Base Load Power Hub (BLPH)

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

GENERAL ARRANGEMENT DRAWINGS AND NAMEPLATE

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1 INTRODUCTION

1.1 PROJECT OVERVIEW

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

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

1.1.1 Project Location

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

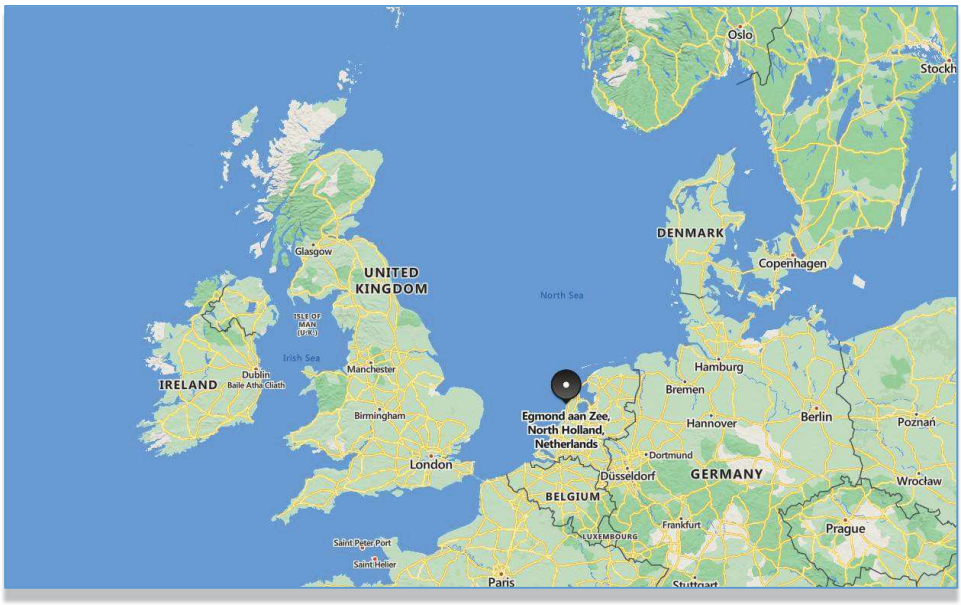


Figure 1 HOLLANDSE KUST NOORD WIND PARK Location Map



Figure 2 - Wind Park Details

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

1.1.2 Project Concept

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

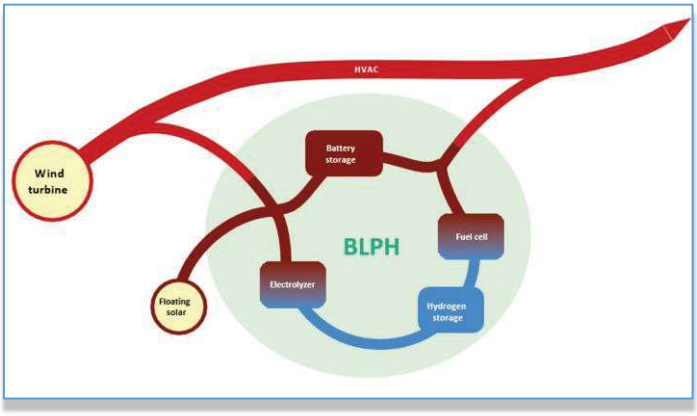


Figure 3 – BLPH Concept

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

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

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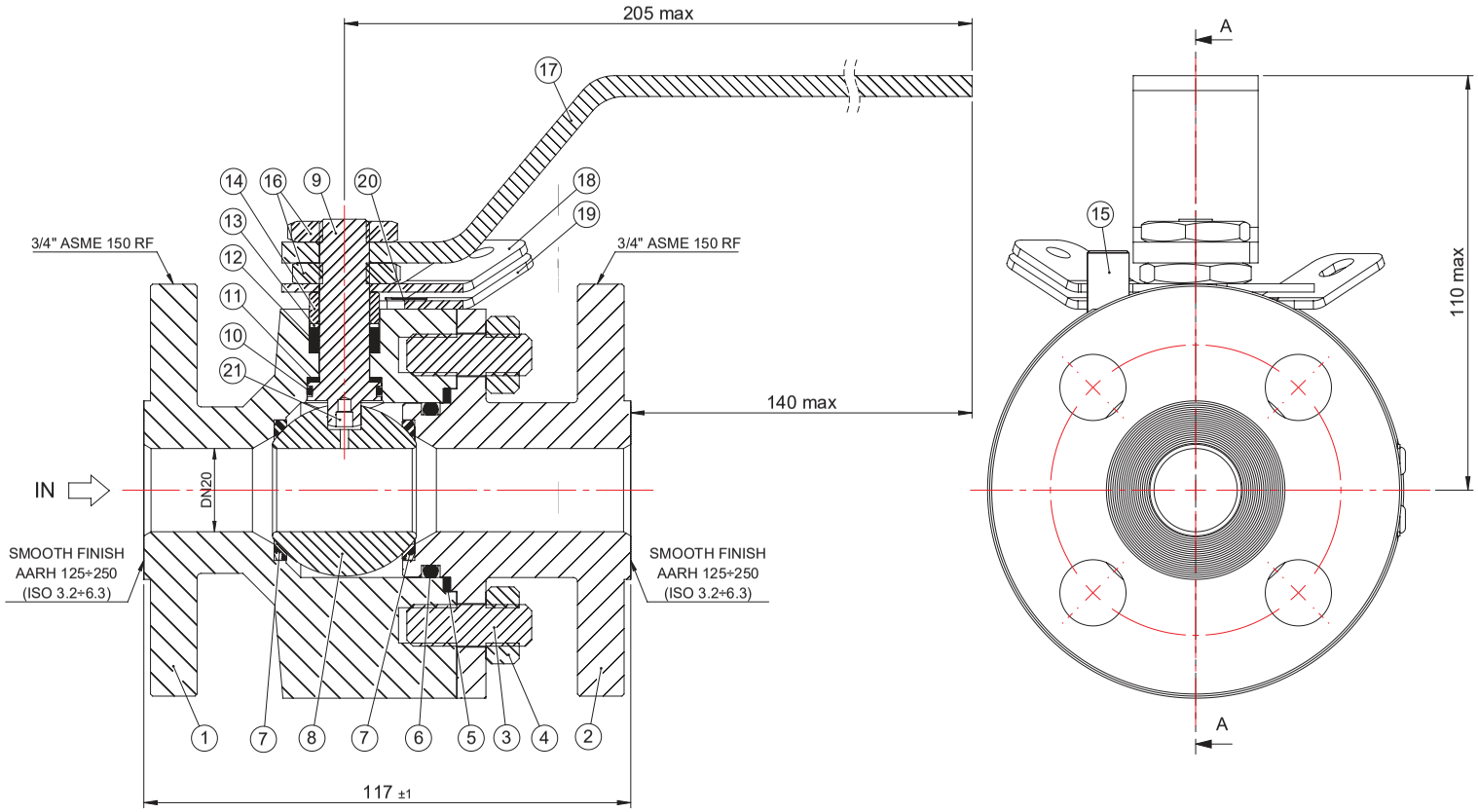
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DBB-737-HR-E300RF3-D-D	00.MNF.0604/V	VLBMNN00013Q0H	MD03C02YH	**BLPH-MV-204**	-	50
DBB-737-HR-E300RF3-D-D	00.MNF.0604/V	VLBMNN00013Q0H	MD03C02YH	**BLPH-MV-205**	-	50
DBB-737-HR-E300RF3-D-D	00.MNF.0604/V	VLBMNN00013Q0H	MD03C02YH	**BLPH-MV-282**	-	50
DBB-737-HR-E300RF3-D-D	00.MNF.0604/V	VLBMNN00013Q0H	MD03C02YH	**BLPH-MV-283**	-	50
DBB-737-HR-E300RF3-D-D	00.MNF.0604/V	VLBMNN00013Q0H	MD03C02YH	**BLPH-MV-421**	-	50
DBB-737-HR-E300RF3-D-D	00.MNF.0604/V	VLBMNN00013Q0H	MD03C02YH	**BLPH-MV-422**	-	50
DBB-737-HR-E300RF3-D-D	00.MNF.0604/V	VLBMNN00013Q0H	MD03C02YH	**BLPH-MV-438**	-	50
DBB-737-HR-E300RF3-D-D	00.MNF.0604/V	VLBMNN00013Q0H	MD03C02YH	**BLPH-MV-439**	-	50
SBB-727-HR-E150RF3-D-D	00.MNF.0608/V	VLBNNN00023Q0H	MS01C02YH	**BLPH-MV-025**	-	51
SBB-727-HR-E150RF3-D-D	00.MNF.0608/V	VLBNNN00023Q0H	MS01C02YH	**BLPH-MV-038**	-	51
SBB-727-HR-E150RF3-D-D	00.MNF.0608/V	VLBNNN00023Q0H	MS01C02YH	**BLPH-MV-213**	-	51
SBB-727-HR-E150RF3-D-D	00.MNF.0608/V	VLBNNN00023Q0H	MS01C02YH	**BLPH-MV-407**	-	51
SBB-727-E150RF3-D-D	00.MNF.0605/V	VLBNNN00033Q0H	MS01C02Y	**BLPH-MV-150**	-	52
SBB-727-E150RF3-D-D	00.MNF.0605/V	VLBNNN00033Q0H	MS01C02Y	**BLPH-MV-151**	-	52
SBB-727-E150RF3-D-D-	00.MNF.0612/V	VLBNNN00063Q0H	MS01B02Y	**BLPH-MV-166**	-	53
SBB-727-E150RF3-D-D-	00.MNF.0612/V	VLBNNN00063Q0H	MS01B02Y	**BLPH-MV-167**	-	53
SBB-727-E150RF3-D-D-	00.MNF.0612/V	VLBNNN00063Q0H	MS01B02Y	**BLPH-MV-386**	-	53
SBB-727-E150RF3-D-D	00.MNF.0606/V	VLBNNN00063Q0H	MS01B02Y	**BLPH-MV-411**	Stem Extension 100mm	54
SB-598-50-L150RF3-L-LF2	00.VSF.2716/V	VBDNN16610300	BC01B01RF	**BLPH-MV-467**		55
DBB-898-HR-25-F300RF3_F_D	00.VSF.2680/V	VLBBNN07190100	DA03C01RFH	**BLPH-MV-466**		24
DBB-898-HR-40-H300RF3_H_D	00.VSF.2681/V	VLBBNN07201H00	DA03C01RFH	**BLPH-MV-468**	-	25
SBB-798-25-F150RF3-F-D-	00.VSF.2784(T)	VLBLNN01370100	BS01F01RFS	**BLPH-MV-469**	-	56
SBB-798-25-F150RF3-F-D-	00.VSF.2784(T)	VLBLNN01370100	BS01F01RFS	**BLPH-MV-470**	-	56
SBB-798-25-F150RF3-F-D-	00.VSF.2784(T)	VLBLNN01370100	BS01F01RFS	**BLPH-MV-471**	-	56

