08-2024

FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00154 | SHEET / OF: 1/1 | REV.: 00

LINE DATA

NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3			
PAINTING	SYSTEM N/A	BASE RAL N/A	FLUID PHASE	Liquid			
INSULATION	TYPE H	THICKNESS 20 [mm]	DESIGN	PRESS. 6 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	Yes		TEST	PRESS. 9 [barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS

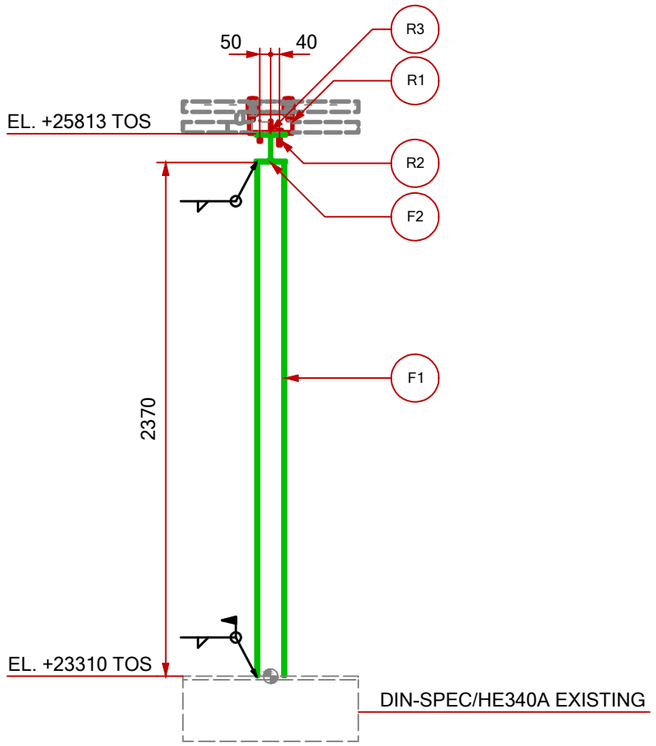
P&ID	123A90-DDL-PR-PID-80022
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

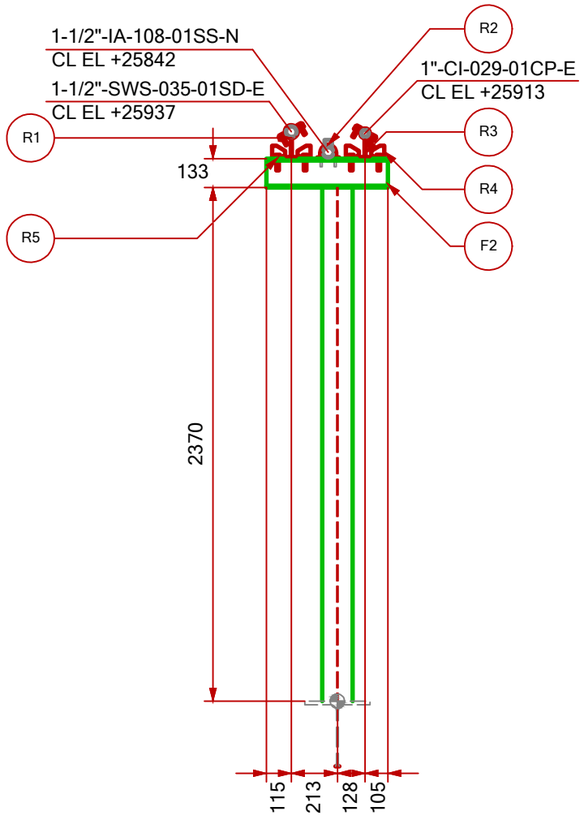
6. EXTRACT OF SUPPORT LIST & DETAILS

SUPPORT LIST

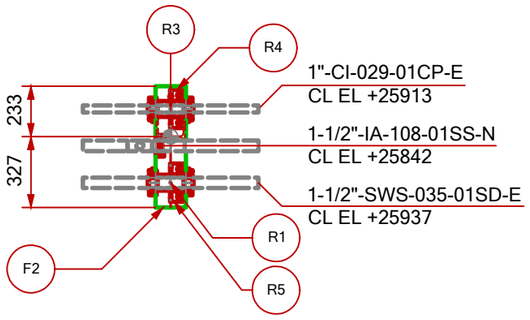
SUPPORT	SUFFIX	SERVICE	DECK IDENTIFICATION	SUB ASSEMBLY	LINE	SUPPORTS STANDARD	NDT CATEGORY	QUANTITY	TOT. WEIGTH (KG)	PAINTING SURFACE (SQM)	REV	DATE	STATUS	NOTES	Test Pack N°
PS-01014	B1	PIP	LOWER DECK		1-1/2"-SWS-035-01SD-E	S-64 - 1.1/2" - 100 - 200		1	3,999	0,108	00	19/08/2024	IFR		TP-028
PS-01014	B5	PIP	LOWER DECK		1-1/2"-SWS-035-01SD-E	C-33 - 1 - I - 2		1	2,280	0,028	00	19/08/2024	IFR		TP-028
PS-01015	B1	PIP	LOWER DECK		1-1/2"-SWS-035-01SD-E	S-64 - 1.1/2" - 100 - 200		1	3,999	0,108	00	19/08/2024	IFR		TP-028
PS-01015	B5	PIP	LOWER DECK		1-1/2"-SWS-035-01SD-E	C-33 - 1 - I - 2		1	2,280	0,028	00	19/08/2024	IFR		TP-028
PS-01027	B1	PIP	LOWER DECK		1-1/2"-SWS-035-01SD-E	S-64 - 1.1/2" - 100 - 200		1	3,999	0,108	00	19/08/2024	IFR		TP-028
PS-01027	B3	PIP	LOWER DECK		1-1/2"-SWS-035-01SD-E	C-33 - 1 - I - 2		1	2,280	0,028	00	19/08/2024	IFR		TP-028
PS-01028	B1	PIP	LOWER DECK		1-1/2"-SWS-035-01SD-E	S-64 - 1.1/2" - 100 - 200		1	3,999	0,108	00	19/08/2024	IFR		TP-028
PS-01028	B3	PIP	LOWER DECK		1-1/2"-SWS-035-01SD-E	C-33 - 1 - I - 2		1	2,280	0,028	00	19/08/2024	IFR		TP-028
PS-01049	B1	PIP	LOWER DECK		1"-SWS-290-01SD-E	S-64 - 1" - 100 - 200		1	3,805	0,102	00	19/08/2024	IFR		TP-028



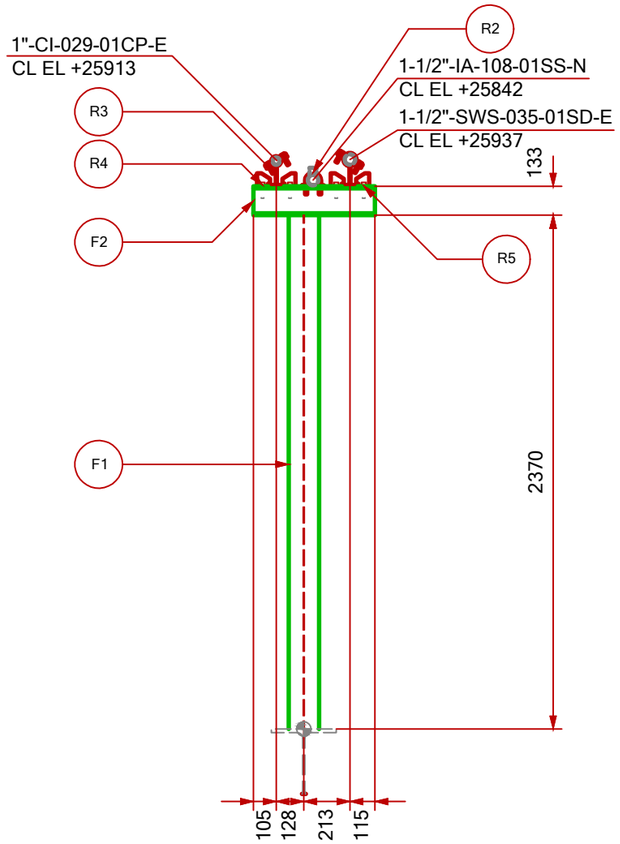
VIEW LOOKING NORTH



VIEW LOOKING WEST



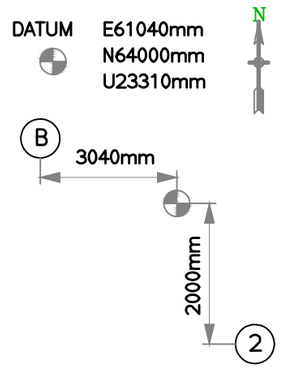
PLAN VIEW

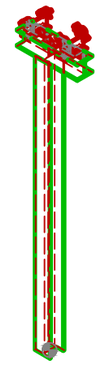


VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	S-64-1.1/2"-100-200	-	-	1	-	4.00	0.108
R2	STD	S-211-1 1/2"	-	-	1	-	0.49	-
R3	STD	S-64-1"-100-200	-	-	1	-	3.81	0.102
R4	STD	C-33-1-C-2	-	-	1	-	2.28	0.028
R5	STD	C-33-1-I-2	-	-	1	-	2.28	0.028
F1	BEAM	HEA140	Carbon Steel	2370	1	24.75	58.66	1.888
F2	BEAM	HEA140	Carbon Steel	560	1	24.75	13.86	0.451
						TOTAL	85.4	2.60





REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

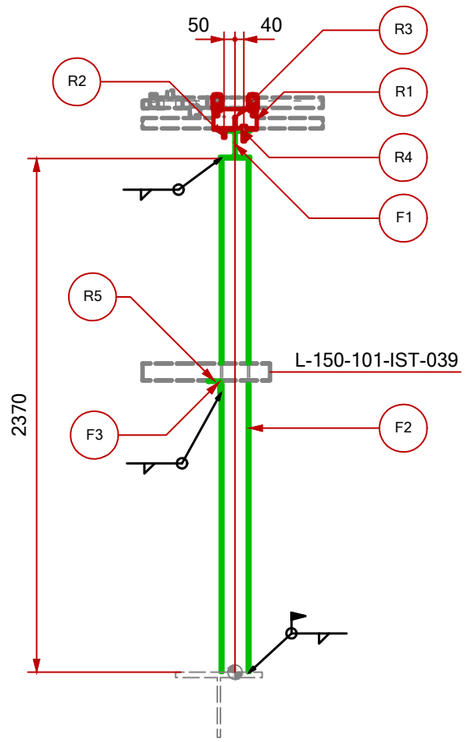
ROSETTI MARINO

TITLE :

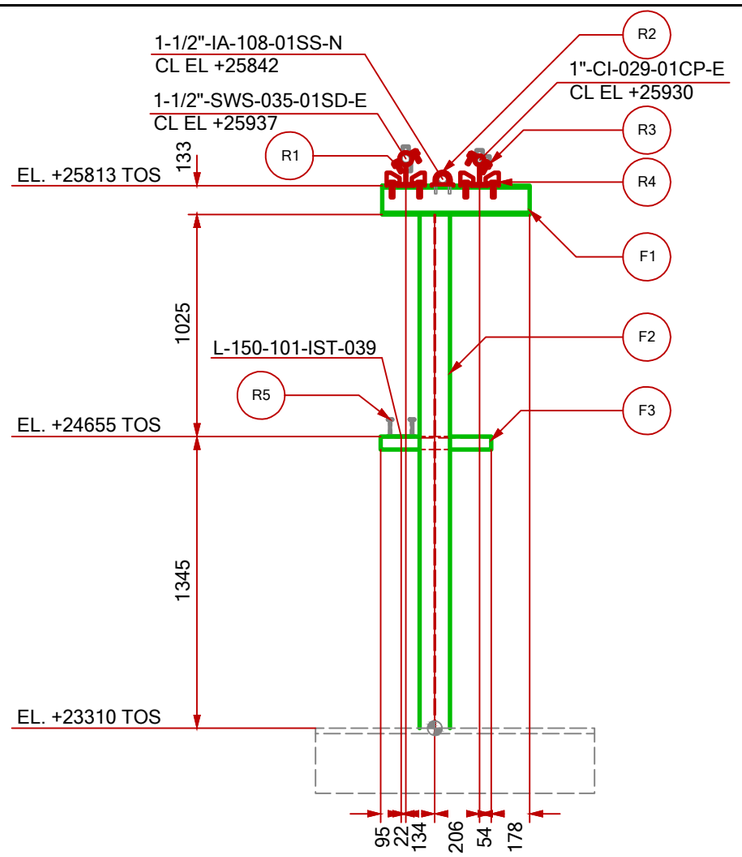
BASE LOAD POWER HUB (BLPH)
Support Drawings
PS-01014

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE	1 : 20
DRAWN	CHECKED	APPROVED		DATE	19/08/24
	DRAWING NO. 123A90-DDL-PP-DD-72000			SHEET 1 of 1	REV. 00

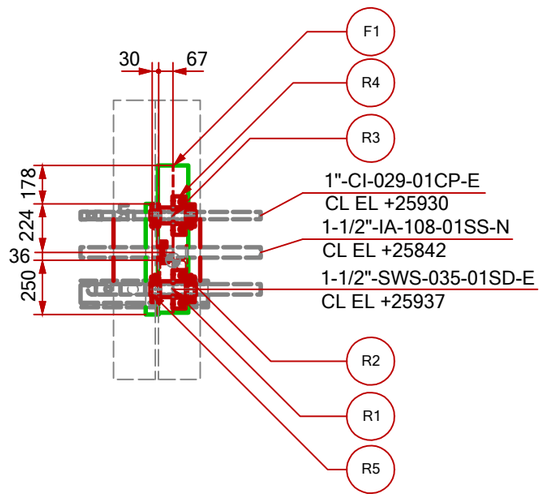
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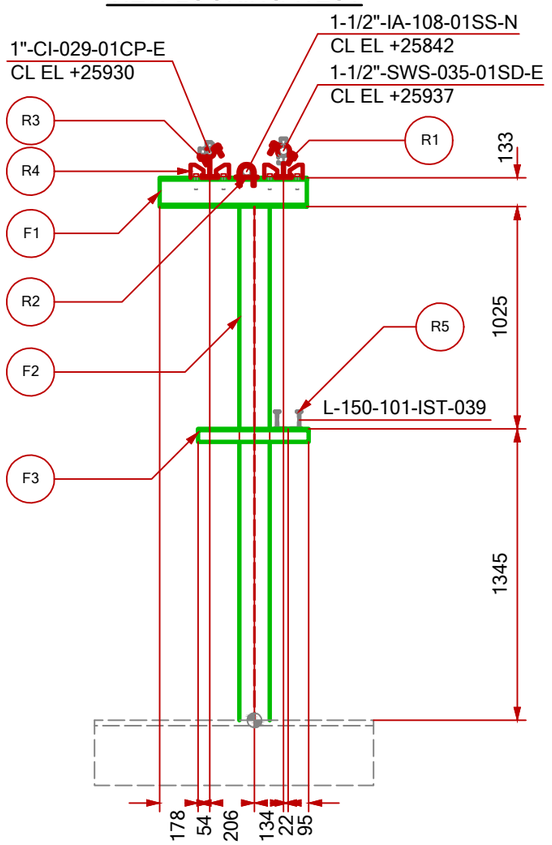
VIEW LOOKING NORTH



VIEW LOOKING WEST



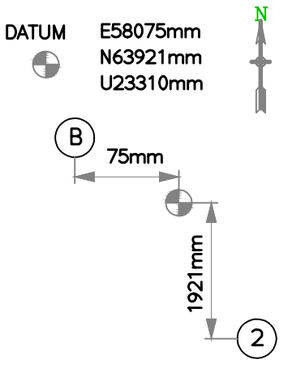
PLAN VIEW

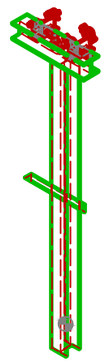


VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	S-64-1.1/2"-100-200	-	-	1	-	4.00	0.108
R2	STD	S-211-1 1/2"	-	-	1	-	0.49	-
R3	STD	S-64-1"-100-200	-	-	1	-	3.81	0.102
R4	STD	C-33-1-I-2	-	-	2	-	2.28	0.028
R5	STD	RACK SUPPORT	-	-	1	-	0.00	-
F1	BEAM	HEA140	Carbon Steel	680	1	24.75	16.83	0.546
F2	BEAM	HEA140	Carbon Steel	2370	1	24.75	58.66	1.888
F3	BEAM	L60x60x6	Carbon Steel	510	1	5.42	2.77	0.120
						TOTAL	91.1	2.82





REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

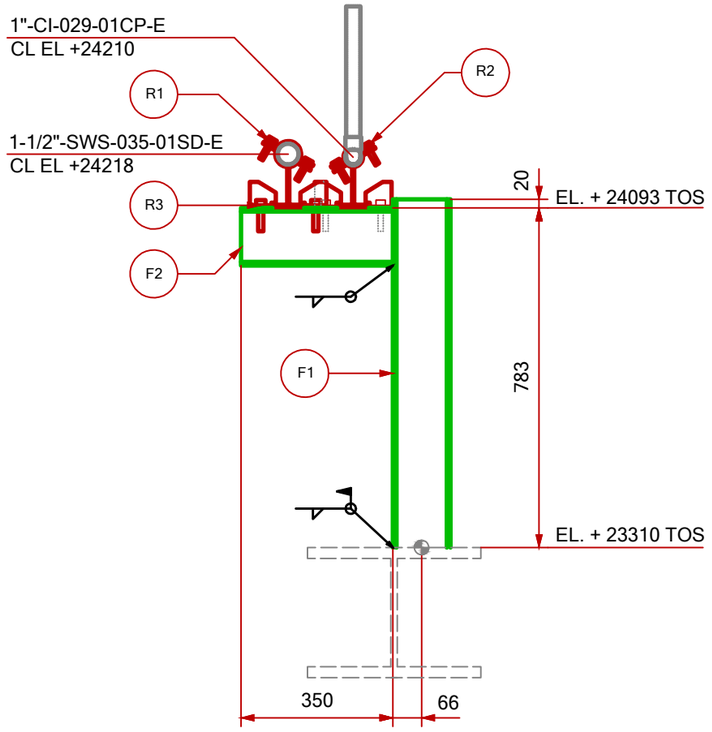
ROSETTI MARINO

TITLE :

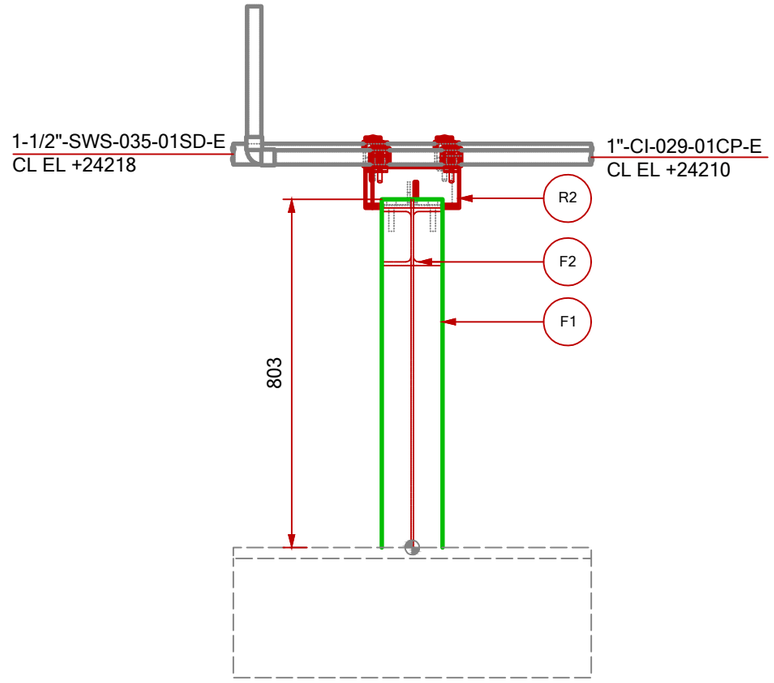
BASE LOAD POWER HUB (BLPH)
Support Drawings
PS-01015

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1 : 20
DRAWN	CHECKED	APPROVED	DATE 19/08/24
DRAWING NO. 123A90-DDL-PP-DD-72000			SHEET 1 of 1 / REV. 00

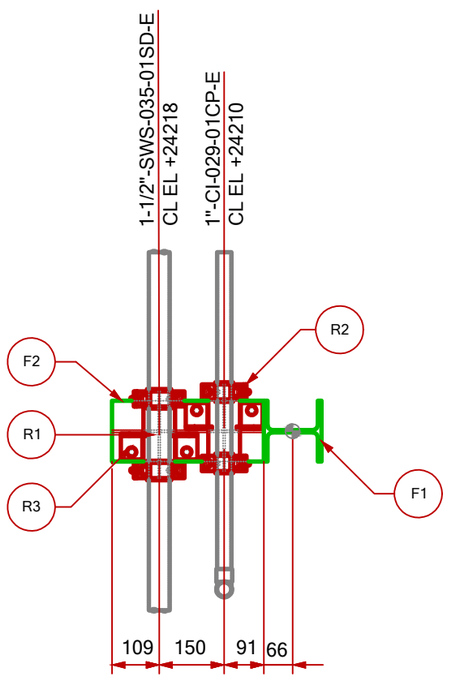
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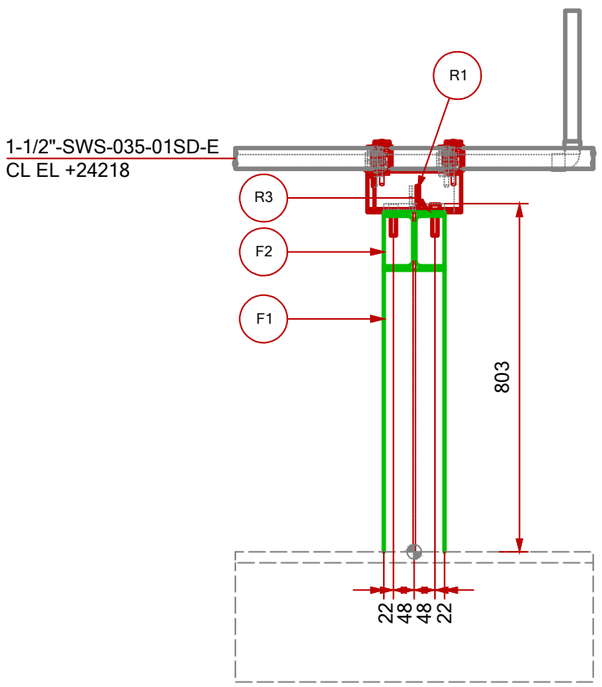
VIEW LOOKING NORTH



VIEW LOOKING WEST



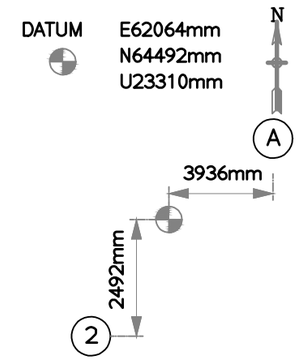
PLAN VIEW

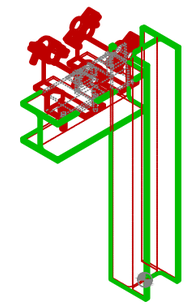


VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	S-64-1.1/2"-100-200	-	-	1	-	4.00	0.108
R2	STD	S-64-1"-100-200	-	-	1	-	3.81	0.102
R3	STD	C-33-1-I-2	-	-	2	-	2.28	0.028
F1	BEAM	HEA140	Carbon Steel	803	1	24.75	19.88	0.644
F2	BEAM	HEA140	Carbon Steel	350	1	24.75	8.66	0.284
						TOTAL	40.9	1.19





REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

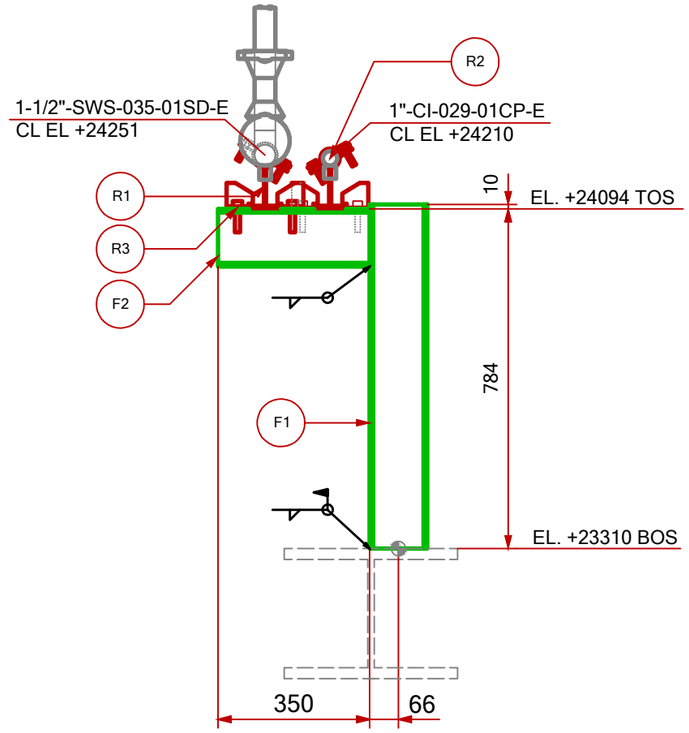
ROSETTI MARINO

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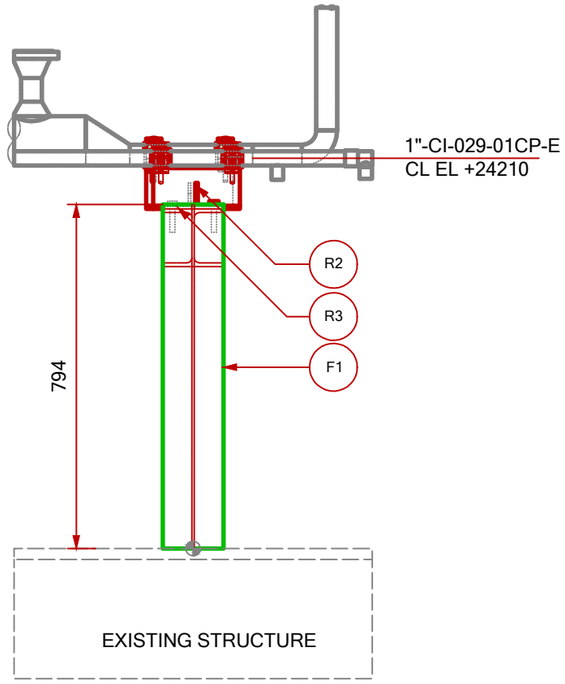
BASE LOAD POWER HUB (BLPH)
Support Drawings
PS-01027

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1 : 10
DRAWN	CHECKED	APPROVED	DATE 19/08/24
DRAWING NO. 123A90-DDL-PP-DD-72000			SHEET 1 of 1 / REV. 00

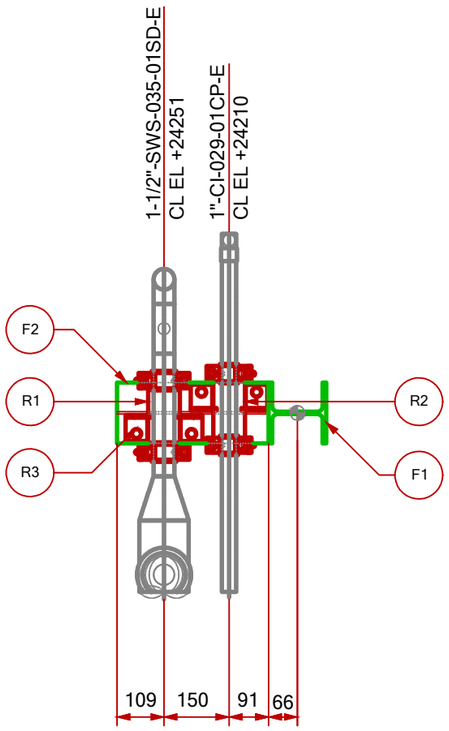
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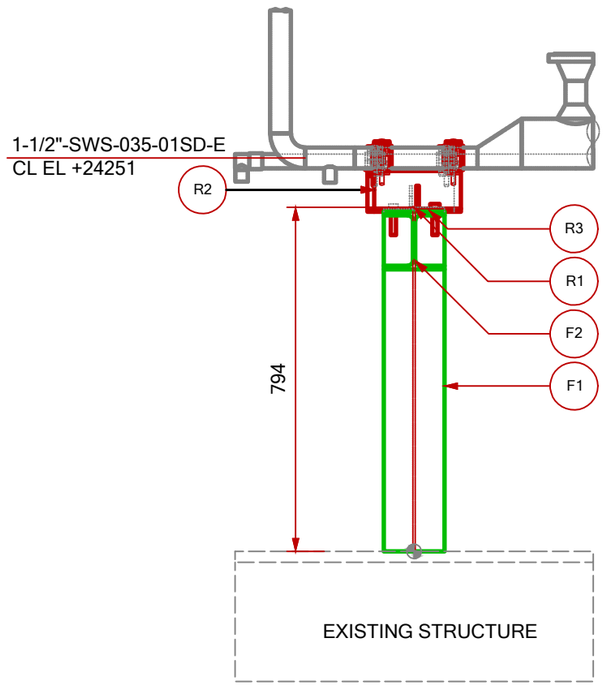
VIEW LOOKING NORTH



VIEW LOOKING WEST



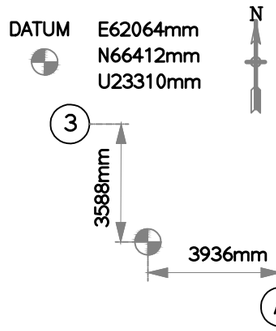
PLAN VIEW

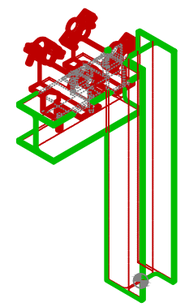


VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	S-64-1.1/2"-100-200	-	-	1	-	4.00	0.108
R2	STD	S-64-1"-100-200	-	-	1	-	3.81	0.102
R3	STD	C-33-1-I-2	-	-	2	-	2.28	0.028
F1	BEAM	HEA140	Carbon Steel	794	1	24.75	19.64	0.636
F2	BEAM	HEA140	Carbon Steel	350	1	24.75	8.66	0.284
						TOTAL	40.7	1.19





REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

ROSETTI MARINO

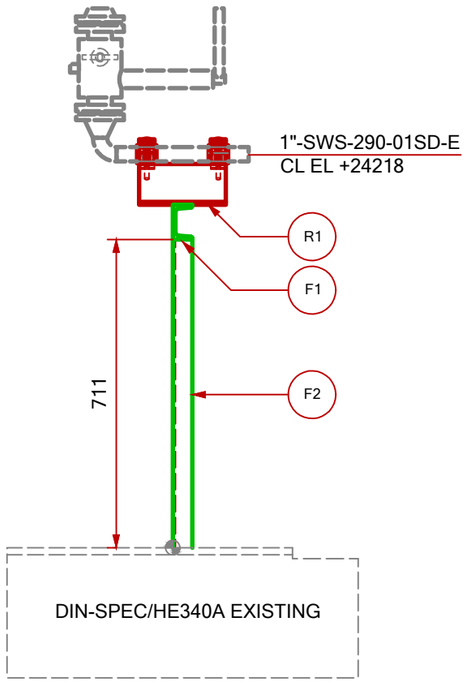
TITLE :

BASE LOAD POWER HUB (BLPH)
Support Drawings

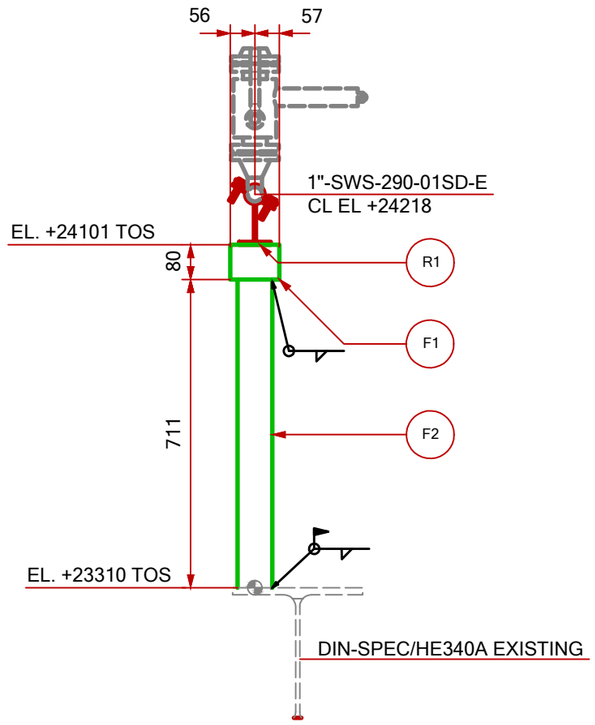
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CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1 : 10
DRAWN	CHECKED	APPROVED	DATE 19/08/24
DRAWING NO. 123A90-DDL-PP-DD-72000			SHEET 1 of 1 / REV. 00

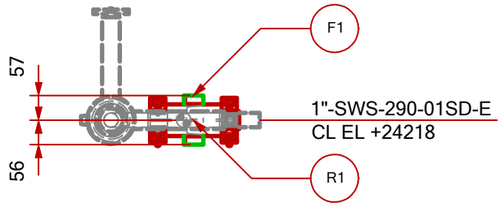
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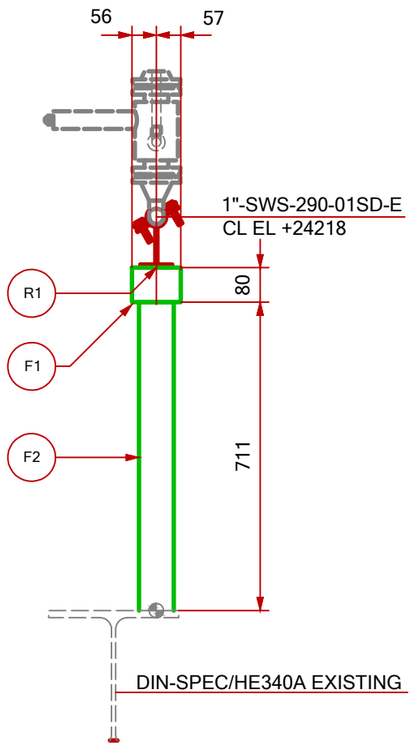
VIEW LOOKING NORTH



VIEW LOOKING WEST



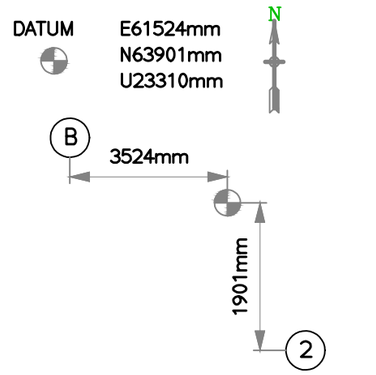
PLAN VIEW

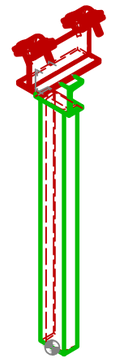


VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	S-64-1"-100-200	-	-	1	-	3.81	0.102
F1	BEAM	UPN80	Carbon Steel	113	1	8.66	0.98	0.038
F2	BEAM	UPN80	Carbon Steel	706	1	8.66	6.12	0.223
						TOTAL	10.9	0.36





REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

ROSETTI MARINO

TITLE :

BASE LOAD POWER HUB (BLPH)
Support Drawings
PS-01049

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE 1 : 10
DRAWN	CHECKED	APPROVED		DATE 19/08/24
	DRAWING NO. 123A90-DDL-PP-DD-72000		SHEET 1 of 1	REV. 00

File Name :

ROSETTI MARINO

STANDARD SPECIFICATION
PIPE SUPPORT DETAIL STANDARD

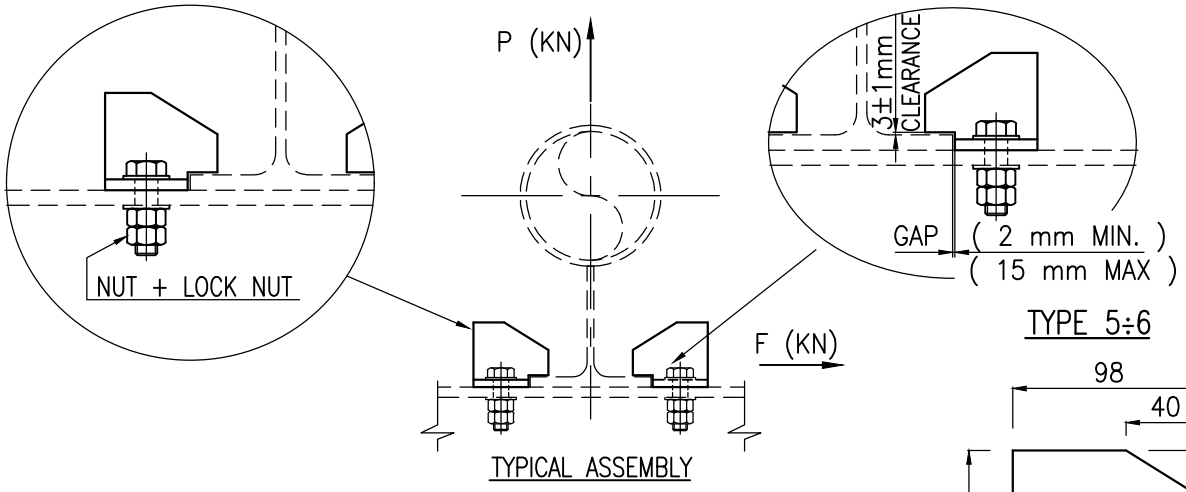
Document Number: STD–PP–DD–0001

Revision: 0

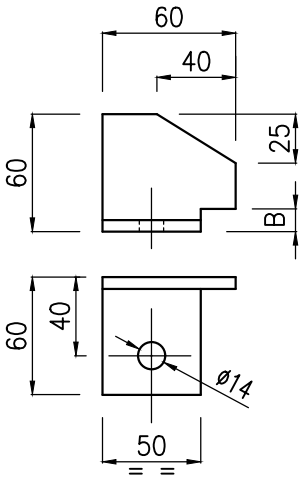
Date: –

GUIDA BULLONATA CON HOLD–DOWN PER SCARPETTE
BOLTED GUIDE WITH HOLD DOWN FOR SHOES

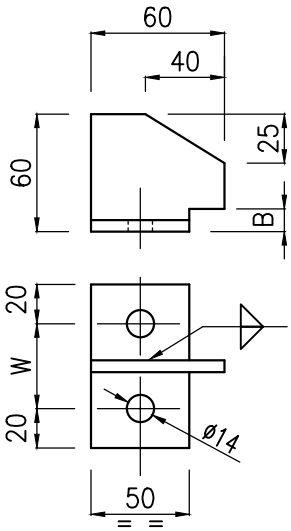
C–33



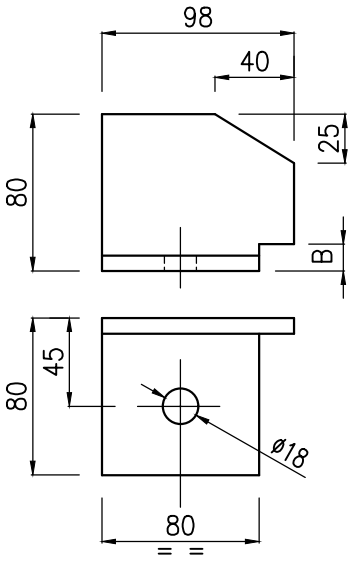
TYPE 1 (NOTE 4)



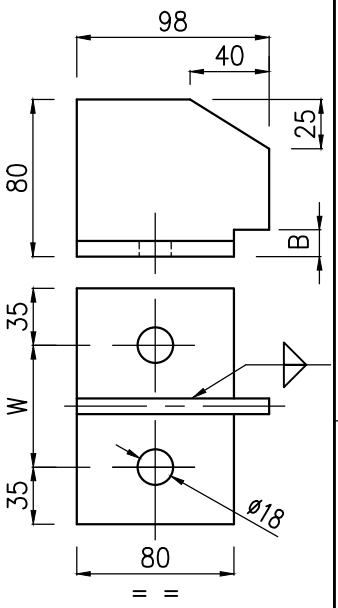
TYPE 2



TYPE 3÷4 (NOTE 4)



TYPE 5÷6



Example of designation : STD – TYPE – SIZE – GAP
(C–33 – 6 – M – 2)

TYPE	SHOE THK.	B	DIM. HOLE	SECTION	BOLTING	F (KN)	P (KN)
1	9–10	12	13	L60x60x6	M12x60	10	32
2	9–10	12	13	PLT. 10THK	M12x60	20	32
3	11–12	14	18	L80x80x8	M16x70	18	59
4	13–14	16	18	L80x80x8	M16x70	18	59
5	11–12	14	18	PLT. 10THK	M16x70	36	71
6	13–14	16	18	PLT. 10THK	M16x70	36	71

SIZE	EXIST. BEAM	W mm
A	HEA 100	58
B	HEA 120	66
C	HEA 140	76
D	HEA 160	86
E	HEA 180	96
F	HEA 200	106
	HEA 220	
G	HEA 240	120
	HEA 260	
	HEA 280	
H	HEA 300	126
I	UPN 100	46
	UPN 120	
J	UPN 140	60
K	UPN 200	100
L	IPE 200	64
	IPE 220	
M	IPE 270	70
N	IPE 300	72
O	IPE 600	94
Z	–	0

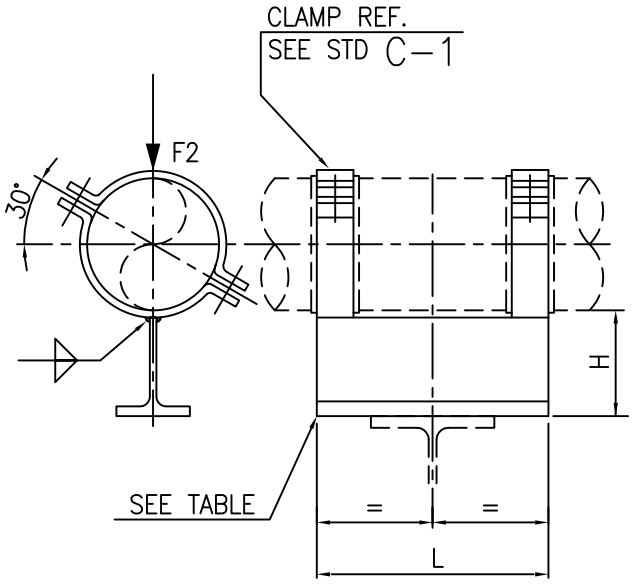
NOTES:
1– PLATES MATERIAL: CARBON STEEL
2– BOLTS (UNI 5739 Cl 8.8), NUTS (UNI 5588 Cl 8.8), LOCK NUT (UNI 7474 Cl.10) & WASHERS (UNI 6592) SHALL BE H.D.G.
3– GUIDE TO BE SITE LOCATED UNLESS NOTED OTHERWISE ON THE PIPE SUPPORT DRAWING.
4– REALIZE A PIECE AS DRAWING AND A PIECE SYMMETRIC.
5– VARIABLE WEIGHT ADDICTED TO THE THE "TYPE" SELECTED AND "W" DIMENSION INDICATED.
6– TYPES 1, 3 & 4 SHALL BE USED PREFERABLY WHEN EXISTING BEAMS ARE ANGULARS

Revision Number	Date	Description	DRAW	CHKD.	APPR.
00	–	ISSUED FOR REVIEW	SLO	GMA	MCO

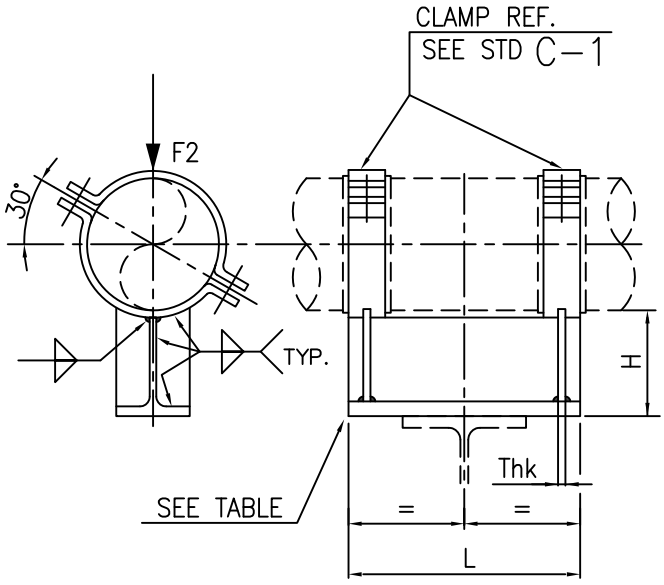
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	ROSETTI MARINO	Document Number: STD–PP–DD–0001
	STANDARD SPECIFICATION PIPE SUPPORT DETAIL STANDARD	Revision: 0 Date: –
SCARPETTA CLAMPATA PER TUBAZIONI C.S.–S.S. E ALLOY CLAMPED SHOE FOR C.S. – S.S. AND ALLOY PIPES		S–64

Example of designation : STD – PIPE ND" – H – L
(S–64 – 4" – 150 – 400)



PIPES ½" TO 4"



PIPES 6" TO 24"

PIPE		TEE CUT FROM	GUSSET Thk	"H" MAX	MAX LOAD (KN)
ND"	ND				F2
½"	15	IPE 140	–	120	2
3/4"	20	IPE 140	–		
1"	25	IPE 140	–		
1½"	40	IPE 140	–		
2"	50	IPE 220	–	190	4.5
3"	80	IPE 220	–		
4"	100	IPE 220	–		
6"	150	IPE 270	10	240	7.9
8"	200	IPE 270	10		
10"	250	HE220A	10	180	47
12"	300	HE220A	10		
14"	350	HE220A	10		
16"	400	HE220A	10		
18"	450	HE300A	15	230	64
20"	500	HE300A	15		
24"	600	HE300A	15		

ALLOWABLE RANGE FOR SHOE LENGTH		
ø PIPE	MIN. "L" mm	MAX. "L" mm
½" ÷ 6"	200	600
8" ÷ 24"	250	600

NOTES:

1– MATERIAL TO BE CARBON STEEL
2– ALL FILLET WELDING MUST HAVE THE EQUAL TO 0.8 OF THE MINIMUM THICKNESS TO BE WELDED EXCEPT WHERE OTHERWISE INDICATED.
3– VARIABLE WEIGHT ADDICTED TO THE "PIPE ND" SELECTED AND THE "L", "H" DIMENSIONS INDICATED.

Revision Number	Date	Description	DRAW	CHKD.	APPR.
00	–	ISSUED FOR REVIEW	SLO	GMA	MCO

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7. WELDING REGISTER & MATERIAL TRACEABILITY RECORD

Rosetti Marino S.p.A.

Welding Register

Job	123A90	BASE LOAD POWER HUB (BLPH)			
From Discipline	PP	Piping			
To Discipline	PP	Piping			
Drawings		**From**	26	**To**	26
Sheet		**From**	0	**To**	0
Marks		**From**		**To**	
Location		**From**		**To**	
Material		**From**		**To**	
Welds Execution		**From**		**To**	
Welds Acceptance		**From**		**To**	
Report Date		**From**		**To**	
Prefabrication	All				
Welding Status	All				
	ITEM				
ADDITIONAL PARAMETERS	**LINE**	**From**		**To**	
	SPOOL	**From**		**To**	
		From		**To**	

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH) Order Number CW-I-WP4-2023-05

Client CRWIND CROSSWIND

Discipline PP Piping ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Cont.	Accept. Date	Spool
1/26/1/_		**00**	**07-11-2024**	**70**	**AZ36**			**CAP**	**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**12-11-2024**	**A**
01SD	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					12-11-2024			
		RT	FIN	Weld Completion				10 %			Acceptable								
2/26/1/_		**00**	**07-11-2024**	**70**	**AZ36**			**TEE**	**0,75 in**	**2,87 mm**	**V**	**0,083 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**12-11-2024**	**A**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					12-11-2024			
		RT	FIN	Weld Completion				10 %			Acceptable								
3/26/1/_		**00**	**07-11-2024**	**70**	**AZ39**			**TEE**	**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**13-11-2024**	**A**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					12-11-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	10 %	000989	3	Acceptable					13-11-2024			
4/26/1/_		**00**	**11-12-2024**	**75**	**AX416**			**TEE**	**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**M**	**S.D.**	**B1A**	**GTAW**	**BW**	**11-12-2024**	
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	ACRISPINO	100 %	OK		Acceptable					11-12-2024			
		RT	FIN	Weld Completion				10 %			Acceptable								
5/26/1/_		**00**	**23-09-2024**	**17**	**AZ39**			**PIPE**	**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**24-09-2024**	**B**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable					24-09-2024			
		RT	FIN	Weld Completion				10 %			Acceptable								
6/26/1/_		**00**	**25-09-2024**	**18**	**AZ39**			**ELB**	**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**26-09-2024**	**B**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					26-09-2024			
		RT	FIN	Weld Completion				10 %			Acceptable								
7/26/1/_		**00**	**08-10-2024**	**34**	**AZ39**			**PIPE**	**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**15-10-2024**	**B**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					09-10-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	AA	10 %	000377	3	Acceptable					15-10-2024			
8/26/1/_		**00**	**25-09-2024**	**18**	**AZ39**			**ELB**	**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**26-09-2024**	**B**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					26-09-2024			
		RT	FIN	Weld Completion				10 %			Acceptable								
9/26/1/_		**00**	**23-09-2024**	**17**	**AZ39**			**PIPE**	**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**24-09-2024**	**B**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable					24-09-2024			
		RT	FIN	Weld Completion				10 %			Acceptable								

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH) Order Number CW-I-WP4-2023-05

Client CRWIND CROSSWIND

Discipline PP Piping ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Cont.	Accept. Date	Spool
9/26/1/_		**00**	**23-09-2024**	**17**	**AZ39**			**PIPE**	**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**24-09-2024**	**B**
10/26/1/_		**00**	**07-11-2024**	**70**	**AZ36**			**TEE**	**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**13-11-2024**	**A**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					12-11-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	10 %	000990	3	Acceptable					13-11-2024			
11/26/1/_		**00**	**07-11-2024**	**70**	**AZ36**			**PIPE**	**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**13-11-2024**	**A**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					12-11-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	10 %	000991	3	Acceptable					13-11-2024			
12/26/1/_		**00**	**11-12-2024**	**75**	**AX416**			**TEE**	**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**M**	**S.D.**	**B1A**	**GTAW**	**BW**	**11-12-2024**	
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	ACRISPINO	100 %	OK		Acceptable					11-12-2024			
		RT	FIN	Weld Completion				10 %			Acceptable								
13/26/1/_		**00**	**23-09-2024**	**17-73**	**AZ39**			**PIPE**	**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**12-11-2024**	**C**
					AZ36	**After Cutting**													
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable					24-09-2024			
		RT	FIN	Weld Completion				10 %			Acceptable								
Cut 07-11-2024		VIS	C 1 DTA	After Cutting		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable B1A		GTAW			12-11-2024			
		RT	C 1 DTA	After Cutting				10 %			Acceptable								
14/26/1/_		**00**	**25-09-2024**	**18-73**	**AZ39**			**ELB**	**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**12-11-2024**	**C**
					AZ36	**After Cutting**													
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					26-09-2024			
		RT	FIN	Weld Completion				10 %			Acceptable								
Cut 07-11-2024		VIS	C 1 DTA	After Cutting		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable B1A		GTAW			12-11-2024			
		RT	C 1 DTA	After Cutting				10 %			Acceptable								
15/26/1/_		**00**	**23-09-2024**	**17-73**	**AZ39**			**PIPE**	**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**12-11-2024**	**C**
					AZ36	**After Cutting**													
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable					24-09-2024			
		RT	FIN	Weld Completion				10 %			Acceptable								
Cut 07-11-2024		VIS	C 1 DTA	After Cutting		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable B1A		GTAW			12-11-2024			
		RT	C 1 DTA	After Cutting				10 %			Acceptable								
16/26/1/_		**00**	**25-09-2024**	**18-73**	**AZ39**	**Welding + Repair done**	**ELB**		**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**12-11-2024**	**C**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					26-09-2024			

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH) Order Number CW-I-WP4-2023-05

Client CRWIND CROSSWIND

Discipline PP Piping ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Cont.	Accept. Date	Spool
16/26/1/_		**00**	**25-09-2024**	**18-73**	**AZ39**	**Welding + Repair done**		**ELB**	**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**12-11-2024**	**C**
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	10 %	000114	3	Acceptable				04-10-2024				
Cut 07-11-2024		VIS	C 1 DTA	After Cutting		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable B1A		GTAW		12-11-2024				
		RT	C 1 DTA	After Cutting				10 %			Acceptable								
17/26/1/_		**00**	**08-10-2024**	**34-73**	**AZ39**			**PIPE**	**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**12-11-2024**	**C**
					AZ36	**After Cutting**													
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				09-10-2024				
		RT	FIN	Weld Completion				10 %			Acceptable								
Cut 07-11-2024		VIS	C 1 DTA	After Cutting		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable B1A		GTAW		12-11-2024				
		RT	C 1 DTA	After Cutting				10 %			Acceptable								
18/26/1/_		**00**	**07-11-2024**	**70**	**AZ36**			**TEE**	**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**13-11-2024**	**A**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				12-11-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	10 %	000992	3	Acceptable				13-11-2024				
19/26/1/_		**00**	**12-12-2024**	**79**	**AX416**			**PIPE**	**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**M**	**S.D.**	**B1A**	**GTAW**	**BW**	**16-12-2024**	
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	ACRISPINO	100 %	OK		Acceptable				13-12-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	10 %	001065	3	Acceptable				16-12-2024				
20/26/2/_		**00**	**08-11-2024**	**71**	**AZ36**			**ELB**	**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**13-11-2024**	**D**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				12-11-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	10 %	000993	3	Acceptable				13-11-2024				
21/26/2/_		**00**	**08-11-2024**	**71**	**AZ36**			**PIPE**	**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**12-11-2024**	**D**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				12-11-2024				
		RT	FIN	Weld Completion				10 %			Acceptable								
22/26/2/_		**00**	**12-11-2024**	**77**	**AZ39**			**ELB**	**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**15-11-2024**	**D**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				15-11-2024				
		RT	FIN	Weld Completion				10 %			Acceptable								
23/26/2/_		**00**	**11-01-2025**	**130**	**AX416**			**TEE**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**M**	**S.D.**	**B1A**	**GTAW**	**BW**	**11-01-2025**	
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	LCOSCA	100 %	OK		Acceptable				11-01-2025				
		RT	FIN	Weld Completion				10 %			Acceptable								
24/26/2/_		**00**	**08-11-2024**	**71**	**AZ36**			**TEE**	**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**12-11-2024**	**D**

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH) Order Number CW-I-WP4-2023-05

Client CRWIND CROSSWIND

Discipline PP Piping ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	N. Rep	Dimension / Films n.	Thickness	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Cont.	Accept. Date	Spool
24/26/2/_		**00**	**08-11-2024**	**71**	**AZ36**			**TEE**		**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**12-11-2024**	**D**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK			Acceptable					12-11-2024			
		RT	FIN	Weld Completion				10 %				Acceptable								
25/26/2/_		**00**	**12-11-2024**	**77**	**AZ39**			**PIPE**		**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**15-11-2024**	**D**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK			Acceptable					15-11-2024			
		RT	FIN	Weld Completion				10 %				Acceptable								
26/26/2/_		**00**	**11-11-2024**	**74**	**AZ36**			**RED**		**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**12-11-2024**	**D**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK			Acceptable					12-11-2024			
		RT	FIN	Weld Completion				10 %				Acceptable								
27/26/2/_		**00**	**23-09-2024**	**17-76**	**AZ39**			**PIPE**		**1,50 in**	**3,68 mm**	**1/2V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**LET**	**12-11-2024**	**D**
					AZ36	**After Cutting**														
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK			Acceptable					24-09-2024			
		LP	FIN	Weld Completion				10 %				Acceptable								
Cut 11-11-2024		VIS	C 1 DTA	After Cutting		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK			Acceptable B1A			GTAW		12-11-2024			
		LP	C 1 DTA	After Cutting				10 %				Acceptable								
28/26/2/_		**00**	**11-11-2024**	**74**	**AZ36**			**PIPE**		**4,00 in**	**3,05 mm**	**V**	**0,359 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**13-11-2024**	**D**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK			Acceptable					12-11-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	10 %	000995	3		Acceptable					13-11-2024			
29/26/2/_		**00**	**12-11-2024**	**77**	**AZ39**			**RED**		**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**15-11-2024**	**D**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK			Acceptable					15-11-2024			
		RT	FIN	Weld Completion				10 %				Acceptable								
30/26/2/_		**00**	**08-11-2024**	**71**	**AZ36**			**PIPE**		**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**13-11-2024**	**D**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK			Acceptable					12-11-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	10 %	000994	3		Acceptable					13-11-2024			
31/26/2/_		**00**	**08-11-2024**	**71**	**AZ36**			**TEE**		**0,75 in**	**2,87 mm**	**V**	**0,083 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**13-11-2024**	**D**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK			Acceptable					12-11-2024			
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	10 %	000985	4		Acceptable					13-11-2024			
32/26/2/_		**00**	**08-11-2024**	**71**	**AZ36**			**TEE**		**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**13-11-2024**	**D**

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH) Order Number CW-I-WP4-2023-05

Client CRWIND CROSSWIND

Discipline PP Piping ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Cont.	Accept. Date	Spool
32/26/2/_		**00**	**08-11-2024**	**71**	**AZ36**			**TEE**	**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**13-11-2024**	**D**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				12-11-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	10 %	000988	3	Acceptable				13-11-2024				
33/26/2/_		**00**	**12-12-2024**	**77**	**AX416**			**ELB**	**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**M**	**S.D.**	**B1A**	**GTAW**	**BW**	**16-12-2024**	
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	ACRISPINO	100 %	OK		Acceptable				12-12-2024				
		RT	FIN	Weld Completion		IDL-QCI-RT 0036 00	PR	10 %	001066	3	Acceptable				16-12-2024				
34/26/2/_		**00**	**26-09-2024**	**19**	**AZ39**			**PIPE**	**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**28-09-2024**	**E**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				28-09-2024				
		RT	FIN	Weld Completion				10 %			Acceptable								
35/26/2/_		**00**	**23-09-2024**	**17**	**AZ39**			**ELB**	**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**24-09-2024**	**E**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable				24-09-2024				
		RT	FIN	Weld Completion				10 %			Acceptable								
36/26/2/_		**00**	**23-09-2024**	**17**	**AZ39**			**PIPE**	**1,50 in**	**3,68 mm**	**V**	**0,151 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**24-09-2024**	**E**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	RGARDINIT	100 %	OK		Acceptable				24-09-2024				
		RT	FIN	Weld Completion				10 %			Acceptable								

Totals per DWG	**26**	**Prefabrication**	**4,93 m**	**31 Nr. Welds**	**50,00 inch**
		Erection	**0,70 m**	**5 Nr. Welds**	**7,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**5,63 m**	**36 Nr. Welds**	**57,00 inch**
		Accepted	**5,63 m**	**36 Nr. Welds**	**57,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Discipline		**Prefabrication**	**4,93 m**	**31 Nr. Welds**	**50,00 inch**
		Erection	**0,70 m**	**5 Nr. Welds**	**7,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**5,63 m**	**36 Nr. Welds**	**57,00 inch**
		Accepted	**5,63 m**	**36 Nr. Welds**	**57,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Project		**Prefabrication**	**4,93 m**	**31 Nr. Welds**	**50,00 inch**
		Erection	**0,70 m**	**5 Nr. Welds**	**7,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**5,63 m**	**36 Nr. Welds**	**57,00 inch**
		Accepted	**5,63 m**	**36 Nr. Welds**	**57,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**

Cliente/Contractor	**CROSSWIND**	Preparato da/Prepared by	Controllato da/Checked by	Approvato da/Approved by	
SubContrattista/SubContractor	**ROSETTIMARINO/GROUPOFCOMPANY**	Nome/Name: Antonio Galesi	Nome/Name:	Nome/Name:	
Progetto/Project	**Hollandse Kust Noord Wind Park Project**				
Commessa/Job	**123A90 - Piping**				
Disciplina/Discipline	**PIPING**				
TitoloDocumento/DocumentTitle	**Material Traceability Report**	StatoDocumento/Document Status:		Data/Date: 14/01/2025	
RosettiDoc.Num.	**123A90MTR001**				

Sketch no.	Rev.	sheet	Spool	Piping Class	pos.	Q.ty (n° - m)	Description	Heat/Serial Number	PurchaseOrder	Pos. Order	Mat. Certificate	Weld Ref.	Note
26	00	1	A	01SD	2	1	Tee Reducing BW ›1.1/2"x3/4" Thk.3,68mmx2,87mm ASTM A815 UNS S32760	1181SA05	1724000839	00510	1181SA05	W1-W2-W3	
26	00	1	A	01SD	3	1	Tee BW ›1.1/2" Thk.3,68mm ASTM A815 UNS S32760	1157SA019	1724001828	00270	1157SA019	W3-W10	
26	00	1	A	01SD	3	1	Tee BW ›1.1/2" Thk.3,68mm ASTM A815 UNS S32760	1157SA019	1724001828	00270	1157SA019	W11-W18	
26	00	1	A	01SD	4	1	Cap BW ›1.1/2" Thk.3,68mm ASTM A815 UNS S32760	1016SA019	1724000839	00170	1016SA019	W1	
26	00	1	A	01SD	5	1	Nipple L=100mm TOE ›3/4" Thk.2,87mm ASTM A790 UNS S32760	TL6	1724001267	00250	003817	W2	
26	00	1	A	01SD	1D	1,339	Pipe 48.3mm(1.1/2") thk.3,68mm ASTM A790 UNS S32760	556787	1724000839	00040	A/198-847363		
26	00	1	A	01SD	1H	2,299	Pipe 48.3mm(1.1/2") thk.3,68mm ASTM A790 UNS S32760	556787	1724000839	00040	A/198-847363		
26	00	1	B	01SD	6	1	90 Deg Elbow Long Radius BW ›1.1/2" Thk.3,68mm ASTM A815 UNS S32760	1023SA024	1724000839	00250	1023SA024	W5-W6	
26	00	1	B	01SD	6	1	90 Deg Elbow Long Radius BW ›1.1/2" Thk.3,68mm ASTM A815 UNS S32760	1023SA024	1724000839	00250	1023SA024	W7-W8	
26	00	1	B	01SD	7	1	Flange WN ›1.1/2" Thk.3,68mm 150LB RF ASTM A182 Gr.F55	E170081	1724000839	00900	770	W9	
26	00	1	B	01SD	1A	0,097	Pipe 48.3mm(1.1/2") thk.3,68mm ASTM A790 UNS S32760	556787	1724000839	00040	A/198-847363		
26	00	1	B	01SD	1B	0,314	Pipe 48.3mm(1.1/2") thk.3,68mm ASTM A790 UNS S32760	556787	1724000839	00040	A/198-847363		
26	00	1	B	01SD	1C	1,127	Pipe 48.3mm(1.1/2") thk.3,68mm ASTM A790 UNS S32760	556787	1724000839	00040	A/198-847363		
26	00	1	C	01SD	6	1	90 Deg Elbow Long Radius BW ›1.1/2" Thk.3,68mm ASTM A815 UNS S32760	1023SA024	1724000839	00250	1023SA024	W13-W14	
26	00	1	C	01SD	6	1	90 Deg Elbow Long Radius BW ›1.1/2" Thk.3,68mm ASTM A815 UNS S32760	1023SA024	1724000839	00250	1023SA024	W15-W16	
26	00	1	C	01SD	7	1	Flange WN ›1.1/2" Thk.3,68mm 150LB RF ASTM A182 Gr.F55	E170081	1724000839	00900	770	W17	
26	00	1	C	01SD	1E	0,097	Pipe 48.3mm(1.1/2") thk.3,68mm ASTM A790 UNS S32760	556787	1724000839	00040	A/198-847363		
26	00	1	C	01SD	1F	0,314	Pipe 48.3mm(1.1/2") thk.3,68mm ASTM A790 UNS S32760	556787	1724000839	00040	A/198-847363		
26	00	1	C	01SD	1G	1,127	Pipe 48.3mm(1.1/2") thk.3,68mm ASTM A790 UNS S32760	556787	1724000839	00040	A/198-847363		
26	00	1	MONT	01SD	8	1	Cap Forged THRD-F NPT ›3/4" 3000# ASTM A182 Gr.F55	0	#N/D	#N/D	#N/D		
26	00	1	MONT	01SD	9	2	Gasket Flat Thk. 3 mm ›1.1/2" 150LB RF NEOPRENE	0	#N/D	#N/D	#N/D		
26	00	1	MONT	01SD	11	8	Stud Bolt + 2 Heavy Nuts 1/2" L=70MM ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	0	#N/D	#N/D	#N/D		
26	00	2	D	01SD	3	1	Tee Reducing BW ›1.1/2"x1" Thk.3,68mmx3,38mm ASTM A815 UNS S32760	1005SA022	1724000839	00520	1005SA022	W22-W24	
26	00	2	D	01SD	4	1	Tee Reducing BW ›1.1/2"x3/4" Thk.3,68mmx2,87mm ASTM A815 UNS S32760	1181SA05	1724000839	00510	1181SA05	W30-W31-W32	
26	00	2	D	01SD	5	1	NipoFlange Reinforced ›4"x1.1/2" Thk.3,05mmx3,68mm 150LB RF ASTM A182 Gr.F55	712578	1724001267	00280	24C0357/02	W27	
26	00	2	D	01SD	6	1	Reducer Eccentric BW ›4"x1.1/2" Thk.3,05mmx3,68mm ASTM A815 UNS S32760	1127SA03	1724000839	00420	1127SA03	W25-W26	
26	00	2	D	01SD	6	1	Reducer Eccentric BW ›4"x1.1/2" Thk.3,05mmx3,68mm ASTM A815 UNS S32760	1127SA03	1724000839	00420	1127SA03	W28-W29	
26	00	2	D	01SD	7	1	90 Deg Elbow Long Radius BW ›1.1/2" Thk.3,68mm ASTM A815 UNS S32760	1023SA024	1724000839	00250	1023SA024	W20	
26	00	2	D	01SD	7	1	90 Deg Elbow Long Radius BW ›1.1/2" Thk.3,68mm ASTM A815 UNS S32760	1023SA024	1724000839	00250	1023SA024	W21-W22	
26	00	2	D	01SD	7	1	90 Deg Elbow Long Radius BW ›1.1/2" Thk.3,68mm ASTM A815 UNS S32760	1023SA024	1724000839	00250	1023SA024	W32	
26	00	2	D	01SD	9	1	Flange WN ›3/4" Thk.2,87mm 150LB RF ASTM A182 Gr.F55	407642	1724000839	00890	770	W31	
26	00	2	D	01SD	1K	0,25	Pipe 114.3mm(4") thk.3.05mm ASTM A790 UNS S32760	59571	1724000839	00020	745216		
26	00	2	D	01SD	2I	1,606	Pipe 48.3mm(1.1/2") thk.3,68mm ASTM A790 UNS S32760	556787	1724000839	00040	A/198-847363		
26	00	2	D	01SD	2J	1,854	Pipe 48.3mm(1.1/2") thk.3,68mm ASTM A790 UNS S32760	556787	1724000839	00040	A/198-847363		
26	00	2	D	01SD	2L	0,283	Pipe 48.3mm(1.1/2") thk.3,68mm ASTM A790 UNS S32760	556787	1724000839	00040	A/198-847363		
26	00	2	E	01SD	7	1	90 Deg Elbow Long Radius BW ›1.1/2" Thk.3,68mm ASTM A815 UNS S32760	1023SA024	1724000839	00250	1023SA024	W34-W35	
26	00	2	E	01SD	8	1	Flange WN ›1.1/2" Thk.3,68mm 150LB RF ASTM A182 Gr.F55	E170081	1724000839	00900	770	W36	
26	00	2	E	01SD	2M	1,453	Pipe 48.3mm(1.1/2") thk.3,68mm ASTM A790 UNS S32760	556787	1724000839	00040	A/198-847363		
26	00	2	E	01SD	2N	0,174	Pipe 48.3mm(1.1/2") thk.3,68mm ASTM A790 UNS S32760	556787	1724000839	00040	A/198-847363		
26	00	2	MONT	01SD	10	1	Ball Valve Split Body FB 150LB FLG RF ›3/4" BS01F01RF	0	#N/D	#N/D	#N/D		
26	00	2	MONT	01SD	11	1	Flange Blind ›3/4" 150LB RF ASTM A182 Gr.F55	0	#N/D	#N/D	#N/D		
26	00	2	MONT	01SD	12	2	Gasket Flat Thk. 3 mm ›1.1/2" 150LB RF NEOPRENE	0	#N/D	#N/D	#N/D		
26	00	2	MONT	01SD	13	2	Gasket Flat Thk. 3 mm ›3/4" 150LB RF NEOPRENE	0	#N/D	#N/D	#N/D		
26	00	2	MONT	01SD	14	8	Stud Bolt + 2 Heavy Nuts 1/2" L=70MM ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	0	#N/D	#N/D	#N/D		
26	00	2	MONT	01SD	15	8	Stud Bolt + 2 Heavy Nuts 1/2" L=65MM ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	0	#N/D	#N/D	#N/D		
26	00	2	MONT	01SD	20	1	Temperature Transmitter 50-TT-001	0	#N/D	#N/D	#N/D		

Rosetti Marino S.p.A.

Welding Register

Job	123A90	BASE LOAD POWER HUB (BLPH)			
From Discipline	PP	Piping			
To Discipline	PP	Piping			
Drawings		**From**	154	**To**	154
Sheet		**From**	0	**To**	0
Marks		**From**		**To**	
Location		**From**		**To**	
Material		**From**		**To**	
Welds Execution		**From**		**To**	
Welds Acceptance		**From**		**To**	
Report Date		**From**		**To**	
Prefabrication	All				
Welding Status	All				
	ITEM				
ADDITIONAL PARAMETERS	**LINE**	**From**		**To**	
	SPOOL	**From**		**To**	
		From		**To**	

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH) Order Number CW-I-WP4-2023-05

Client CRWIND CROSSWIND

Discipline PP Piping ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders / Work Instructions	Item type / Oper.	Dimension / Exam. %	Thickness / N. Rep	Bevel / Films n.	Weld Length / Result	P/M / WPS Rip.	Material / Techn. Weld.	WPS / Defect length	Techn. Weld. / CND date	Type Conn / NOTE	Accept. Date	Spool
1/154/1/_		**01**	**26-09-2024**	**19**	**AZ39**	**PIPE**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**28-09-2024**	**A**
01SD	2	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				28-09-2024			
		RT	FIN	Weld Completion			10 %			Acceptable							
2/154/1/_		**01**	**25-09-2024**	**18**	**AZ39**	**ELB**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**26-09-2024**	**A**
	2	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				26-09-2024			
		RT	FIN	Weld Completion			10 %			Acceptable							
3/154/1/_		**01**	**26-09-2024**	**19**	**AZ39**	**FWN**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**28-09-2024**	**B**
	2	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				28-09-2024			
		RT	FIN	Weld Completion			10 %			Acceptable							
4/154/1/_		**01**	**26-09-2024**	**19**	**AZ39**	**PIPE**	**1,00 in**	**3,38 mm**	**V**	**0,104 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**28-09-2024**	**B**
	2	VIS	FTP	FIT-UP and on weld	123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				28-09-2024			
		RT	FIN	Weld Completion			10 %			Acceptable							

Totals per DWG	**154**	**Prefabrication**	**0,40 m**	**4 Nr. Welds**	**4,00 inch**
		Erection	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**0,40 m**	**4 Nr. Welds**	**4,00 inch**
		Accepted	**0,40 m**	**4 Nr. Welds**	**4,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Discipline		**Prefabrication**	**0,40 m**	**4 Nr. Welds**	**4,00 inch**
		Erection	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**0,40 m**	**4 Nr. Welds**	**4,00 inch**
		Accepted	**0,40 m**	**4 Nr. Welds**	**4,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Project		**Prefabrication**	**0,40 m**	**4 Nr. Welds**	**4,00 inch**
		Erection	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**0,40 m**	**4 Nr. Welds**	**4,00 inch**
		Accepted	**0,40 m**	**4 Nr. Welds**	**4,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**

CROSSWIND / ROSETTI MARINO	Cliente/Contractor	**CROSSWIND**	Preparato da/Prepared by	Controllato da/Checked by	Approvato da/Approved by
	SubContrattista/SubContractor	**ROSETTIMARINO/GROUPOFCOMPANY**	Nome/Name: Antonio Galesi	Nome/Name:	Nome/Name:
	Progetto/Project	**Hollandse Kust Noord Wind Park Project**			
	Commessa/Job	**123A90 - Piping**			
	Disciplina/Discipline	**PIPING**			
	TitoloDocumento/DocumentTitle	**Material Traceability Report**	StatoDocumento/Document Status:		Data/Date: 14/01/2025
	RosettiDoc.Num.	**123A90MTR001**			

Sketch no.	Rev.	sheet	Spool	Piping Class	pos.	Q.ty (n° - m)	Description	Heat/Serial Number	PurchaseOrder	Pos. Order	Mat. Certificate	Weld Ref.	Note
154	00	1	A	01SD	2	1	90 Deg Elbow Long Radius BW ›1" Thk.3.38mm ASTM A815 UNS S32760	1035SA022	1724000839	00240	1035SA022	W1-W2	
154	00	1	A	01SD	3	1	Flange WN ›1" Thk.3.38mm 150LB RF ASTM A182 Gr.F55	407642	1724000839	00870	770	W2	
154	00	1	A	01SD	1A	0,305	Pipe 33.4mm(1") thk.3.38mm ASTM A790 UNS S32760	BC2877	1724000839	00010	751007		
154	00	1	B	01SD	3	1	Flange WN ›1" Thk.3.38mm 150LB RF ASTM A182 Gr.F55	407642	1724000839	00870	770	W3	
154	00	1	B	01SD	3	1	Flange WN ›1" Thk.3.38mm 150LB RF ASTM A182 Gr.F55	407642	1724000839	00870	770	W4	
154	00	1	B	01SD	1B	0,1	Pipe 33.4mm(1") thk.3.38mm ASTM A790 UNS S32760	BC2877	1724000839	00010	751007		
154	00	1	MONT	01SD	4	1	Pressure Safety Valve 50-PSV-011	0	#N/D	#N/D	#N/D		
154	00	1	MONT	01SD	5	1	Block & Bleed Valve 150LB FLG RF ›1" BS01F01RFS	0	#N/D	#N/D	#N/D		
154	00	1	MONT	01SD	6	3	Gasket Flat Thk. 3 mm ›1" 150LB RF NEOPRENE	0	#N/D	#N/D	#N/D		
154	00	1	MONT	01SD	7	8	Stud Bolt + 2 Heavy Nuts 1/2" L=65MM ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	0	#N/D	#N/D	#N/D		
154	00	1	MONT	01SD	8	4	Stud Bolt + 2 Heavy Nuts 1/2" L=105MM ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	0	#N/D	#N/D	#N/D		

8. PIPING & VESSEL PRE-COMMISSIONING CONFORMITY CHECKS & TESTS:

8.1 CLX02A - Pipework Before test

8.2 CLX02B - Pipework After Test

8.3 CXX01 - Thermal insulation

8.4 CXX02 – Painting Line – NOT APPLICABLE

8.5 TMX03 – Cleaning

8.6 TMX05 – Pressure test

8.7 TMX25 – Gross Air Leak Test – NOT APPLICABLE

8.8 TMX27 – Bolt Tensioning / Torquing

8.9 TPLX05 - Drying

ITEM	Tag	50-00-TP-028	: Test Pack 50-00-TP-028			Dwg	123A90-DDL-PR-PID-80021-22
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10003449		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity STS	Discipline	Piping	Form	TPLX05 Drying

1	Drying out method :	Drying with dry air.
2	Operation description :	Dried the system using a flow of dry air, ensuring all drains/vents (when present) were open to facilitate the removal of moisture. Continued the drying until no moisture remained in the system, particularly in areas that were difficult to reach. After drying, inlet and outlet points were closed with covers.
3	Temporary means :	Blind flanges and plugs, if necessary, to isolate inlet and outlet points during process. Covers to close all openings after the drying.
4	Dew point (obtain after soaking and nitrogen purging):	NA
5	Valve body cavity, branches, etc.. Have been drained form residual water	●
	Attachments	
6	Procedures	
7	Sketches and drawings	
8	Pressure records	
9	Records of failures	
10	SAFETY PRECAUTIONS:	Restricting access to the area.
11	REMARKS:	Restricting access to the area.

Page 1/1	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-01-15	2025-01-15	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-15T06:22:22.633Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-01-15T09:08:37.010Z	

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	50-00-TP-045	: Test Pack 50-00-TP-045			Dwg	123A90-DDL-PR-PID-80021-22
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10003577		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	CLX02A Pipework Before Test

1	Check for each line of the Test Pack the NDT clearance.	OK
2	Confirm that materials conforms to the line specifications (ref. to the last issued revision of the isometric material table)	OK
3	Check the installation of all pipe – supports are in accordance with the specifications and drawings.	PL
4	Check that pipework at pump and vessel nozzles are free from spring.	PL
5	Check that the pipe flanges have been mounted square to each other. Also that the bolting and gaskets are correct (all TMX27 are complete, if necessary).	PL
6	Check bolt tightening and flange management (excluded battery limit joints).	PL
7	Check that the flow direction of the valves and check – valve is in the correct sense / direction (ball valves to be set at half open).	NA
8	Check that the removed equipment is in accordance with the agreed list of fragile devices. Check valve should be removed or flappers locked.	NA
9	Check that spool pieces or other substitution means have been put in place instead of the removed fragile device.	NA
10	Check the Blind list.	NA
11	Check that all the temporary material to perform the task are conforms to the procedure & suitable pressure rating.	NA
12	If required produce Red Line Mark Up for "AS BUILT".	

Comments: Visual check performed on spool not assembled in erection.

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	Rodeo	RM (Rosetti Marino)	
Name	Emanuele Delfino	Kangi Albonetti	
Date	2024-12-05	2024-12-18	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2024-12-05T08:45:10.456Z	PROVERLIS Digitaly signed by Kangi Albonetti 2024-12-18T13:17:38.725Z	

Base Load Power Hub (BLPH)

TEST PACK

N°50-00-TP-045
SUB-SYSTEM N° 50-00

System	50
Sub-System	50-00
Test Pressure	N/A
Test Fluid	N/A
Test Duration	N/A

Rev.	Date	Prepared by	Checked by
0	27/09/2024	J.Q.	L.M.

List of Contents

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2. PIPING TEST 3D CIRCUIT
3. MATERIAL LIST FOR TEST
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5. ISOMETRIC RED-MARKED DRAWINGS & EXTRACT OF ISO LIST
6. EXTRACT OF SUPPORT LIST AND DETAILS
7. WELDING REGISTER & MATERIAL TRACEABILITY RECORD
8. PIPING & VESSEL PRE-COMMISSIONING CONFORMITY CHECKS & TESTS:
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   - 8.2 CLX02B - Pipework After Test
   - 8.3 CXX01 - Thermal insulation
   - 8.4 CXX02 – Painting Line – NOT APPLICABLE
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   - 8.7 TMX25 – Gross Air Leak Test – NOT APPLICABLE
   - 8.8 TMX27 – Bolt Tensioning / Torquing
   - 8.9 TPLX05 – Drying – NOT APPLICABLE

1. COLOURED MARKED P&IDs

DRAWING NO. DRAWING_NO.

REV. REV

P-50001 A/B

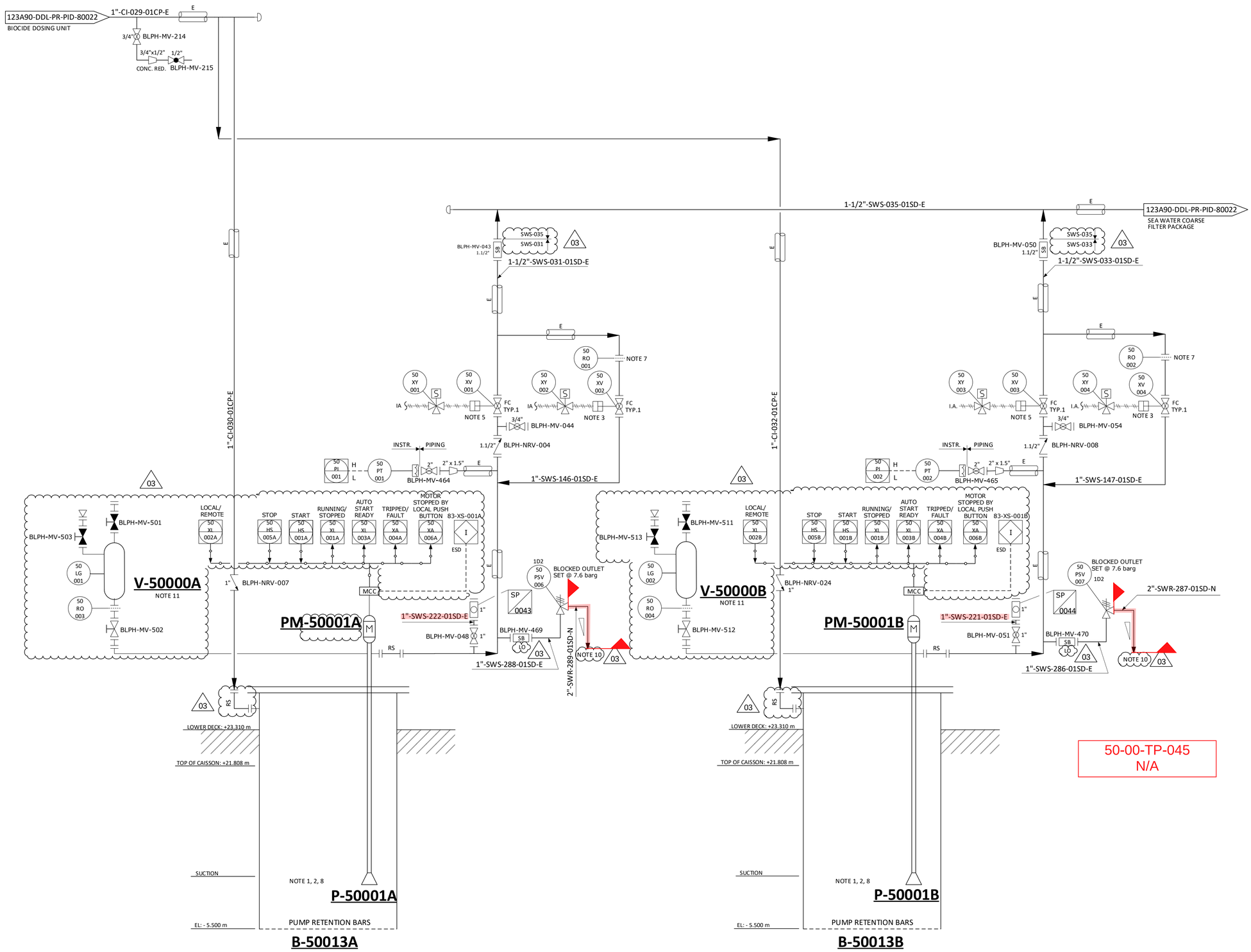
SEA WATER LIFT PUMPS

POWER : 1.6 KW
FLOW : 2.5 m³/h
DESIGN P/T : 7.6 barg / 80°C
DISCHARGE PRESSURE : 5.6 barg (NOTE 9)
MATERIAL : SDSS

B-50013 A/B

SEA WATER LIFT PUMPS
CAISSONS

SIZE : 343 mm (ID) x 27308 mm (H)
MATERIAL : CS + CA



NOTES

1. SEAWATER LIFT PUMPS ARE RATED 2 X 100%
2. AUTO START OF DESIGNATED STANDBY PUMP ON LOSS OF RUNNING STATUS AND DISCHARGE LOW PRESSURE ALARM OF DUTY PUMP.
3. VALVE TO BE OPENED WHEN PUMP IS OFFLINE TO DOSE CAISSON WITH TREATED SEAWATER TO PREVENT BIOLOGICAL GROWTH.
4. DELETED.
5. SOFTWARE INTERLOCK PREVENTS PUMPS FROM STARTING IN CASE THE RELEVANT XV VALVE IS FULLY CLOSED. 03
6. DELETED.
7. FOR ORIFICE DIAMETER REFERENCE SHALL BE MADE TO "123A90-DDL-IN-DS-40054 - TECHNICAL DATASHEET FOR RESTRICTION ORIFICE".
8. LOGIC FOR CONTROL OF P-5001A/B THAT PREVENTS SIMULTANEOUS RUNNING OF A AND B PUMP IS PROVIDED.
9. DISCHARGE PRESSURE REFERS TO THE FLANGE DISCHARGE OF THE PUMP AT LOWER DECK.
10. ROUTED TO THE SEA.
11. VESSELS V-50000A/B ARE INSULATED AND HEAT TRACED. 03

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.
5. DELETED.

50-00-TP-045
N/A

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
SEA-WATER INTAKE SYSTEM SHEET 1

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80021	SHEET 001	REV. 03

File Name : FILE_NAME

DRAWING NO. DRAWING_NO.

REV. REV

A-50000
WATER TREATMENT PACKAGE
CAPACITY : 2.5 m³/hr

GAS CONFIRMED 50 XA 001 — F&G
SMOKE CONFIRMED 50 XA 002 — F&G
FAULT PACKAGE 50 XA 003 — ESD
50-XS-001 SHUT-DOWN — ESD
NOTE 6

CONTRACTOR | SUPPLIER

123A90-DDL-PR-PID-80025
TO 50-TDI-002
50 TI 001
BLOCKED OUTLET SET @ 6 barg
50 PSV 011 1D2
2"-SWR-291-01SD-N
BLPH-MV-471
SB LO
03
NOTE 7
1"-SWS-290-01SD-E
50 TT 001
50 TE 001
03
1.1/2"
TP 017 50
E
4"x1.1/2"
4"x1.1/2"
ECC. RED.
ECC. RED.
123A90-DDL-PR-PID-80021
FROM SEA WATER LIFT PUMP
1-1/2"-SWS-035-01SD-E
BLPH-MV-241
3/4"

FOR CONTINUATION SEE DOC N. 123A90-DDL-PR-PID-80023

A-50000
WATER TREATMENT PACKAGE
SEE VENDOR DRAWING
DOC. N. 1724000448-PR-PID-00013

FOR CONTINUATION SEE DOC N. 123A90-DDL-PR-PID-80023

E
TP 005 50 03
123A90-DDL-PR-PID-80021
TO SEA WATER LIFT PUMP AND LIFT PUMP CAISSONS
1"-CI-029-01CP-E

1"-CI-043-01CP-E
TP 006 50 03
DECK
HOOK-UP 003
123A90-DDL-PR-PID-80026
TO WASTE WATER TANK

SUPPLIER | CONTRACTOR

TP 003 50 03
1.1/2"x1"
3"x1.1/2"
1"-SWR-045-01CS-H
123A90-DDL-PR-PID-80025
TO BRINE DISCHARGE CAISSON

TP 007 50 03
1.1/2"x1"
1"-WW-038-01CS-H
123A90-DDL-PR-PID-80026
TO WASTE WATER TANK

50-00-TP-045
N/A

NOTES

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.
5. DELETED.
6. SERIAL COMMUNICATION WITH CONTROL SYSTEM.
7. ROUTED TO THE SEA. 03

HOLDS

1. DELETED.
2. DELETED.
3. DELETED.
4. DELETED.
5. DELETED.
6. DELETED.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
03	09/09/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
02	12/06/2024	CIM	RZI	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	15/02/2024	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)
00	20/10/2023	CIM	RZI	DLO	ISSUE FOR ACCEPTANCE (IFA)

CROSSWIND

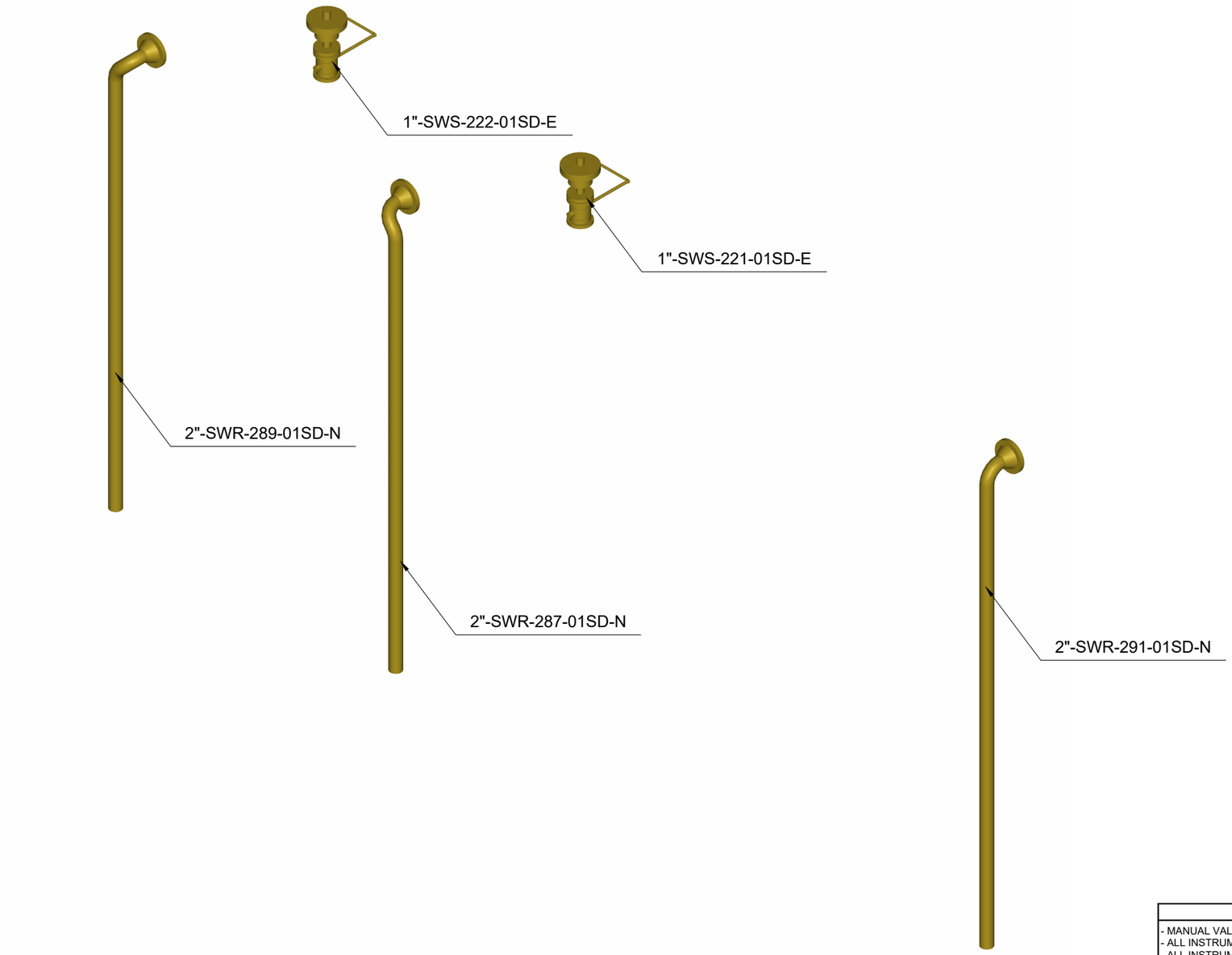
ROSETTI MARINO

TITLE :
BLPH PIPING AND INSTRUMENTATION DIAGRAM
SEA-WATER INTAKE SYSTEM SHEET 2

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	NTS
DRAWN	CHECKED	APPROVED	DATE
A1	DRAWING NO. 123A90-DDL-PR-PID-80022	SHEET 001	REV. 03

File Name : FILE_NAME

2. HYDROSTATIC TEST 3D CIRCUIT



50-00-TP-045

N/A

NOTES

- MANUAL VALVES MAY BE EXCLUDED FROM THE TEST
- ALL INSTRUMENTS (PG, TT, etc.) SHALL BE EXCLUDED FROM THE TEST
- ALL INSTRUMENT VALVES (SDV, PCV, etc.) SHALL BE EXCLUDED FROM THE TEST
- FILLING POINT, VENTS & DRAINS SHALL BE DEFINED ON SITE AS FOR REAL TEST CIRCUIT CONFIGURATION

REV.	DATE	DESCRIPTION	DRN	CHKD	APPD
00	27-09-24	ISSUED FOR INFORMATION	J.Q.	T.L.	L.M.