SB BALL VALVE

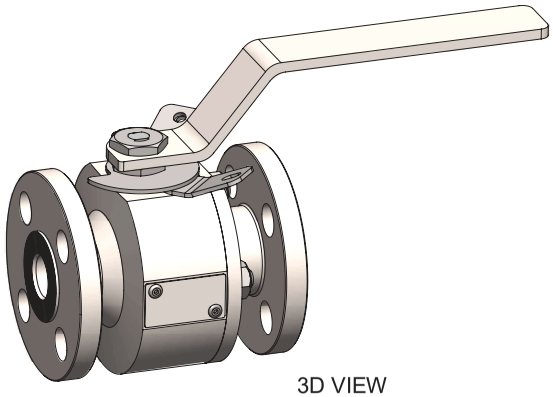
Item	Description	Material
1	VALVE BODY	ASTM A182 F316/316L NACE
2	CLOSURE	ASTM A182 F316/316L NACE
3	STUD BOLT	ASTM A193 B8M Cl.2
4	NUT	ASTM A194 Gr.8M
5	CLOSURE SEAL RING	GRAPHITE
6	CLOSURE O-RING	FKM AED
7	SEAT	RPTFE
8	BALL	ASTM A479 316/316L NACE
9	STEM	ASTM A479 316/316L NACE
10	STEM O-RING	FKM AED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

SPECIFICATION

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



SECTION A-A



3D VIEW

FLOW DIAGRAM



All dimensions are in mm

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

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

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

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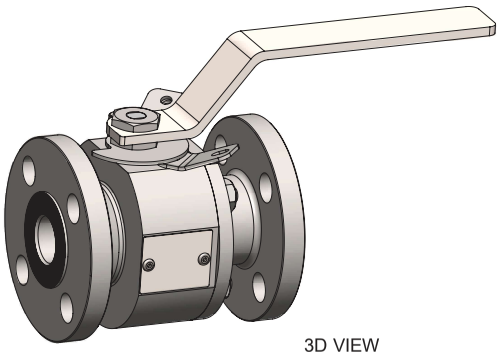
A4 - ORIZ.

SB BALL VALVE

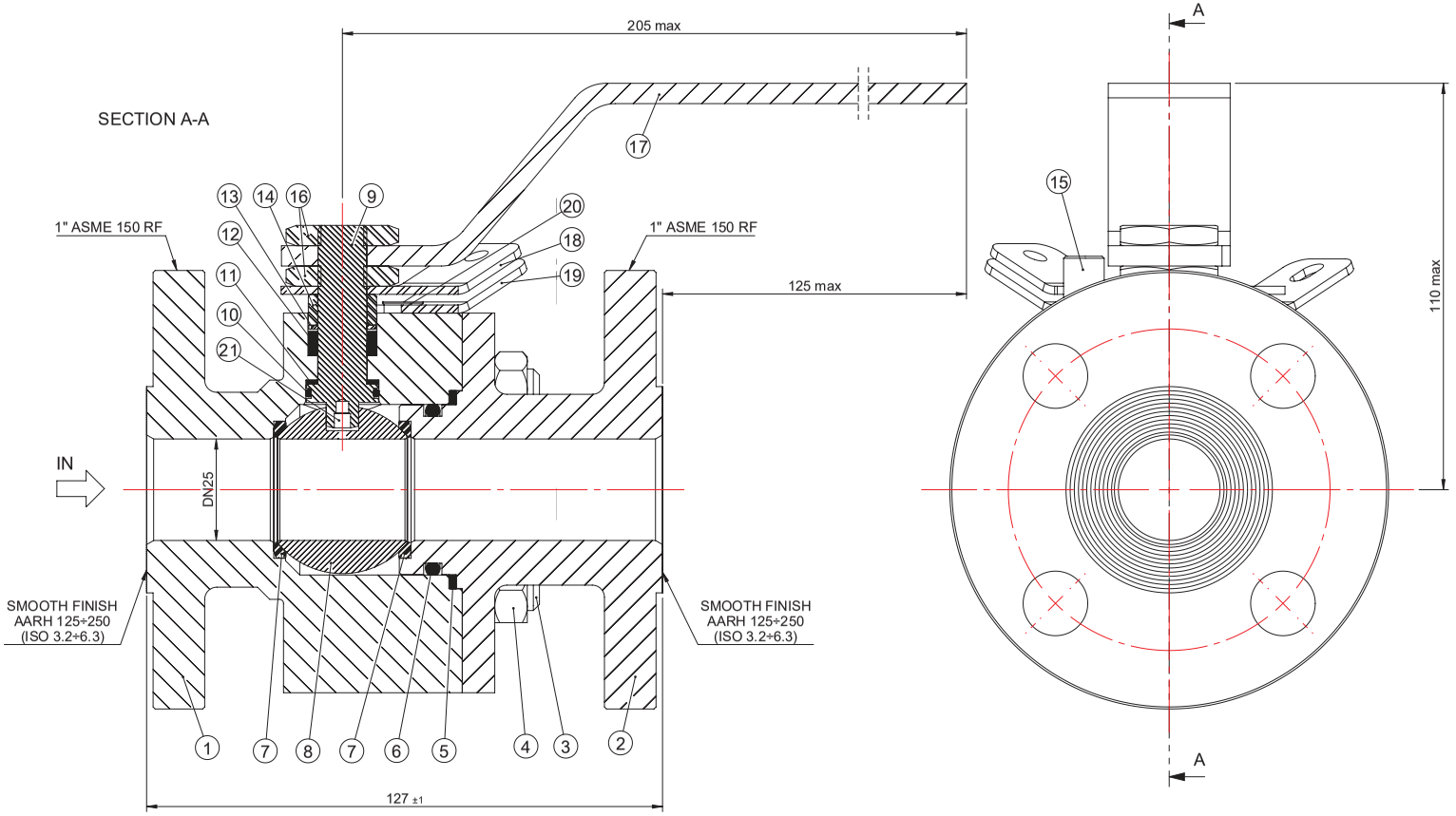
Item	Description	Material
1	VALVE BODY	ASTM A182 F316/316L NACE
2	CLOSURE	ASTM A182 F316/316L NACE
3	STUD BOLT	ASTM A193 B8M Cl.2
4	NUT	ASTM A194 Gr.8M
5	CLOSURE SEAL RING	GRAPHITE
6	CLOSURE O-RING	FKM AED
7	SEAT	RPTFE
8	BALL	ASTM A479 316/316L NACE
9	STEM	ASTM A479 316/316L NACE
10	STEM O-RING	FKM AED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

SPECIFICATION

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



3D VIEW



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

FLOW DIAGRAM



All dimensions are in mm

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

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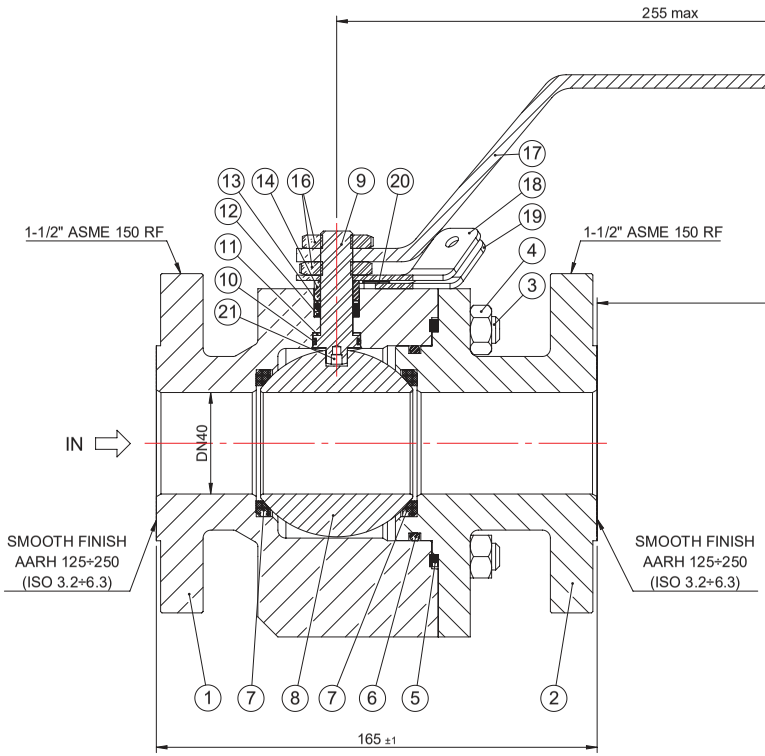
A4 - ORIZ.

SB BALL VALVE

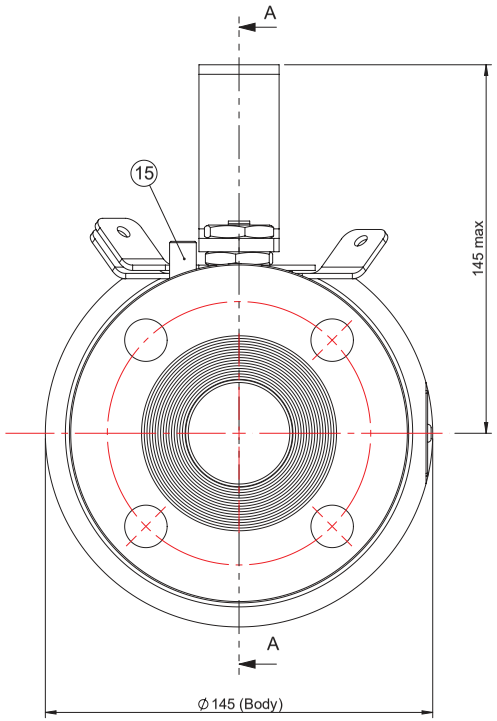
Item	Description	Material
1	VALVE BODY	ASTM A182 F316/316L NACE
2	CLOSURE	ASTM A182 F316/316L NACE
3	STUD BOLT	ASTM A193 B8M Cl.2
4	NUT	ASTM A194 Gr.8M
5	CLOSURE SEAL RING	GRAPHITE
6	CLOSURE O-RING	FKM AED
7	SEAT	RPTFE
8	BALL	ASTM A479 316/316L NACE
9	STEM	ASTM A479 316/316L NACE
10	STEM O-RING	FKM AED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

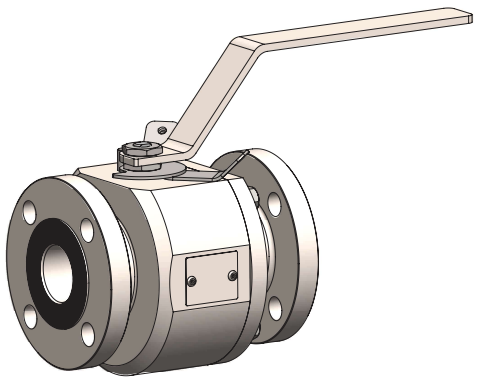
SPECIFICATION

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



SECTION A-A





3D VIEW

FLOW DIAGRAM



All dimensions are in mm

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

indra VALVES - ITALY
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Tel. 02.97.29.86.63 r.a. - Fax 02.97.29.18.55
E-mail: indra@indra.it - http://www.indra.it

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

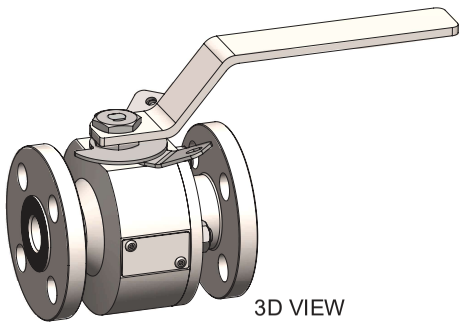
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SB BALL VALVE