CROSSWIND

ROSETTI MARINO

HOLLANDSE KUST NOORD WIND PARK

PIPING TEST 3D CIRCUIT
50-00-TP-045

FORMAT	SCALE	DRAWING N.	REV.	SHEET
A3	NTS	N/A	00	1 OF 1

3. MATERIAL LIST FOR TEST

NOT APPLICABLE

4. EXTRACT OF LINE LIST

Isometric N°	Short Line N°	Sequential Number	Size [in]	Piping Class	Insulation Type	Pipe Wall Thicknes [mm]	Pipe Schedule	Tracing	Line Number	PID Number	Design Pressure [barg]	Commissioning System Code	Commissioning SubSystem Code	Test Pack N°	Test Fluid	Test Pressure [barg]	Fluid Service	Class Base Material	Line INF/SUP/TL	Ped Category	Painting System	Line Base Ral
117	SWS-221	221	1	01SD	E	3,38	40S	Yes	1"-SWS-221-01SD-E	123A90-DDL-PR-PID-80021	7,60	50	50-00	TP-045	N/A	N/A	Sea Water Supply	Stainless Steel (Super Duplex)	INF	Art. 4, par. 3	N/A	N/A
118	SWS-222	222	1	01SD	E	3,38	40S	Yes	1"-SWS-222-01SD-E	123A90-DDL-PR-PID-80021	7,60	50	50-00	TP-045	N/A	N/A	Sea Water Supply	Stainless Steel (Super Duplex)	INF	Art. 4, par. 3	N/A	N/A
151	SWR-287	287	2	01SD	N	2,77	10S	N/A	2"-SWR-287-01SD-N	123A90-DDL-PR-PID-80021	3,50	50	50-00	TP-045	N/A	N/A	Sea Water Return	Stainless Steel (Super Duplex)	SUP	Art. 4, par. 3	N/A	N/A
153	SWR-289	289	2	01SD	N	2,77	10S	N/A	2"-SWR-289-01SD-N	123A90-DDL-PR-PID-80021	3,50	50	50-00	TP-045	N/A	N/A	Sea Water Return	Stainless Steel (Super Duplex)	SUP	Art. 4, par. 3	N/A	N/A
155	SWR-291	291	2	01SD	N	2,77	10S	N/A	2"-SWR-291-01SD-N	123A90-DDL-PR-PID-80022	3,50	50	50-00	TP-045	N/A	N/A	Sea Water Return	Stainless Steel (Super Duplex)	SUP	Art. 4, par. 3	N/A	N/A

5. ISOMETRIC RED MARKED DRAWING & EXTRACT OF ISO LIST

CROSSWIND

ROSETTI MARINO

PROJECT

BASE LOAD POWER HUB (BLPH)

JOB **123A90**

DOCUMENT NR **123A90-FDL-ST-LIS-00001**

REV. **05**

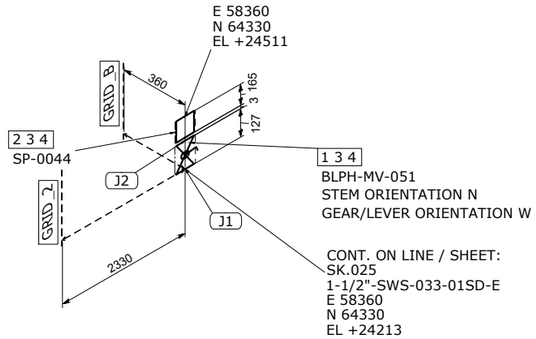
TITLE

SHOP DRAWING ISOMETRIC LIST

DATE **17/09/2024**

POS.	DOCUMENT NR	ROSETTI SKETCH NR	SHEET	DOCUMENT TITLE	Rev. 00	Rev. 01	Rev. 02	Rev. 03	Rev. 04	Rev. 05	Rev. 06	Rev. 07	Rev. 08	Rev. 09	Rev. 10	Mark-up Rev.	Mark-up Data	LAST REV	LIST REV	NOTES	TEST PACK NR
150	123A90-FDL-PP-DI-00117-01	**117**	01	SHOP DRAWING ISOMETRIC - LINE NR 1"-SWS-221-01SD-E	27/08/2024													**00**	**03**		**TP-045**
151	123A90-FDL-PP-DI-00118-01	**118**	01	SHOP DRAWING ISOMETRIC - LINE NR 1"-SWS-222-01SD-E	27/08/2024													**00**	**03**		**TP-045**
188	123A90-FDL-PP-DI-00151-01	**151**	01	SHOP DRAWING ISOMETRIC - LINE NR 2"-SWR-287-01SD-N	27/08/2024	17/09/2024												**01**	**05**		**TP-045**
190	123A90-FDL-PP-DI-00153-01	**153**	01	SHOP DRAWING ISOMETRIC - LINE NR 2"-SWR-289-01SD-N	27/08/2024	17/09/2024												**01**	**05**		**TP-045**
192	123A90-FDL-PP-DI-00155-01	**155**	01	SHOP DRAWING ISOMETRIC - LINE NR 2"-SWR-291-01SD-N	27/08/2024	17/09/2024												**01**	**05**		**TP-045**

N



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	VBC0NN24440100	Ball Valve Split Body FB API 6D FLG 150LB RF BS01F01RF	1	9.0
2	1	SPARNN00010100	Air Release Valve Manuf.s STD FLG 150LB RF SP-0043	1	0.0
3	1	GFL3GK15970100	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	2	0.1
4	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.0

FABRICATION WEIGHT [kg]	0.0
ERECTION WEIGHT [kg]	10.1
OVERALL WEIGHT [kg]	10.1

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2

SUPPORT LIST

SPOOL	WELD [inches]	WEIGHT [kg]
MONT	0	10.1

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

50-00-TP-045

MASTER

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 1"-SWS-221-01SD-E

SK.117

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE: N/A

DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 27-08-2024

FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00117 | SHEET / OF: 1/1 | REV.: 00

LINE DATA

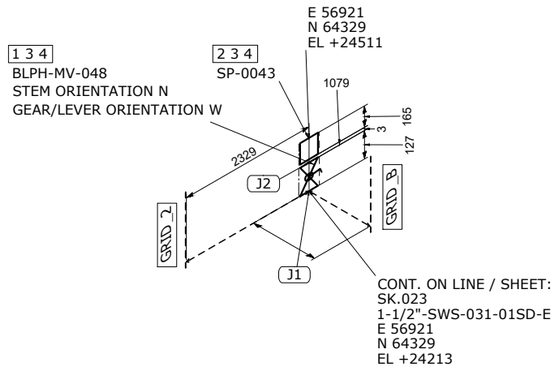
NDT INSPECTION CATEGORY	2			PED CATEGORY	Art. 4, par. 3				
PAINTING	SYSTEM N/A	BASE RAL N/A		FLUID PHASE	Liquid				
INSULATION	TYPE H	THICKNESS 20 mm [mm]		DESIGN	PRESS. 7.6 [barg]	TEMP. -29 / 100 [°C]			
HEAT TRACING	Yes			TEST	PRESS. N/A [barg]	TEMP. AMB	MEDIUM N/A		

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80021
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

N



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	VBC0NN24440100	Ball Valve Split Body FB API 6D FLG 150LB RF BS01F01RF	1	9.0
2	1	SPARNN00010100	Air Release Valve Manuf.s STD FLG 150LB RF SP-0043	1	0.0
3	1	GFL3GK15970100	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	2	0.1
4	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.0

FABRICATION WEIGHT [kg]	0.0
ERECTION WEIGHT [kg]	10.1
OVERALL WEIGHT [kg]	10.1

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2

SUPPORT LIST

SPOOL	WELD [inches]	WEIGHT [kg]
MONT	0	10.1

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

50-00-TP-045

MASTER

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 1"-SWS-222-01SD-E

SK.118

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE: N/A

DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 27-08-2024

FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00118 | SHEET / OF: 1/1 | REV.: 00

LINE DATA

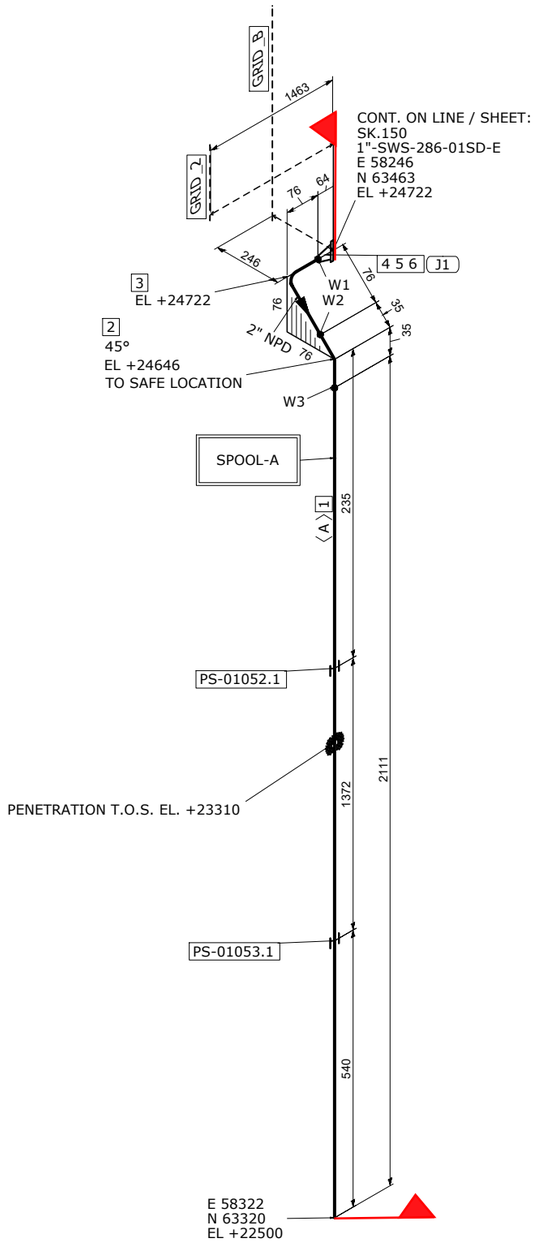
NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3			
PAINTING	SYSTEM N/A	BASE RAL N/A	FLUID PHASE	Liquid			
INSULATION	TYPE H	THICKNESS 20 [mm]	DESIGN	PRESS. 7.6 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	Yes		TEST	PRESS. N/A [barg]	TEMP. AMB	MEDIUM N/A	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80021
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

N



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	2	PIPESD02860200	Pipe ASME B36.19M PE 2,77 SML ASTM A790 UNS S32760	2.1M	8.5
2	2	E45RSD01550200	45 Deg Elbow Long Radius ASME B16.9 BW 2,77 WRS ASTM A815 UNS S32760	1	0.2
3	2	E90RSD01650200	90 Deg Elbow Long Radius ASME B16.9 BW 2,77 WRS ASTM A815 UNS S32760	1	0.5
4	2	FLWDSD01250200	Flange WN ASME B16.5 150LB RF 2,77 FRG ASTM A182 Gr.F55 (01)	1	2.8

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
5	2	GFL3GK13230200	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	1	0.1
6	5/8	SB20BO00990300	110 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1.1

FABRICATION WEIGHT [kg]	12.0
ERECTION WEIGHT [kg]	1.2
OVERALL WEIGHT [kg]	13.2

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	2	BW
W2	2	BW
W3	2	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	2	2112	BEVEL	SQ.CUT

SUPPORT LIST

PS-01052.1
PS-01053.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	6	11.9
MONT	0	1.2

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	17-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 2"-SWR-287-01SD-N

SK.151

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE: N/A

DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 17-09-2024

FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00151 | SHEET / OF: 1/1 | REV.: 01

50-00-TP-045

MASTER

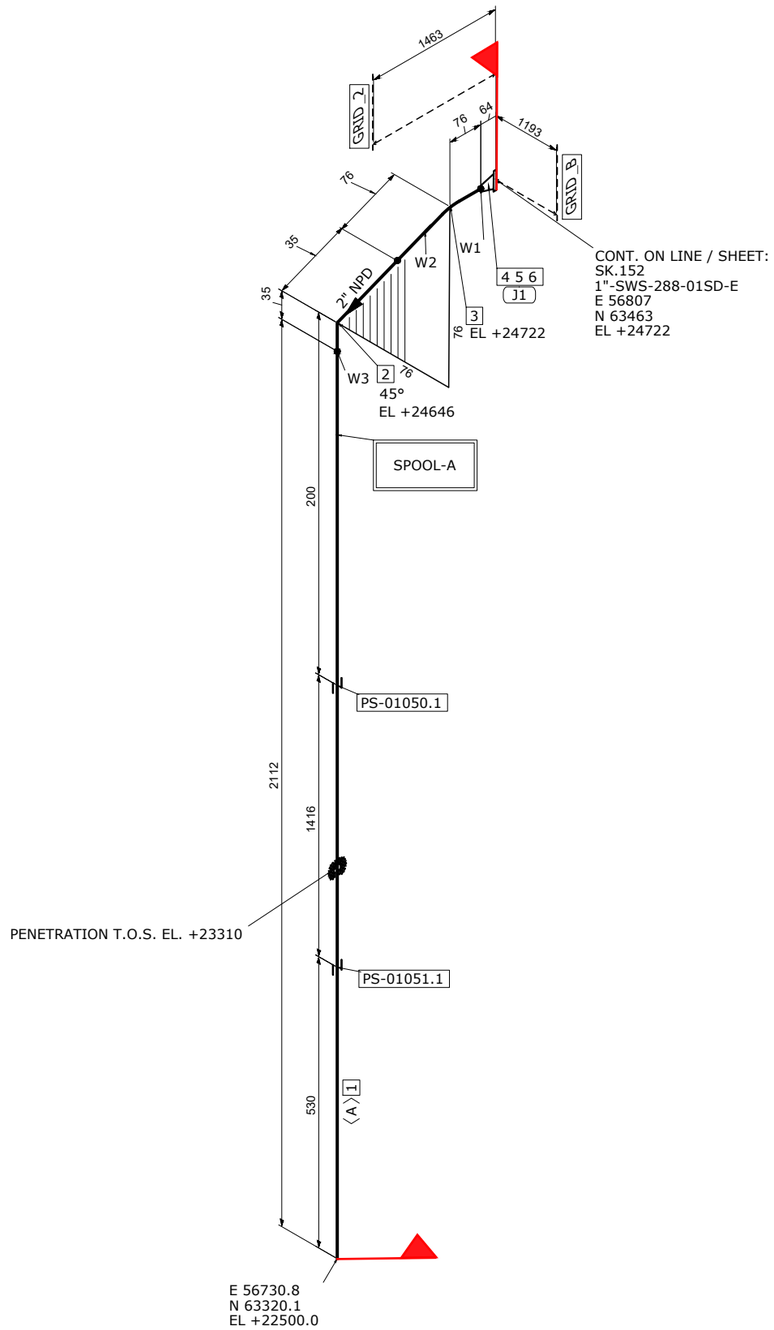
LINE DATA

NDT INSPECTION CATEGORY	2	PED CATEGORY	Art. 4, par. 3		
PAINTING	SYSTEM N/A	BASE RAL N/A	FLUID PHASE	Liquid	
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 3.5 [barg]	TEMP. -29 / 100 [°C]
HEAT TRACING	N/A		TEST	PRESS. N/A [barg]	TEMP. AMB MEDIUM N/A

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80021
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	2	PIPESD02860200	Pipe ASME B36.19M PE 2,77 SML ASTM A790 UNS S32760	2.1M	8.5
2	2	E45RSD01550200	45 Deg Elbow Long Radius ASME B16.9 BW 2,77 WRS ASTM A815 UNS S32760	1	0.2
3	2	E90RSD01650200	90 Deg Elbow Long Radius ASME B16.9 BW 2,77 WRS ASTM A815 UNS S32760	1	0.5
4	2	FLWDSD01250200	Flange WN ASME B16.5 150LB RF 2,77 FRG ASTM A182 Gr.F55 (01)	1	2.8

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
5	2	GFL3GK13230200	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	1	0.1
6	5/8	SB20BO00990300	110 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1.1

FABRICATION WEIGHT [kg]	12.0
ERECTION WEIGHT [kg]	1.2
OVERALL WEIGHT [kg]	13.2

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	2	BW
W2	2	BW
W3	2	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	2	2112	BEVEL	BEVEL

SUPPORT LIST

PS-01050.1
PS-01051.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	6	11.9
MONT	0	1.2

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	17-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 2"-SWR-289-01SD-N

SK.153

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE: N/A

DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 17-09-2024

FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00153 | SHEET / OF: 1/1 | REV.: 01

50-00-TP-045

MASTER

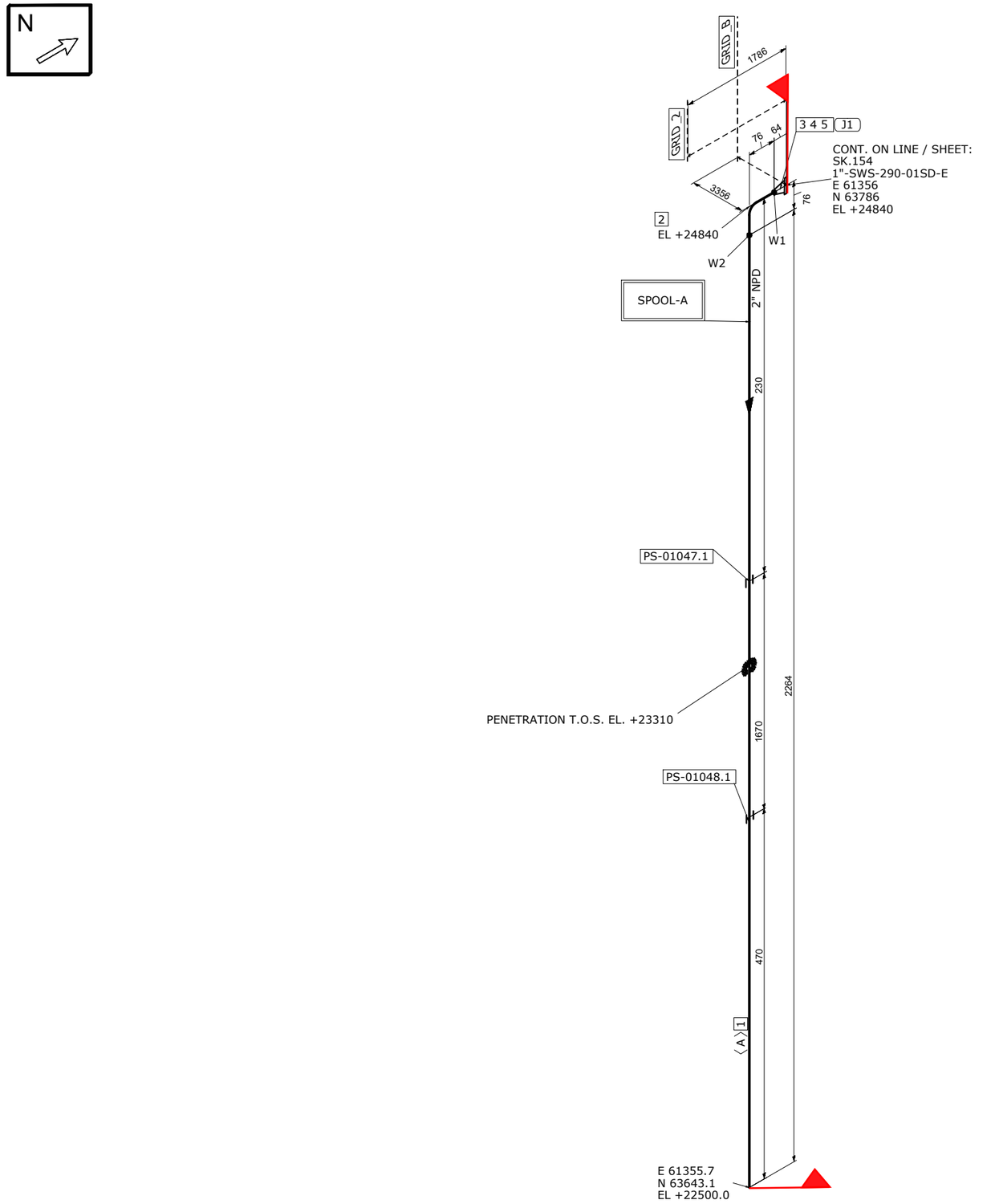
LINE DATA

NDT INSPECTION CATEGORY	2			PED CATEGORY	Art. 4, par. 3			
PAINTING	SYSTEM N/A	BASE RAL N/A		FLUID PHASE	Liquid			
INSULATION	TYPE N	THICKNESS [mm]		DESIGN	PRESS. 3.5 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	N/A			TEST	PRESS. N/A [barg]	TEMP. AMB	MEDIUM N/A	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80021
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	2	PIPESD02860200	Pipe ASME B36.19M PE 2,77 SML ASTM A790 UNS S32760	2.3M	9.1
2	2	E90RSD01650200	90 Deg Elbow Long Radius ASME B16.9 BW 2,77 WRS ASTM A815 UNS S32760	1	0.5
3	2	FLWDSD01250200	Flange WN ASME B16.5 150LB RF 2,77 FRG ASTM A182 Gr.F55 (01)	1	2.8

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
4	2	GFL3GK13230200	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	1	0.1
5	5/8	SB20BO00990300	110 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1.1

FABRICATION WEIGHT [kg]	12.4
ERECTION WEIGHT [kg]	1.2
OVERALL WEIGHT [kg]	13.6

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	2	BW
W2	2	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	2	2264	BEVEL	SQ.CUT

SUPPORT LIST

PS-01047.1
PS-01048.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	4	12.3
MONT	0	1.2

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	17-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 2"-SWR-291-01SD-N

SK.155

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE: N/A

DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 17-09-2024

FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00155 | SHEET / OF: 1/1 | REV.: 01

50-00-TP-045

MASTER

LINE DATA

NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3			
PAINTING	SYSTEM N/A	BASE RAL N/A	FLUID PHASE	Liquid			
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 3.5 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	N/A		TEST	PRESS. N/A [barg]	TEMP. AMB.	MEDIUM N/A	

REFERENCE DOCUMENTS

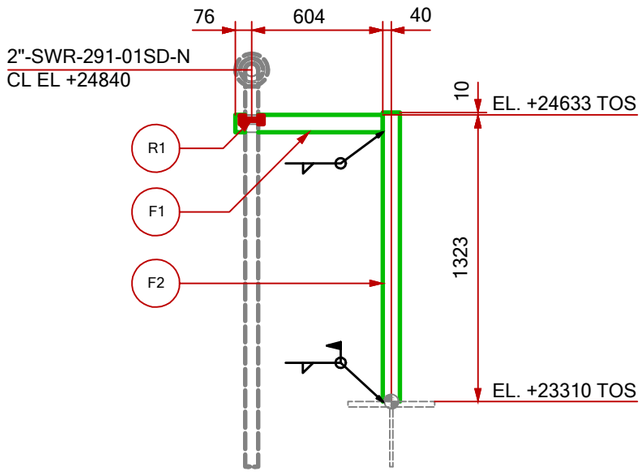
P&ID	123A90-DDL-PR-PID-80022
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

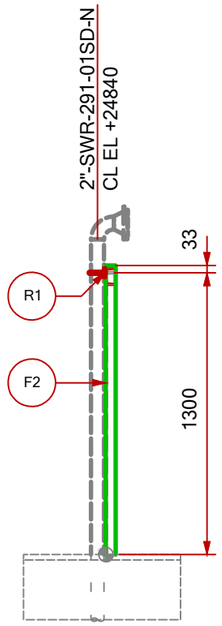
6. EXTRACT OF SUPPORT LIST & DETAILS

SUPPORT LIST

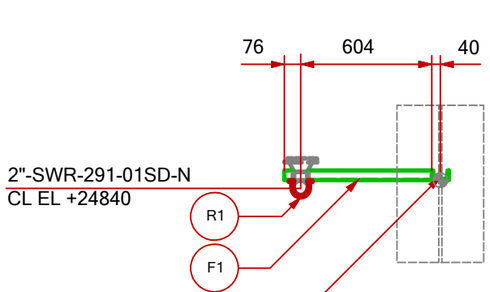
SUPPORT	SUFFIX	SERVICE	DECK IDENTIFICATION	SUB ASSEMBLY	LINE	SUPPORTS STANDARD	NDT CATEGORY	QUANTITY	TOT. WEIGTH (KG)	PAINTING SURFACE (SQM)	REV	DATE	STATUS	NOTES	Test Pack N°
PS-01047	B1	PIP	LOWER DECK		2"-SWR-291-01SD-N	S-211 - 2"		1	0,519	0,000	00	19/08/2024	IFR		TP-045
PS-01048	B1	PIP	LOWER DECK		2"-SWR-291-01SD-N	S-211 - 2"		1	0,519	0,000	00	19/08/2024	IFR		TP-045
PS-01050	B1	PIP	LOWER DECK		2"-SWR-289-01SD-N	S-211 - 2"		1	0,519	0,000	00	19/08/2024	IFR		TP-045
PS-01051	B1	PIP	LOWER DECK		2"-SWR-289-01SD-N	S-211 - 2"		1	0,519	0,000	00	19/08/2024	IFR		TP-045
PS-01052	B1	PIP	LOWER DECK		2"-SWR-287-01SD-N	S-211 - 2"		1	0,519	0,000	00	19/08/2024	IFR		TP-045
PS-01053	B1	PIP	LOWER DECK		2"-SWR-287-01SD-N	S-211 - 2"		1	0,519	0,000	00	19/08/2024	IFR		TP-045



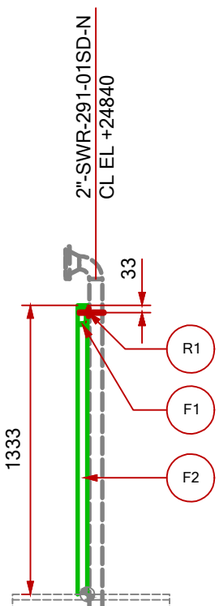
VIEW LOOKING NORTH



VIEW LOOKING WEST



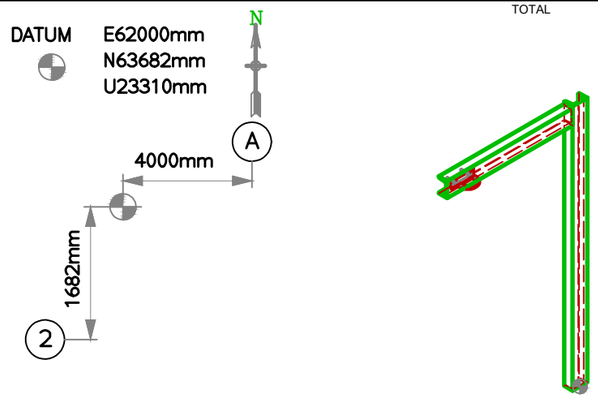
PLAN VIEW



VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	S-211-2"	-	-	1	-	0.52	-
F1	BEAM	UPN80	Carbon Steel	680	1	8.66	5.89	0.215
F2	BEAM	UPN80	Carbon Steel	1333	1	8.66	11.55	0.420
						TOTAL	18.0	0.63



REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

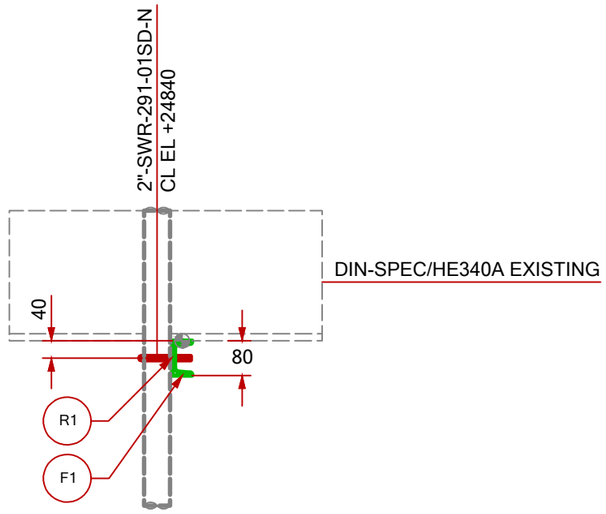
ROSETTI MARINO

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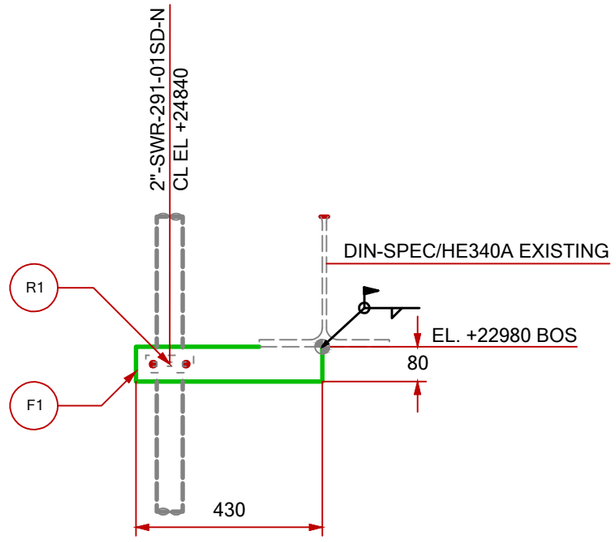
BASE LOAD POWER HUB (BLPH)
Support Drawings
PS-01047

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1 : 20
DRAWN	CHECKED	APPROVED	DATE 19/08/24
DRAWING NO. 123A90-DDL-PP-DD-72000			SHEET 1 of 1 / REV. 00

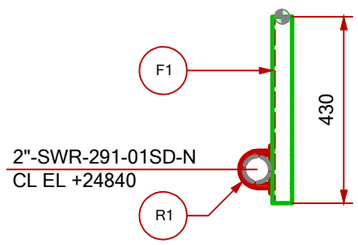
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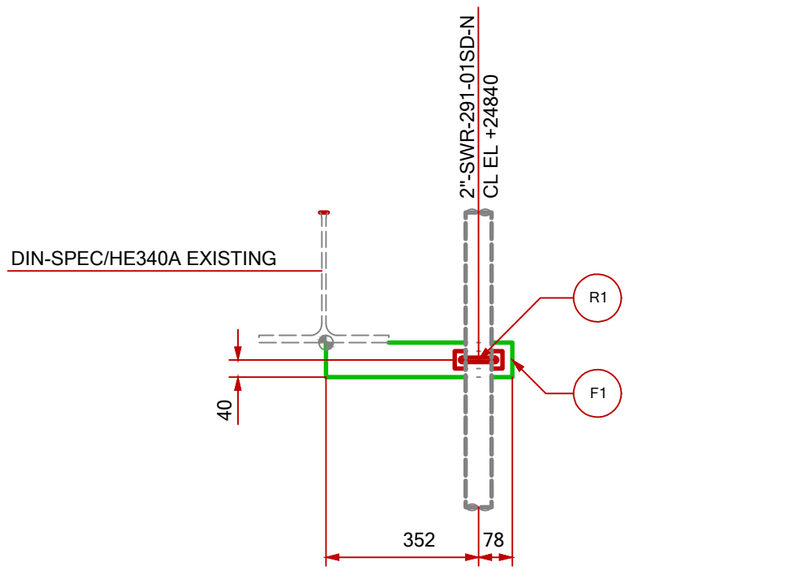
VIEW LOOKING NORTH



VIEW LOOKING WEST



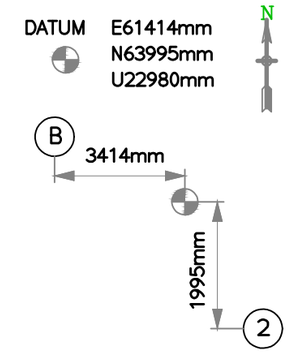
PLAN VIEW

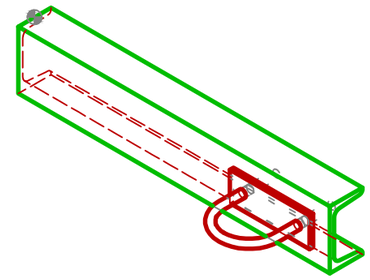


VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	S-211-2"	-	-	1	-	0.52	-
F1	BEAM	UPN80	Carbon Steel	430	1	8.66	3.73	0.137
						TOTAL	4.2	0.14





REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

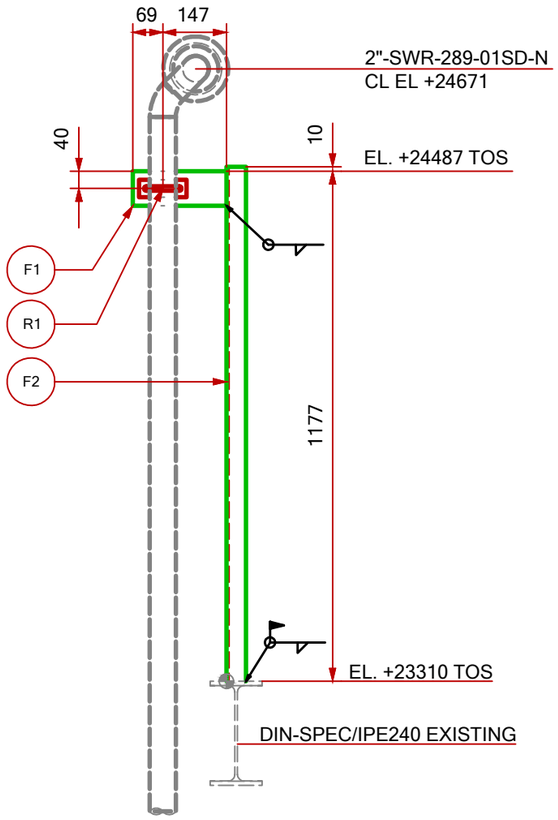
ROSETTI MARINO

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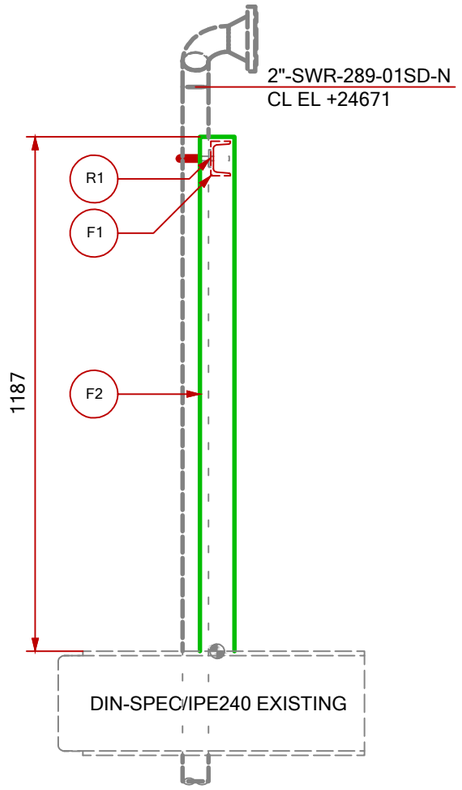
BASE LOAD POWER HUB (BLPH)
Support Drawings
PS-01048

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1 : 10
DRAWN	CHECKED	APPROVED	DATE 19/08/24
DRAWING NO. 123A90-DDL-PP-DD-72000			SHEET 1 of 1 / REV. 00

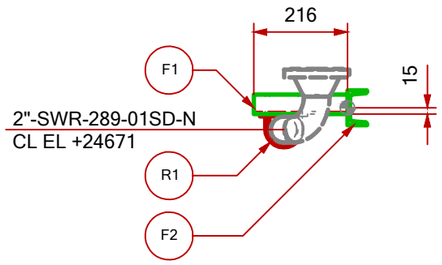
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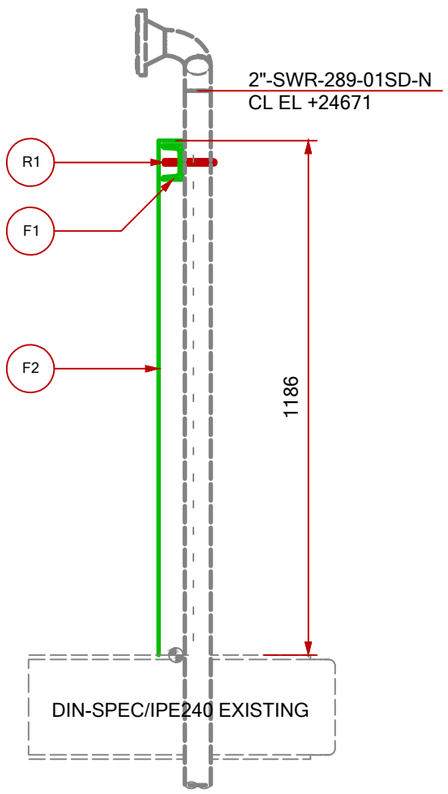
VIEW LOOKING NORTH



VIEW LOOKING WEST



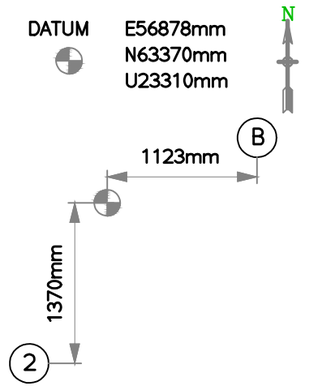
PLAN VIEW

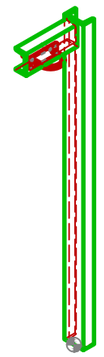


VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	S-211-2"	-	-	1	-	0.52	-
F1	BEAM	UPN80	Carbon Steel	216	1	8.66	1.87	0.070
F2	BEAM	UPN80	Carbon Steel	1186	1	8.66	10.28	0.374
						TOTAL	12.7	0.44





REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
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CROSSWIND

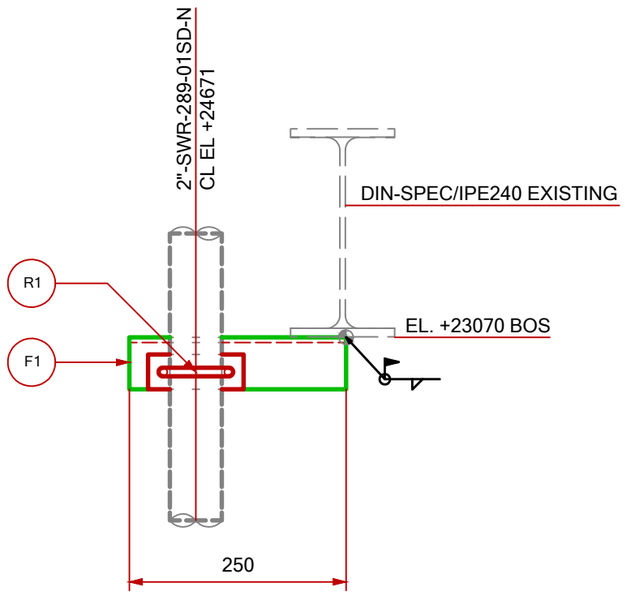
ROSETTI MARINO

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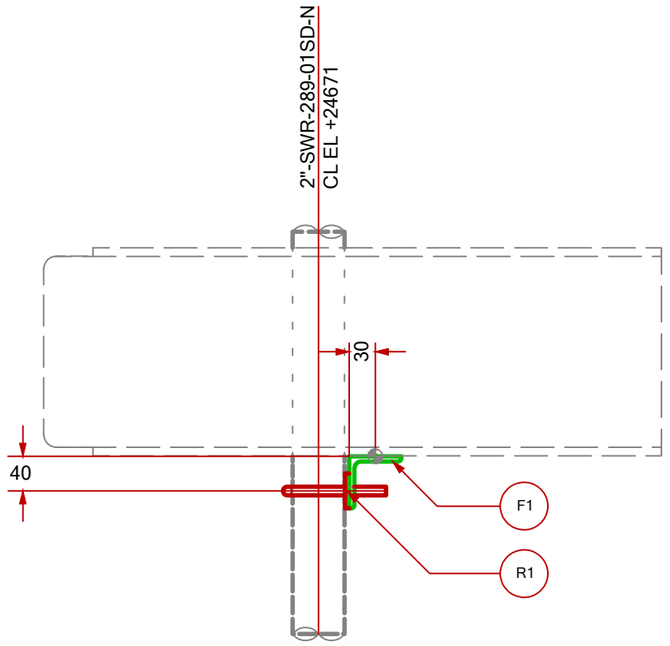
BASE LOAD POWER HUB (BLPH)
Support Drawings
PS-01050

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1 : 10
DRAWN	CHECKED	APPROVED	DATE 19/08/24
DRAWING NO. 123A90-DDL-PP-DD-72000			SHEET 1 of 1 / REV. 00

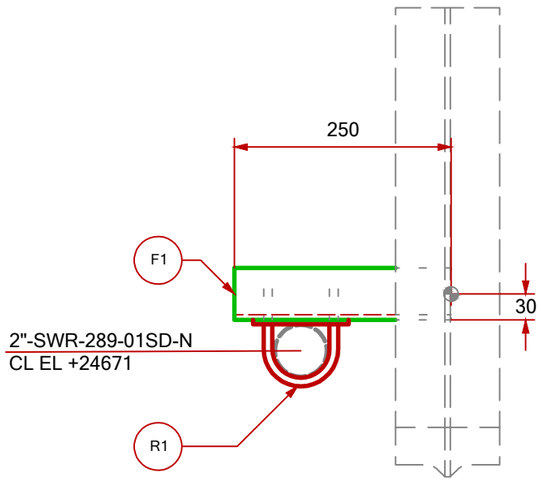
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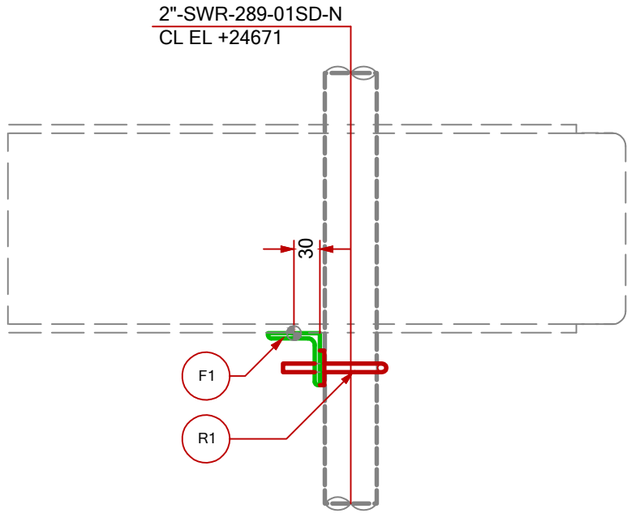
VIEW LOOKING NORTH



VIEW LOOKING WEST



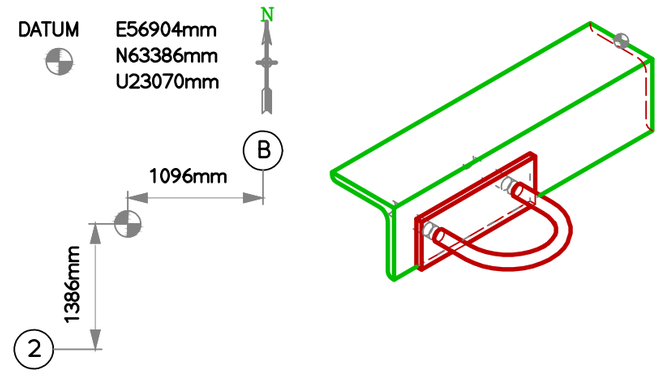
PLAN VIEW



VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	S-211-2"	-	-	1	-	0.52	-
F1	BEAM	L60x60x6	carbon steel	250	1	5.42	1.36	0.060
						TOTAL	1.9	0.06



REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

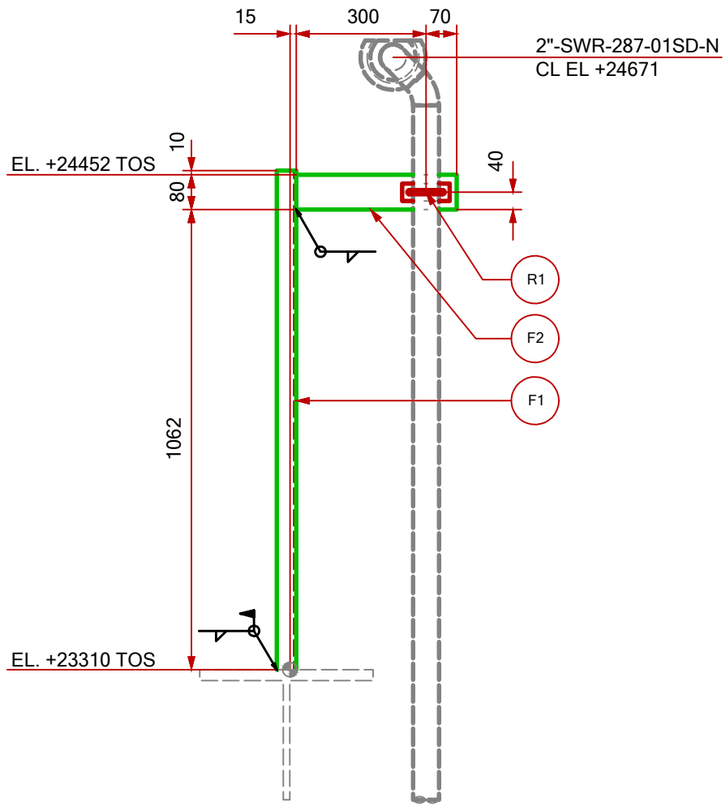
ROSETTI MARINO

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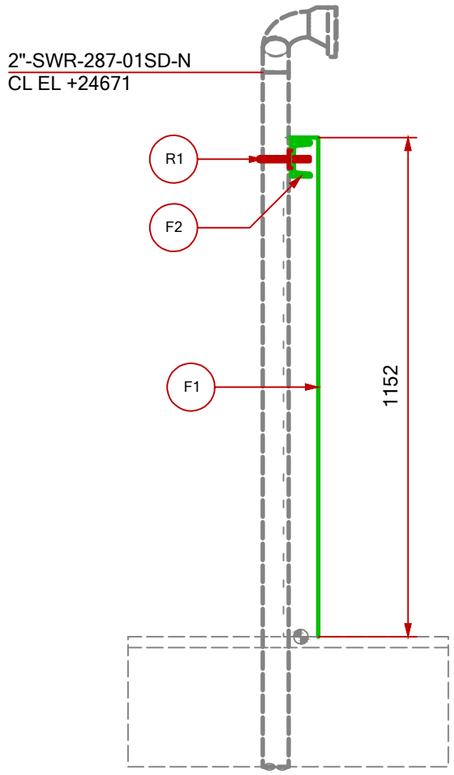
BASE LOAD POWER HUB (BLPH)
Support Drawings
PS-01051

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1 : 5
DRAWN	CHECKED	APPROVED	DATE 19/08/24
DRAWING NO. 123A90-DDL-PP-DD-72000			SHEET 1 of 1 / REV. 00

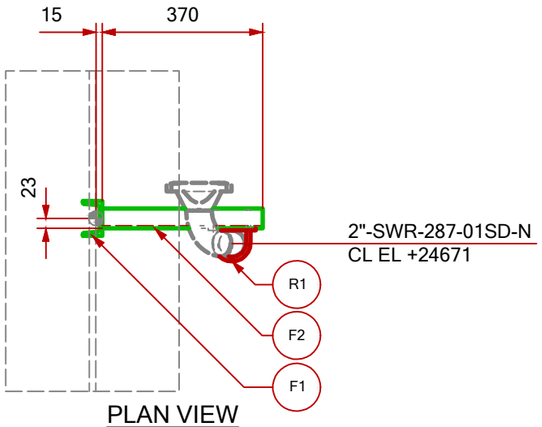
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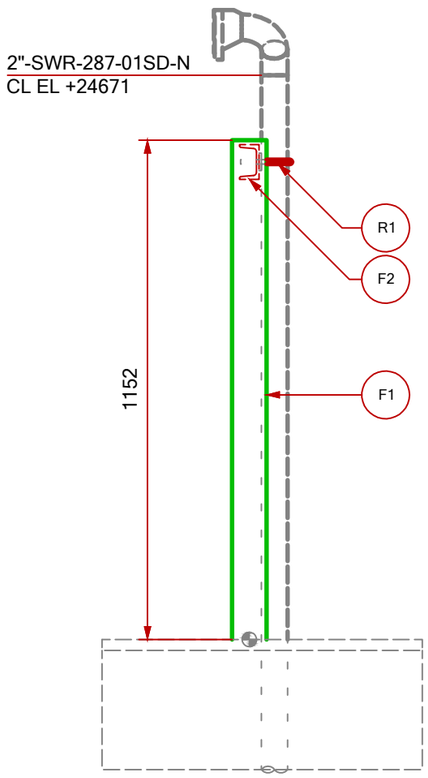
VIEW LOOKING NORTH



VIEW LOOKING WEST



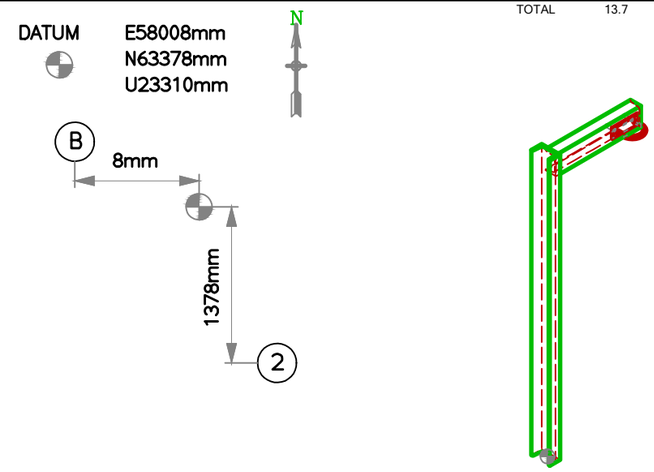
PLAN VIEW



VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	S-211-2"	-	-	1	-	0.52	-
F1	BEAM	UPN80	Carbon Steel	1152	1	8.66	9.98	0.363
F2	BEAM	UPN80	Carbon Steel	370	1	8.66	3.21	0.118
						TOTAL	13.7	0.48



REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

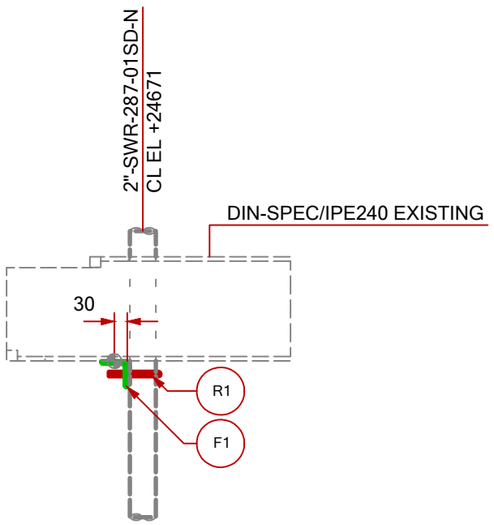
ROSETTI MARINO

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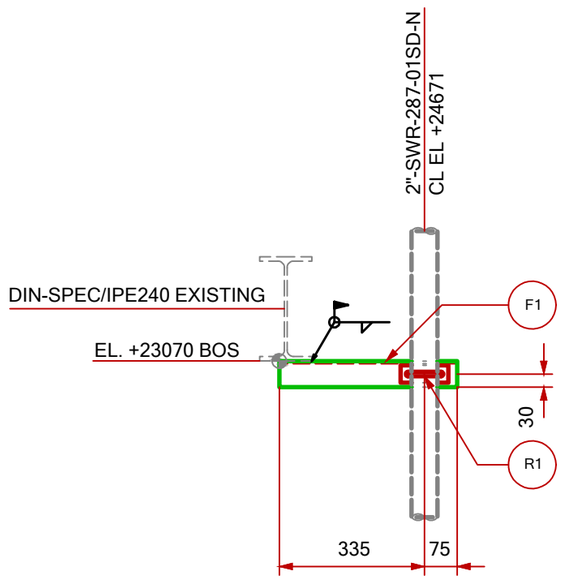
BASE LOAD POWER HUB (BLPH)
Support Drawings
PS-01052

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE	1 : 10
DRAWN	CHECKED	APPROVED		DATE	19/08/24
	DRAWING NO. 123A90-DDL-PP-DD-72000			SHEET 1 of 1	REV. 00

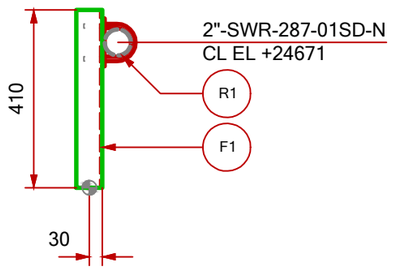
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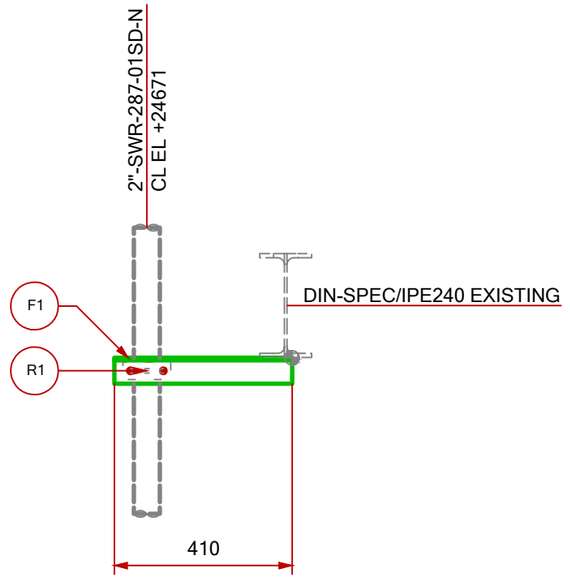
VIEW LOOKING NORTH



VIEW LOOKING WEST



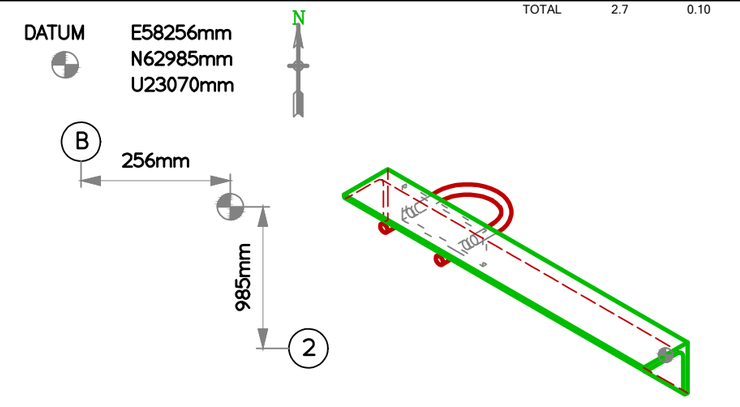
PLAN VIEW



VIEW LOOKING EAST

SUPPORT MATERIAL LIST

POS.	TYPE	DESCRIPTION	MATERIAL	LENGHT (mm)	Q.TY (n°)	UNIT WEIGHT (Kg/mt)	TOTAL WEIGHT (Kg)	PAINT SURF. (m2)
R1	STD	S-211-2"	-	-	1	-	0.52	-
F1	BEAM	L60x60x6	Carbon Steel	410	1	5.42	2.22	0.097
						TOTAL	2.7	0.10



REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	19/08/24	MMA	SLO	DLO	ISSUE FOR REVIEW

CROSSWIND

ROSETTI MARINO

TITLE :

BASE LOAD POWER HUB (BLPH)
Support Drawings
PS-01053

CONTRACT NO./TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE 1 : 10
DRAWN	CHECKED	APPROVED	DATE 19/08/24
DRAWING NO. 123A90-DDL-PP-DD-72000			SHEET 1 of 1 / REV. 00

File Name :

ROSETTI MARINO

STANDARD SPECIFICATION
PIPE SUPPORT DETAIL STANDARD

Document Number: STD–PP–DD–0001

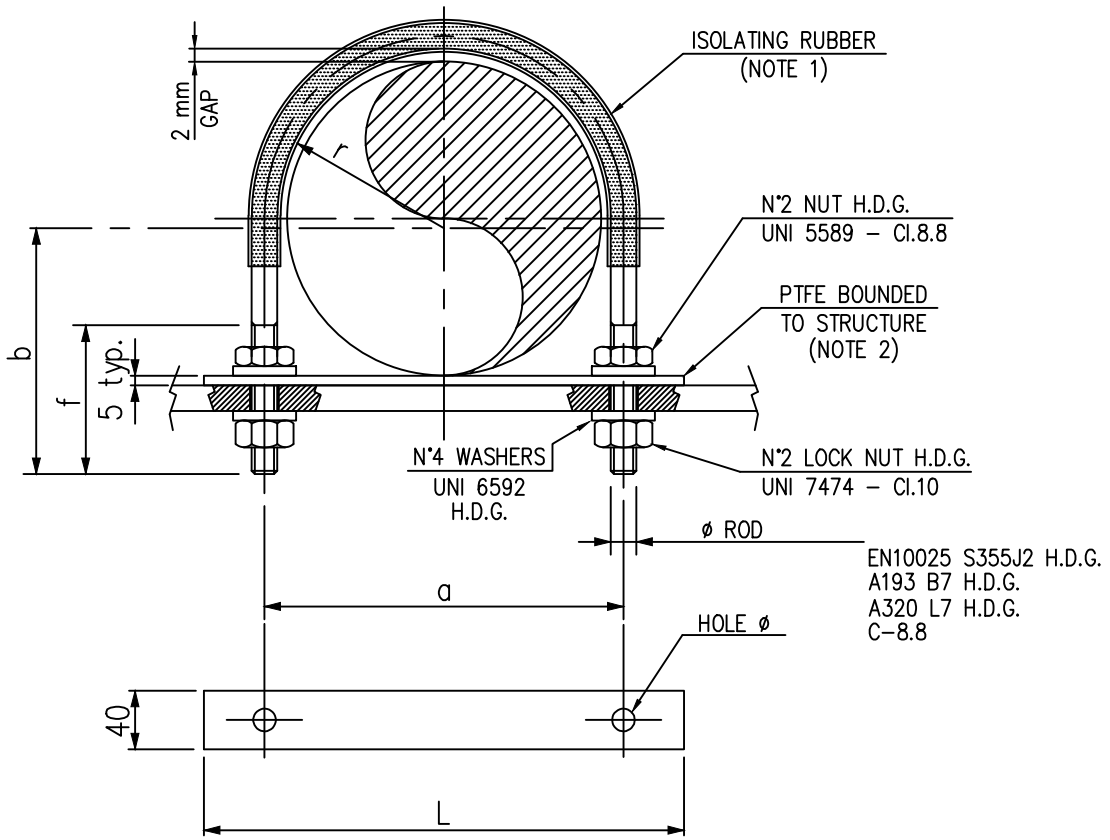
Revision: 0

Date: –

CAVALLOTTI GALVANIZZATI DI GUIDA PER TUBAZIONI IN C.S S.S. E ALLOY
GALVANIZED U–BOLTS GUIDE FOR C.S. S.S. AND ALLOY PIPES (NON GRIP)

S–211

Example of designation : STD – PIPE ND"
(S–211 – 10")



SIZE ND	ROD DIA	r	a	b	f	L	HOLE ø	DEV	DEV. RUBBER	WEIGHT Kg
½"	M8	14	36	55	52	65	10	167	62	0.16
3/4"	M8	17	42	55	52	70	10	176	75	0.16
1"	M8	20	48	60	55	80	10	196	90	0.18
1½"	M10	27	64	70	65	100	12	240	120	0.32
2"	M10	33	76	80	70	110	12	280	150	0.35
3"	M12	48	108	100	80	150	14	370	210	0.60
4"	M12	60	132	110	80	180	14	430	260	0.67
6"	M16	87	190	150	100	250	18	600	380	1.39
8"	M16	113	242	170	100	300	18	720	500	1.60
10"	M16	140	296	200	100	350	18	865	650	1.86
12"	M20	165	350	240	120	420	22	1030	750	3.31
14"	M20	181	382	260	120	450	22	1120	840	3.55
16"	M24	207	438	290	130	520	26	1270	1000	5.76
18"	M24	232	488	320	130	570	26	1410	1100	6.28
20"	M30	257	544	360	160	640	32	1570	1200	11.02
24"	M30	308	646	410	160	750	32	1830	1450	12.52

NOTES:

1) HEAT SHRINK TUBE TYPE FLAME RETARDANT, WITH RATIO 2:1
2) MULTIPLE SHEETS OF PTFE CAN BE ADDED IN ORDER TO ENSURE THE CORRECT ELEVATION AND SLOPE OF THE LINES.

Revision Number	Date	Description	DRAW	CHKD.	APPR.
00	–	ISSUED FOR REVIEW	SLO	GMA	MCO

Documento di proprietà aziendale.La Società tutelerà i propri diritti a termine di legge.This document is Company property. The Company lawfulliy reserves all rights.

7. WELDING REGISTER & MATERIAL TRACEABILITY RECORD

Rosetti Marino S.p.A.

Welding Register

Job	123A90	BASE LOAD POWER HUB (BLPH)			
From Discipline	PP	Piping			
To Discipline	PP	Piping			
Drawings		**From**	151	**To**	151
Sheet		**From**	0	**To**	0
Marks		**From**		**To**	
Location		**From**		**To**	
Material		**From**		**To**	
Welds Execution		**From**		**To**	
Welds Acceptance		**From**		**To**	
Report Date		**From**		**To**	
Prefabrication	All				
Welding Status	All				
ITEM					
ADDITIONAL PARAMETERS	**LINE**	**From**		**To**	
	SPOOL	**From**		**To**	
		From		**To**	

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Conn.	Accept. Date	Spool
1/151/1/_		**01**	**11-11-2024**	**74**	**AZ36**			**FWN**	**2,00 in**	**2,77 mm**	**V**	**0,189 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**12-11-2024**	**A**
01SD	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					12-11-2024			
		RT	FIN	Weld Completion				10 %			Acceptable								
2/151/1/_		**01**	**12-11-2024**	**77**	**AZ39**			**ELB**	**2,00 in**	**2,77 mm**	**V**	**0,189 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**15-11-2024**	**A**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					15-11-2024			
		RT	FIN	Weld Completion				10 %			Acceptable								
3/151/1/_		**01**	**11-11-2024**	**74**	**AZ36**			**ELB**	**2,00 in**	**2,77 mm**	**V**	**0,189 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**12-11-2024**	**A**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					12-11-2024			
		RT	FIN	Weld Completion				10 %			Acceptable								

Totals per DWG	**151**	**Prefabrication**	**0,57 m**	**3 Nr. Welds**	**6,00 inch**
		Erection	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**0,57 m**	**3 Nr. Welds**	**6,00 inch**
		Accepted	**0,57 m**	**3 Nr. Welds**	**6,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Discipline		**Prefabrication**	**0,57 m**	**3 Nr. Welds**	**6,00 inch**
		Erection	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**0,57 m**	**3 Nr. Welds**	**6,00 inch**
		Accepted	**0,57 m**	**3 Nr. Welds**	**6,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Project		**Prefabrication**	**0,57 m**	**3 Nr. Welds**	**6,00 inch**
		Erection	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**0,57 m**	**3 Nr. Welds**	**6,00 inch**
		Accepted	**0,57 m**	**3 Nr. Welds**	**6,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**

CROSSWIND / ROSETTI MARINO	Cliente/Contractor: CROSSWIND	Preparato da/Prepared by	Controllato da/Checked by	Approvato da/Approved by
	SubContrattista/SubContractor: ROSETTIMARINO/GROUPOFCOMPANY	Nome/Name: Antonio Galesi	Nome/Name:	Nome/Name:
	Progetto/Project: Hollandse Kust Noord Wind Park Project			
	Commessa/Job: 123A90 - Piping			
	Disciplina/Discipline: PIPING			
	TitoloDocumento/DocumentTitle: Material Traceability Report	StatoDocumento/Document Status:		Data/Date: 10/12/2024
	RosettiDoc.Num.: 123A90MTR001			

Sketch no.	Rev.	sheet	Spool	Piping Class	pos.	Q.ty (n° - m)	Description	Heat/Serial Number	PurchaseOrder	Pos. Order	Mat. Certificate	Weld Ref.	Note
151	01	1	A	01SD	2	1	45 Deg Elbow Long Radius BW ›2" Thk.2.77mm ASTM A815 UNS S32760	1080SA023	1724001828	00020	1080SA023	W2-W3	
151	01	1	A	01SD	3	1	90 Deg Elbow Long Radius BW ›2" Thk.2.77mm ASTM A815 UNS S32760	1031SA024	1724001828	00030	1031SA024	W1-W2	
151	01	1	A	01SD	4	1	Flange WN For Jackscrews ›2" Thk.2,77mm 150LB RF ASTM A182 Gr.F55	555304	1724000839	00880	770	W1	
151	01	1	A	01SD	1A	2,112	Pipe 60.3mm(2") thk.2.77mm ASTM A790 UNS S32760	59769	1724001828	00110	749303		
151	01	1	MONT	01SD	5	1	Gasket Flat Thk. 3 mm ›2" 150LB RF NEOPRENE	0	#N/D	#N/D	#N/D		
151	01	1	MONT	01SD	6	4	Stud Bolt + 2 Heavy Nuts 5/8" L=110MM ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	0	#N/D	#N/D	#N/D		

Rosetti Marino S.p.A.

Welding Register

Job	123A90	BASE LOAD POWER HUB (BLPH)			
From Discipline	PP	Piping			
To Discipline	PP	Piping			
Drawings		**From**	153	**To**	153
Sheet		**From**	0	**To**	0
Marks		**From**		**To**	
Location		**From**		**To**	
Material		**From**		**To**	
Welds Execution		**From**		**To**	
Welds Acceptance		**From**		**To**	
Report Date		**From**		**To**	
Prefabrication	All				
Welding Status	All				
ITEM					
ADDITIONAL PARAMETERS	**LINE**	**From**		**To**	
	SPOOL	**From**		**To**	
		From		**To**	

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld.	Type Conn / NOTE	Accept. Date	Spool
1/153/1/_		**01**	**11-11-2024**	**74**	**AZ36**			**FWN**	**2,00 in**	**2,77 mm**	**V**	**0,189 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**12-11-2024**	**A**
01SD	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				12-11-2024				
		RT	FIN	Weld Completion				10 %			Acceptable								
2/153/1/_		**01**	**14-11-2024**	**78**	**AZ39**			**ELB**	**2,00 in**	**2,77 mm**	**V**	**0,189 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**15-11-2024**	**A**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				15-11-2024				
		RT	FIN	Weld Completion				10 %			Acceptable								
3/153/1/_		**01**	**11-11-2024**	**74**	**AZ36**			**ELB**	**2,00 in**	**2,77 mm**	**V**	**0,189 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**12-11-2024**	**A**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable				12-11-2024				
		RT	FIN	Weld Completion				10 %			Acceptable								

Totals per DWG	**153**	**Prefabrication**	**0,57 m**	**3 Nr. Welds**	**6,00 inch**
		Erection	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**0,57 m**	**3 Nr. Welds**	**6,00 inch**
		Accepted	**0,57 m**	**3 Nr. Welds**	**6,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Discipline		**Prefabrication**	**0,57 m**	**3 Nr. Welds**	**6,00 inch**
		Erection	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**0,57 m**	**3 Nr. Welds**	**6,00 inch**
		Accepted	**0,57 m**	**3 Nr. Welds**	**6,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Project		**Prefabrication**	**0,57 m**	**3 Nr. Welds**	**6,00 inch**
		Erection	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**0,57 m**	**3 Nr. Welds**	**6,00 inch**
		Accepted	**0,57 m**	**3 Nr. Welds**	**6,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**

CROSSWIND ROSETTI MARINO	Cliente/Contractor	**CROSSWIND**				Preparato da/Prepared by	Controllato da/Checked by		Approvato da/Approved by			
	SubContrattista/SubContractor	**ROSETTIMARINO/GROUPOFCOMPANY**				Nome/Name: Antonio Galesi	Nome/Name:		Nome/Name:			
	Progetto/Project	**Hollandse Kust Noord Wind Park Project**										
	Commessa/Job	**123A90 - Piping**										
	Disciplina/Discipline	**PIPING**										
	TitoloDocumento/DocumentTitle	**Material Traceability Report**				StatoDocumento/Document Status:			Data/Date: 04/12/2024			
	RosettiDoc.Num.	**123A90MTR001**										

Sketch no.	Rev.	sheet	Spool	Piping Class	pos.	Q.ty (n° - m)	Description	Heat/Serial Number	PurchaseOrder	Pos. Order	Mat. Certificate	Weld Ref.	Note
153	01	1	A	01SD	2	1	45 Deg Elbow Long Radius BW ›2" Thk.2.77mm ASTM A815 UNS S32760	1080SA023	1724001828	00020	1080SA023	W2-W3	
153	01	1	A	01SD	3	1	90 Deg Elbow Long Radius BW ›2" Thk.2.77mm ASTM A815 UNS S32760	1031SA024	1724001828	00030	1031SA024	W1-W2	
153	01	1	A	01SD	4	1	Flange WN For Jackscrews ›2" Thk.2,77mm 150LB RF ASTM A182 Gr.F55	555304	1724000839	00880	770	W1	
153	01	1	A	01SD	1A	2,112	Pipe 60.3mm(2") thk.2.77mm ASTM A790 UNS S32760	59769	1724001267	00290	769303		

Rosetti Marino S.p.A.

Welding Register

Job	123A90	BASE LOAD POWER HUB (BLPH)			
From Discipline	PP	Piping			
To Discipline	PP	Piping			
Drawings		**From**	155	**To**	155
Sheet		**From**	0	**To**	0
Marks		**From**		**To**	
Location		**From**		**To**	
Material		**From**		**To**	
Welds Execution		**From**		**To**	
Welds Acceptance		**From**		**To**	
Report Date		**From**		**To**	
Prefabrication	All				
Welding Status	All				
ITEM					
ADDITIONAL PARAMETERS	**LINE**	**From**		**To**	
	SPOOL	**From**		**To**	
		From		**To**	

Rosetti Marino S.p.A.

Welding Register

Job 123A90 BASE LOAD POWER HUB (BLPH)
Client CRWIND CROSSWIND
Discipline PP Piping

Order Number CW-I-WP4-2023-05
ITEM

Weld Number / Class	Insp. Category	Rev. / Cont.	Prod. Date / Examination phase	Prod. Sheet	Welders	Work Instructions	Oper.	Item type / Exam. %	Dimension / N. Rep	Thickness / Films n.	Bevel / Result	Weld Length / WPS Rip.	P/M / Techn. Weld.	Material / Defect length	WPS / CND date	Techn. Weld. / NOTE	Type Cons	Accept. Date	Spool
1/155/1/_		**01**	**11-11-2024**	**74**	**AZ36**			**FWN**	**2,00 in**	**2,77 mm**	**V**	**0,189 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**12-11-2024**	**A**
01SD	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					12-11-2024			
		RT	FIN	Weld Completion				10 %			Acceptable								
2/155/1/_		**01**	**12-11-2024**	**77**	**AZ39**			**ELB**	**2,00 in**	**2,77 mm**	**V**	**0,189 m**	**P**	**S.D.**	**B1A**	**GTAW**	**BW**	**15-11-2024**	**A**
	2	VIS	FTP	FIT-UP and on weld		123A90-PML-QHSE-PRO-00103 Rev 00	SSANTUCCI	100 %	OK		Acceptable					15-11-2024			
		RT	FIN	Weld Completion				10 %			Acceptable								

Totals per DWG	**155**	**Prefabrication**	**0,38 m**	**2 Nr. Welds**	**4,00 inch**
		Erection	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**0,38 m**	**2 Nr. Welds**	**4,00 inch**
		Accepted	**0,38 m**	**2 Nr. Welds**	**4,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Discipline		**Prefabrication**	**0,38 m**	**2 Nr. Welds**	**4,00 inch**
		Erection	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**0,38 m**	**2 Nr. Welds**	**4,00 inch**
		Accepted	**0,38 m**	**2 Nr. Welds**	**4,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
Totals by Project		**Prefabrication**	**0,38 m**	**2 Nr. Welds**	**4,00 inch**
		Erection	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Offshore	**0,00 m**	**0 Nr. Welds**	**0,00 inch**
		Performed	**0,38 m**	**2 Nr. Welds**	**4,00 inch**
		Accepted	**0,38 m**	**2 Nr. Welds**	**4,00 inch**
		Repaired	**0,00 m**	**0 Nr. Welds**	**0,00 inch**

Cliente/Contractor	**CROSSWIND**	Preparato da/Prepared by	Controllato da/Checked by	Approvato da/Approved by
SubContrattista/SubContractor	**ROSETTIMARINO/GROUPOFCOMPANY**	Nome/Name:	Nome/Name:	Nome/Name:
Progetto/Project	**Hollandse Kust Noord Wind Park Project**			
Commessa/Job	**123A90 - Piping**			
Disciplina/Discipline	**PIPING**	Antonio Galesi		
TitoloDocumento/DocumentTitle	**Material Traceability Report**	StatoDocumento/Document Status:		Data/Date:
RosettiDoc.Num.	**123A90MTR001**			04/12/2024

Sketch no.	Rev.	sheet	Spool	Piping Class	pos.	Q.ty (n° - m)	Description	Heat/Serial Number	PurchaseOrder	Pos. Order	Mat. Certificate	Weld Ref.	Note
155	01	1	A	01SD	2	1	90 Deg Elbow Long Radius BW ›2" Thk.2.77mm ASTM A815 UNS S32760	1031SA024	1724001828	00030	1031SA024	W1-W2	
155	01	1	A	01SD	3	1	Flange WN For Jackscrews ›2" Thk.2,77mm 150LB RF ASTM A182 Gr.F55	555304	1724000839	00880	770	W1	
155	01	1	A	01SD	1A	2,264	Pipe 60.3mm(2") thk.2.77mm ASTM A790 UNS S32760	59769	1724001267	00290	769303		

8. PIPING & VESSEL PRE-COMMISSIONING CONFORMITY CHECKS & TESTS:

8.1 CLX02A - Pipework Before test

8.2 CLX02B - Pipework After Test

8.3 CXX01 - Thermal insulation

8.4 CXX02 – Painting Line – NOT APPLICABLE

8.5 TMX03 – Cleaning – NOT APPLICABLE

8.6 TMX05 – Pressure test – NOT APPLICABLE

8.7 TMX25 – Gross Air Leak Test – NOT APPLICABLE

8.8 TMX27 – Bolt Tensioning / Torquing

8.9 TPLX05 – Drying – NOT APPLICABLE

ITEM	Tag	50-00-TP-045	: Test Pack 50-00-TP-045			Dwg	123A90-DDL-PR-PID-80021-22
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10003578		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	CLX02B Pipework After Test

1	Check that the pipework and equipment are drained as per procedure.	OK
2	Check if all temporary equipment (test spades, filters ,spool pieces..etc) have been removed.	OK
3	All plugs installed on vents and drains for test have been removed.	NA
4	Check that all removed devices and valves have been re-installed.	NA
5	Check that the new gaskets have been installed after pipework and equipment reinstallation.	OK
6	All specific blinds and / or spectacle blinds have been correctly installed as per P&ID.	NA
7	Check that the pipework, valves , check valves are undamaged. Also check the ancillaries and any other components.	OK
8	After the (re) installation of a valve check that it operates freely.	OK
9	Check that the flow direction of the valves and check – valve is in correct sense /direction in correct open/closed position as per P&ID.	OK
10	Check all locking device.	OK
11	Check that the valves have been correctly lubricated and that they have the correct spindle packing.	NA
12	Check that all the bolts and fasteners are suitably lubricated inline with the flange management procedure.	OK
13	Check that the bolts have been tightned at opened joints.	OK
14	Check that all golden welds (final tie-ins without hydrotest) have been performed as per procedure.	NA
15	Check for the correct tagging, labeling and colour coding of pipework and equipment (only for bare pipe lines).	NA
16	Check that the pipework and equipment (re) installation conforms to the specifications, drawings and to the P&ID's.	OK
17	If required produce Red Line Mark Up for "AS BUILT".	

Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Lorenzo Novaga	
Date	2025-02-07	2025-03-06	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-02-07T13:17:33.084Z	PROVERLIS Digitaly signed by Lorenzo Novaga 2025-03-06T15:41:12.916Z	

ITEM	Tag	50-00-TP-045	: Test Pack 50-00-TP-045			Dwg	123A90-DDL-PR-PID-80021-22
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10003579		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity CCK	Discipline	Piping	Form	CXX01 Thermal Insulation

1	Ensure CLX02B Pipework After Test (reinstatement) check completed.	OK
2	Ensure CXX02 "Painting Line" check (for the concerned insulated lines) completed.	OK
3	Ensure CPX22A "Heat tracing Before Insulation" check completed.	OK
4	Check that the insulation and cladding materials conform to the specifications.	PL
5	Check that the insulation is compatible with the Heat tracing system.	OK
6	Check that the surface condition prior to the application of the insulation	OK
7	Check the installation of wire mesh	NA
8	Check the overlap of the metal cladding.	NA
9	Check that each joint is sealed with a suitable sealant specified for water proofing.	PL
10	Check the staggering of the metal cladding joints and verify that they have been applied as per the specifications.	PL
11	Control that the locking devices boxes opretated satisfactorily.	PL
12	Check the blinds, the spectacles and the instruments are visible.	NA
13	Check the flange accessibility without damaging the insulation.	PL
14	Check that color coding/line marking/flow direction are correct	NA

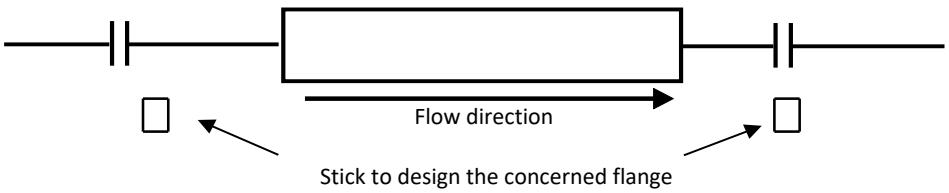
Comments:

	Performed by	● WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RM_CONSTR (ROSETTI MARINO)	RM (ROSETTI MARINO)	
Name	Gianluca De Maglie	Lorenzo Novaga	
Date	2025-03-21	2025-03-25	
Signature	PROVERLIS Digitaly signed by Gianluca De Maglie 2025-03-21T15:21:45.127Z	PROVERLIS Digitaly signed by Lorenzo Novaga 2025-03-25T15:48:38.175Z	

ITEM	Tag	023-1-J1	: Joint 023-1-J1			Dwg	123A90-FDL-PP-DI-00023-01
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10004181	Location	Offshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27
							Bolt tensioning / torquing

Test Pack N.: TP-001

EQUIPMENT TAG



Flange Type	150LB	**Lubricant**	Yes
Flange Size	1.1/2"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Flat Thk. 3 mm	**Used tools**	
Bolt tensioning/Torquing value	48.6		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1			15	29	48.6
2			15	29	48.6
3			15	29	48.6
4			15	29	48.6
5			15	29	48.6
6			15	29	48.6
7			15	29	48.6
8			15	29	48.6
9			15	29	48.6
10			15	29	48.6
11			15	29	48.6
12			15	29	48.6
13			15	29	48.6
14			15	29	48.6
15			15	29	48.6
16			15	29	48.6
17			15	29	48.6
18			15	29	48.6
19			15	29	48.6
20			15	29	48.6

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination.

2 **Flange Face Check:** Both flanges clean and free from damage.

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique.

4 **Alignment:** Check alignment according to code.