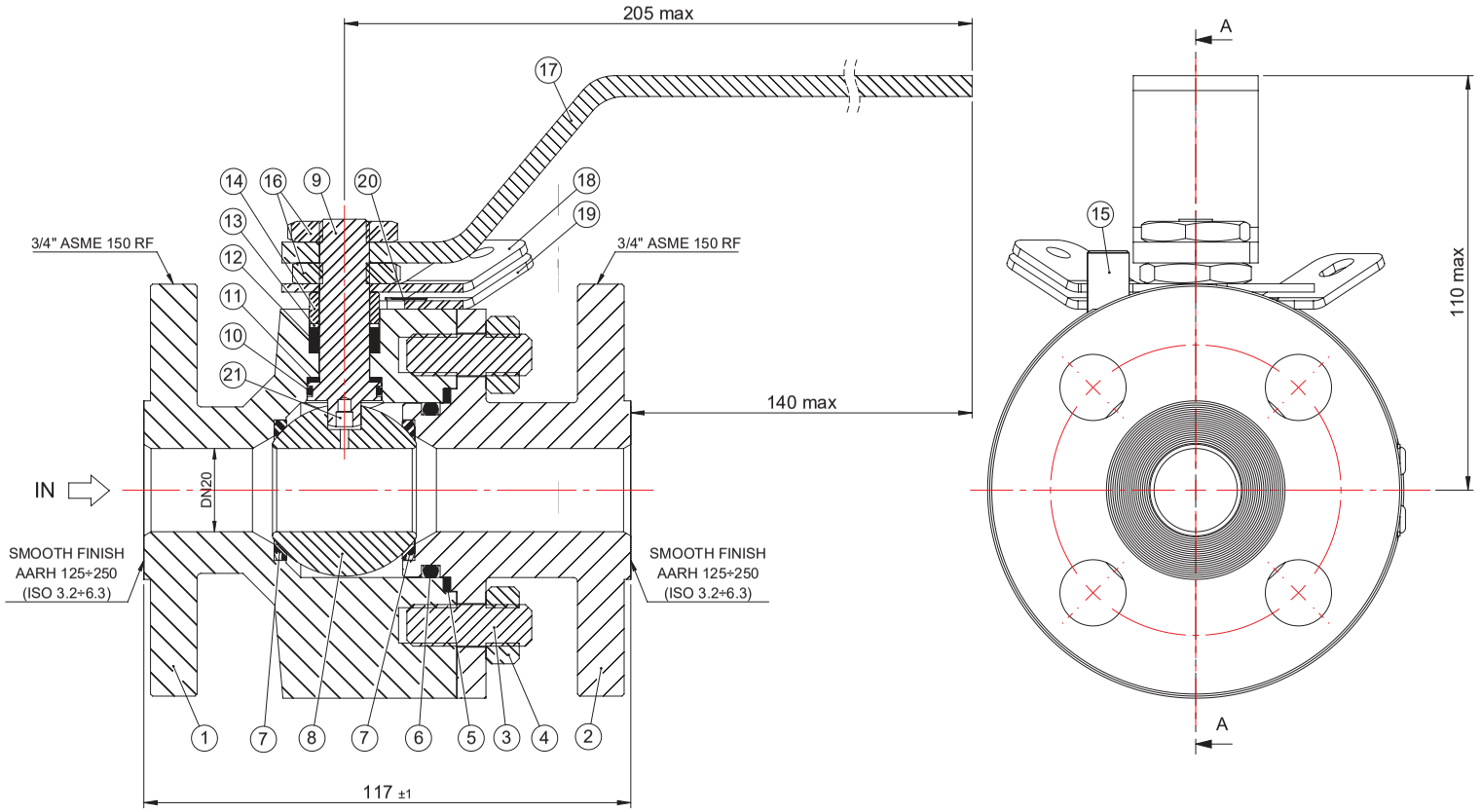
Item	Description	Material
1	VALVE BODY	ASTM A182 F316/316L NACE
2	CLOSURE	ASTM A182 F316/316L NACE
3	STUD BOLT	ASTM A193 B8M Cl.2
4	NUT	ASTM A194 Gr.8HM
5	CLOSURE SEAL RING	GRAPHITE
6	CLOSURE O-RING	FKM AED
7	SEAT	RPTFE
8	BALL	ASTM A479 316/316L NACE
9	STEM	ASTM A479 316/316L NACE
10	STEM O-RING	FKM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

SPECIFICATION

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



3D VIEW



SECTION A-A

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

FLOW DIAGRAM



All dimensions are in mm

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

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

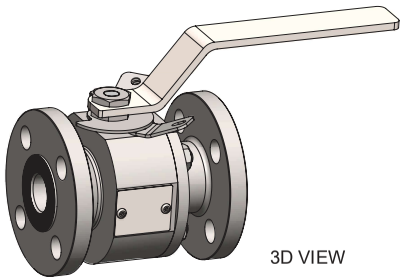
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SB BALL VALVE

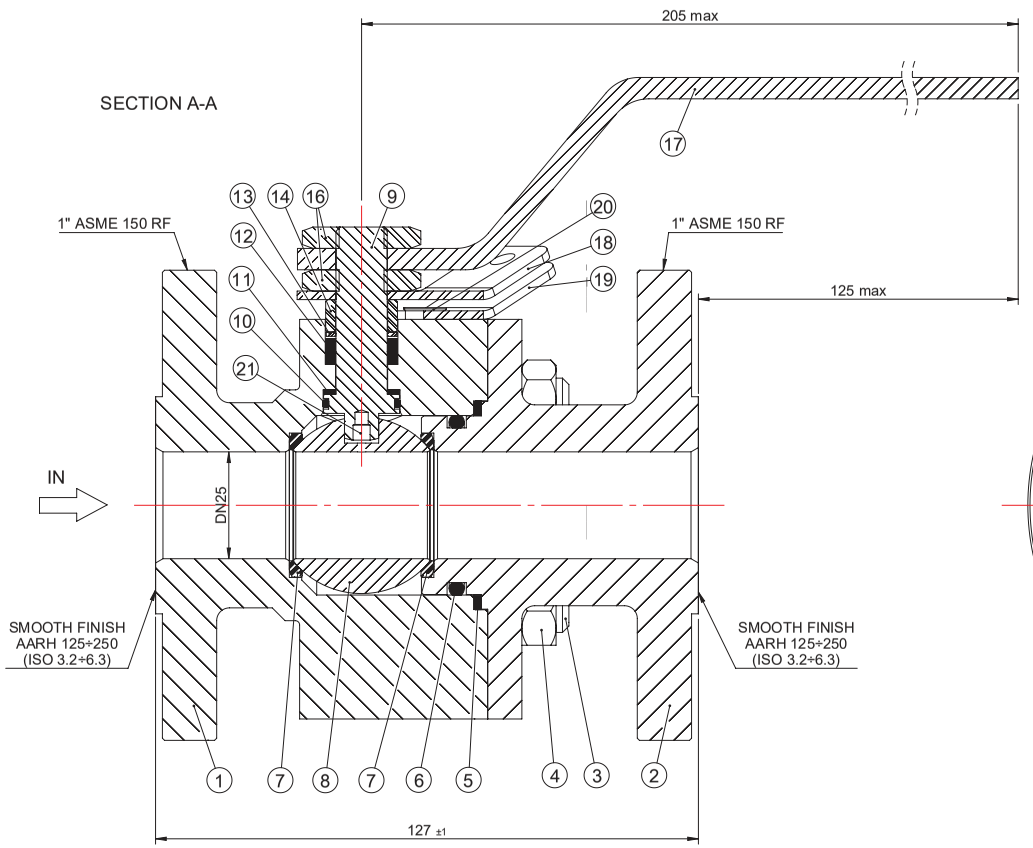
Item	Description	Material
1	VALVE BODY	ASTM A182 F316/316L NACE
2	CLOSURE	ASTM A182 F316/316L NACE
3	STUD BOLT	ASTM A193 B8M Cl.2
4	NUT	ASTM A194 Gr.8M
5	CLOSURE SEAL RING	GRAPHITE
6	CLOSURE O-RING	FKM AED
7	SEAT	PEEK
8	BALL	ASTM A479 316/316L NACE
9	STEM	ASTM A479 316/316L NACE
10	STEM O-RING	FKM AED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

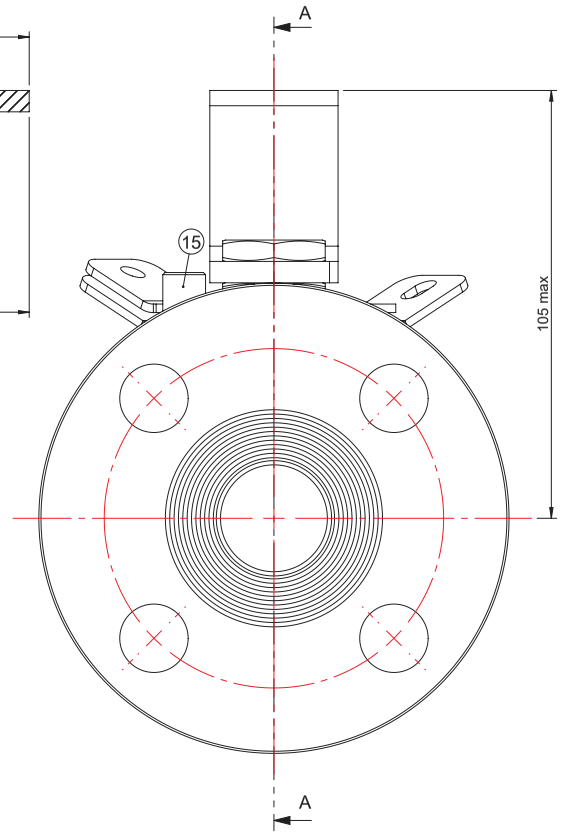
SPECIFICATION

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



3D VIEW





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

FLOW DIAGRAM



All dimensions are in mm

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

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

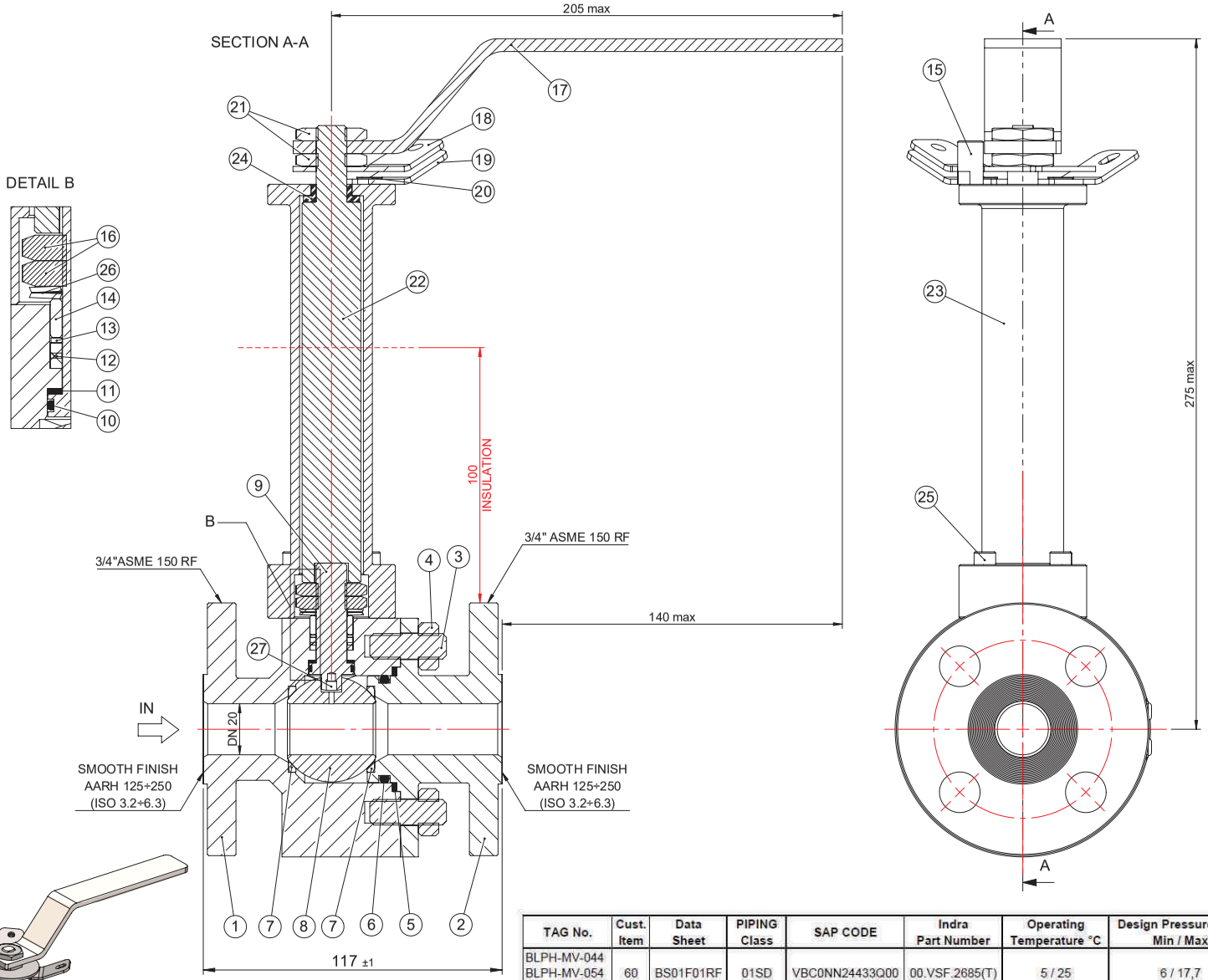
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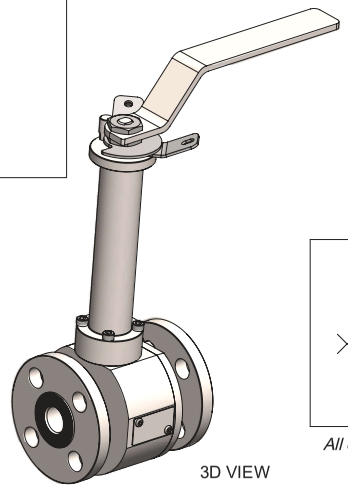
SB BALL VALVE

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

SPECIFICATION

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





3D VIEW

FLOW DIAGRAM



All dimensions are in mm

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

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

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

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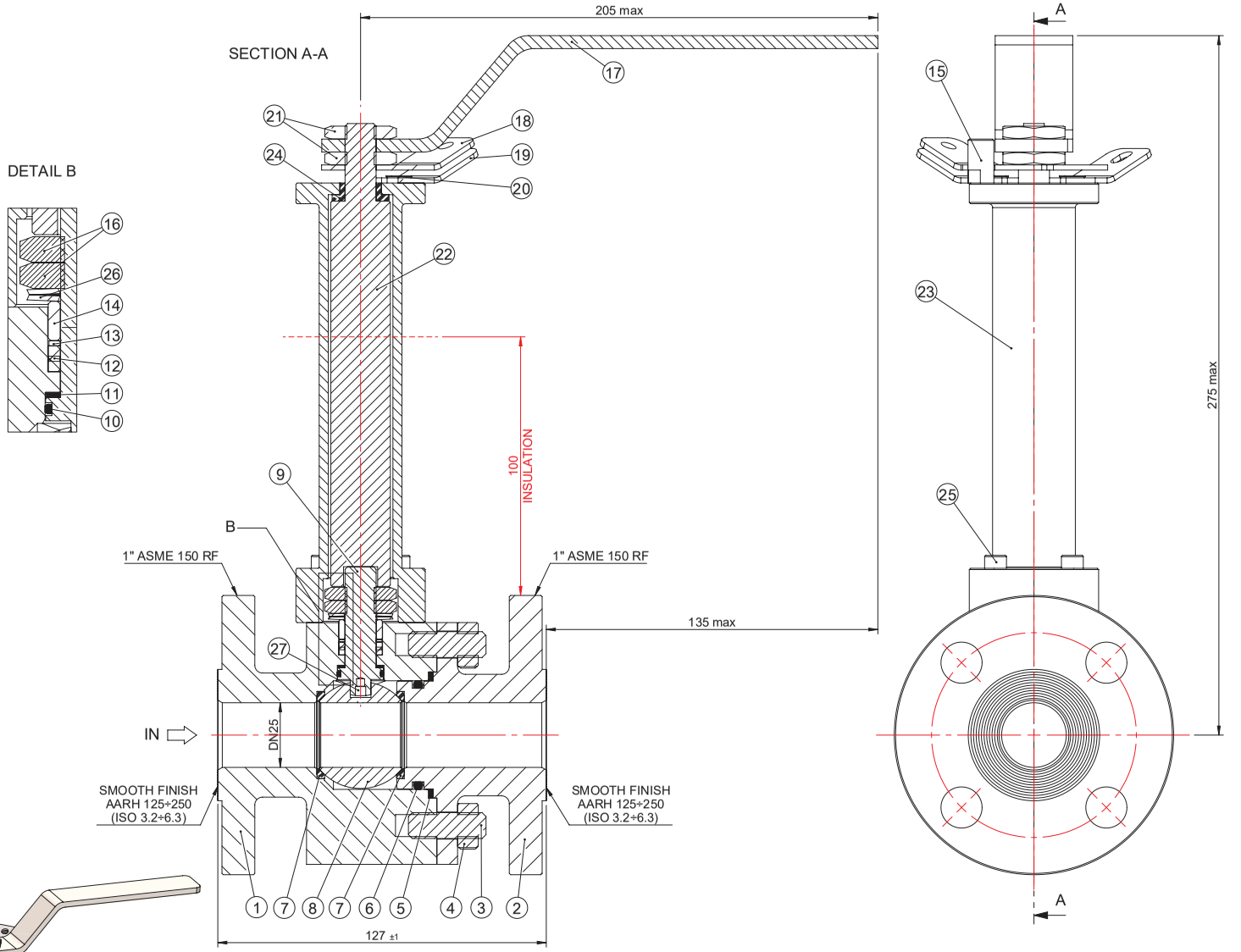
A4 - ORIZ.