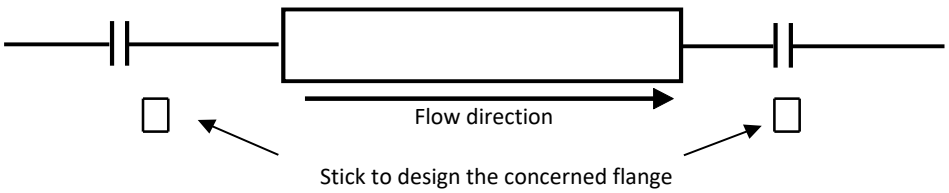
Comments:

Page 1/1	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company			
Name			
Date			
Signature			

ITEM	Tag	023-1-J10	: Joint 023-1-J10			Dwg	123A90-FDL-PP-DI-00023-01
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10004182	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27 Bolt tensioning / torquing

Test Pack N.: TP-001

EQUIPMENT TAG



Flange Type	150LB	**Lubricant**	Yes
Flange Size	1.1/2"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Flat Thk. 3 mm	**Used tools**	V030390 / RD00261
Bolt tensioning/Torquing value	48.6		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	15	50	15	29	48.6
2	15	50	15	29	48.6
3	15	50	15	29	48.6
4	15	50	15	29	48.6
5			15	29	48.6
6			15	29	48.6
7			15	29	48.6
8			15	29	48.6
9			15	29	48.6
10			15	29	48.6
11			15	29	48.6
12			15	29	48.6
13			15	29	48.6
14			15	29	48.6
15			15	29	48.6
16			15	29	48.6
17			15	29	48.6
18			15	29	48.6
19			15	29	48.6
20			15	29	48.6

1	**Clear Bore Inspection:** Pipe and Valve clear of debris/contamination.	Yes
2	**Flange Face Check:** Both flanges clean and free from damage.	Yes
3	**Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique.	Yes
4	**Alignment:** Check alignment according to code.	Yes

Comments:

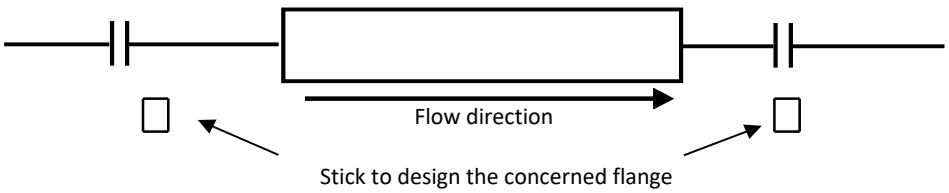
Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Andrea Mancini	
Date	2025-01-28	2025-01-28	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-28T05:42:58.810Z	PROVERLIS Digitaly signed by Andrea Mancini 2025-01-28T09:56:00.833Z	


TAG
023-1-J10
FLANGE TIGHTENED
ID STAMP RFJ 2/6
SIGNED
DATE 27/01/25
RETURN TO SUPERVISOR
TAG
023-1-J10
FLANGE ASSEMBLED
ID STAMP RFJ 2/6
SIGNED
DATE 27/01/25
RETURN TO SUPERVISOR
TAG
023-1-J10
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	023-1-J11	: Joint 023-1-J11			Dwg	123A90-FDL-PP-DI-00023-01
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10004183		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27		Bolt tensioning / torquing

Test Pack N.: TP-001

EQUIPMENT TAG



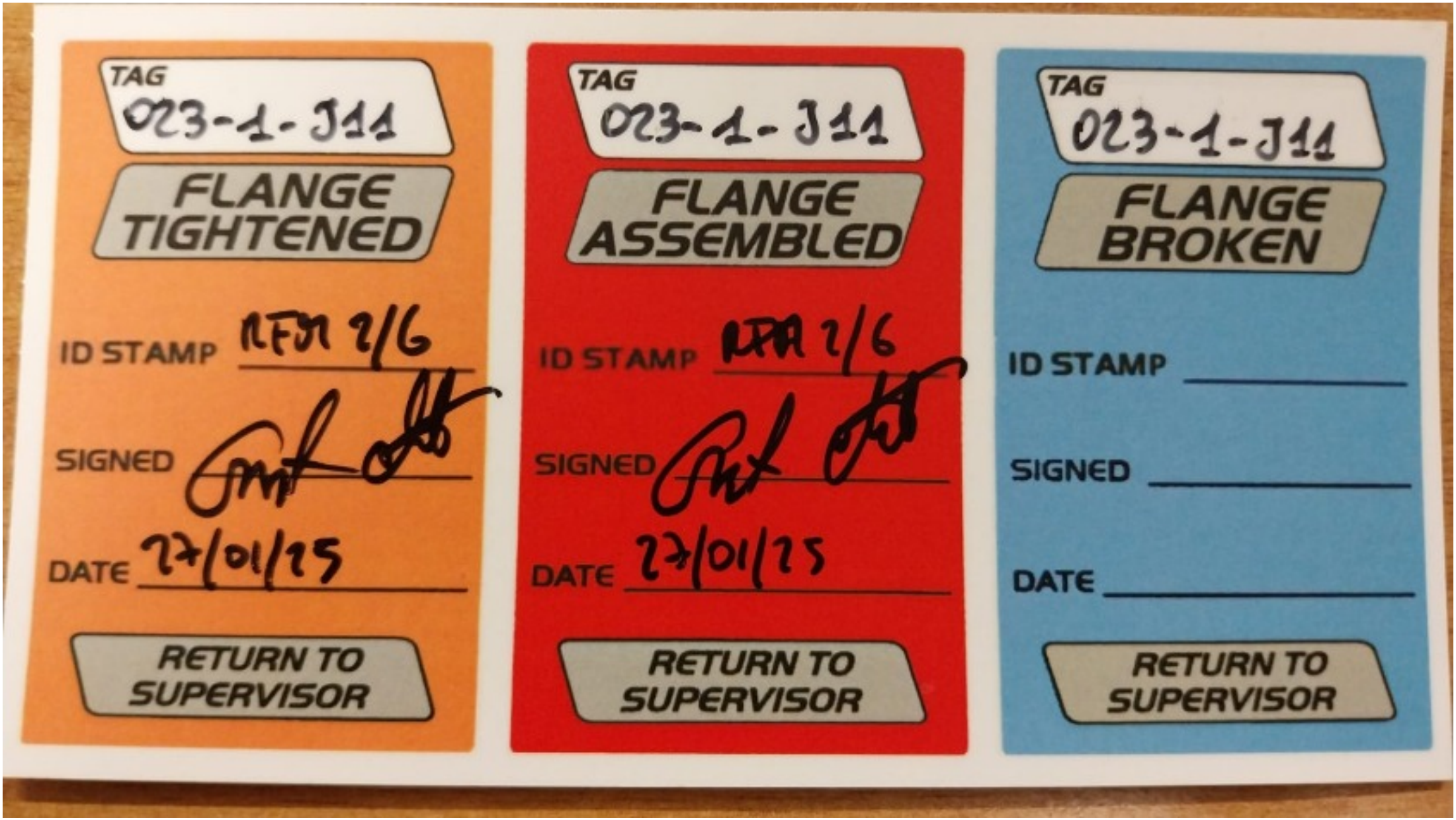
Flange Type	150LB	**Lubricant**	Yes
Flange Size	1.1/2"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Flat Thk. 3 mm	**Used tools**	V030390 / RD00261
Bolt tensioning/Torquing value	48.6		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	15	50	15	29	48.6
2	15	50	15	29	48.6
3	15	50	15	29	48.6
4	15	50	15	29	48.6
5			15	29	48.6
6			15	29	48.6
7			15	29	48.6
8			15	29	48.6
9			15	29	48.6
10			15	29	48.6
11			15	29	48.6
12			15	29	48.6
13			15	29	48.6
14			15	29	48.6
15			15	29	48.6
16			15	29	48.6
17			15	29	48.6
18			15	29	48.6
19			15	29	48.6
20			15	29	48.6

1	**Clear Bore Inspection:** Pipe and Valve clear of debris/contamination.	Yes
2	**Flange Face Check:** Both flanges clean and free from damage.	Yes
3	**Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique.	Yes
4	**Alignment:** Check alignment according to code.	Yes

Comments:

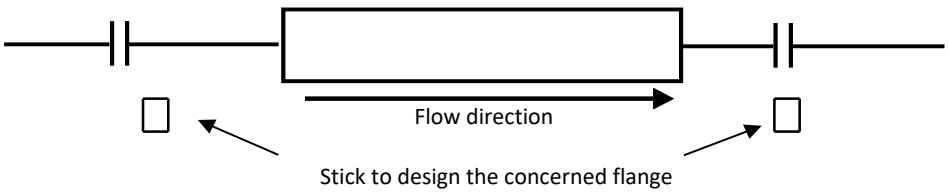
Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Andrea Mancini	
Date	2025-01-28	2025-01-28	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-28T05:43:12.071Z	PROVERLIS Digitaly signed by Andrea Mancini 2025-01-28T09:56:40.959Z	


TAG
023-1-J11
FLANGE TIGHTENED
ID STAMP RFJA 2/6
SIGNED
DATE 27/01/25
RETURN TO SUPERVISOR
TAG
023-1-J11
FLANGE ASSEMBLED
ID STAMP RFJA 2/6
SIGNED
DATE 27/01/25
RETURN TO SUPERVISOR
TAG
023-1-J11
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	023-1-J2	: Joint 023-1-J2			Dwg	123A90-FDL-PP-DI-00023-01
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10004184	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27 Bolt tensioning / torquing

Test Pack N.: TP-001

EQUIPMENT TAG



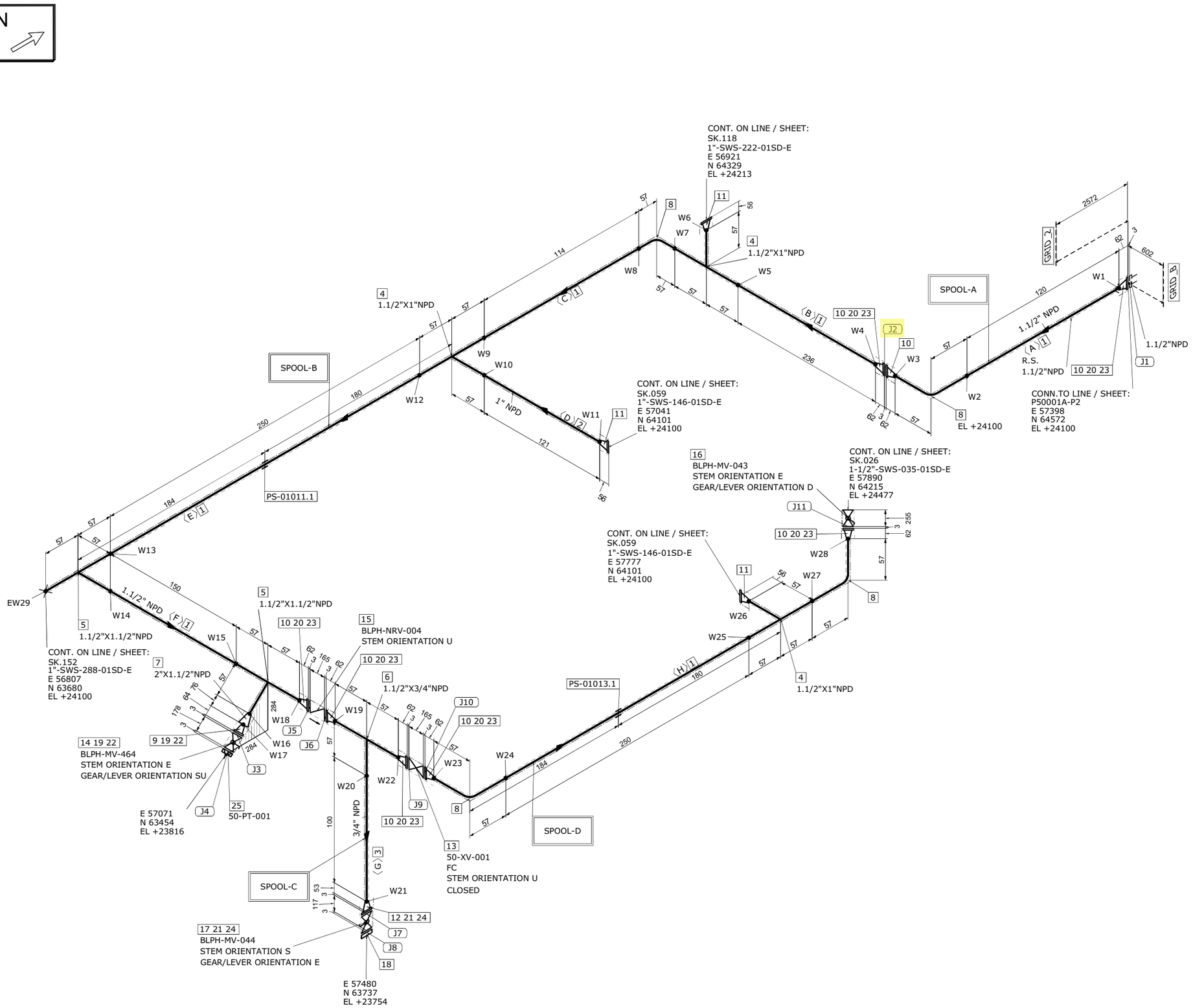
Flange Type	150LB	**Lubricant**	Yes
Flange Size	1.1/2"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Flat Thk. 3 mm	**Used tools**	V030390 / RD00261
Bolt tensioning/Torquing value	48.6		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	15	50	15	29	48.6
2	15	50	15	29	48.6
3	15	50	15	29	48.6
4	15	50	15	29	48.6
5			15	29	48.6
6			15	29	48.6
7			15	29	48.6
8			15	29	48.6
9			15	29	48.6
10			15	29	48.6
11			15	29	48.6
12			15	29	48.6
13			15	29	48.6
14			15	29	48.6
15			15	29	48.6
16			15	29	48.6
17			15	29	48.6
18			15	29	48.6
19			15	29	48.6
20			15	29	48.6

1	**Clear Bore Inspection:** Pipe and Valve clear of debris/contamination.	Yes
2	**Flange Face Check:** Both flanges clean and free from damage.	Yes
3	**Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique.	Yes
4	**Alignment:** Check alignment according to code.	Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Andrea Mancini	
Date	2025-01-29	2025-01-29	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-29T10:21:44.209Z	PROVERLIS Digitaly signed by Andrea Mancini 2025-01-29T10:41:01.754Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1.1/2	PIPESD04761H00	Pipe ASME B36.19M PE 3,68 SML ASTM A790 UNS S32760	1.1M	4.6
2	1	PIPESD02850100	Pipe ASME B36.19M PE 3,38 SML ASTM A790 UNS S32760	0.1M	0.3
3	3/4	PIPESD04753Q00	Pipe ASME B36.19M PE 2,87 SML ASTM A790 UNS S32760	0.1M	0.2
4	1.1/2X1	TER0SD09381H01	Tee Reducing ASME B16.9 BW 3,68x3,38 WRS ASTM A815 UNS S32760	3	2.3
5	1.1/2X1.1/2	TEE0SD02931H00	Tee ASME B16.9 BW 3,68 WRS ASTM A815 UNS S32760	2	1.7
6	1.1/2X3/4	TER0SD09371H3Q	Tee Reducing ASME B16.9 BW 3,68x2,87 WRS ASTM A815 UNS S32760	1	0.8
7	2X1.1/2	REC0SD0803021H	Reducer Concentric ASME B16.9 BW 2,77x3,68 WRS ASTM A815 UNS S32760	1	0.3
8	1.1/2	E90RSD03031H00	90 Deg Elbow Long Radius ASME B16.9 BW 3,68 WRS ASTM A815 UNS S32760	4	1.5
9	2	FLW0SD01250200	Flange WN ASME B16.5 150LB RF 2,77 FRG ASTM A182 Gr.F55	1	2.8
10	1.1/2	FLW0SD02861H00	Flange WN ASME B16.5 150LB RF 3,68 FRG ASTM A182 Gr.F55	8	14.7
11	1	FLW0SD01240100	Flange WN ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	3	4.3
12	3/4	FLW0SD02853Q00	Flange WN ASME B16.5 150LB RF 2,87 FRG ASTM A182 Gr.F55	1	0.9

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
13	1.1/2		ON/OFF Ball Actuator Valve - 150#RF Flanged	1	54.0
14	2	VBC0NN24460200	Ball Valve Split Body FB API 6D FLG 150LB RF BA01F01RF	1	19.2
15	1.1/2	VDRNNN02511H00	Check Valve Piston EN ISO 15761 FLG 150LB RF CH01F02RF	1	0.0
16	1.1/2	VLBLNN01381H00	Block & Bleed Valve API 6D FLG 150LB RF BS01F01RFS	1	28.0
17	3/4	VBC0NN24433Q00	Ball Valve Split Body FB API 6D FLG 150LB RF BS01F01RF	1	7.0
18	3/4	FLB0SD01843Q00	Flange Blind ASME B16.5 150LB RF FRG ASTM A182 Gr.F55	1	0.9
19	2	GFL3GK13230200	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	2	0.2
20	1.1/2	GFL3GK15981H00	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	7	0.4
21	3/4	GFL3GK15963Q00	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	2	0.1
22	5/8	SB20BO00660300	85 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.9
23	1/2	SB20BO00930200	70 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	28	3.4
24	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.0
25	2		Pressure Transmitter	1	2.0

FABRICATION WEIGHT [kg]	34.4
ERECTION WEIGHT [kg]	118.2
OVERALL WEIGHT [kg]	152.5

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1.1/2	BW
W2	1.1/2	BW
W3	1.1/2	BW
W4	1.1/2	BW
W5	1.1/2	BW
W6	1	BW
W7	1.1/2	BW
W8	1.1/2	BW
W9	1.1/2	BW
W10	1	BW
W11	1	BW
W12	1.1/2	BW
W13	1.1/2	BW
W14	1.1/2	BW
W15	1.1/2	BW
W16	1.1/2	BW
W17	2	BW
W18	1.1/2	BW
W19	1.1/2	BW
W20	3/4	BW
W21	3/4	BW
W22	1.1/2	BW
W23	1.1/2	BW
W24	1.1/2	BW
W25	1.1/2	BW
W26	1	BW
W27	1.1/2	BW
W28	1.1/2	BW
EW29	1.1/2	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1.1/2	121	BEVEL	BEVEL
B	1.1/2	236	BEVEL	BEVEL
C	1.1/2	114	BEVEL	BEVEL
D	1	121	BEVEL	BEVEL
E	1.1/2	250	BEVEL	BEVEL
F	1.1/2	150	BEVEL	BEVEL
G	3/4	100	BEVEL	BEVEL
H	1.1/2	250	BEVEL	BEVEL

SUPPORT LIST

PS-01011.1
PS-01013.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	4.5	4.6
B	21.5	16.6
C	4.5	5.5
D	8.5	7.7
MONT	1.5	118.2

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 1-1/2"-SWS-031-01SD-E

SK.023

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE	N/A
DRAWN	STAFF SRL	CHECKED	RT	APPROVED	LM
DATE	27-08-2024				
FORMAT	A3	DRAWING NO.	123A90-FDL-PP-DI-00023	SHEET / OF	1/1
REV.	00				

LINE DATA

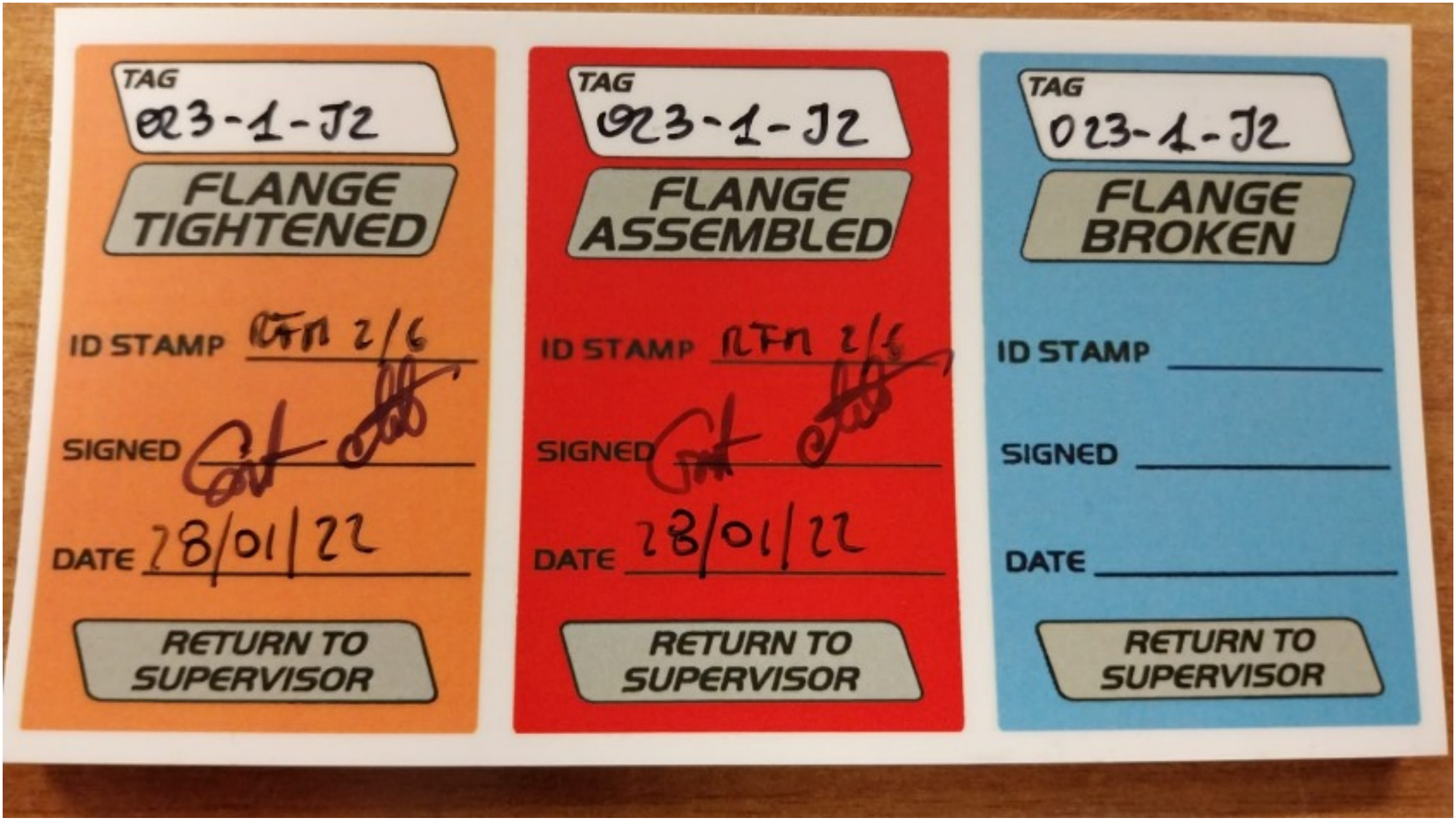
NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3				
PAINTING	SYSTEM N/A	BASE RAL N/A	FLUID PHASE	Liquid				
INSULATION	TYPE H	THICKNESS 20 [mm]	DESIGN	PRESS. 7.6 [barg]	TEMP. -29 / 100 [°C]			
HEAT TRACING	Yes		TEST	PRESS. 11.4 [barg]	TEMP. AMB	MEDIUM Water		

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80021
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

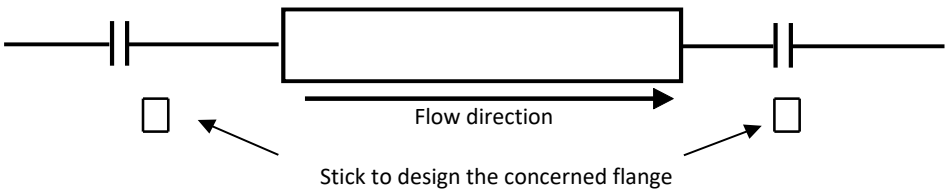
MASTER


TAG
023-1-J2
FLANGE TIGHTENED
ID STAMP RTH 2/6
SIGNED
DATE 28/01/22
RETURN TO SUPERVISOR
TAG
023-1-J2
FLANGE ASSEMBLED
ID STAMP RTH 2/6
SIGNED
DATE 28/01/22
RETURN TO SUPERVISOR
TAG
023-1-J2
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	023-1-J3	: Joint 023-1-J3			Dwg	123A90-FDL-PP-DI-00023-01
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10004185	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27 Bolt tensioning / torquing

Test Pack N.: TP-001

EQUIPMENT TAG



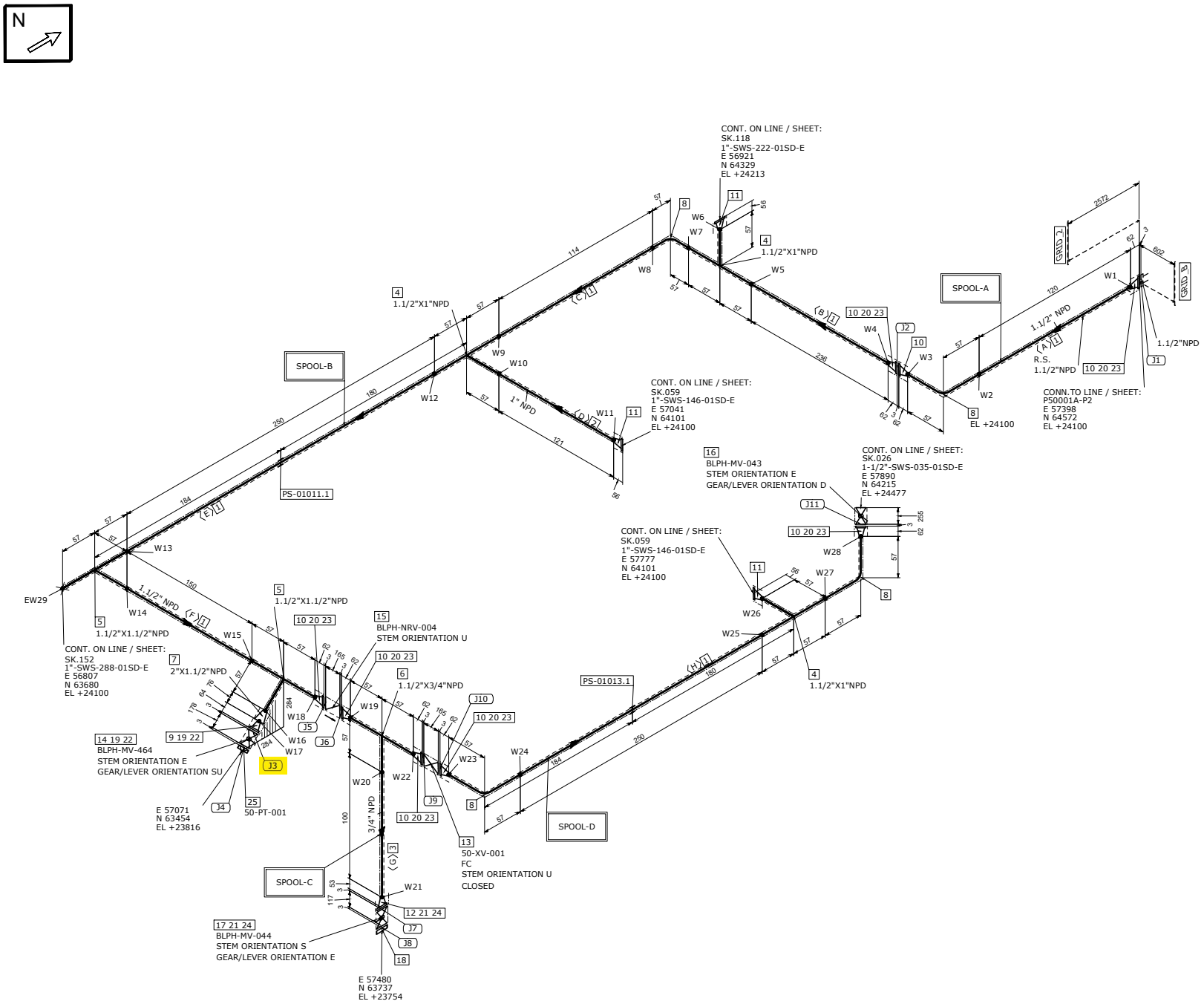
Flange Type	150LB	**Lubricant**	Yes
Flange Size	2"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Flat Thk. 3 mm	**Used tools**	V030390 / RD00261
Bolt tensioning/Torquing value	95		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	29	95	29	57	95
2	29	95	29	57	95
3	29	95	29	57	95
4	29	95	29	57	95
5			29	57	95
6			29	57	95
7			29	57	95
8			29	57	95
9			29	57	95
10			29	57	95
11			29	57	95
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13			29	57	95
14			29	57	95
15			29	57	95
16			29	57	95
17			29	57	95
18			29	57	95
19			29	57	95
20			29	57	95

1	**Clear Bore Inspection:** Pipe and Valve clear of debris/contamination.	Yes
2	**Flange Face Check:** Both flanges clean and free from damage.	Yes
3	**Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique.	Yes
4	**Alignment:** Check alignment according to code.	Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Andrea Mancini	
Date	2025-01-28	2025-01-28	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-28T05:43:24.630Z	PROVERLIS Digitaly signed by Andrea Mancini 2025-01-28T09:57:05.343Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1.1/2	PIPESD04761H00	Pipe ASME B36.19M PE 3,68 SML ASTM A790 UNS S32760	1.1M	4.6
2	1	PIPESD02850100	Pipe ASME B36.19M PE 3,38 SML ASTM A790 UNS S32760	0.1M	0.3
3	3/4	PIPESD04753Q00	Pipe ASME B36.19M PE 2,87 SML ASTM A790 UNS S32760	0.1M	0.2
4	1.1/2X1	TER0SD09381H01	Tee Reducing ASME B16.9 BW 3,68x3,38 WRS ASTM A815 UNS S32760	3	2.3
5	1.1/2X1.1/2	TEE0SD02931H00	Tee ASME B16.9 BW 3,68 WRS ASTM A815 UNS S32760	2	1.7
6	1.1/2X3/4	TER0SD09371H3Q	Tee Reducing ASME B16.9 BW 3,68x2,87 WRS ASTM A815 UNS S32760	1	0.8
7	2X1.1/2	REC0SD0803021H	Reducer Concentric ASME B16.9 BW 2,77x3,68 WRS ASTM A815 UNS S32760	1	0.3
8	1.1/2	E90RSD03031H00	90 Deg Elbow Long Radius ASME B16.9 BW 3,68 WRS ASTM A815 UNS S32760	4	1.5
9	2	FLW0SD01250200	Flange WN ASME B16.5 150LB RF 2,77 FRG ASTM A182 Gr.F55	1	2.8
10	1.1/2	FLW0SD02861H00	Flange WN ASME B16.5 150LB RF 3,68 FRG ASTM A182 Gr.F55	8	14.7
11	1	FLW0SD01240100	Flange WN ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	3	4.3
12	3/4	FLW0SD02853Q00	Flange WN ASME B16.5 150LB RF 2,87 FRG ASTM A182 Gr.F55	1	0.9

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
13	1.1/2		ON/OFF Ball Actuator Valve - 150#RF Flanged	1	54.0
14	2	VBC0NN24460200	Ball Valve Split Body FB API 6D FLG 150LB RF BA01F01RF	1	19.2
15	1.1/2	VDRNNN02511H00	Check Valve Piston EN ISO 15761 FLG 150LB RF CH01F02RF	1	0.0
16	1.1/2	VLBLNN01381H00	Block & Bleed Valve API 6D FLG 150LB RF BS01F01RFS	1	28.0
17	3/4	VBC0NN24433Q00	Ball Valve Split Body FB API 6D FLG 150LB RF BS01F01RF	1	7.0
18	3/4	FLB0SD01843Q00	Flange Blind ASME B16.5 150LB RF FRG ASTM A182 Gr.F55	1	0.9
19	2	GFL3GK13230200	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	2	0.2
20	1.1/2	GFL3GK15981H00	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	7	0.4
21	3/4	GFL3GK15963Q00	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	2	0.1
22	5/8	SB20BO00660300	85 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.9
23	1/2	SB20BO00930200	70 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	28	3.4
24	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.0
25	2		Pressure Transmitter	1	2.0

FABRICATION WEIGHT [kg]	34.4
ERECTION WEIGHT [kg]	118.2
OVERALL WEIGHT [kg]	152.5

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1.1/2	BW
W2	1.1/2	BW
W3	1.1/2	BW
W4	1.1/2	BW
W5	1.1/2	BW
W6	1	BW
W7	1.1/2	BW
W8	1.1/2	BW
W9	1.1/2	BW
W10	1	BW
W11	1	BW
W12	1.1/2	BW
W13	1.1/2	BW
W14	1.1/2	BW
W15	1.1/2	BW
W16	1.1/2	BW
W17	2	BW
W18	1.1/2	BW
W19	1.1/2	BW
W20	3/4	BW
W21	3/4	BW
W22	1.1/2	BW
W23	1.1/2	BW
W24	1.1/2	BW
W25	1.1/2	BW
W26	1	BW
W27	1.1/2	BW
W28	1.1/2	BW
EW29	1.1/2	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1.1/2	121	BEVEL	BEVEL
B	1.1/2	236	BEVEL	BEVEL
C	1.1/2	114	BEVEL	BEVEL
D	1	121	BEVEL	BEVEL
E	1.1/2	250	BEVEL	BEVEL
F	1.1/2	150	BEVEL	BEVEL
G	3/4	100	BEVEL	BEVEL
H	1.1/2	250	BEVEL	BEVEL

SUPPORT LIST

PS-01011.1
PS-01013.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	4.5	4.6
B	21.5	16.6
C	4.5	5.5
D	8.5	7.7
MONT	1.5	118.2

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 1-1/2"-SWS-031-01SD-E

SK.023

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE: N/A

DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 27-08-2024

FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00023 | SHEET / OF: 1/1 | REV.: 00

LINE DATA

NDT INSPECTION CATEGORY	2			PED CATEGORY	Art. 4, par. 3				
PAINTING	SYSTEM N/A		BASE RAL N/A	FLUID PHASE	Liquid				
INSULATION	TYPE H		THICKNESS 20 [mm]	DESIGN	PRESS. 7.6 [barg]	TEMP. -29 / 100 [°C]			
HEAT TRACING	Yes			TEST	PRESS. 11.4 [barg]	TEMP. AMB.	MEDIUM Water		

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80021
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

MASTER

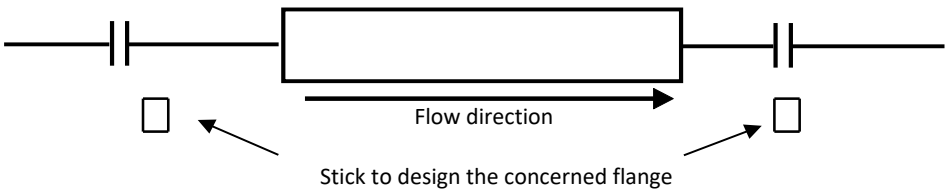

TAG
023-1-J3
FLANGE TIGHTENED
ID STAMP RFM 2/6
SIGNED
DATE 27/01/25
RETURN TO SUPERVISOR
TAG
023-1-J3
FLANGE ASSEMBLED
ID STAMP RFM 2/6
SIGNED
DATE 27/01/25
RETURN TO SUPERVISOR
TAG
023-1-J3
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ROSETTI MARINO — CROSSWIND

ITEM	Tag	023-1-J4	: Joint 023-1-J4			Dwg	123A90-FDL-PP-DI-00023-01
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10004186	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27 — Bolt tensioning / torquing

Test Pack N.: TP-001

EQUIPMENT TAG



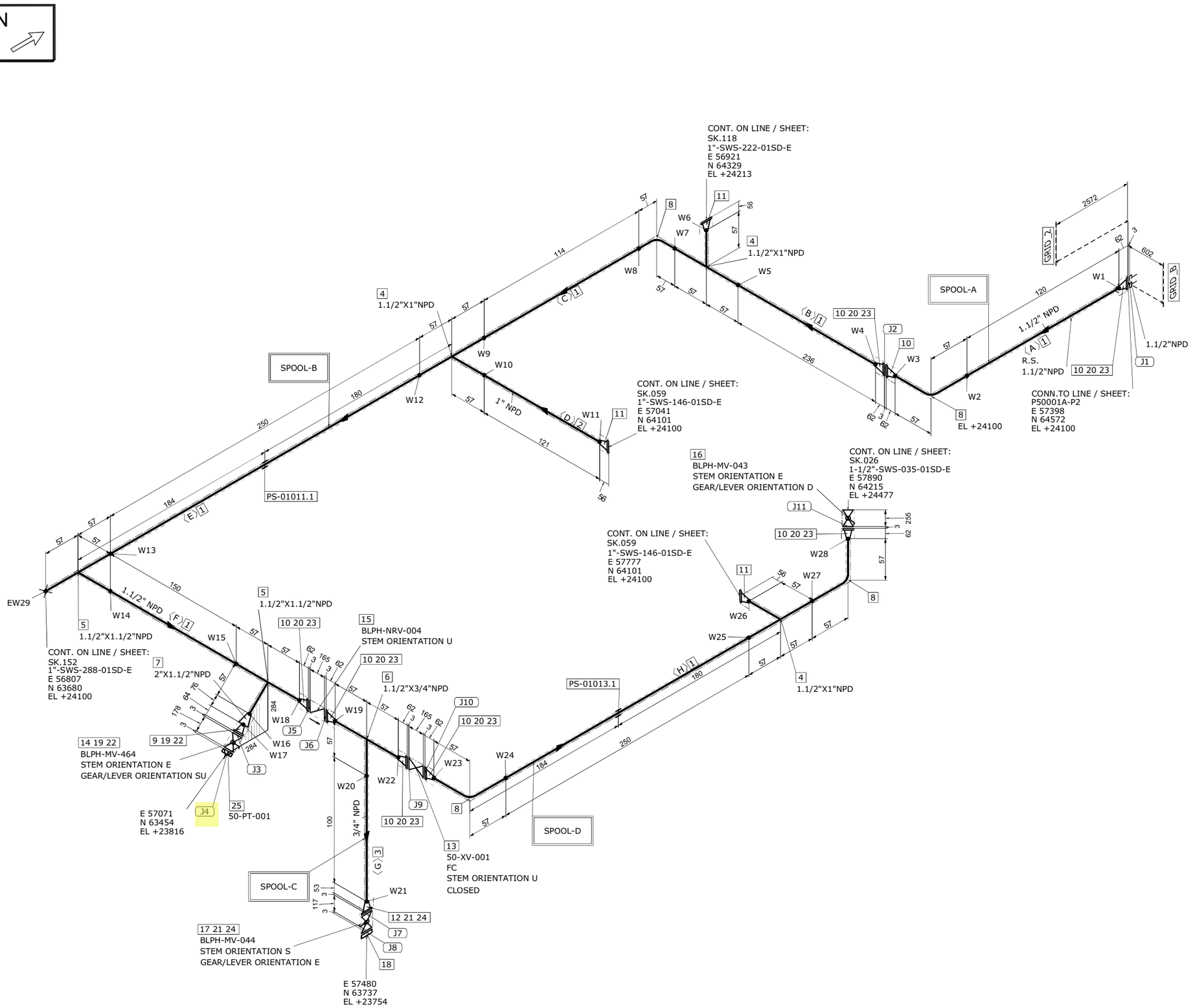
Flange Type	150LB	**Lubricant**	Yes
Flange Size	2"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Flat Thk. 3 mm	**Used tools**	V030390 / RD00261
Bolt tensioning/Torquing value	95		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	29	95	29	57	95
2	29	95	29	57	95
3	29	95	29	57	95
4	29	95	29	57	95
5			29	57	95
6			29	57	95
7			29	57	95
8			29	57	95
9			29	57	95
10			29	57	95
11			29	57	95
12			29	57	95
13			29	57	95
14			29	57	95
15			29	57	95
16			29	57	95
17			29	57	95
18			29	57	95
19			29	57	95
20			29	57	95

1	**Clear Bore Inspection:** Pipe and Valve clear of debris/contamination.	Yes
2	**Flange Face Check:** Both flanges clean and free from damage.	Yes
3	**Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique.	Yes
4	**Alignment:** Check alignment according to code.	Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Andrea Mancini	
Date	2025-01-29	2025-01-29	
Signature	Digitaly signed by Emanuele Delfino 2025-01-29T10:08:22.061Z	Digitaly signed by Andrea Mancini 2025-01-29T10:41:35.684Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1.1/2	PIPESD04761H00	Pipe ASME B36.19M PE 3,68 SML ASTM A790 UNS S32760	1.1M	4.6
2	1	PIPESD02850100	Pipe ASME B36.19M PE 3,38 SML ASTM A790 UNS S32760	0.1M	0.3
3	3/4	PIPESD04753Q00	Pipe ASME B36.19M PE 2,87 SML ASTM A790 UNS S32760	0.1M	0.2
4	1.1/2X1	TER0SD09381H01	Tee Reducing ASME B16.9 BW 3,68x3,38 WRS ASTM A815 UNS S32760	3	2.3
5	1.1/2X1.1/2	TEE0SD02931H00	Tee ASME B16.9 BW 3,68 WRS ASTM A815 UNS S32760	2	1.7
6	1.1/2X3/4	TER0SD09371H3Q	Tee Reducing ASME B16.9 BW 3,68x2,87 WRS ASTM A815 UNS S32760	1	0.8
7	2X1.1/2	REC0SD0803021H	Reducer Concentric ASME B16.9 BW 2,77x3,68 WRS ASTM A815 UNS S32760	1	0.3
8	1.1/2	E90RSD03031H00	90 Deg Elbow Long Radius ASME B16.9 BW 3,68 WRS ASTM A815 UNS S32760	4	1.5
9	2	FLW0SD01250200	Flange WN ASME B16.5 150LB RF 2,77 FRG ASTM A182 Gr.F55	1	2.8
10	1.1/2	FLW0SD02861H00	Flange WN ASME B16.5 150LB RF 3,68 FRG ASTM A182 Gr.F55	8	14.7
11	1	FLW0SD01240100	Flange WN ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	3	4.3
12	3/4	FLW0SD02853Q00	Flange WN ASME B16.5 150LB RF 2,87 FRG ASTM A182 Gr.F55	1	0.9

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
13	1.1/2		ON/OFF Ball Actuator Valve - 150#RF Flanged	1	54.0
14	2	VBC0NN24460200	Ball Valve Split Body FB API 6D FLG 150LB RF BA01F01RF	1	19.2
15	1.1/2	VDRNNN02511H00	Check Valve Piston EN ISO 15761 FLG 150LB RF CH01F02RF	1	0.0
16	1.1/2	VLBLNN01381H00	Block & Bleed Valve API 6D FLG 150LB RF BS01F01RFS	1	28.0
17	3/4	VBC0NN24433Q00	Ball Valve Split Body FB API 6D FLG 150LB RF BS01F01RF	1	7.0
18	3/4	FLB0SD01843Q00	Flange Blind ASME B16.5 150LB RF FRG ASTM A182 Gr.F55	1	0.9
19	2	GFL3GK13230200	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	2	0.2
20	1.1/2	GFL3GK15981H00	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	7	0.4
21	3/4	GFL3GK15963Q00	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	2	0.1
22	5/8	SB20BO00660300	85 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.9
23	1/2	SB20BO00930200	70 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	28	3.4
24	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.0
25	2		Pressure Transmitter	1	2.0

FABRICATION WEIGHT [kg]	34.4
ERECTION WEIGHT [kg]	118.2
OVERALL WEIGHT [kg]	152.5

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1.1/2	BW
W2	1.1/2	BW
W3	1.1/2	BW
W4	1.1/2	BW
W5	1.1/2	BW
W6	1	BW
W7	1.1/2	BW
W8	1.1/2	BW
W9	1.1/2	BW
W10	1	BW
W11	1	BW
W12	1.1/2	BW
W13	1.1/2	BW
W14	1.1/2	BW
W15	1.1/2	BW
W16	1.1/2	BW
W17	2	BW
W18	1.1/2	BW
W19	1.1/2	BW
W20	3/4	BW
W21	3/4	BW
W22	1.1/2	BW
W23	1.1/2	BW
W24	1.1/2	BW
W25	1.1/2	BW
W26	1	BW
W27	1.1/2	BW
W28	1.1/2	BW
EW29	1.1/2	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1.1/2	121	BEVEL	BEVEL
B	1.1/2	236	BEVEL	BEVEL
C	1.1/2	114	BEVEL	BEVEL
D	1	121	BEVEL	BEVEL
E	1.1/2	250	BEVEL	BEVEL
F	1.1/2	150	BEVEL	BEVEL
G	3/4	100	BEVEL	BEVEL
H	1.1/2	250	BEVEL	BEVEL

SUPPORT LIST

PS-01011.1
PS-01013.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	4.5	4.6
B	21.5	16.6
C	4.5	5.5
D	8.5	7.7
MONT	1.5	118.2

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 1-1/2"-SWS-031-01SD-E

SK.023

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	N/A
DRAWN	STAFF SRL	CHECKED	RT
APPROVED	LM	DATE	27-08-2024
FORMAT	A3	DRAWING NO.	123A90-FDL-PP-DI-00023
SHEET / OF	1/1	REV.	00

LINE DATA

NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3				
PAINTING	SYSTEM N/A	BASE RAL N/A	FLUID PHASE	Liquid				
INSULATION	TYPE H	THICKNESS 20 [mm]	DESIGN	PRESS. 7.6 [barg]	TEMP. -29 / 100 [°C]			
HEAT TRACING	Yes		TEST	PRESS. 11.4 [barg]	TEMP. AMB	MEDIUM Water		

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80021
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

MASTER

TAG 023-1-JH

FLANGE TIGHTENED

ID STAMP RFM 2/6

SIGNED

DATE 28/01/25

RETURN TO SUPERVISOR

TAG 023-1-JH

FLANGE ASSEMBLED

ID STAMP RFM 2/6

SIGNED

DATE 28/01/25

RETURN TO SUPERVISOR

TAG 023-1-JH

FLANGE BROKEN

ID STAMP

SIGNED

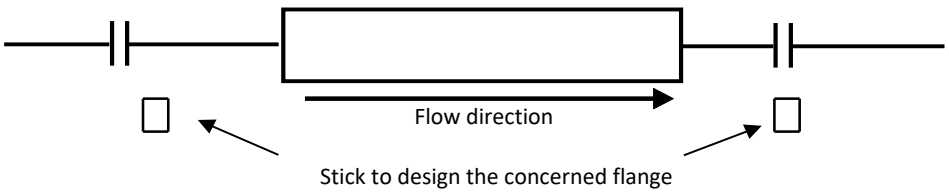
DATE

RETURN TO SUPERVISOR

ITEM	Tag	023-1-J5	: Joint 023-1-J5			Dwg	123A90-FDL-PP-DI-00023-01
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10004187		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27 Bolt tensioning / torquing

Test Pack N.: TP-001

EQUIPMENT TAG



Flange Type	150LB	**Lubricant**	Yes
Flange Size	1.1/2"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Flat Thk. 3 mm	**Used tools**	V030390 / RD00261
Bolt tensioning/Torquing value	48.6		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	15	50	15	29	48.6
2	15	50	15	29	48.6
3	15	50	15	29	48.6
4	15	50	15	29	48.6
5			15	29	48.6
6			15	29	48.6
7			15	29	48.6
8			15	29	48.6
9			15	29	48.6
10			15	29	48.6
11			15	29	48.6
12			15	29	48.6
13			15	29	48.6
14			15	29	48.6
15			15	29	48.6
16			15	29	48.6
17			15	29	48.6
18			15	29	48.6
19			15	29	48.6
20			15	29	48.6

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

4 **Alignment:** Check alignment according to code. Yes

Comments:

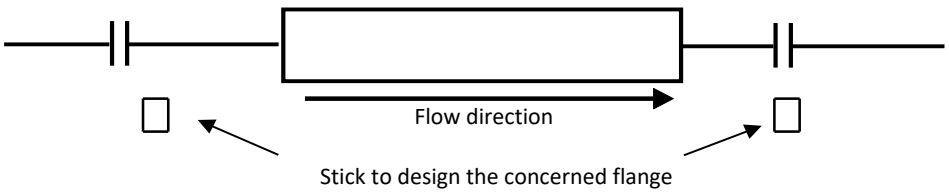
Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Andrea Mancini	
Date	2025-01-28	2025-01-28	
Signature	Digitaly signed by Emanuele Delfino 2025-01-28T05:43:38.968Z	Digitaly signed by Andrea Mancini 2025-01-28T09:57:37.992Z	


TAG
023-1-J5
FLANGE TIGHTENED
ID STAMP RFM 2/6
SIGNED
DATE 27/01/25
RETURN TO SUPERVISOR
TAG
023-1-J5
FLANGE ASSEMBLED
ID STAMP RFM 2/6
SIGNED
DATE 27/01/25
RETURN TO SUPERVISOR
TAG
023-1-J5
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	023-1-J6	: Joint 023-1-J6			Dwg	123A90-FDL-PP-DI-00023-01
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10004188	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27 Bolt tensioning / torquing

Test Pack N.: TP-001

EQUIPMENT TAG



Flange Type	150LB	**Lubricant**	Yes
Flange Size	1.1/2"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Flat Thk. 3 mm	**Used tools**	V030390 / RD00261
Bolt tensioning/Torquing value	48.6		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	15	50	15	29	48.6
2	15	50	15	29	48.6
3	15	50	15	29	48.6
4	15	50	15	29	48.6
5			15	29	48.6
6			15	29	48.6
7			15	29	48.6
8			15	29	48.6
9			15	29	48.6
10			15	29	48.6
11			15	29	48.6
12			15	29	48.6
13			15	29	48.6
14			15	29	48.6
15			15	29	48.6
16			15	29	48.6
17			15	29	48.6
18			15	29	48.6
19			15	29	48.6
20			15	29	48.6

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

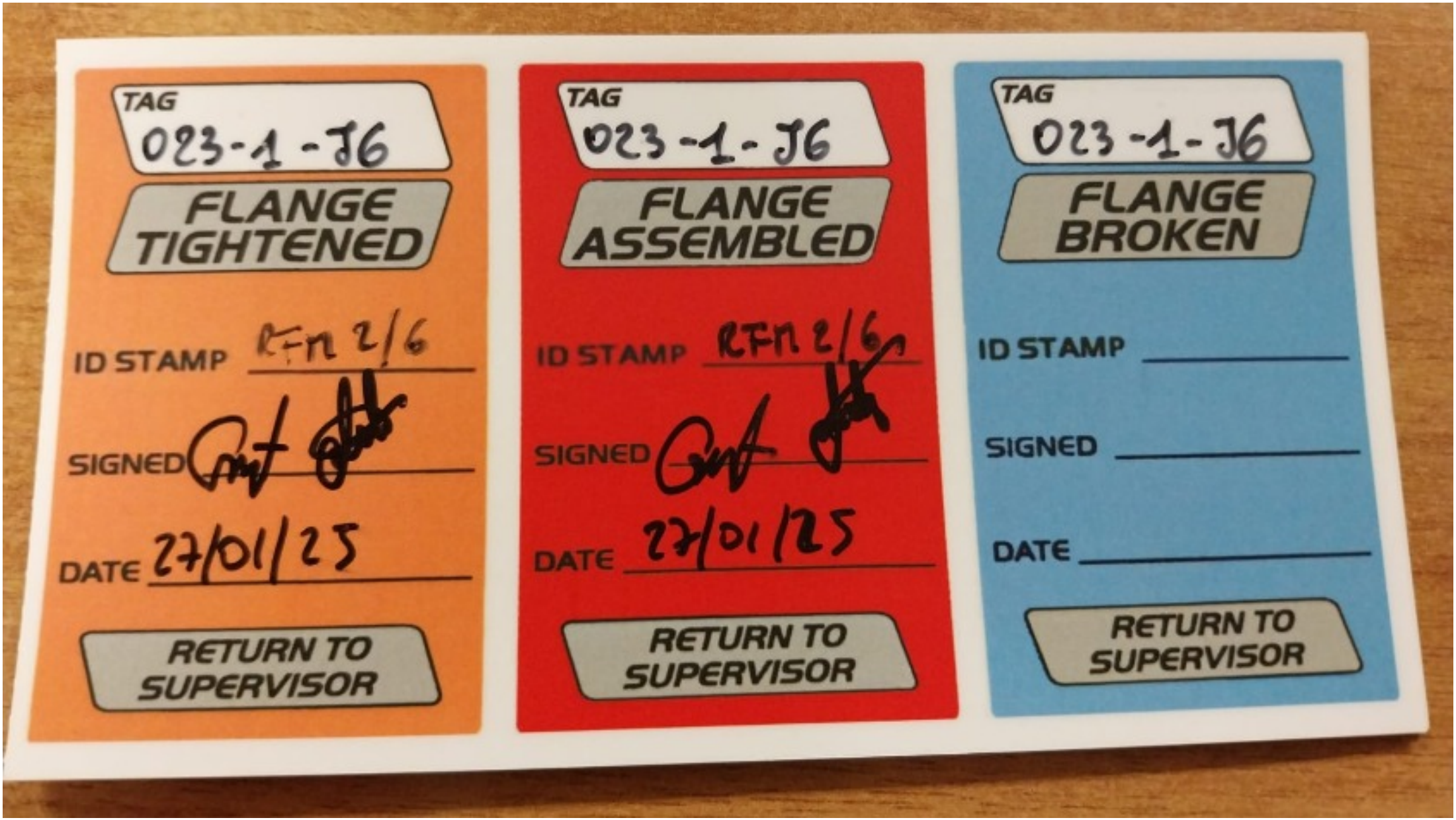
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

4 **Alignment:** Check alignment according to code. Yes

Comments:

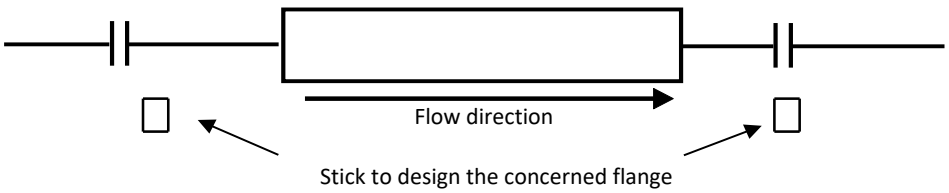
Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Andrea Mancini	
Date	2025-01-28	2025-01-28	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-28T05:43:54.110Z	PROVERLIS Digitaly signed by Andrea Mancini 2025-01-28T09:58:19.018Z	


TAG
023-1-J6
FLANGE TIGHTENED
ID STAMP RFN 2/6
SIGNED
DATE 27/01/25
RETURN TO SUPERVISOR
TAG
023-1-J6
FLANGE ASSEMBLED
ID STAMP RFN 2/6
SIGNED
DATE 27/01/25
RETURN TO SUPERVISOR
TAG
023-1-J6
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	023-1-J7	: Joint 023-1-J7			Dwg	123A90-FDL-PP-DI-00023-01
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10004189	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27 Bolt tensioning / torquing

Test Pack N.: TP-001

EQUIPMENT TAG



Flange Type	150LB	**Lubricant**	Yes
Flange Size	3/4"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Flat Thk. 3 mm	**Used tools**	V030390 / RD00261
Bolt tensioning/Torquing value	48.6		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	15	50	15	29	48.6
2	15	50	15	29	48.6
3	15	50	15	29	48.6
4	15	50	15	29	48.6
5			15	29	48.6
6			15	29	48.6
7			15	29	48.6
8			15	29	48.6
9			15	29	48.6
10			15	29	48.6
11			15	29	48.6
12			15	29	48.6
13			15	29	48.6
14			15	29	48.6
15			15	29	48.6
16			15	29	48.6
17			15	29	48.6
18			15	29	48.6
19			15	29	48.6
20			15	29	48.6

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

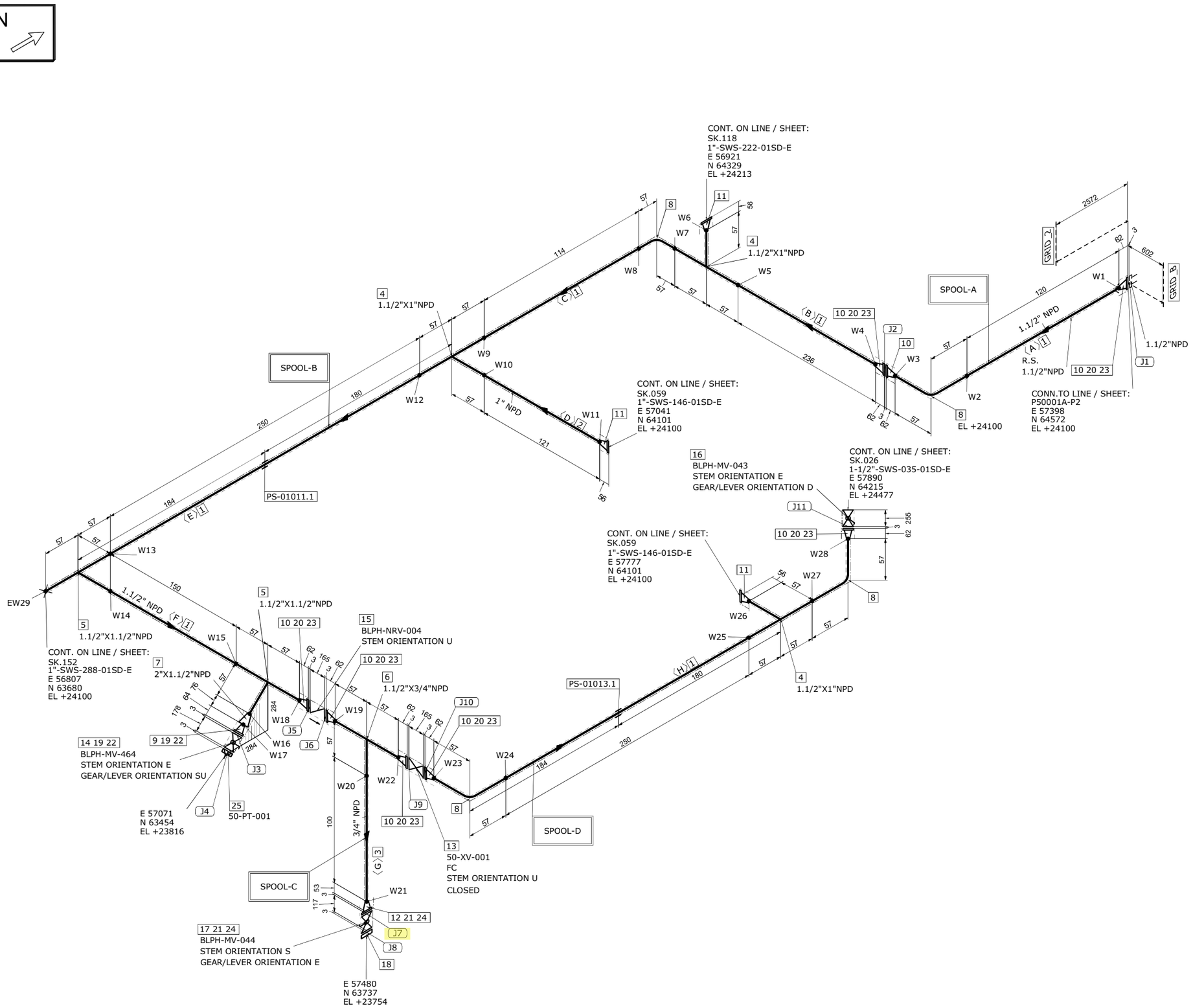
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Andrea Mancini	
Date	2025-01-29	2025-01-29	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-29T10:09:11.682Z	PROVERLIS Digitaly signed by Andrea Mancini 2025-01-29T10:42:05.353Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1.1/2	PIPESD04761H00	Pipe ASME B36.19M PE 3,68 SML ASTM A790 UNS S32760	1.1M	4.6
2	1	PIPESD02850100	Pipe ASME B36.19M PE 3,38 SML ASTM A790 UNS S32760	0.1M	0.3
3	3/4	PIPESD04753Q00	Pipe ASME B36.19M PE 2,87 SML ASTM A790 UNS S32760	0.1M	0.2
4	1.1/2X1	TER0SD09381H01	Tee Reducing ASME B16.9 BW 3,68x3,38 WRS ASTM A815 UNS S32760	3	2.3
5	1.1/2X1.1/2	TEE0SD02931H00	Tee ASME B16.9 BW 3,68 WRS ASTM A815 UNS S32760	2	1.7
6	1.1/2X3/4	TER0SD09371H3Q	Tee Reducing ASME B16.9 BW 3,68x2,87 WRS ASTM A815 UNS S32760	1	0.8
7	2X1.1/2	REC0SD0803021H	Reducer Concentric ASME B16.9 BW 2,77x3,68 WRS ASTM A815 UNS S32760	1	0.3
8	1.1/2	E90RSD03031H00	90 Deg Elbow Long Radius ASME B16.9 BW 3,68 WRS ASTM A815 UNS S32760	4	1.5
9	2	FLW0SD01250200	Flange WN ASME B16.5 150LB RF 2,77 FRG ASTM A182 Gr.F55	1	2.8
10	1.1/2	FLW0SD02861H00	Flange WN ASME B16.5 150LB RF 3,68 FRG ASTM A182 Gr.F55	8	14.7
11	1	FLW0SD01240100	Flange WN ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	3	4.3
12	3/4	FLW0SD02853Q00	Flange WN ASME B16.5 150LB RF 2,87 FRG ASTM A182 Gr.F55	1	0.9

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
13	1.1/2		ON/OFF Ball Actuator Valve - 150#RF Flanged	1	54.0
14	2	VBC0NN24460200	Ball Valve Split Body FB API 6D FLG 150LB RF BA01F01RF	1	19.2
15	1.1/2	VDRNNN02511H00	Check Valve Piston EN ISO 15761 FLG 150LB RF CH01F02RF	1	0.0
16	1.1/2	VLBLNN01381H00	Block & Bleed Valve API 6D FLG 150LB RF BS01F01RFS	1	28.0
17	3/4	VBC0NN24433Q00	Ball Valve Split Body FB API 6D FLG 150LB RF BS01F01RF	1	7.0
18	3/4	FLB0SD01843Q00	Flange Blind ASME B16.5 150LB RF FRG ASTM A182 Gr.F55	1	0.9
19	2	GFL3GK13230200	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	2	0.2
20	1.1/2	GFL3GK15981H00	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	7	0.4
21	3/4	GFL3GK15963Q00	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	2	0.1
22	5/8	SB20BO00660300	85 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.9
23	1/2	SB20BO00930200	70 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	28	3.4
24	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.0
25	2		Pressure Transmitter	1	2.0

FABRICATION WEIGHT [kg]	34.4
ERECTION WEIGHT [kg]	118.2
OVERALL WEIGHT [kg]	152.5

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1.1/2	BW
W2	1.1/2	BW
W3	1.1/2	BW
W4	1.1/2	BW
W5	1.1/2	BW
W6	1	BW
W7	1.1/2	BW
W8	1.1/2	BW
W9	1.1/2	BW
W10	1	BW
W11	1	BW
W12	1.1/2	BW
W13	1.1/2	BW
W14	1.1/2	BW
W15	1.1/2	BW
W16	1.1/2	BW
W17	2	BW
W18	1.1/2	BW
W19	1.1/2	BW
W20	3/4	BW
W21	3/4	BW
W22	1.1/2	BW
W23	1.1/2	BW
W24	1.1/2	BW
W25	1.1/2	BW
W26	1	BW
W27	1.1/2	BW
W28	1.1/2	BW
EW29	1.1/2	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1.1/2	121	BEVEL	BEVEL
B	1.1/2	236	BEVEL	BEVEL
C	1.1/2	114	BEVEL	BEVEL
D	1	121	BEVEL	BEVEL
E	1.1/2	250	BEVEL	BEVEL
F	1.1/2	150	BEVEL	BEVEL
G	3/4	100	BEVEL	BEVEL
H	1.1/2	250	BEVEL	BEVEL

SUPPORT LIST

PS-01011.1
PS-01013.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	4.5	4.6
B	21.5	16.6
C	4.5	5.5
D	8.5	7.7
MONT	1.5	118.2

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 1-1/2"-SWS-031-01SD-E

SK.023

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	N/A
DRAWN	STAFF SRL	CHECKED	RT
APPROVED	LM	DATE	27-08-2024
FORMAT	A3	DRAWING NO.	123A90-FDL-PP-DI-00023
SHEET / OF	1/1	REV.	00

LINE DATA

NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3				
PAINTING	SYSTEM N/A	BASE RAL N/A	FLUID PHASE	Liquid				
INSULATION	TYPE H	THICKNESS 20 [mm]	DESIGN	PRESS. 7.6 [barg]	TEMP. -29 / 100 [°C]			
HEAT TRACING	Yes		TEST	PRESS. 11.4 [barg]	TEMP. AMB	MEDIUM Water		

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80021
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

MASTER

TAG 023-1-J7

FLANGE TIGHTENED

ID STAMP RFM 2/6

SIGNED

DATE 28/01/25

RETURN TO SUPERVISOR

TAG 023-1-J7

FLANGE ASSEMBLED

ID STAMP RFM 2/6

SIGNED

DATE 28/01/25

RETURN TO SUPERVISOR

TAG 023-1-J7

FLANGE BROKEN

ID STAMP

SIGNED

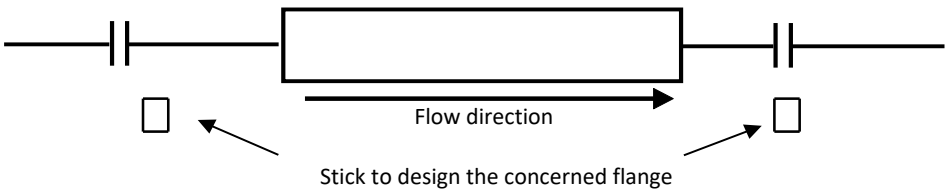
DATE

RETURN TO SUPERVISOR

ITEM	Tag	023-1-J8	: Joint 023-1-J8			Dwg	123A90-FDL-PP-DI-00023-01
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10004190	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27 Bolt tensioning / torquing

Test Pack N.: TP-001

EQUIPMENT TAG



Flange Type	150LB	**Lubricant**	Yes
Flange Size	3/4"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Flat Thk. 3 mm	**Used tools**	V030390 / RD00261
Bolt tensioning/Torquing value	48.6		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	15	50	15	29	48.6
2	15	50	15	29	48.6
3	15	50	15	29	48.6
4	15	50	15	29	48.6
5			15	29	48.6
6			15	29	48.6
7			15	29	48.6
8			15	29	48.6
9			15	29	48.6
10			15	29	48.6
11			15	29	48.6
12			15	29	48.6
13			15	29	48.6
14			15	29	48.6
15			15	29	48.6
16			15	29	48.6
17			15	29	48.6
18			15	29	48.6
19			15	29	48.6
20			15	29	48.6

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

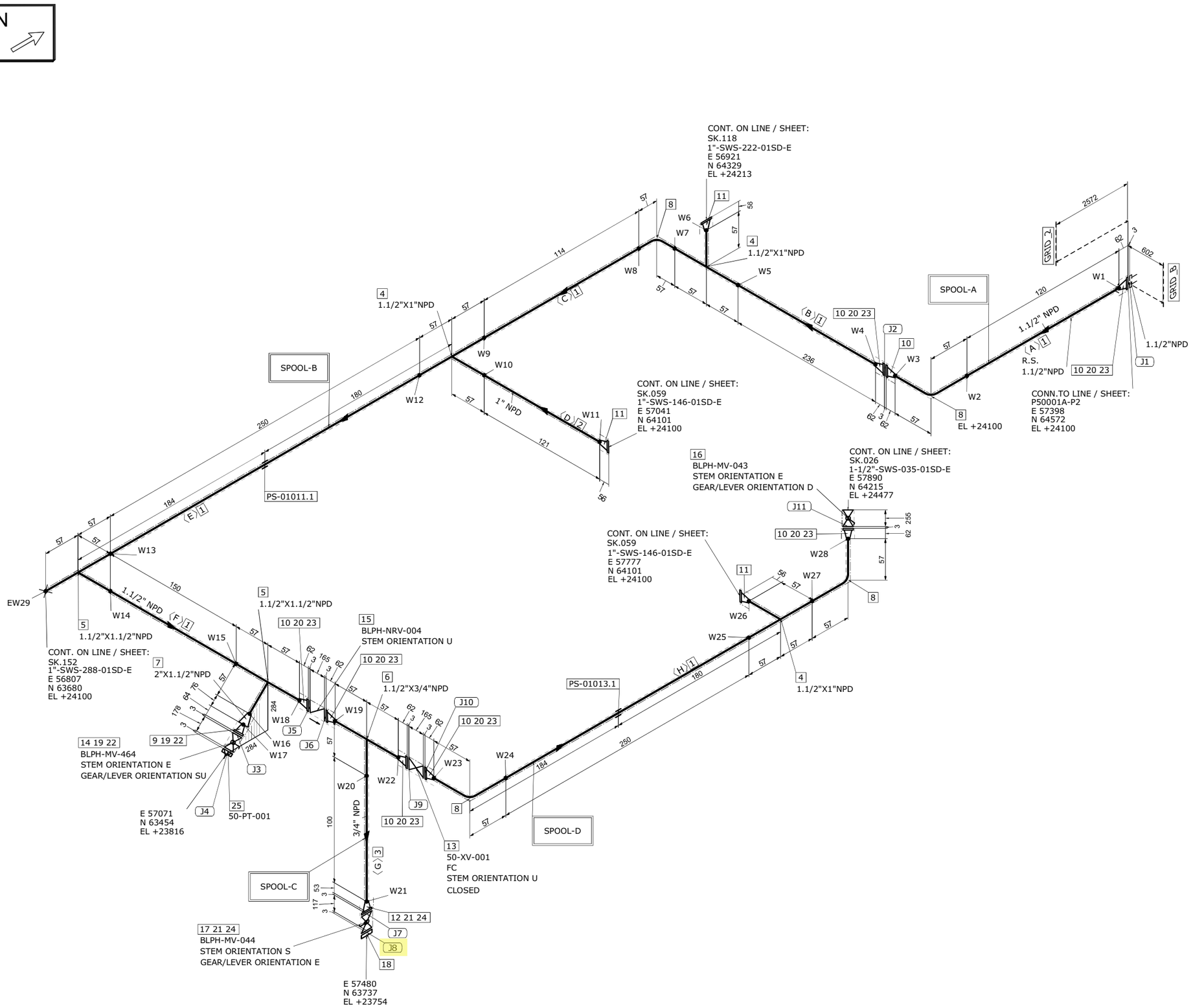
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Andrea Mancini	
Date	2025-01-29	2025-01-29	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-29T10:09:49.914Z	PROVERLIS Digitaly signed by Andrea Mancini 2025-01-29T10:42:37.895Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1.1/2	PIPESD04761H00	Pipe ASME B36.19M PE 3,68 SML ASTM A790 UNS S32760	1.1M	4.6
2	1	PIPESD02850100	Pipe ASME B36.19M PE 3,38 SML ASTM A790 UNS S32760	0.1M	0.3
3	3/4	PIPESD04753Q00	Pipe ASME B36.19M PE 2,87 SML ASTM A790 UNS S32760	0.1M	0.2
4	1.1/2X1	TER0SD09381H01	Tee Reducing ASME B16.9 BW 3,68x3,38 WRS ASTM A815 UNS S32760	3	2.3
5	1.1/2X1.1/2	TEE0SD02931H00	Tee ASME B16.9 BW 3,68 WRS ASTM A815 UNS S32760	2	1.7
6	1.1/2X3/4	TER0SD09371H3Q	Tee Reducing ASME B16.9 BW 3,68x2,87 WRS ASTM A815 UNS S32760	1	0.8
7	2X1.1/2	REC0SD0803021H	Reducer Concentric ASME B16.9 BW 2,77x3,68 WRS ASTM A815 UNS S32760	1	0.3
8	1.1/2	E90RSD03031H00	90 Deg Elbow Long Radius ASME B16.9 BW 3,68 WRS ASTM A815 UNS S32760	4	1.5
9	2	FLW0SD01250200	Flange WN ASME B16.5 150LB RF 2,77 FRG ASTM A182 Gr.F55	1	2.8
10	1.1/2	FLW0SD02861H00	Flange WN ASME B16.5 150LB RF 3,68 FRG ASTM A182 Gr.F55	8	14.7
11	1	FLW0SD01240100	Flange WN ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	3	4.3
12	3/4	FLW0SD02853Q00	Flange WN ASME B16.5 150LB RF 2,87 FRG ASTM A182 Gr.F55	1	0.9

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
13	1.1/2		ON/OFF Ball Actuator Valve - 150#RF Flanged	1	54.0
14	2	VBC0NN24460200	Ball Valve Split Body FB API 6D FLG 150LB RF BA01F01RF	1	19.2
15	1.1/2	VDRNNN02511H00	Check Valve Piston EN ISO 15761 FLG 150LB RF CH01F02RF	1	0.0
16	1.1/2	VLBLNN01381H00	Block & Bleed Valve API 6D FLG 150LB RF BS01F01RFS	1	28.0
17	3/4	VBC0NN24433Q00	Ball Valve Split Body FB API 6D FLG 150LB RF BS01F01RF	1	7.0
18	3/4	FLB0SD01843Q00	Flange Blind ASME B16.5 150LB RF FRG ASTM A182 Gr.F55	1	0.9
19	2	GFL3GK13230200	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	2	0.2
20	1.1/2	GFL3GK15981H00	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	7	0.4
21	3/4	GFL3GK15963Q00	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	2	0.1
22	5/8	SB20BO00660300	85 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.9
23	1/2	SB20BO00930200	70 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	28	3.4
24	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.0
25	2		Pressure Transmitter	1	2.0

FABRICATION WEIGHT [kg]	34.4
ERECTION WEIGHT [kg]	118.2
OVERALL WEIGHT [kg]	152.5

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1.1/2	BW
W2	1.1/2	BW
W3	1.1/2	BW
W4	1.1/2	BW
W5	1.1/2	BW
W6	1	BW
W7	1.1/2	BW
W8	1.1/2	BW
W9	1.1/2	BW
W10	1	BW
W11	1	BW
W12	1.1/2	BW
W13	1.1/2	BW
W14	1.1/2	BW
W15	1.1/2	BW
W16	1.1/2	BW
W17	2	BW
W18	1.1/2	BW
W19	1.1/2	BW
W20	3/4	BW
W21	3/4	BW
W22	1.1/2	BW
W23	1.1/2	BW
W24	1.1/2	BW
W25	1.1/2	BW
W26	1	BW
W27	1.1/2	BW
W28	1.1/2	BW
EW29	1.1/2	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1.1/2	121	BEVEL	BEVEL
B	1.1/2	236	BEVEL	BEVEL
C	1.1/2	114	BEVEL	BEVEL
D	1	121	BEVEL	BEVEL
E	1.1/2	250	BEVEL	BEVEL
F	1.1/2	150	BEVEL	BEVEL
G	3/4	100	BEVEL	BEVEL
H	1.1/2	250	BEVEL	BEVEL

SUPPORT LIST

PS-01011.1
PS-01013.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	4.5	4.6
B	21.5	16.6
C	4.5	5.5
D	8.5	7.7
MONT	1.5	118.2

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 1-1/2"-SWS-031-01SD-E

SK.023

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	N/A
DRAWN	STAFF SRL	CHECKED	RT
APPROVED	LM	DATE	27-08-2024
FORMAT	A3	DRAWING NO.	123A90-FDL-PP-DI-00023
SHEET / OF	1/1	REV.	00

LINE DATA

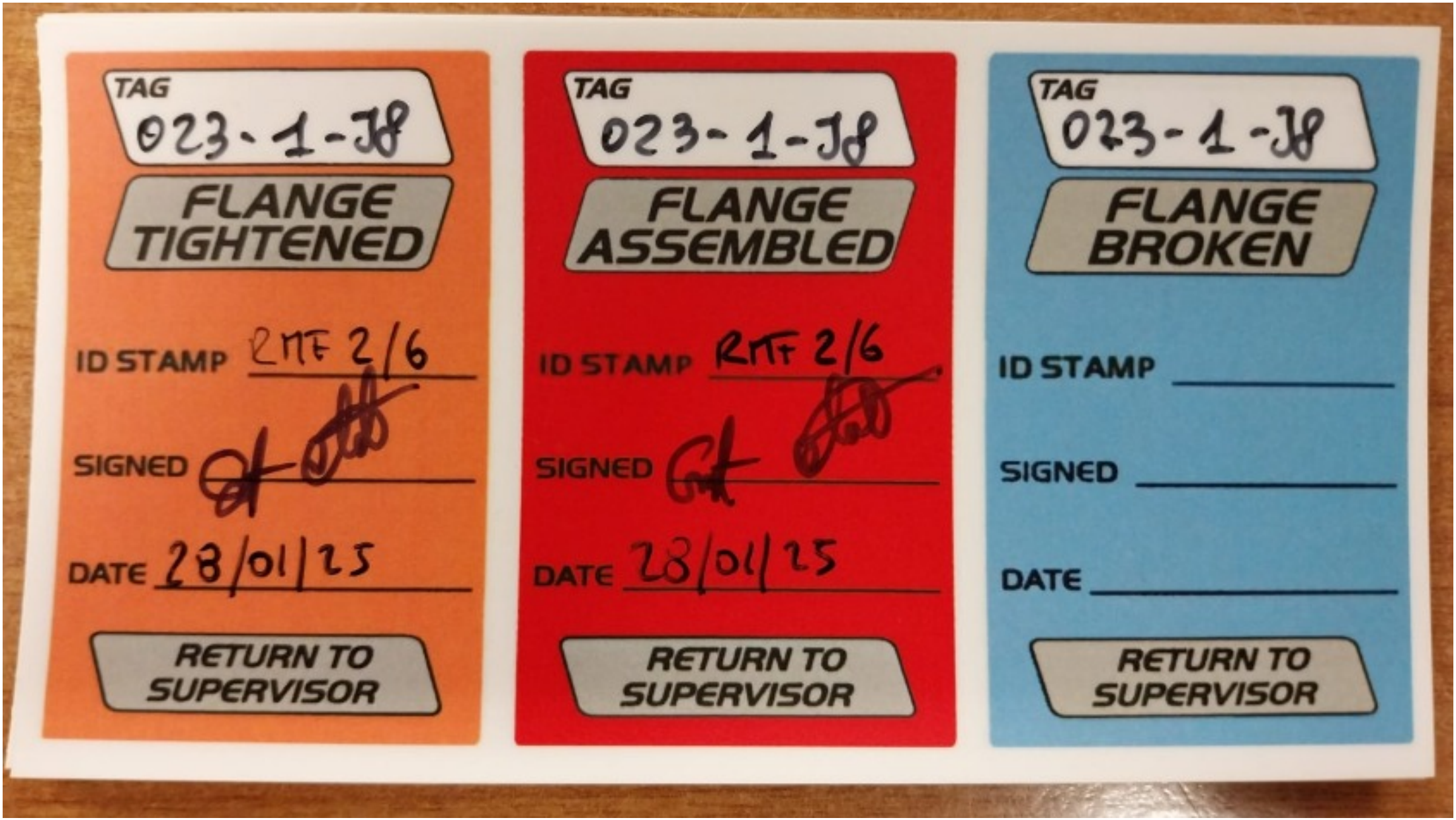
NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3				
PAINTING	SYSTEM N/A	BASE RAL N/A	FLUID PHASE	Liquid				
INSULATION	TYPE H	THICKNESS 20 [mm]	DESIGN	PRESS. 7.6 [barg]	TEMP. -29 / 100 [°C]			
HEAT TRACING	Yes		TEST	PRESS. 11.4 [barg]	TEMP. AMB	MEDIUM Water		

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80021
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

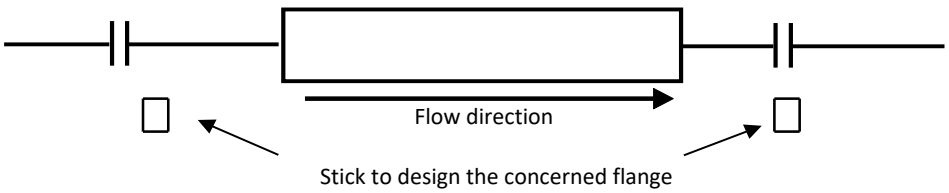
MASTER


TAG
023-1-J8
FLANGE TIGHTENED
ID STAMP RTF 2/6
SIGNED
DATE 28/01/25
RETURN TO SUPERVISOR
TAG
023-1-J8
FLANGE ASSEMBLED
ID STAMP RTF 2/6
SIGNED
DATE 28/01/25
RETURN TO SUPERVISOR
TAG
023-1-J8
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	023-1-J9	: Joint 023-1-J9			Dwg	123A90-FDL-PP-DI-00023-01
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10004191	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27 Bolt tensioning / torquing

Test Pack N.: TP-001

EQUIPMENT TAG



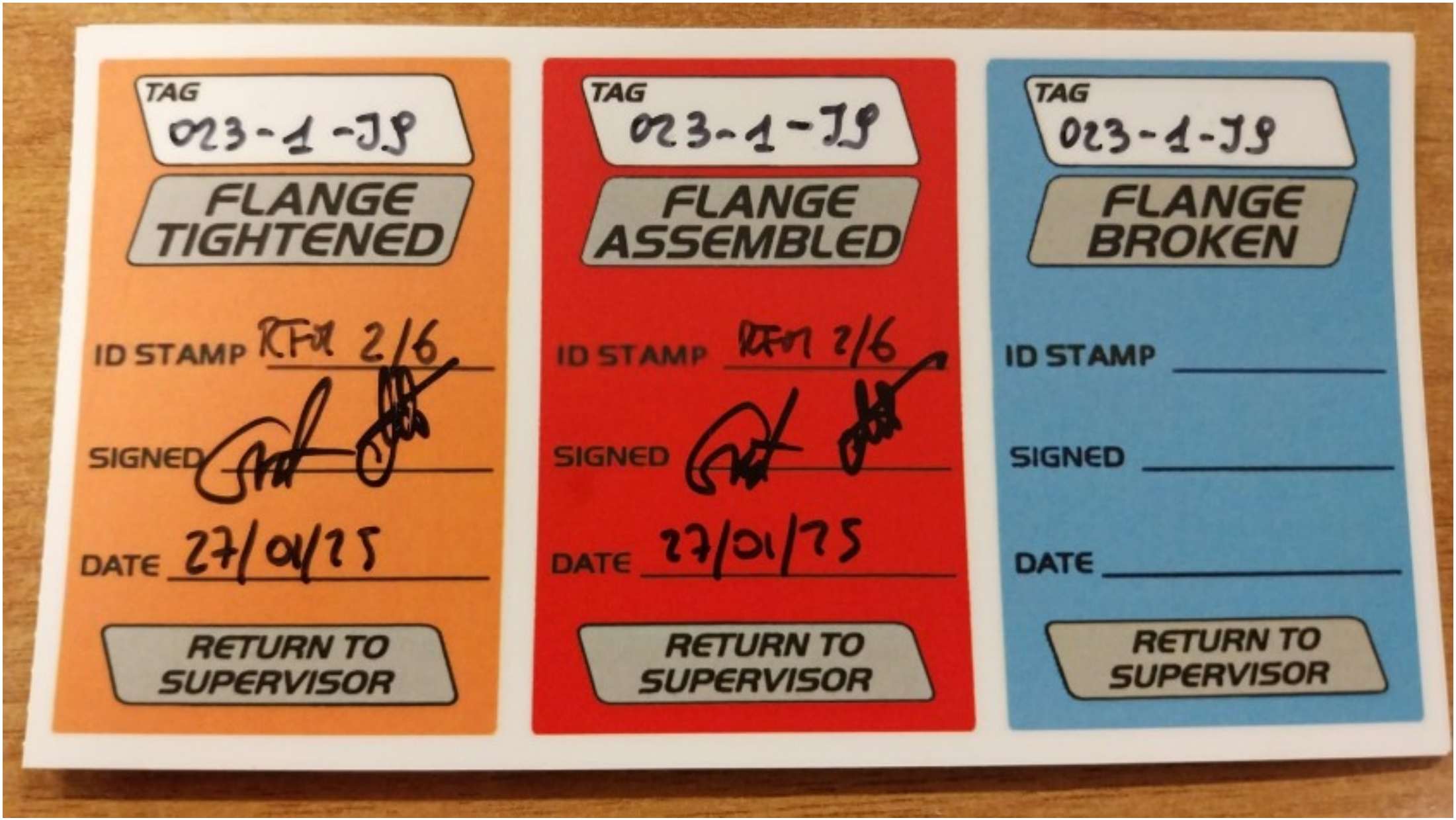
Flange Type	150LB	**Lubricant**	Yes
Flange Size	1.1/2"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Flat Thk. 3 mm	**Used tools**	V030390 / RD00261
Bolt tensioning/Torquing value	48.6		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	15	50	15	29	48.6
2	15	50	15	29	48.6
3	15	50	15	29	48.6
4	15	50	15	29	48.6
5			15	29	48.6
6			15	29	48.6
7			15	29	48.6
8			15	29	48.6
9			15	29	48.6
10			15	29	48.6
11			15	29	48.6
12			15	29	48.6
13			15	29	48.6
14			15	29	48.6
15			15	29	48.6
16			15	29	48.6
17			15	29	48.6
18			15	29	48.6
19			15	29	48.6
20			15	29	48.6

1	**Clear Bore Inspection:** Pipe and Valve clear of debris/contamination.	Yes
2	**Flange Face Check:** Both flanges clean and free from damage.	Yes
3	**Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique.	Yes
4	**Alignment:** Check alignment according to code.	Yes

Comments:

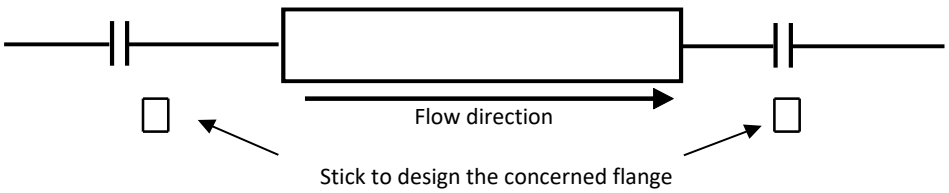
Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Andrea Mancini	
Date	2025-01-28	2025-01-28	
Signature	Digitaly signed by Emanuele Delfino 2025-01-28T05:44:12.769Z	Digitaly signed by Andrea Mancini 2025-01-28T09:58:54.998Z	


TAG
023-1-JS
FLANGE TIGHTENED
ID STAMP RFM 2/6
SIGNED
DATE 27/01/25
RETURN TO SUPERVISOR
TAG
023-1-JS
FLANGE ASSEMBLED
ID STAMP RFM 2/6
SIGNED
DATE 27/01/25
RETURN TO SUPERVISOR
TAG
023-1-JS
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	025-1-J1	: Joint 025-1-J1			Dwg	123A90-FDL-PP-DI-00025-01
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10004192	Location	Offshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27

Test Pack N.: TP-001

EQUIPMENT TAG



Flange Type	150LB	**Lubricant**	Yes
Flange Size	1.1/2"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Flat Thk. 3 mm	**Used tools**	
Bolt tensioning/Torquing value	48.6		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1			15	29	48.6
2			15	29	48.6
3			15	29	48.6
4			15	29	48.6
5			15	29	48.6
6			15	29	48.6
7			15	29	48.6
8			15	29	48.6
9			15	29	48.6
10			15	29	48.6
11			15	29	48.6
12			15	29	48.6
13			15	29	48.6
14			15	29	48.6
15			15	29	48.6
16			15	29	48.6
17			15	29	48.6
18			15	29	48.6
19			15	29	48.6
20			15	29	48.6

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination.

2 **Flange Face Check:** Both flanges clean and free from damage.

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique.

4 **Alignment:** Check alignment according to code.