SB BALL VALVE

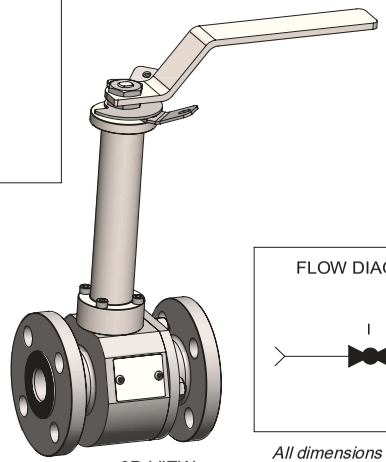
Item	Description	Material
1	VALVE BODY	ASTM A182 F55 NACE
2	CLOSURE	ASTM A182 F55 NACE
3	STUD BOLT	ASTM A193 B7M + HDG
4	NUT	ASTM A194 Gr.2HM + HDG
5	CLOSURE SEAL RING	GRAPHITE
6	CLOSURE O-RING	FKM AED
7	SEAT	PEEK
8	BALL	ASTM A479 F55 NACE
9	STEM	ASTM A479 F55 NACE
10	STEM O-RING	FKM AED
11	STEM THRUST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

SPECIFICATION

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



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



3D VIEW

All dimensions are in mm

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

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

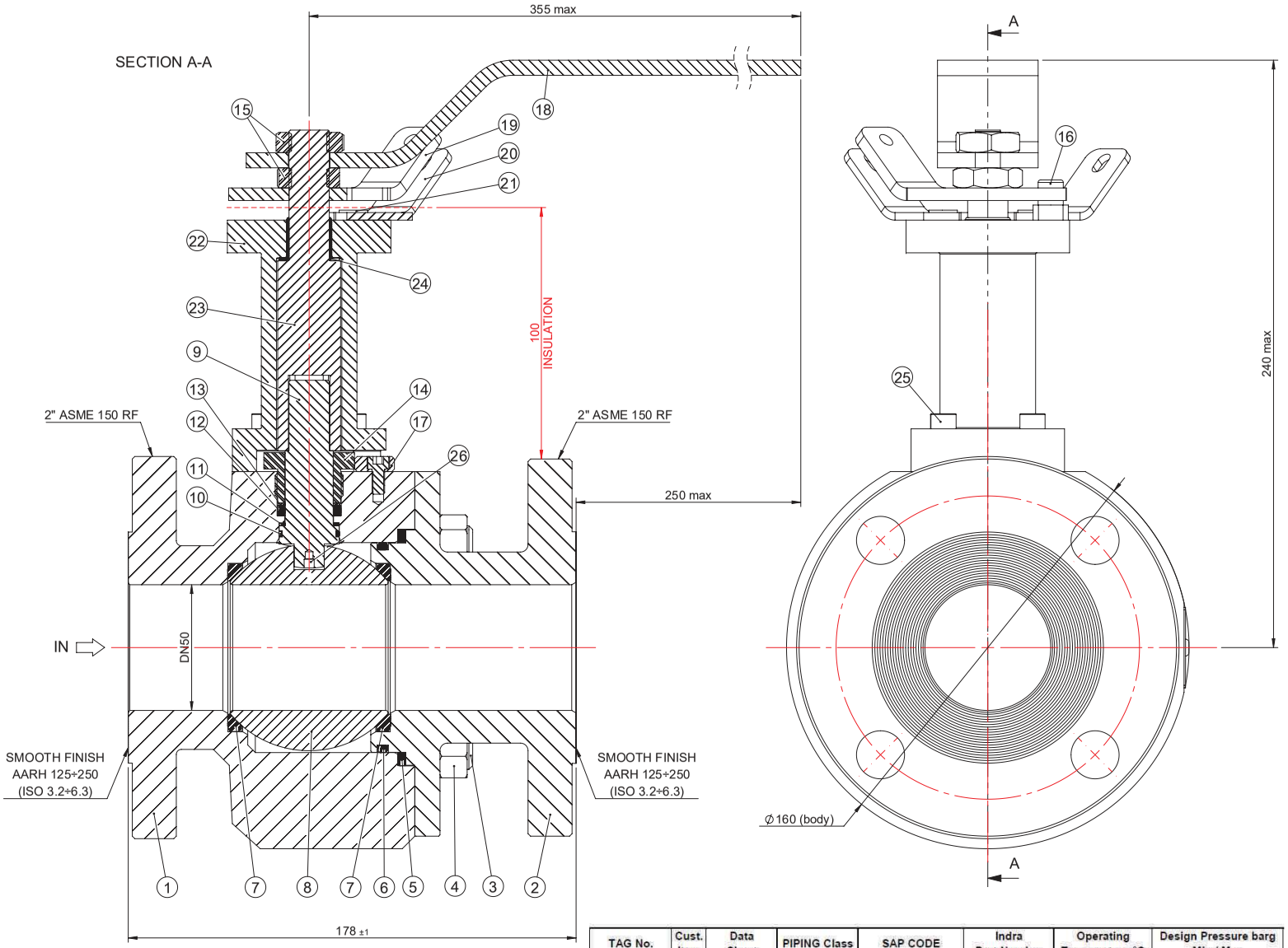
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SB BALL VALVE

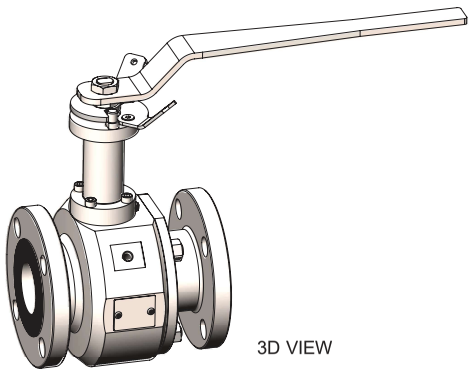
Item	Description	Material
1	VALVE BODY	ASTM A182 F55 NACE
2	CLOSER	ASTM A182 F55 NACE
3	STUD BOLT	ASTM A193 B7M + HDG
4	NUT	ASTM A194 Gr.2HM + HDG
5	CLOSER SEAL RING	Graphite
6	CLOSER O-RING	FKM AED
7	SEAT	PEEK
8	BALL	ASTM A479 F55 NACE
9	STEM	ASTM A479 F55 NACE
10	STEM O-RING	FKM AED
11	STEM THRUST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

SPECIFICATION

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

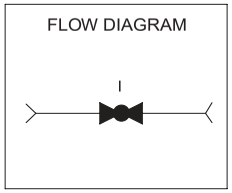


TAG No.	Cust. Item	Data Sheet	PIPING Class	SAP CODE	Indra Part Number	Operating Temperature °C	Design Pressure barg Min / Max
BLPH-MV-464 BLPH-MV-465	80	BA01F01RF	01SD	VBC0NN24460200	00.VSF.2692(T)	5 / 25	6 / 17,7



3D VIEW

FLOW DIAGRAM



All dimensions are in mm

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

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

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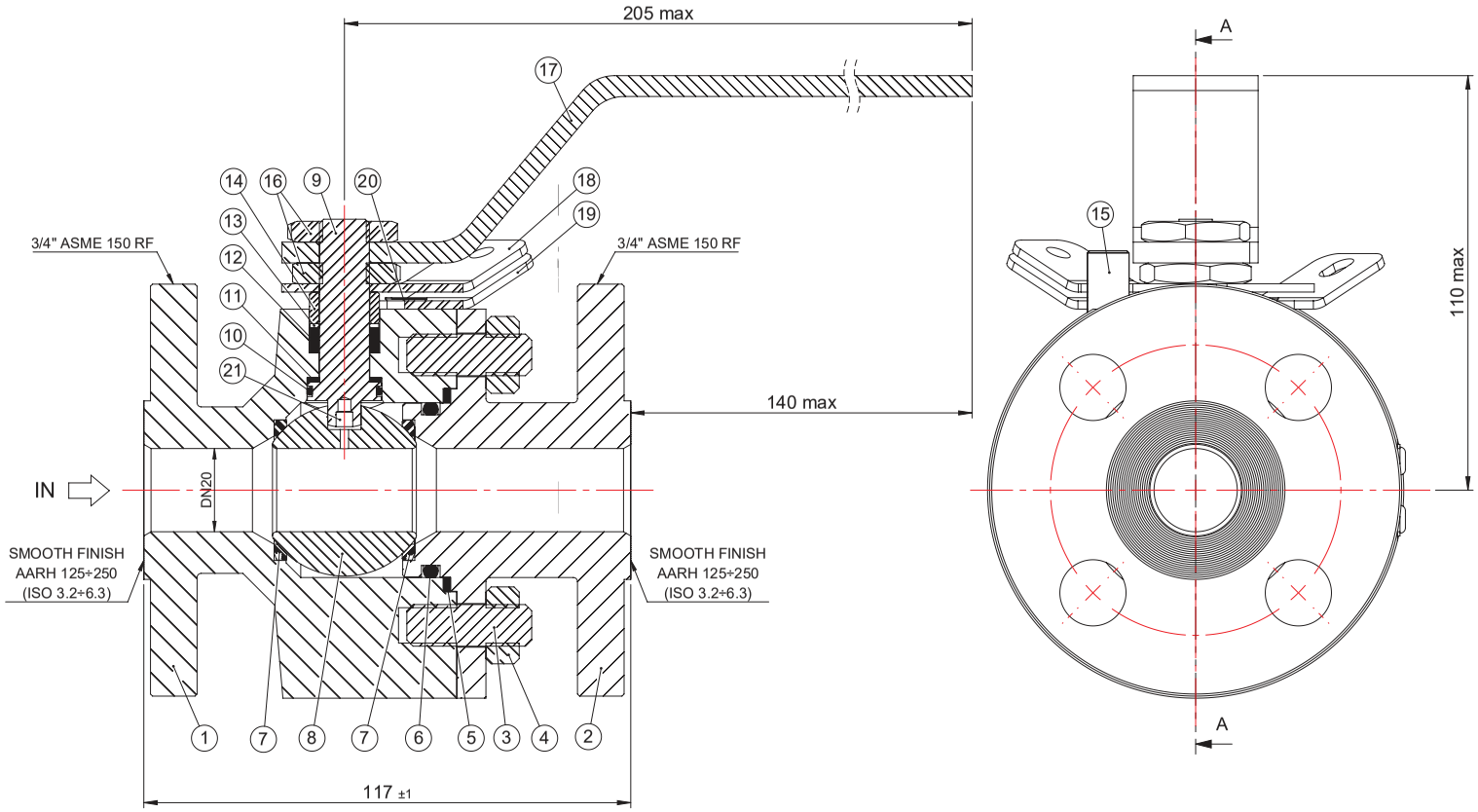
A4 - ORIZ.

SB BALL VALVE

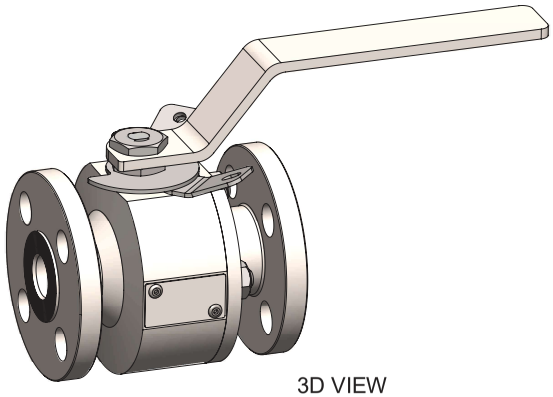
Item	Description	Material
1	VALVE BODY	ASTM A350 LF2 CL.1 NACE
2	CLOSURE	ASTM A350 LF2 CL.1 NACE
3	STUD BOLT	ASTM A193 B7M + HDG
4	NUT	ASTM A194 Gr.2HM + HDG
5	CLOSURE SEAL RING	GRAPHITE
6	CLOSURE O-RING	FKM AED
7	SEAT	RPTFE
8	BALL	ASTM A479 316/316L NACE
9	STEM	ASTM A479 316/316L NACE
10	STEM O-RING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

SPECIFICATION

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



SECTION A-A



3D VIEW

FLOW DIAGRAM



All dimensions are in mm

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

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

TITOLO: TITLE:	SB BALL VALVE FLANGED - FLANGED			DISEGNO: DWG.:	00.VSF.2686/V
MODELLO: MODEL:	SB-598-20-E150RF3_E			REV.: 02 A	DATA: DATE: 27/06/2024
CODICE: CODE:	00.VSF.2686/V			NOTE / NOTES:	*Rev01: Updated drawing* *Rev02: Updated drawing*
SCALA: SCALE:	N/A	FOGLIO: SHEET:	1/1	MATERIALE: MATERIAL:	See Table
DISEGNATO DA: DRAWN BY:	D.S	CONTROLLATO DA: CONTROLLED BY:	D.R	PESO: WEIGHT:	5,3 kg (max)
DATA: DATE:	15/05/2024	REVISIONATO DA: REVISED BY:	S.M	RICHIESTO DA: REQUESTED BY:	G.G

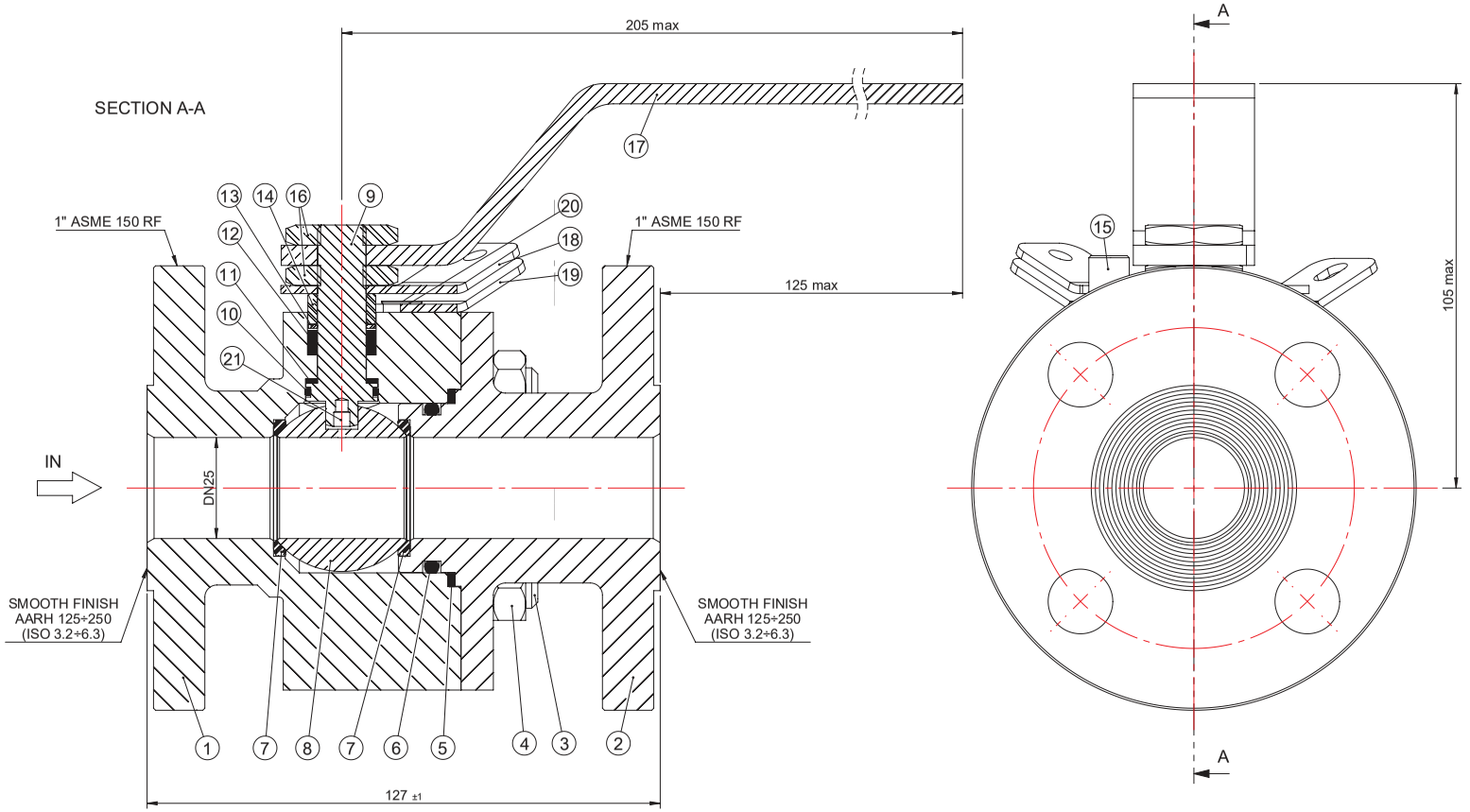
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SB BALL VALVE