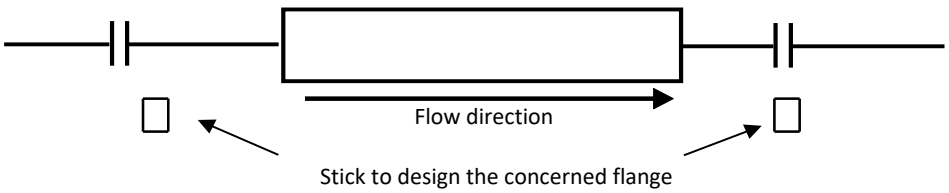
Comments:

Page 1/1	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company			
Name			
Date			
Signature			

ITEM	Tag	025-1-J10	: Joint 025-1-J10			Dwg	123A90-FDL-PP-DI-00025-01
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10004193	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27		Bolt tensioning / torquing

Test Pack N.: TP-001

EQUIPMENT TAG



Flange Type	150LB	**Lubricant**	Yes
Flange Size	1.1/2"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Flat Thk. 3 mm	**Used tools**	V030390 / RD00261
Bolt tensioning/Torquing value	48.6		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	15	50	15	29	48.6
2	15	50	15	29	48.6
3	15	50	15	29	48.6
4	15	50	15	29	48.6
5			15	29	48.6
6			15	29	48.6
7			15	29	48.6
8			15	29	48.6
9			15	29	48.6
10			15	29	48.6
11			15	29	48.6
12			15	29	48.6
13			15	29	48.6
14			15	29	48.6
15			15	29	48.6
16			15	29	48.6
17			15	29	48.6
18			15	29	48.6
19			15	29	48.6
20			15	29	48.6

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

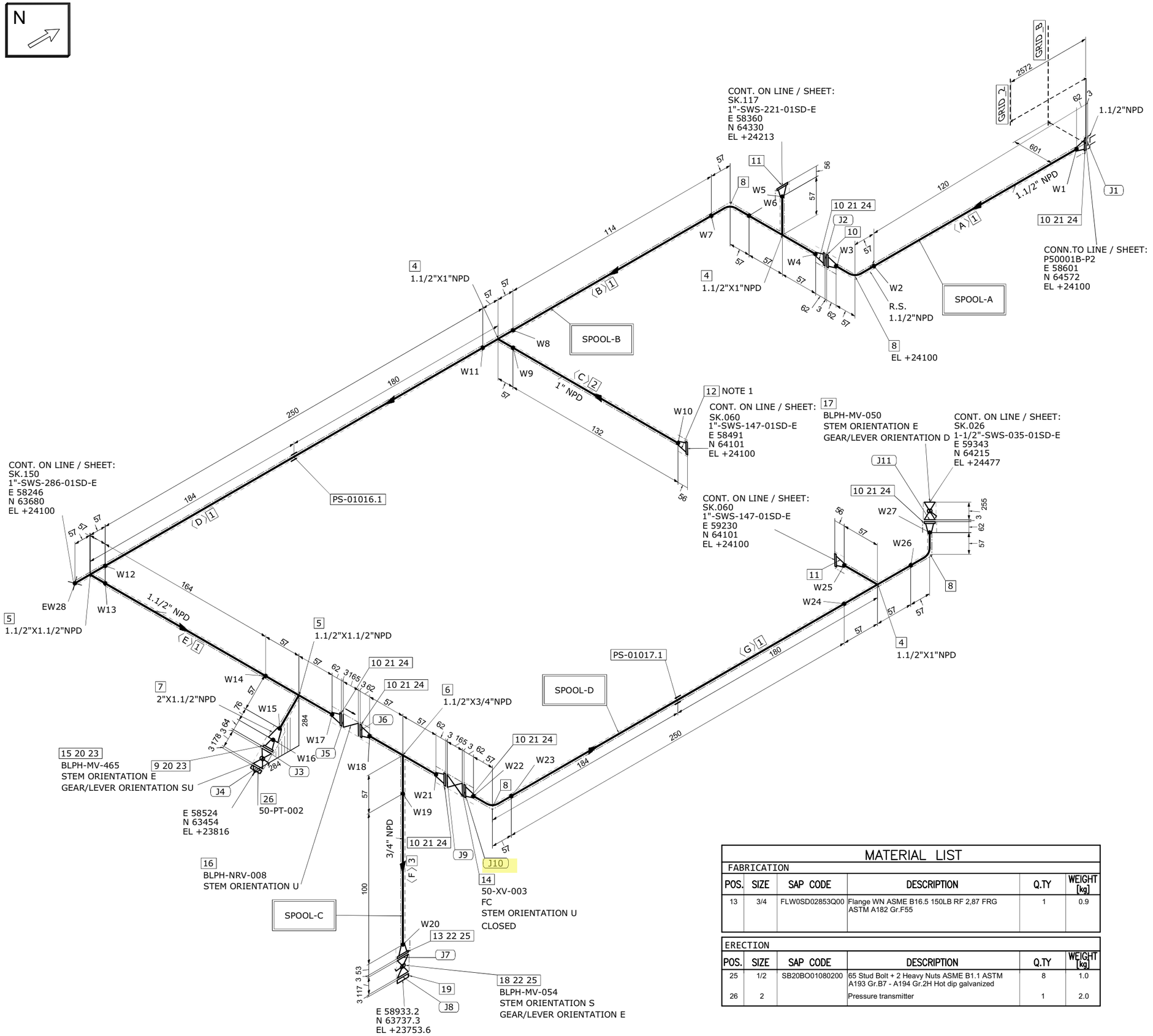
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Andrea Mancini	
Date	2025-01-29	2025-01-29	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-29T10:10:07.056Z	PROVERLIS Digitaly signed by Andrea Mancini 2025-01-29T10:46:48.819Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1.1/2	PIPESD04761H00	Pipe ASME B36.19M PE 3,68 SML ASTM A790 UNS S32760	0.9M	3.7
2	1	PIPESD02850100	Pipe ASME B36.19M PE 3,38 SML ASTM A790 UNS S32760	0.1M	0.3
3	3/4	PIPESD04753Q00	Pipe ASME B36.19M PE 2,87 SML ASTM A790 UNS S32760	0.1M	0.2
4	1.1/2X1	TER0SD09381H01	Tee Reducing ASME B16.9 BW 3,68x3,38 WRS ASTM A815 UNS S32760	3	2.3
5	1.1/2X1.1/2	TEE0SD02931H00	Tee ASME B16.9 BW 3,68 WRS ASTM A815 UNS S32760	2	1.7
6	1.1/2X3/4	TER0SD09371H3Q	Tee Reducing ASME B16.9 BW 3,68x2,87 WRS ASTM A815 UNS S32760	1	0.8
7	2X1.1/2	REC0SD0803021H	Reducer Concentric ASME B16.9 BW 2,77x3,68 WRS ASTM A815 UNS S32760	1	0.3
8	1.1/2	E90RSD03031H00	90 Deg Elbow Long Radius ASME B16.9 BW 3,68 WRS ASTM A815 UNS S32760	4	1.5
9	2	FLW0SD01250200	Flange WN ASME B16.5 150LB RF 2,77 FRG ASTM A182 Gr.F55	1	2.8
10	1.1/2	FLW0SD02861H00	Flange WN ASME B16.5 150LB RF 3,68 FRG ASTM A182 Gr.F55	8	14.7
11	1	FLW0SD01240100	Flange WN ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	2	2.9
12	1	FLWDSD00300100	Flange WN For Jackscrews ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	1	1.4

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
14	1.1/2		ON/OFF Ball Actuator Valve - 150#RF Flanged	1	54.0
15	2	VBC0NN24460200	Ball Valve Split Body FB API 6D FLG 150LB RF BA01F01RF	1	19.2
16	1.1/2	VDRNNN02511H00	Check Valve Piston EN ISO 15761 FLG 150LB RF CH01F02RF	1	0.0
17	1.1/2	VLBLNN01381H00	Block & Bleed Valve API 6D FLG 150LB RF BS01F01RFS	1	28.0
18	3/4	VBC0NN24433Q00	Ball Valve Split Body FB API 6D FLG 150LB RF BS01F01RF	1	7.0
19	3/4	FLB0SD01843Q00	Flange Blind ASME B16.5 150LB RF FRG ASTM A182 Gr.F55	1	0.9
20	2	GFL3GK13230200	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	2	0.2
21	1.1/2	GFL3GK15981H00	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	7	0.4
22	3/4	GFL3GK15963Q00	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	2	0.1
23	5/8	SB20BO00660300	85 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.9
24	1/2	SB20BO00930200	70 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	28	3.4

FABRICATION WEIGHT [kg]	33.5
ERECTION WEIGHT [kg]	118.1
OVERALL WEIGHT [kg]	151.6

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1.1/2	BW
W2	1.1/2	BW
W3	1.1/2	BW
W4	1.1/2	BW
W5	1	BW
W6	1.1/2	BW
W7	1.1/2	BW
W8	1.1/2	BW
W9	1	BW
W10	1	BW
W11	1.1/2	BW
W12	1.1/2	BW
W13	1.1/2	BW
W14	1.1/2	BW
W15	1.1/2	BW
W16	2	BW
W17	1.1/2	BW
W18	1.1/2	BW
W19	3/4	BW
W20	3/4	BW
W21	1.1/2	BW
W22	1.1/2	BW
W23	1.1/2	BW
W24	1.1/2	BW
W25	1	BW
W26	1.1/2	BW
W27	1.1/2	BW
EW28	1.1/2	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1.1/2	120	BEVEL	BEVEL
B	1.1/2	115	BEVEL	BEVEL
C	1	132	BEVEL	BEVEL
D	1.1/2	250	BEVEL	BEVEL
E	1.1/2	164	BEVEL	BEVEL
F	3/4	100	BEVEL	BEVEL
G	1.1/2	250	BEVEL	BEVEL

SUPPORT LIST

PS-01016.1
PS-01017.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	4.5	4.6
B	20	15.7
C	4.5	5.5
D	8.5	7.7
MONT	1.5	118.1

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 1-1/2"-SWS-033-01SD-E

SK.025

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE	N/A
DRAWN	STAFF SRL	CHECKED	RT	APPROVED	LM
DATE	27-08-2024				
FORMAT	A3	DRAWING NO.	123A90-FDL-PP-DI-00025	SHEET / OF	1/1
REV.	00				

MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
13	3/4	FLW0SD02853Q00	Flange WN ASME B16.5 150LB RF 2,87 FRG ASTM A182 Gr.F55	1	0.9

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
25	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.0
26	2		Pressure transmitter	1	2.0

LINE DATA

NDT INSPECTION CATEGORY	2			PED CATEGORY	Art. 4, par. 3			
PAINTING	SYSTEM N/A	BASE RAL N/A		FLUID PHASE	Liquid			
INSULATION	TYPE H	THICKNESS 20	[mm]	DESIGN	PRESS. 7.6	[barg]	TEMP. -29 / 100	[°C]
HEAT TRACING	Yes			TEST	PRESS. 11.4	[barg]	TEMP. AMB	MEDIUM Water

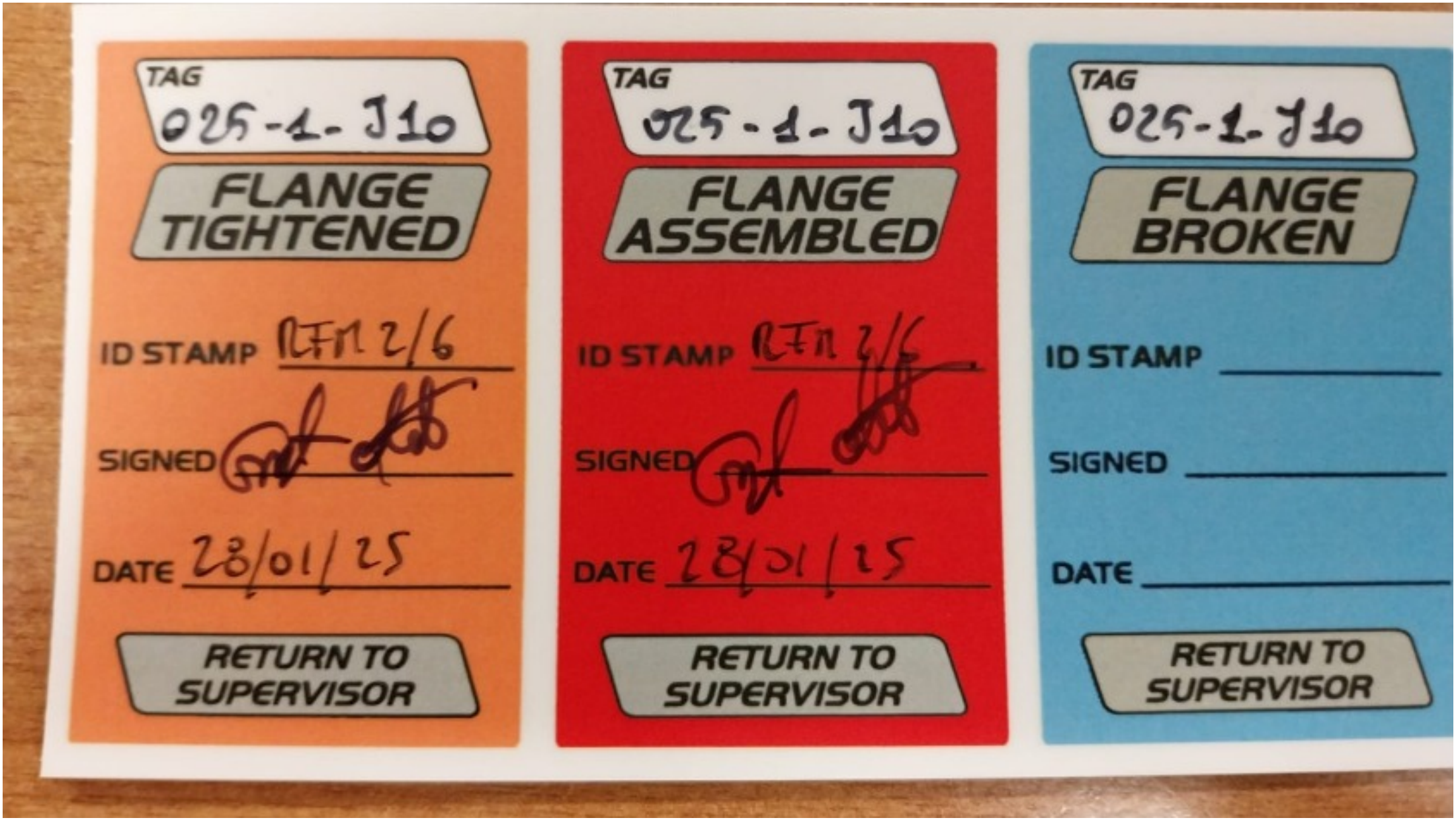
REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80021
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

1.JACKSCREWS POSITION N/S

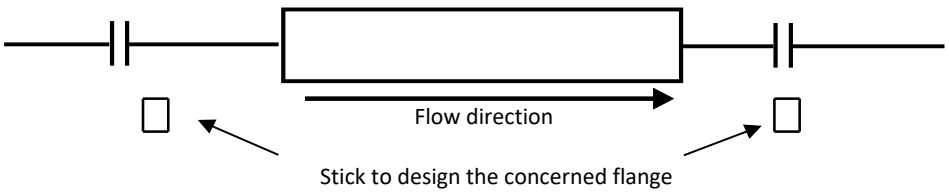
MASTER


TAG
025-1-J10
FLANGE TIGHTENED
ID STAMP RFN 2/6
SIGNED
DATE 28/01/25
RETURN TO SUPERVISOR
TAG
025-1-J10
FLANGE ASSEMBLED
ID STAMP RFN 2/6
SIGNED
DATE 28/01/25
RETURN TO SUPERVISOR
TAG
025-1-J10
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	025-1-J11	: Joint 025-1-J11			Dwg	123A90-FDL-PP-DI-00025-01
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10004194		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27		Bolt tensioning / torquing

Test Pack N.: TP-001

EQUIPMENT TAG



Flange Type	150LB	**Lubricant**	Yes
Flange Size	1.1/2"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Flat Thk. 3 mm	**Used tools**	V030390 / RD00261
Bolt tensioning/Torquing value	48.6		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	15	50	15	29	48.6
2	15	50	15	29	48.6
3	15	50	15	29	48.6
4	15	50	15	29	48.6
5			15	29	48.6
6			15	29	48.6
7			15	29	48.6
8			15	29	48.6
9			15	29	48.6
10			15	29	48.6
11			15	29	48.6
12			15	29	48.6
13			15	29	48.6
14			15	29	48.6
15			15	29	48.6
16			15	29	48.6
17			15	29	48.6
18			15	29	48.6
19			15	29	48.6
20			15	29	48.6

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

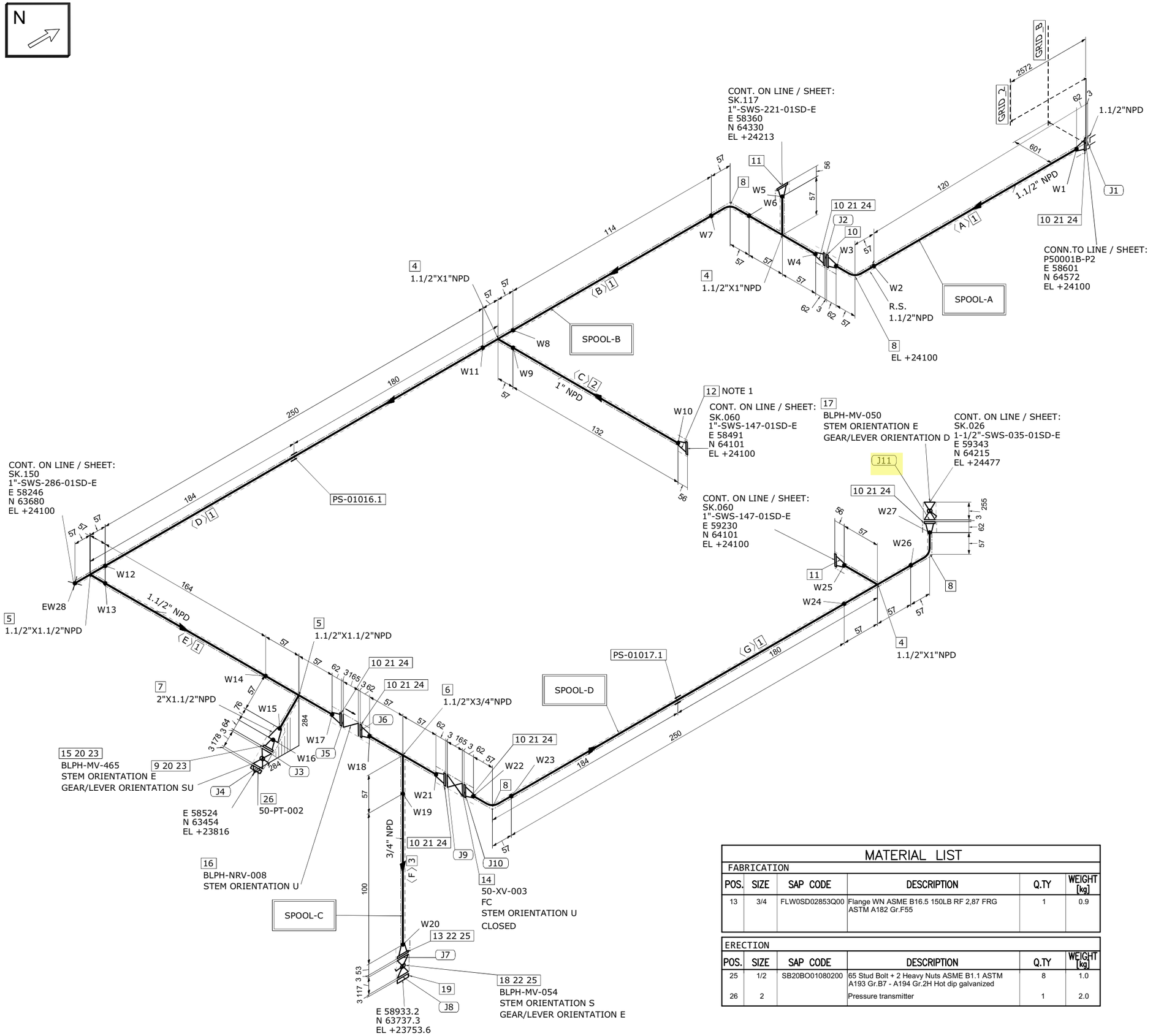
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Andrea Mancini	
Date	2025-01-29	2025-01-29	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-29T10:10:53.200Z	PROVERLIS Digitaly signed by Andrea Mancini 2025-01-29T10:47:15.021Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1.1/2	PIPESD04761H00	Pipe ASME B36.19M PE 3,68 SML ASTM A790 UNS S32760	0.9M	3.7
2	1	PIPESD02850100	Pipe ASME B36.19M PE 3,38 SML ASTM A790 UNS S32760	0.1M	0.3
3	3/4	PIPESD04753Q00	Pipe ASME B36.19M PE 2,87 SML ASTM A790 UNS S32760	0.1M	0.2
4	1.1/2X1	TER0SD09381H01	Tee Reducing ASME B16.9 BW 3,68x3,38 WRS ASTM A815 UNS S32760	3	2.3
5	1.1/2X1.1/2	TEE0SD02931H00	Tee ASME B16.9 BW 3,68 WRS ASTM A815 UNS S32760	2	1.7
6	1.1/2X3/4	TER0SD09371H3Q	Tee Reducing ASME B16.9 BW 3,68x2,87 WRS ASTM A815 UNS S32760	1	0.8
7	2X1.1/2	REC0SD0803021H	Reducer Concentric ASME B16.9 BW 2,77x3,68 WRS ASTM A815 UNS S32760	1	0.3
8	1.1/2	E90RSD03031H00	90 Deg Elbow Long Radius ASME B16.9 BW 3,68 WRS ASTM A815 UNS S32760	4	1.5
9	2	FLW0SD01250200	Flange WN ASME B16.5 150LB RF 2,77 FRG ASTM A182 Gr.F55	1	2.8
10	1.1/2	FLW0SD02861H00	Flange WN ASME B16.5 150LB RF 3,68 FRG ASTM A182 Gr.F55	8	14.7
11	1	FLW0SD01240100	Flange WN ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	2	2.9
12	1	FLWDSD00300100	Flange WN For Jackscrews ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	1	1.4

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
14	1.1/2		ON/OFF Ball Actuator Valve - 150#RF Flanged	1	54.0
15	2	VBC0NN24460200	Ball Valve Split Body FB API 6D FLG 150LB RF BA01F01RF	1	19.2
16	1.1/2	VDRNNN02511H00	Check Valve Piston EN ISO 15761 FLG 150LB RF CH01F02RF	1	0.0
17	1.1/2	VLBLNN01381H00	Block & Bleed Valve API 6D FLG 150LB RF BS01F01RFS	1	28.0
18	3/4	VBC0NN24433Q00	Ball Valve Split Body FB API 6D FLG 150LB RF BS01F01RF	1	7.0
19	3/4	FLB0SD01843Q00	Flange Blind ASME B16.5 150LB RF FRG ASTM A182 Gr.F55	1	0.9
20	2	GFL3GK13230200	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	2	0.2
21	1.1/2	GFL3GK15981H00	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	7	0.4
22	3/4	GFL3GK15963Q00	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	2	0.1
23	5/8	SB20BO00660300	85 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.9
24	1/2	SB20BO00930200	70 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	28	3.4

FABRICATION WEIGHT [kg]	33.5
ERECTION WEIGHT [kg]	118.1
OVERALL WEIGHT [kg]	151.6

MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
13	3/4	FLW0SD02853Q00	Flange WN ASME B16.5 150LB RF 2,87 FRG ASTM A182 Gr.F55	1	0.9

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
25	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.0
26	2		Pressure transmitter	1	2.0

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1.1/2	BW
W2	1.1/2	BW
W3	1.1/2	BW
W4	1.1/2	BW
W5	1	BW
W6	1.1/2	BW
W7	1.1/2	BW
W8	1.1/2	BW
W9	1	BW
W10	1	BW
W11	1.1/2	BW
W12	1.1/2	BW
W13	1.1/2	BW
W14	1.1/2	BW
W15	1.1/2	BW
W16	2	BW
W17	1.1/2	BW
W18	1.1/2	BW
W19	3/4	BW
W20	3/4	BW
W21	1.1/2	BW
W22	1.1/2	BW
W23	1.1/2	BW
W24	1.1/2	BW
W25	1	BW
W26	1.1/2	BW
W27	1.1/2	BW
EW28	1.1/2	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1.1/2	120	BEVEL	BEVEL
B	1.1/2	115	BEVEL	BEVEL
C	1	132	BEVEL	BEVEL
D	1.1/2	250	BEVEL	BEVEL
E	1.1/2	164	BEVEL	BEVEL
F	3/4	100	BEVEL	BEVEL
G	1.1/2	250	BEVEL	BEVEL

SUPPORT LIST

PS-01016.1
PS-01017.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	4.5	4.6
B	20	15.7
C	4.5	5.5
D	8.5	7.7
MONT	1.5	118.1

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 1-1/2"-SWS-033-01SD-E

SK.025

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE	N/A
DRAWN	STAFF SRL	CHECKED	RT	APPROVED	LM
DATE	27-08-2024				
FORMAT	A3	DRAWING NO.	123A90-FDL-PP-DI-00025	SHEET / OF	1/1
REV.	00				

LINE DATA

NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3			
PAINTING	SYSTEM N/A	BASE RAL N/A	FLUID PHASE	Liquid			
INSULATION	TYPE H	THICKNESS 20 [mm]	DESIGN	PRESS. 7.6 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	Yes		TEST	PRESS. 11.4 [barg]	TEMP. AMB	MEDIUM Water	

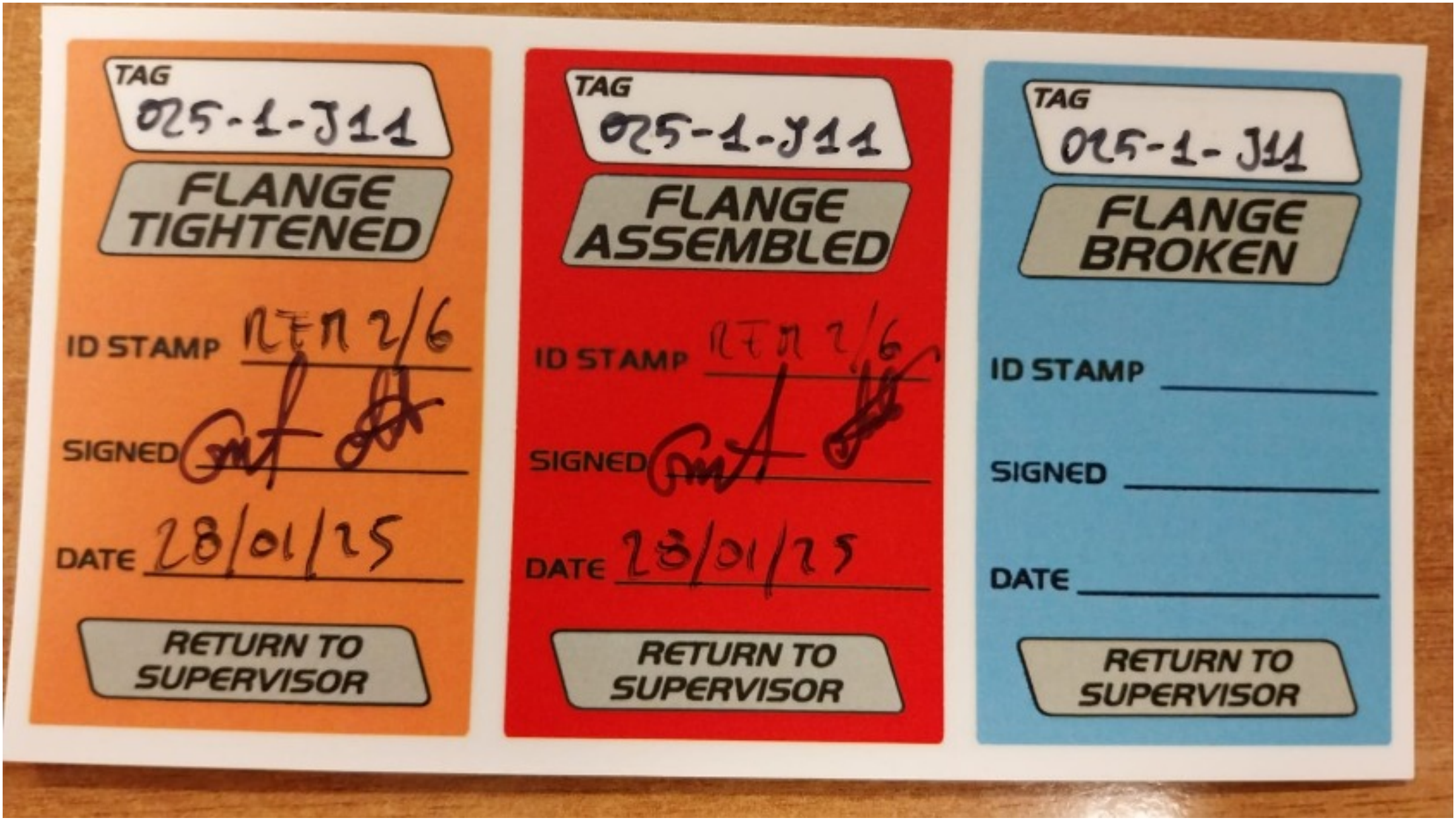
REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80021
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

1.JACKSCREWS POSITION N/S

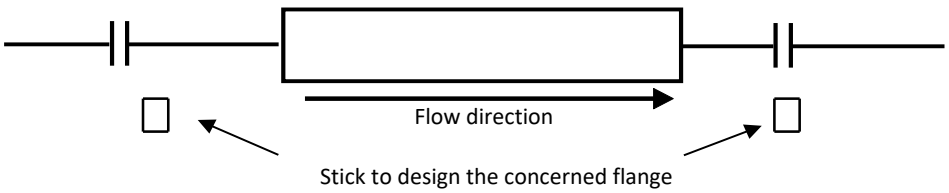
MASTER


TAG
025-1-J11
FLANGE TIGHTENED
ID STAMP NEN 2/6
SIGNED
DATE 28/01/25
RETURN TO SUPERVISOR
TAG
025-1-J11
FLANGE ASSEMBLED
ID STAMP NEN 2/6
SIGNED
DATE 28/01/25
RETURN TO SUPERVISOR
TAG
025-1-J11
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	025-1-J2	: Joint 025-1-J2			Dwg	123A90-FDL-PP-DI-00025-01
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10004195	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27 Bolt tensioning / torquing

Test Pack N.: TP-001

EQUIPMENT TAG



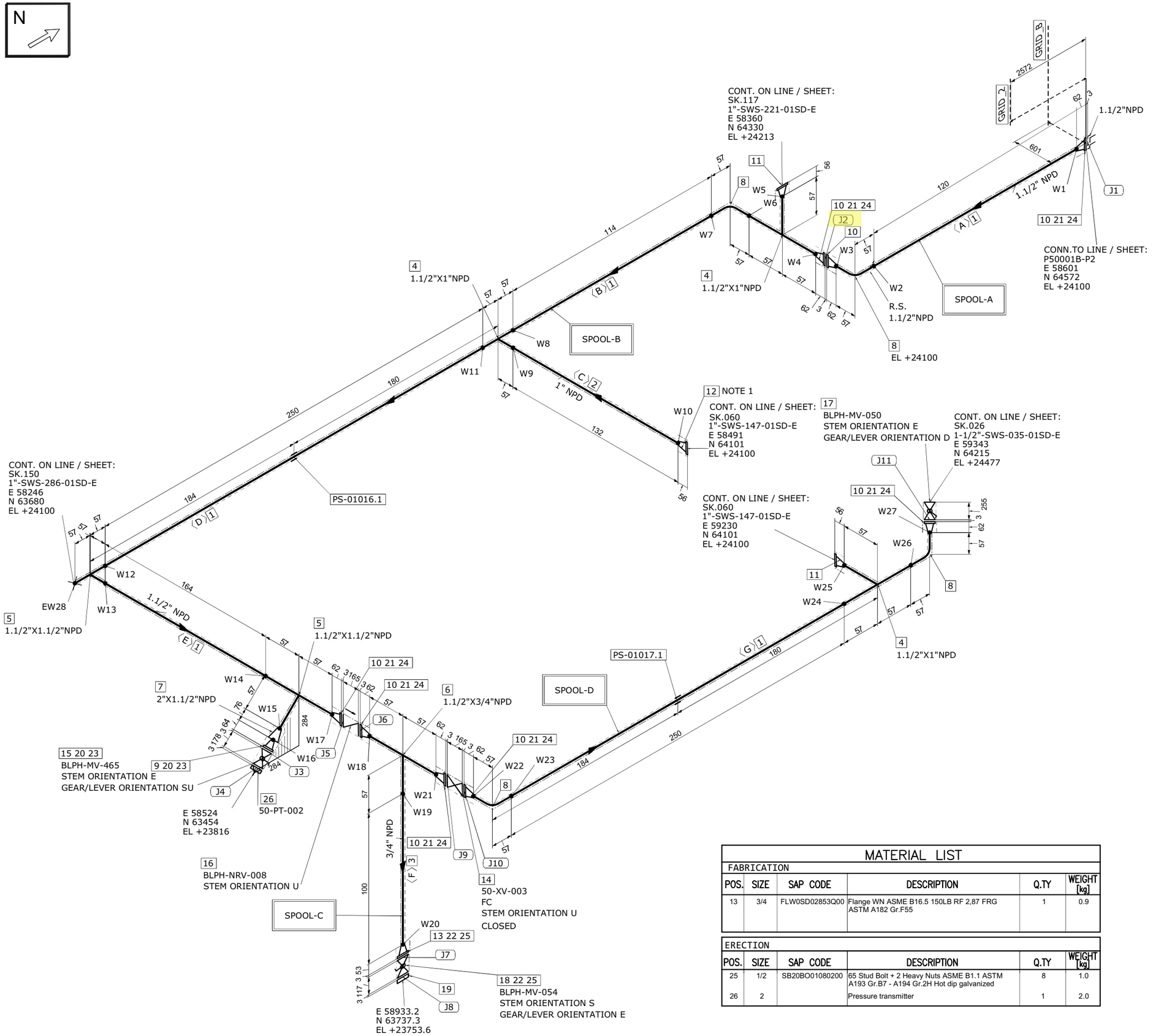
Flange Type	150LB	**Lubricant**	Yes
Flange Size	1.1/2"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Flat Thk. 3 mm	**Used tools**	V030390 / RD00261
Bolt tensioning/Torquing value	48.6		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	15	50	15	29	48.6
2	15	50	15	29	48.6
3	15	50	15	29	48.6
4	15	50	15	29	48.6
5			15	29	48.6
6			15	29	48.6
7			15	29	48.6
8			15	29	48.6
9			15	29	48.6
10			15	29	48.6
11			15	29	48.6
12			15	29	48.6
13			15	29	48.6
14			15	29	48.6
15			15	29	48.6
16			15	29	48.6
17			15	29	48.6
18			15	29	48.6
19			15	29	48.6
20			15	29	48.6

1	**Clear Bore Inspection:** Pipe and Valve clear of debris/contamination.	Yes
2	**Flange Face Check:** Both flanges clean and free from damage.	Yes
3	**Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique.	Yes
4	**Alignment:** Check alignment according to code.	Yes

Comments:

Page 1/1	Performed by	☒ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Andrea Mancini	
Date	2025-01-29	2025-01-29	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-29T10:22:03.264Z	PROVERLIS Digitaly signed by Andrea Mancini 2025-01-29T10:47:43.000Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1.1/2	PIPESD04761H00	Pipe ASME B36.19M PE 3,68 SML ASTM A790 UNS S32760	0.9M	3.7
2	1	PIPESD02850100	Pipe ASME B36.19M PE 3,38 SML ASTM A790 UNS S32760	0.1M	0.3
3	3/4	PIPESD04753Q00	Pipe ASME B36.19M PE 2,87 SML ASTM A790 UNS S32760	0.1M	0.2
4	1.1/2X1	TER0SD09381H01	Tee Reducing ASME B16.9 BW 3,68x3,38 WRS ASTM A815 UNS S32760	3	2.3
5	1.1/2X1.1/2	TEE0SD02931H00	Tee ASME B16.9 BW 3,68 WRS ASTM A815 UNS S32760	2	1.7
6	1.1/2X3/4	TER0SD09371H3Q	Tee Reducing ASME B16.9 BW 3,68x2,87 WRS ASTM A815 UNS S32760	1	0.8
7	2X1.1/2	REC0SD0803021H	Reducer Concentric ASME B16.9 BW 2,77x3,68 WRS ASTM A815 UNS S32760	1	0.3
8	1.1/2	E90RSD03031H00	90 Deg Elbow Long Radius ASME B16.9 BW 3,68 WRS ASTM A815 UNS S32760	4	1.5
9	2	FLW0SD01250200	Flange WN ASME B16.5 150LB RF 2,77 FRG ASTM A182 Gr.F55	1	2.8
10	1.1/2	FLW0SD02861H00	Flange WN ASME B16.5 150LB RF 3,68 FRG ASTM A182 Gr.F55	8	14.7
11	1	FLW0SD01240100	Flange WN ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	2	2.9
12	1	FLWDSD00300100	Flange WN For Jackscrews ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	1	1.4

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
14	1.1/2		ON/OFF Ball Actuator Valve - 150#RF Flanged	1	54.0
15	2	VBC0NN24460200	Ball Valve Split Body FB API 6D FLG 150LB RF BA01F01RF	1	19.2
16	1.1/2	VDRNNN02511H00	Check Valve Piston EN ISO 15761 FLG 150LB RF CH01F02RF	1	0.0
17	1.1/2	VLBLNN01381H00	Block & Bleed Valve API 6D FLG 150LB RF BS01F01RFS	1	28.0
18	3/4	VBC0NN24433Q00	Ball Valve Split Body FB API 6D FLG 150LB RF BS01F01RF	1	7.0
19	3/4	FLB0SD01843Q00	Flange Blind ASME B16.5 150LB RF FRG ASTM A182 Gr.F55	1	0.9
20	2	GFL3GK13230200	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	2	0.2
21	1.1/2	GFL3GK15981H00	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	7	0.4
22	3/4	GFL3GK15963Q00	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	2	0.1
23	5/8	SB20BO00660300	85 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.9
24	1/2	SB20BO00930200	70 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	28	3.4

FABRICATION WEIGHT [kg]	33.5
ERECTION WEIGHT [kg]	118.1
OVERALL WEIGHT [kg]	151.6

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1.1/2	BW
W2	1.1/2	BW
W3	1.1/2	BW
W4	1.1/2	BW
W5	1	BW
W6	1.1/2	BW
W7	1.1/2	BW
W8	1.1/2	BW
W9	1	BW
W10	1	BW
W11	1.1/2	BW
W12	1.1/2	BW
W13	1.1/2	BW
W14	1.1/2	BW
W15	1.1/2	BW
W16	2	BW
W17	1.1/2	BW
W18	1.1/2	BW
W19	3/4	BW
W20	3/4	BW
W21	1.1/2	BW
W22	1.1/2	BW
W23	1.1/2	BW
W24	1.1/2	BW
W25	1	BW
W26	1.1/2	BW
W27	1.1/2	BW
EW28	1.1/2	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1.1/2	120	BEVEL	BEVEL
B	1.1/2	115	BEVEL	BEVEL
C	1	132	BEVEL	BEVEL
D	1.1/2	250	BEVEL	BEVEL
E	1.1/2	164	BEVEL	BEVEL
F	3/4	100	BEVEL	BEVEL
G	1.1/2	250	BEVEL	BEVEL

SUPPORT LIST

PS-01016.1
PS-01017.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	4.5	4.6
B	20	15.7
C	4.5	5.5
D	8.5	7.7
MONT	1.5	118.1

MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
13	3/4	FLW0SD02853Q00	Flange WN ASME B16.5 150LB RF 2,87 FRG ASTM A182 Gr.F55	1	0.9

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
25	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.0
26	2		Pressure transmitter	1	2.0

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 1-1/2"-SWS-033-01SD-E

SK.025

LINE DATA							
NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3			
PAINTING	SYSTEM N/A	BASE RAL N/A	FLUID PHASE	Liquid			
INSULATION	TYPE H	THICKNESS 20 [mm]	DESIGN	PRESS. 7.6 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	Yes		TEST	PRESS. 11.4 [barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS	
P&ID	123A90-DDL-PR-PID-80021
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES
1.JACKSCREWS POSITION N/S

MASTER

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	N/A
DRAWN STAFF SRL	CHECKED RT	APPROVED LM	DATE 27-08-2024
FORMAT A3	DRAWING NO. 123A90-FDL-PP-DI-00025	SHEET / OF 1/1	REV. 00

TAG 025-1-J2

FLANGE TIGHTENED

ID STAMP RFM 2/6

SIGNED

DATE 28/01/25

RETURN TO SUPERVISOR

TAG 025-1-J2

FLANGE ASSEMBLED

ID STAMP RFM 2/6

SIGNED

DATE 28/01/25

RETURN TO SUPERVISOR

TAG 025-1-J2

FLANGE BROKEN

ID STAMP

SIGNED

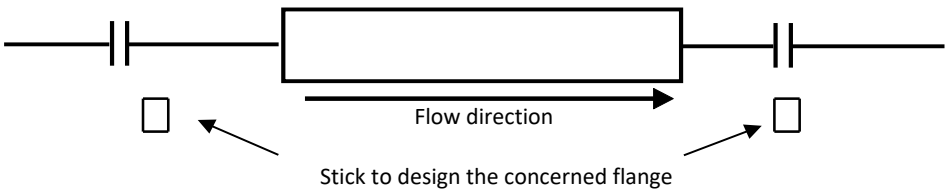
DATE

RETURN TO SUPERVISOR

ITEM	Tag	025-1-J3	: Joint 025-1-J3			Dwg	123A90-FDL-PP-DI-00025-01
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10004196	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27 Bolt tensioning / torquing

Test Pack N.: TP-001

EQUIPMENT TAG



Flange Type	150LB	**Lubricant**	Yes
Flange Size	2"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Flat Thk. 3 mm	**Used tools**	V030390 / RD00261
Bolt tensioning/Torquing value	95		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	29	95	29	57	95
2	29	95	29	57	95
3	29	95	29	57	95
4	29	95	29	57	95
5			29	57	95
6			29	57	95
7			29	57	95
8			29	57	95
9			29	57	95
10			29	57	95
11			29	57	95
12			29	57	95
13			29	57	95
14			29	57	95
15			29	57	95
16			29	57	95
17			29	57	95
18			29	57	95
19			29	57	95
20			29	57	95

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

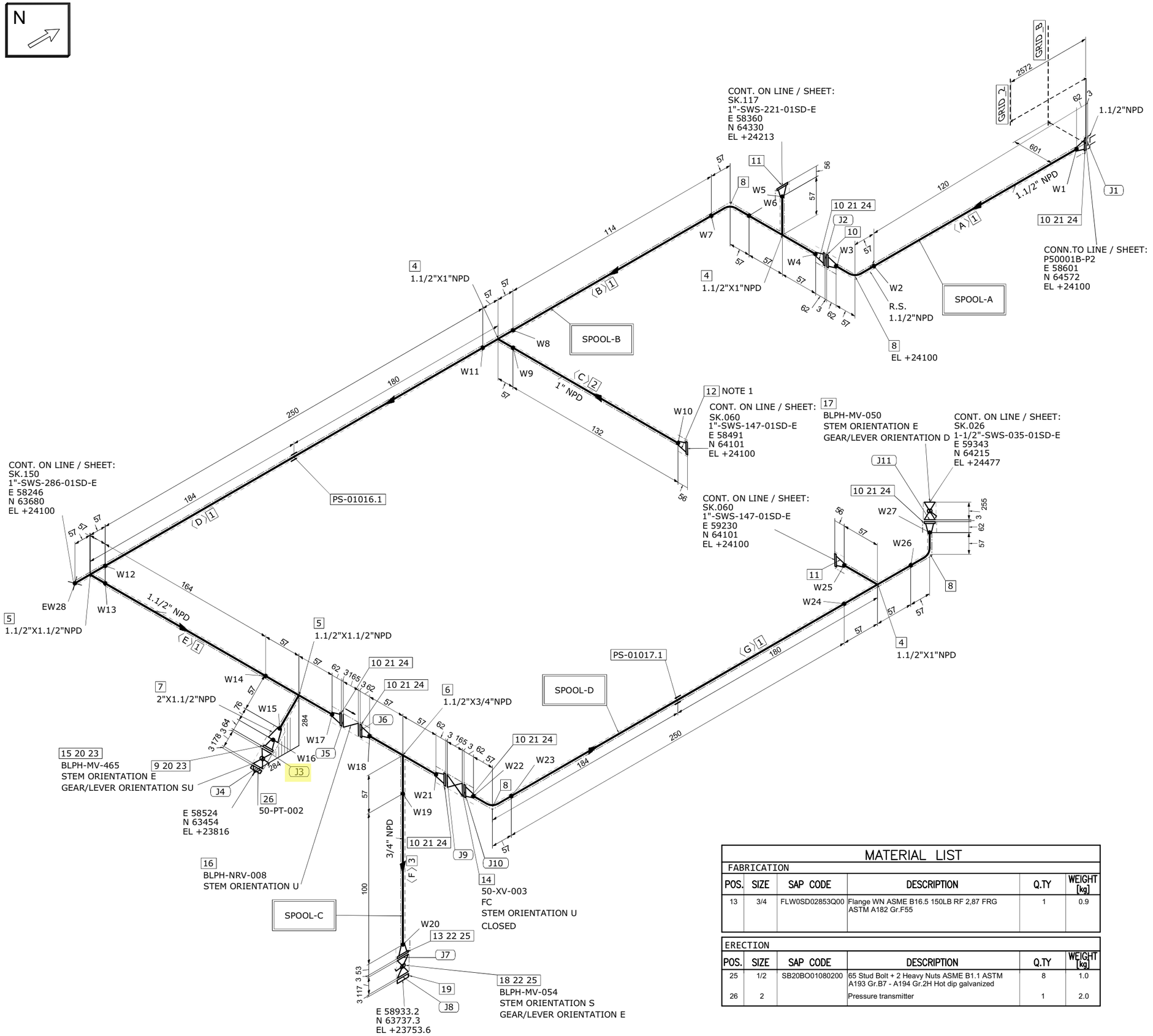
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Andrea Mancini	
Date	2025-01-29	2025-01-29	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-29T10:16:43.509Z	PROVERLIS Digitaly signed by Andrea Mancini 2025-01-29T10:47:59.045Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1.1/2	PIPESD04761H00	Pipe ASME B36.19M PE 3,68 SML ASTM A790 UNS S32760	0.9M	3.7
2	1	PIPESD02850100	Pipe ASME B36.19M PE 3,38 SML ASTM A790 UNS S32760	0.1M	0.3
3	3/4	PIPESD04753Q00	Pipe ASME B36.19M PE 2,87 SML ASTM A790 UNS S32760	0.1M	0.2
4	1.1/2X1	TER0SD09381H01	Tee Reducing ASME B16.9 BW 3,68x3,38 WRS ASTM A815 UNS S32760	3	2.3
5	1.1/2X1.1/2	TEE0SD02931H00	Tee ASME B16.9 BW 3,68 WRS ASTM A815 UNS S32760	2	1.7
6	1.1/2X3/4	TER0SD09371H3Q	Tee Reducing ASME B16.9 BW 3,68x2,87 WRS ASTM A815 UNS S32760	1	0.8
7	2X1.1/2	REC0SD0803021H	Reducer Concentric ASME B16.9 BW 2,77x3,68 WRS ASTM A815 UNS S32760	1	0.3
8	1.1/2	E90RSD03031H00	90 Deg Elbow Long Radius ASME B16.9 BW 3,68 WRS ASTM A815 UNS S32760	4	1.5
9	2	FLW0SD01250200	Flange WN ASME B16.5 150LB RF 2,77 FRG ASTM A182 Gr.F55	1	2.8
10	1.1/2	FLW0SD02861H00	Flange WN ASME B16.5 150LB RF 3,68 FRG ASTM A182 Gr.F55	8	14.7
11	1	FLW0SD01240100	Flange WN ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	2	2.9
12	1	FLWDSD00300100	Flange WN For Jackscrews ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	1	1.4

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
14	1.1/2		ON/OFF Ball Actuator Valve - 150#RF Flanged	1	54.0
15	2	VBC0NN24460200	Ball Valve Split Body FB API 6D FLG 150LB RF BA01F01RF	1	19.2
16	1.1/2	VDRNNN02511H00	Check Valve Piston EN ISO 15761 FLG 150LB RF CH01F02RF	1	0.0
17	1.1/2	VLBLNN01381H00	Block & Bleed Valve API 6D FLG 150LB RF BS01F01RFS	1	28.0
18	3/4	VBC0NN24433Q00	Ball Valve Split Body FB API 6D FLG 150LB RF BS01F01RF	1	7.0
19	3/4	FLB0SD01843Q00	Flange Blind ASME B16.5 150LB RF FRG ASTM A182 Gr.F55	1	0.9
20	2	GFL3GK13230200	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	2	0.2
21	1.1/2	GFL3GK15981H00	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	7	0.4
22	3/4	GFL3GK15963Q00	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	2	0.1
23	5/8	SB20BO00660300	85 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.9
24	1/2	SB20BO00930200	70 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	28	3.4

FABRICATION WEIGHT [kg]	33.5
ERECTION WEIGHT [kg]	118.1
OVERALL WEIGHT [kg]	151.6

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1.1/2	BW
W2	1.1/2	BW
W3	1.1/2	BW
W4	1.1/2	BW
W5	1	BW
W6	1.1/2	BW
W7	1.1/2	BW
W8	1.1/2	BW
W9	1	BW
W10	1	BW
W11	1.1/2	BW
W12	1.1/2	BW
W13	1.1/2	BW
W14	1.1/2	BW
W15	1.1/2	BW
W16	2	BW
W17	1.1/2	BW
W18	1.1/2	BW
W19	3/4	BW
W20	3/4	BW
W21	1.1/2	BW
W22	1.1/2	BW
W23	1.1/2	BW
W24	1.1/2	BW
W25	1	BW
W26	1.1/2	BW
W27	1.1/2	BW
EW28	1.1/2	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1.1/2	120	BEVEL	BEVEL
B	1.1/2	115	BEVEL	BEVEL
C	1	132	BEVEL	BEVEL
D	1.1/2	250	BEVEL	BEVEL
E	1.1/2	164	BEVEL	BEVEL
F	3/4	100	BEVEL	BEVEL
G	1.1/2	250	BEVEL	BEVEL

SUPPORT LIST

PS-01016.1
PS-01017.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	4.5	4.6
B	20	15.7
C	4.5	5.5
D	8.5	7.7
MONT	1.5	118.1

MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
13	3/4	FLW0SD02853Q00	Flange WN ASME B16.5 150LB RF 2,87 FRG ASTM A182 Gr.F55	1	0.9

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
25	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.0
26	2		Pressure transmitter	1	2.0

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 1-1/2"-SWS-033-01SD-E

SK.025

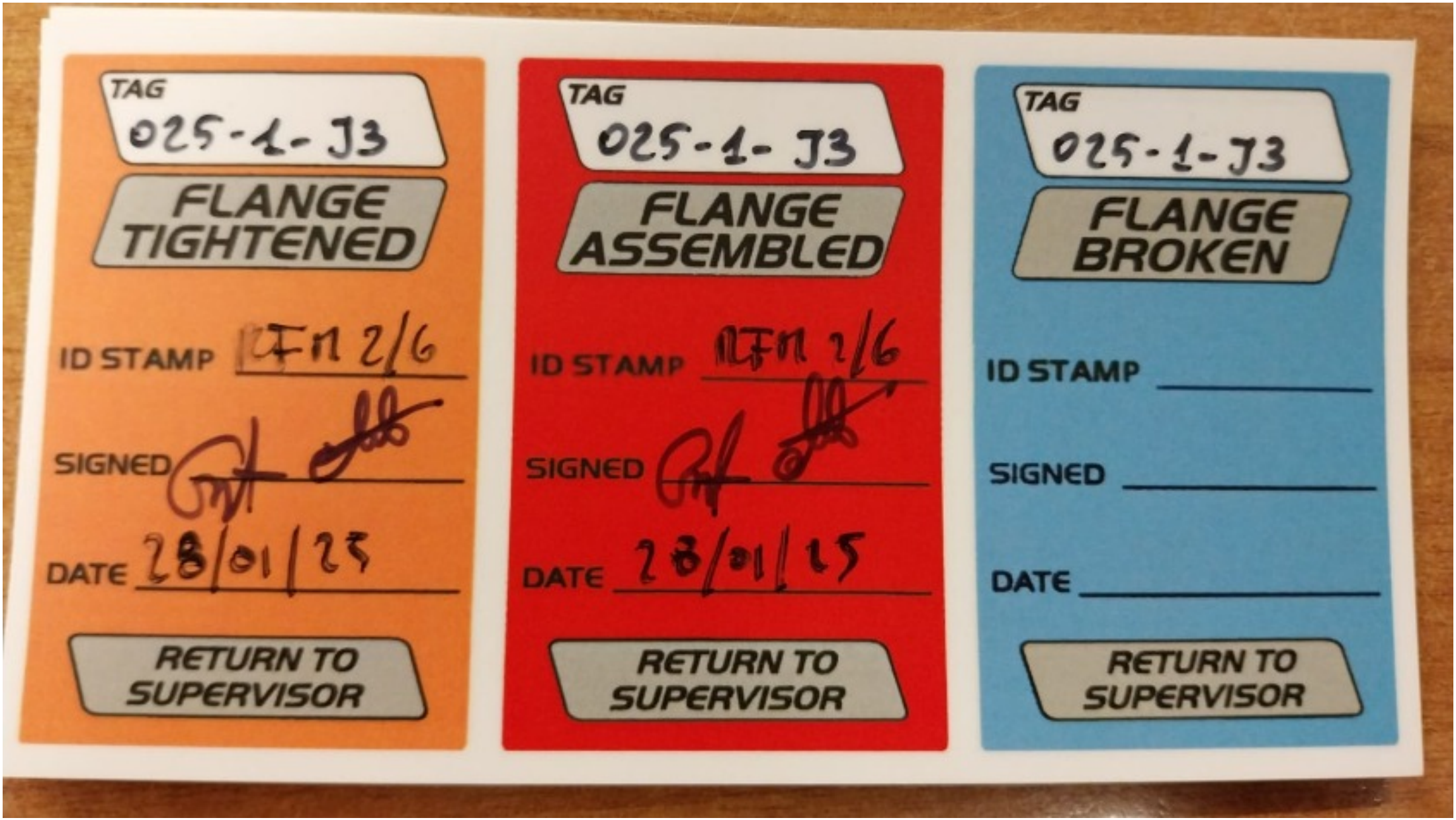
LINE DATA							
NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3			
PAINTING	SYSTEM N/A	BASE RAL N/A	FLUID PHASE	Liquid			
INSULATION	TYPE H	THICKNESS 20 [mm]	DESIGN	PRESS. 7.6 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	Yes		TEST	PRESS. 11.4 [barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS	
P&ID	123A90-DDL-PR-PID-80021
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES
1.JACKSCREWS POSITION N/S

MASTER

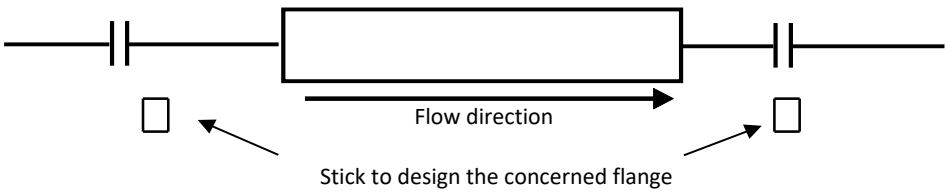
CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	N/A
DRAWN STAFF SRL	CHECKED RT	APPROVED LM	DATE 27-08-2024
FORMAT A3	DRAWING NO. 123A90-FDL-PP-DI-00025	SHEET / OF 1/1	REV. 00


TAG
025-1-J3
FLANGE TIGHTENED
ID STAMP
SIGNED
DATE 28/01/25
RETURN TO SUPERVISOR
TAG
025-1-J3
FLANGE ASSEMBLED
ID STAMP
SIGNED
DATE 28/01/25
RETURN TO SUPERVISOR
TAG
025-1-J3
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	025-1-J4	: Joint 025-1-J4			Dwg	123A90-FDL-PP-DI-00025-01
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10004197	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27 Bolt tensioning / torquing

Test Pack N.: TP-001

EQUIPMENT TAG



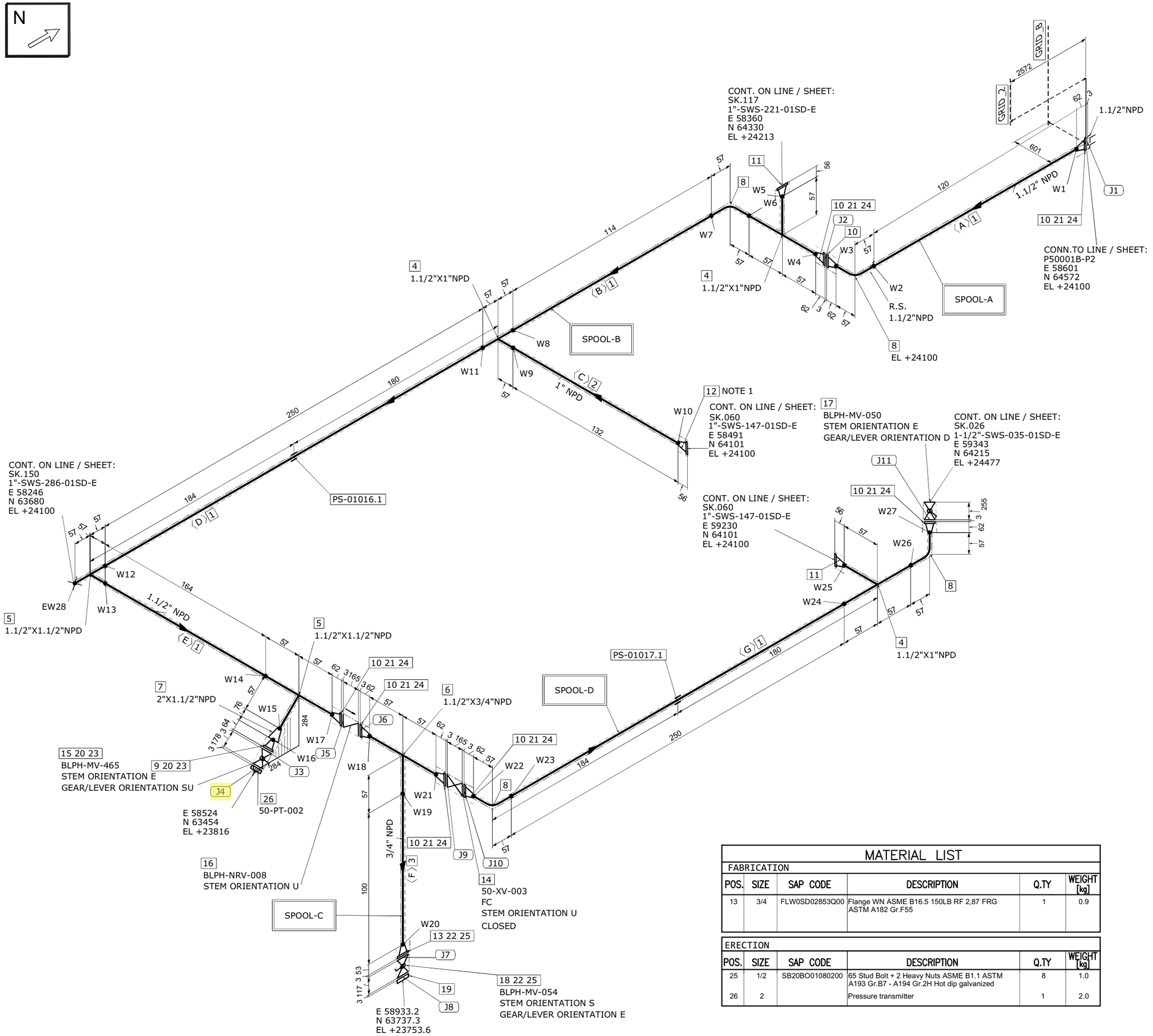
Flange Type	150LB	**Lubricant**	Yes
Flange Size	2"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Flat Thk. 3 mm	**Used tools**	V030390 / RD00261
Bolt tensioning/Torquing value	95		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	29	95	29	57	95
2	29	95	29	57	95
3	29	95	29	57	95
4	29	95	29	57	95
5			29	57	95
6			29	57	95
7			29	57	95
8			29	57	95
9			29	57	95
10			29	57	95
11			29	57	95
12			29	57	95
13			29	57	95
14			29	57	95
15			29	57	95
16			29	57	95
17			29	57	95
18			29	57	95
19			29	57	95
20			29	57	95

1	**Clear Bore Inspection:** Pipe and Valve clear of debris/contamination.	Yes
2	**Flange Face Check:** Both flanges clean and free from damage.	Yes
3	**Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique.	Yes
4	**Alignment:** Check alignment according to code.	Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Andrea Mancini	
Date	2025-01-29	2025-01-29	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-29T10:17:11.926Z	PROVERLIS Digitaly signed by Andrea Mancini 2025-01-29T10:48:15.390Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1.1/2	PIPESD04761H00	Pipe ASME B36.19M PE 3,68 SML ASTM A790 UNS S32760	0.9M	3.7
2	1	PIPESD02850100	Pipe ASME B36.19M PE 3,38 SML ASTM A790 UNS S32760	0.1M	0.3
3	3/4	PIPESD04753Q00	Pipe ASME B36.19M PE 2,87 SML ASTM A790 UNS S32760	0.1M	0.2
4	1.1/2X1	TER0SD09381H01	Tee Reducing ASME B16.9 BW 3,68x3,38 WRS ASTM A815 UNS S32760	3	2.3
5	1.1/2X1.1/2	TEE0SD02931H00	Tee ASME B16.9 BW 3,68 WRS ASTM A815 UNS S32760	2	1.7
6	1.1/2X3/4	TER0SD09371H3Q	Tee Reducing ASME B16.9 BW 3,68x2,87 WRS ASTM A815 UNS S32760	1	0.8
7	2X1.1/2	REC0SD0803021H	Reducer Concentric ASME B16.9 BW 2,77x3,68 WRS ASTM A815 UNS S32760	1	0.3
8	1.1/2	E90RSD03031H00	90 Deg Elbow Long Radius ASME B16.9 BW 3,68 WRS ASTM A815 UNS S32760	4	1.5
9	2	FLW0SD01250200	Flange WN ASME B16.5 150LB RF 2,77 FRG ASTM A182 Gr.F55	1	2.8
10	1.1/2	FLW0SD02861H00	Flange WN ASME B16.5 150LB RF 3,68 FRG ASTM A182 Gr.F55	8	14.7
11	1	FLW0SD01240100	Flange WN ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	2	2.9
12	1	FLWDSD00300100	Flange WN For Jackscrews ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	1	1.4

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
14	1.1/2		ON/OFF Ball Actuator Valve - 150#RF Flanged	1	54.0
15	2	VBC0NN24460200	Ball Valve Split Body FB API 6D FLG 150LB RF BA01F01RF	1	19.2
16	1.1/2	VDRNNN02511H00	Check Valve Piston EN ISO 15761 FLG 150LB RF CH01F02RF	1	0.0
17	1.1/2	VLBLNN01381H00	Block & Bleed Valve API 6D FLG 150LB RF BS01F01RFS	1	28.0
18	3/4	VBC0NN24433Q00	Ball Valve Split Body FB API 6D FLG 150LB RF BS01F01RF	1	7.0
19	3/4	FLB0SD01843Q00	Flange Blind ASME B16.5 150LB RF FRG ASTM A182 Gr.F55	1	0.9
20	2	GFL3GK13230200	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	2	0.2
21	1.1/2	GFL3GK15981H00	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	7	0.4
22	3/4	GFL3GK15963Q00	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	2	0.1
23	5/8	SB20BO00660300	85 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.9
24	1/2	SB20BO00930200	70 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	28	3.4

FABRICATION WEIGHT [kg]	33.5
ERECTION WEIGHT [kg]	118.1
OVERALL WEIGHT [kg]	151.6

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1.1/2	BW
W2	1.1/2	BW
W3	1.1/2	BW
W4	1.1/2	BW
W5	1	BW
W6	1.1/2	BW
W7	1.1/2	BW
W8	1.1/2	BW
W9	1	BW
W10	1	BW
W11	1.1/2	BW
W12	1.1/2	BW
W13	1.1/2	BW
W14	1.1/2	BW
W15	1.1/2	BW
W16	2	BW
W17	1.1/2	BW
W18	1.1/2	BW
W19	3/4	BW
W20	3/4	BW
W21	1.1/2	BW
W22	1.1/2	BW
W23	1.1/2	BW
W24	1.1/2	BW
W25	1	BW
W26	1.1/2	BW
W27	1.1/2	BW
EW28	1.1/2	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1.1/2	120	BEVEL	BEVEL
B	1.1/2	115	BEVEL	BEVEL
C	1	132	BEVEL	BEVEL
D	1.1/2	250	BEVEL	BEVEL
E	1.1/2	164	BEVEL	BEVEL
F	3/4	100	BEVEL	BEVEL
G	1.1/2	250	BEVEL	BEVEL

SUPPORT LIST

PS-01016.1
PS-01017.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	4.5	4.6
B	20	15.7
C	4.5	5.5
D	8.5	7.7
MONT	1.5	118.1

MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
13	3/4	FLW0SD02853Q00	Flange WN ASME B16.5 150LB RF 2,87 FRG ASTM A182 Gr.F55	1	0.9

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
25	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.0
26	2		Pressure transmitter	1	2.0

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 1-1/2"-SWS-033-01SD-E

SK.025

LINE DATA							
NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3			
PAINTING	SYSTEM N/A	BASE RAL N/A	FLUID PHASE	Liquid			
INSULATION	TYPE H	THICKNESS 20 [mm]	DESIGN	PRESS. 7.6 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	Yes		TEST	PRESS. 11.4 [barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS	
P&ID	123A90-DDL-PR-PID-80021
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES
1.JACKSCREWS POSITION N/S

MASTER

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK
SCALE	N/A
DRAWN	STAFF SRL
CHECKED	RT
APPROVED	LM
DATE	27-08-2024
FORMAT	A3
DRAWING NO.	123A90-FDL-PP-DI-00025
SHEET / OF	1/1
REV.	00

TAG 025-1-J4

FLANGE TIGHTENED

ID STAMP RFM 2/6

SIGNED

DATE 28/01/25

RETURN TO SUPERVISOR

TAG 025-1-J4

FLANGE ASSEMBLED

ID STAMP RFM 2/6

SIGNED

DATE 28/01/25

RETURN TO SUPERVISOR

TAG 025-1-J4

FLANGE BROKEN

ID STAMP

SIGNED

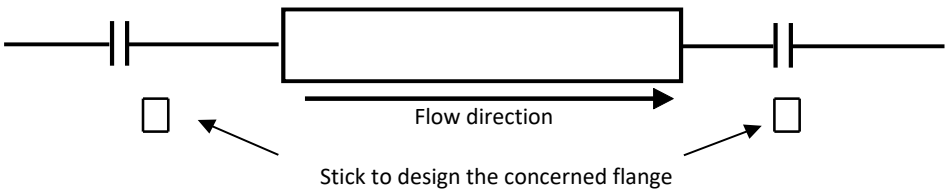
DATE

RETURN TO SUPERVISOR

ITEM	Tag	025-1-J5	: Joint 025-1-J5			Dwg	123A90-FDL-PP-DI-00025-01
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10004198	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27 Bolt tensioning / torquing

Test Pack N.: TP-001

EQUIPMENT TAG



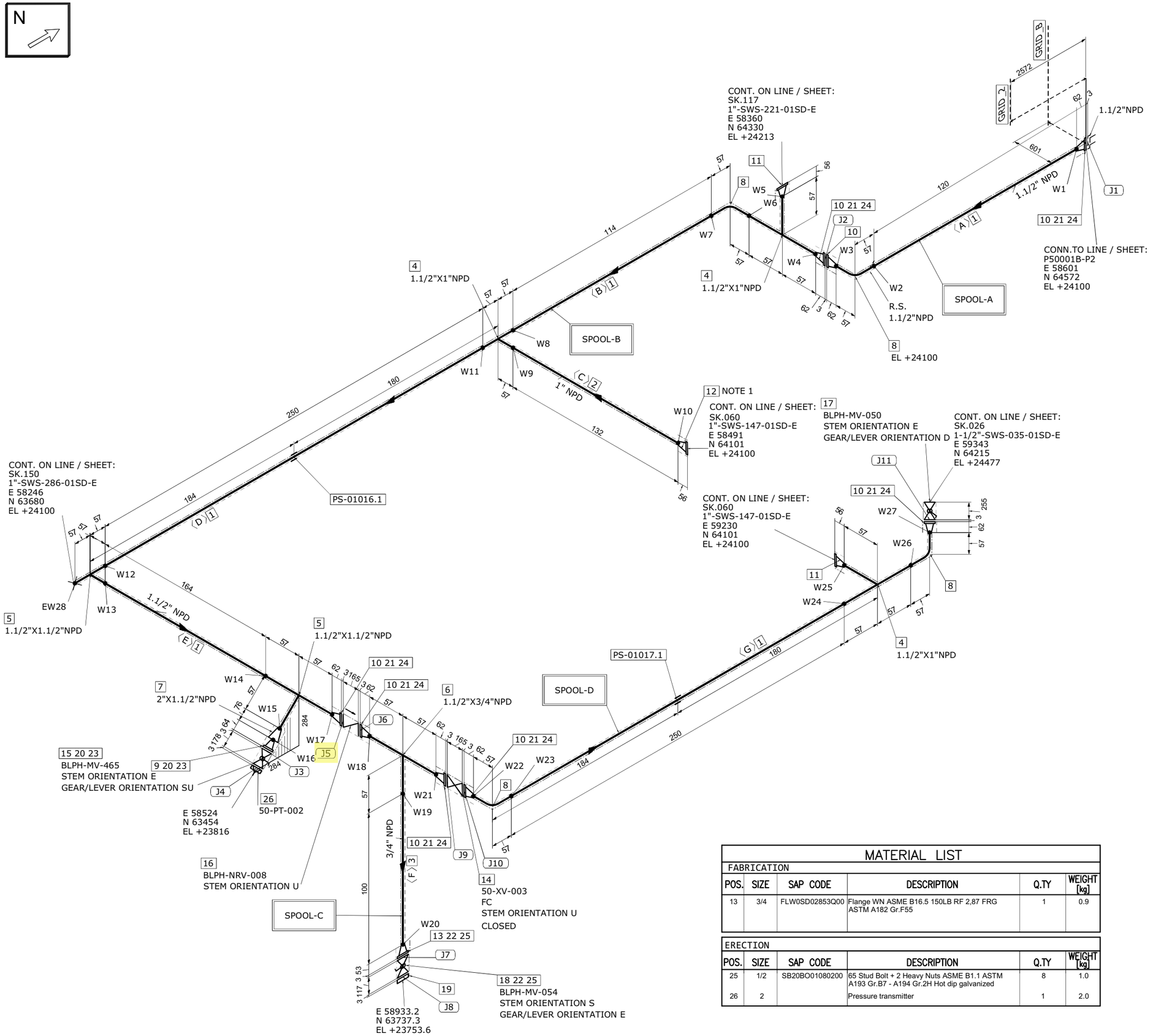
Flange Type	150LB	**Lubricant**	Yes
Flange Size	1.1/2"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Flat Thk. 3 mm	**Used tools**	V030390 / RD00261
Bolt tensioning/Torquing value	48.6		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	15	50	15	29	48.6
2	15	50	15	29	48.6
3	15	50	15	29	48.6
4	15	50	15	29	48.6
5			15	29	48.6
6			15	29	48.6
7			15	29	48.6
8			15	29	48.6
9			15	29	48.6
10			15	29	48.6
11			15	29	48.6
12			15	29	48.6
13			15	29	48.6
14			15	29	48.6
15			15	29	48.6
16			15	29	48.6
17			15	29	48.6
18			15	29	48.6
19			15	29	48.6
20			15	29	48.6

1	**Clear Bore Inspection:** Pipe and Valve clear of debris/contamination.	Yes
2	**Flange Face Check:** Both flanges clean and free from damage.	Yes
3	**Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique.	Yes
4	**Alignment:** Check alignment according to code.	Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Andrea Mancini	
Date	2025-01-29	2025-01-29	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-29T10:17:49.051Z	PROVERLIS Digitaly signed by Andrea Mancini 2025-01-29T10:48:35.089Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1.1/2	PIPESD04761H00	Pipe ASME B36.19M PE 3,68 SML ASTM A790 UNS S32760	0.9M	3.7
2	1	PIPESD02850100	Pipe ASME B36.19M PE 3,38 SML ASTM A790 UNS S32760	0.1M	0.3
3	3/4	PIPESD04753Q00	Pipe ASME B36.19M PE 2,87 SML ASTM A790 UNS S32760	0.1M	0.2
4	1.1/2X1	TER0SD09381H01	Tee Reducing ASME B16.9 BW 3,68x3,38 WRS ASTM A815 UNS S32760	3	2.3
5	1.1/2X1.1/2	TEE0SD02931H00	Tee ASME B16.9 BW 3,68 WRS ASTM A815 UNS S32760	2	1.7
6	1.1/2X3/4	TER0SD09371H3Q	Tee Reducing ASME B16.9 BW 3,68x2,87 WRS ASTM A815 UNS S32760	1	0.8
7	2X1.1/2	REC0SD0803021H	Reducer Concentric ASME B16.9 BW 2,77x3,68 WRS ASTM A815 UNS S32760	1	0.3
8	1.1/2	E90RSD03031H00	90 Deg Elbow Long Radius ASME B16.9 BW 3,68 WRS ASTM A815 UNS S32760	4	1.5
9	2	FLW0SD01250200	Flange WN ASME B16.5 150LB RF 2,77 FRG ASTM A182 Gr.F55	1	2.8
10	1.1/2	FLW0SD02861H00	Flange WN ASME B16.5 150LB RF 3,68 FRG ASTM A182 Gr.F55	8	14.7
11	1	FLW0SD01240100	Flange WN ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	2	2.9
12	1	FLWDSD00300100	Flange WN For Jackscrews ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	1	1.4

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
14	1.1/2		ON/OFF Ball Actuator Valve - 150#RF Flanged	1	54.0
15	2	VBC0NN24460200	Ball Valve Split Body FB API 6D FLG 150LB RF BA01F01RF	1	19.2
16	1.1/2	VDRNNN02511H00	Check Valve Piston EN ISO 15761 FLG 150LB RF CH01F02RF	1	0.0
17	1.1/2	VLBLNN01381H00	Block & Bleed Valve API 6D FLG 150LB RF BS01F01RFS	1	28.0
18	3/4	VBC0NN24433Q00	Ball Valve Split Body FB API 6D FLG 150LB RF BS01F01RF	1	7.0
19	3/4	FLB0SD01843Q00	Flange Blind ASME B16.5 150LB RF FRG ASTM A182 Gr.F55	1	0.9
20	2	GFL3GK13230200	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	2	0.2
21	1.1/2	GFL3GK15981H00	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	7	0.4
22	3/4	GFL3GK15963Q00	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	2	0.1
23	5/8	SB20BO00660300	85 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.9
24	1/2	SB20BO00930200	70 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	28	3.4

FABRICATION WEIGHT [kg]	33.5
ERECTION WEIGHT [kg]	118.1
OVERALL WEIGHT [kg]	151.6

MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
13	3/4	FLW0SD02853Q00	Flange WN ASME B16.5 150LB RF 2,87 FRG ASTM A182 Gr.F55	1	0.9

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
25	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.0
26	2		Pressure transmitter	1	2.0

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1.1/2	BW
W2	1.1/2	BW
W3	1.1/2	BW
W4	1.1/2	BW
W5	1	BW
W6	1.1/2	BW
W7	1.1/2	BW
W8	1.1/2	BW
W9	1	BW
W10	1	BW
W11	1.1/2	BW
W12	1.1/2	BW
W13	1.1/2	BW
W14	1.1/2	BW
W15	1.1/2	BW
W16	2	BW
W17	1.1/2	BW
W18	1.1/2	BW
W19	3/4	BW
W20	3/4	BW
W21	1.1/2	BW
W22	1.1/2	BW
W23	1.1/2	BW
W24	1.1/2	BW
W25	1	BW
W26	1.1/2	BW
W27	1.1/2	BW
EW28	1.1/2	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1.1/2	120	BEVEL	BEVEL
B	1.1/2	115	BEVEL	BEVEL
C	1	132	BEVEL	BEVEL
D	1.1/2	250	BEVEL	BEVEL
E	1.1/2	164	BEVEL	BEVEL
F	3/4	100	BEVEL	BEVEL
G	1.1/2	250	BEVEL	BEVEL

SUPPORT LIST

PS-01016.1
PS-01017.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	4.5	4.6
B	20	15.7
C	4.5	5.5
D	8.5	7.7
MONT	1.5	118.1

LINE DATA

NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3			
PAINTING	SYSTEM N/A	BASE RAL N/A	FLUID PHASE	Liquid			
INSULATION	TYPE H	THICKNESS 20 [mm]	DESIGN	PRESS. 7.6 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	Yes		TEST	PRESS. 11.4 [barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80021
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

1.JACKSCREWS POSITION N/S

MASTER

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 1-1/2"-SWS-033-01SD-E

SK.025

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE	N/A
DRAWN	STAFF SRL	CHECKED	RT	APPROVED	LM
DATE	27-08-2024				
FORMAT	A3	DRAWING NO.	123A90-FDL-PP-DI-00025	SHEET / OF	1/1
REV.	00				

TAG
025-1-J5

FLANGE TIGHTENED

ID STAMP RFM 2/6

SIGNED

DATE 28/01/25

RETURN TO SUPERVISOR

TAG
025-1-J5

FLANGE ASSEMBLED

ID STAMP RFM 2/6

SIGNED

DATE 28/01/25

RETURN TO SUPERVISOR

TAG
025-1-J5

FLANGE BROKEN

ID STAMP

SIGNED

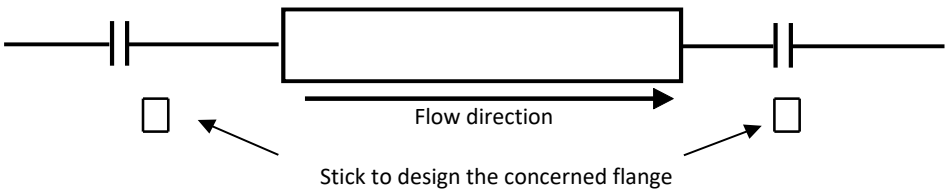
DATE

RETURN TO SUPERVISOR

ITEM	Tag	025-1-J6	: Joint 025-1-J6			Dwg	123A90-FDL-PP-DI-00025-01
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10004199		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27		Bolt tensioning / torquing

Test Pack N.: TP-001

EQUIPMENT TAG



Flange Type	150LB	**Lubricant**	Yes
Flange Size	1.1/2"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Flat Thk. 3 mm	**Used tools**	V030390 / RD00261
Bolt tensioning/Torquing value	48.6		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	15	50	15	29	48.6
2	15	50	15	29	48.6
3	15	50	15	29	48.6
4	15	50	15	29	48.6
5			15	29	48.6
6			15	29	48.6
7			15	29	48.6
8			15	29	48.6
9			15	29	48.6
10			15	29	48.6
11			15	29	48.6
12			15	29	48.6
13			15	29	48.6
14			15	29	48.6
15			15	29	48.6
16			15	29	48.6
17			15	29	48.6
18			15	29	48.6
19			15	29	48.6
20			15	29	48.6

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

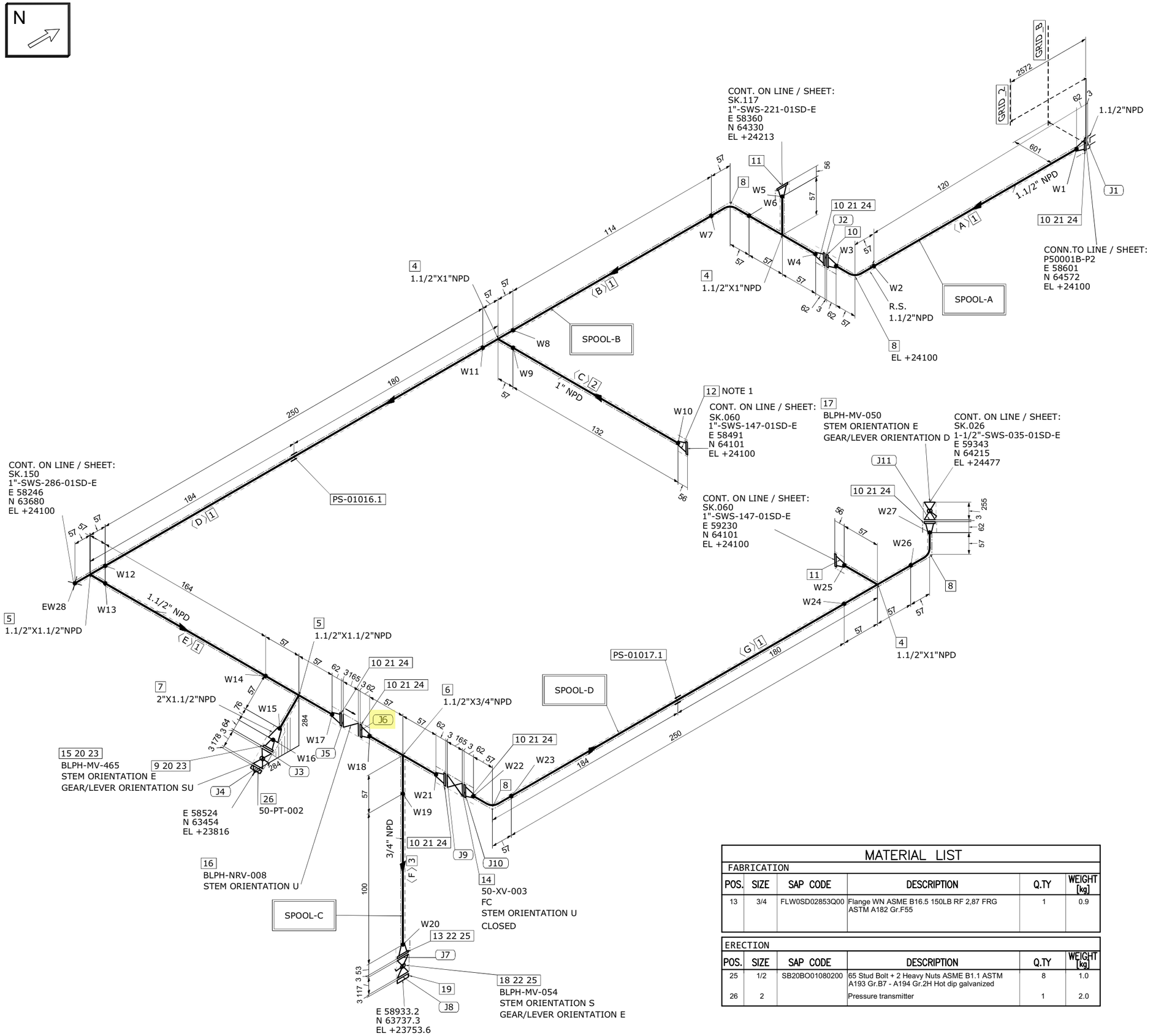
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Andrea Mancini	
Date	2025-01-29	2025-01-29	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-29T10:18:18.162Z	PROVERLIS Digitaly signed by Andrea Mancini 2025-01-29T10:48:58.376Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1.1/2	PIPESD04761H00	Pipe ASME B36.19M PE 3,68 SML ASTM A790 UNS S32760	0.9M	3.7
2	1	PIPESD02850100	Pipe ASME B36.19M PE 3,38 SML ASTM A790 UNS S32760	0.1M	0.3
3	3/4	PIPESD04753Q00	Pipe ASME B36.19M PE 2,87 SML ASTM A790 UNS S32760	0.1M	0.2
4	1.1/2X1	TER0SD09381H01	Tee Reducing ASME B16.9 BW 3,68x3,38 WRS ASTM A815 UNS S32760	3	2.3
5	1.1/2X1.1/2	TEE0SD02931H00	Tee ASME B16.9 BW 3,68 WRS ASTM A815 UNS S32760	2	1.7
6	1.1/2X3/4	TER0SD09371H3Q	Tee Reducing ASME B16.9 BW 3,68x2,87 WRS ASTM A815 UNS S32760	1	0.8
7	2X1.1/2	REC0SD0803021H	Reducer Concentric ASME B16.9 BW 2,77x3,68 WRS ASTM A815 UNS S32760	1	0.3
8	1.1/2	E90RSD03031H00	90 Deg Elbow Long Radius ASME B16.9 BW 3,68 WRS ASTM A815 UNS S32760	4	1.5
9	2	FLW0SD01250200	Flange WN ASME B16.5 150LB RF 2,77 FRG ASTM A182 Gr.F55	1	2.8
10	1.1/2	FLW0SD02861H00	Flange WN ASME B16.5 150LB RF 3,68 FRG ASTM A182 Gr.F55	8	14.7
11	1	FLW0SD01240100	Flange WN ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	2	2.9
12	1	FLWDSD00300100	Flange WN For Jackscrews ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	1	1.4

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
14	1.1/2		ON/OFF Ball Actuator Valve - 150#RF Flanged	1	54.0
15	2	VBC0NN24460200	Ball Valve Split Body FB API 6D FLG 150LB RF BA01F01RF	1	19.2
16	1.1/2	VDRNNN02511H00	Check Valve Piston EN ISO 15761 FLG 150LB RF CH01F02RF	1	0.0
17	1.1/2	VLBLNN01381H00	Block & Bleed Valve API 6D FLG 150LB RF BS01F01RFS	1	28.0
18	3/4	VBC0NN24433Q00	Ball Valve Split Body FB API 6D FLG 150LB RF BS01F01RF	1	7.0
19	3/4	FLB0SD01843Q00	Flange Blind ASME B16.5 150LB RF FRG ASTM A182 Gr.F55	1	0.9
20	2	GFL3GK13230200	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	2	0.2
21	1.1/2	GFL3GK15981H00	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	7	0.4
22	3/4	GFL3GK15963Q00	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	2	0.1
23	5/8	SB20BO00660300	85 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.9
24	1/2	SB20BO00930200	70 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	28	3.4

FABRICATION WEIGHT [kg]	33.5
ERECTION WEIGHT [kg]	118.1
OVERALL WEIGHT [kg]	151.6

MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
13	3/4	FLW0SD02853Q00	Flange WN ASME B16.5 150LB RF 2,87 FRG ASTM A182 Gr.F55	1	0.9

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
25	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.0
26	2		Pressure transmitter	1	2.0

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1.1/2	BW
W2	1.1/2	BW
W3	1.1/2	BW
W4	1.1/2	BW
W5	1	BW
W6	1.1/2	BW
W7	1.1/2	BW
W8	1.1/2	BW
W9	1	BW
W10	1	BW
W11	1.1/2	BW
W12	1.1/2	BW
W13	1.1/2	BW
W14	1.1/2	BW
W15	1.1/2	BW
W16	2	BW
W17	1.1/2	BW
W18	1.1/2	BW
W19	3/4	BW
W20	3/4	BW
W21	1.1/2	BW
W22	1.1/2	BW
W23	1.1/2	BW
W24	1.1/2	BW
W25	1	BW
W26	1.1/2	BW
W27	1.1/2	BW
EW28	1.1/2	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1.1/2	120	BEVEL	BEVEL
B	1.1/2	115	BEVEL	BEVEL
C	1	132	BEVEL	BEVEL
D	1.1/2	250	BEVEL	BEVEL
E	1.1/2	164	BEVEL	BEVEL
F	3/4	100	BEVEL	BEVEL
G	1.1/2	250	BEVEL	BEVEL

SUPPORT LIST

PS-01016.1
PS-01017.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	4.5	4.6
B	20	15.7
C	4.5	5.5
D	8.5	7.7
MONT	1.5	118.1

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 1-1/2"-SWS-033-01SD-E

SK.025

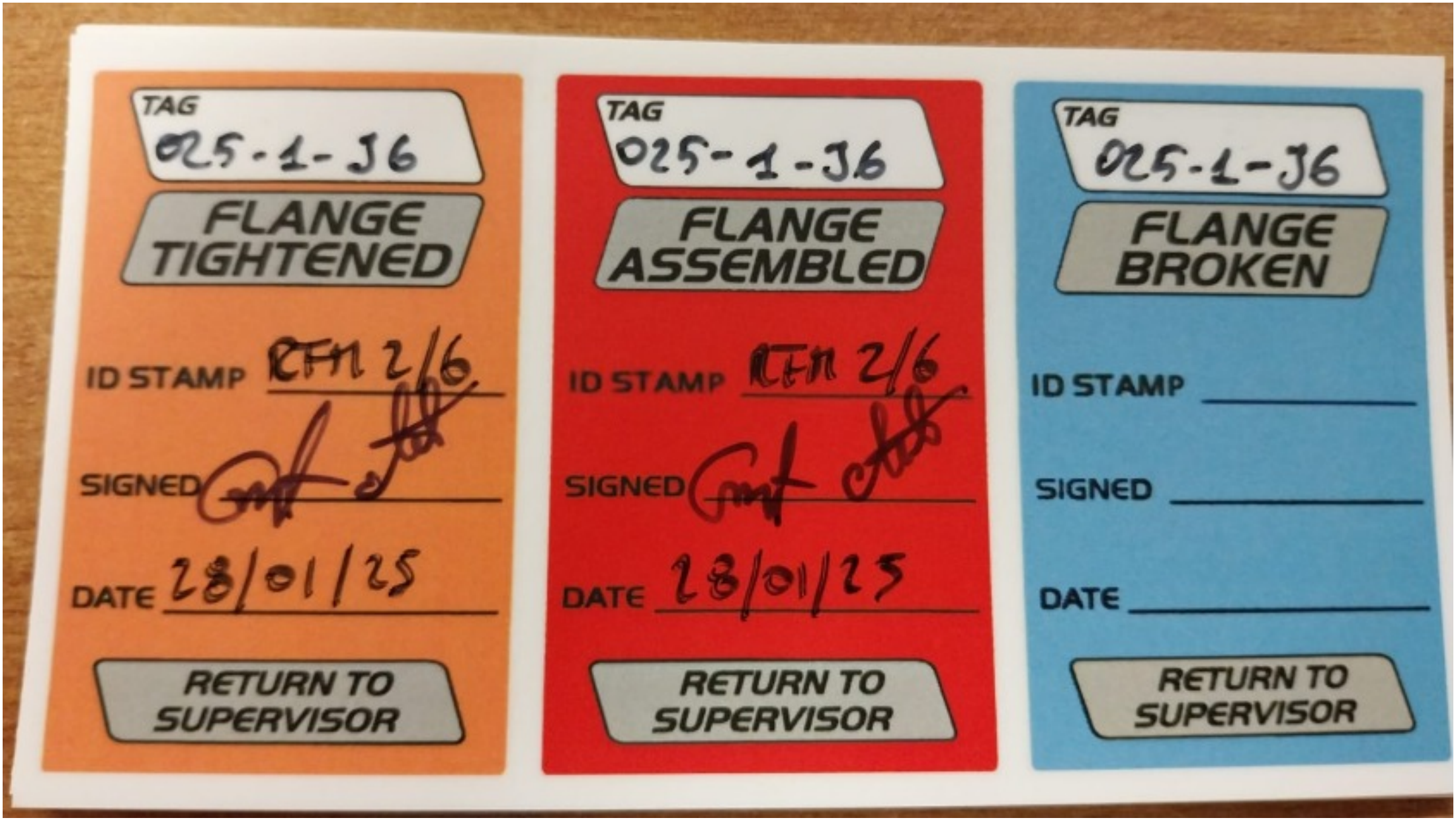
LINE DATA								
NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3				
PAINTING	SYSTEM N/A	BASE RAL N/A	FLUID PHASE	Liquid				
INSULATION	TYPE H	THICKNESS 20 [mm]	DESIGN	PRESS. 7.6 [barg]	TEMP. -29 / 100 [°C]			
HEAT TRACING	Yes		TEST	PRESS. 11.4 [barg]	TEMP. AMB	MEDIUM Water		

REFERENCE DOCUMENTS	
P&ID	123A90-DDL-PR-PID-80021
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES
1.JACKSCREWS POSITION N/S

MASTER

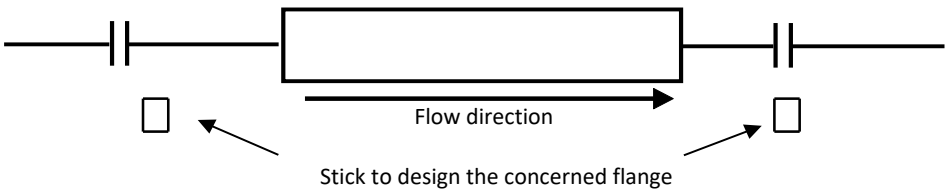
CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	N/A
DRAWN STAFF SRL	CHECKED RT	APPROVED LM	DATE 27-08-2024
FORMAT A3	DRAWING NO. 123A90-FDL-PP-DI-00025	SHEET / OF 1/1	REV. 00


TAG
025-1-J6
FLANGE TIGHTENED
ID STAMP RFM 2/6
SIGNED
DATE 28/01/25
RETURN TO SUPERVISOR
TAG
025-1-J6
FLANGE ASSEMBLED
ID STAMP RFM 2/6
SIGNED
DATE 28/01/25
RETURN TO SUPERVISOR
TAG
025-1-J6
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	025-1-J7	: Joint 025-1-J7			Dwg	123A90-FDL-PP-DI-00025-01
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10004200		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27		Bolt tensioning / torquing

Test Pack N.: TP-001

EQUIPMENT TAG



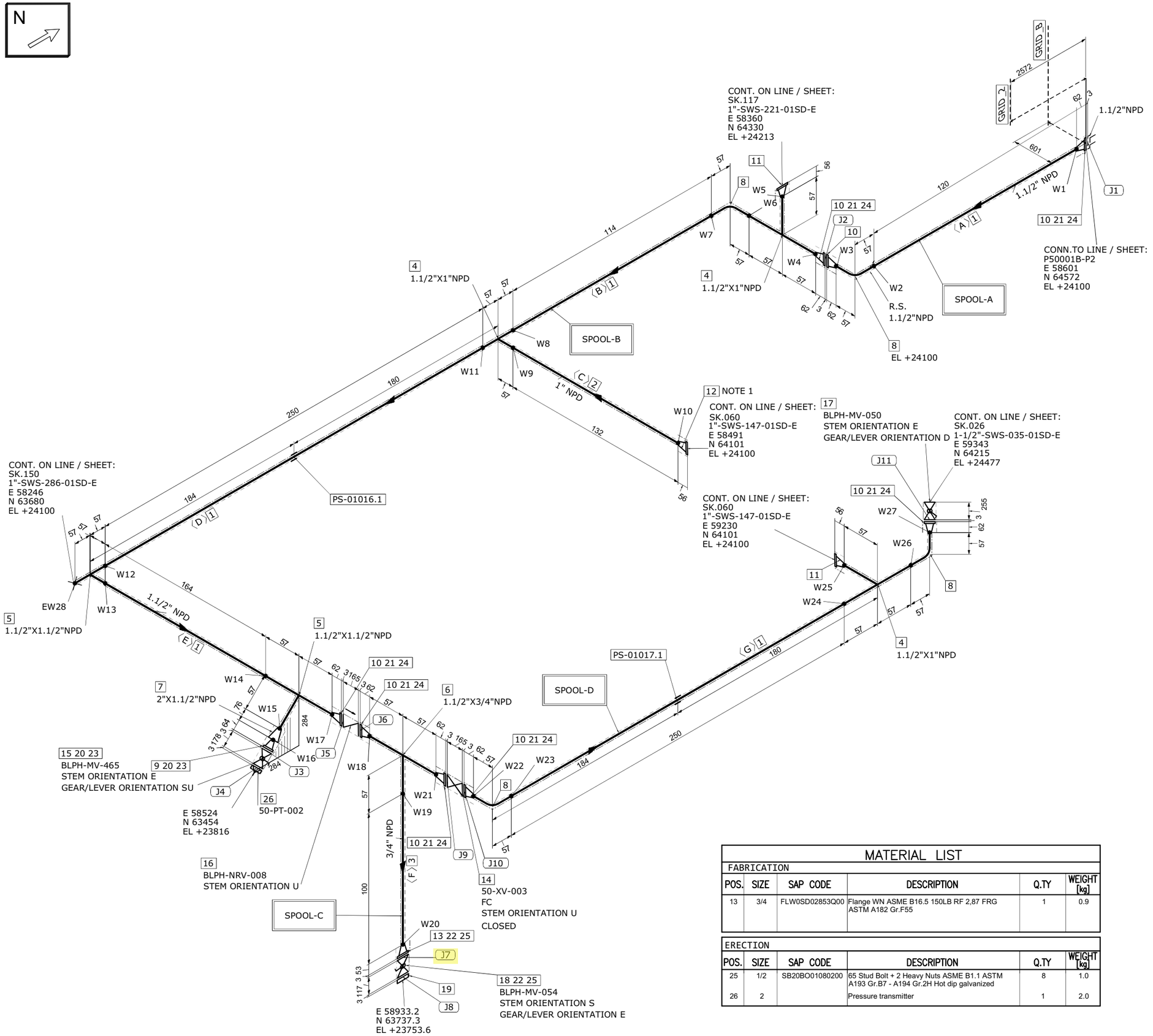
Flange Type	150LB	**Lubricant**	Yes
Flange Size	3/4"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Flat Thk. 3 mm	**Used tools**	V030390 / RD00261
Bolt tensioning/Torquing value	48.6		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	15	50	15	29	48.6
2	15	50	15	29	48.6
3	15	50	15	29	48.6
4	15	50	15	29	48.6
5			15	29	48.6
6			15	29	48.6
7			15	29	48.6
8			15	29	48.6
9			15	29	48.6
10			15	29	48.6
11			15	29	48.6
12			15	29	48.6
13			15	29	48.6
14			15	29	48.6
15			15	29	48.6
16			15	29	48.6
17			15	29	48.6
18			15	29	48.6
19			15	29	48.6
20			15	29	48.6

1	**Clear Bore Inspection:** Pipe and Valve clear of debris/contamination.	Yes
2	**Flange Face Check:** Both flanges clean and free from damage.	Yes
3	**Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique.	Yes
4	**Alignment:** Check alignment according to code.	Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Andrea Mancini	
Date	2025-01-29	2025-01-29	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-29T10:19:10.508Z	PROVERLIS Digitaly signed by Andrea Mancini 2025-01-29T10:49:28.066Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1.1/2	PIPESD04761H00	Pipe ASME B36.19M PE 3,68 SML ASTM A790 UNS S32760	0.9M	3.7
2	1	PIPESD02850100	Pipe ASME B36.19M PE 3,38 SML ASTM A790 UNS S32760	0.1M	0.3
3	3/4	PIPESD04753Q00	Pipe ASME B36.19M PE 2,87 SML ASTM A790 UNS S32760	0.1M	0.2
4	1.1/2X1	TER0SD09381H01	Tee Reducing ASME B16.9 BW 3,68x3,38 WRS ASTM A815 UNS S32760	3	2.3
5	1.1/2X1.1/2	TEE0SD02931H00	Tee ASME B16.9 BW 3,68 WRS ASTM A815 UNS S32760	2	1.7
6	1.1/2X3/4	TER0SD09371H3Q	Tee Reducing ASME B16.9 BW 3,68x2,87 WRS ASTM A815 UNS S32760	1	0.8
7	2X1.1/2	REC0SD0803021H	Reducer Concentric ASME B16.9 BW 2,77x3,68 WRS ASTM A815 UNS S32760	1	0.3
8	1.1/2	E90RSD03031H00	90 Deg Elbow Long Radius ASME B16.9 BW 3,68 WRS ASTM A815 UNS S32760	4	1.5
9	2	FLW0SD01250200	Flange WN ASME B16.5 150LB RF 2,77 FRG ASTM A182 Gr.F55	1	2.8
10	1.1/2	FLW0SD02861H00	Flange WN ASME B16.5 150LB RF 3,68 FRG ASTM A182 Gr.F55	8	14.7
11	1	FLW0SD01240100	Flange WN ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	2	2.9
12	1	FLWDSD00300100	Flange WN For Jackscrews ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	1	1.4

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
14	1.1/2		ON/OFF Ball Actuator Valve - 150#RF Flanged	1	54.0
15	2	VBC0NN24460200	Ball Valve Split Body FB API 6D FLG 150LB RF BA01F01RF	1	19.2
16	1.1/2	VDRNNN02511H00	Check Valve Piston EN ISO 15761 FLG 150LB RF CH01F02RF	1	0.0
17	1.1/2	VLBLNN01381H00	Block & Bleed Valve API 6D FLG 150LB RF BS01F01RFS	1	28.0
18	3/4	VBC0NN24433Q00	Ball Valve Split Body FB API 6D FLG 150LB RF BS01F01RF	1	7.0
19	3/4	FLB0SD01843Q00	Flange Blind ASME B16.5 150LB RF FRG ASTM A182 Gr.F55	1	0.9
20	2	GFL3GK13230200	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	2	0.2
21	1.1/2	GFL3GK15981H00	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	7	0.4
22	3/4	GFL3GK15963Q00	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	2	0.1
23	5/8	SB20BO00660300	85 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.9
24	1/2	SB20BO00930200	70 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	28	3.4

FABRICATION WEIGHT [kg]	33.5
ERECTION WEIGHT [kg]	118.1
OVERALL WEIGHT [kg]	151.6

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1.1/2	BW
W2	1.1/2	BW
W3	1.1/2	BW
W4	1.1/2	BW
W5	1	BW
W6	1.1/2	BW
W7	1.1/2	BW
W8	1.1/2	BW
W9	1	BW
W10	1	BW
W11	1.1/2	BW
W12	1.1/2	BW
W13	1.1/2	BW
W14	1.1/2	BW
W15	1.1/2	BW
W16	2	BW
W17	1.1/2	BW
W18	1.1/2	BW
W19	3/4	BW
W20	3/4	BW
W21	1.1/2	BW
W22	1.1/2	BW
W23	1.1/2	BW
W24	1.1/2	BW
W25	1	BW
W26	1.1/2	BW
W27	1.1/2	BW
EW28	1.1/2	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1.1/2	120	BEVEL	BEVEL
B	1.1/2	115	BEVEL	BEVEL
C	1	132	BEVEL	BEVEL
D	1.1/2	250	BEVEL	BEVEL
E	1.1/2	164	BEVEL	BEVEL
F	3/4	100	BEVEL	BEVEL
G	1.1/2	250	BEVEL	BEVEL

SUPPORT LIST

PS-01016.1
PS-01017.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	4.5	4.6
B	20	15.7
C	4.5	5.5
D	8.5	7.7
MONT	1.5	118.1

MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
13	3/4	FLW0SD02853Q00	Flange WN ASME B16.5 150LB RF 2,87 FRG ASTM A182 Gr.F55	1	0.9

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
25	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.0
26	2		Pressure transmitter	1	2.0

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 1-1/2"-SWS-033-01SD-E

SK.025

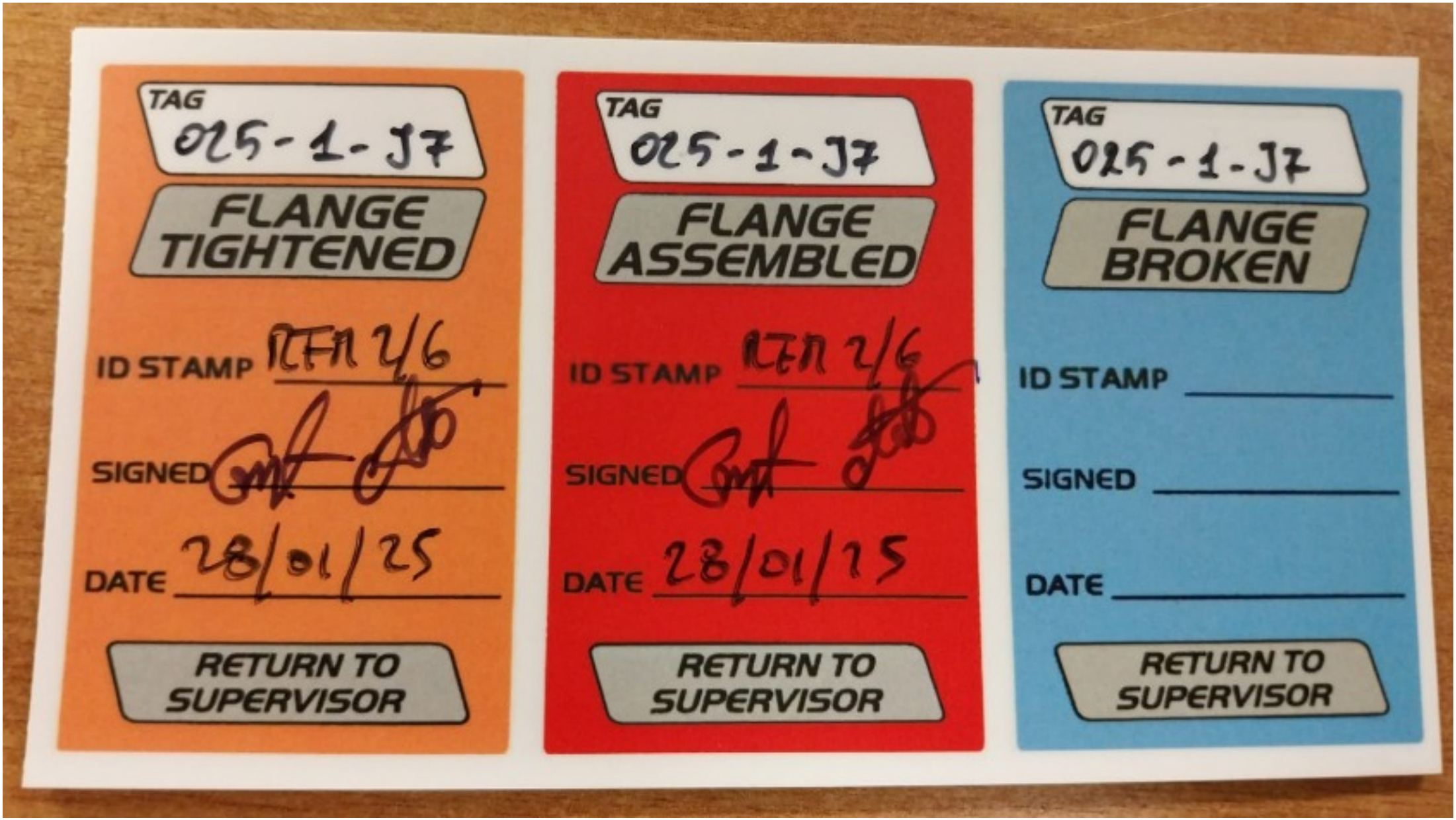
LINE DATA							
NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3			
PAINTING	SYSTEM N/A	BASE RAL N/A	FLUID PHASE	Liquid			
INSULATION	TYPE H	THICKNESS 20 [mm]	DESIGN	PRESS. 7.6 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	Yes		TEST	PRESS. 11.4 [barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS	
P&ID	123A90-DDL-PR-PID-80021
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES
1.JACKSCREWS POSITION N/S

MASTER

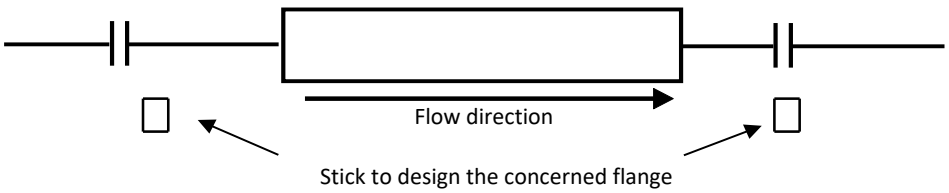
CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK
SCALE	N/A
DRAWN	STAFF SRL
CHECKED	RT
APPROVED	LM
DATE	27-08-2024
FORMAT	A3
DRAWING NO.	123A90-FDL-PP-DI-00025
SHEET / OF	1/1
REV.	00


TAG
025-1-J7
FLANGE TIGHTENED
ID STAMP
SIGNED
DATE 28/01/25
RETURN TO SUPERVISOR
TAG
025-1-J7
FLANGE ASSEMBLED
ID STAMP
SIGNED
DATE 28/01/25
RETURN TO SUPERVISOR
TAG
025-1-J7
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	025-1-J8	: Joint 025-1-J8			Dwg	123A90-FDL-PP-DI-00025-01
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10004201		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27		Bolt tensioning / torquing

Test Pack N.: TP-001

EQUIPMENT TAG



Flange Type	150LB	**Lubricant**	Yes
Flange Size	3/4"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Flat Thk. 3 mm	**Used tools**	V030390 / RD00261
Bolt tensioning/Torquing value	48.6		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	15	50	15	29	48.6
2	15	50	15	29	48.6
3	15	50	15	29	48.6
4	15	50	15	29	48.6
5			15	29	48.6
6			15	29	48.6
7			15	29	48.6
8			15	29	48.6
9			15	29	48.6
10			15	29	48.6
11			15	29	48.6
12			15	29	48.6
13			15	29	48.6
14			15	29	48.6
15			15	29	48.6
16			15	29	48.6
17			15	29	48.6
18			15	29	48.6
19			15	29	48.6
20			15	29	48.6

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

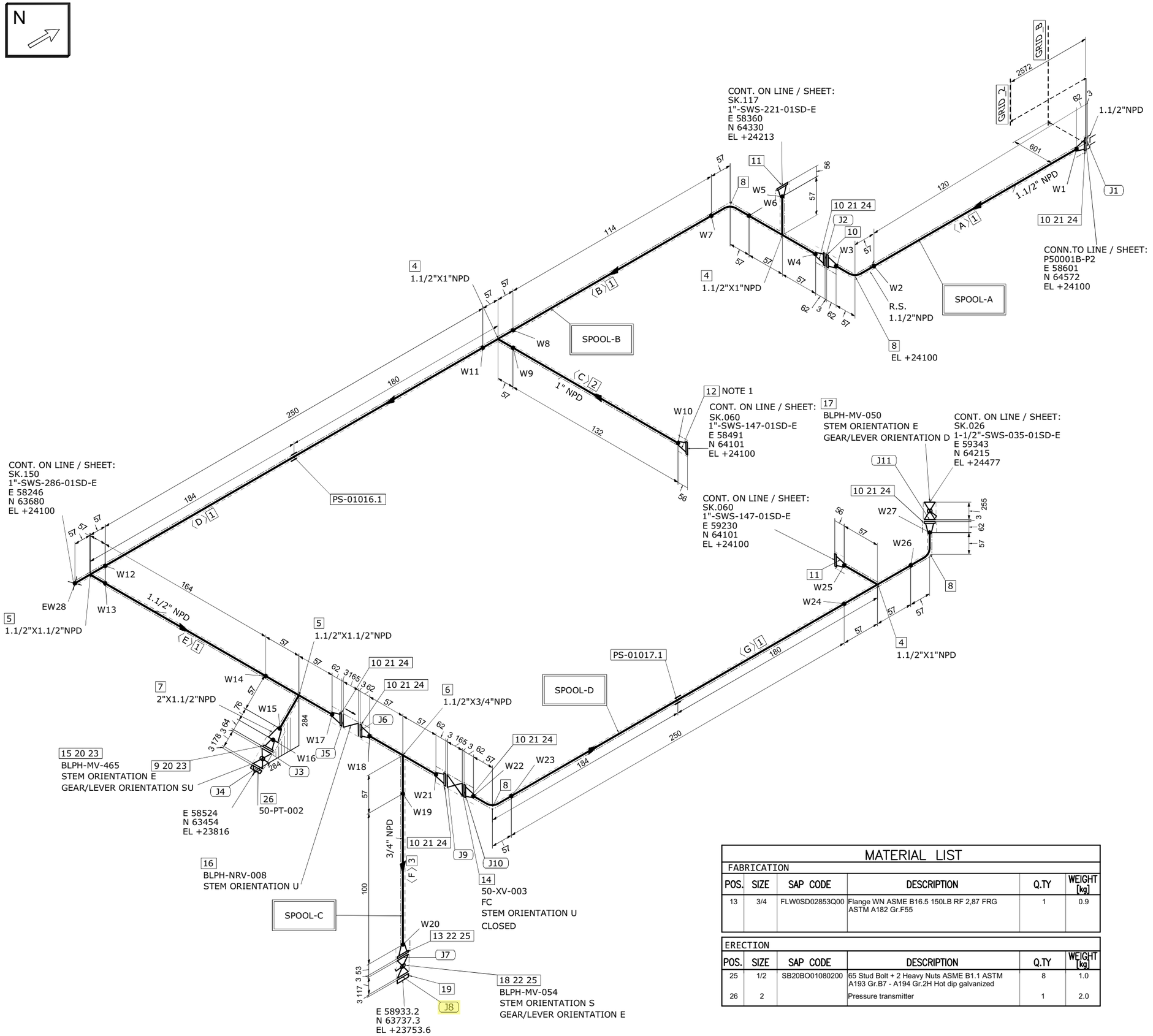
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Andrea Mancini	
Date	2025-01-29	2025-01-29	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-29T10:19:38.298Z	PROVERLIS Digitaly signed by Andrea Mancini 2025-01-29T10:49:59.078Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1.1/2	PIPESD04761H00	Pipe ASME B36.19M PE 3,68 SML ASTM A790 UNS S32760	0.9M	3.7
2	1	PIPESD02850100	Pipe ASME B36.19M PE 3,38 SML ASTM A790 UNS S32760	0.1M	0.3
3	3/4	PIPESD04753Q00	Pipe ASME B36.19M PE 2,87 SML ASTM A790 UNS S32760	0.1M	0.2
4	1.1/2X1	TER0SD09381H01	Tee Reducing ASME B16.9 BW 3,68x3,38 WRS ASTM A815 UNS S32760	3	2.3
5	1.1/2X1.1/2	TEE0SD02931H00	Tee ASME B16.9 BW 3,68 WRS ASTM A815 UNS S32760	2	1.7
6	1.1/2X3/4	TER0SD09371H3Q	Tee Reducing ASME B16.9 BW 3,68x2,87 WRS ASTM A815 UNS S32760	1	0.8
7	2X1.1/2	REC0SD0803021H	Reducer Concentric ASME B16.9 BW 2,77x3,68 WRS ASTM A815 UNS S32760	1	0.3
8	1.1/2	E90RSD03031H00	90 Deg Elbow Long Radius ASME B16.9 BW 3,68 WRS ASTM A815 UNS S32760	4	1.5
9	2	FLW0SD01250200	Flange WN ASME B16.5 150LB RF 2,77 FRG ASTM A182 Gr.F55	1	2.8
10	1.1/2	FLW0SD02861H00	Flange WN ASME B16.5 150LB RF 3,68 FRG ASTM A182 Gr.F55	8	14.7
11	1	FLW0SD01240100	Flange WN ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	2	2.9
12	1	FLWDSD00300100	Flange WN For Jackscrews ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	1	1.4

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
14	1.1/2		ON/OFF Ball Actuator Valve - 150#RF Flanged	1	54.0
15	2	VBC0NN24460200	Ball Valve Split Body FB API 6D FLG 150LB RF BA01F01RF	1	19.2
16	1.1/2	VDRNNN02511H00	Check Valve Piston EN ISO 15761 FLG 150LB RF CH01F02RF	1	0.0
17	1.1/2	VLBLNN01381H00	Block & Bleed Valve API 6D FLG 150LB RF BS01F01RFS	1	28.0
18	3/4	VBC0NN24433Q00	Ball Valve Split Body FB API 6D FLG 150LB RF BS01F01RF	1	7.0
19	3/4	FLB0SD01843Q00	Flange Blind ASME B16.5 150LB RF FRG ASTM A182 Gr.F55	1	0.9
20	2	GFL3GK13230200	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	2	0.2
21	1.1/2	GFL3GK15981H00	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	7	0.4
22	3/4	GFL3GK15963Q00	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	2	0.1
23	5/8	SB20BO00660300	85 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.9
24	1/2	SB20BO00930200	70 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	28	3.4

FABRICATION WEIGHT [kg]	33.5
ERECTION WEIGHT [kg]	118.1
OVERALL WEIGHT [kg]	151.6

MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
13	3/4	FLW0SD02853Q00	Flange WN ASME B16.5 150LB RF 2,87 FRG ASTM A182 Gr.F55	1	0.9

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
25	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.0
26	2		Pressure transmitter	1	2.0

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1.1/2	BW
W2	1.1/2	BW
W3	1.1/2	BW
W4	1.1/2	BW
W5	1	BW
W6	1.1/2	BW
W7	1.1/2	BW
W8	1.1/2	BW
W9	1	BW
W10	1	BW
W11	1.1/2	BW
W12	1.1/2	BW
W13	1.1/2	BW
W14	1.1/2	BW
W15	1.1/2	BW
W16	2	BW
W17	1.1/2	BW
W18	1.1/2	BW
W19	3/4	BW
W20	3/4	BW
W21	1.1/2	BW
W22	1.1/2	BW
W23	1.1/2	BW
W24	1.1/2	BW
W25	1	BW
W26	1.1/2	BW
W27	1.1/2	BW
EW28	1.1/2	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1.1/2	120	BEVEL	BEVEL
B	1.1/2	115	BEVEL	BEVEL
C	1	132	BEVEL	BEVEL
D	1.1/2	250	BEVEL	BEVEL
E	1.1/2	164	BEVEL	BEVEL
F	3/4	100	BEVEL	BEVEL
G	1.1/2	250	BEVEL	BEVEL

SUPPORT LIST

PS-01016.1
PS-01017.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	4.5	4.6
B	20	15.7
C	4.5	5.5
D	8.5	7.7
MONT	1.5	118.1

LINE DATA

NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3			
PAINTING	SYSTEM N/A	BASE RAL N/A	FLUID PHASE	Liquid			
INSULATION	TYPE H	THICKNESS 20 [mm]	DESIGN	PRESS. 7.6 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	Yes		TEST	PRESS. 11.4 [barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80021
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

1.JACKSCREWS POSITION N/S

MASTER

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

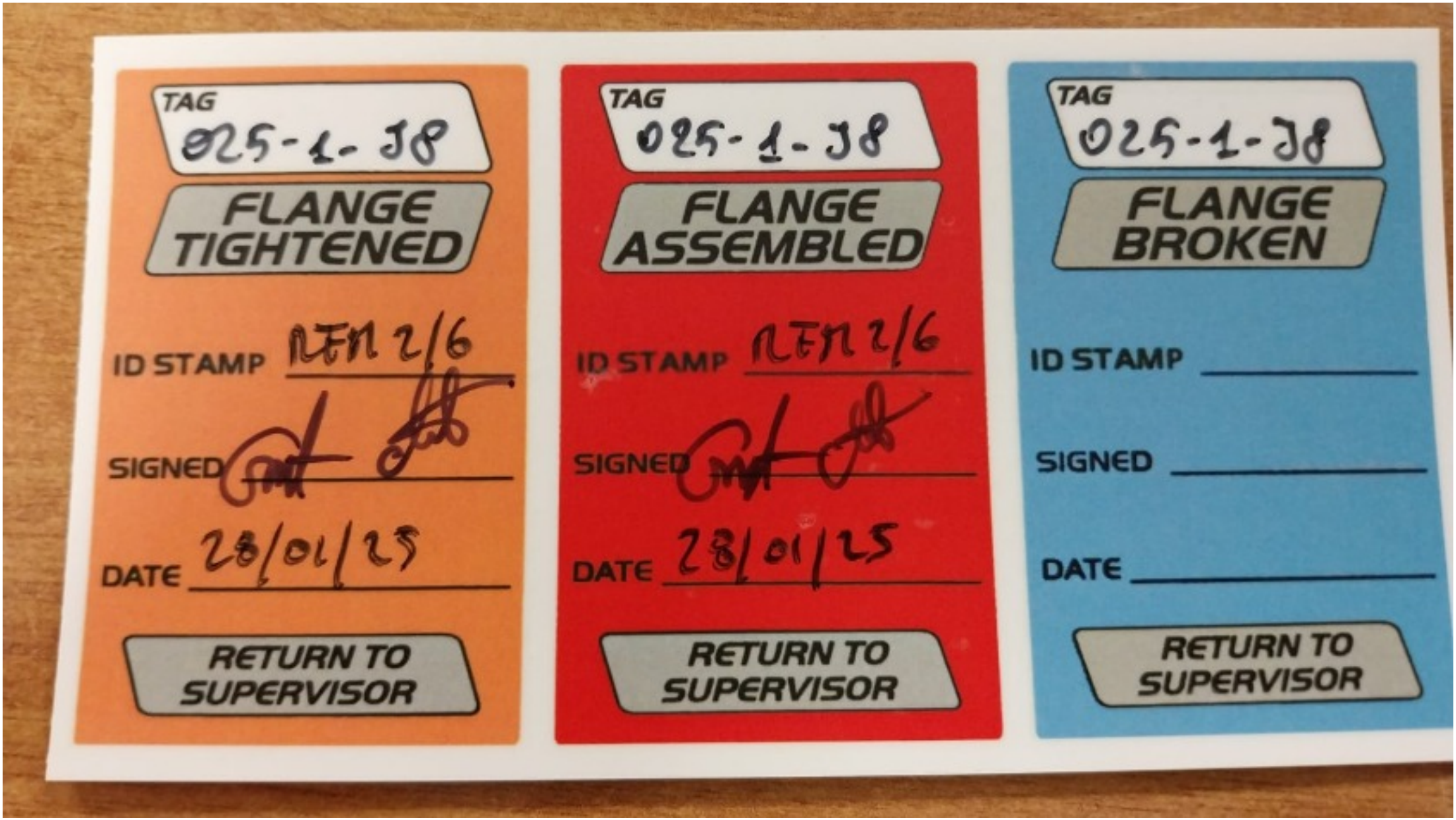
CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 1-1/2"-SWS-033-01SD-E

SK.025

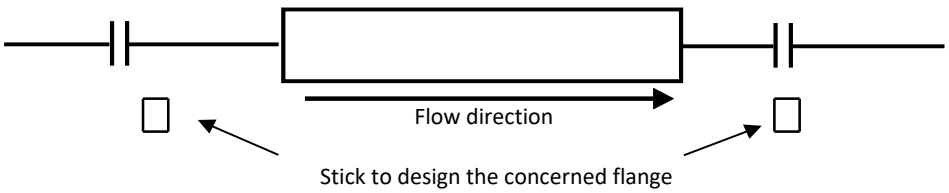
CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK			SCALE	N/A
DRAWN	STAFF SRL	CHECKED	RT	APPROVED	LM	DATE	27-08-2024
FORMAT A3	DRAWING NO. 123A90-FDL-PP-DI-00025			SHEET / OF	1/1	REV.	00


TAG
025-1-J8
FLANGE TIGHTENED
ID STAMP RFN 2/6
SIGNED
DATE 28/01/25
RETURN TO SUPERVISOR
TAG
025-1-J8
FLANGE ASSEMBLED
ID STAMP RFN 2/6
SIGNED
DATE 28/01/25
RETURN TO SUPERVISOR
TAG
025-1-J8
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	025-1-J9	: Joint 025-1-J9		Dwg	123A90-FDL-PP-DI-00025-01	
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)		Module	LD	
TASK	code	C10004202	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity PIP	Discipline Piping	Form	TMX27	Bolt tensioning / torquing

Test Pack N.: TP-001

EQUIPMENT TAG



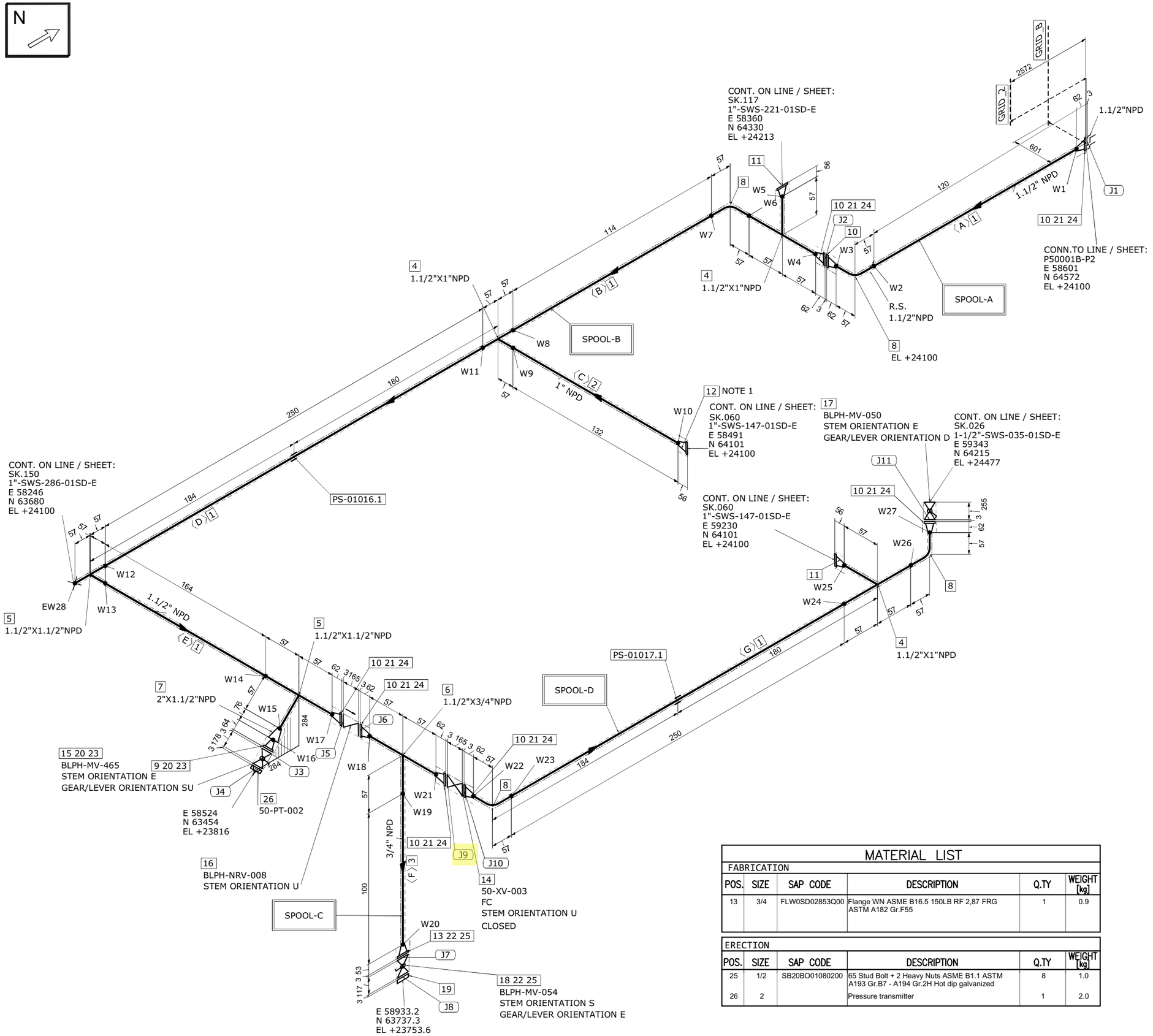
Flange Type	150LB	**Lubricant**	Yes
Flange Size	1.1/2"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Flat Thk. 3 mm	**Used tools**	V030390 / RD00261
Bolt tensioning/Torquing value	48.6		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	15	50	15	29	48.6
2	15	50	15	29	48.6
3	15	50	15	29	48.6
4	15	50	15	29	48.6
5			15	29	48.6
6			15	29	48.6
7			15	29	48.6
8			15	29	48.6
9			15	29	48.6
10			15	29	48.6
11			15	29	48.6
12			15	29	48.6
13			15	29	48.6
14			15	29	48.6
15			15	29	48.6
16			15	29	48.6
17			15	29	48.6
18			15	29	48.6
19			15	29	48.6
20			15	29	48.6

1	**Clear Bore Inspection:** Pipe and Valve clear of debris/contamination.	Yes
2	**Flange Face Check:** Both flanges clean and free from damage.	Yes
3	**Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique.	Yes
4	**Alignment:** Check alignment according to code.	Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Andrea Mancini	
Date	2025-01-29	2025-01-29	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-29T10:20:15.989Z	PROVERLIS Digitaly signed by Andrea Mancini 2025-01-29T10:50:23.629Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1.1/2	PIPESD04761H00	Pipe ASME B36.19M PE 3,68 SML ASTM A790 UNS S32760	0.9M	3.7
2	1	PIPESD02850100	Pipe ASME B36.19M PE 3,38 SML ASTM A790 UNS S32760	0.1M	0.3
3	3/4	PIPESD04753Q00	Pipe ASME B36.19M PE 2,87 SML ASTM A790 UNS S32760	0.1M	0.2
4	1.1/2X1	TER0SD09381H01	Tee Reducing ASME B16.9 BW 3,68x3,38 WRS ASTM A815 UNS S32760	3	2.3
5	1.1/2X1.1/2	TEE0SD02931H00	Tee ASME B16.9 BW 3,68 WRS ASTM A815 UNS S32760	2	1.7
6	1.1/2X3/4	TER0SD09371H3Q	Tee Reducing ASME B16.9 BW 3,68x2,87 WRS ASTM A815 UNS S32760	1	0.8
7	2X1.1/2	REC0SD0803021H	Reducer Concentric ASME B16.9 BW 2,77x3,68 WRS ASTM A815 UNS S32760	1	0.3
8	1.1/2	E90RSD03031H00	90 Deg Elbow Long Radius ASME B16.9 BW 3,68 WRS ASTM A815 UNS S32760	4	1.5
9	2	FLW0SD01250200	Flange WN ASME B16.5 150LB RF 2,77 FRG ASTM A182 Gr.F55	1	2.8
10	1.1/2	FLW0SD02861H00	Flange WN ASME B16.5 150LB RF 3,68 FRG ASTM A182 Gr.F55	8	14.7
11	1	FLW0SD01240100	Flange WN ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	2	2.9
12	1	FLWDSD00300100	Flange WN For Jackscrews ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	1	1.4

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
14	1.1/2		ON/OFF Ball Actuator Valve - 150#RF Flanged	1	54.0
15	2	VBC0NN24460200	Ball Valve Split Body FB API 6D FLG 150LB RF BA01F01RF	1	19.2
16	1.1/2	VDRNNN02511H00	Check Valve Piston EN ISO 15761 FLG 150LB RF CH01F02RF	1	0.0
17	1.1/2	VLBLNN01381H00	Block & Bleed Valve API 6D FLG 150LB RF BS01F01RFS	1	28.0
18	3/4	VBC0NN24433Q00	Ball Valve Split Body FB API 6D FLG 150LB RF BS01F01RF	1	7.0
19	3/4	FLB0SD01843Q00	Flange Blind ASME B16.5 150LB RF FRG ASTM A182 Gr.F55	1	0.9
20	2	GFL3GK13230200	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	2	0.2
21	1.1/2	GFL3GK15981H00	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	7	0.4
22	3/4	GFL3GK15963Q00	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	2	0.1
23	5/8	SB20BO00660300	85 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.9
24	1/2	SB20BO00930200	70 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	28	3.4

FABRICATION WEIGHT [kg]	33.5
ERECTION WEIGHT [kg]	118.1
OVERALL WEIGHT [kg]	151.6

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1.1/2	BW
W2	1.1/2	BW
W3	1.1/2	BW
W4	1.1/2	BW
W5	1	BW
W6	1.1/2	BW
W7	1.1/2	BW
W8	1.1/2	BW
W9	1	BW
W10	1	BW
W11	1.1/2	BW
W12	1.1/2	BW
W13	1.1/2	BW
W14	1.1/2	BW
W15	1.1/2	BW
W16	2	BW
W17	1.1/2	BW
W18	1.1/2	BW
W19	3/4	BW
W20	3/4	BW
W21	1.1/2	BW
W22	1.1/2	BW
W23	1.1/2	BW
W24	1.1/2	BW
W25	1	BW
W26	1.1/2	BW
W27	1.1/2	BW
EW28	1.1/2	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1.1/2	120	BEVEL	BEVEL
B	1.1/2	115	BEVEL	BEVEL
C	1	132	BEVEL	BEVEL
D	1.1/2	250	BEVEL	BEVEL
E	1.1/2	164	BEVEL	BEVEL
F	3/4	100	BEVEL	BEVEL
G	1.1/2	250	BEVEL	BEVEL

SUPPORT LIST

PS-01016.1
PS-01017.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	4.5	4.6
B	20	15.7
C	4.5	5.5
D	8.5	7.7
MONT	1.5	118.1

MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
13	3/4	FLW0SD02853Q00	Flange WN ASME B16.5 150LB RF 2,87 FRG ASTM A182 Gr.F55	1	0.9

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
25	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.0
26	2		Pressure transmitter	1	2.0

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 1-1/2"-SWS-033-01SD-E

SK.025

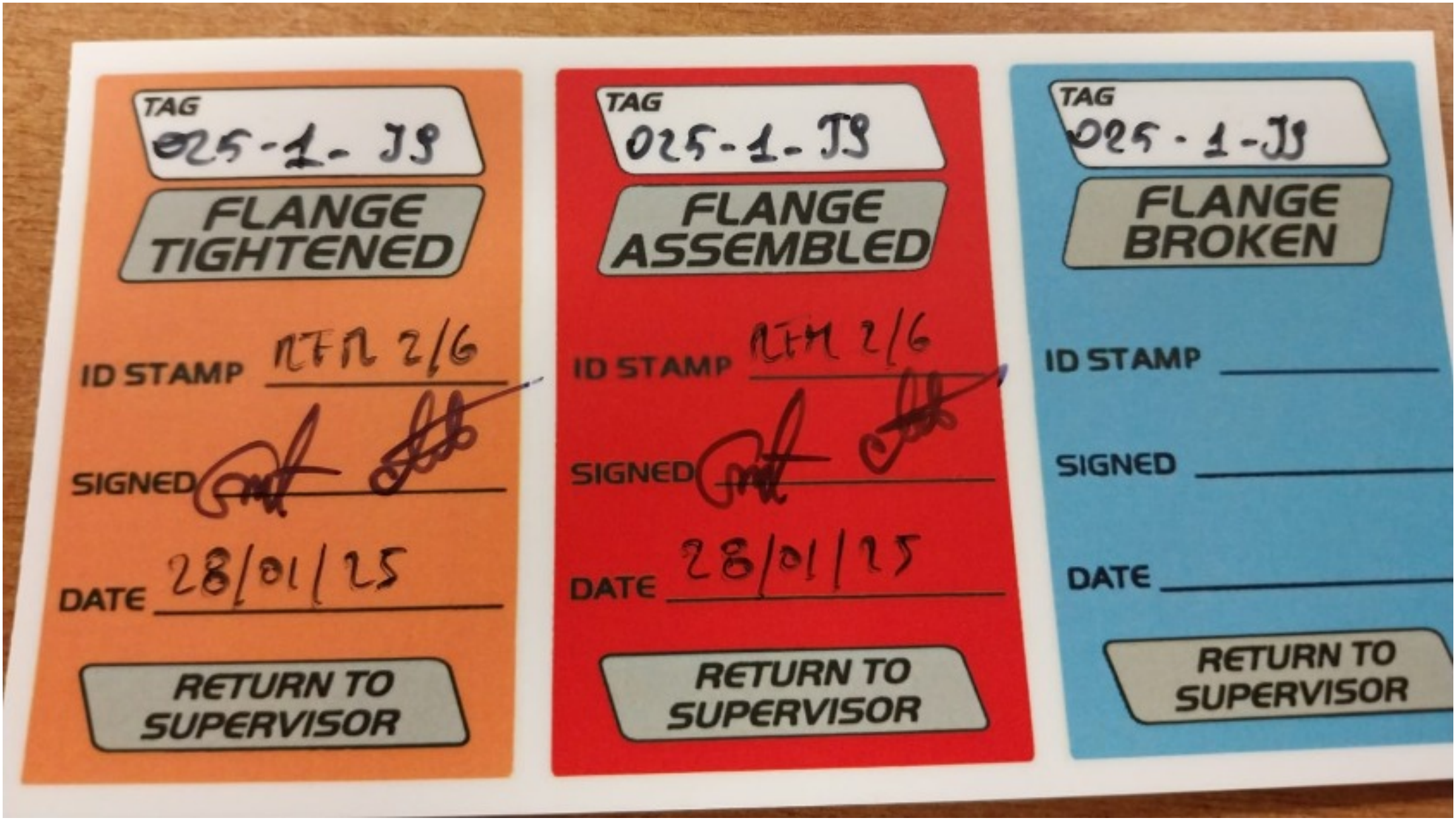
LINE DATA							
NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3			
PAINTING	SYSTEM N/A	BASE RAL N/A	FLUID PHASE	Liquid			
INSULATION	TYPE H	THICKNESS 20 [mm]	DESIGN	PRESS. 7.6 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	Yes		TEST	PRESS. 11.4 [barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS	
P&ID	123A90-DDL-PR-PID-80021
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES
1.JACKSCREWS POSITION N/S

MASTER

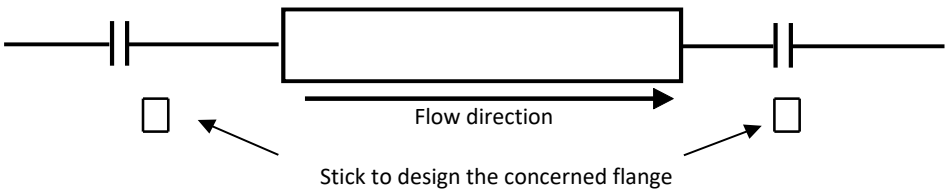
CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK
SCALE	N/A
DRAWN	STAFF SRL
CHECKED	RT
APPROVED	LM
DATE	27-08-2024
FORMAT	A3
DRAWING NO.	123A90-FDL-PP-DI-00025
SHEET / OF	1/1
REV.	00


TAG
025-1-JJ
FLANGE TIGHTENED
ID STAMP RFM 2/6
SIGNED
DATE 28/01/25
RETURN TO SUPERVISOR
TAG
025-1-JJ
FLANGE ASSEMBLED
ID STAMP RFM 2/6
SIGNED
DATE 28/01/25
RETURN TO SUPERVISOR
TAG
025-1-JJ
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	026-1-J1	: Joint 026-1-J1			Dwg	123A90-FDL-PP-DI-00026-01
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10004203	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27		Bolt tensioning / torquing

Test Pack N.: TP-028

EQUIPMENT TAG



Flange Type	150LB	**Lubricant**	Yes
Flange Size	1.1/2"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Flat Thk. 3 mm	**Used tools**	V030390 / RD00261
Bolt tensioning/Torquing value	48.6		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	15	50	15	29	48.6
2	15	50	15	29	48.6
3	15	50	15	29	48.6
4	15	50	15	29	48.6
5			15	29	48.6
6			15	29	48.6
7			15	29	48.6
8			15	29	48.6
9			15	29	48.6
10			15	29	48.6
11			15	29	48.6
12			15	29	48.6
13			15	29	48.6
14			15	29	48.6
15			15	29	48.6
16			15	29	48.6
17			15	29	48.6
18			15	29	48.6
19			15	29	48.6
20			15	29	48.6

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

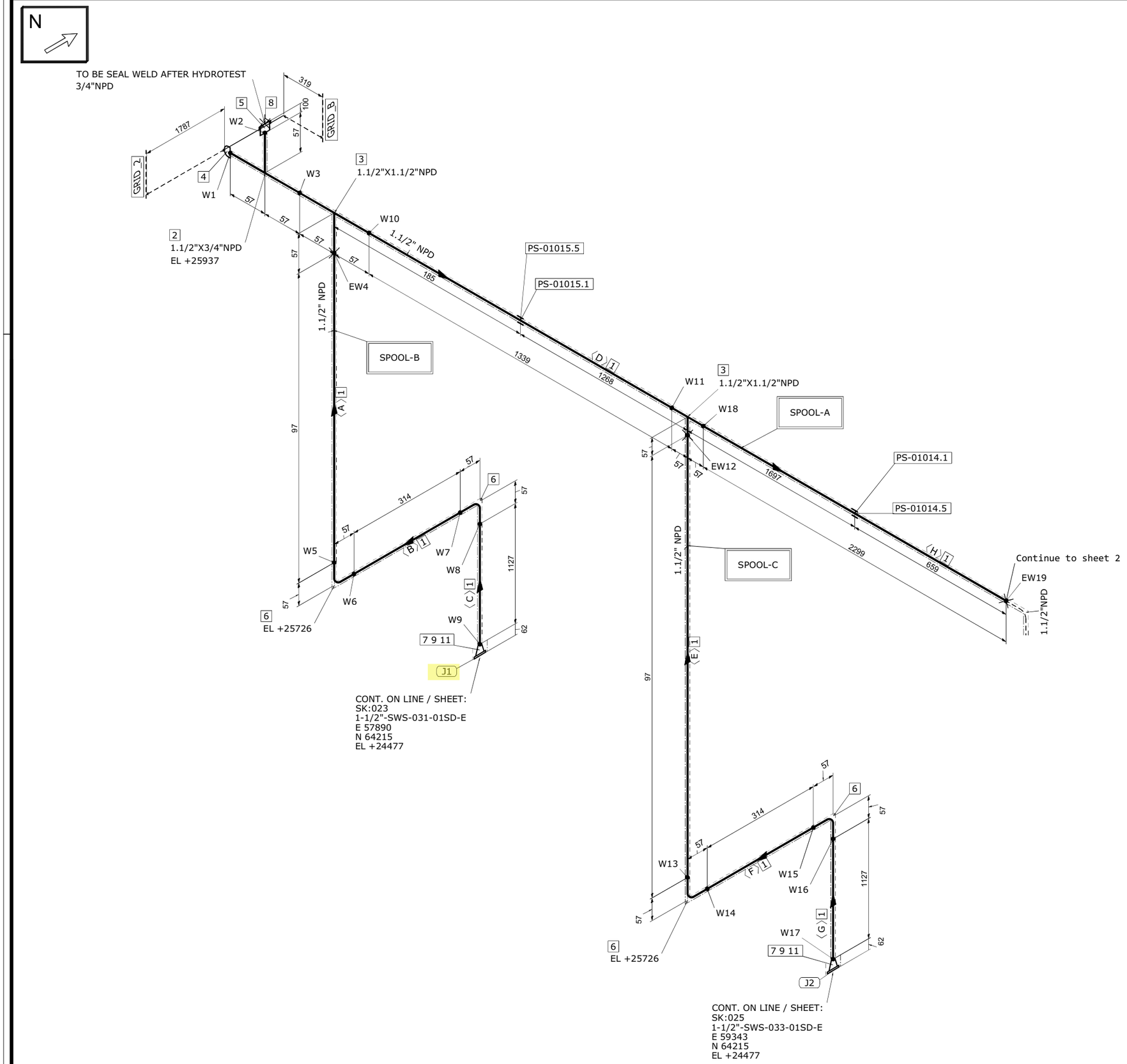
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Andrea Mancini	
Date	2025-01-29	2025-01-29	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-29T10:20:34.528Z	PROVERLIS Digitaly signed by Andrea Mancini 2025-01-29T10:50:56.844Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1.1/2	PIPESD04761H00	Pipe ASME B36.19M PE 3,68 SML ASTM A790 UNS S32760	6.7M	27.7
2	1.1/2X3/4	TER0SD09371H3Q	Tee Reducing ASME B16.9 BW 3,68x2,87 WRS ASTM A815 UNS S32760	1	0.8
3	1.1/2X1.1/2	TEE0SD02931H00	Tee ASME B16.9 BW 3,68 WRS ASTM A815 UNS S32760	2	1.7
4	1.1/2	CAP0SD02721H00	Cap ASME B16.9 BW 3,68 WRS ASTM A815 UNS S32760	1	0.2
5	3/4	N100SD00403Q00	Nipple L=100mm ASME B36.19M THRD-M NPT x PE 2,87 SML ASTM A790 UNS S32760	1	0.2
6	1.1/2	E90RSD03031H00	90 Deg Elbow Long Radius ASME B16.9 BW 3,68 WRS ASTM A815 UNS S32760	4	1.5
7	1.1/2	FLW0SD02861H00	Flange WN ASME B16.5 150LB RF 3,68 FRG ASTM A182 Gr.F55	2	3.7

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
8	3/4	CAPFSD00073Q00	Cap Forged ASME B16.11 THRD-F NPT 3000# FRG ASTM A182 Gr.F55	1	0.2
9	1.1/2	GFL3GK15981H00	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	2	0.1
11	1/2	SB20BO00930200	70 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.0

FABRICATION WEIGHT [kg]	35.8
ERECTION WEIGHT [kg]	1.3
OVERALL WEIGHT [kg]	37.1

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1.1/2	BW
W2	3/4	BW
W3	1.1/2	BW
EW4	1.1/2	BW
W5	1.1/2	BW
W6	1.1/2	BW
W7	1.1/2	BW
W8	1.1/2	BW
W9	1.1/2	BW
W10	1.1/2	BW
W11	1.1/2	BW
EW12	1.1/2	BW
W13	1.1/2	BW
W14	1.1/2	BW
W15	1.1/2	BW
W16	1.1/2	BW
W17	1.1/2	BW
W18	1.1/2	BW
EW19	1.1/2	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1.1/2	97	BEVEL	BEVEL
B	1.1/2	314	BEVEL	BEVEL
C	1.1/2	1127	BEVEL	BEVEL
D	1.1/2	1339	BEVEL	BEVEL
E	1.1/2	97	BEVEL	BEVEL
F	1.1/2	314	BEVEL	BEVEL
G	1.1/2	1127	BEVEL	BEVEL
H	1.1/2	2299	BEVEL	BEVEL

SUPPORT LIST

/PS-01015.5
/PS-01015.1
/PS-01014.1
/PS-01014.5

SPOOL	WELD [inches]	WEIGHT [kg]
A	8.25	17.8
B	7.5	9.0
C	7.5	9.0
MONT	4.5	1.3

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 1-1/2"-SWS-035-01SD-E

SK.026

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK
SCALE: N/A
DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 27-08-2024
FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00026 | SHEET / OF: 1/2 | REV.: 00

LINE DATA

NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3				
PAINTING	SYSTEM N/A	BASE RAL N/A	FLUID PHASE	Liquid				
INSULATION	TYPE H	THICKNESS 20 [mm]	DESIGN	PRESS. 7.6 [barg]	TEMP. -29 / 100 [°C]			
HEAT TRACING	Yes		TEST	PRESS. 9 [barg]	TEMP. AMB	MEDIUM Water		

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80021
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

MASTER

TAG 026-1-J1

FLANGE TIGHTENED

ID STAMP TFH 2/6

SIGNED

DATE 27/01/25

RETURN TO SUPERVISOR

TAG 026-1-J1

FLANGE ASSEMBLED

ID STAMP TFH 2/6

SIGNED

DATE 27/01/25

RETURN TO SUPERVISOR

TAG 026-1-J1

FLANGE BROKEN

ID STAMP

SIGNED

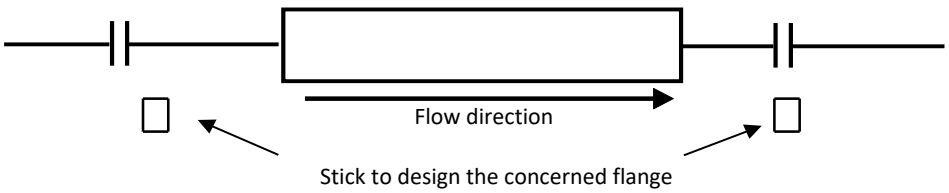
DATE

RETURN TO SUPERVISOR

ITEM	Tag	026-1-J2	: Joint 026-1-J2			Dwg	123A90-FDL-PP-DI-00026-01
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10004204		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27		Bolt tensioning / torquing

Test Pack N.: TP-028

EQUIPMENT TAG



Flange Type	150LB	**Lubricant**	Yes
Flange Size	1.1/2"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Flat Thk. 3 mm	**Used tools**	V030390 / RD00261
Bolt tensioning/Torquing value	48.6		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	15	50	15	29	48.6
2	15	50	15	29	48.6
3	15	50	15	29	48.6
4	15	50	15	29	48.6
5			15	29	48.6
6			15	29	48.6
7			15	29	48.6
8			15	29	48.6
9			15	29	48.6
10			15	29	48.6
11			15	29	48.6
12			15	29	48.6
13			15	29	48.6
14			15	29	48.6
15			15	29	48.6
16			15	29	48.6
17			15	29	48.6
18			15	29	48.6
19			15	29	48.6
20			15	29	48.6

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

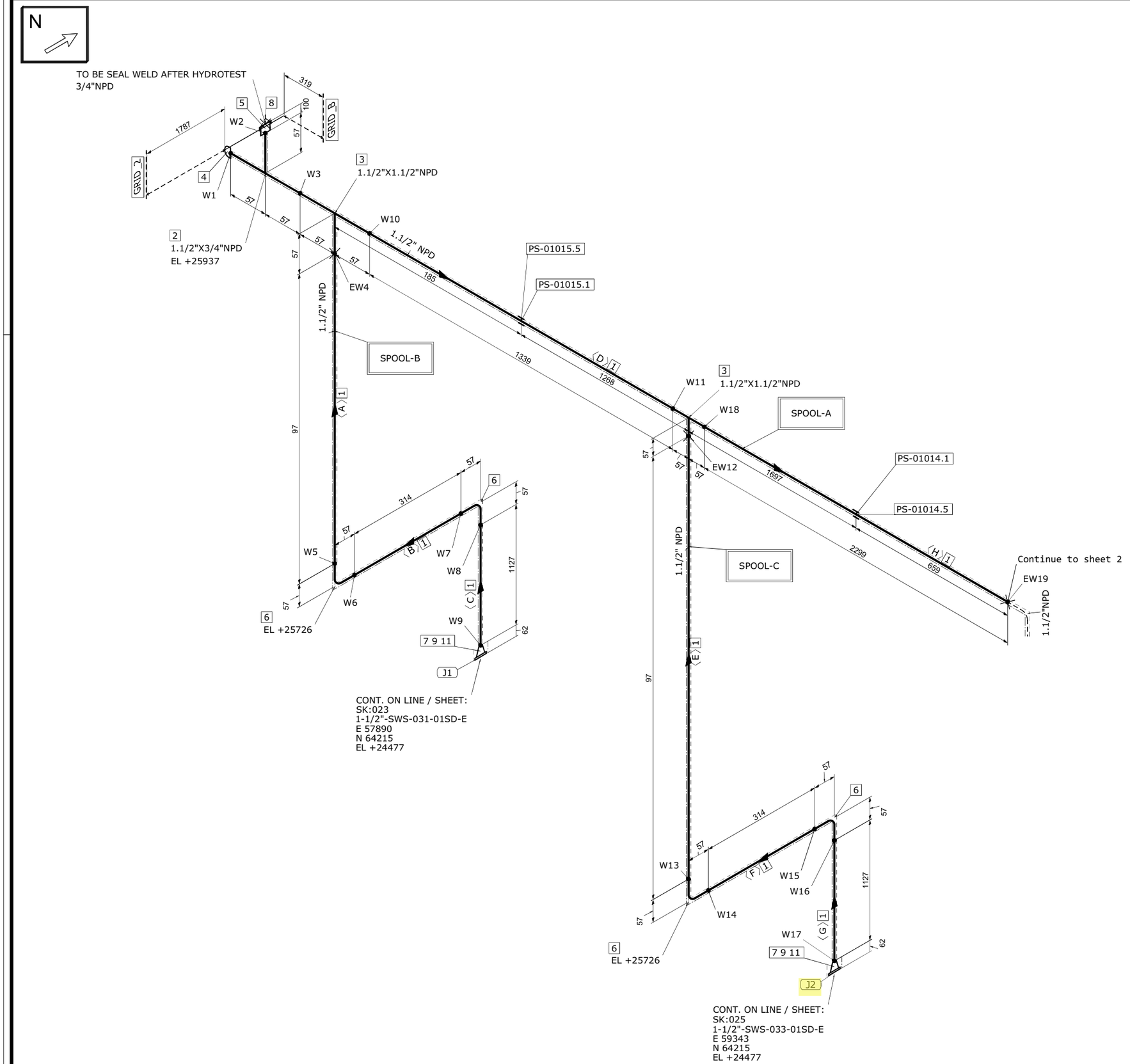
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Andrea Mancini	
Date	2025-01-29	2025-01-29	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-29T10:20:52.416Z	PROVERLIS Digitaly signed by Andrea Mancini 2025-01-29T10:51:25.073Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1.1/2	PIPESD04761H00	Pipe ASME B36.19M PE 3,68 SML ASTM A790 UNS S32760	6.7M	27.7
2	1.1/2X3/4	TER0SD09371H3Q	Tee Reducing ASME B16.9 BW 3,68x2,87 WRS ASTM A815 UNS S32760	1	0.8
3	1.1/2X1.1/2	TEE0SD02931H00	Tee ASME B16.9 BW 3,68 WRS ASTM A815 UNS S32760	2	1.7
4	1.1/2	CAP0SD02721H00	Cap ASME B16.9 BW 3,68 WRS ASTM A815 UNS S32760	1	0.2
5	3/4	N100SD00403Q00	Nipple L=100mm ASME B36.19M THRD-M NPT x PE 2,87 SML ASTM A790 UNS S32760	1	0.2
6	1.1/2	E90RSD03031H00	90 Deg Elbow Long Radius ASME B16.9 BW 3,68 WRS ASTM A815 UNS S32760	4	1.5
7	1.1/2	FLW0SD02861H00	Flange WN ASME B16.5 150LB RF 3,68 FRG ASTM A182 Gr.F55	2	3.7

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
8	3/4	CAPFSD00073Q00	Cap Forged ASME B16.11 THRD-F NPT 3000# FRG ASTM A182 Gr.F55	1	0.2
9	1.1/2	GFL3GK15981H00	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	2	0.1
11	1/2	SB20BO00930200	70 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.0

FABRICATION WEIGHT [kg]	35.8
ERECTION WEIGHT [kg]	1.3
OVERALL WEIGHT [kg]	37.1

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1.1/2	BW
W2	3/4	BW
W3	1.1/2	BW
EW4	1.1/2	BW
W5	1.1/2	BW
W6	1.1/2	BW
W7	1.1/2	BW
W8	1.1/2	BW
W9	1.1/2	BW
W10	1.1/2	BW
W11	1.1/2	BW
EW12	1.1/2	BW
W13	1.1/2	BW
W14	1.1/2	BW
W15	1.1/2	BW
W16	1.1/2	BW
W17	1.1/2	BW
W18	1.1/2	BW
EW19	1.1/2	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1.1/2	97	BEVEL	BEVEL
B	1.1/2	314	BEVEL	BEVEL
C	1.1/2	1127	BEVEL	BEVEL
D	1.1/2	1339	BEVEL	BEVEL
E	1.1/2	97	BEVEL	BEVEL
F	1.1/2	314	BEVEL	BEVEL
G	1.1/2	1127	BEVEL	BEVEL
H	1.1/2	2299	BEVEL	BEVEL

SUPPORT LIST

/PS-01015.5
/PS-01015.1
/PS-01014.1
/PS-01014.5

SPOOL	WELD [inches]	WEIGHT [kg]
A	8.25	17.8
B	7.5	9.0
C	7.5	9.0
MONT	4.5	1.3

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 1-1/2"-SWS-035-01SD-E

SK.026

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK
SCALE: N/A
DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 27-08-2024
FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00026 | SHEET / OF: 1/2 | REV.: 00

LINE DATA

NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3				
PAINTING	SYSTEM N/A	BASE RAL N/A	FLUID PHASE	Liquid				
INSULATION	TYPE H	THICKNESS 20 [mm]	DESIGN	PRESS. 7.6 [barg]	TEMP. -29 / 100 [°C]			
HEAT TRACING	Yes		TEST	PRESS. 9 [barg]	TEMP. AMB	MEDIUM Water		

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80021
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

MASTER


TAG
026-1-J2
FLANGE TIGHTENED
ID STAMP RFM 2/6
SIGNED
DATE 28/01/25
RETURN TO SUPERVISOR
TAG
026-1-J2
FLANGE ASSEMBLED
ID STAMP RFM 2/6
SIGNED
DATE 28/01/25
RETURN TO SUPERVISOR
TAG
026-1-J2
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

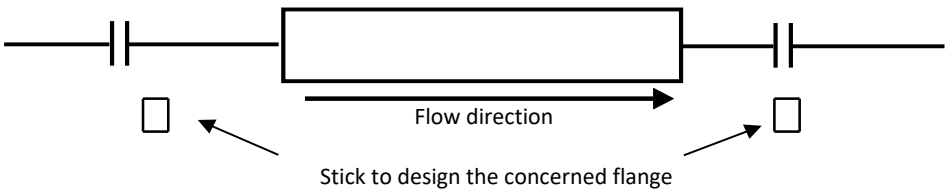
ROSETTI MARINO

CROSSWIND

ITEM	Tag	026-2-J3	: Joint 026-2-J3			Dwg	123A90-FDL-PP-DI-00026-02
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10004205		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27 — Bolt tensioning / torquing

Test Pack N.: TP-028

EQUIPMENT TAG



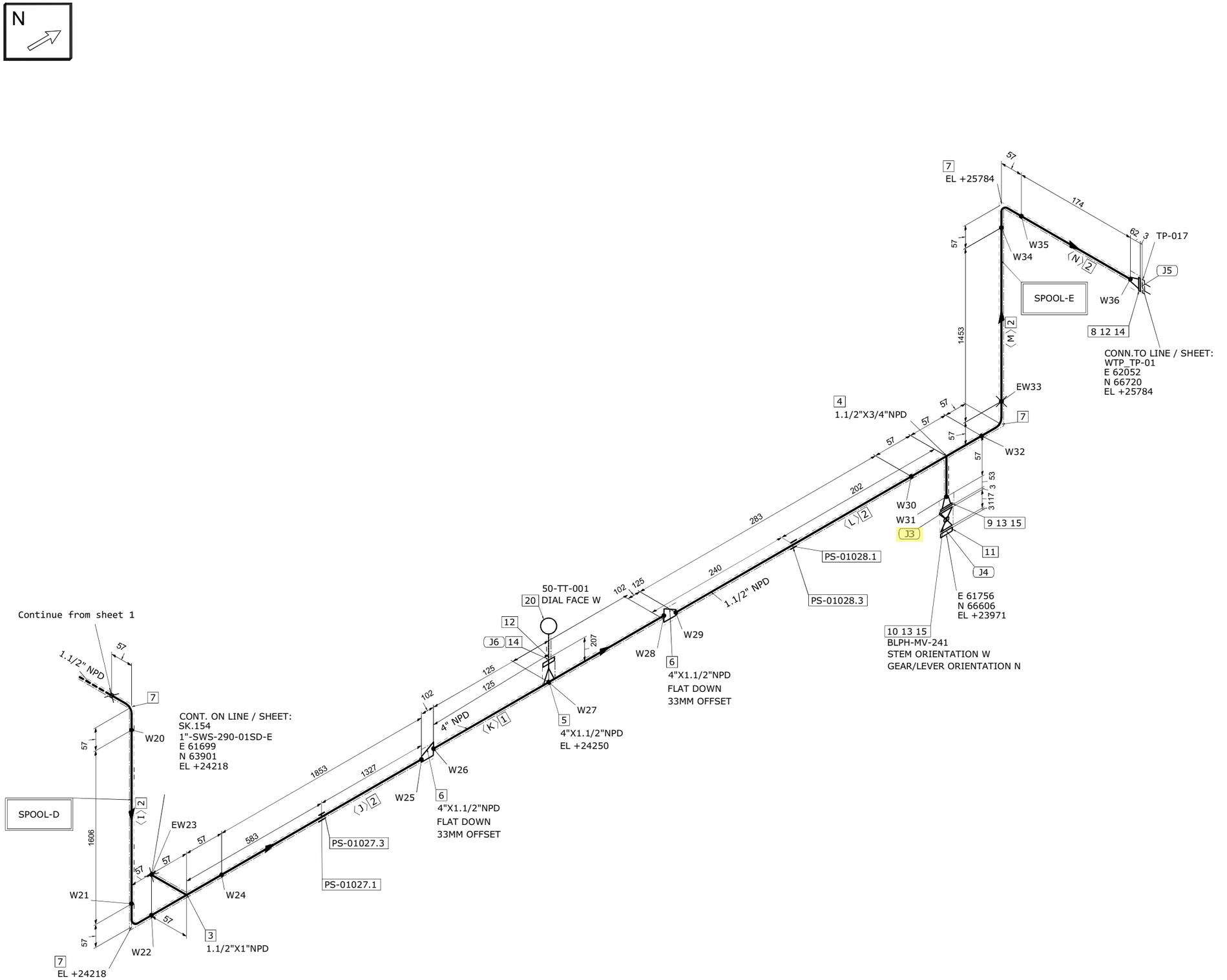
Flange Type	150LB	**Lubricant**	Yes
Flange Size	3/4"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Flat Thk. 3 mm	**Used tools**	Torque wrench V030390 (12-68 Nm)
Bolt tensioning/Torquing value	48.6		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	15	49	15	29	48.6
2	15	49	15	29	48.6
3	15	49	15	29	48.6
4	15	49	15	29	48.6
5			15	29	48.6
6			15	29	48.6
7			15	29	48.6
8			15	29	48.6
9			15	29	48.6
10			15	29	48.6
11			15	29	48.6
12			15	29	48.6
13			15	29	48.6
14			15	29	48.6
15			15	29	48.6
16			15	29	48.6
17			15	29	48.6
18			15	29	48.6
19			15	29	48.6
20			15	29	48.6

1	**Clear Bore Inspection:** Pipe and Valve clear of debris/contamination.	Yes
2	**Flange Face Check:** Both flanges clean and free from damage.	Yes
3	**Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique.	Yes
4	**Alignment:** Check alignment according to code.	Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-01-15	2025-01-15	
Signature	Digitaly signed by Emanuele Delfino 2025-01-15T15:15:15.843Z	Digitaly signed by Massimo Bruschi 2025-01-15T16:52:12.860Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	4	PIPESD02880400	Pipe ASME B36.19M PE 3,05 SML ASTM A790 UNS S32760	0.3M	2.1
2	1.1/2	PIPESD04761H00	Pipe ASME B36.19M PE 3,68 SML ASTM A790 UNS S32760	5.4M	22.2
3	1.1/2X1	TER0SD09381H01	Tee Reducing ASME B16.9 BW 3,68x3,38 WRS ASTM A815 UNS S32760	1	0.8
4	1.1/2X3/4	TER0SD09371H3Q	Tee Reducing ASME B16.9 BW 3,68x2,87 WRS ASTM A815 UNS S32760	1	0.8
5	4X1.1/2	ONFRSD02000041H	NipoFlange Reinforced Manuf.s STD 150LB RF 3,05x3,68 FRG ASTM A182 Gr.F55	1	3.3
6	4X1.1/2	REE0SD0809041H	Reducer Eccentric ASME B16.9 BW 3,05x3,68 WRS ASTM A815 UNS S32760	2	1.7
7	1.1/2	E90RSD03031H00	90 Deg Elbow Long Radius ASME B16.9 BW 3,68 WRS ASTM A815 UNS S32760	4	1.5
8	1.1/2	FLW0SD02861H00	Flange WN ASME B16.5 150LB RF 3,68 FRG ASTM A182 Gr.F55	1	1.8
9	3/4	FLW0SD02853Q00	Flange WN ASME B16.5 150LB RF 2,87 FRG ASTM A182 Gr.F55	1	0.9

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
10	3/4	VBC0NN24433Q00	Ball Valve Split Body FB API 6D FLG 150LB RF BS01F01RF	1	7.0
11	3/4	FLB0SD01843Q00	Flange Blind ASME B16.5 150LB RF FRG ASTM A182 Gr.F55	1	0.9
12	1.1/2	GFL3GK15981H00	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	2	0.1
13	3/4	GFL3GK15963Q00	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	2	0.1
14	1/2	SB20BO00930200	70 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.0
15	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.0
20	1.1/2		Temperature Trasmitter 150#	1	2.0

FABRICATION WEIGHT [kg]	35.1
ERECTION WEIGHT [kg]	12.1
OVERALL WEIGHT [kg]	47.2

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W20	1.1/2	BW
W21	1.1/2	BW
W22	1.1/2	BW
EW23	1	BW
W24	1.1/2	BW
W25	1.1/2	BW
W26	4	BW
W27	1.1/2	LET
W28	4	BW
W29	1.1/2	BW
W30	1.1/2	BW
W31	3/4	BW
W32	1.1/2	BW
EW33	1.1/2	BW
W34	1.1/2	BW
W35	1.1/2	BW
W36	1.1/2	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
I	1.1/2	1606	BEVEL	BEVEL
J	1.1/2	1854	BEVEL	BEVEL
K	4	250	BEVEL	BEVEL
L	1.1/2	283	BEVEL	BEVEL
M	1.1/2	1453	BEVEL	BEVEL
N	1.1/2	174	BEVEL	BEVEL

SUPPORT LIST

PS-01027.1
PS-01027.3
PS-01028.1
PS-01028.3

SPOOL	WELD [inches]	WEIGHT [kg]
D	22.25	26.1
E	4.5	8.9
MONT	2.5	12.1

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

LINE DATA

NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3			
PAINTING	SYSTEM N/A	BASE RAL N/A	FLUID PHASE	Liquid			
INSULATION	TYPE H	THICKNESS 20 [mm]	DESIGN	PRESS. 7.6 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	Yes		TEST	PRESS. 9 [barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80021
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

MASTER

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 1-1/2"-SWS-035-01SD-E

SK.026

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE: N/A

DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 27-08-2024

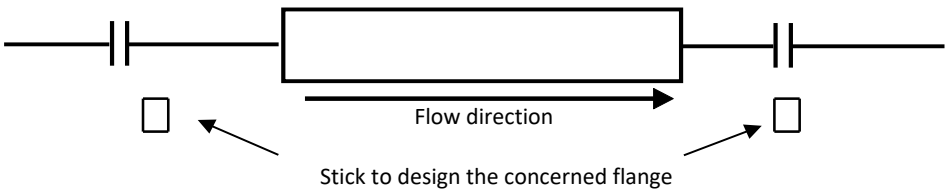
FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00026 | SHEET / OF: 2/2 | REV.: 00


TAG
026 - 2 - J3
FLANGE TIGHTENED
ID STAMP RFM 3/9
SIGNED
DATE 14/01/25
RETURN TO SUPERVISOR
TAG
026 - 2 - J3
FLANGE ASSEMBLED
ID STAMP RFM 3/9
SIGNED
DATE 14/01/25
RETURN TO SUPERVISOR
TAG
026 - 2 - J3
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	026-2-J4	: Joint 026-2-J4			Dwg	123A90-FDL-PP-DI-00026-02
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10004206	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27 Bolt tensioning / torquing

Test Pack N.: TP-028

EQUIPMENT TAG



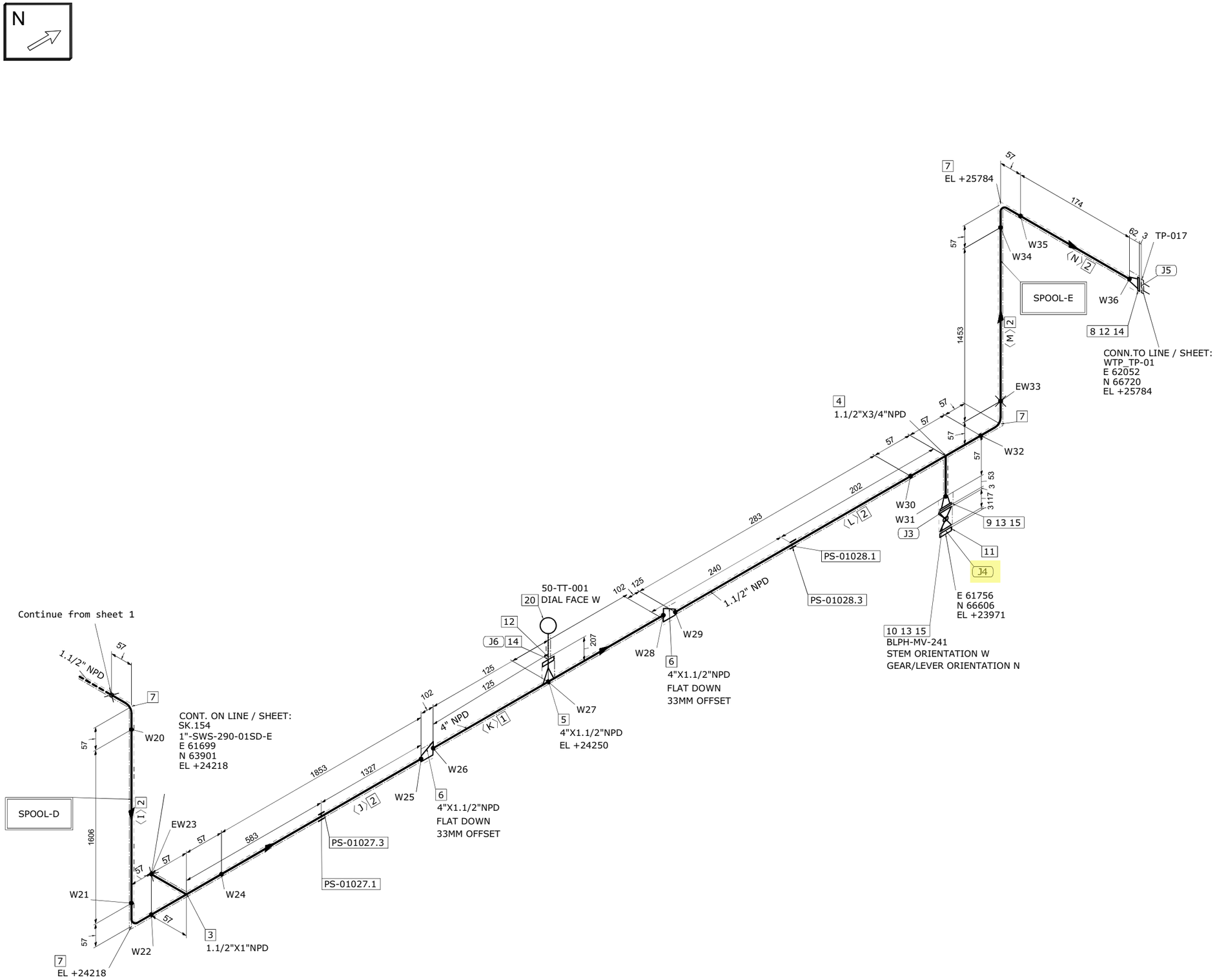
Flange Type	150LB	**Lubricant**	Yes
Flange Size	3/4"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Flat Thk. 3 mm	**Used tools**	Torque wrench V030390 (12-68 Nm)
Bolt tensioning/Torquing value	48.6		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	15	49	15	29	48.6
2	15	49	15	29	48.6
3	15	49	15	29	48.6
4	15	49	15	29	48.6
5			15	29	48.6
6			15	29	48.6
7			15	29	48.6
8			15	29	48.6
9			15	29	48.6
10			15	29	48.6
11			15	29	48.6
12			15	29	48.6
13			15	29	48.6
14			15	29	48.6
15			15	29	48.6
16			15	29	48.6
17			15	29	48.6
18			15	29	48.6
19			15	29	48.6
20			15	29	48.6

1	**Clear Bore Inspection:** Pipe and Valve clear of debris/contamination.	Yes
2	**Flange Face Check:** Both flanges clean and free from damage.	Yes
3	**Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique.	Yes
4	**Alignment:** Check alignment according to code.	Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-01-15	2025-01-15	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-15T15:15:27.070Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-01-15T16:52:27.076Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	4	PIPESD02880400	Pipe ASME B36.19M PE 3,05 SML ASTM A790 UNS S32760	0.3M	2.1
2	1.1/2	PIPESD04761H00	Pipe ASME B36.19M PE 3,68 SML ASTM A790 UNS S32760	5.4M	22.2
3	1.1/2X1	TER0SD09381H01	Tee Reducing ASME B16.9 BW 3,68x3,38 WRS ASTM A815 UNS S32760	1	0.8
4	1.1/2X3/4	TER0SD09371H3Q	Tee Reducing ASME B16.9 BW 3,68x2,87 WRS ASTM A815 UNS S32760	1	0.8
5	4X1.1/2	ONFRSD02000041H	NipoFlange Reinforced Manuf.s STD 150LB RF 3,05x3,68 FRG ASTM A182 Gr.F55	1	3.3
6	4X1.1/2	REE0SD0809041H	Reducer Eccentric ASME B16.9 BW 3,05x3,68 WRS ASTM A815 UNS S32760	2	1.7
7	1.1/2	E90RSD03031H00	90 Deg Elbow Long Radius ASME B16.9 BW 3,68 WRS ASTM A815 UNS S32760	4	1.5
8	1.1/2	FLW0SD02861H00	Flange WN ASME B16.5 150LB RF 3,68 FRG ASTM A182 Gr.F55	1	1.8
9	3/4	FLW0SD02853Q00	Flange WN ASME B16.5 150LB RF 2,87 FRG ASTM A182 Gr.F55	1	0.9

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
10	3/4	VBC0NN24433Q00	Ball Valve Split Body FB API 6D FLG 150LB RF BS01F01RF	1	7.0
11	3/4	FLB0SD01843Q00	Flange Blind ASME B16.5 150LB RF FRG ASTM A182 Gr.F55	1	0.9
12	1.1/2	GFL3GK15981H00	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	2	0.1
13	3/4	GFL3GK15963Q00	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	2	0.1
14	1/2	SB20BO00930200	70 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.0
15	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.0
20	1.1/2		Temperature Trasmitter 150#	1	2.0

FABRICATION WEIGHT [kg]	35.1
ERECTION WEIGHT [kg]	12.1
OVERALL WEIGHT [kg]	47.2

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W20	1.1/2	BW
W21	1.1/2	BW
W22	1.1/2	BW
EW23	1	BW
W24	1.1/2	BW
W25	1.1/2	BW
W26	4	BW
W27	1.1/2	LET
W28	4	BW
W29	1.1/2	BW
W30	1.1/2	BW
W31	3/4	BW
W32	1.1/2	BW
EW33	1.1/2	BW
W34	1.1/2	BW
W35	1.1/2	BW
W36	1.1/2	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
I	1.1/2	1606	BEVEL	BEVEL
J	1.1/2	1854	BEVEL	BEVEL
K	4	250	BEVEL	BEVEL
L	1.1/2	283	BEVEL	BEVEL
M	1.1/2	1453	BEVEL	BEVEL
N	1.1/2	174	BEVEL	BEVEL

SUPPORT LIST

PS-01027.1
PS-01027.3
PS-01028.1
PS-01028.3

SPOOL	WELD [inches]	WEIGHT [kg]
D	22.25	26.1
E	4.5	8.9
MONT	2.5	12.1

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 1-1/2"-SWS-035-01SD-E

SK.026

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE: N/A

DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 27-08-2024

FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00026 | SHEET / OF: 2/2 | REV.: 00

LINE DATA

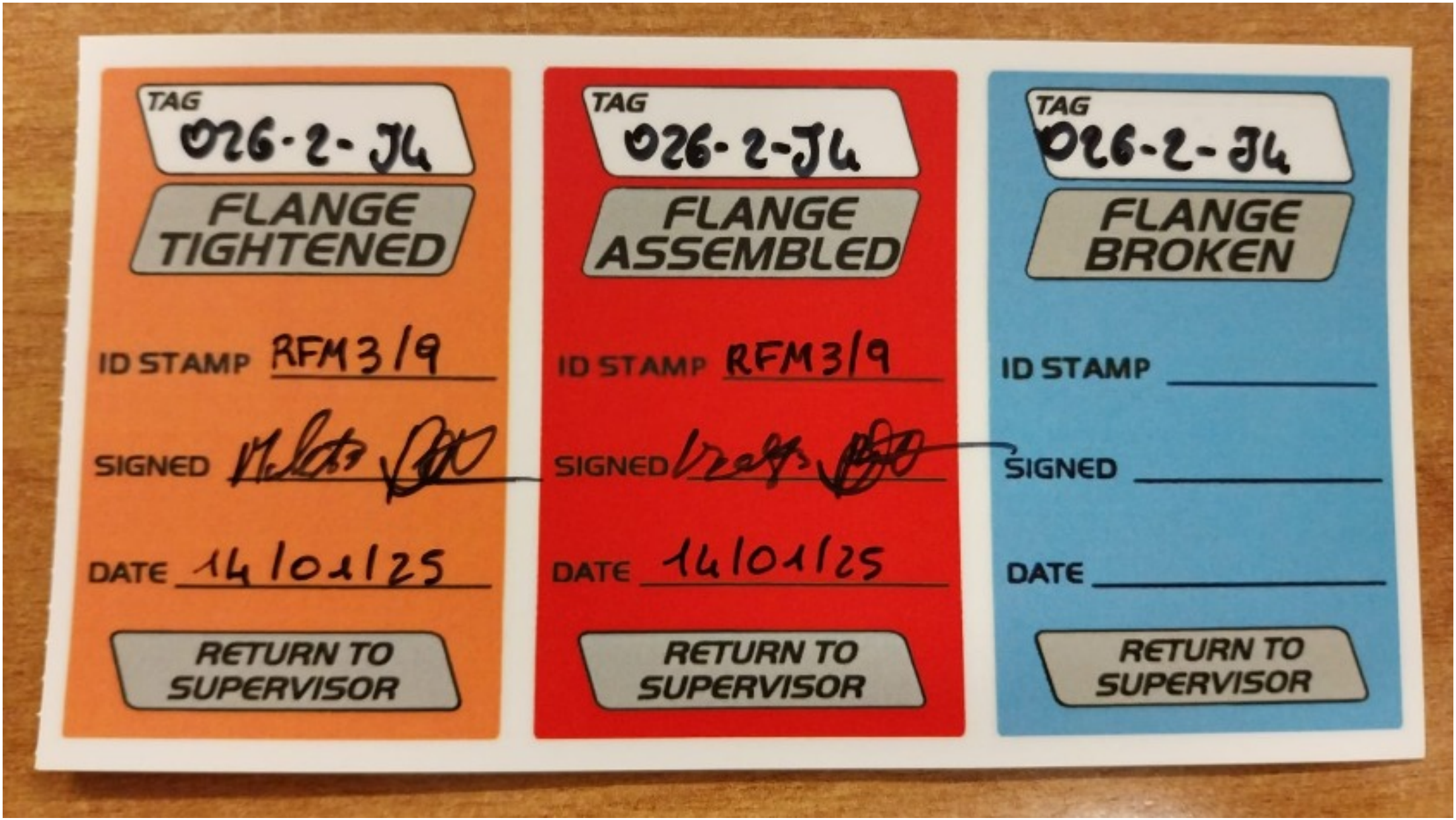
NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3			
PAINTING	SYSTEM N/A	BASE RAL N/A	FLUID PHASE	Liquid			
INSULATION	TYPE H	THICKNESS 20 [mm]	DESIGN	PRESS. 7.6 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	Yes		TEST	PRESS. 9 [barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80021
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

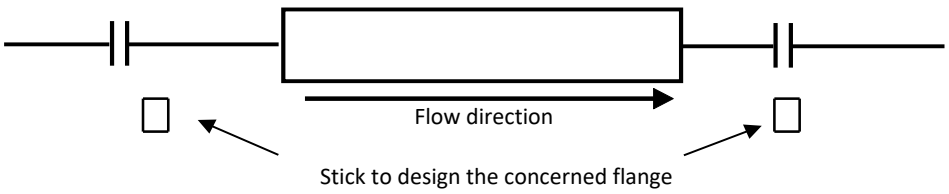
MASTER


TAG
026-2-J4
FLANGE TIGHTENED
ID STAMP RFM3/9
SIGNED
DATE 14/01/25
RETURN TO SUPERVISOR
TAG
026-2-J4
FLANGE ASSEMBLED
ID STAMP RFM3/9
SIGNED
DATE 14/01/25
RETURN TO SUPERVISOR
TAG
026-2-J4
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	026-2-J5	: Joint 026-2-J5			Dwg	123A90-FDL-PP-DI-00026-02
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10004207		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27		Bolt tensioning / torquing

Test Pack N.: TP-028

EQUIPMENT TAG



Flange Type	150LB	**Lubricant**	Yes
Flange Size	1.1/2"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Flat Thk. 3 mm	**Used tools**	
Bolt tensioning/Torquing value	48.6		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1			15	29	48.6
2			15	29	48.6
3			15	29	48.6
4			15	29	48.6
5			15	29	48.6
6			15	29	48.6
7			15	29	48.6
8			15	29	48.6
9			15	29	48.6
10			15	29	48.6
11			15	29	48.6
12			15	29	48.6
13			15	29	48.6
14			15	29	48.6
15			15	29	48.6
16			15	29	48.6
17			15	29	48.6
18			15	29	48.6
19			15	29	48.6
20			15	29	48.6

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination.

2 **Flange Face Check:** Both flanges clean and free from damage.

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique.

4 **Alignment:** Check alignment according to code.

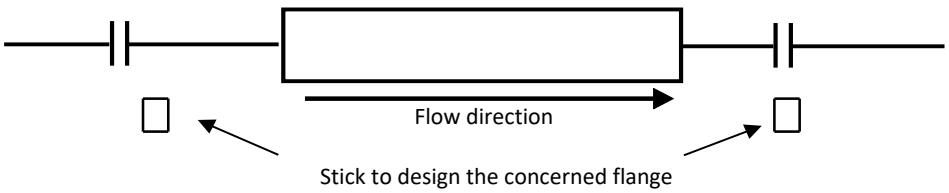
Comments:

Page 1/1	Performed by	☐ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company			
Name			
Date			
Signature			

ITEM	Tag	026-2-J6	: Joint 026-2-J6			Dwg	123A90-FDL-PP-DI-00026-02
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10004208		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27		Bolt tensioning / torquing

Test Pack N.: TP-028

EQUIPMENT TAG



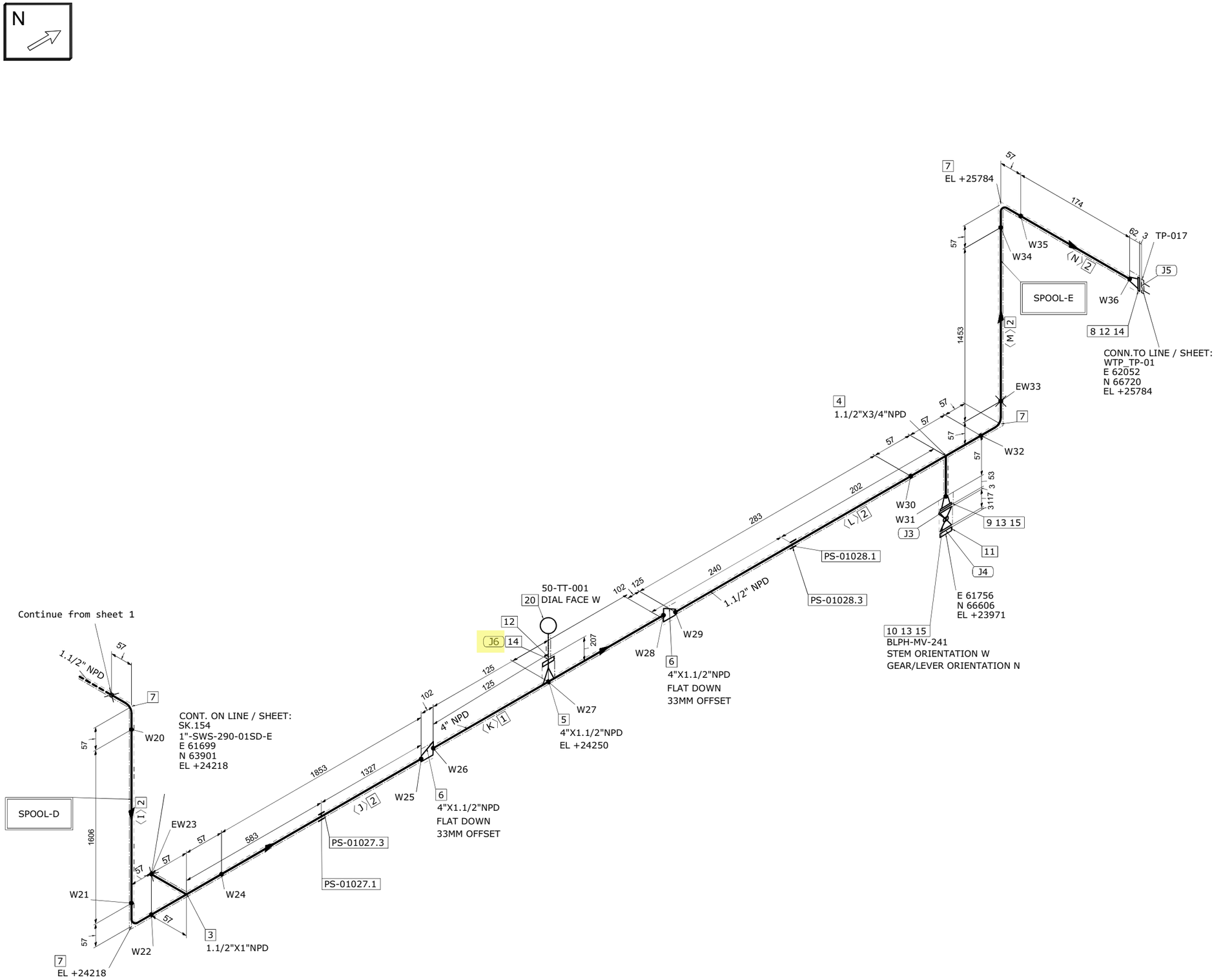
Flange Type	150LB	**Lubricant**	Yes
Flange Size	1.1/2"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Flat Thk. 3 mm	**Used tools**	Torque wrench V030390 (12-68 Nm)
Bolt tensioning/Torquing value	48.6		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	15	49	15	29	48.6
2	15	49	15	29	48.6
3	15	49	15	29	48.6
4	15	49	15	29	48.6
5			15	29	48.6
6			15	29	48.6
7			15	29	48.6
8			15	29	48.6
9			15	29	48.6
10			15	29	48.6
11			15	29	48.6
12			15	29	48.6
13			15	29	48.6
14			15	29	48.6
15			15	29	48.6
16			15	29	48.6
17			15	29	48.6
18			15	29	48.6
19			15	29	48.6
20			15	29	48.6

1	**Clear Bore Inspection:** Pipe and Valve clear of debris/contamination.	Yes
2	**Flange Face Check:** Both flanges clean and free from damage.	Yes
3	**Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique.	Yes
4	**Alignment:** Check alignment according to code.	Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-01-30	2025-03-14	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-30T05:30:58.164Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-03-14T12:57:24.756Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	4	PIPESD02880400	Pipe ASME B36.19M PE 3,05 SML ASTM A790 UNS S32760	0.3M	2.1
2	1.1/2	PIPESD04761H00	Pipe ASME B36.19M PE 3,68 SML ASTM A790 UNS S32760	5.4M	22.2
3	1.1/2X1	TER0SD09381H01	Tee Reducing ASME B16.9 BW 3,68x3,38 WRS ASTM A815 UNS S32760	1	0.8
4	1.1/2X3/4	TER0SD09371H3Q	Tee Reducing ASME B16.9 BW 3,68x2,87 WRS ASTM A815 UNS S32760	1	0.8
5	4X1.1/2	ONFRSD02000041H	NipoFlange Reinforced Manuf.s STD 150LB RF 3,05x3,68 FRG ASTM A182 Gr.F55	1	3.3
6	4X1.1/2	REE0SD0809041H	Reducer Eccentric ASME B16.9 BW 3,05x3,68 WRS ASTM A815 UNS S32760	2	1.7
7	1.1/2	E90RSD03031H00	90 Deg Elbow Long Radius ASME B16.9 BW 3,68 WRS ASTM A815 UNS S32760	4	1.5
8	1.1/2	FLW0SD02861H00	Flange WN ASME B16.5 150LB RF 3,68 FRG ASTM A182 Gr.F55	1	1.8
9	3/4	FLW0SD02853Q00	Flange WN ASME B16.5 150LB RF 2,87 FRG ASTM A182 Gr.F55	1	0.9

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
10	3/4	VBC0NN24433Q00	Ball Valve Split Body FB API 6D FLG 150LB RF BS01F01RF	1	7.0
11	3/4	FLB0SD01843Q00	Flange Blind ASME B16.5 150LB RF FRG ASTM A182 Gr.F55	1	0.9
12	1.1/2	GFL3GK15981H00	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	2	0.1
13	3/4	GFL3GK15963Q00	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	2	0.1
14	1/2	SB20BO00930200	70 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.0
15	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.0
20	1.1/2		Temperature Trasmitter 150#	1	2.0

FABRICATION WEIGHT [kg]	35.1
ERECTION WEIGHT [kg]	12.1
OVERALL WEIGHT [kg]	47.2

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W20	1.1/2	BW
W21	1.1/2	BW
W22	1.1/2	BW
EW23	1	BW
W24	1.1/2	BW
W25	1.1/2	BW
W26	4	BW
W27	1.1/2	LET
W28	4	BW
W29	1.1/2	BW
W30	1.1/2	BW
W31	3/4	BW
W32	1.1/2	BW
EW33	1.1/2	BW
W34	1.1/2	BW
W35	1.1/2	BW
W36	1.1/2	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
I	1.1/2	1606	BEVEL	BEVEL
J	1.1/2	1854	BEVEL	BEVEL
K	4	250	BEVEL	BEVEL
L	1.1/2	283	BEVEL	BEVEL
M	1.1/2	1453	BEVEL	BEVEL
N	1.1/2	174	BEVEL	BEVEL

SUPPORT LIST

PS-01027.1
PS-01027.3
PS-01028.1
PS-01028.3

SPOOL	WELD [inches]	WEIGHT [kg]
D	22.25	26.1
E	4.5	8.9
MONT	2.5	12.1

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

LINE DATA

NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3				
PAINTING	SYSTEM N/A	BASE RAL N/A	FLUID PHASE	Liquid				
INSULATION	TYPE H	THICKNESS 20 [mm]	DESIGN	PRESS. 7.6 [barg]	TEMP. -29 / 100 [°C]			
HEAT TRACING	Yes		TEST	PRESS. 9 [barg]	TEMP. AMB	MEDIUM Water		

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80021
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

MASTER

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 1-1/2"-SWS-035-01SD-E

SK.026

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE: N/A

DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 27-08-2024

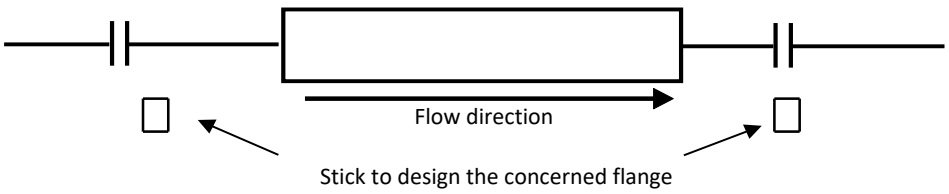
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TAG
026-2-J6
FLANGE TIGHTENED
ID STAMP RFH3/RFH9
SIGNED
DATE 18/02/25
RETURN TO SUPERVISOR
TAG
026-2-J6
FLANGE ASSEMBLED
ID STAMP RFH3/RFH9
SIGNED
DATE 18/02/25
RETURN TO SUPERVISOR
TAG
026-2-J6
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	059-1-J1	: Joint 059-1-J1			Dwg	123A90-FDL-PP-DI-00059-01
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10004236		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27		Bolt tensioning / torquing

Test Pack N.: TP-001

EQUIPMENT TAG



Flange Type 150LB

Flange Size 1"

Gasket Type Gasket Flat Thk. 3 mm

Bolt tensioning/Torquing value 48.6

Lubricant Yes

Lubricant Type MOLYKOTE 1000 PASTE

Used tools Torque wrench V030390 (12-68 Nm)

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	15	49	15	29	48.6
2	15	49	15	29	48.6
3	15	49	15	29	48.6
4	15	49	15	29	48.6
5			15	29	48.6
6			15	29	48.6
7			15	29	48.6
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11			15	29	48.6
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15			15	29	48.6
16			15	29	48.6
17			15	29	48.6
18			15	29	48.6
19			15	29	48.6
20			15	29	48.6

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

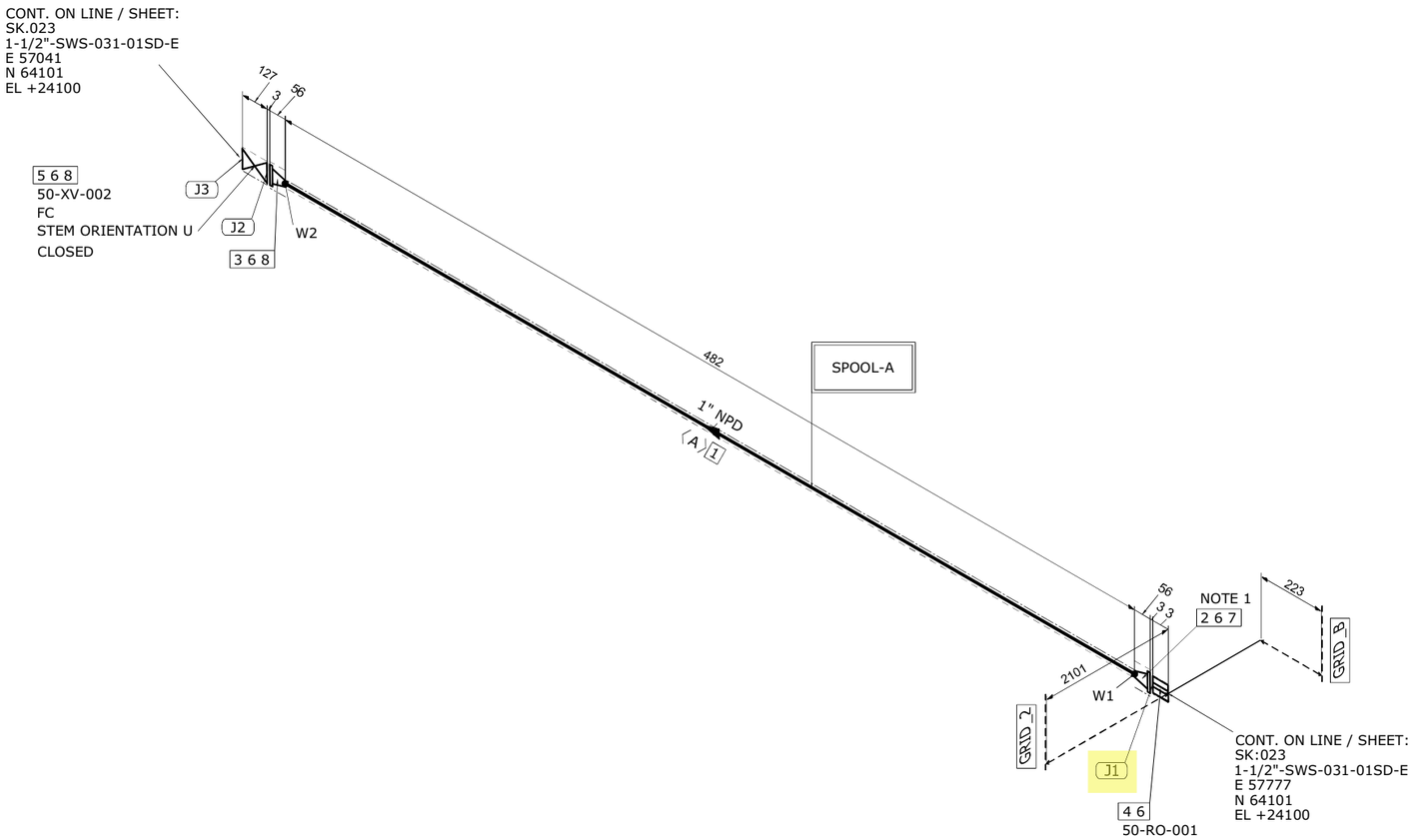
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-01-30	2025-02-21	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-30T05:31:09.339Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-02-21T11:47:12.076Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPESD02850100	Pipe ASME B36.19M PE 3,38 SML ASTM A790 UNS S32760	0.5M	1.2
2	1	FLWDSD00300100	Flange WN For Jackscrews ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	1	1.4
3	1	FLW0SD01240100	Flange WN ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	1	1.4

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
4	1		Restriction Orifice 150#RF	1	1.0
5	1		ON/OFF Ball Actuator Valve - 150#RF Flanged	1	40.0
6	1	GFL3GK15970100	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	4	0.2
7	1/2	SB20BO00940200	75 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.5
8	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.0

FABRICATION WEIGHT [kg]	4.0
ERECTION WEIGHT [kg]	42.7
OVERALL WEIGHT [kg]	46.7

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1	BW
W2	1	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1	482	BEVEL	BEVEL

SUPPORT LIST

SPOOL	WELD [inches]	WEIGHT [kg]
A	2	4.1
MONT	0	42.7

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 1"-SWS-146-01SD-E

SK.059

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE: N/A

DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 27-08-2024

FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00059 | SHEET / OF: 1/1 | REV.: 00

LINE DATA

NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3				
PAINTING	SYSTEM N/A	BASE RAL N/A	FLUID PHASE	Liquid				
INSULATION	TYPE H	THICKNESS 20 [mm]	DESIGN	PRESS. 7.6 [barg]	TEMP. -29 / 100 [°C]			
HEAT TRACING	Yes		TEST	PRESS. 11.4 [barg]	TEMP. AMB	MEDIUM Water		

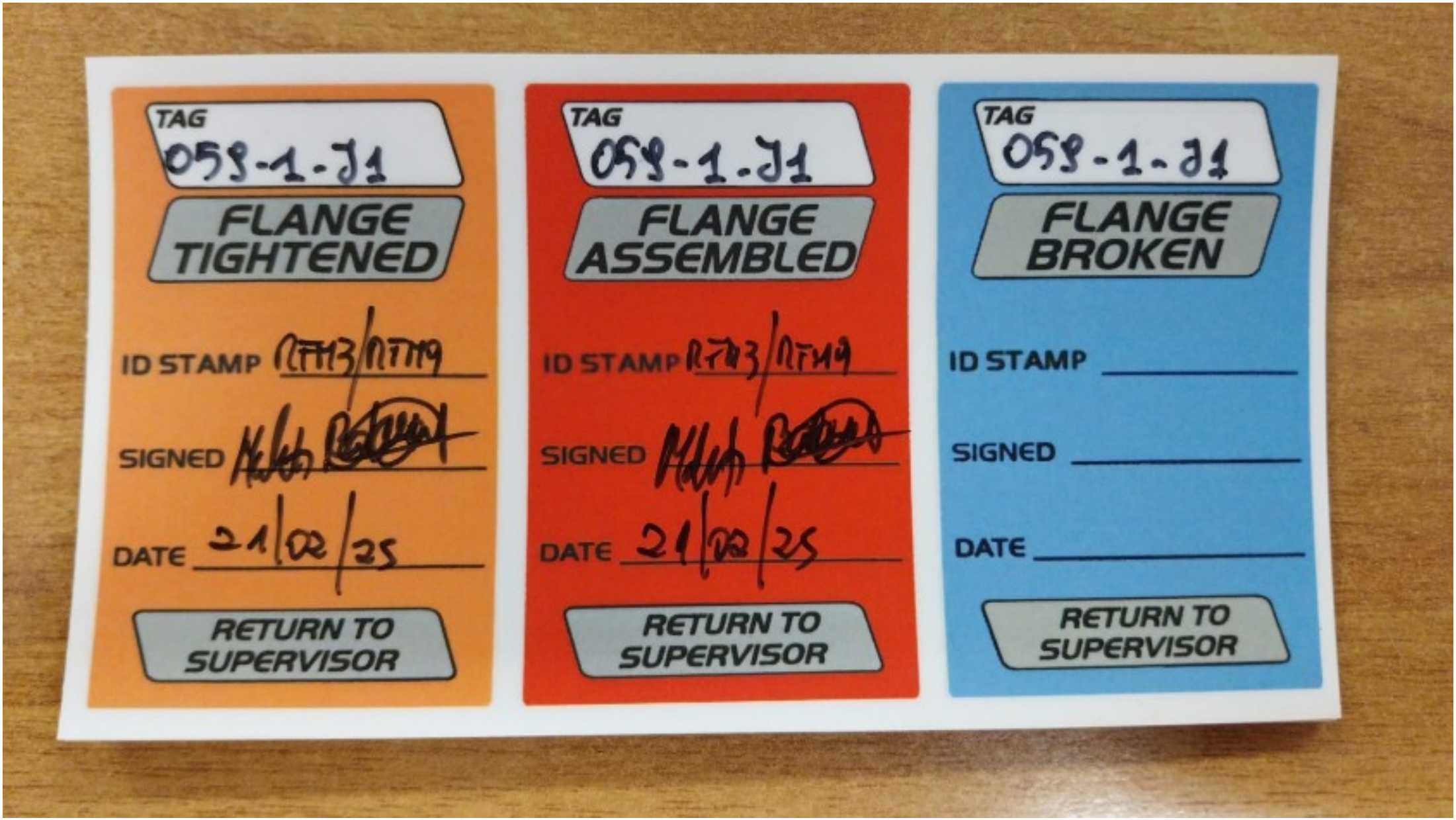
REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80021
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

1.JACKSCREWS POSITION N/S

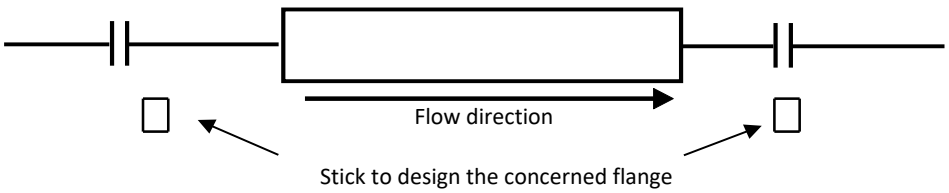
MASTER


TAG
058-1-J1
FLANGE TIGHTENED
ID STAMP
DATE 21/02/25
RETURN TO SUPERVISOR
TAG
058-1-J1
FLANGE ASSEMBLED
ID STAMP
DATE 21/02/25
RETURN TO SUPERVISOR
TAG
058-1-J1
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	059-1-J2	: Joint 059-1-J2			Dwg	123A90-FDL-PP-DI-00059-01
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10004237	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27		Bolt tensioning / torquing

Test Pack N.: TP-001

EQUIPMENT TAG



Flange Type	150LB	**Lubricant**	Yes
Flange Size	1"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Flat Thk. 3 mm	**Used tools**	Torque wrench V030390 (12-68 Nm)
Bolt tensioning/Torquing value	48.6		

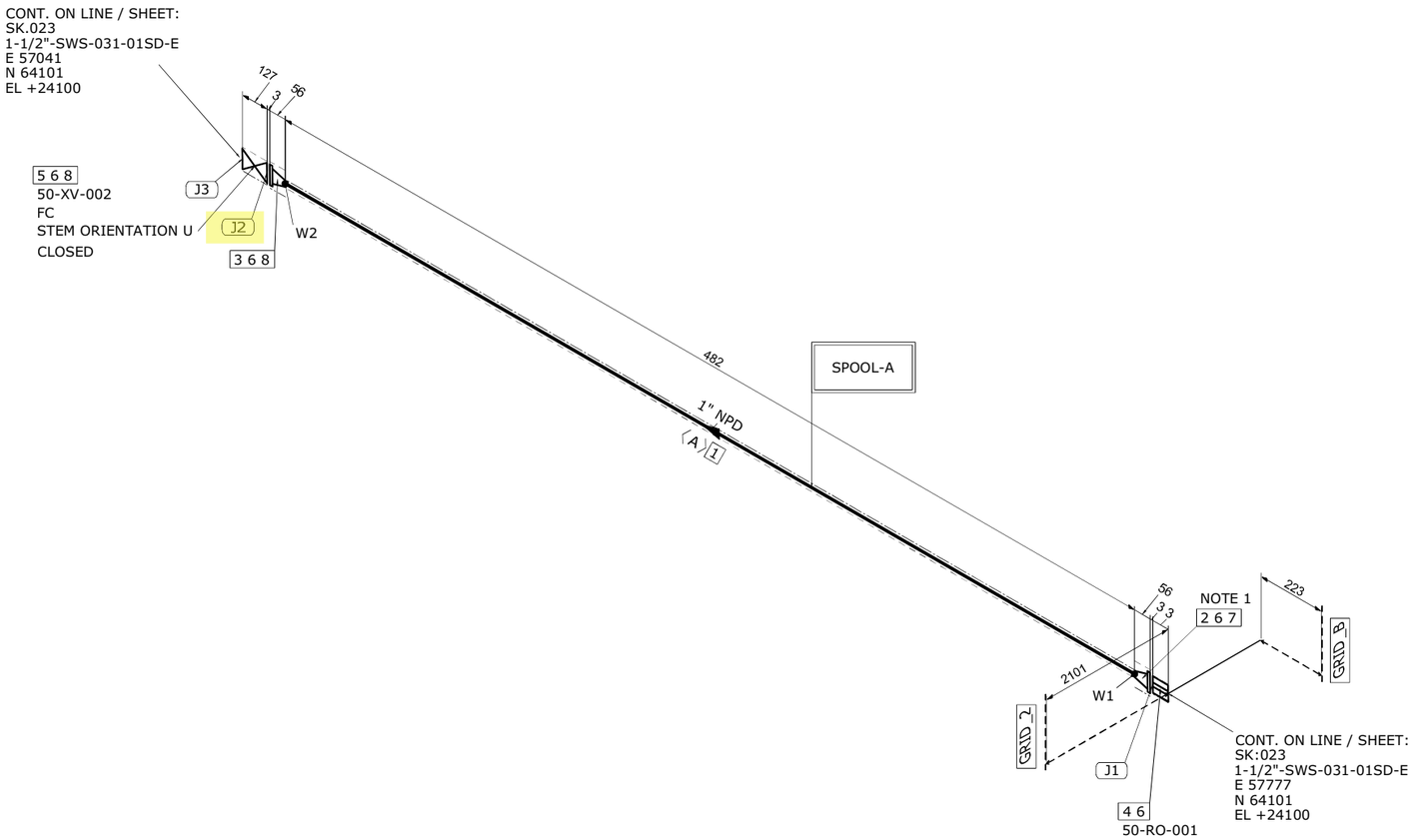
			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	15	49	15	29	48.6
2	15	49	15	29	48.6
3	15	49	15	29	48.6
4	15	49	15	29	48.6
5			15	29	48.6
6			15	29	48.6
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17			15	29	48.6
18			15	29	48.6
19			15	29	48.6
20			15	29	48.6

1	**Clear Bore Inspection:** Pipe and Valve clear of debris/contamination.	Yes
2	**Flange Face Check:** Both flanges clean and free from damage.	Yes
3	**Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique.	Yes
4	**Alignment:** Check alignment according to code.	Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-01-30	2025-02-21	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-30T05:31:19.951Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-02-21T11:47:45.355Z	

N



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPESD02850100	Pipe ASME B36.19M PE 3,38 SML ASTM A790 UNS S32760	0.5M	1.2
2	1	FLWDSD00300100	Flange WN For Jackscrews ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	1	1.4
3	1	FLW0SD01240100	Flange WN ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	1	1.4

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
4	1		Restriction Orifice 150#RF	1	1.0
5	1		ON/OFF Ball Actuator Valve - 150#RF Flanged	1	40.0
6	1	GFL3GK15970100	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	4	0.2
7	1/2	SB20BO00940200	75 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.5
8	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.0

FABRICATION WEIGHT [kg]	4.0
ERECTION WEIGHT [kg]	42.7
OVERALL WEIGHT [kg]	46.7

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1	BW
W2	1	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1	482	BEVEL	BEVEL

SUPPORT LIST

SPOOL	WELD [inches]	WEIGHT [kg]
A	2	4.1
MONT	0	42.7

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 1"-SWS-146-01SD-E

SK.059

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE: N/A

DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 27-08-2024

FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00059 | SHEET / OF: 1/1 | REV.: 00

LINE DATA

NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3				
PAINTING	SYSTEM N/A	BASE RAL N/A	FLUID PHASE	Liquid				
INSULATION	TYPE H	THICKNESS 20 [mm]	DESIGN	PRESS. 7.6 [barg]	TEMP. -29 / 100 [°C]			
HEAT TRACING	Yes		TEST	PRESS. 11.4 [barg]	TEMP. AMB	MEDIUM Water		

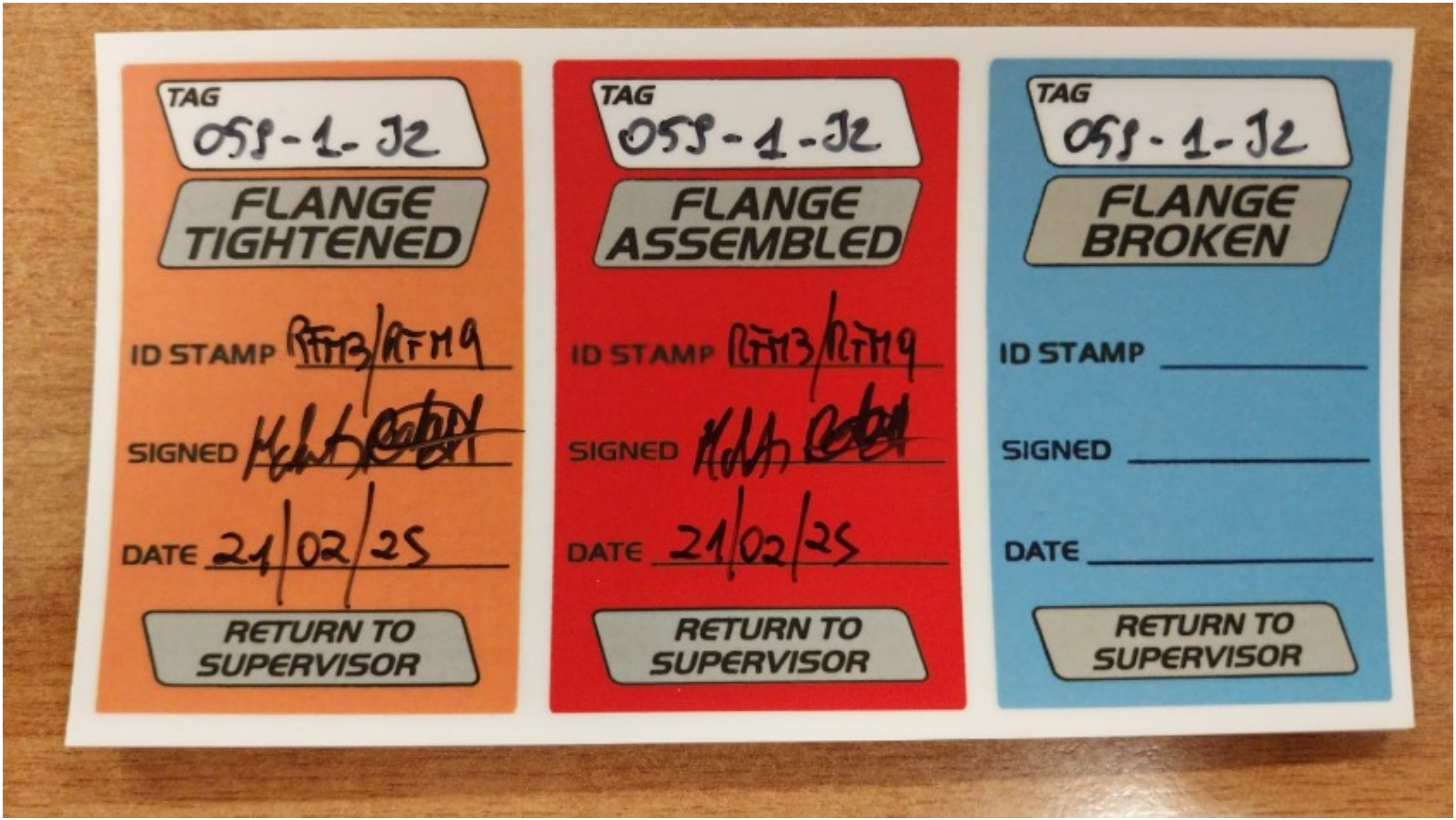
REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80021
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

1.JACKSCREWS POSITION N/S

MASTER

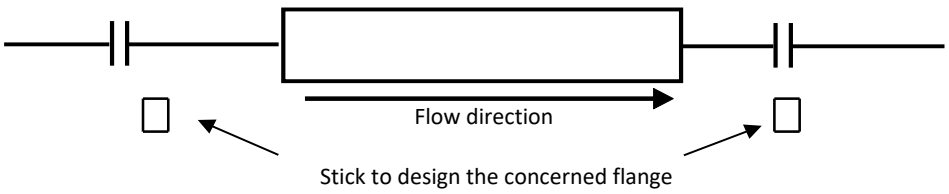

TAG
058-1-J2
FLANGE TIGHTENED
ID STAMP RTH3/RTH9
SIGNED
DATE 21/02/25
RETURN TO SUPERVISOR
TAG
058-1-J2
FLANGE ASSEMBLED
ID STAMP RTH3/RTH9
SIGNED
DATE 21/02/25
RETURN TO SUPERVISOR
TAG
058-1-J2
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ROSETTI MARINO | PROVERLIS | CROSSWIND

ITEM	Tag	059-1-J3	: Joint 059-1-J3			Dwg	123A90-FDL-PP-DI-00059-01
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10004238	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27 Bolt tensioning / torquing

Test Pack N.: TP-001

EQUIPMENT TAG



Flange Type	150LB	**Lubricant**	Yes
Flange Size	1"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Flat Thk. 3 mm	**Used tools**	Torque wrench V030390 (12-68 Nm)
Bolt tensioning/Torquing value	48.6		

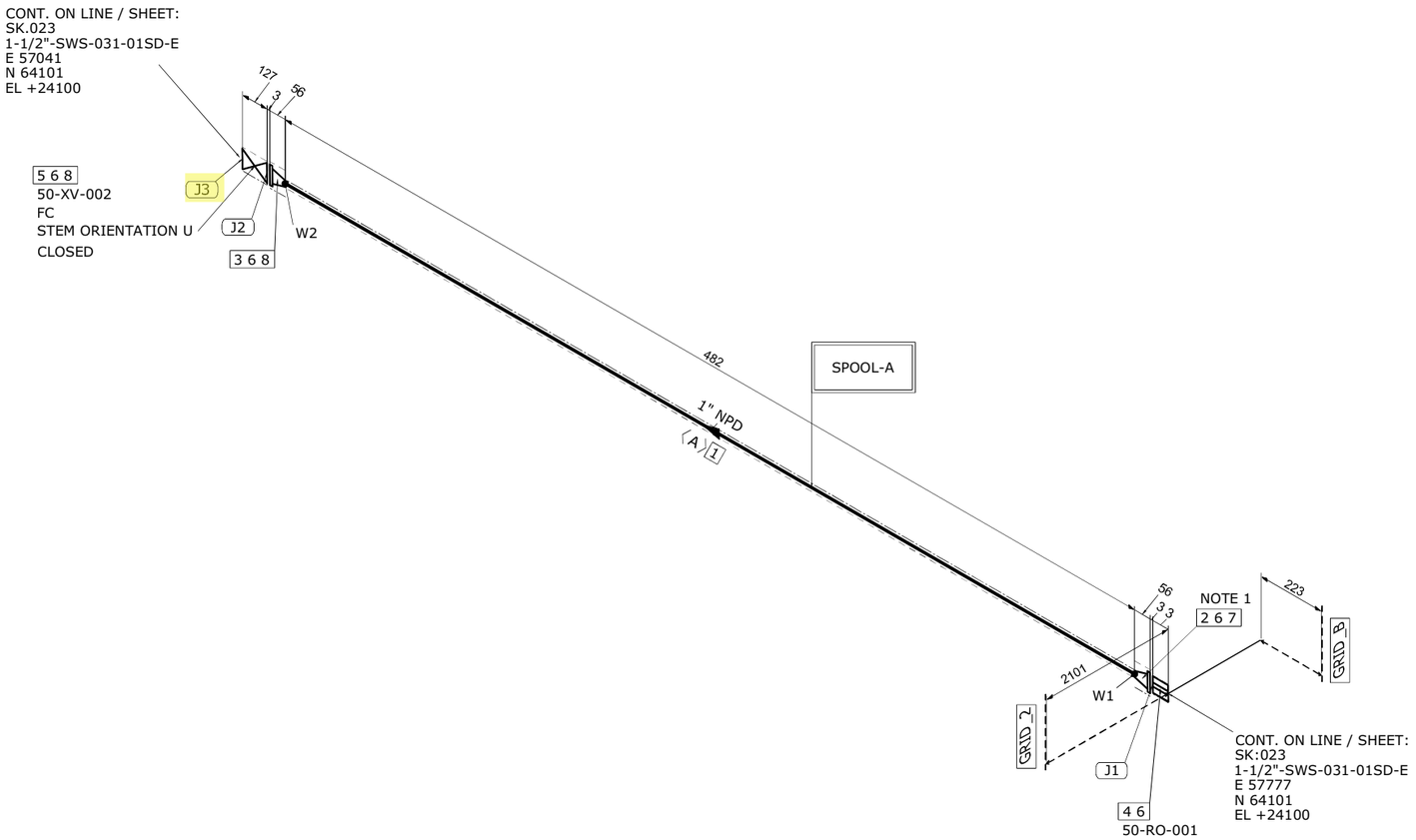
			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	15	49	15	29	48.6
2	15	49	15	29	48.6
3	15	49	15	29	48.6
4	15	49	15	29	48.6
5			15	29	48.6
6			15	29	48.6
7			15	29	48.6
8			15	29	48.6
9			15	29	48.6
10			15	29	48.6
11			15	29	48.6
12			15	29	48.6
13			15	29	48.6
14			15	29	48.6
15			15	29	48.6
16			15	29	48.6
17			15	29	48.6
18			15	29	48.6
19			15	29	48.6
20			15	29	48.6

1	**Clear Bore Inspection:** Pipe and Valve clear of debris/contamination.	Yes
2	**Flange Face Check:** Both flanges clean and free from damage.	Yes
3	**Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique.	Yes
4	**Alignment:** Check alignment according to code.	Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-01-30	2025-02-21	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-30T05:31:31.259Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-02-21T11:47:38.568Z	

N



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPESD02850100	Pipe ASME B36.19M PE 3,38 SML ASTM A790 UNS S32760	0.5M	1.2
2	1	FLWDSD00300100	Flange WN For Jackscrews ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	1	1.4
3	1	FLW0SD01240100	Flange WN ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	1	1.4

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
4	1		Restriction Orifice 150#RF	1	1.0
5	1		ON/OFF Ball Actuator Valve - 150#RF Flanged	1	40.0
6	1	GFL3GK15970100	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	4	0.2
7	1/2	SB20BO00940200	75 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.5
8	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.0

FABRICATION WEIGHT [kg]	4.0
ERECTION WEIGHT [kg]	42.7
OVERALL WEIGHT [kg]	46.7

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1	BW
W2	1	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1	482	BEVEL	BEVEL

SUPPORT LIST

SPOOL	WELD [inches]	WEIGHT [kg]
A	2	4.1
MONT	0	42.7

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 1"-SWS-146-01SD-E

SK.059

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE: N/A

DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 27-08-2024

FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00059 | SHEET / OF: 1/1 | REV.: 00

LINE DATA

NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3			
PAINTING	SYSTEM N/A	BASE RAL N/A	FLUID PHASE	Liquid			
INSULATION	TYPE H	THICKNESS 20 [mm]	DESIGN	PRESS. 7.6 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	Yes		TEST	PRESS. 11.4 [barg]	TEMP. AMB	MEDIUM Water	

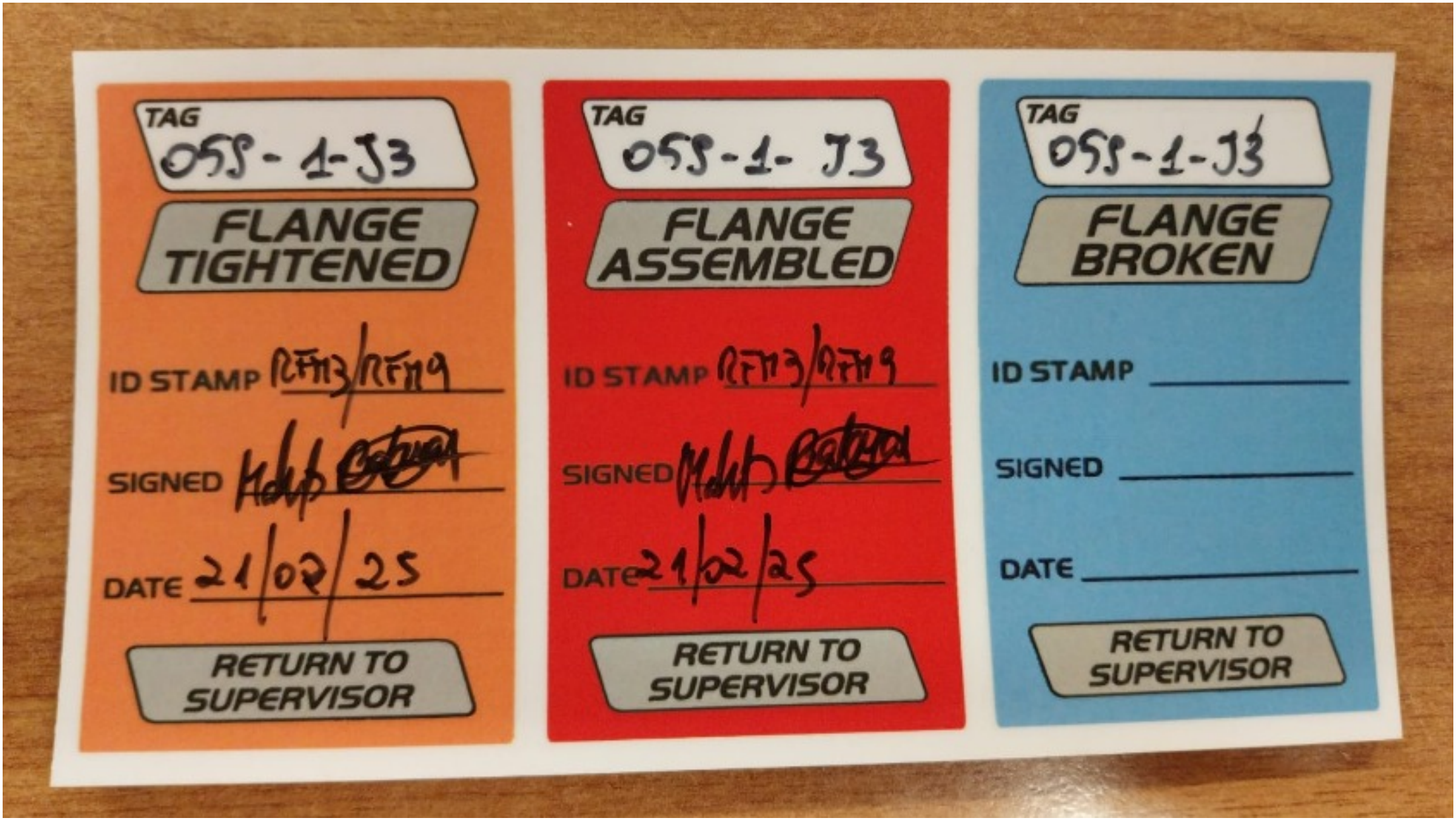
REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80021
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

1.JACKSCREWS POSITION N/S

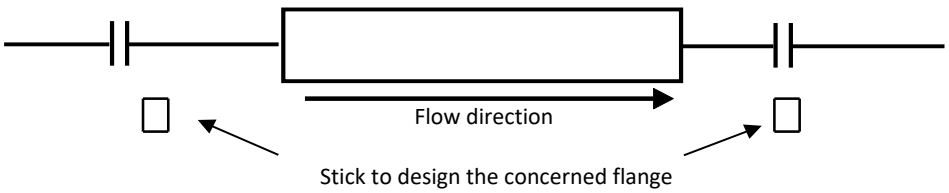
MASTER


TAG
055-1-J3
FLANGE TIGHTENED
ID STAMP RFH3/RFH9
SIGNED
DATE 21/02/25
RETURN TO SUPERVISOR
TAG
055-1-J3
FLANGE ASSEMBLED
ID STAMP RFH3/RFH9
SIGNED
DATE 21/02/25
RETURN TO SUPERVISOR
TAG
055-1-J3
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	060-1-J1	: Joint 060-1-J1			Dwg	123A90-FDL-PP-DI-00060-01
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10004239	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form TMX27	Bolt tensioning / torquing

Test Pack N.: TP-001

EQUIPMENT TAG



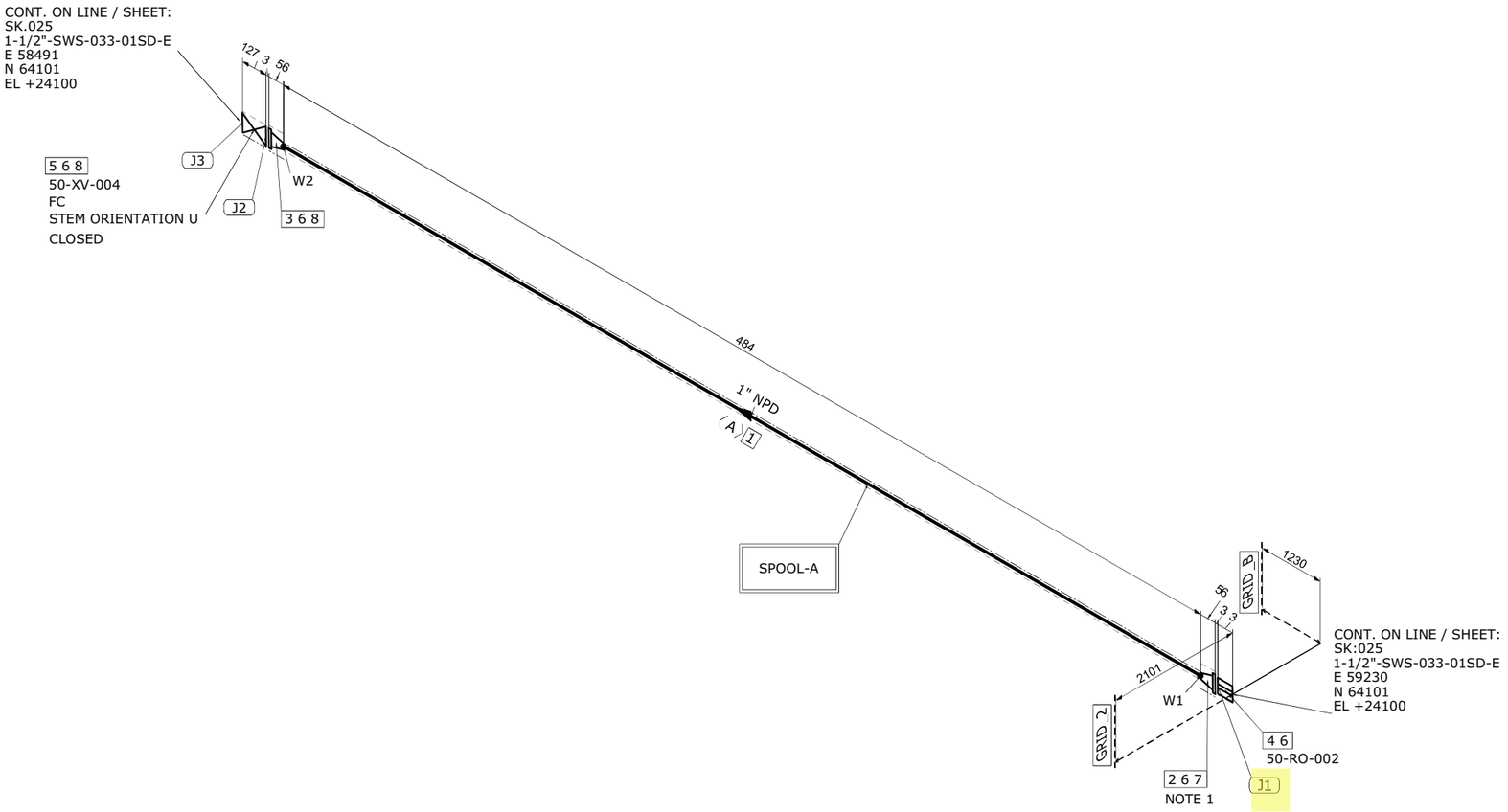
Flange Type	150LB	**Lubricant**	Yes
Flange Size	1"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Flat Thk. 3 mm	**Used tools**	Torque wrench V030390 (12-68 Nm)
Bolt tensioning/Torquing value	48.6		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	15	49	15	29	48.6
2	15	49	15	29	48.6
3	15	49	15	29	48.6
4	15	49	15	29	48.6
5			15	29	48.6
6			15	29	48.6
7			15	29	48.6
8			15	29	48.6
9			15	29	48.6
10			15	29	48.6
11			15	29	48.6
12			15	29	48.6
13			15	29	48.6
14			15	29	48.6
15			15	29	48.6
16			15	29	48.6
17			15	29	48.6
18			15	29	48.6
19			15	29	48.6
20			15	29	48.6

1	**Clear Bore Inspection:** Pipe and Valve clear of debris/contamination.	Yes
2	**Flange Face Check:** Both flanges clean and free from damage.	Yes
3	**Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique.	Yes
4	**Alignment:** Check alignment according to code.	Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-01-30	2025-02-21	
Signature	Digitaly signed by Emanuele Delfino 2025-01-30T05:31:42.610Z	Digitaly signed by Massimo Bruschi 2025-02-21T11:47:31.993Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPESD02850100	Pipe ASME B36.19M PE 3,38 SML ASTM A790 UNS S32760	0.5M	1.2
2	1	FLWDSD00300100	Flange WN For Jackscrews ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	1	1.4
3	1	FLW0SD01240100	Flange WN ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	1	1.4

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
4	1		Restriction Orifice 150#RF	1	1.0
5	1		ON/OFF Ball Actuator Valve - 150#RF Flanged	1	40.0
6	1	GFL3GK15970100	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	4	0.2
7	1/2	SB20BO00940200	75 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.5
8	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.0

FABRICATION WEIGHT [kg]	4.0
ERECTION WEIGHT [kg]	42.7
OVERALL WEIGHT [kg]	46.7

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1	BW
W2	1	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1	485	BEVEL	BEVEL

SUPPORT LIST

SPOOL	WELD [inches]	WEIGHT [kg]
A	2	4.1
MONT	0	42.7

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 1"-SWS-147-01SD-E

SK.060

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK
SCALE	N/A
DRAWN	STAFF SRL
CHECKED	RT
APPROVED	LM
DATE	27-08-2024
FORMAT	A3
DRAWING NO.	123A90-FDL-PP-DI-00060
SHEET / OF	1/1
REV.	00

LINE DATA

NDT INSPECTION CATEGORY	2			PED CATEGORY	Art. 4, par. 3			
PAINTING	SYSTEM N/A	BASE RAL N/A		FLUID PHASE	Liquid			
INSULATION	TYPE H	THICKNESS 20	[mm]	DESIGN	PRESS. 7.6	[barg]	TEMP. -29 / 100	[°C]
HEAT TRACING	Yes			TEST	PRESS. 11.4	[barg]	TEMP. AMB	MEDIUM Water

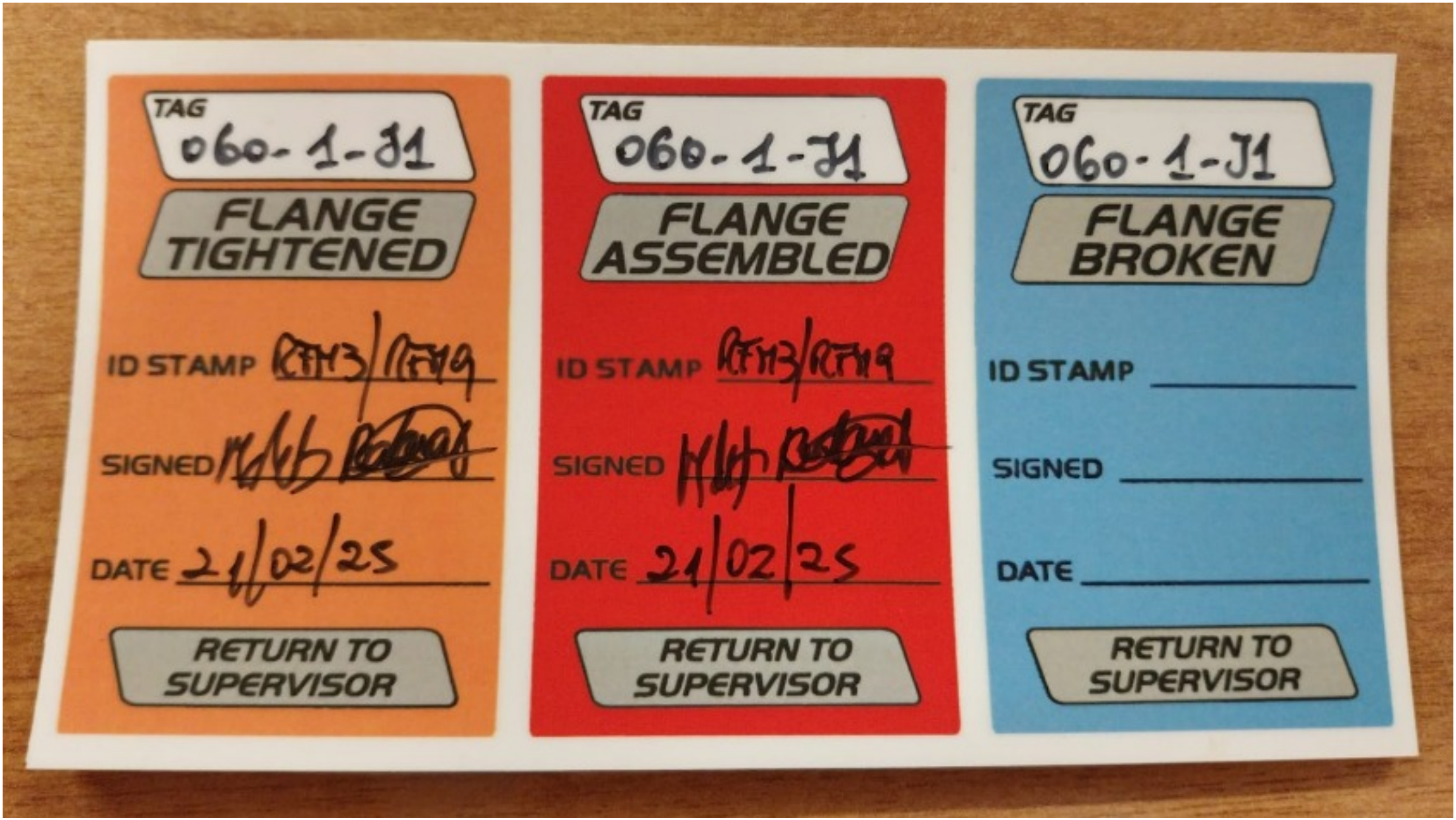
REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80021
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

1.JACKSCREWS POSITION N/S

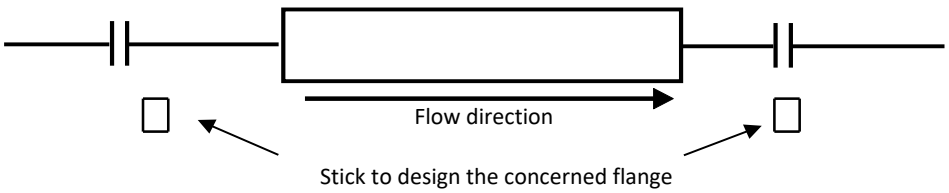
MASTER


TAG
060-1-J1
FLANGE TIGHTENED
ID STAMP
SIGNED
DATE 21/02/25
RETURN TO SUPERVISOR
TAG
060-1-J1
FLANGE ASSEMBLED
ID STAMP
SIGNED
DATE 21/02/25
RETURN TO SUPERVISOR
TAG
060-1-J1
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	060-1-J2	: Joint 060-1-J2			Dwg	123A90-FDL-PP-DI-00060-01
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10004240		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27
							Bolt tensioning / torquing

Test Pack N.: TP-001

EQUIPMENT TAG



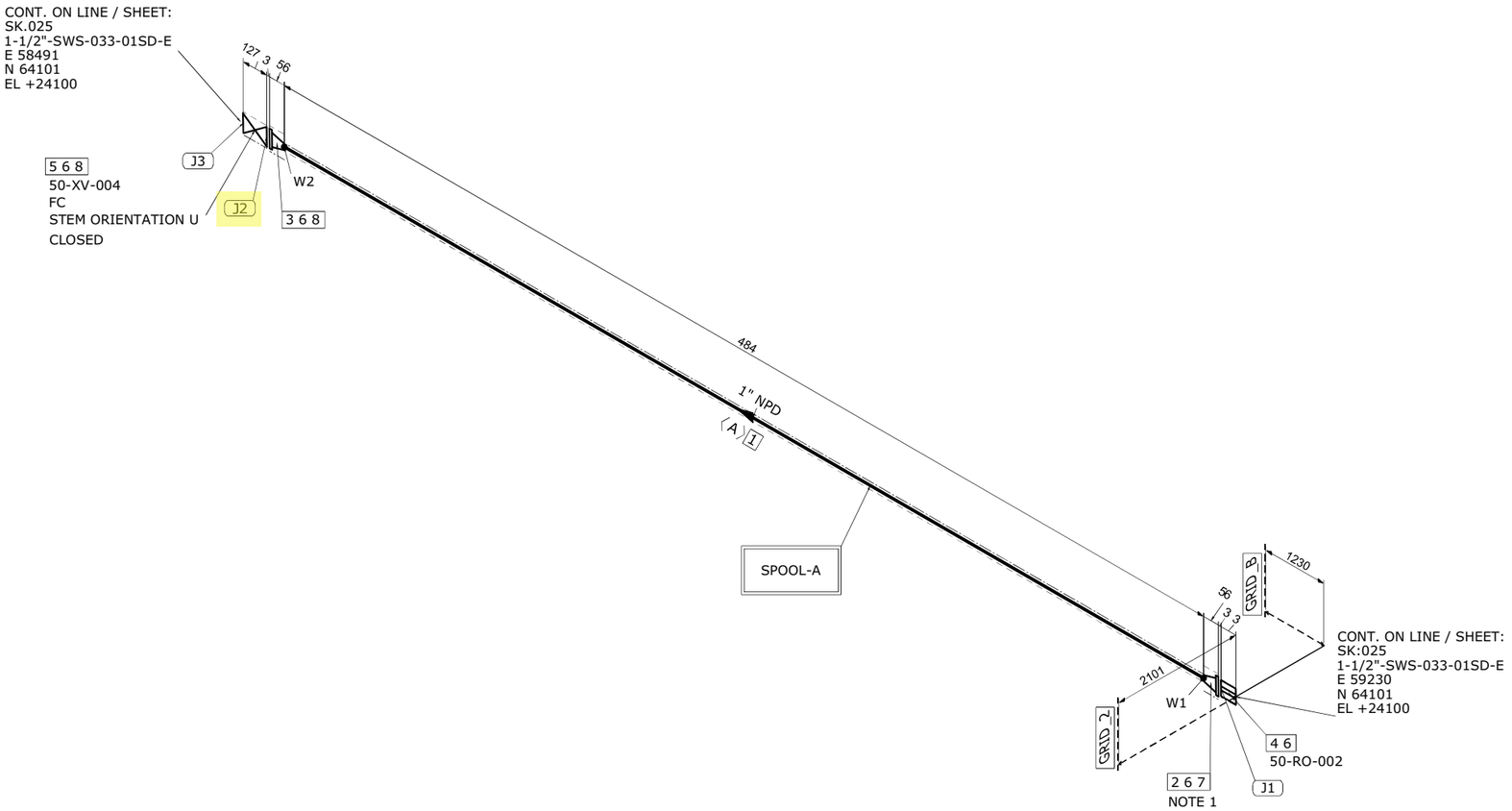
Flange Type	150LB	**Lubricant**	Yes
Flange Size	1"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Flat Thk. 3 mm	**Used tools**	Torque wrench V030390 (12-68 Nm)
Bolt tensioning/Torquing value	48.6		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	15	49	15	29	48.6
2	15	49	15	29	48.6
3	15	49	15	29	48.6
4	15	49	15	29	48.6
5			15	29	48.6
6			15	29	48.6
7			15	29	48.6
8			15	29	48.6
9			15	29	48.6
10			15	29	48.6
11			15	29	48.6
12			15	29	48.6
13			15	29	48.6
14			15	29	48.6
15			15	29	48.6
16			15	29	48.6
17			15	29	48.6
18			15	29	48.6
19			15	29	48.6
20			15	29	48.6

1	**Clear Bore Inspection:** Pipe and Valve clear of debris/contamination.	Yes
2	**Flange Face Check:** Both flanges clean and free from damage.	Yes
3	**Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique.	Yes
4	**Alignment:** Check alignment according to code.	Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-01-30	2025-02-21	
Signature	Digitaly signed by Emanuele Delfino 2025-01-30T05:31:54.388Z	Digitaly signed by Massimo Bruschi 2025-02-21T11:47:25.321Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPESD02850100	Pipe ASME B36.19M PE 3,38 SML ASTM A790 UNS S32760	0.5M	1.2
2	1	FLWDSD00300100	Flange WN For Jackscrews ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	1	1.4
3	1	FLW0SD01240100	Flange WN ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	1	1.4

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
4	1		Restriction Orifice 150#RF	1	1.0
5	1		ON/OFF Ball Actuator Valve - 150#RF Flanged	1	40.0
6	1	GFL3GK15970100	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	4	0.2
7	1/2	SB20BO00940200	75 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.5
8	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.0

FABRICATION WEIGHT [kg]	4.0
ERECTION WEIGHT [kg]	42.7
OVERALL WEIGHT [kg]	46.7

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1	BW
W2	1	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1	485	BEVEL	BEVEL

SUPPORT LIST

SPOOL	WELD [inches]	WEIGHT [kg]
A	2	4.1
MONT	0	42.7

LINE DATA

NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3			
PAINTING	SYSTEM N/A	BASE RAL N/A	FLUID PHASE	Liquid			
INSULATION	TYPE H	THICKNESS 20 [mm]	DESIGN	PRESS. 7.6 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	Yes		TEST	PRESS. 11.4 [barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80021
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

1.JACKSCREWS POSITION N/S

MASTER

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 1"-SWS-147-01SD-E

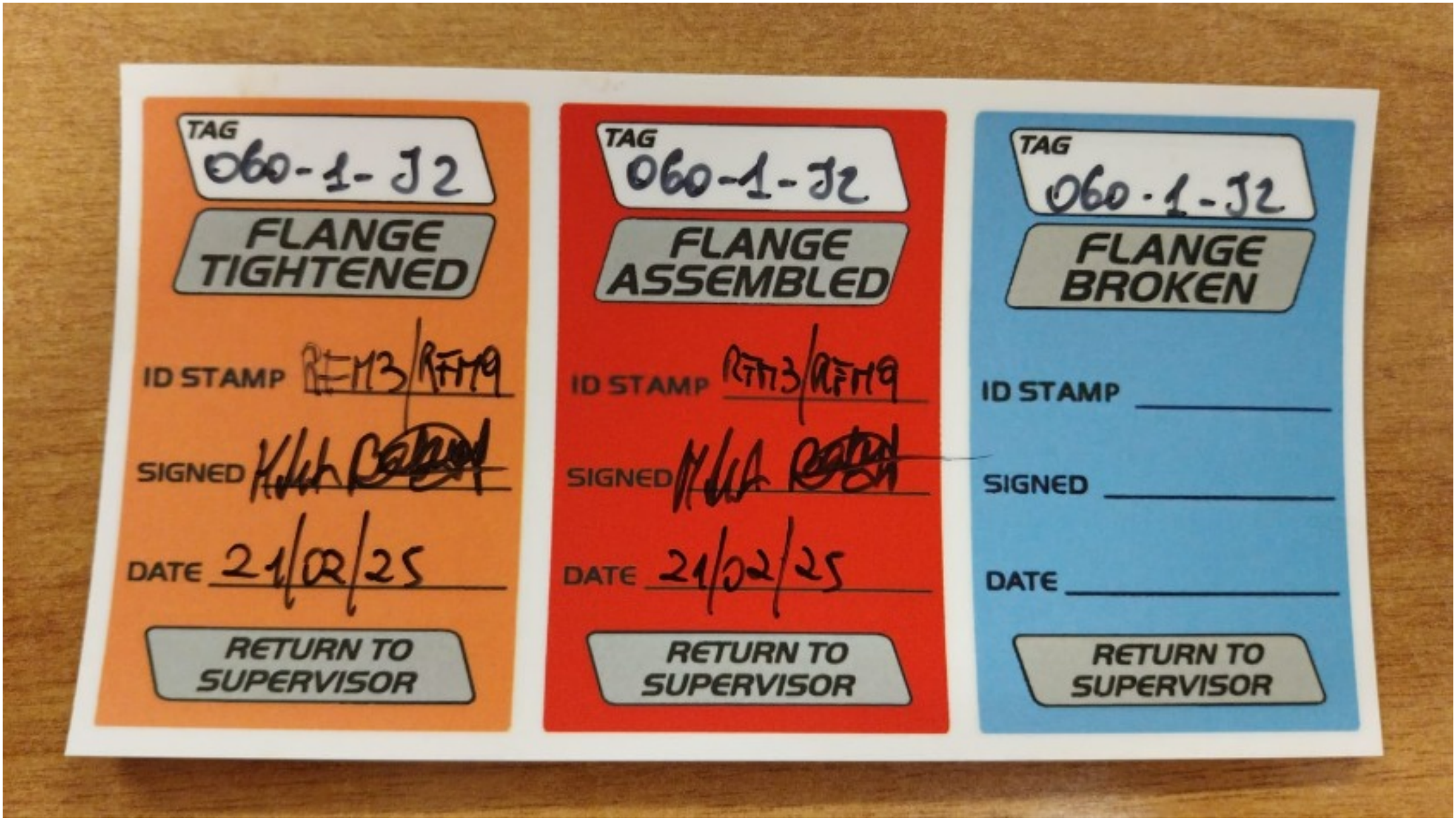
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CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE: N/A

DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 27-08-2024

FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00060 | SHEET / OF: 1/1 | REV.: 00

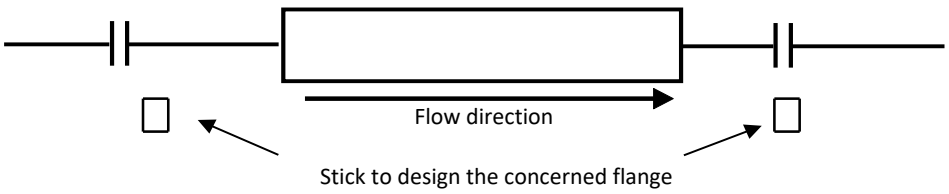

TAG
060-1-J2
FLANGE TIGHTENED
ID STAMP RTM3/RTM9
SIGNED
DATE 21/02/25
RETURN TO SUPERVISOR
TAG
060-1-J2
FLANGE ASSEMBLED
ID STAMP RTM3/RTM9
SIGNED
DATE 21/02/25
RETURN TO SUPERVISOR
TAG
060-1-J2
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	060-1-J3	: Joint 060-1-J3			Dwg	123A90-FDL-PP-DI-00060-01
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10004241	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27

Bolt tensioning / torquing

Test Pack N.: TP-001

EQUIPMENT TAG



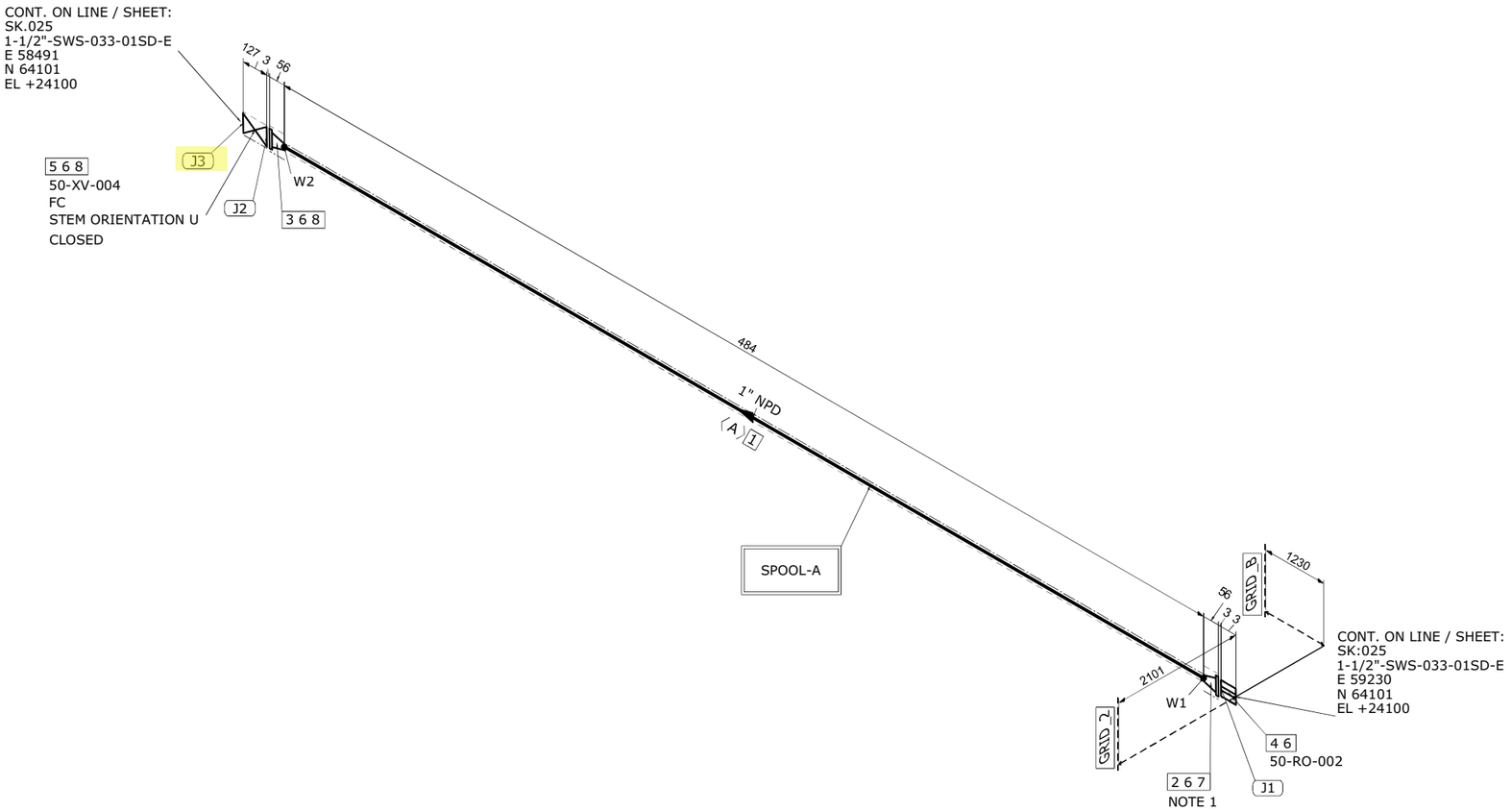
Flange Type	150LB	**Lubricant**	Yes
Flange Size	1"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Flat Thk. 3 mm	**Used tools**	Torque wrench V030390 (12-68 Nm)
Bolt tensioning/Torquing value	48.6		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	15	49	15	29	48.6
2	15	49	15	29	48.6
3	15	49	15	29	48.6
4	15	49	15	29	48.6
5			15	29	48.6
6			15	29	48.6
7			15	29	48.6
8			15	29	48.6
9			15	29	48.6
10			15	29	48.6
11			15	29	48.6
12			15	29	48.6
13			15	29	48.6
14			15	29	48.6
15			15	29	48.6
16			15	29	48.6
17			15	29	48.6
18			15	29	48.6
19			15	29	48.6
20			15	29	48.6

1	**Clear Bore Inspection:** Pipe and Valve clear of debris/contamination.	Yes
2	**Flange Face Check:** Both flanges clean and free from damage.	Yes
3	**Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique.	Yes
4	**Alignment:** Check alignment according to code.	Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-01-30	2025-02-21	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-30T05:32:05.885Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-02-21T11:47:18.829Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPESD02850100	Pipe ASME B36.19M PE 3,38 SML ASTM A790 UNS S32760	0.5M	1.2
2	1	FLWDSD00300100	Flange WN For Jackscrews ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	1	1.4
3	1	FLW0SD01240100	Flange WN ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	1	1.4

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
4	1		Restriction Orifice 150#RF	1	1.0
5	1		ON/OFF Ball Actuator Valve - 150#RF Flanged	1	40.0
6	1	GFL3GK15970100	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	4	0.2
7	1/2	SB20BO00940200	75 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.5
8	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.0

FABRICATION WEIGHT [kg]	4.0
ERECTION WEIGHT [kg]	42.7
OVERALL WEIGHT [kg]	46.7

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1	BW
W2	1	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1	485	BEVEL	BEVEL

SUPPORT LIST

SPOOL	WELD [inches]	WEIGHT [kg]
A	2	4.1
MONT	0	42.7

LINE DATA

NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3			
PAINTING	SYSTEM N/A	BASE RAL N/A	FLUID PHASE	Liquid			
INSULATION	TYPE H	THICKNESS 20 [mm]	DESIGN	PRESS. 7.6 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	Yes		TEST	PRESS. 11.4 [barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80021
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

1.JACKSCREWS POSITION N/S

MASTER

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 1"-SWS-147-01SD-E

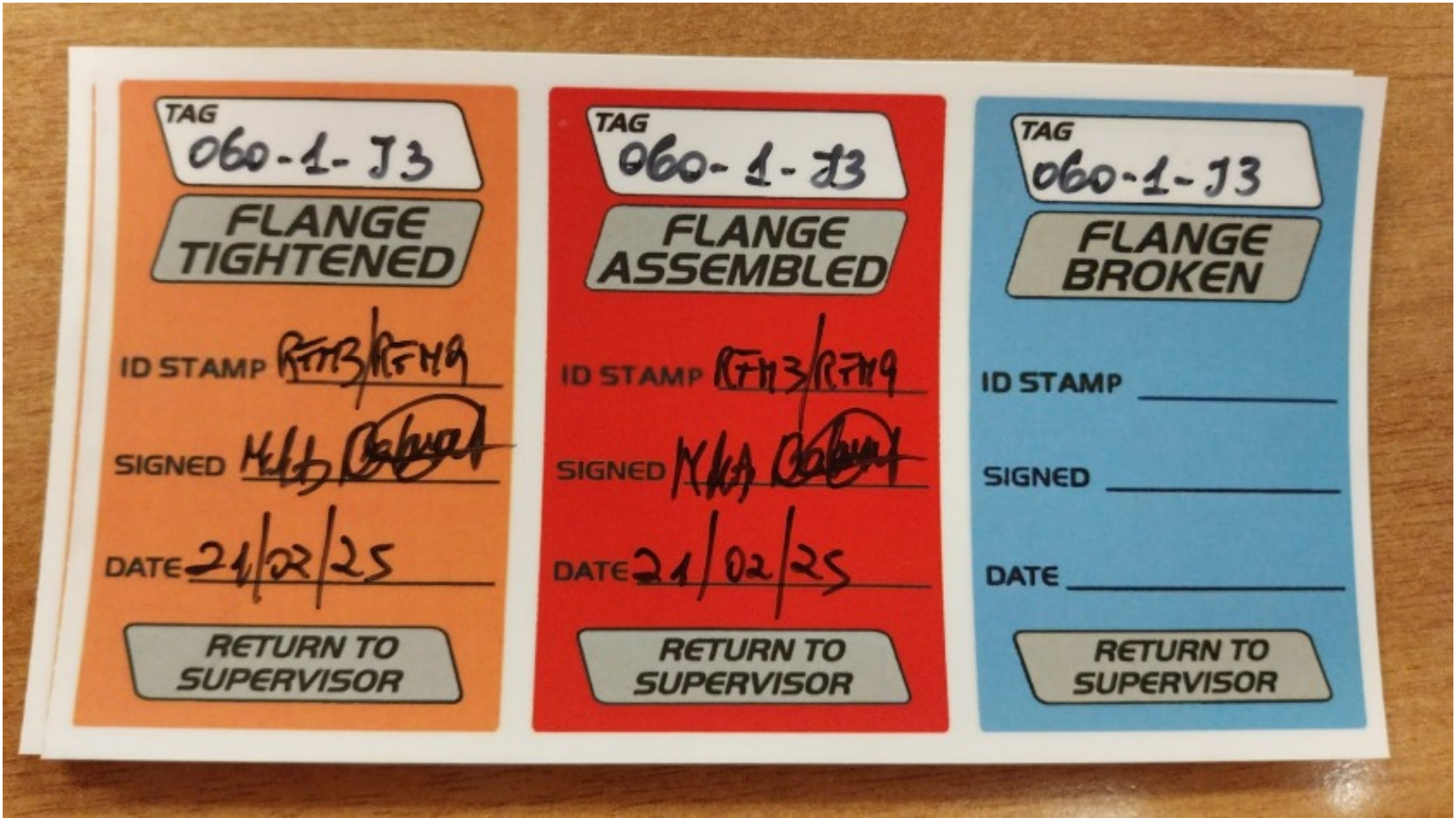
SK.060

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE: N/A

DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 27-08-2024

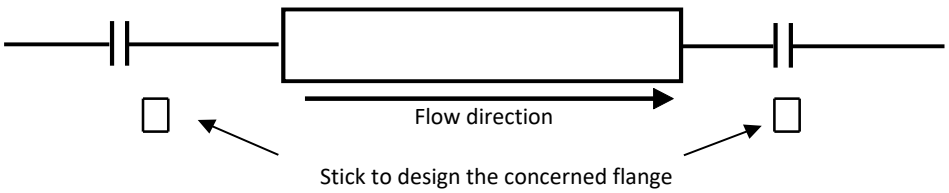
FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00060 | SHEET / OF: 1/1 | REV.: 00


TAG
060-1-J3
FLANGE TIGHTENED
ID STAMP RTH3/RTH9
SIGNED
DATE 21/02/25
RETURN TO SUPERVISOR
TAG
060-1-J3
FLANGE ASSEMBLED
ID STAMP RTH3/RTH9
SIGNED
DATE 21/02/25
RETURN TO SUPERVISOR
TAG
060-1-J3
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	117-1-J1	: Joint 117-1-J1			Dwg	123A90-FDL-PP-DI-00117-01
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10004284	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27 Bolt tensioning / torquing

Test Pack N.: TP-045

EQUIPMENT TAG



Flange Type	150LB	**Lubricant**	Yes
Flange Size	1"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Flat Thk. 3 mm	**Used tools**	V030390 / RD00261
Bolt tensioning/Torquing value	48.6		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	15	50	15	29	48.6
2	15	50	15	29	48.6
3	15	50	15	29	48.6
4	15	50	15	29	48.6
5			15	29	48.6
6			15	29	48.6
7			15	29	48.6
8			15	29	48.6
9			15	29	48.6
10			15	29	48.6
11			15	29	48.6
12			15	29	48.6
13			15	29	48.6
14			15	29	48.6
15			15	29	48.6
16			15	29	48.6
17			15	29	48.6
18			15	29	48.6
19			15	29	48.6
20			15	29	48.6

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

2 **Flange Face Check:** Both flanges clean and free from damage. Yes

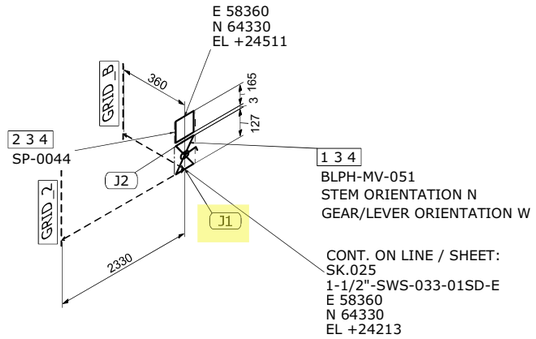
3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Andrea Mancini	
Date	2025-01-29	2025-01-29	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-29T10:21:13.264Z	PROVERLIS Digitaly signed by Andrea Mancini 2025-01-29T13:13:53.134Z	

N



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	VBC0NN24440100	Ball Valve Split Body FB API 6D FLG 150LB RF BS01F01RF	1	9.0
2	1	SPARNN00010100	Air Release Valve Manuf.s STD FLG 150LB RF SP-0043	1	0.0
3	1	GFL3GK15970100	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	2	0.1
4	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.0

FABRICATION WEIGHT [kg]	0.0
ERECTION WEIGHT [kg]	10.1
OVERALL WEIGHT [kg]	10.1

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2

SUPPORT LIST

SPOOL	WELD [inches]	WEIGHT [kg]
MONT	0	10.1

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 1"-SWS-221-01SD-E

SK.117

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE: N/A

DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 27-08-2024

FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00117 | SHEET / OF: 1/1 | REV.: 00

LINE DATA

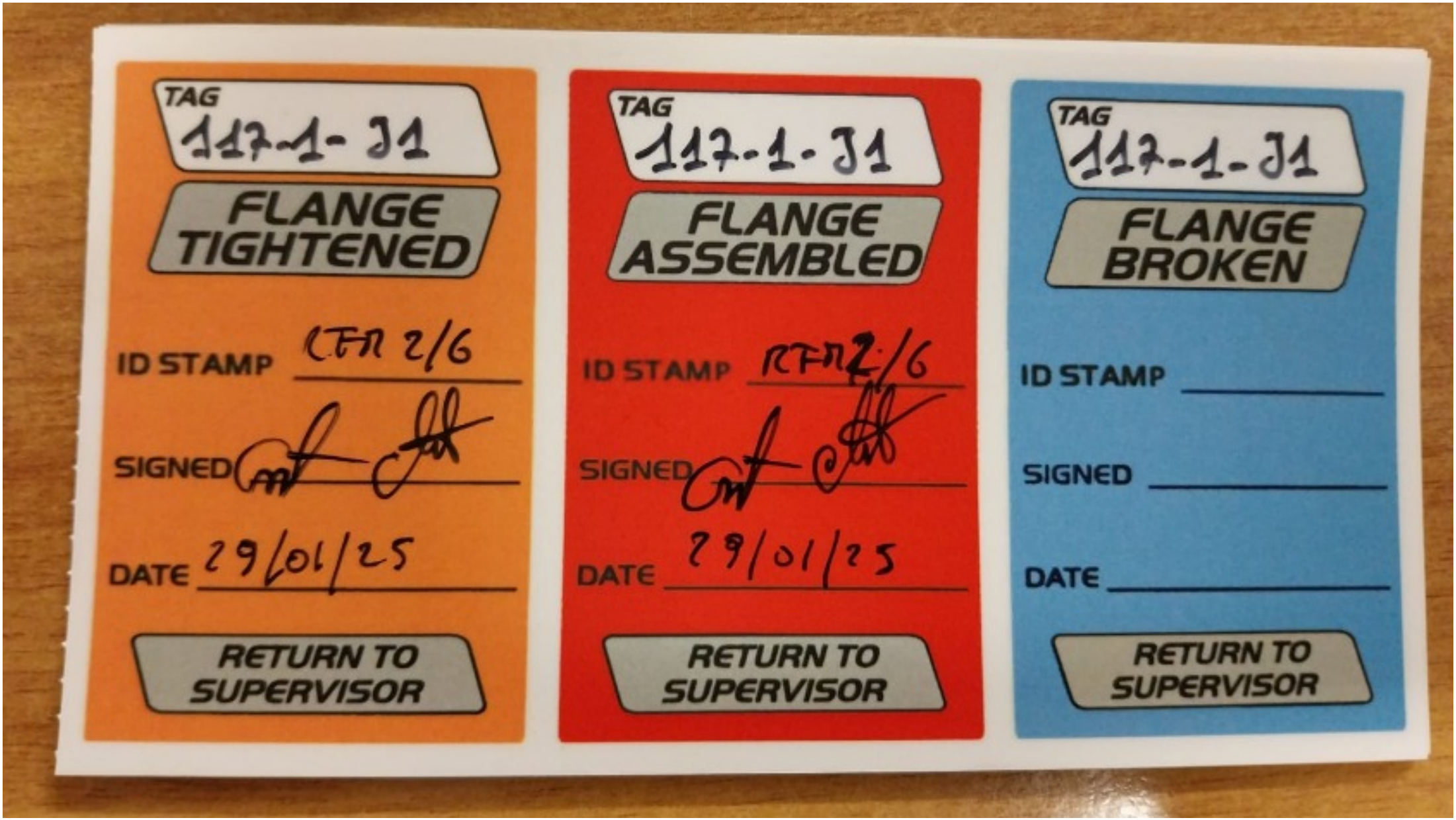
NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3					
PAINTING	SYSTEM N/A	BASE RAL N/A	FLUID PHASE	Liquid					
INSULATION	TYPE H	THICKNESS 20 mm [mm]	DESIGN	PRESS. 7.6	[barg]	TEMP. -29 / 100	[°C]		
HEAT TRACING	Yes		TEST	PRESS. N/A	[barg]	TEMP. AMB	MEDIUM N/A		

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80021
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

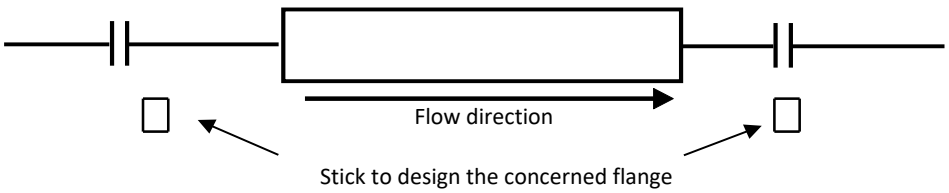
MASTER


TAG
117-1-J1
FLANGE TIGHTENED
ID STAMP CFR 2/6
SIGNED
DATE 29/01/25
RETURN TO SUPERVISOR
TAG
117-1-J1
FLANGE ASSEMBLED
ID STAMP CFR 2/6
SIGNED
DATE 29/01/25
RETURN TO SUPERVISOR
TAG
117-1-J1
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	117-1-J2	: Joint 117-1-J2			Dwg	123A90-FDL-PP-DI-00117-01
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10004285	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27 Bolt tensioning / torquing

Test Pack N.: TP-045

EQUIPMENT TAG



Flange Type	150LB	**Lubricant**	Yes
Flange Size	1"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Flat Thk. 3 mm	**Used tools**	V030390 / RD00261
Bolt tensioning/Torquing value	48.6		

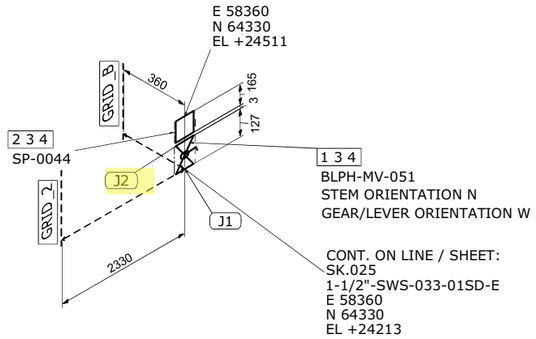
			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	15	50	15	29	48.6
2	15	50	15	29	48.6
3	15	50	15	29	48.6
4	15	50	15	29	48.6
5			15	29	48.6
6			15	29	48.6
7			15	29	48.6
8			15	29	48.6
9			15	29	48.6
10			15	29	48.6
11			15	29	48.6
12			15	29	48.6
13			15	29	48.6
14			15	29	48.6
15			15	29	48.6
16			15	29	48.6
17			15	29	48.6
18			15	29	48.6
19			15	29	48.6
20			15	29	48.6

1	**Clear Bore Inspection:** Pipe and Valve clear of debris/contamination.	Yes
2	**Flange Face Check:** Both flanges clean and free from damage.	Yes
3	**Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique.	Yes
4	**Alignment:** Check alignment according to code.	Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Andrea Mancini	
Date	2025-01-29	2025-01-29	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-29T10:15:00.213Z	PROVERLIS Digitaly signed by Andrea Mancini 2025-01-29T13:14:16.416Z	

N



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	VBC0NN24440100	Ball Valve Split Body FB API 6D FLG 150LB RF BS01F01RF	1	9.0
2	1	SPARNN00010100	Air Release Valve Manuf.s STD FLG 150LB RF SP-0043	1	0.0
3	1	GFL3GK15970100	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	2	0.1
4	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.0

FABRICATION WEIGHT [kg]	0.0
ERECTION WEIGHT [kg]	10.1
OVERALL WEIGHT [kg]	10.1

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2

SUPPORT LIST

SPOOL	WELD [inches]	WEIGHT [kg]
MONT	0	10.1

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 1"-SWS-221-01SD-E

SK.117

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE: N/A

DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 27-08-2024

FORMAT: A3

DRAWING NO.: 123A90-FDL-PP-DI-00117

SHEET / OF: 1/1

REV.: 00

LINE DATA

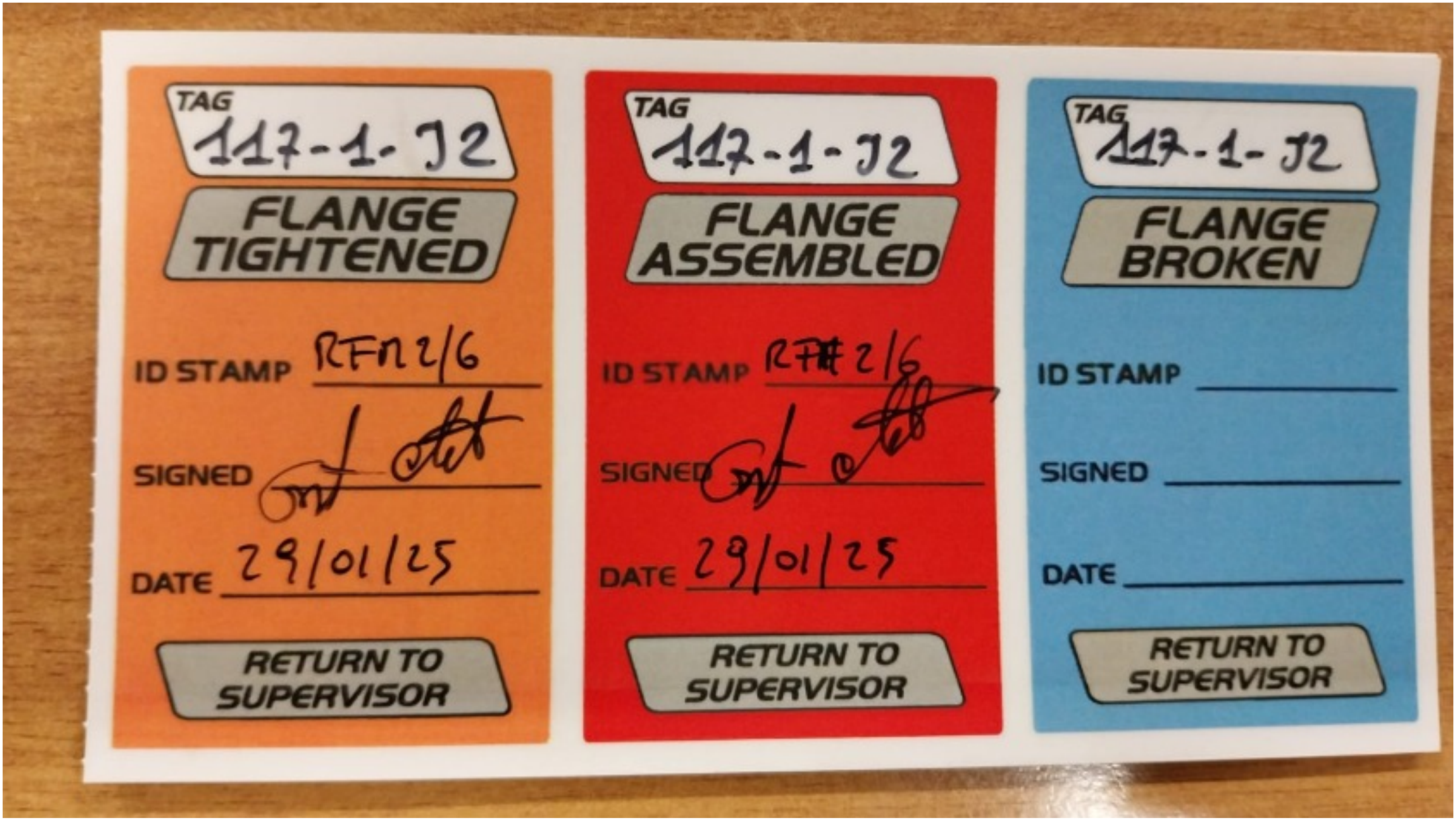
NDT INSPECTION CATEGORY	2			PED CATEGORY	Art. 4, par. 3				
PAINTING	SYSTEM N/A	BASE RAL N/A		FLUID PHASE	Liquid				
INSULATION	TYPE H	THICKNESS 20 mm	[mm]	DESIGN	PRESS. 7.6	[barg]	TEMP. -29 / 100	[°C]	
HEAT TRACING	Yes			TEST	PRESS. N/A	[barg]	TEMP. AMB	MEDIUM N/A	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80021
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

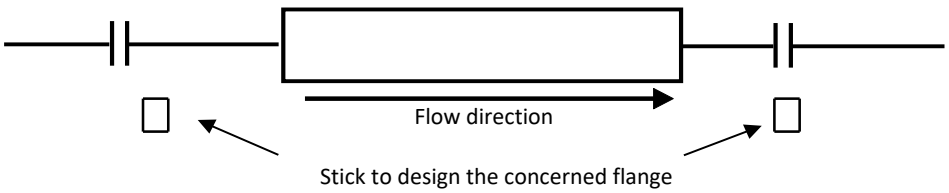
MASTER


TAG
117-1-J2
FLANGE TIGHTENED
ID STAMP RFN 2/6
SIGNED
DATE 29/01/25
RETURN TO SUPERVISOR
TAG
117-1-J2
FLANGE ASSEMBLED
ID STAMP RFN 2/6
SIGNED
DATE 29/01/25
RETURN TO SUPERVISOR
TAG
117-1-J2
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	118-1-J1	: Joint 118-1-J1			Dwg	123A90-FDL-PP-DI-00118-01
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10004286		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27		Bolt tensioning / torquing

Test Pack N.: TP-045

EQUIPMENT TAG



Flange Type 150LB

Flange Size 1"

Gasket Type Gasket Flat Thk. 3 mm

Bolt tensioning/Torquing value 48.6

Lubricant Yes

Lubricant Type MOLYKOTE 1000 PASTE

Used tools V030390 / RD00261

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	15	50	15	29	48.6
2	15	50	15	29	48.6
3	15	50	15	29	48.6
4	15	50	15	29	48.6
5			15	29	48.6
6			15	29	48.6
7			15	29	48.6
8			15	29	48.6
9			15	29	48.6
10			15	29	48.6
11			15	29	48.6
12			15	29	48.6
13			15	29	48.6
14			15	29	48.6
15			15	29	48.6
16			15	29	48.6
17			15	29	48.6
18			15	29	48.6
19			15	29	48.6
20			15	29	48.6

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

2 **Flange Face Check:** Both flanges clean and free from damage. Yes

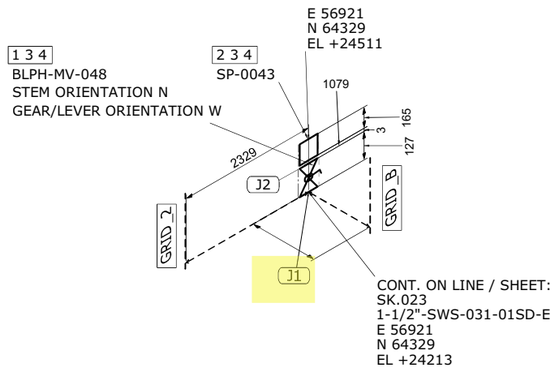
3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Andrea Mancini	
Date	2025-01-29	2025-01-29	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-29T10:14:16.246Z	PROVERLIS Digitaly signed by Andrea Mancini 2025-01-29T13:14:49.999Z	

N



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	VBC0NN24440100	Ball Valve Split Body FB API 6D FLG 150LB RF BS01F01RF	1	9.0
2	1	SPARNN00010100	Air Release Valve Manuf.s STD FLG 150LB RF SP-0043	1	0.0
3	1	GFL3GK15970100	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	2	0.1
4	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.0

FABRICATION WEIGHT [kg]	0.0
ERECTION WEIGHT [kg]	10.1
OVERALL WEIGHT [kg]	10.1

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2

SUPPORT LIST

SPOOL	WELD [inches]	WEIGHT [kg]
MONT	0	10.1

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 1"-SWS-222-01SD-E

SK.118

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK
SCALE	N/A
DRAWN	STAFF SRL
CHECKED	RT
APPROVED	LM
DATE	27-08-2024
FORMAT	A3
DRAWING NO.	123A90-FDL-PP-DI-00118
SHEET / OF	1/1
REV.	00

LINE DATA

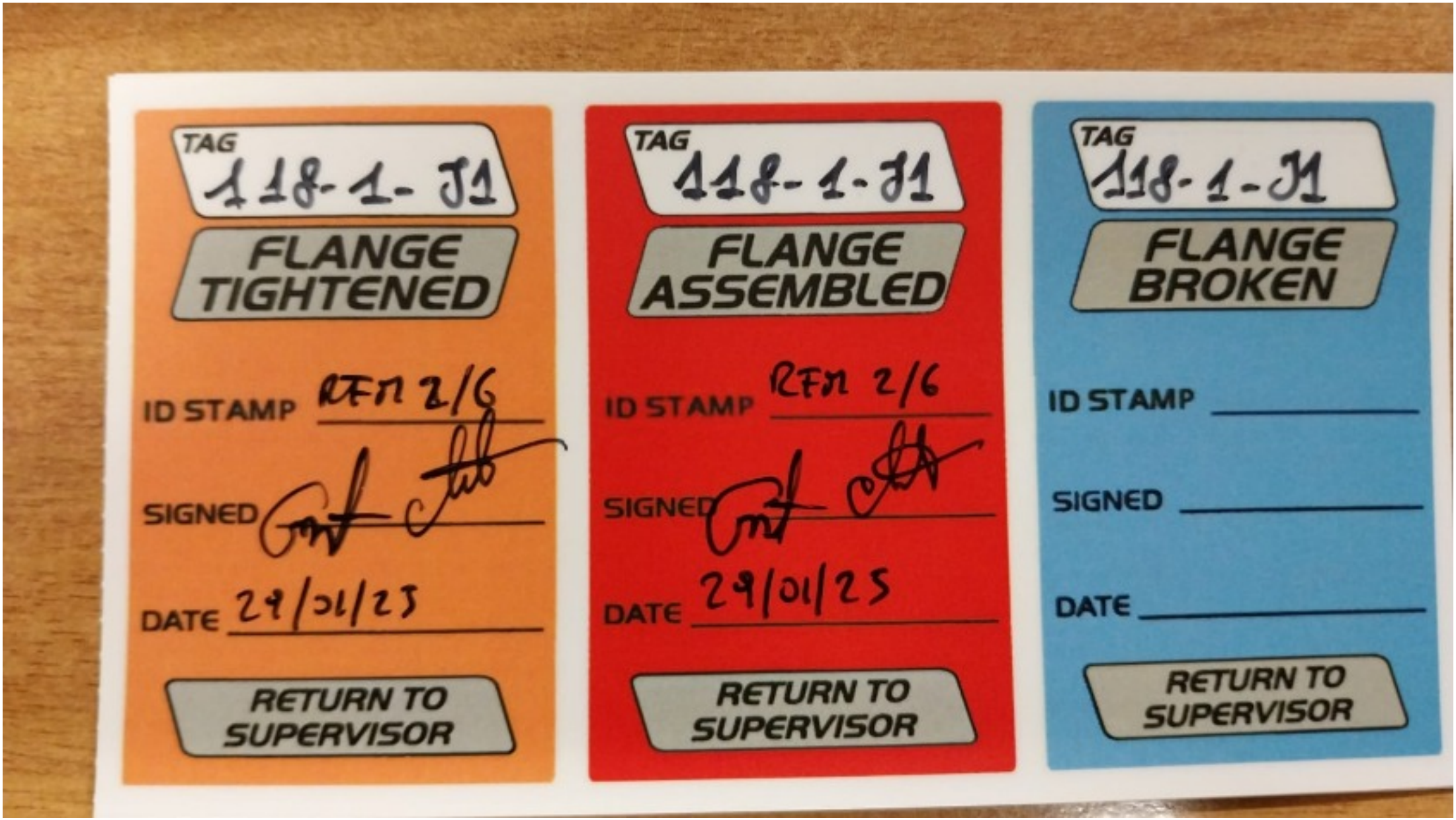
NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3			
PAINTING	SYSTEM N/A	BASE RAL N/A	FLUID PHASE	Liquid			
INSULATION	TYPE H	THICKNESS 20 [mm]	DESIGN	PRESS. 7.6 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	Yes		TEST	PRESS. N/A [barg]	TEMP. AMB	MEDIUM N/A	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80021
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

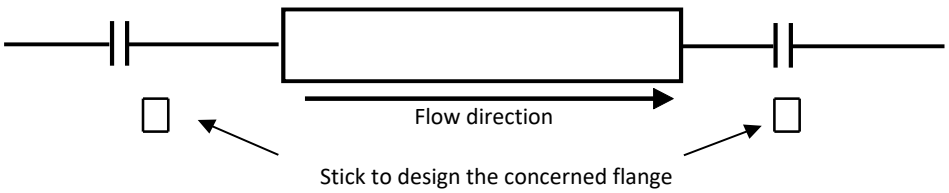
MASTER


TAG
118-1-J1
FLANGE TIGHTENED
ID STAMP RFN 2/6
SIGNED
DATE 29/01/25
RETURN TO SUPERVISOR
TAG
118-1-J1
FLANGE ASSEMBLED
ID STAMP RFN 2/6
SIGNED
DATE 29/01/25
RETURN TO SUPERVISOR
TAG
118-1-J1
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	118-1-J2	: Joint 118-1-J2			Dwg	123A90-FDL-PP-DI-00118-01
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10004287	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27 Bolt tensioning / torquing

Test Pack N.: TP-045

EQUIPMENT TAG



Flange Type	150LB	**Lubricant**	Yes
Flange Size	1"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Flat Thk. 3 mm	**Used tools**	V030390 / RD00261
Bolt tensioning/Torquing value	48.6		

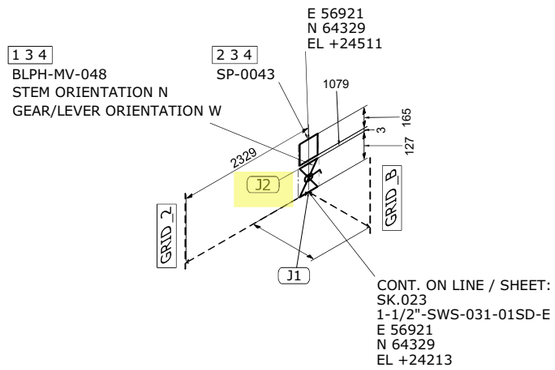
			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	15	50	15	29	48.6
2	15	50	15	29	48.6
3	15	50	15	29	48.6
4	15	50	15	29	48.6
5			15	29	48.6
6			15	29	48.6
7			15	29	48.6
8			15	29	48.6
9			15	29	48.6
10			15	29	48.6
11			15	29	48.6
12			15	29	48.6
13			15	29	48.6
14			15	29	48.6
15			15	29	48.6
16			15	29	48.6
17			15	29	48.6
18			15	29	48.6
19			15	29	48.6
20			15	29	48.6

1	**Clear Bore Inspection:** Pipe and Valve clear of debris/contamination.	Yes
2	**Flange Face Check:** Both flanges clean and free from damage.	Yes
3	**Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique.	Yes
4	**Alignment:** Check alignment according to code.	Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Andrea Mancini	
Date	2025-01-29	2025-01-29	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-29T10:13:32.655Z	PROVERLIS Digitaly signed by Andrea Mancini 2025-01-29T13:15:13.494Z	

N



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	VBC0NN24440100	Ball Valve Split Body FB API 6D FLG 150LB RF BS01F01RF	1	9.0
2	1	SPARNN00010100	Air Release Valve Manuf.s STD FLG 150LB RF SP-0043	1	0.0
3	1	GFL3GK15970100	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	2	0.1
4	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.0

FABRICATION WEIGHT [kg]	0.0
ERECTION WEIGHT [kg]	10.1
OVERALL WEIGHT [kg]	10.1

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2

SUPPORT LIST

SPOOL	WELD [inches]	WEIGHT [kg]
MONT	0	10.1

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 1"-SWS-222-01SD-E

SK.118

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE: N/A

DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 27-08-2024

FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00118 | SHEET / OF: 1/1 | REV.: 00

LINE DATA

NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3			
PAINTING	SYSTEM N/A	BASE RAL N/A	FLUID PHASE	Liquid			
INSULATION	TYPE H	THICKNESS 20 [mm]	DESIGN	PRESS. 7.6 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	Yes		TEST	PRESS. N/A [barg]	TEMP. AMB.	MEDIUM N/A	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80021
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

MASTER

TAG 118-1-J2

FLANGE TIGHTENED

ID STAMP CEM 2/6

SIGNED

DATE 29/01/25

RETURN TO SUPERVISOR

TAG 118-1-J2

FLANGE ASSEMBLED

ID STAMP CEM 2/6

SIGNED

DATE 29/01/25

RETURN TO SUPERVISOR

TAG 118-1-J2

FLANGE BROKEN

ID STAMP

SIGNED

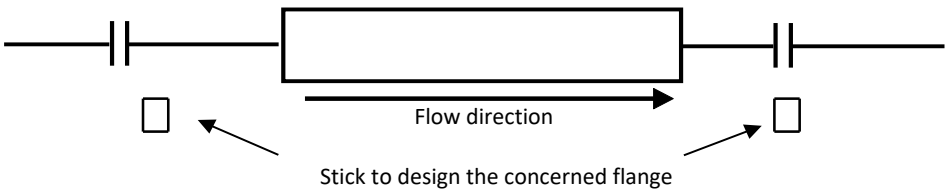
DATE

RETURN TO SUPERVISOR

ITEM	Tag	150-1-J1	: Joint 150-1-J1		Dwg	123A90-FDL-PP-DI-00150-01	
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)		Module	LD	
TASK	code	C10004303	Location	Onshore Activities	User	Rosetti Marino Quality Control	
FORM	Process	MC	Activity PIP	Discipline Piping	Form	TMX27	Bolt tensioning / torquing

Test Pack N.: TP-001

EQUIPMENT TAG



Flange Type 150LB

Flange Size 1"

Gasket Type Gasket Flat Thk. 3 mm

Bolt tensioning/Torquing value 48.6

Lubricant Yes

Lubricant Type MOLYKOTE 1000 PASTE

Used tools V030390 / RD00261

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	15	50	15	29	48.6
2	15	50	15	29	48.6
3	15	50	15	29	48.6
4	15	50	15	29	48.6
5			15	29	48.6
6			15	29	48.6
7			15	29	48.6
8			15	29	48.6
9			15	29	48.6
10			15	29	48.6
11			15	29	48.6
12			15	29	48.6
13			15	29	48.6
14			15	29	48.6
15			15	29	48.6
16			15	29	48.6
17			15	29	48.6
18			15	29	48.6
19			15	29	48.6
20			15	29	48.6

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

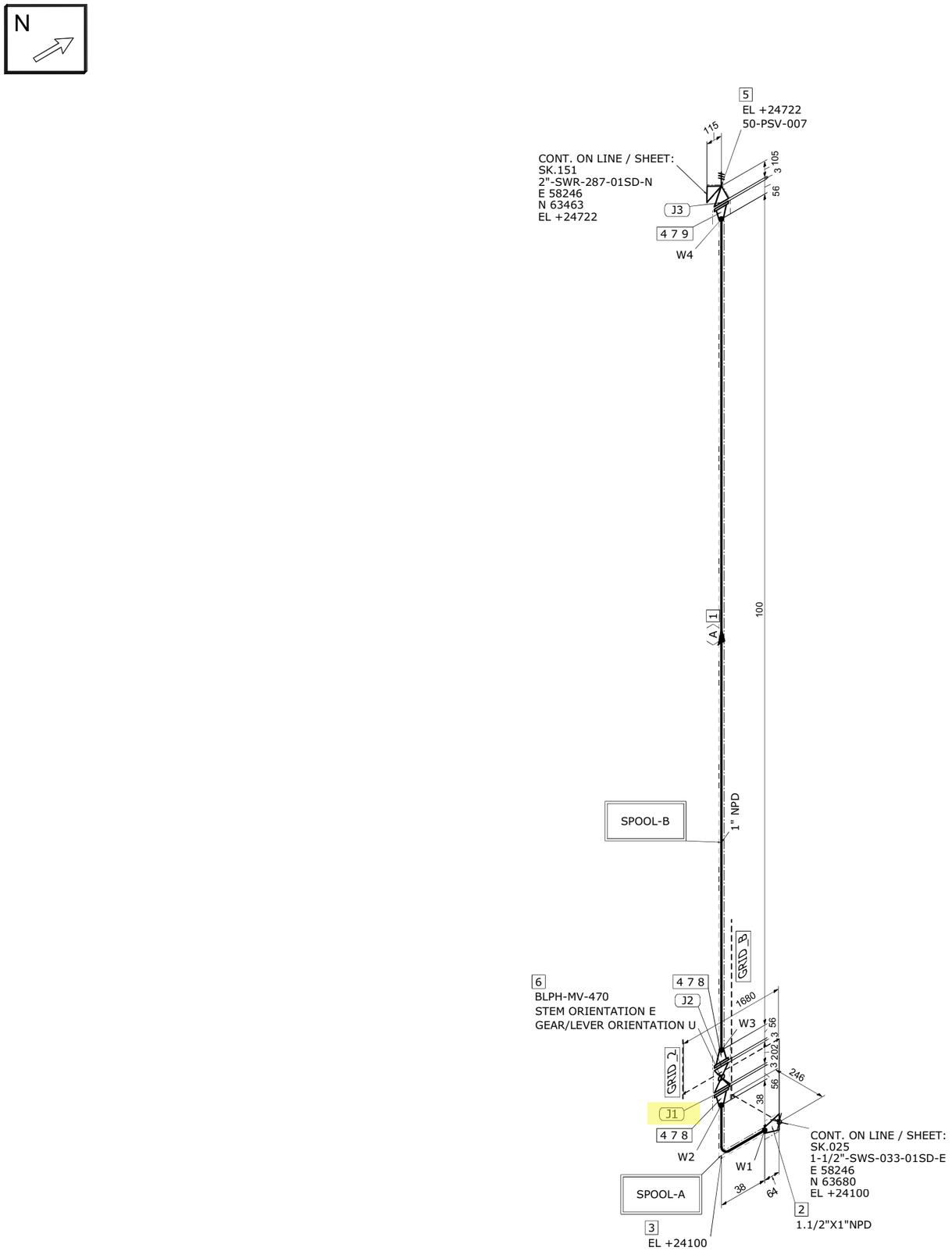
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Andrea Mancini	
Date	2025-01-30	2025-01-30	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-30T05:32:22.029Z	PROVERLIS Digitaly signed by Andrea Mancini 2025-01-30T10:19:48.197Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPESD02850100	Pipe ASME B36.19M PE 3,38 SML ASTM A790 UNS S32760	0.1M	0.3
2	1.1/2X1	REC0SD08001H01	Reducer Concentric ASME B16.9 BW 3,68x3,38 WRS ASTM A815 UNS S32760	1	0.3
3	1	E90RSD01640100	90 Deg Elbow Long Radius ASME B16.9 BW 3,38 WRS ASTM A815 UNS S32760	1	0.1
4	1	FLW0SD01240100	Flange WN ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	3	4.3

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
5	2X1		SAFETY VALVE FLG.150/150#RF	1	15.0
6	1	VLBLNN01370100	Block & Bleed Valve API 6D FLG 150LB RF BS01F01RFS	1	12.5
7	1	GFL3GK15970100	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	3	0.2
8	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.0
9	1/2	SB20BO34450200	105 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.7

FABRICATION WEIGHT [kg]	5.0
ERECTION WEIGHT [kg]	19.4
OVERALL WEIGHT [kg]	34.4

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1	BW
W2	1	BW
W3	1	BW
W4	1	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1	100	BEVEL	BEVEL

SUPPORT LIST

SPOOL	WELD [inches]	WEIGHT [kg]
A	2	1.8
B	2	3.1
MONT	0	29.4

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 1"-SWS-286-01SD-E

SK.150

LINE DATA

NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3				
PAINTING	SYSTEM N/A	BASE RAL N/A	FLUID PHASE	Liquid				
INSULATION	TYPE H	THICKNESS 20 [mm]	DESIGN	PRESS. 7.6 [barg]	TEMP. -29 / 100 [°C]			
HEAT TRACING	Yes		TEST	PRESS. 11.4 [barg]	TEMP. AMB	MEDIUM Water		

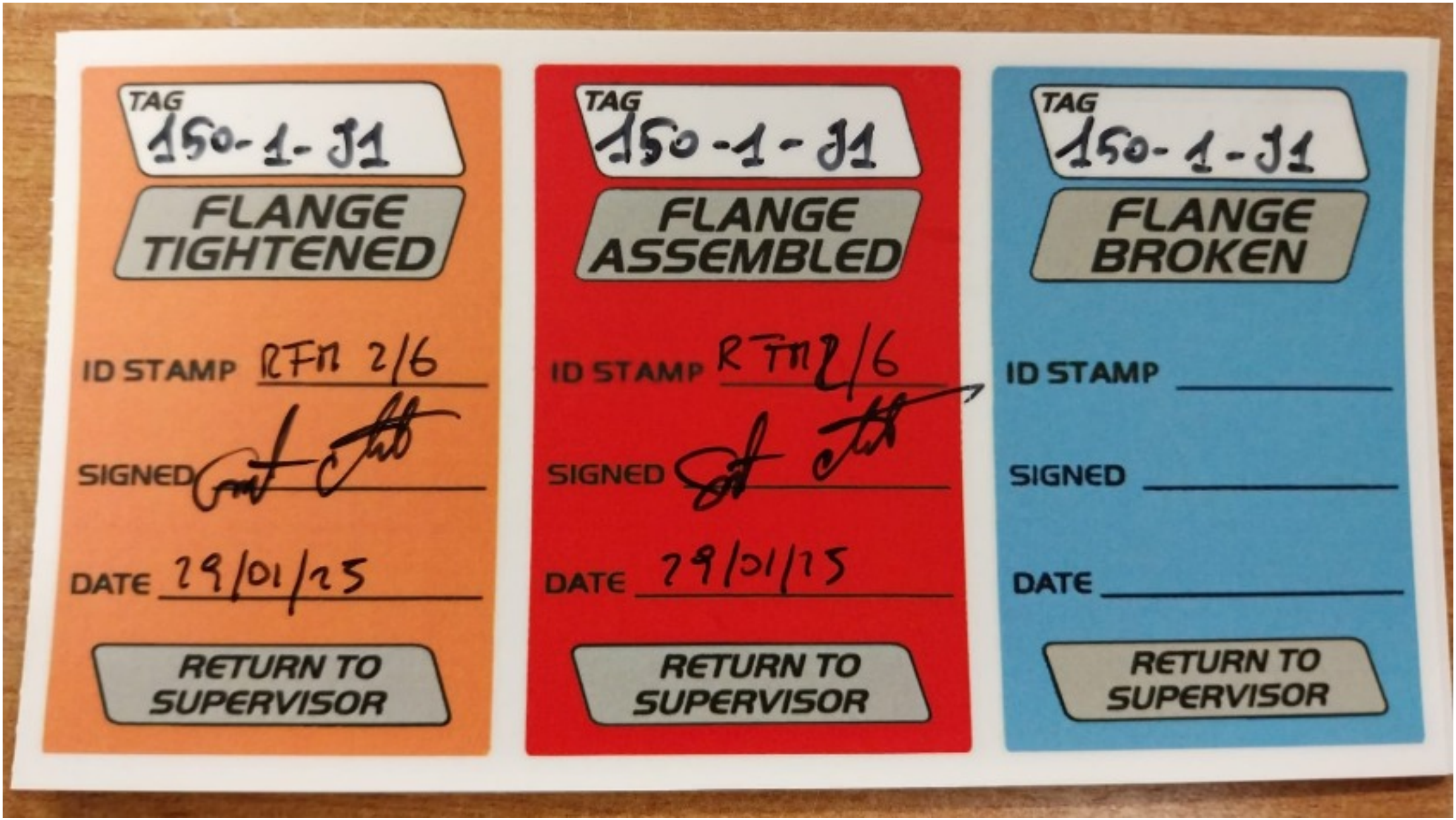
REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80021
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

MASTER

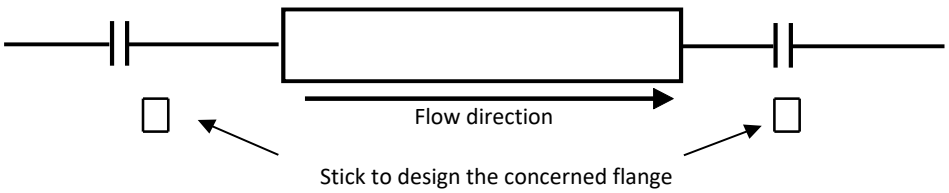
CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE	N/A
DRAWN STAFF SRL	CHECKED RT	APPROVED LM	DATE	27-08-2024
FORMAT A3	DRAWING NO. 123A90-FDL-PP-DI-00150		SHEET / OF 1/1	REV. 00


TAG
150-1-J1
FLANGE TIGHTENED
ID STAMP RFN 2/6
SIGNED
DATE 29/01/25
RETURN TO SUPERVISOR
TAG
150-1-J1
FLANGE ASSEMBLED
ID STAMP RFN 2/6
SIGNED
DATE 29/01/25
RETURN TO SUPERVISOR
TAG
150-1-J1
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	150-1-J2	: Joint 150-1-J2			Dwg	123A90-FDL-PP-DI-00150-01
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10004304		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27		Bolt tensioning / torquing

Test Pack N.: TP-001

EQUIPMENT TAG



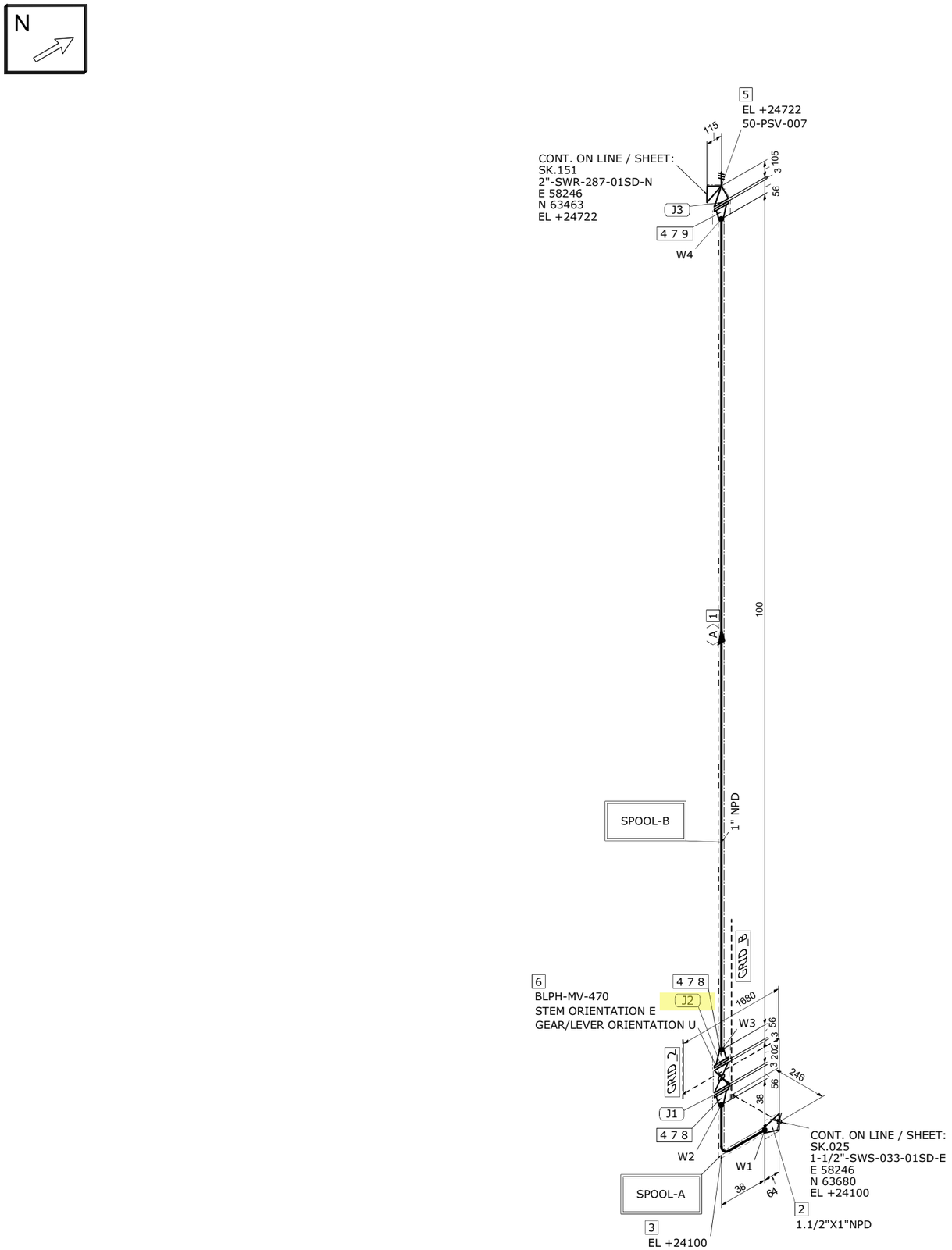
Flange Type	150LB	**Lubricant**	Yes
Flange Size	1"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Flat Thk. 3 mm	**Used tools**	V030390 / RD00261
Bolt tensioning/Torquing value	48.6		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	15	50	15	29	48.6
2	15	50	15	29	48.6
3	15	50	15	29	48.6
4	15	50	15	29	48.6
5			15	29	48.6
6			15	29	48.6
7			15	29	48.6
8			15	29	48.6
9			15	29	48.6
10			15	29	48.6
11			15	29	48.6
12			15	29	48.6
13			15	29	48.6
14			15	29	48.6
15			15	29	48.6
16			15	29	48.6
17			15	29	48.6
18			15	29	48.6
19			15	29	48.6
20			15	29	48.6

1	**Clear Bore Inspection:** Pipe and Valve clear of debris/contamination.	Yes
2	**Flange Face Check:** Both flanges clean and free from damage.	Yes
3	**Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique.	Yes
4	**Alignment:** Check alignment according to code.	Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Andrea Mancini	
Date	2025-01-30	2025-01-30	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-30T05:32:34.340Z	PROVERLIS Digitaly signed by Andrea Mancini 2025-01-30T10:20:21.442Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPESD02850100	Pipe ASME B36.19M PE 3,38 SML ASTM A790 UNS S32760	0.1M	0.3
2	1.1/2X1	REC0SD08001H01	Reducer Concentric ASME B16.9 BW 3,68x3,38 WRS ASTM A815 UNS S32760	1	0.3
3	1	E90RSD01640100	90 Deg Elbow Long Radius ASME B16.9 BW 3,38 WRS ASTM A815 UNS S32760	1	0.1
4	1	FLW0SD01240100	Flange WN ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	3	4.3

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
5	2X1		SAFETY VALVE FLG.150/150#RF	1	15.0
6	1	VLBLNN01370100	Block & Bleed Valve API 6D FLG 150LB RF BS01F01RFS	1	12.5
7	1	GFL3GK15970100	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	3	0.2
8	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.0
9	1/2	SB20BO34450200	105 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.7

FABRICATION WEIGHT [kg]	5.0
ERECTION WEIGHT [kg]	19.4
OVERALL WEIGHT [kg]	34.4

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1	BW
W2	1	BW
W3	1	BW
W4	1	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1	100	BEVEL	BEVEL

SUPPORT LIST

SPOOL	WELD [inches]	WEIGHT [kg]
A	2	1.8
B	2	3.1
MONT	0	29.4

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 1"-SWS-286-01SD-E

SK.150

LINE DATA

NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3			
PAINTING	SYSTEM N/A	BASE RAL N/A	FLUID PHASE	Liquid			
INSULATION	TYPE H	THICKNESS 20 [mm]	DESIGN	PRESS. 7.6 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	Yes		TEST	PRESS. 11.4 [barg]	TEMP. AMB	MEDIUM Water	

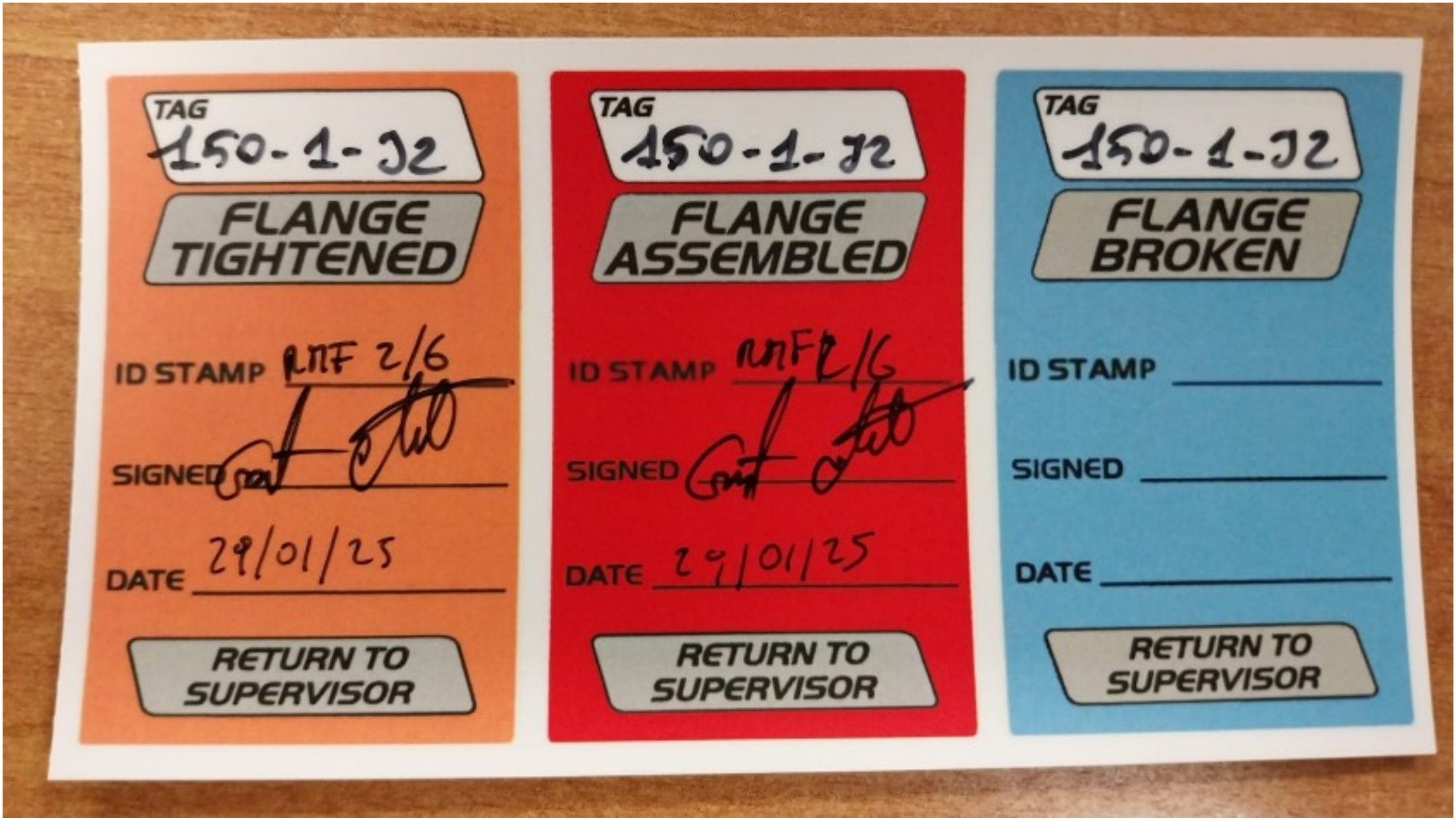
REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80021
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

MASTER

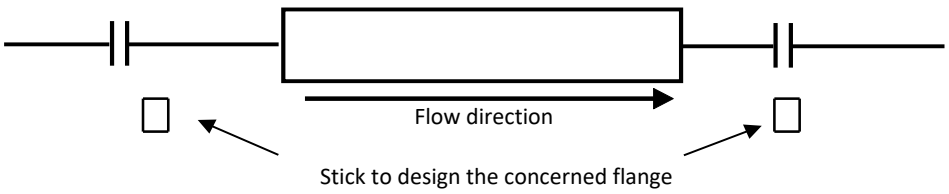
CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	N/A
DRAWN STAFF SRL	CHECKED RT	APPROVED LM	DATE 27-08-2024
FORMAT A3	DRAWING NO. 123A90-FDL-PP-DI-00150	SHEET / OF 1/1	REV. 00


TAG
150-1-J2
FLANGE TIGHTENED
ID STAMP RMF 2/6
SIGNED
DATE 29/01/25
RETURN TO SUPERVISOR
TAG
150-1-J2
FLANGE ASSEMBLED
ID STAMP RMF 2/6
SIGNED
DATE 29/01/25
RETURN TO SUPERVISOR
TAG
150-1-J2
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	150-1-J3	: Joint 150-1-J3			Dwg	123A90-FDL-PP-DI-00150-01
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10004305		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27		Bolt tensioning / torquing

Test Pack N.: TP-001

EQUIPMENT TAG



Flange Type	150LB	**Lubricant**	Yes
Flange Size	1"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Flat Thk. 3 mm	**Used tools**	Torque wrench V030390 (12-68 Nm)
Bolt tensioning/Torquing value	48.6		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	15	49	15	29	48.6
2	15	49	15	29	48.6
3	15	49	15	29	48.6
4	15	49	15	29	48.6
5			15	29	48.6
6			15	29	48.6
7			15	29	48.6
8			15	29	48.6
9			15	29	48.6
10			15	29	48.6
11			15	29	48.6
12			15	29	48.6
13			15	29	48.6
14			15	29	48.6
15			15	29	48.6
16			15	29	48.6
17			15	29	48.6
18			15	29	48.6
19			15	29	48.6
20			15	29	48.6

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

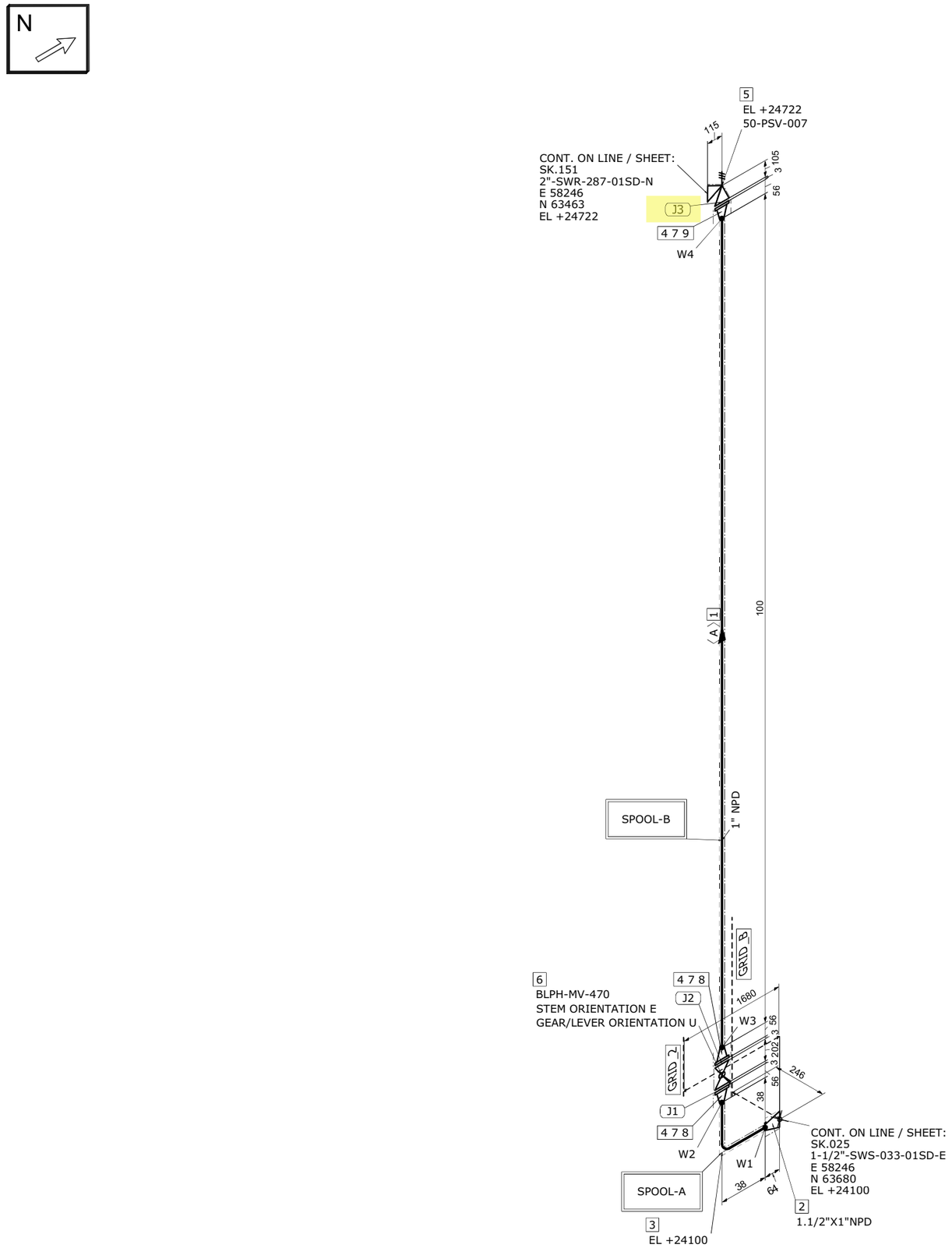
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-01-30	2025-02-14	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-30T05:32:45.916Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-02-14T15:41:20.624Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPESD02850100	Pipe ASME B36.19M PE 3,38 SML ASTM A790 UNS S32760	0.1M	0.3
2	1.1/2X1	REC0SD08001H01	Reducer Concentric ASME B16.9 BW 3,68x3,38 WRS ASTM A815 UNS S32760	1	0.3
3	1	E90RSD01640100	90 Deg Elbow Long Radius ASME B16.9 BW 3,38 WRS ASTM A815 UNS S32760	1	0.1
4	1	FLW0SD01240100	Flange WN ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	3	4.3

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
5	2X1		SAFETY VALVE FLG.150/150#RF	1	15.0
6	1	VLBLNN01370100	Block & Bleed Valve API 6D FLG 150LB RF BS01F01RFS	1	12.5
7	1	GFL3GK15970100	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	3	0.2
8	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.0
9	1/2	SB20BO34450200	105 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.7

FABRICATION WEIGHT [kg]	5.0
ERECTION WEIGHT [kg]	19.4
OVERALL WEIGHT [kg]	34.4

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1	BW
W2	1	BW
W3	1	BW
W4	1	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1	100	BEVEL	BEVEL

SUPPORT LIST

SPOOL	WELD [inches]	WEIGHT [kg]
A	2	1.8
B	2	3.1
MONT	0	29.4

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 1"-SWS-286-01SD-E

SK.150

LINE DATA

NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3			
PAINTING	SYSTEM N/A	BASE RAL N/A	FLUID PHASE	Liquid			
INSULATION	TYPE H	THICKNESS 20 [mm]	DESIGN	PRESS. 7.6 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	Yes		TEST	PRESS. 11.4 [barg]	TEMP. AMB	MEDIUM Water	

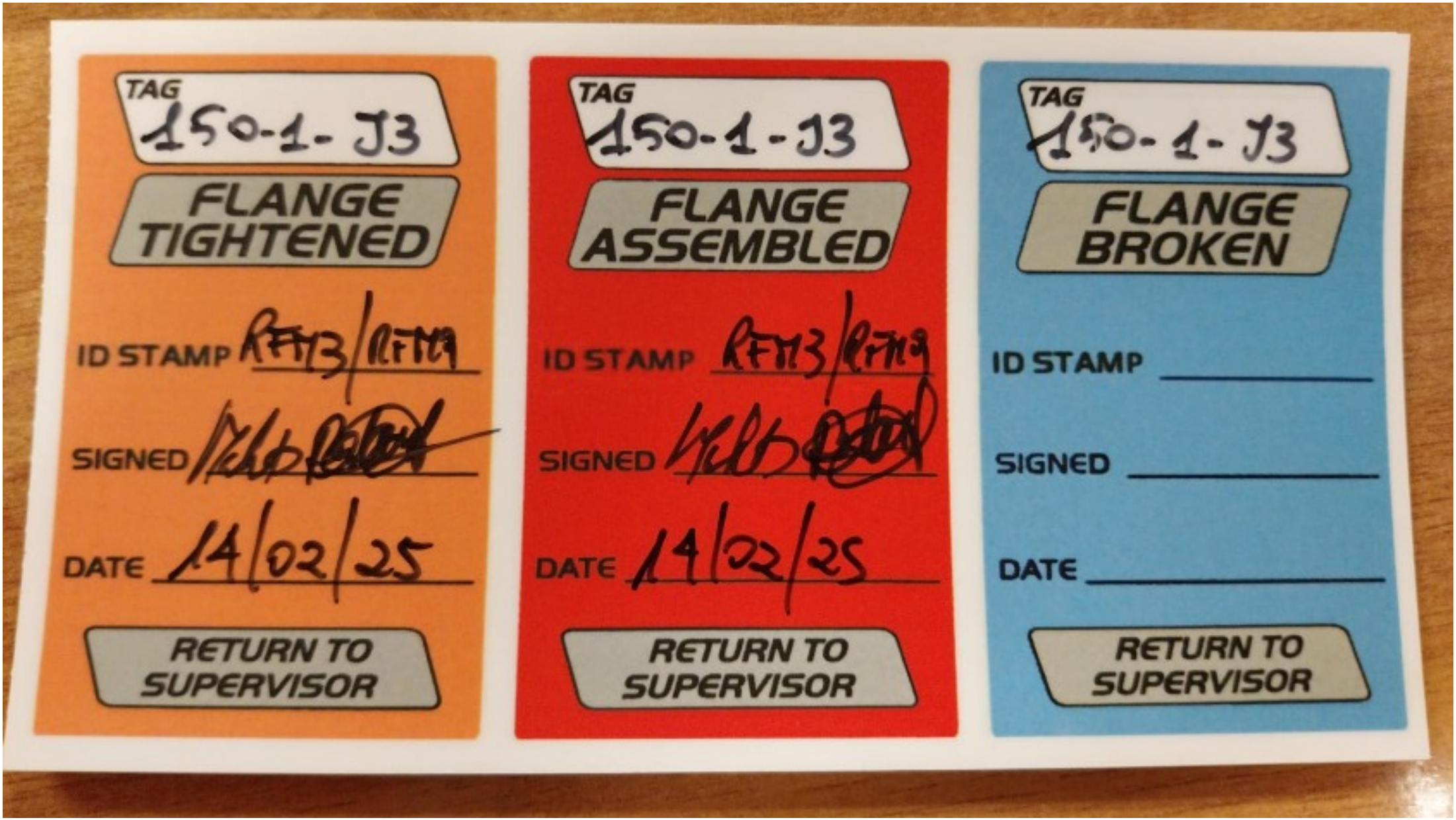
REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80021
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

MASTER

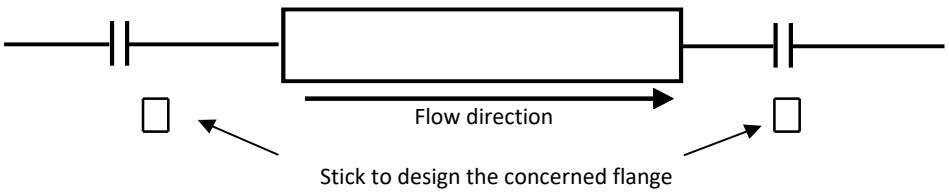
CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK	SCALE	N/A
DRAWN STAFF SRL	CHECKED RT	APPROVED LM	DATE 27-08-2024
FORMAT A3	DRAWING NO. 123A90-FDL-PP-DI-00150	SHEET / OF 1/1	REV. 00


TAG
150-1-J3
FLANGE TIGHTENED
ID STAMP
SIGNED
DATE 14/02/25
RETURN TO SUPERVISOR
TAG
150-1-J3
FLANGE ASSEMBLED
ID STAMP
SIGNED
DATE 14/02/25
RETURN TO SUPERVISOR
TAG
150-1-J3
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	151-1-J1	: Joint 151-1-J1			Dwg	123A90-FDL-PP-DI-00151-01
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10004306		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27		Bolt tensioning / torquing

Test Pack N.: TP-045

EQUIPMENT TAG



Flange Type 150LB

Flange Size 2"

Gasket Type INSULATION KIT

Bolt tensioning/Torquing value 120

Lubricant Yes

Lubricant Type MOLYKOTE 1000 PASTE

Used tools Torque wrench V030390 / RD00261

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	36	120	36	72	120
2	36	120	36	72	120
3	36	120	36	72	120
4	36	120	36	72	120
5			36	72	120
6			36	72	120
7			36	72	120
8			36	72	120
9			36	72	120
10			36	72	120
11			36	72	120
12			36	72	120
13			36	72	120
14			36	72	120
15			36	72	120
16			36	72	120
17			36	72	120
18			36	72	120
19			36	72	120
20			36	72	120

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

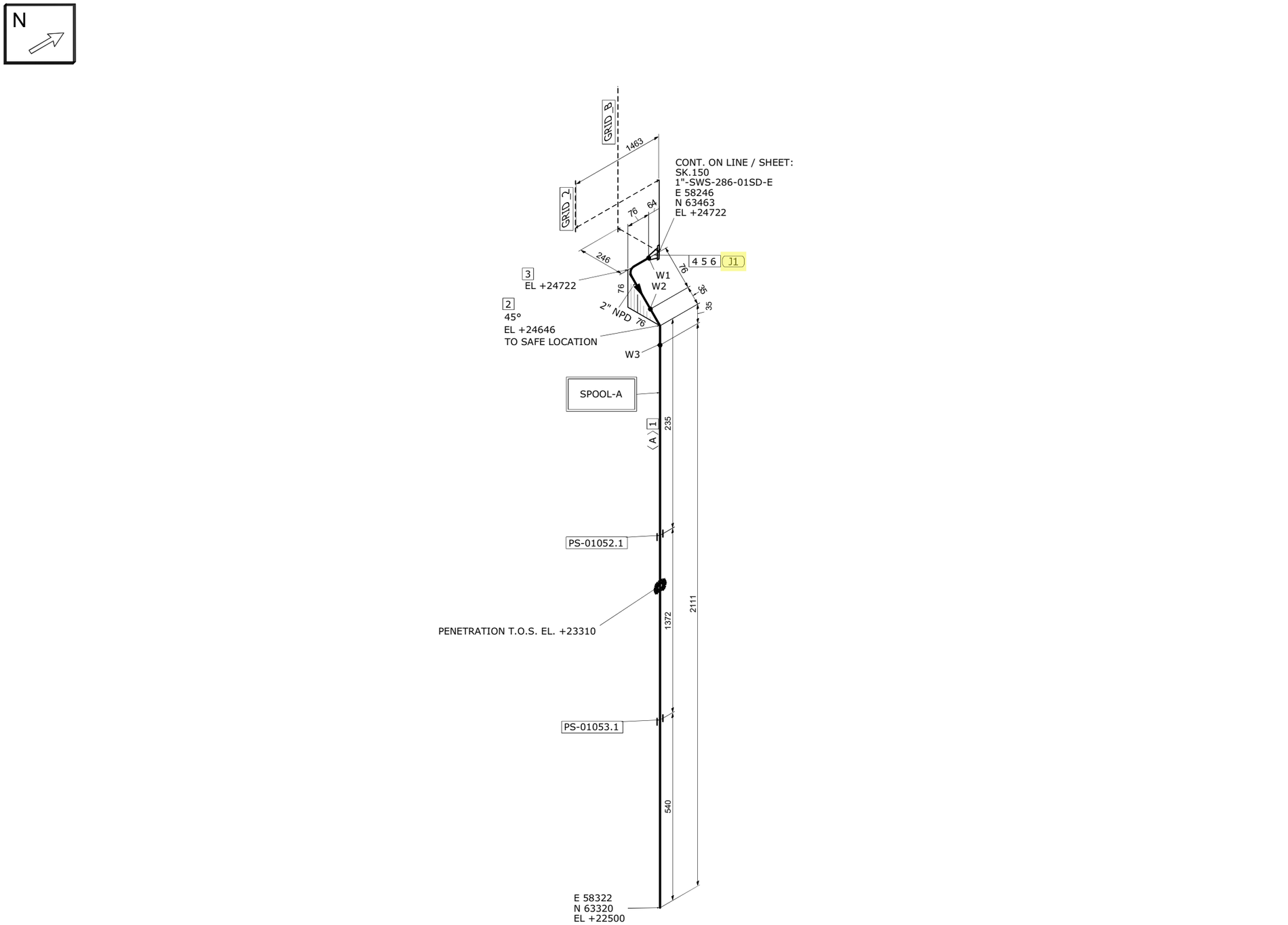
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-01-30	2025-02-14	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-30T05:32:58.546Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-02-14T15:41:10.218Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	2	PIPESD02860200	Pipe ASME B36.19M PE 2,77 SML ASTM A790 UNS S32760	2.1M	8.5
2	2	E45RSD01550200	45 Deg Elbow Long Radius ASME B16.9 BW 2,77 WRS ASTM A815 UNS S32760	1	0.2
3	2	E90RSD01650200	90 Deg Elbow Long Radius ASME B16.9 BW 2,77 WRS ASTM A815 UNS S32760	1	0.5
4	2	FLWDSD01250200	Flange WN ASME B16.5 150LB RF 2,77 FRG ASTM A182 Gr.F55 (01)	1	2.8

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
5	2	GFL3GK13230200	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	1	0.1
6	5/8	SB20BO00990300	110 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1.1

FABRICATION WEIGHT [kg]	12.0
ERECTION WEIGHT [kg]	1.2
OVERALL WEIGHT [kg]	13.2

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	2	BW
W2	2	BW
W3	2	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	2	2112	BEVEL	SQ.CUT

SUPPORT LIST

PS-01052.1
PS-01053.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	6	11.9
MONT	0	1.2

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	17-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 2"-SWR-287-01SD-N

SK.151

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE: N/A

DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 17-09-2024

FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00151 | SHEET / OF: 1/1 | REV.: 01

LINE DATA

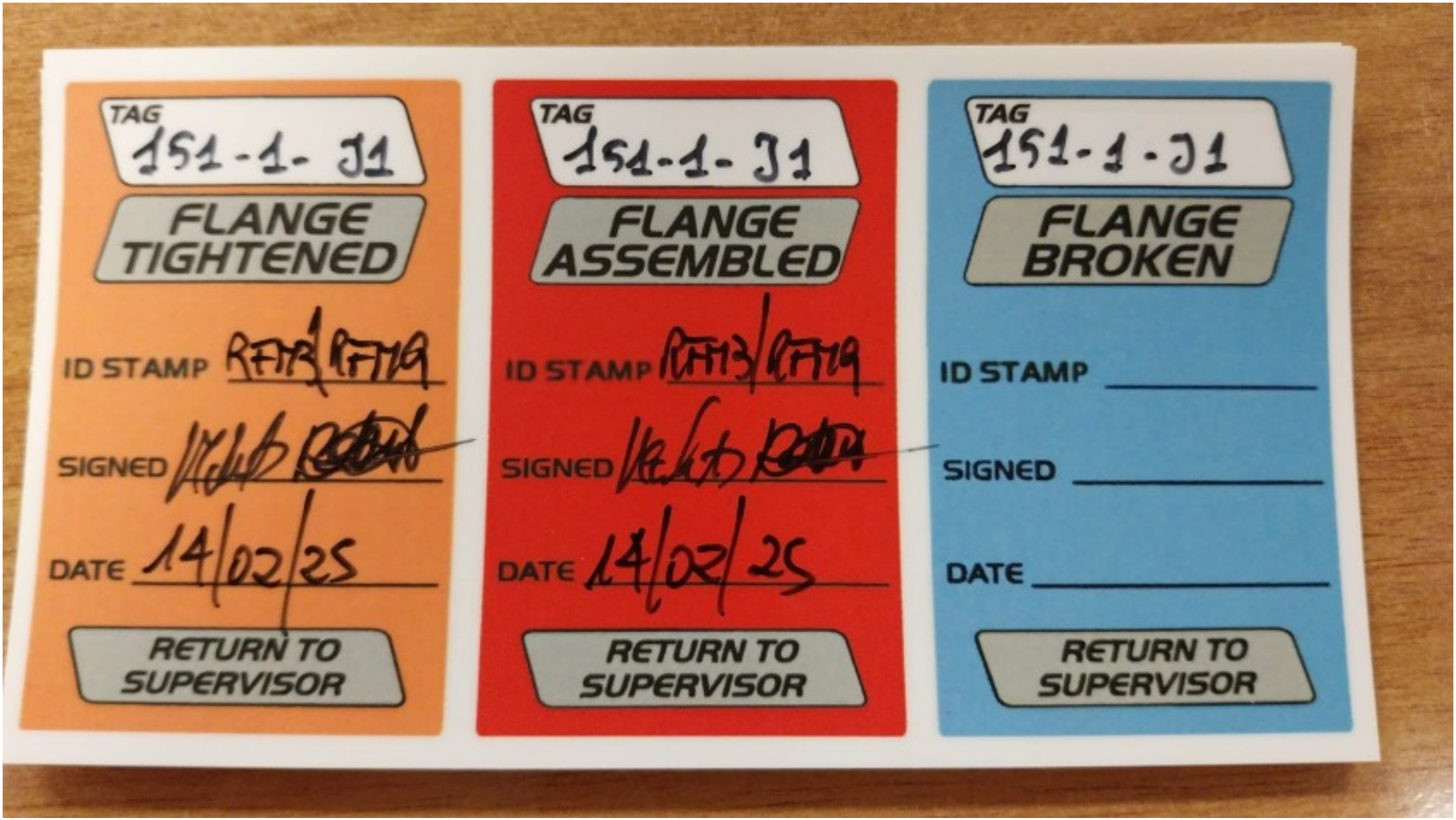
NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3			
PAINTING	SYSTEM N/A	BASE RAL N/A	FLUID PHASE	Liquid			
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 3.5 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	N/A		TEST	PRESS. N/A [barg]	TEMP. AMB.	MEDIUM N/A	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80021
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

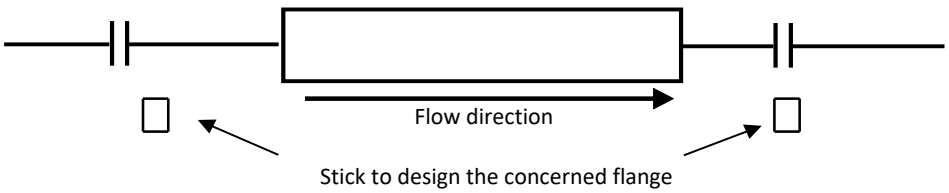
MASTER


TAG
151-1-J1
FLANGE TIGHTENED
ID STAMP
SIGNED
DATE 14/02/25
RETURN TO SUPERVISOR
TAG
151-1-J1
FLANGE ASSEMBLED
ID STAMP
SIGNED
DATE 14/02/25
RETURN TO SUPERVISOR
TAG
151-1-J1
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	152-1-J1	: Joint 152-1-J1			Dwg	123A90-FDL-PP-DI-00152-01
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10004307		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27 — Bolt tensioning / torquing

Test Pack N.: TP-001

EQUIPMENT TAG



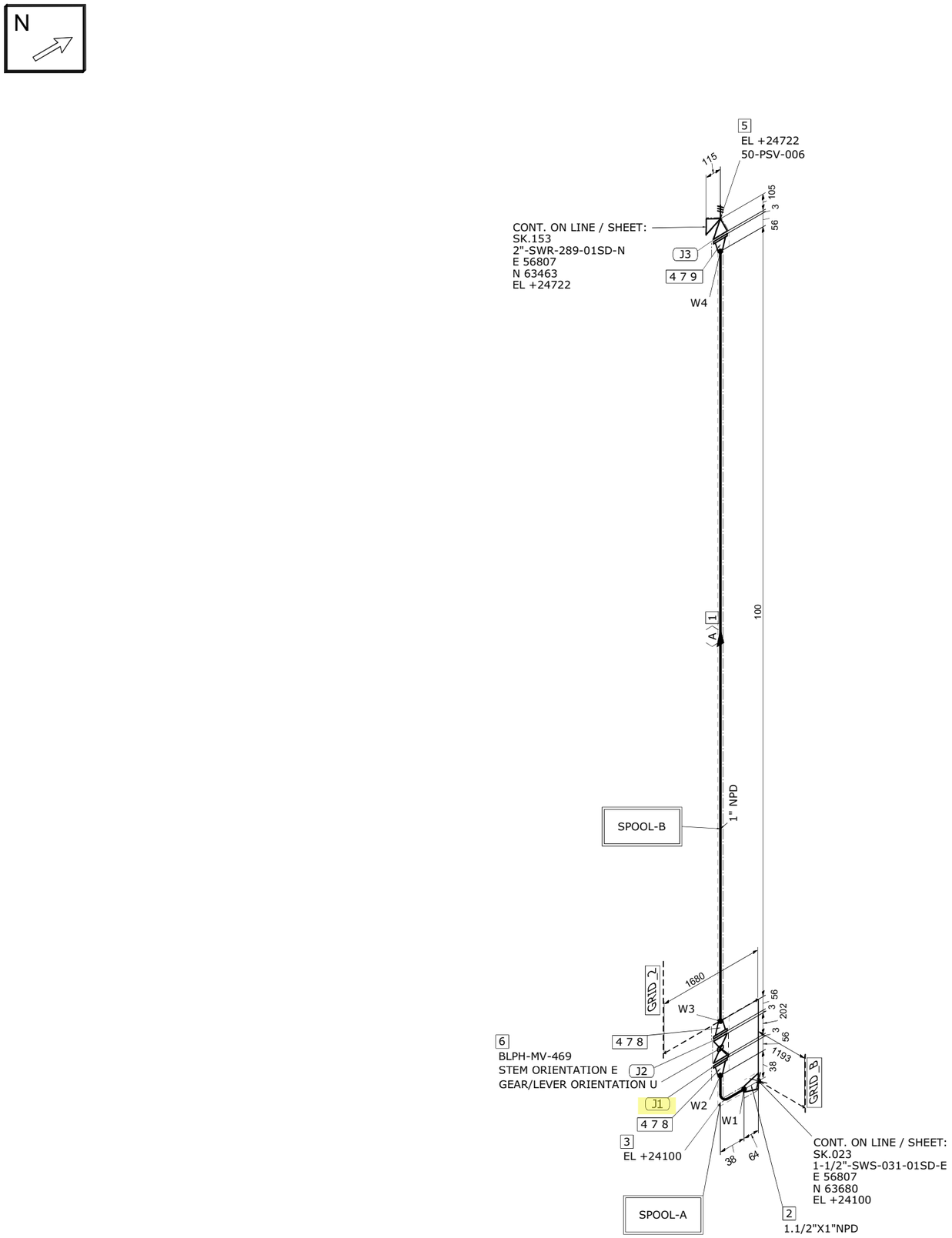
Flange Type	150LB	**Lubricant**	Yes
Flange Size	1"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Flat Thk. 3 mm	**Used tools**	V030390 / RD00261
Bolt tensioning/Torquing value	48.6		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	15	50	15	29	48.6
2	15	50	15	29	48.6
3	15	50	15	29	48.6
4	15	50	15	29	48.6
5			15	29	48.6
6			15	29	48.6
7			15	29	48.6
8			15	29	48.6
9			15	29	48.6
10			15	29	48.6
11			15	29	48.6
12			15	29	48.6
13			15	29	48.6
14			15	29	48.6
15			15	29	48.6
16			15	29	48.6
17			15	29	48.6
18			15	29	48.6
19			15	29	48.6
20			15	29	48.6

1	**Clear Bore Inspection:** Pipe and Valve clear of debris/contamination.	Yes
2	**Flange Face Check:** Both flanges clean and free from damage.	Yes
3	**Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique.	Yes
4	**Alignment:** Check alignment according to code.	Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Andrea Mancini	
Date	2025-01-30	2025-01-30	
Signature	Digitaly signed by Emanuele Delfino 2025-01-30T05:33:10.668Z	Digitaly signed by Andrea Mancini 2025-01-30T10:20:54.048Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPESD02850100	Pipe ASME B36.19M PE 3,38 SML ASTM A790 UNS S32760	0.1M	0.3
2	1.1/2X1	REC0SD08001H01	Reducer Concentric ASME B16.9 BW 3,68x3,38 WRS ASTM A815 UNS S32760	1	0.3
3	1	E90RSD01640100	90 Deg Elbow Long Radius ASME B16.9 BW 3,38 WRS ASTM A815 UNS S32760	1	0.1
4	1	FLW0SD01240100	Flange WN ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	3	4.3

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
5	2X1		SAFETY VALVE FLG.150/150#RF	1	15.0
6	1	VLBLNN01370100	Block & Bleed Valve API 6D FLG 150LB RF BS01F01RFS	1	12.5
7	1	GFL3GK15970100	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	3	0.2
8	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.0
9	1/2	SB20BO34450200	105 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.7

FABRICATION WEIGHT [kg]	5.0
ERECTION WEIGHT [kg]	29.4
OVERALL WEIGHT [kg]	34.4

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1	BW
W2	1	BW
W3	1	BW
W4	1	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1	100	BEVEL	BEVEL

SUPPORT LIST

SPOOL	WELD [inches]	WEIGHT [kg]
A	2	1.8
B	2	3.1
MONT	0	29.4

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 1"-SWS-288-01SD-E

SK.152

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE: N/A

DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 27-08-2024

FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00152 | SHEET / OF: 1/1 | REV.: 00

LINE DATA

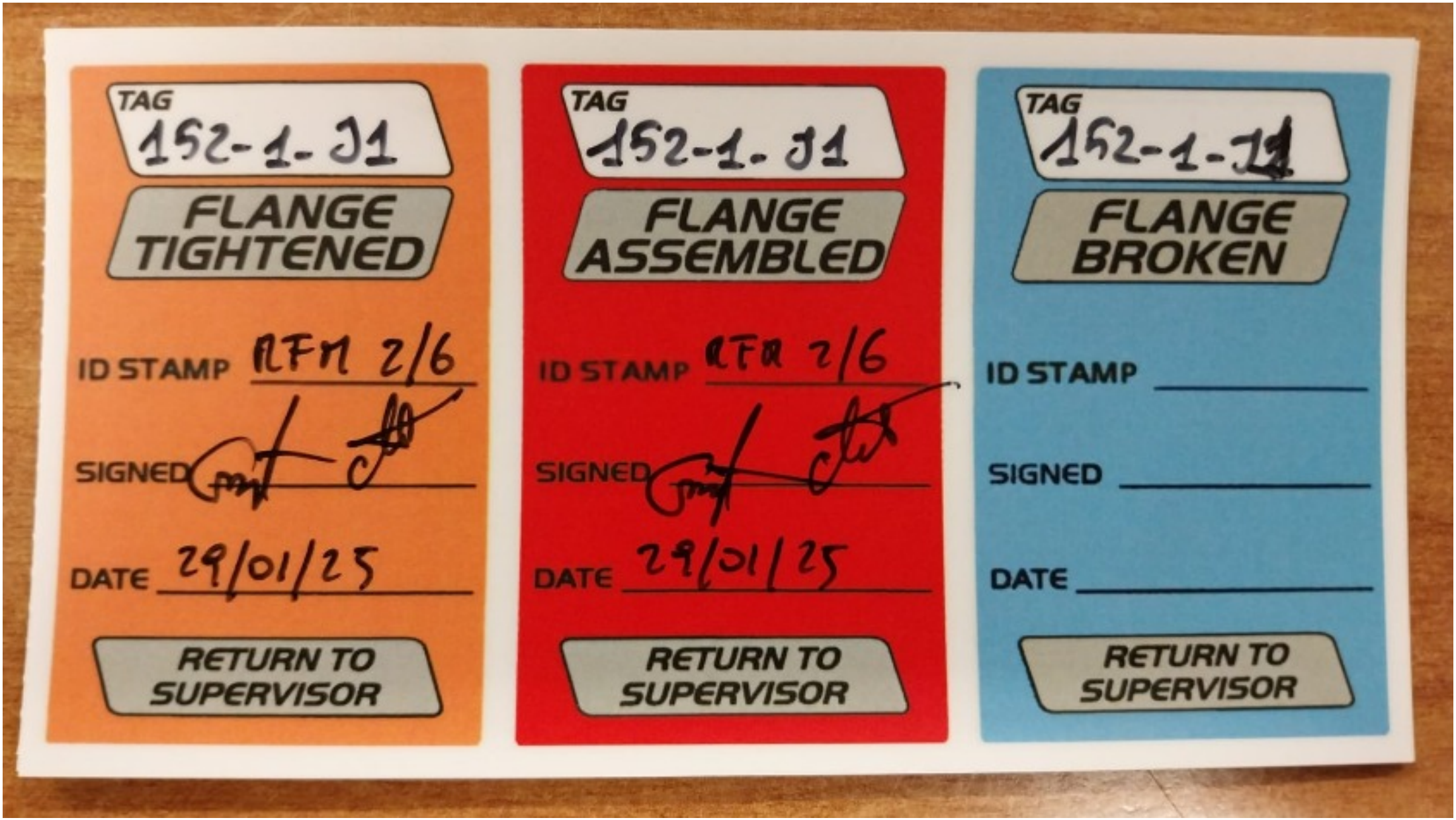
NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3				
PAINTING	SYSTEM N/A	BASE RAL N/A	FLUID PHASE	Liquid				
INSULATION	TYPE H	THICKNESS 20 [mm]	DESIGN	PRESS. 7.6 [barg]	TEMP. -29 / 100 [°C]			
HEAT TRACING	Yes		TEST	PRESS. 11.4 [barg]	TEMP. AMB	MEDIUM Water		

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80021
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

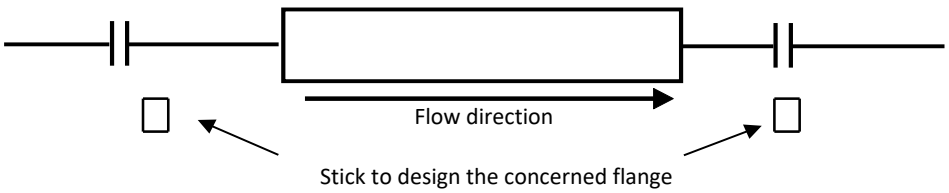
MASTER


TAG
152-1-J1
FLANGE TIGHTENED
ID STAMP RFM 2/6
SIGNED
DATE 29/01/25
RETURN TO SUPERVISOR
TAG
152-1-J1
FLANGE ASSEMBLED
ID STAMP RFM 2/6
SIGNED
DATE 29/01/25
RETURN TO SUPERVISOR
TAG
152-1-J1
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	152-1-J2	: Joint 152-1-J2			Dwg	123A90-FDL-PP-DI-00152-01
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10004308		Location	Onshore Activities	User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27		Bolt tensioning / torquing

Test Pack N.: TP-001

EQUIPMENT TAG



Flange Type	150LB	**Lubricant**	Yes
Flange Size	1"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Flat Thk. 3 mm	**Used tools**	V030390 / RD00261
Bolt tensioning/Torquing value	48.6		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	15	50	15	29	48.6
2	15	50	15	29	48.6
3	15	50	15	29	48.6
4	15	50	15	29	48.6
5			15	29	48.6
6			15	29	48.6
7			15	29	48.6
8			15	29	48.6
9			15	29	48.6
10			15	29	48.6
11			15	29	48.6
12			15	29	48.6
13			15	29	48.6
14			15	29	48.6
15			15	29	48.6
16			15	29	48.6
17			15	29	48.6
18			15	29	48.6
19			15	29	48.6
20			15	29	48.6

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

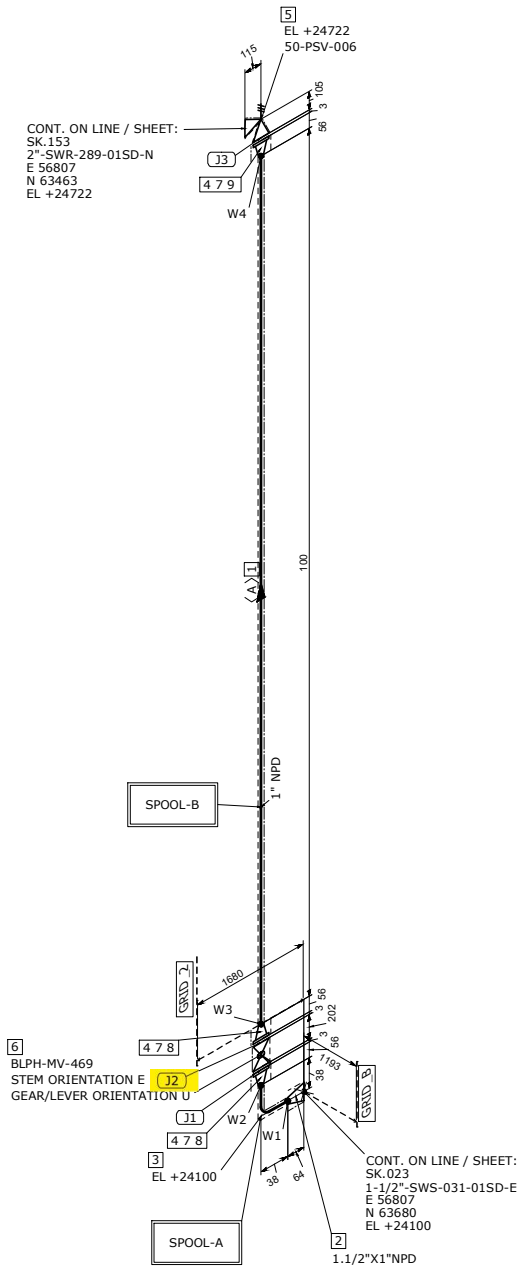
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO		
Name	Emanuele Delfino	Andrea Mancini	
Date	2025-01-30	2025-01-30	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-30T05:33:22.636Z	PROVERLIS Digitaly signed by Andrea Mancini 2025-01-30T10:21:10.291Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPESD02850100	Pipe ASME B36.19M PE 3,38 SML ASTM A790 UNS S32760	0.1M	0.3
2	1.1/2X1	REC0SD08001H01	Reducer Concentric ASME B16.9 BW 3,68x3,38 WRS ASTM A815 UNS S32760	1	0.3
3	1	E90RSD01640100	90 Deg Elbow Long Radius ASME B16.9 BW 3,38 WRS ASTM A815 UNS S32760	1	0.1
4	1	FLW0SD01240100	Flange WN ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	3	4.3

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
5	2X1		SAFETY VALVE FLG.150/150#RF	1	15.0
6	1	VLBLNN01370100	Block & Bleed Valve API 6D FLG 150LB RF BS01F01RFS	1	12.5
7	1	GFL3GK15970100	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	3	0.2
8	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.0
9	1/2	SB20BO34450200	105 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.7

FABRICATION WEIGHT [kg]	5.0
ERECTION WEIGHT [kg]	29.4
OVERALL WEIGHT [kg]	34.4

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1	BW
W2	1	BW
W3	1	BW
W4	1	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1	100	BEVEL	BEVEL

SUPPORT LIST

SPOOL	WELD [inches]	WEIGHT [kg]
A	2	1.8
B	2	3.1
MONT	0	29.4

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 1"-SWS-288-01SD-E

SK.152

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE: N/A

DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 27-08-2024

FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00152 | SHEET / OF: 1/1 | REV.: 00

LINE DATA

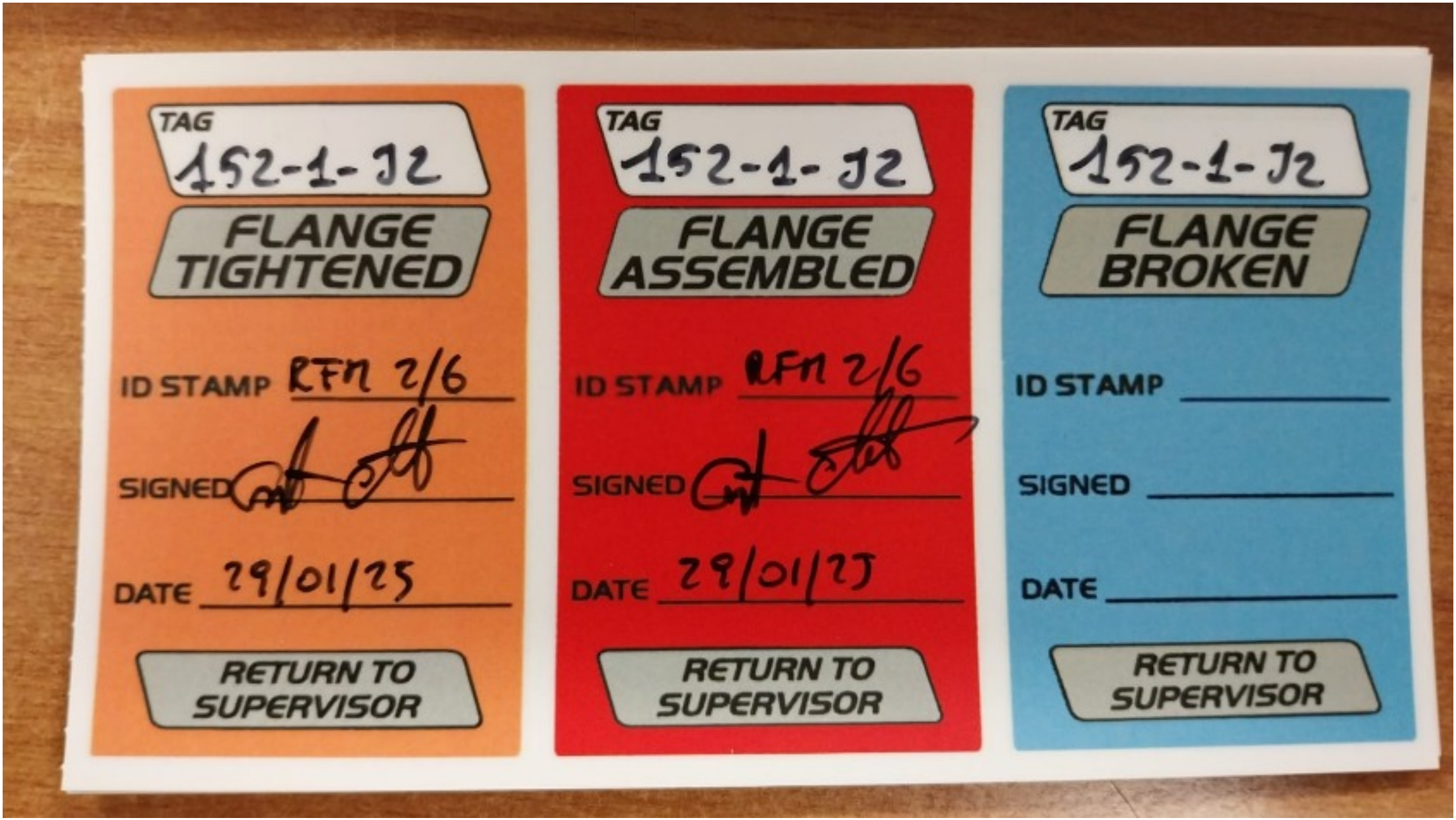
NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3	
PAINTING	SYSTEM N/A	BASE RAL N/A	FLUID PHASE	Liquid	
INSULATION	TYPE H	THICKNESS 20 [mm]	DESIGN	PRESS. 7.6 [barg]	TEMP. -29 / 100 [°C]
HEAT TRACING	Yes		TEST	PRESS. 11.4 [barg]	TEMP. AMB. MEDIUM Water

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80021
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

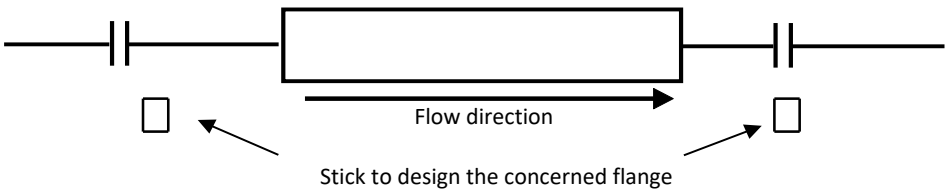
MASTER


TAG
152-1-J2
FLANGE TIGHTENED
ID STAMP RFN 2/6
SIGNED
DATE 29/01/25
RETURN TO SUPERVISOR
TAG
152-1-J2
FLANGE ASSEMBLED
ID STAMP RFN 2/6
SIGNED
DATE 29/01/25
RETURN TO SUPERVISOR
TAG
152-1-J2
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	152-1-J3	: Joint 152-1-J3			Dwg	123A90-FDL-PP-DI-00152-01
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10004309	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form TMX27	Bolt tensioning / torquing

Test Pack N.: TP-001

EQUIPMENT TAG



Flange Type 150LB

Flange Size 1"

Gasket Type Gasket Flat Thk. 3 mm

Bolt tensioning/Torquing value 48.6

Lubricant Yes

Lubricant Type MOLYKOTE 1000 PASTE

Used tools Torque wrench V030390 (12-68 Nm)

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	15	49	15	29	48.6
2	15	49	15	29	48.6
3	15	49	15	29	48.6
4	15	49	15	29	48.6
5			15	29	48.6
6			15	29	48.6
7			15	29	48.6
8			15	29	48.6
9			15	29	48.6
10			15	29	48.6
11			15	29	48.6
12			15	29	48.6
13			15	29	48.6
14			15	29	48.6
15			15	29	48.6
16			15	29	48.6
17			15	29	48.6
18			15	29	48.6
19			15	29	48.6
20			15	29	48.6

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

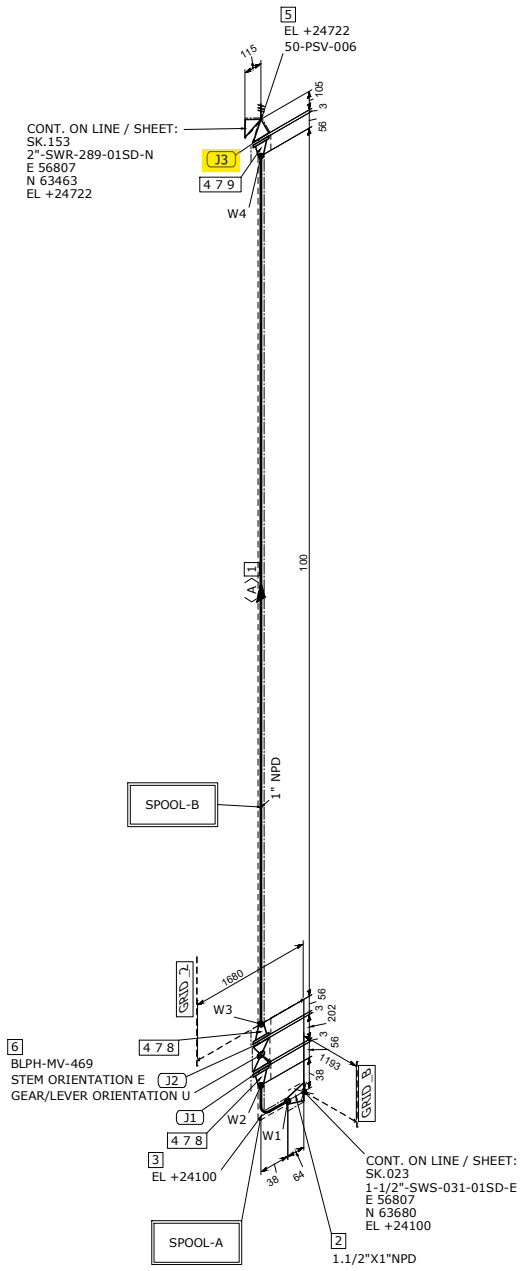
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-01-30	2025-02-14	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-30T05:33:35.2022	PROVERLIS Digitaly signed by Massimo Bruschi 2025-02-14T15:41:00.583Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPESD02850100	Pipe ASME B36.19M PE 3,38 SML ASTM A790 UNS S32760	0.1M	0.3
2	1.1/2X1	REC0SD08001H01	Reducer Concentric ASME B16.9 BW 3,68x3,38 WRS ASTM A815 UNS S32760	1	0.3
3	1	E90RSD01640100	90 Deg Elbow Long Radius ASME B16.9 BW 3,38 WRS ASTM A815 UNS S32760	1	0.1
4	1	FLW0SD01240100	Flange WN ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	3	4.3

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
5	2X1		SAFETY VALVE FLG.150/150#RF	1	15.0
6	1	VLBLNN01370100	Block & Bleed Valve API 6D FLG 150LB RF BS01F01RFS	1	12.5
7	1	GFL3GK15970100	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	3	0.2
8	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.0
9	1/2	SB20BO34450200	105 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.7

FABRICATION WEIGHT [kg]	5.0
ERECTION WEIGHT [kg]	29.4
OVERALL WEIGHT [kg]	34.4

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1	BW
W2	1	BW
W3	1	BW
W4	1	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1	100	BEVEL	BEVEL

SUPPORT LIST

SPOOL	WELD [inches]	WEIGHT [kg]
A	2	1.8
B	2	3.1
MONT	0	29.4

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 1"-SWS-288-01SD-E

SK.152

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE: N/A

DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 27-08-2024

FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00152 | SHEET / OF: 1/1 | REV.: 00

LINE DATA

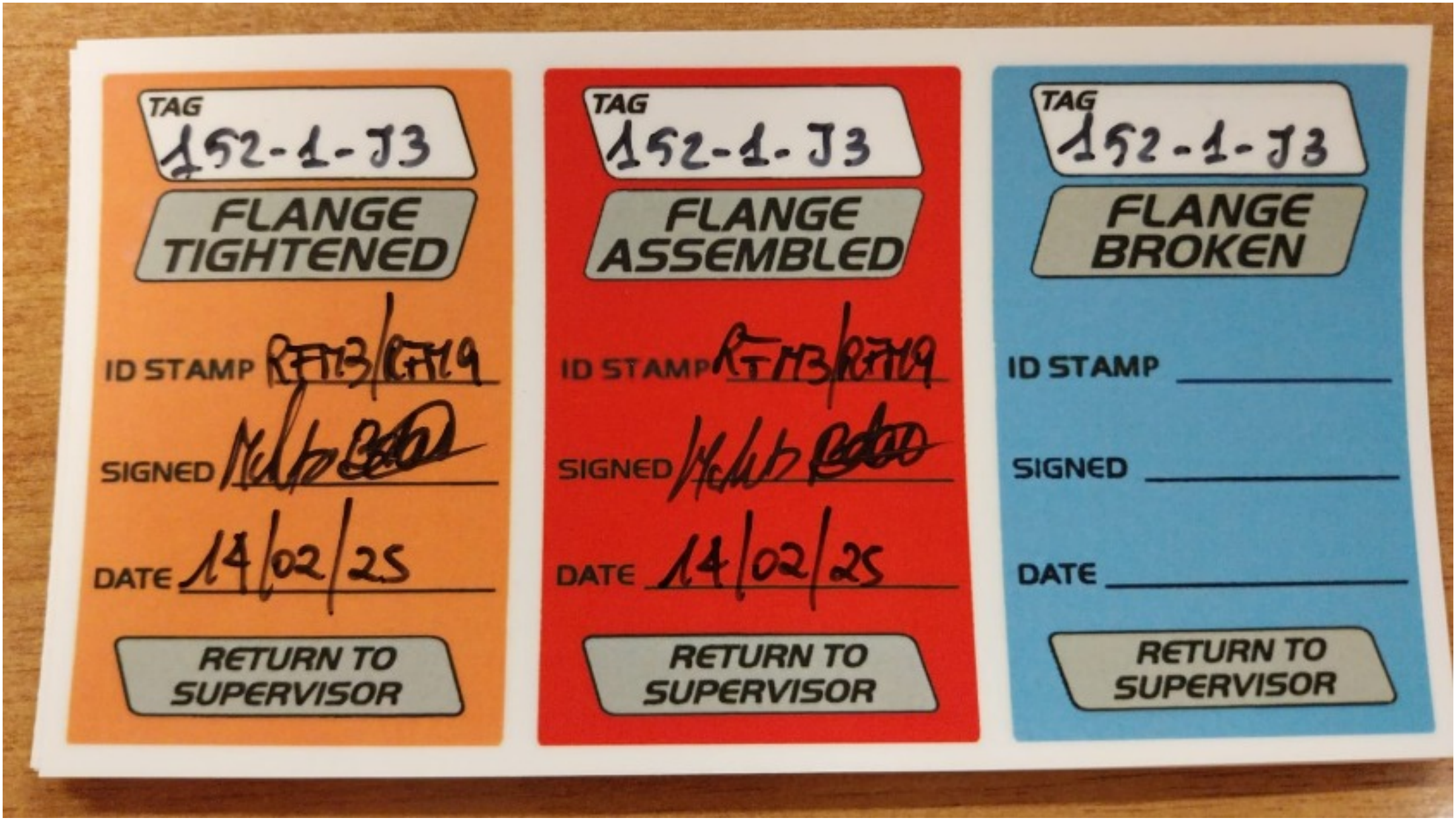
NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3	
PAINTING	SYSTEM N/A	BASE RAL N/A	FLUID PHASE	Liquid	
INSULATION	TYPE H	THICKNESS 20 [mm]	DESIGN	PRESS. 7.6 [barg]	TEMP. -29 / 100 [°C]
HEAT TRACING	Yes		TEST	PRESS. 11.4 [barg]	TEMP. AMB. MEDIUM Water

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80021
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

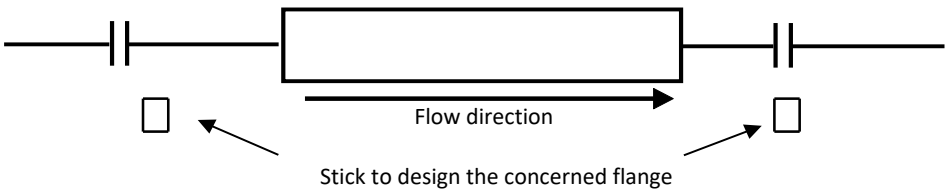
MASTER


TAG
152-1-J3
FLANGE TIGHTENED
ID STAMP RT13/RT19
SIGNED
DATE 14/02/25
RETURN TO SUPERVISOR
TAG
152-1-J3
FLANGE ASSEMBLED
ID STAMP RT13/RT19
SIGNED
DATE 14/02/25
RETURN TO SUPERVISOR
TAG
152-1-J3
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	153-1-J1	: Joint 153-1-J1			Dwg	123A90-FDL-PP-DI-00153-01
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10004310	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27 Bolt tensioning / torquing

Test Pack N.: TP-045

EQUIPMENT TAG



Flange Type	150LB	**Lubricant**	Yes
Flange Size	2"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	INSULATION KIT	**Used tools**	Torque wrench V030390 / RD00261
Bolt tensioning/Torquing value	120		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	36	120	36	72	120
2	36	120	36	72	120
3	36	120	36	72	120
4	36	120	36	72	120
5			36	72	120
6			36	72	120
7			36	72	120
8			36	72	120
9			36	72	120
10			36	72	120
11			36	72	120
12			36	72	120
13			36	72	120
14			36	72	120
15			36	72	120
16			36	72	120
17			36	72	120
18			36	72	120
19			36	72	120
20			36	72	120

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

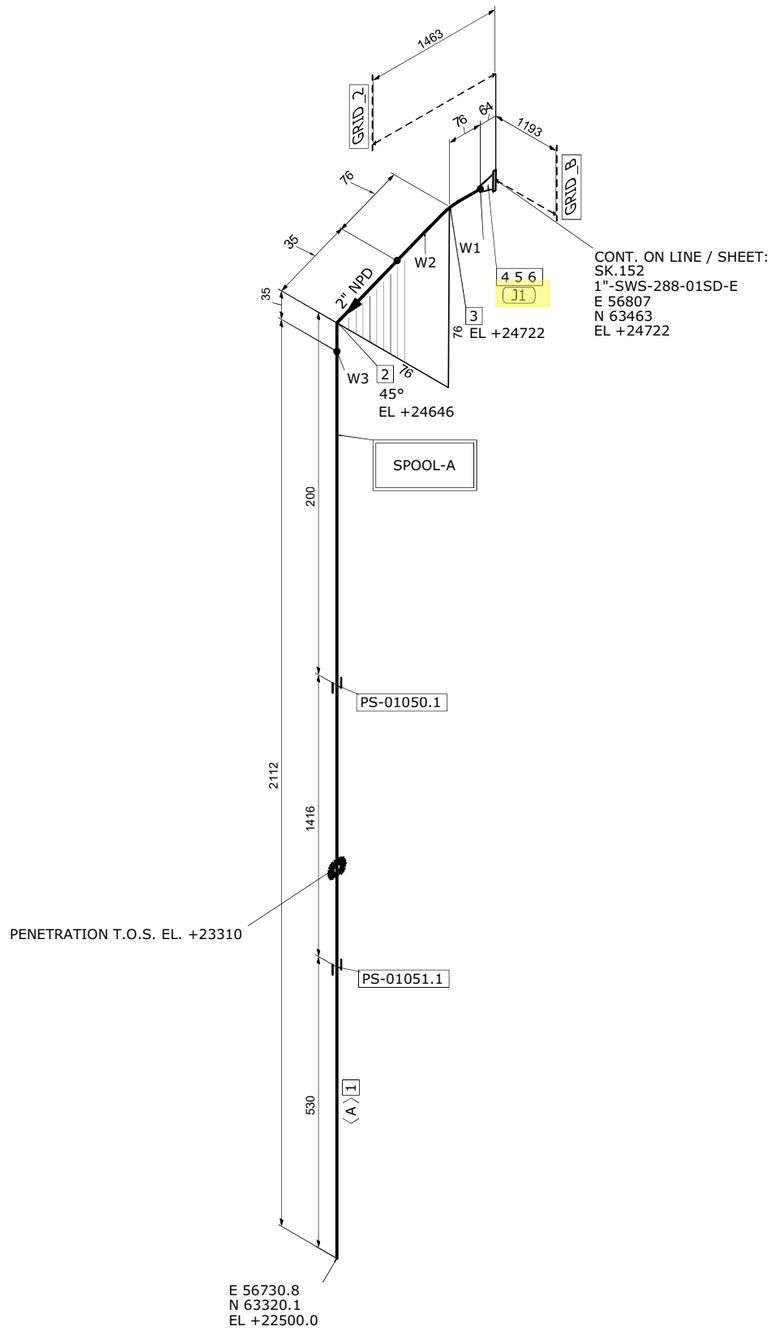
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-01-30	2025-02-14	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-30T05:33:49.186Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-02-14T15:40:48.586Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	2	PIPESD02860200	Pipe ASME B36.19M PE 2,77 SML ASTM A790 UNS S32760	2.1M	8.5
2	2	E45RSD01550200	45 Deg Elbow Long Radius ASME B16.9 BW 2,77 WRS ASTM A815 UNS S32760	1	0.2
3	2	E90RSD01650200	90 Deg Elbow Long Radius ASME B16.9 BW 2,77 WRS ASTM A815 UNS S32760	1	0.5
4	2	FLWDSD01250200	Flange WN ASME B16.5 150LB RF 2,77 FRG ASTM A182 Gr.F55 △01	1	2.8

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
5	2	GFL3GK13230200	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	1	0.1
6	5/8	SB20BO00990300	110 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1.1

FABRICATION WEIGHT [kg]	12.0
ERECTION WEIGHT [kg]	1.2
OVERALL WEIGHT [kg]	13.2

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	2	BW
W2	2	BW
W3	2	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	2	2112	BEVEL	BEVEL

SUPPORT LIST

PS-01050.1
PS-01051.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	6	11.9
MONT	0	1.2

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	17-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 2"-SWR-289-01SD-N

SK.153

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE: N/A

DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 17-09-2024

FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00153 | SHEET / OF: 1/1 | REV.: 01

LINE DATA

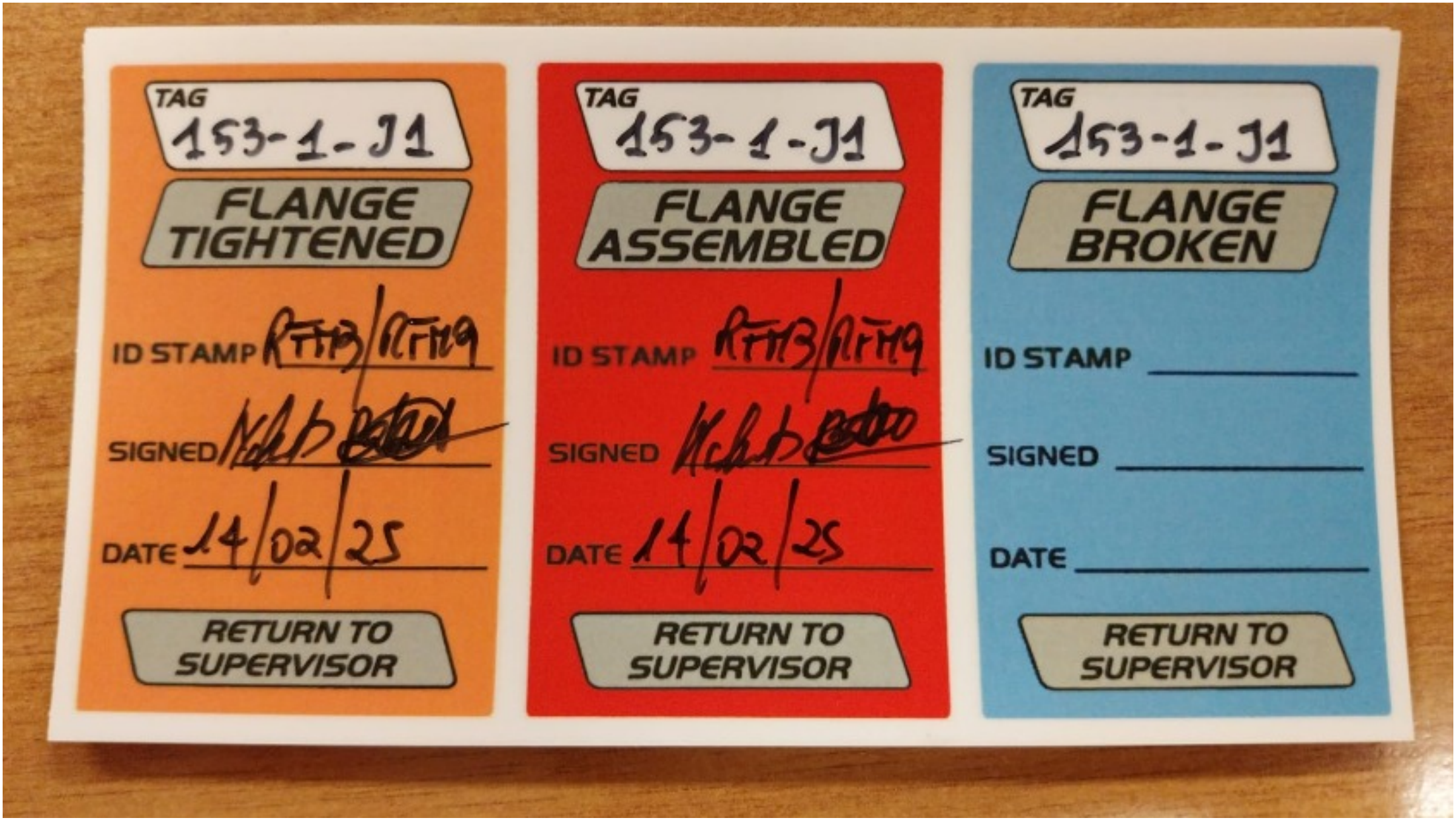
NDT INSPECTION CATEGORY	2			PED CATEGORY	Art. 4, par. 3				
PAINTING	SYSTEM N/A		BASE RAL N/A	FLUID PHASE	Liquid				
INSULATION	TYPE N		THICKNESS [mm]	DESIGN	PRESS. 3.5	[barg]	TEMP. -29 / 100	[°C]	
HEAT TRACING	N/A			TEST	PRESS. N/A	[barg]	TEMP. AMB	MEDIUM N/A	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80021
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

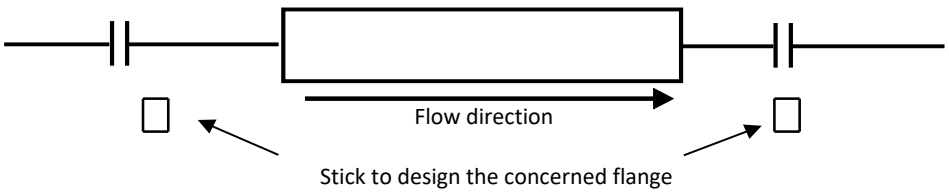
MASTER


TAG
153-1-J1
FLANGE TIGHTENED
ID STAMP RTTB/RTTG
SIGNED
DATE 14/02/25
RETURN TO SUPERVISOR
TAG
153-1-J1
FLANGE ASSEMBLED
ID STAMP RTTB/RTTG
SIGNED
DATE 14/02/25
RETURN TO SUPERVISOR
TAG
153-1-J1
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	154-1-J1	: Joint 154-1-J1			Dwg	123A90-FDL-PP-DI-00154-01
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10004311	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27 Bolt tensioning / torquing

Test Pack N.: TP-028

EQUIPMENT TAG



Flange Type	150LB	**Lubricant**	Yes
Flange Size	1"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Flat Thk. 3 mm	**Used tools**	Torque wrench V030390 (12-68 Nm)
Bolt tensioning/Torquing value	48.6		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	15	49	15	29	48.6
2	15	49	15	29	48.6
3	15	49	15	29	48.6
4	15	49	15	29	48.6
5			15	29	48.6
6			15	29	48.6
7			15	29	48.6
8			15	29	48.6
9			15	29	48.6
10			15	29	48.6
11			15	29	48.6
12			15	29	48.6
13			15	29	48.6
14			15	29	48.6
15			15	29	48.6
16			15	29	48.6
17			15	29	48.6
18			15	29	48.6
19			15	29	48.6
20			15	29	48.6

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

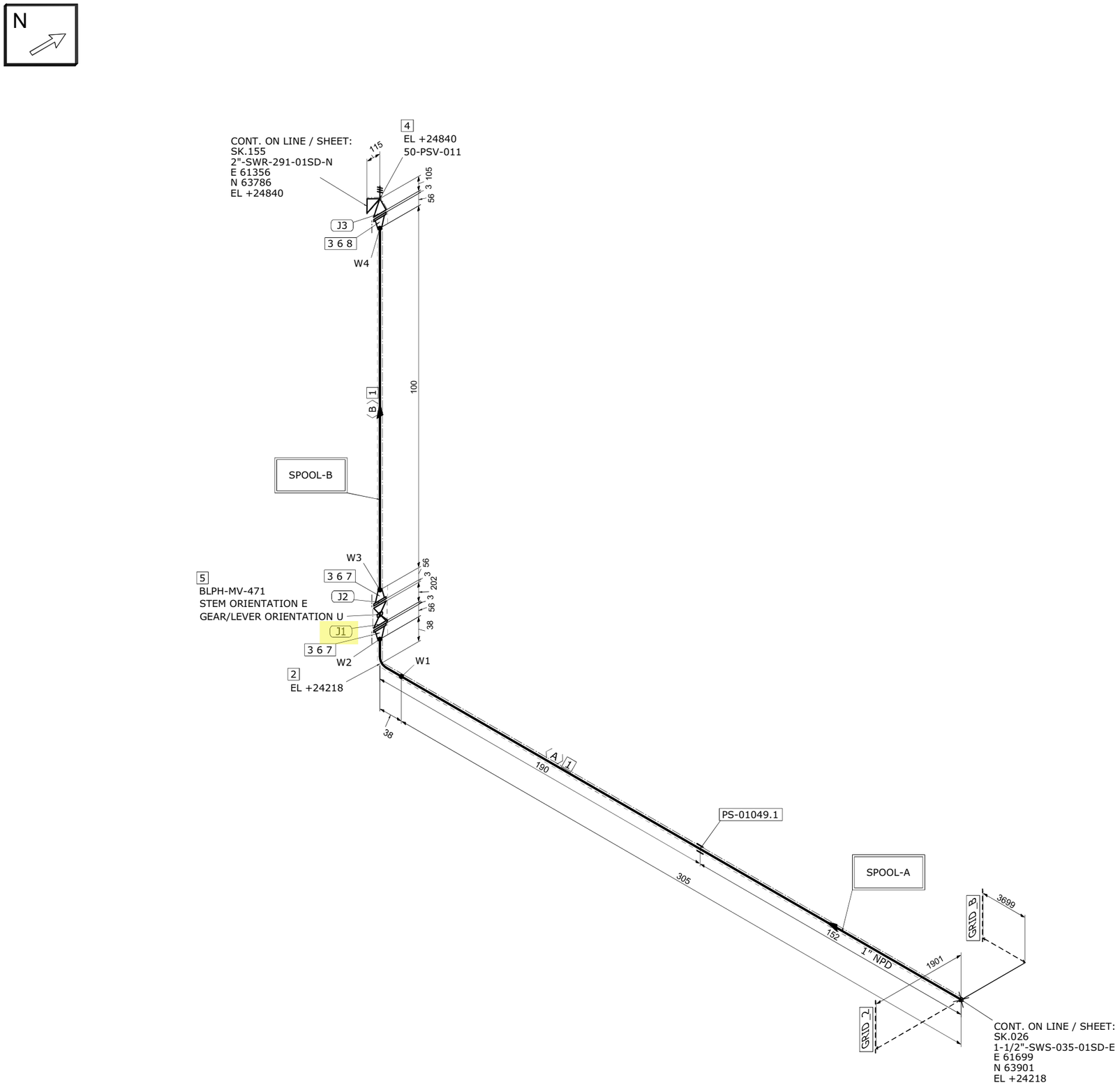
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-01-15	2025-01-15	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-15T15:15:38.199Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-01-15T16:52:40.101Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPESD02850100	Pipe ASME B36.19M PE 3,38 SML ASTM A790 UNS S32760	0.4M	1.0
2	1	E90RSD01640100	90 Deg Elbow Long Radius ASME B16.9 BW 3,38 WRS ASTM A815 UNS S32760	1	0.1
3	1	FLW0SD01240100	Flange WN ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	3	4.3

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
4	2X1		SAFETY VALVE FLG.150/150#RF	1	15.0
5	1	VLBLNN01370100	Block & Bleed Valve API 6D FLG 150LB RF BS01F01RFS	1	12.5
6	1	GFL3GK15970100	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	3	0.2
7	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.0
8	1/2	SB20BO34450200	105 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.7

FABRICATION WEIGHT [kg]	5.4
ERECTION WEIGHT [kg]	29.4
OVERALL WEIGHT [kg]	34.8

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1	BW
W2	1	BW
W3	1	BW
W4	1	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1	305	BEVEL	BEVEL
B	1	100	BEVEL	BEVEL

SUPPORT LIST

PS-01049.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	2	2.3
B	2	3.1
MONT	0	29.4

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 1"-SWS-290-01SD-E

SK.154

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE: N/A

DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 27-08-2024

FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00154 | SHEET / OF: 1/1 | REV.: 00

LINE DATA

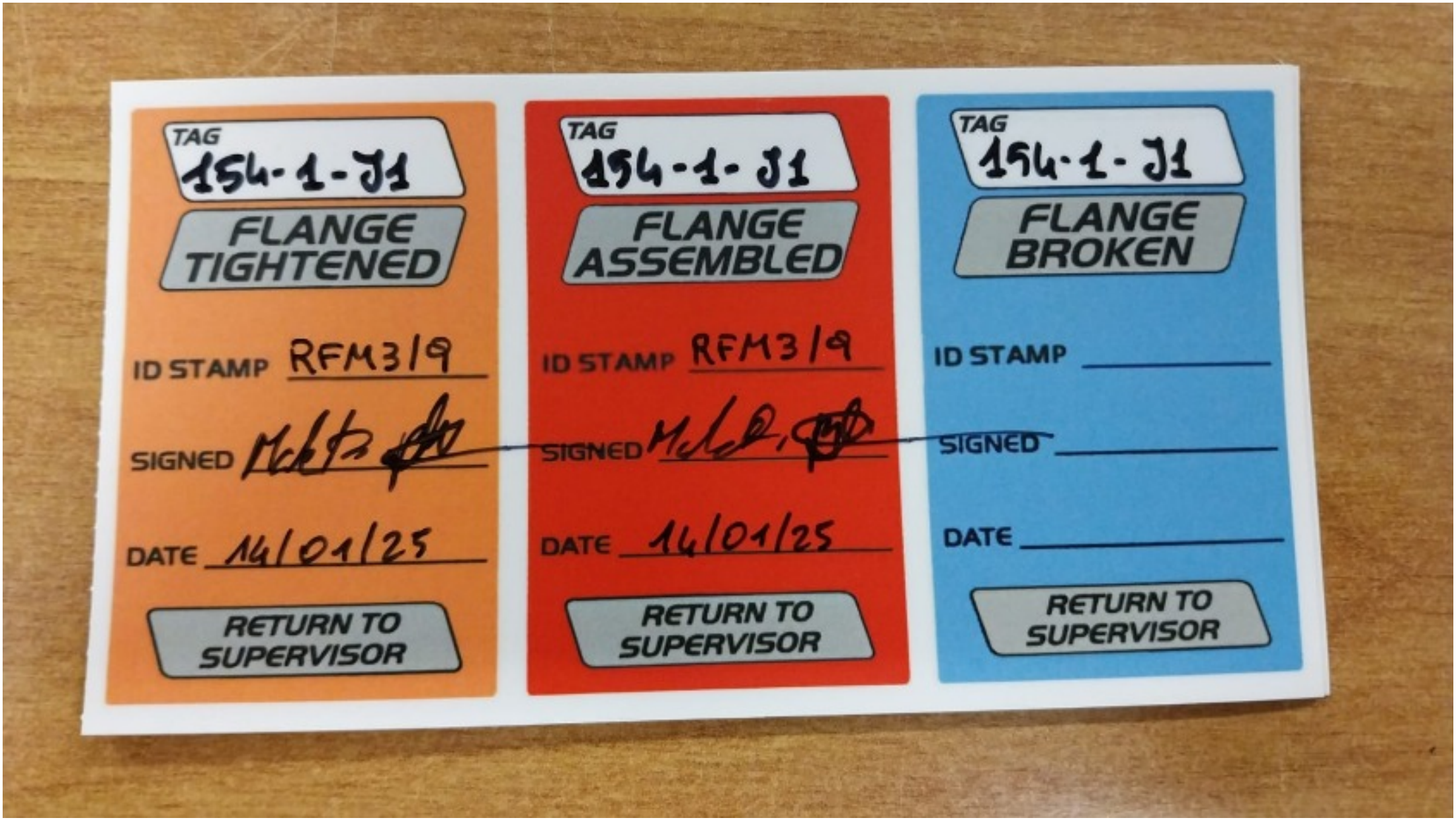
NDT INSPECTION CATEGORY	2			PED CATEGORY	Art. 4, par. 3				
PAINTING	SYSTEM N/A		BASE RAL N/A	FLUID PHASE	Liquid				
INSULATION	TYPE H		THICKNESS 20 [mm]	DESIGN	PRESS. 6 [barg]	TEMP. -29 / 100 [°C]			
HEAT TRACING	Yes			TEST	PRESS. 9 [barg]	TEMP. AMB.	MEDIUM Water		

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80022
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

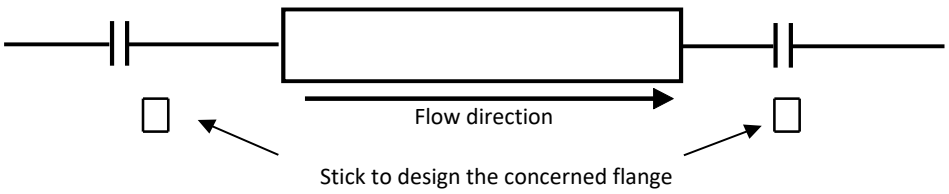
MASTER


TAG
154-1-J1
FLANGE TIGHTENED
ID STAMP RFM3/9
SIGNED
DATE 14/01/25
RETURN TO SUPERVISOR
TAG
154-1-J1
FLANGE ASSEMBLED
ID STAMP RFM3/9
SIGNED
DATE 14/01/25
RETURN TO SUPERVISOR
TAG
154-1-J1
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	154-1-J2	: Joint 154-1-J2			Dwg	123A90-FDL-PP-DI-00154-01
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10004312	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27		Bolt tensioning / torquing

Test Pack N.: TP-028

EQUIPMENT TAG



Flange Type	150LB	**Lubricant**	Yes
Flange Size	1"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Flat Thk. 3 mm	**Used tools**	Torque wrench V030390 (12-68 Nm)
Bolt tensioning/Torquing value	48.6		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	15	49	15	29	48.6
2	15	49	15	29	48.6
3	15	49	15	29	48.6
4	15	49	15	29	48.6
5			15	29	48.6
6			15	29	48.6
7			15	29	48.6
8			15	29	48.6
9			15	29	48.6
10			15	29	48.6
11			15	29	48.6
12			15	29	48.6
13			15	29	48.6
14			15	29	48.6
15			15	29	48.6
16			15	29	48.6
17			15	29	48.6
18			15	29	48.6
19			15	29	48.6
20			15	29	48.6

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

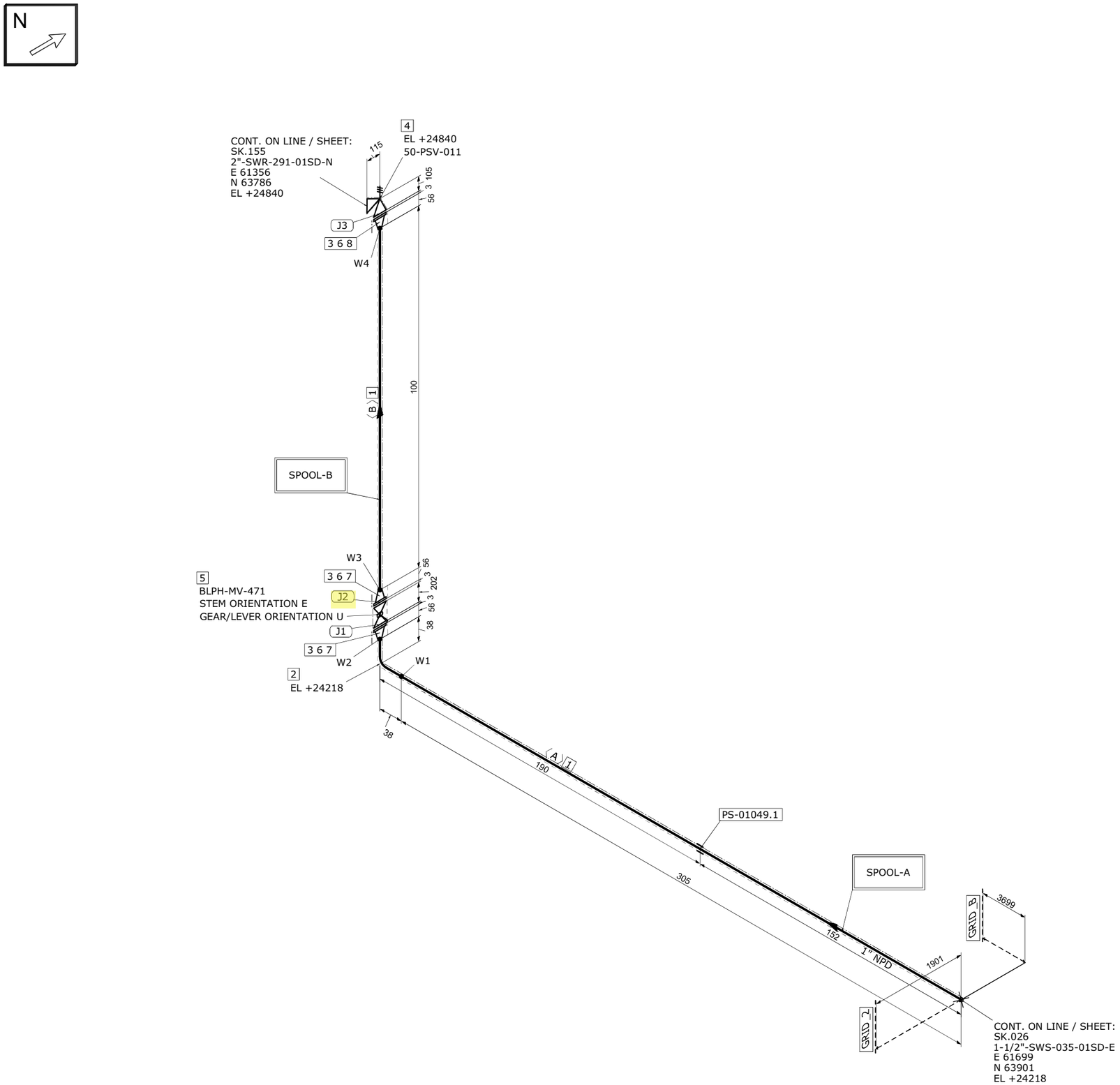
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-01-15	2025-01-15	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-15T15:15:49.528Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-01-15T16:52:50.907Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPESD02850100	Pipe ASME B36.19M PE 3,38 SML ASTM A790 UNS S32760	0.4M	1.0
2	1	E90RSD01640100	90 Deg Elbow Long Radius ASME B16.9 BW 3,38 WRS ASTM A815 UNS S32760	1	0.1
3	1	FLW0SD01240100	Flange WN ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	3	4.3

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
4	2X1		SAFETY VALVE FLG.150/150#RF	1	15.0
5	1	VLBLNN01370100	Block & Bleed Valve API 6D FLG 150LB RF BS01F01RFS	1	12.5
6	1	GFL3GK15970100	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	3	0.2
7	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.0
8	1/2	SB20BO34450200	105 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.7

FABRICATION WEIGHT [kg]	5.4
ERECTION WEIGHT [kg]	29.4
OVERALL WEIGHT [kg]	34.8

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1	BW
W2	1	BW
W3	1	BW
W4	1	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1	305	BEVEL	BEVEL
B	1	100	BEVEL	BEVEL

SUPPORT LIST

PS-01049.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	2	2.3
B	2	3.1
MONT	0	29.4

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 1"-SWS-290-01SD-E

SK.154

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK					SCALE	N/A
DRAWN	STAFF SRL	CHECKED	RT	APPROVED	LM	DATE	27-08-2024
FORMAT	A3	DRAWING NO.	123A90-FDL-PP-DI-00154			SHEET / OF	1/1
						REV.	00

LINE DATA

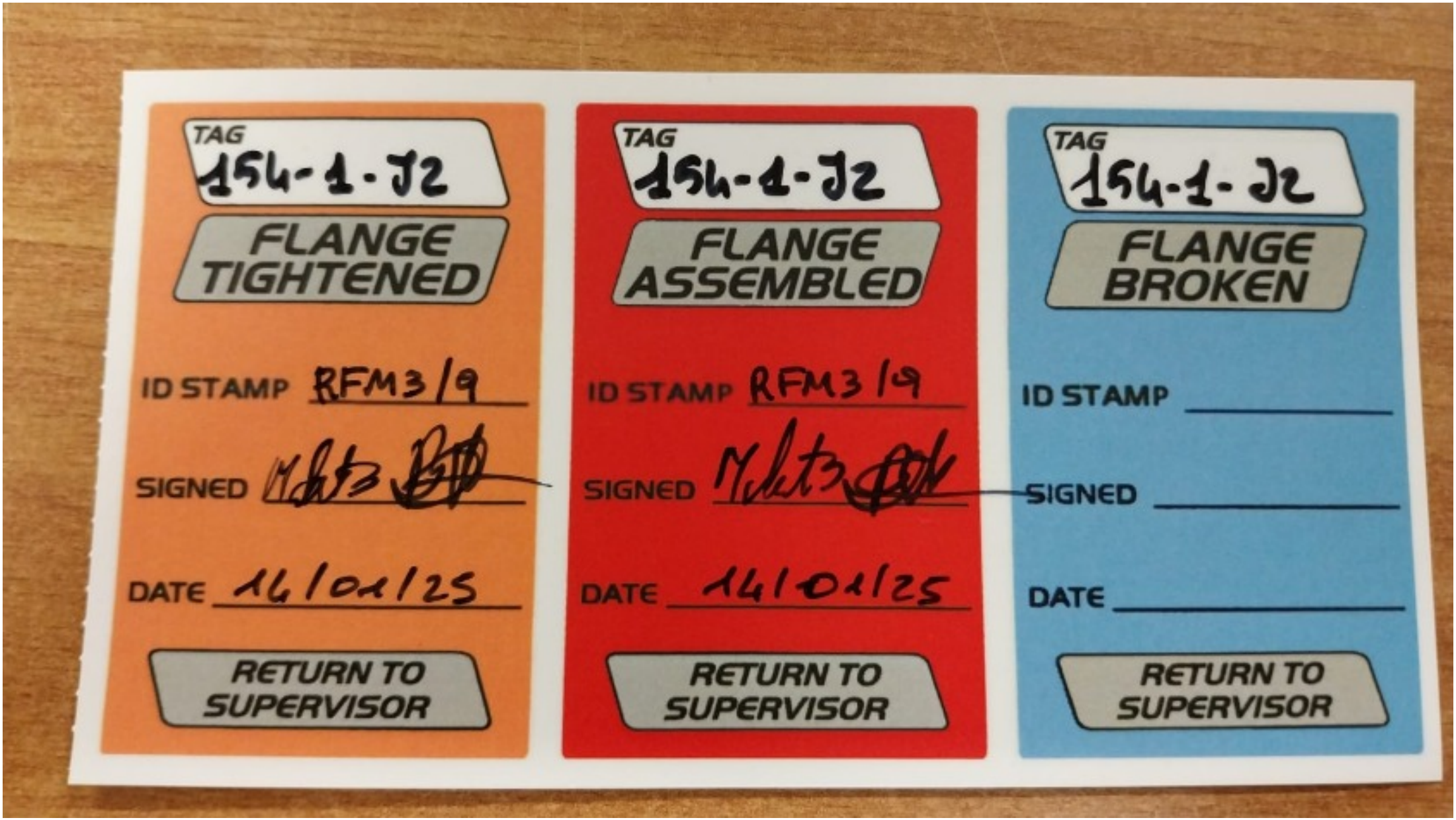
NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3			
PAINTING	SYSTEM N/A	BASE RAL N/A	FLUID PHASE	Liquid			
INSULATION	TYPE H	THICKNESS 20 [mm]	DESIGN	PRESS. 6 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	Yes		TEST	PRESS. 9 [barg]	TEMP. AMB	MEDIUM Water	

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80022
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

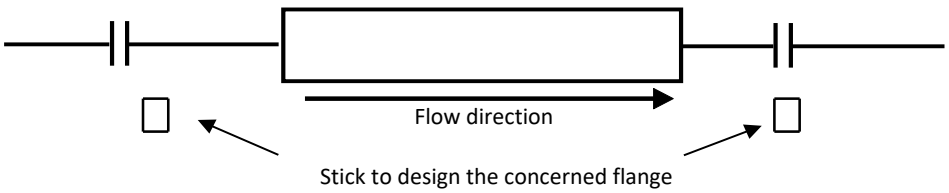
MASTER


TAG
154-1-J2
FLANGE TIGHTENED
ID STAMP RFM3/9
SIGNED
DATE 16/01/25
RETURN TO SUPERVISOR
TAG
154-1-J2
FLANGE ASSEMBLED
ID STAMP RFM3/9
SIGNED
DATE 14/01/25
RETURN TO SUPERVISOR
TAG
154-1-J2
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	154-1-J3	: Joint 154-1-J3			Dwg	123A90-FDL-PP-DI-00154-01
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10004313	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27 Bolt tensioning / torquing

Test Pack N.: TP-028

EQUIPMENT TAG



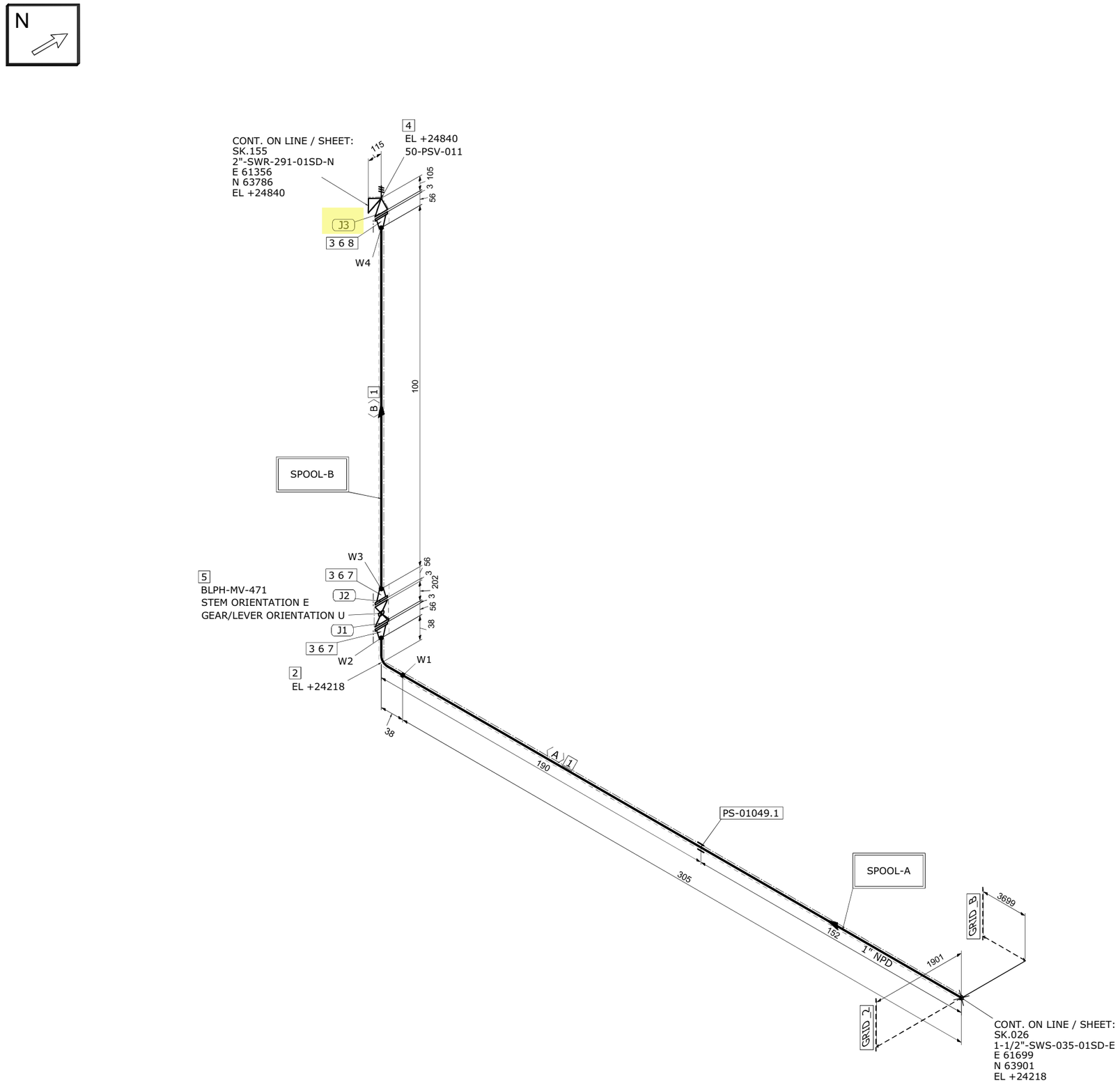
Flange Type	150LB	**Lubricant**	Yes
Flange Size	1"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	Gasket Flat Thk. 3 mm	**Used tools**	Torque wrench V030390 (12-68 Nm)
Bolt tensioning/Torquing value	48.6		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	15	49	15	29	48.6
2	15	49	15	29	48.6
3	15	49	15	29	48.6
4	15	49	15	29	48.6
5			15	29	48.6
6			15	29	48.6
7			15	29	48.6
8			15	29	48.6
9			15	29	48.6
10			15	29	48.6
11			15	29	48.6
12			15	29	48.6
13			15	29	48.6
14			15	29	48.6
15			15	29	48.6
16			15	29	48.6
17			15	29	48.6
18			15	29	48.6
19			15	29	48.6
20			15	29	48.6

1	**Clear Bore Inspection:** Pipe and Valve clear of debris/contamination.	Yes
2	**Flange Face Check:** Both flanges clean and free from damage.	Yes
3	**Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique.	Yes
4	**Alignment:** Check alignment according to code.	Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-01-30	2025-02-21	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-30T05:33:58.585Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-02-21T11:48:07.063Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	1	PIPESD02850100	Pipe ASME B36.19M PE 3,38 SML ASTM A790 UNS S32760	0.4M	1.0
2	1	E90RSD01640100	90 Deg Elbow Long Radius ASME B16.9 BW 3,38 WRS ASTM A815 UNS S32760	1	0.1
3	1	FLW0SD01240100	Flange WN ASME B16.5 150LB RF 3,38 FRG ASTM A182 Gr.F55	3	4.3

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
4	2X1		SAFETY VALVE FLG.150/150#RF	1	15.0
5	1	VLBLNN01370100	Block & Bleed Valve API 6D FLG 150LB RF BS01F01RFS	1	12.5
6	1	GFL3GK15970100	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	3	0.2
7	1/2	SB20BO01080200	65 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	8	1.0
8	1/2	SB20BO34450200	105 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	0.7

FABRICATION WEIGHT [kg]	5.4
ERECTION WEIGHT [kg]	29.4
OVERALL WEIGHT [kg]	34.8

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	1	BW
W2	1	BW
W3	1	BW
W4	1	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	1	305	BEVEL	BEVEL
B	1	100	BEVEL	BEVEL

SUPPORT LIST

PS-01049.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	2	2.3
B	2	3.1
MONT	0	29.4

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE: SHOP DRAWING ISOMETRIC
LINE NR. 1"-SWS-290-01SD-E

SK.154

CONTRACT NO./ TITLE: CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE: N/A

DRAWN: STAFF SRL | CHECKED: RT | APPROVED: LM | DATE: 27-08-2024

FORMAT: A3 | DRAWING NO.: 123A90-FDL-PP-DI-00154 | SHEET / OF: 1/1 | REV.: 00

LINE DATA

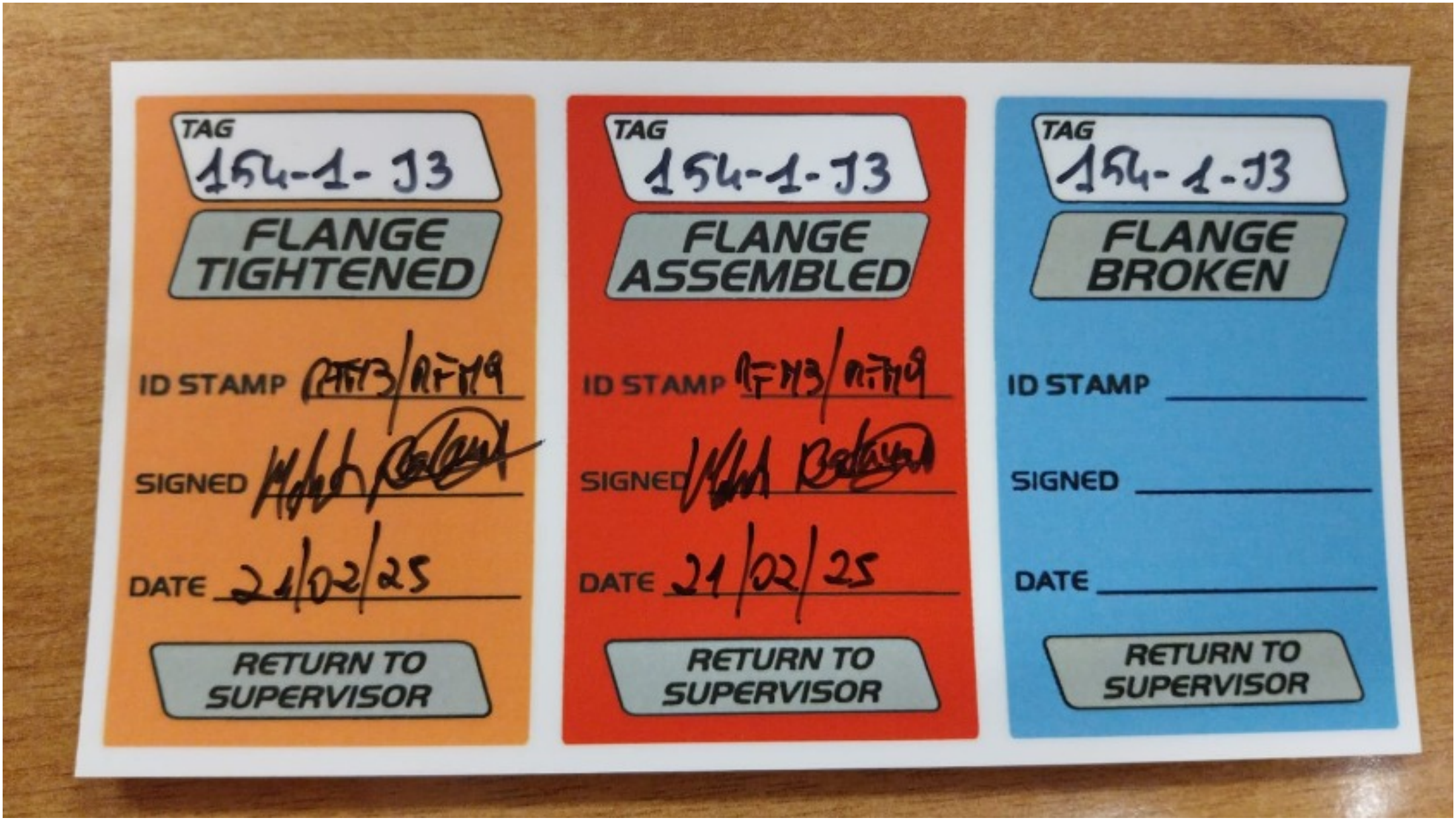
NDT INSPECTION CATEGORY	2			PED CATEGORY	Art. 4, par. 3			
PAINTING	SYSTEM N/A	BASE RAL N/A		FLUID PHASE	Liquid			
INSULATION	TYPE H	THICKNESS 20	[mm]	DESIGN	PRESS. 6	[barg]	TEMP. -29 / 100	[°C]
HEAT TRACING	Yes			TEST	PRESS. 9	[barg]	TEMP. AMB	MEDIUM Water

REFERENCE DOCUMENTS

P&ID	123A90-DDL-PR-PID-80022
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

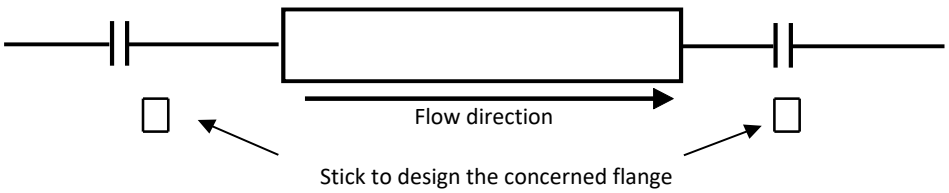
MASTER


TAG
154-1-J3
FLANGE TIGHTENED
ID STAMP
SIGNED
DATE 21/02/25
RETURN TO SUPERVISOR
TAG
154-1-J3
FLANGE ASSEMBLED
ID STAMP
SIGNED
DATE 21/02/25
RETURN TO SUPERVISOR
TAG
154-1-J3
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

ITEM	Tag	155-1-J1	: Joint 155-1-J1			Dwg	123A90-FDL-PP-DI-00155-01
	S/Sys	50-00	: Seawater Intake System (Lifting Pumps)			Module	LD
TASK	code	C10004314	Location	Onshore Activities		User	Rosetti Marino Quality Control
FORM	Process	MC	Activity PIP	Discipline	Piping	Form	TMX27 Bolt tensioning / torquing

Test Pack N.: TP-045

EQUIPMENT TAG



Flange Type	150LB	**Lubricant**	Yes
Flange Size	2"	**Lubricant Type**	MOLYKOTE 1000 PASTE
Gasket Type	INSULATION KIT	**Used tools**	Torque wrench V030390 / RD00261
Bolt tensioning/Torquing value	120		

			Torque (Design Value)		
Sequence	Pre tension/torque	Final tension/torque	30%	60%	100%
1	36	120	36	72	120
2	36	120	36	72	120
3	36	120	36	72	120
4	36	120	36	72	120
5			36	72	120
6			36	72	120
7			36	72	120
8			36	72	120
9			36	72	120
10			36	72	120
11			36	72	120
12			36	72	120
13			36	72	120
14			36	72	120
15			36	72	120
16			36	72	120
17			36	72	120
18			36	72	120
19			36	72	120
20			36	72	120

1 **Clear Bore Inspection:** Pipe and Valve clear of debris/contamination. Yes

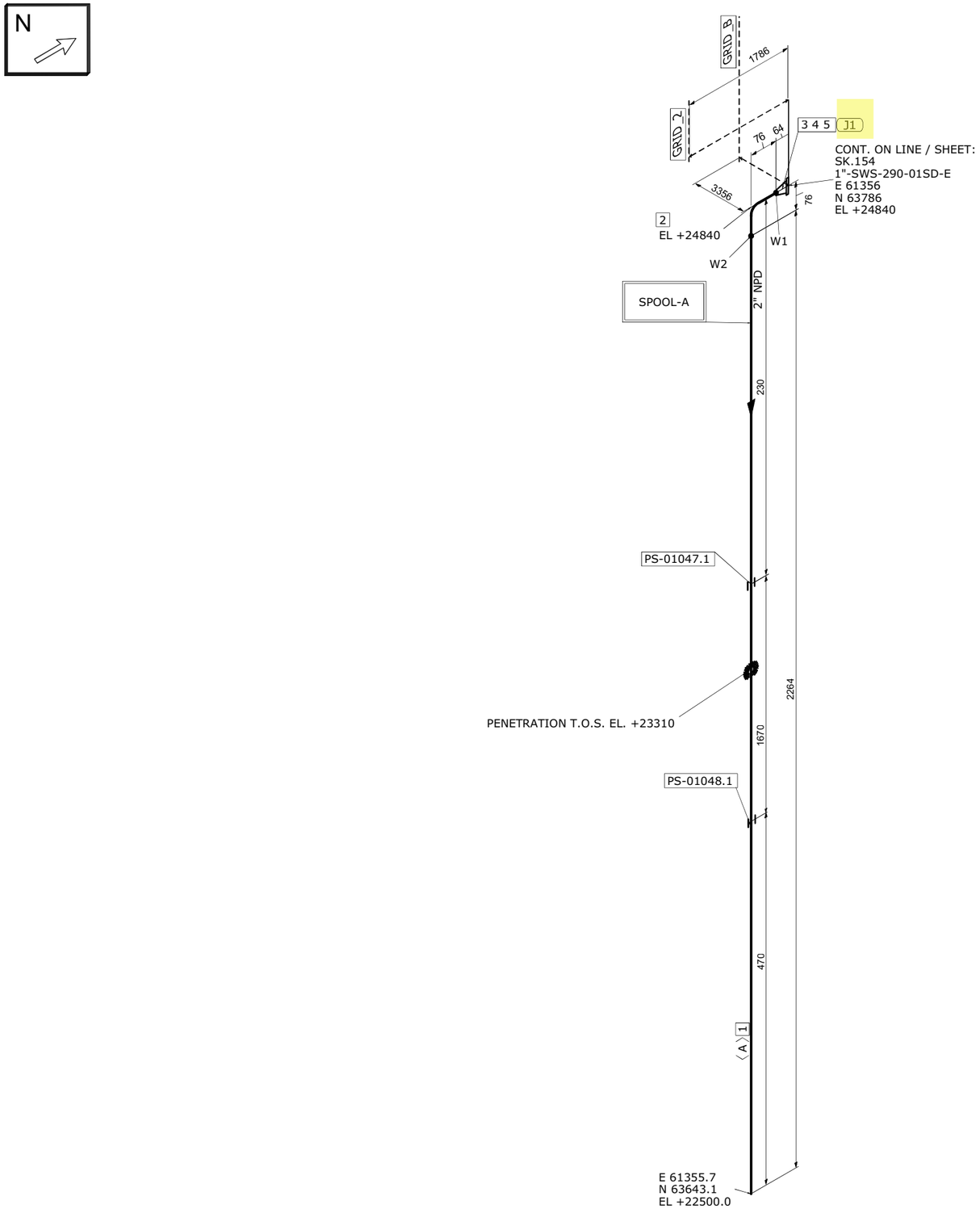
2 **Flange Face Check:** Both flanges clean and free from damage. Yes

3 **Gaskets and Bolts:** Gaskets and Bolts checked for correctness to specification, any damage and for correct length technique. Yes

4 **Alignment:** Check alignment according to code. Yes

Comments:

Page 1/1	Performed by	☑ WITNESS ☐ REVIEW	☐ WITNESS ☐ REVIEW
Company	RODEO	RM (ROSETTI MARINO)	
Name	Emanuele Delfino	Massimo Bruschi	
Date	2025-01-30	2025-02-21	
Signature	PROVERLIS Digitaly signed by Emanuele Delfino 2025-01-30T05:34:10.329Z	PROVERLIS Digitaly signed by Massimo Bruschi 2025-02-21T11:48:35.108Z	



MATERIAL LIST

FABRICATION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
1	2	PIPESD02860200	Pipe ASME B36.19M PE 2,77 SML ASTM A790 UNS S32760	2.3M	9.1
2	2	E90RSD01650200	90 Deg Elbow Long Radius ASME B16.9 BW 2,77 WRS ASTM A815 UNS S32760	1	0.5
3	2	FLWDSD01250200	Flange WN ASME B16.5 150LB RF 2,77 FRG ASTM A182 Gr.F55 (01)	1	2.8

ERECTION

POS.	SIZE	SAP CODE	DESCRIPTION	Q.TY	WEIGHT [kg]
4	2	GFL3GK13230200	Gasket Flat Thk. 3 mm ASME B16.21 150LB RF GSK NEOPRENE	1	0.1
5	5/8	SB20BO00990300	110 Stud Bolt + 2 Heavy Nuts ASME B1.1 ASTM A193 Gr.B7 - A194 Gr.2H Hot dip galvanized	4	1.1

FABRICATION WEIGHT [kg]	12.4
ERECTION WEIGHT [kg]	1.2
OVERALL WEIGHT [kg]	13.6

WELD SUMMARY

WELD No.	SIZE [inches]	TYPE
W1	2	BW
W2	2	BW

CUTTING LIST

PIECE No.	SIZE [inches]	LENGTH [mm]	END PREP.1	END PREP.2
A	2	2264	BEVEL	SQ.CUT

SUPPORT LIST

PS-01047.1
PS-01048.1

SPOOL	WELD [inches]	WEIGHT [kg]
A	4	12.3
MONT	0	1.2

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
01	17-09-2024	STAFF SRL	RT	LM	REVISED WHERE INDICATED
00	27-08-2024	STAFF SRL	RT	LM	ISSUED FOR CONSTRUCTION

CROSSWIND

ROSETTI MARINO

TITLE
SHOP DRAWING ISOMETRIC
LINE NR. 2"-SWR-291-01SD-N

SK.155

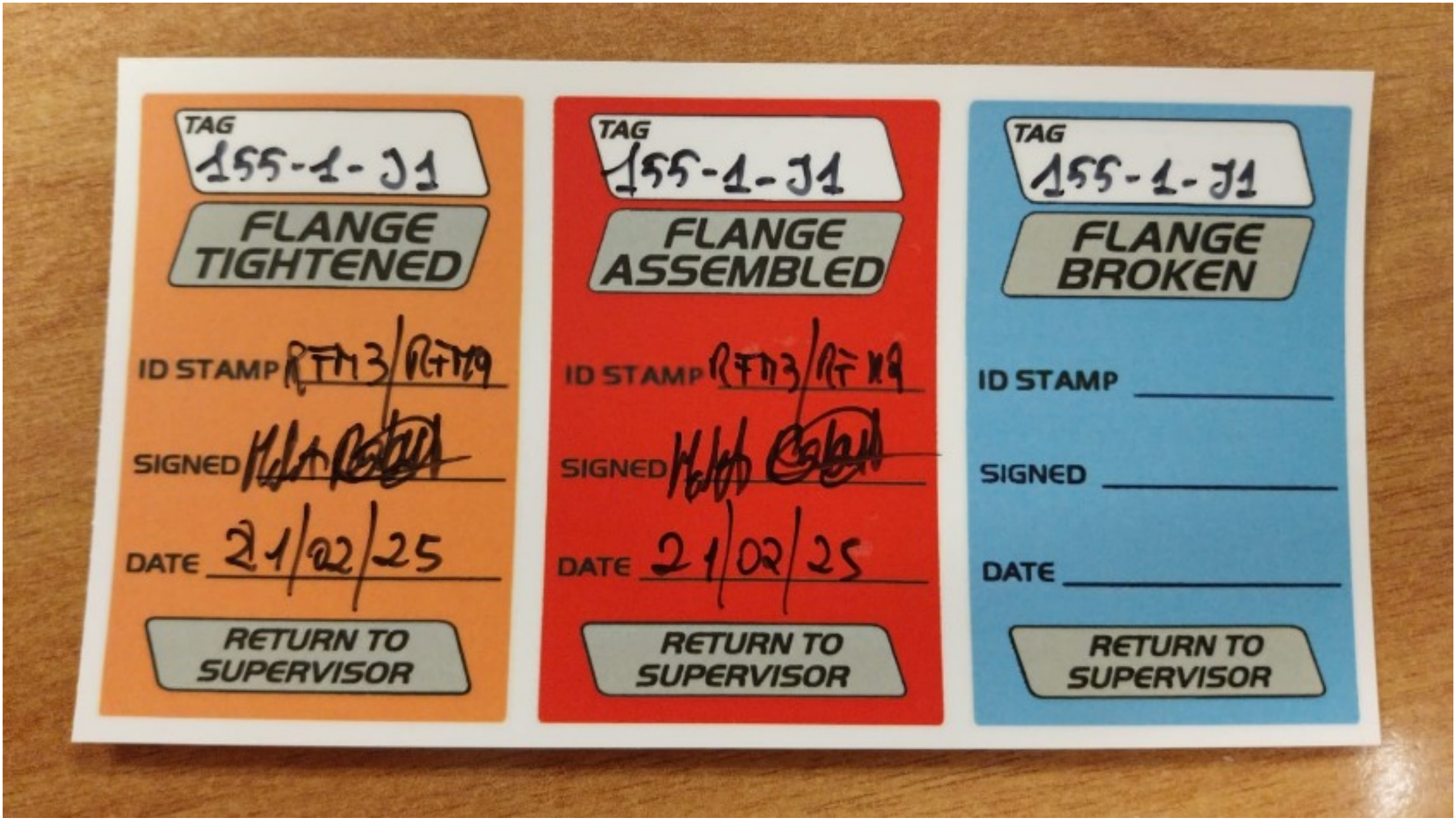
NDT INSPECTION CATEGORY	2		PED CATEGORY	Art. 4, par. 3			
PAINTING	SYSTEM N/A	BASE RAL N/A	FLUID PHASE	Liquid			
INSULATION	TYPE N	THICKNESS [mm]	DESIGN	PRESS. 3.5 [barg]	TEMP. -29 / 100 [°C]		
HEAT TRACING	N/A		TEST	PRESS. N/A [barg]	TEMP. AMB.	MEDIUM N/A	

REFERENCE DOCUMENTS	
P&ID	123A90-DDL-PR-PID-80022
ISOMETRIC SHOP DWG LIST	123A90-FDL-PP-LIS-00001
PIPING SUPPORT BOOK	123A90-DDL-PP-DD-72000
PIPING MATERIAL CLASS	123A90-DDL-PP-SP-70029

NOTES

MASTER

CONTRACT NO./ TITLE	CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK		SCALE	N/A
DRAWN STAFF SRL	CHECKED RT	APPROVED LM	DATE	17-09-2024
FORMAT A3	DRAWING NO. 123A90-FDL-PP-DI-00155		SHEET / OF 1/1	REV. 01


TAG
155-1-J1
FLANGE TIGHTENED
ID STAMP RTH3/RTH9
SIGNED
DATE 21/02/25
RETURN TO SUPERVISOR
TAG
155-1-J1
FLANGE ASSEMBLED
ID STAMP RTH3/RTH9
SIGNED
DATE 21/02/25
RETURN TO SUPERVISOR
TAG
155-1-J1
FLANGE BROKEN
ID STAMP
SIGNED
DATE
RETURN TO SUPERVISOR

Section 11 MECHANICAL COMPLETION INDEX - SAFETY DISCIPLINE

NOT APPLICABLE

Section 12 FAT / VENDOR REPORTS

ROSETTI MARINO	INSPECTION REPORT	Report No. IR-0936-PCM-01	SHEET 1 di 7
		Data *Date* ***08/10/2024***	Rev. *Rev.* ***00***

PROGETTO	CLIENTE	COMMESSA / *Job*	COMMESSA FORNITORE / *Job Vendor*
HOLLANDSE KUST NOORD WIND PARK	CROSSWIND	**123A90**	
FORNITORE/*Supplier PCM*	**No. Ordine**/*P.O. No.* **1724000936**	**Progressive Cavity Pump**	

DESCRIZIONE DEL MATERIALE / *Material Description*					
POS. *Item*	**QUANTITA'** *Quantity*	**DESCRIZIONE** *Description*	**Nr. TAG S/N** *TAG No. S/N*	**TIPO DI ISPEZIONE** / *Kind of Inspection*	**ESITO** / *Result*
10	**2**	**1PUMP005 MONOSCREW PUMP SEA WATER LIFT PUMP VERTICAL SUBMERGED TYPE**	**P500001 A/B**	**QCP Step 2.4: Hydrostatic test for pump casing parts**	**Satisfactory**

DOCUMENTI APPLICABILI / *Applicable Documents*			
TITOLO DOCUMENTO / *Document Title*	**NUMERO DOCUMENTO** / *Document Number*	**REVISIONE** / *Revision*	**STATO DOCUMENTO** / *Document Status*
Inspection and Test Plan	1724000936-QC-ITP-00002	01	Approved by RM Commented by CrossWind
HYDROSTATIC TEST PROCEDURE For Sea Water Lift Progressive Cavity Pumps (P-50001 A/B)	1724000936-QC-PRO-00022	02	Code 2

DISTRIBUZIONE A: / *Distribution to:*	
☐**GESTIONE FORNITURE** / *Supply Management Department*	☐**CAPO COMMESSA** / *Project Manager*
☐**PRODUZIONE** / *Production*	☒**FORNITORE** / *Supplier*
☐**PPLM** / *Project Procurement & Logistic Manager*	☐**P.Q.M.**
☐**MAGAZZINO** / *Warehouse*	☐**P.E.M.**

L' INCARICATO / *The person in charge*	**IL RAPP. DEL CLIENTE** / *Client's Representative*	**IL FORNITORE** / *Supplier*
Mohammad Sheydaee Mehr Enginex Inspector on Behalf of Rosetti Marino	Majid Moeini, Inspector o.b.o. Crosswind	Guillaume Le Mével, PCM Loïc BONICEL, SRCI

QUESTO DOCUMENTO NON SOLLEVA IL FORNITORE DALLA RESPONSABILITA' DI EVENTUALI DIFETTI E/O MALFUNZIONAMENTI RILEVATI DURANTE L'USO /
This document does not relieve the Supplier of the responsibility of any possible defects and/or misfunctioning arising during the utilisation.

PROGETTO	CLIENTE	COMMESSA / *Job*	COMMESSA FORNITORE / *Job Vendor*
HOLLANDSE KUST NOORD WIND PARK	CROSSWIND	**123A90**	
FORNITORE/*Supplier PCM*	**No. Ordine**/*P.O. No.* **1724000936**	**Progressive Cavity Pump**	

ATTIVITA' ESEGUITE / *Activities Carried Out*

A – INTRODUZIONE / *Preliminary Introduction*

On the 8th of October the inspector attended at SRCI & P2MI 4-6 Allé des Bruyères 71200 Le Creusot France to conduct the inspection activities as per inspection notification NOI-01_1724000936_P-50001A-B dated 02/10/2024.

Attendees:

- Mohammad Sheydaee, Enginex Inspector o.b.o. Rosetti Marino
- Majid Moeini, Inspector o.b.o. Crosswind
- Guillaume Le Mével, STP Project Manager, PCM
- Loïc BONICEL, Production Manager, SRCI

The following activities were performed according to ITP 1724000936-QC-ITP-00002 Rev 01.

Step 2.4: Hydrostatic test

- Hydrostatic pressure test has been carried out in accordance with the HYDROSTATIC TEST PROCEDURE For Sea Water Lift Progressive Cavity Pumps (P-50001 A/B), Document Number: 1724000936-QC-PRO-00022 Rev. 02.
- According to supplier, due to pump length, hydrostatic test will be done in several batches.
- There were 18 tubing extension parts ready to be tested in the workshop.
- During this visit, the hydrostatic pressure test was carried out for 1 string including the following three parts:
  - Part No. 1
  - Part No. 3
  - Part No. 7
- Prior to the test, the pressure gauge was checked to be calibrated.
- Calibration certificates of the pressure gauge is attached to this report.
- According to the procedure, the test was carried out at ambient temperature and ambient temperature was measured and recorded during the test.
- The hydrostatic tests were conducted using water, and the chloride content was checked to be below 50 ppm.
- The certificate of the water is attached to this report.
- The pressure, 30 barg (1.5 x MACP), was applied according to the test procedure.
- During the test, special attention was paid to the welded parts.

L' INCARICATO / *The person in charge*	**IL RAPP. DEL CLIENTE** / *Client's Representative*	**IL FORNITORE** / *Supplier*
Mohammad Sheydaee Mehr Enginex Inspector on Behalf of Rosetti Marino	Majid Moeini, Inspector o.b.o. Crosswind	Guillaume Le Mével, PCM Loïc BONICEL, SRCI

QUESTO DOCUMENTO NON SOLLEVA IL FORNITORE DALLA RESPONSABILITA' DI EVENTUALI DIFETTI E/O MALFUNZIONAMENTI RILEVATI DURANTE L'USO /
This document does not relieve the Supplier of the responsibility of any possible defects and/or misfunctioning arising during the utilisation.

- The summary of the results is presented in the table below:

Inspected items	Piping (Tubing extension) Part No. 1 Part No. 3 Part No. 7
Test Pressure	30 barg
Duration	30 min
Test Fluid	Water
Reference pressure gauges	S/N: 138451 Validity: 16/05/2025
Ambient temperature	19 °C
Acceptance Criteria	➢ No permanent deformation ➢ No crack ➢ No leak
Results	**Satisfactory**

- No permanent deformation, no crack, no leak from pressurized parts was observed by the attendees.
- After finishing the hydrotest, the test report was provided by the supplier and it was signed by attendees.

HSE:

- During the hydrostatic test, strict adherence to HSE protocols was maintained throughout the entire process to ensure the safety of personnel, equipment, and the surrounding environment.
- Appropriate Personal Protective Equipment (PPE) were used by personnel involved in the hydrotest.

B –SCOPO DELL'ISPEZIONE / *Scope of Inspection*

DESCRIZIONE DEI TEST PRESENZIATI / *Description of witnessed tests*	**ESITO** / *Result*
QCP Step 2.4	Satisfactory

L' INCARICATO / *The person in charge*	**IL RAPP. DEL CLIENTE** / *Client's Representative*	**IL FORNITORE** / *Supplier*
Mohammad Sheydaee Mehr Enginex Inspector on Behalf of Rosetti Marino	Majid Moeini, Inspector o.b.o. Crosswind	Guillaume Le Mével, PCM Loïc BONICEL, SRCI

QUESTO DOCUMENTO NON SOLLEVA IL FORNITORE DALLA RESPONSABILITA' DI EVENTUALI DIFETTI E/O MALFUNZIONAMENTI RILEVATI DURANTE L'USO /
This document does not relieve the Supplier of the responsibility of any possible defects and/or misfunctioning arising during the utilisation.

ROSETTI MARINO	INSPECTION REPORT	Report No. IR-0936-PCM-01	SHEET 4 di 7
		Data *Date* ***08/10/2024***	Rev. *Rev.* ***00***

PROGETTO	CLIENTE	COMMESSA / *Job*	COMMESSA FORNITORE / *Job Vendor*
HOLLANDSE KUST NOORD WIND PARK	CROSSWIND	**123A90**	
FORNITORE/*Supplier* *PCM*	**No. Ordine**/*P.O. No.* **1724000936**	**Progressive Cavity Pump**	

C –DETTAGLIO DEGLI STRUMENTI UTILIZZATI PER TEST E ISPEZIONE / *Details of Inspection and Test Instruments used*

NOME DELLO STRUMENTO *Equipment name*	PRODUTTORE *Manufacturer*	MODELLO *Model*	PROSSIMA TARATURA *Next calibration*
Pressure gauge, 138451	SANS	MANO INOX	16/05/2025
Chain of temperature measurement	RS PRO	RS-42	22/12/2024

D –ALLEGATI / *Attachments (***CERTIFICATI E TEST REPORT** */ Certificates and Test Reports)*

NUMERO DOCUMENTO / *Document Number*	DESCRIZIONE / *Description*	TIPO / *Type*	NR. PAGINE / *No. Pages*
Att. 1 - Hydrotest report	Hydrotest report	Test report	3
Att. 2 -1724000936-QC-ITP-00002	ITP signed	-	4
Att. 3	Instrument calibration certificates	-	4
		-	

E – DETTAGLI ED ESITO DELL'ISPEZIONE / *Details and Results of Inspection*

POS. *Item*	BREVE DESCRIZIONE MATERIALE *Material brief description*	Q.TA' ODA *Order Q.ty*	Q.TA' TESTATA *Tested Q.ty*	ACCETTATO *Accepted*	DATA ACCETTAZIONE *Acceptance date*
-	Tubing extension parts	18	3	3	08/10/2024

F – CONCLUSIONI / *Conclusions*

The Hydrostatic test (Step 2.4) was performed for three tubing extension parts (Part No. 1, 3 and 7).

Result: satisfactory

G – PUNTI IRRISOLTI / *Outstanding points*

H – STATO PACKING LIST / *Packing List Status*	☐ EMESSO / *Issued*	☒ NON EMESSO / *Not Issued*	DD/MM/YYYY ULTIMA DATA UTILE / *Last Date*

PUNCH LIST REPORT: VEDI ALLEGATO N° / *Refer to Attachment n° N/A*

REPORT FOTOGRAFICO (SE PRESENTE) / *Digital Pictures (if any)*

L' INCARICATO / *The person in charge*	IL RAPP. DEL CLIENTE / *Client's Representative*	IL FORNITORE / *Supplier*
Mohammad Sheydaee Mehr Enginex Inspector on Behalf of Rosetti Marino	Majid Moeini, Inspector o.b.o. Crosswind	Guillaume Le Mével, PCM Loïc BONICEL, SRCI

QUESTO DOCUMENTO NON SOLLEVA IL FORNITORE DALLA RESPONSABILITA' DI EVENTUALI DIFETTI E/O MALFUNZIONAMENTI RILEVATI DURANTE L'USO /
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PROGETTO	CLIENTE	COMMESSA / *Job*	COMMESSA FORNITORE / *Job Vendor*
HOLLANDSE KUST NOORD WIND PARK	CROSSWIND	**123A90**	
FORNITORE/*Supplier PCM*	**No. Ordine**/*P.O. No.* **1724000936**	**Progressive Cavity Pump**	



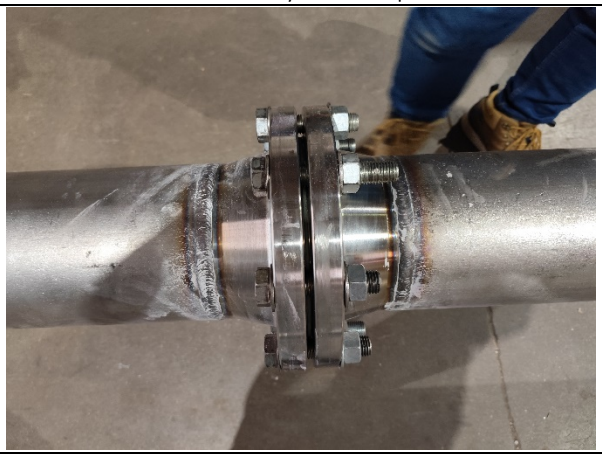
Items ready at workshop



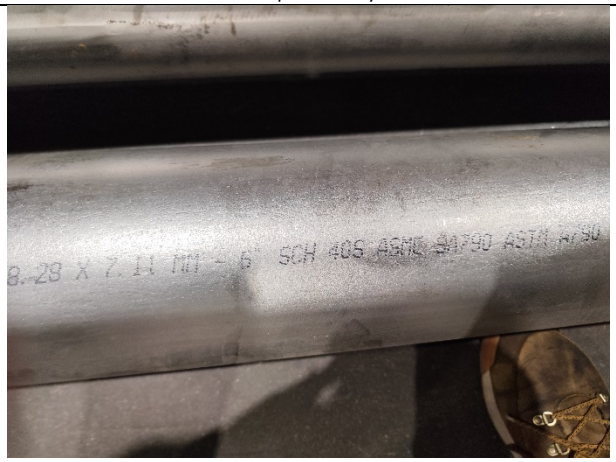
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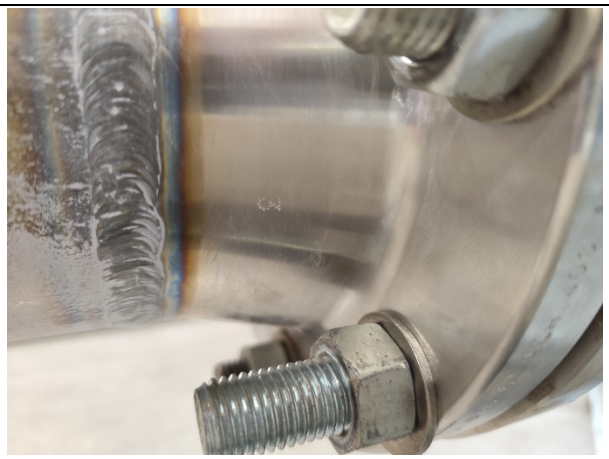
Assembled parts for hydrotest



Visual check



Marking check



Marking check

L' INCARICATO / *The person in charge*	**IL RAPP. DEL CLIENTE** / *Client's Representative*	**IL FORNITORE** / *Supplier*
Mohammad Sheydaee Mehr Enginex Inspector on Behalf of Rosetti Marino	Majid Moeini, Inspector o.b.o. Crosswind	Guillaume Le Mével, PCM Loïc BONICEL, SRCI

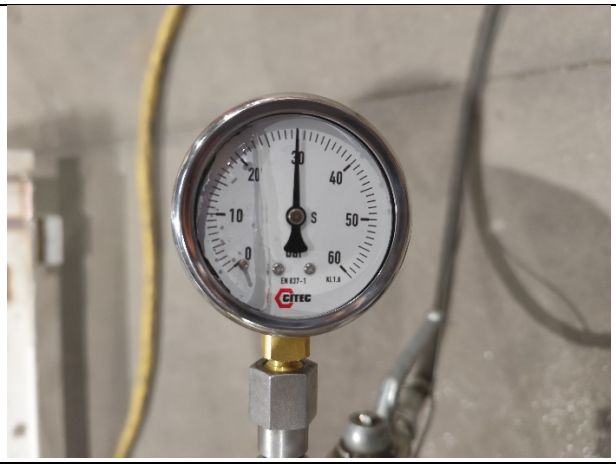
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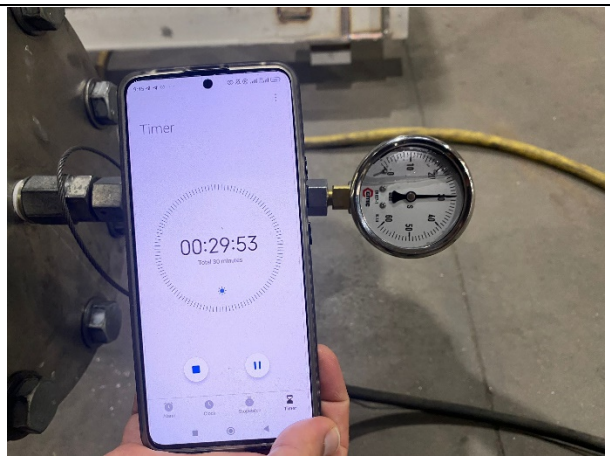
Test set up



Pressure gauge check



Pressure check



Pressure check



Testing water check

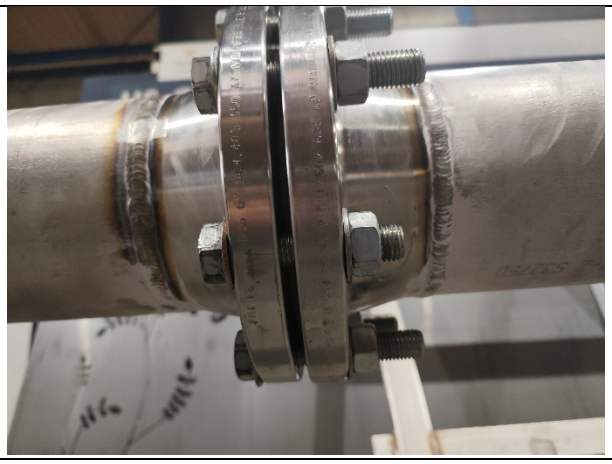


Testing water check

L' INCARICATO / *The person in charge*	**IL RAPP. DEL CLIENTE** / *Client's Representative*	**IL FORNITORE** / *Supplier*
Mohammad Sheydaee Mehr Enginex Inspector on Behalf of Rosetti Marino	Majid Moeini, Inspector o.b.o. Crosswind	Guillaume Le Mével, PCM Loïc BONICEL, SRCI

QUESTO DOCUMENTO NON SOLLEVA IL FORNITORE DALLA RESPONSABILITA' DI EVENTUALI DIFETTI E/O MALFUNZIONAMENTI RILEVATI DURANTE L'USO /
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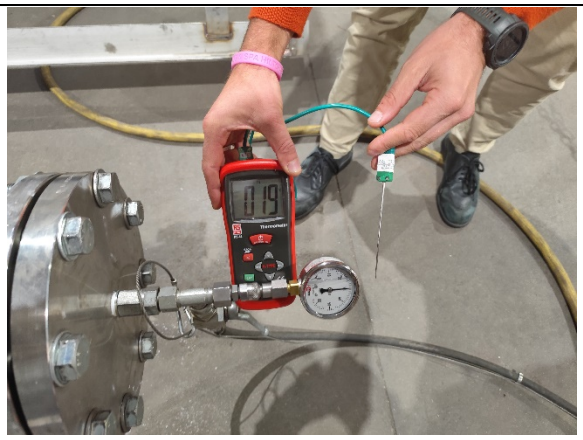
ROSETTI MARINO	**INSPECTION REPORT**	**Report No.** **IR-0936-PCM-01**	SHEET 7 di 7
		Data *Date* ***08/10/2024***	Rev. *Rev.* ***00***
PROGETTO **HOLLANDSE KUST NOORD WIND PARK**	**CLIENTE** CROSSWIND	**COMMESSA** / *Job* **123A90**	**COMMESSA FORNITORE** / *Job Vendor*
FORNITORE/*Supplier* *PCM*	**No. Ordine**/*P.O. No.* **1724000936**	**Progressive Cavity Pump**	



Visual check for leakage



Visual check for leakage



Ambient temperature check



Instrument check

NON VALIDO PER IL RILASCIO DELLA FORNITURA / *It is not valid for the supply's release*

L' INCARICATO / *The person in charge*	**IL RAPP. DEL CLIENTE** / *Client's Representative*	**IL FORNITORE** / *Supplier*
Mohammad Sheydaee Mehr Enginex Inspector on Behalf of Rosetti Marino	Majid Moeini, Inspector o.b.o. Crosswind	Guillaume Le Mével, PCM Loïc BONICEL, SRCI

QUESTO DOCUMENTO NON SOLLEVA IL FORNITORE DALLA RESPONSABILITA' DI EVENTUALI DIFETTI E/O MALFUNZIONAMENTI RILEVATI DURANTE L'USO /
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ROSETTI MARINO	**INSPECTION REPORT**	**Report No.** IR-0887-ENC-02	SHEET 1 di 8
		Data *Date* ***12/12/2024***	Rev. *Rev.* ***00***

PROGETTO	**CLIENTE**	**COMMESSA** / *Job*	**COMMESSA FORNITORE** / *Job Vendor*
HOLLANDSE KUST NOORD WIND PARK	CROSSWIND	**123A90**	
FORNITORE/*Supplier* *PCM*	**No. Ordine**/*P.O. No.* *1724000936*	**OGGETTO**/ *Object:* **Seawater Lift Pumps**	

DESCRIZIONE DEL MATERIALE / *Material Description*

POS. *Item*	**QUANTITA'** *Quantity*	**DESCRIZIONE** *Description*	**Nr. TAG S/N** *TAG No. S/N*	**TIPO DI ISPEZIONE** / *Kind of Inspection*	**ESITO** / *Result*
10	**1**	**MONOSCREW PUMP SEA WATER LIFT PUMP**	**P-50001 A**	**Performance & Run Test**	

DOCUMENTI APPLICABILI / *Applicable Documents*

TITOLO DOCUMENTO / *Document Title*	**NUMERO DOCUMENTO** / *Document Number*	**REVISIONE** / *Revision*	**STATO DOCUMENTO** / *Document Status*
GAD	1724000936-MAC-DA-00004_ATT1	03	No comment
Pump Data Sheet	1724000936-MAC-DS-00012_ATT2	02	No comment
Pump & Motor Noise DS	1724000936-MAC-DS-00013_ATT2	03	No comment
Pump Performance Curves	1724000936-MAC-DS-00015_ATT2	03	No comment
Electric Motor Performance Data	1724000936-MAC-DS-00016_ATT1	01	No comment
ITP	1724000936-QC-ITP-00002_ATT2	01	No comment
FAT Procedure	1724000936-QC-PRO-00023_ATT2	02	No comment

DISTRIBUZIONE A: / *Distribution to:*

☐**GESTIONE FORNITURE** / *Supply Management Department*	☐**CAPO COMMESSA** / *Project Manager*
☐**PRODUZIONE** / *Production*	☒**FORNITORE** / *Supplier*
☐**PPLM** / *Project Procurement & Logistic Manager*	☐**P.Q.M.**
☐**MAGAZZINO** / *Warehouse*	☐**P.E.M.**

ATTIVITA' ESEGUITE / *Activities Carried Out*

A – INTRODUZIONE / *Preliminary Introduction*

As per inspection notification 002, inspector attended on the 12th of December at PCM in order to perform the request performance & run test for pump A.
Inspections were carried out with satisfactory results, for additional details please refer to below sections of this report.

B –SCOPO DELL'ISPEZIONE / *Scope of Inspection*

DESCRIZIONE DEI TEST PRESENZIATI / *Description of witnessed tests*	**ESITO** / *Result*
Performance & Run Test P-50001 A	Satisfactory

L' INCARICATO / *The person in charge*	**IL RAPP. DEL CLIENTE** / *Client's Representative*	**IL FORNITORE** / *Supplier*
Frederic Chesnin Enginex Inspector on Behalf of Rosetti Marino		

QUESTO DOCUMENTO NON SOLLEVA IL FORNITORE DALLA RESPONSABILITA' DI EVENTUALI DIFETTI E/O MALFUNZIONAMENTI RILEVATI DURANTE L'USO /
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PROGETTO	CLIENTE	COMMESSA / *Job*	COMMESSA FORNITORE / *Job Vendor*
HOLLANDSE KUST NOORD WIND PARK	CROSSWIND	**123A90**	
FORNITORE/*Supplier* *PCM*	**No. Ordine**/*P.O. No.* *1724000936*	**OGGETTO**/ *Object:* **Seawater Lift Pumps**	

C –DETTAGLIO DEGLI STRUMENTI UTILIZZATI PER TEST E ISPEZIONE / *Details of Inspection and Test Instruments used*

NOME DELLO STRUMENTO *Equipment name*	PRODUTTORE *Manufacturer*	MODELLO *Model*	PROSSIMA TARATURA *Next calibration*
Pressure gauge		**MA0-10-9**	**01/2025**
Thermal gauge		**TKE21**	**08/2025**
Thermal gauge		**AE12**	**03/2026**
Electrical test bench		**BANC STP**	**07/2026**
Flowmeter		**DEDN80-60-2**	**08/2026**

D –ALLEGATI / *Attachments (***CERTIFICATI E TEST REPORT** */ Certificates and Test Reports)*

NUMERO DOCUMENTO / *Document Number*	DESCRIZIONE / *Description*	TIPO / *Type*	NR. PAGINE / *No. Pages*
P-50001B_FAT report signed	FAT Test report + Vibration / noise check	-	3
P-50001B_ITP signed	ITP	-	1

E – DETTAGLI ED ESITO DELL'ISPEZIONE / *Details and Results of Inspection*

POS. *Item*	BREVE DESCRIZIONE MATERIALE *Material brief description*	Q.TA' ODA *Order Q.ty*	Q.TA' TESTATA *Tested Q.ty*	ACCETTATO *Accepted*	DATA ACCETTAZIONE *Acceptance date*
10	**MONOSCREW PUMP SEA WATER LIFT PUMP**	1	1	1	2024/12/12

F – CONCLUSIONI / *Conclusions*

FAT of pump P-50001-B is satisfactory
Noise test is satisfactory
Vibration check is satisfactory
MDB not ready for review (customer was already informed)

Fat procedure ref. 1724000936-QC-PRO-00023 rev 02 approved Code 1.
Pump ref. P-50001-B is installed on vertical testing bench.
As per the procedure, the length of the pump is reduced in order to be fitted inside vertical tank.
Checking of the temperature of the fluid during the test.

Run in test
At rated point, discharge pressure is 6.5 bar.
Actual flow is 2.99 m3/h
1h test with monitoring of the temperature every 15 mn.
No abnormal raise of temperature – satisfactory

Performance test
Tests of the pump had been carried out at rated discharge pressure (6.5 bar) / 0 bar / 8.8 bar
Checking of the flow / pump speed / electric consumption
Test is satisfactory

L' INCARICATO / *The person in charge*	IL RAPP. DEL CLIENTE / *Client's Representative*	IL FORNITORE / *Supplier*
Frederic Chesnin Enginex Inspector on Behalf of Rosetti Marino		

QUESTO DOCUMENTO NON SOLLEVA IL FORNITORE DALLA RESPONSABILITA' DI EVENTUALI DIFETTI E/O MALFUNZIONAMENTI RILEVATI DURANTE L'USO /
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ROSETTI MARINO	INSPECTION REPORT	Report No. IR-0887-ENC-02	SHEET 3 di 8
		Data *Date* ***12/12/2024***	Rev. *Rev.* ***00***

PROGETTO	CLIENTE	COMMESSA / *Job*	COMMESSA FORNITORE / *Job Vendor*
HOLLANDSE KUST NOORD WIND PARK	CROSSWIND	**123A90**	
FORNITORE/*Supplier* *PCM*	**No. Ordine**/*P.O. No.* *1724000936*	**OGGETTO**/ *Object:* **Seawater Lift Pumps**	

Vibration check

At pump flange level the vibrations in all direction are null – satisfactory

Same (no vibration) on the pump casing.

Noise measurements

The noise measurements are below 73 dBA – satisfactory

All measurements are performed at 1 m from the source.

G – PUNTI IRRISOLTI / *Outstanding points*

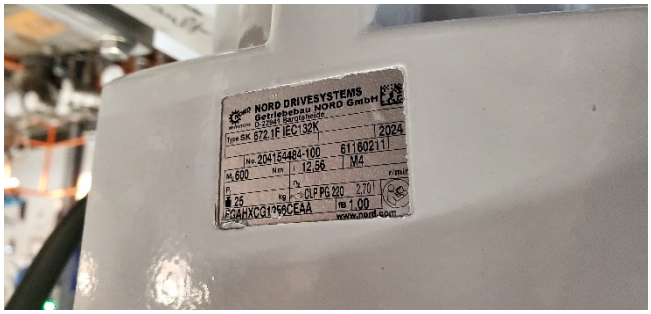
H – STATO PACKING LIST / *Packing List Status*	☐ **EMESSO** / *Issued*	☐ **NON EMESSO** / *Not Issued*	DD/MM/YYYY **ULTIMA DATA UTILE** / *Last Date*

PUNCH LIST REPORT: VEDI ALLEGATO N° / *Refer to Attachment n° N/A*

REPORT FOTOGRAFICO (SE PRESENTE) / *Digital Pictures (if any)*



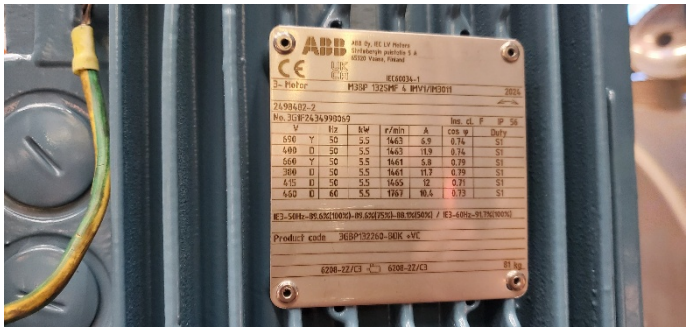
General view



Ref of the reduction gear

L' INCARICATO / *The person in charge*	IL RAPP. DEL CLIENTE / *Client's Representative*	IL FORNITORE / *Supplier*
Frederic Chesnin Enginex Inspector on Behalf of Rosetti Marino		

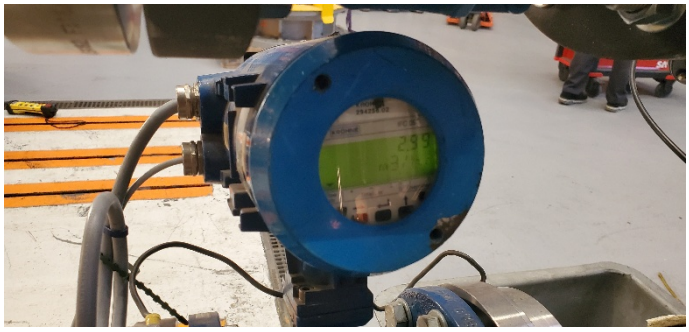
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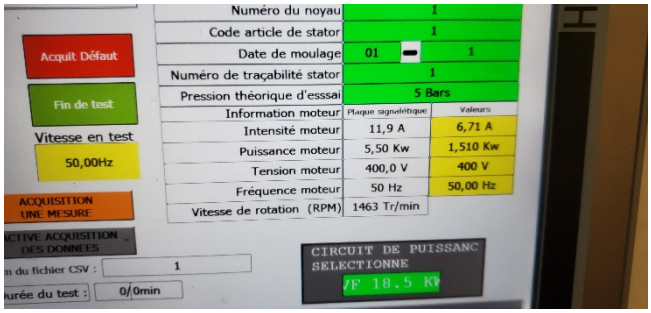
Electric motor



Discharge pressure at rated point



Actual flow is 2.99 m3 / h



Electric consumption

L' INCARICATO / *The person in charge*	**IL RAPP. DEL CLIENTE** / *Client's Representative*	**IL FORNITORE** / *Supplier*
Frederic Chesnin Enginex Inspector on Behalf of Rosetti Marino		

QUESTO DOCUMENTO NON SOLLEVA IL FORNITORE DALLA RESPONSABILITA' DI EVENTUALI DIFETTI E/O MALFUNZIONAMENTI RILEVATI DURANTE L'USO /
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Pump speed



Water temp in tank



Temperature in reduction gear



Bearing temp

L' INCARICATO / *The person in charge*	**IL RAPP. DEL CLIENTE** / *Client's Representative*	**IL FORNITORE** / *Supplier*
Frederic Chesnin Enginex Inspector on Behalf of Rosetti Marino		

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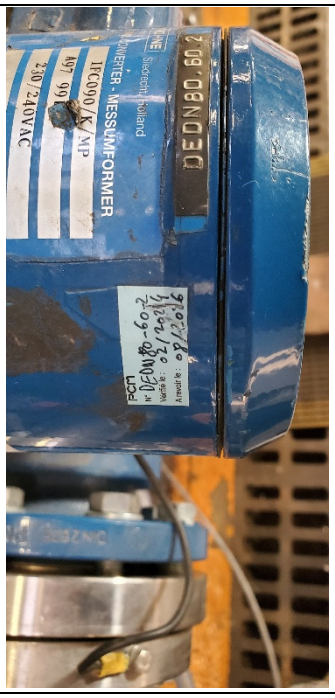


Vibration check





Impressive vibration result



Calibration tag on flowmeter



Calibration tag on thermal gauge

L' INCARICATO / *The person in charge*	**IL RAPP. DEL CLIENTE** / *Client's Representative*	**IL FORNITORE** / *Supplier*
Frederic Chesnin Enginex Inspector on Behalf of Rosetti Marino		

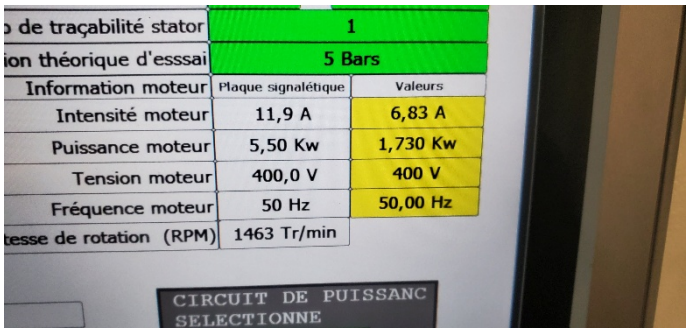
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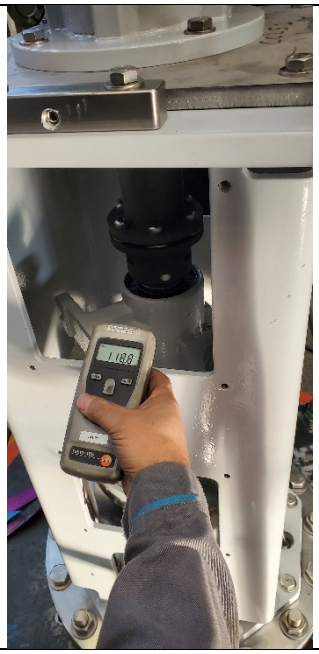
Test at 8.8 bar on discharge



Flow



Electric consumption



Pump speed



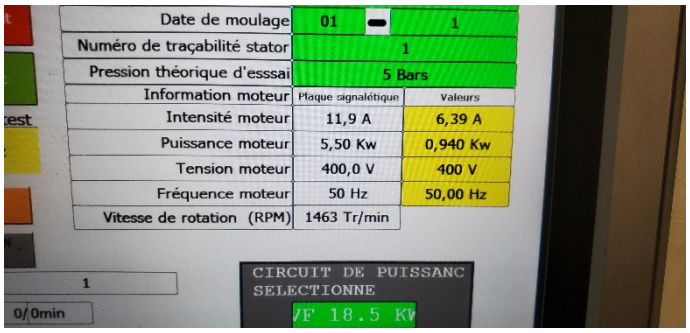
0 bar pressure



Flow at 0 bar pressure

L' INCARICATO / *The person in charge*	**IL RAPP. DEL CLIENTE** / *Client's Representative*	**IL FORNITORE** / *Supplier*
Frederic Chesnin Enginex Inspector on Behalf of Rosetti Marino		

PROGETTO	CLIENTE	COMMESSA / *Job*	COMMESSA FORNITORE / *Job Vendor*
HOLLANDSE KUST NOORD WIND PARK	CROSSWIND	**123A90**	
FORNITORE/*Supplier* *PCM*	**No. Ordine**/*P.O. No.* *1724000936*	**OGGETTO**/ *Object:* **Seawater Lift Pumps**	



Electric consumption



Marking on pump flange

NON VALIDO PER IL RILASCIO DELLA FORNITURA / *It is not valid for the supply's release*

L' INCARICATO / *The person in charge*	**IL RAPP. DEL CLIENTE** / *Client's Representative*	**IL FORNITORE** / *Supplier*
Frederic Chesnin Enginex Inspector on Behalf of Rosetti Marino		

Section 13 MECHANICAL COMPLETION CHANGES / MARK-UPS

NOT APPLICABLE