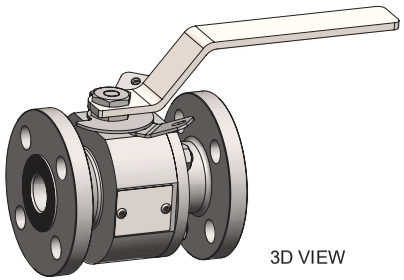
Item	Description	Material
1	VALVE BODY	ASTM A350 LF2 Cl.1 NACE
2	CLOSURE	ASTM A350 LF2 Cl.1 NACE
3	STUD BOLT	ASTM A193 B7M + HDG
4	NUT	ASTM A194 Gr.2HM + HDG
5	CLOSURE SEAL RING	GRAPHITE
6	CLOSURE O-RING	FKM AED
7	SEAT	RPTFE
8	BALL	ASTM A479 316/316L NACE
9	STEM	ASTM A479 316/316L NACE
10	STEM O-RING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

SPECIFICATION

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

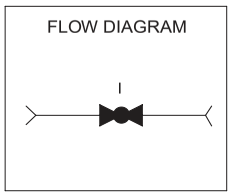


TAG No.	Cust. Item	Data Sheet	PIPING Class	SAP CODE	Indra Part Number	Operating Temperature °C	Design Pressure barg Min / Max
BLPH-MV-263	100	BS01B01RF	01CS	VBC0NN24710100	00.VSF.2770/V	-10 /70	10 / 17,7
BLPH-MV-419	100	BS01B01RF	01CS	VBC0NN24710100	00.VSF.2770/V	-10 /70	10 / 17,7



3D VIEW

FLOW DIAGRAM



All dimensions are in mm

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

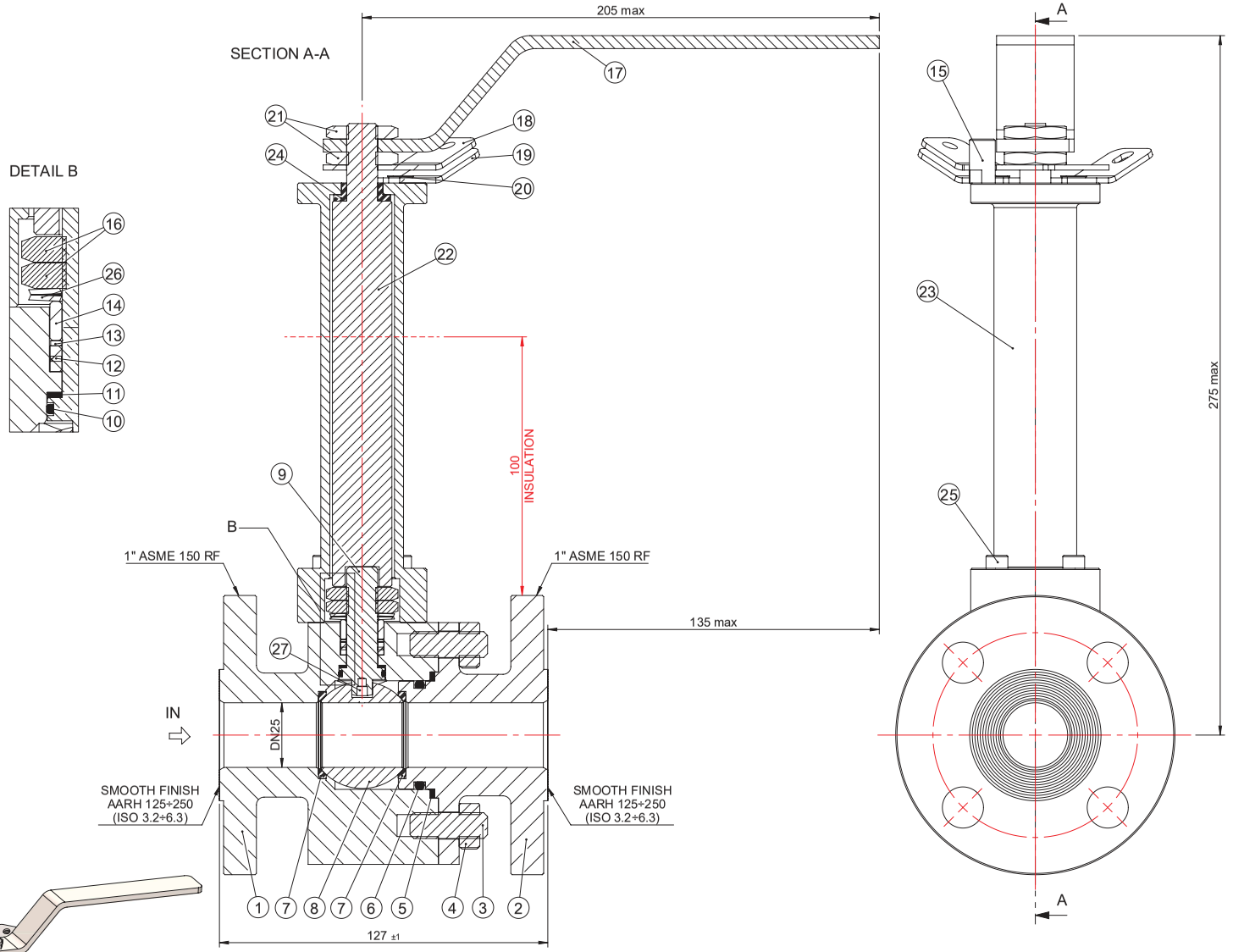
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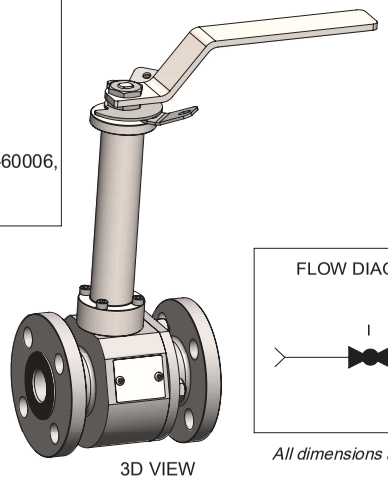
SB BALL VALVE

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

SPECIFICATION

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





3D VIEW

FLOW DIAGRAM

All dimensions are in mm

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

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

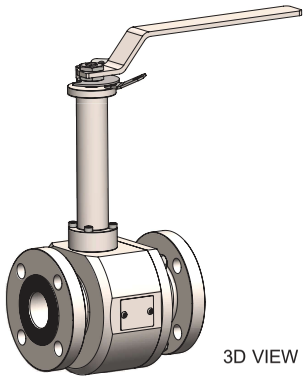
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SB BALL VALVE

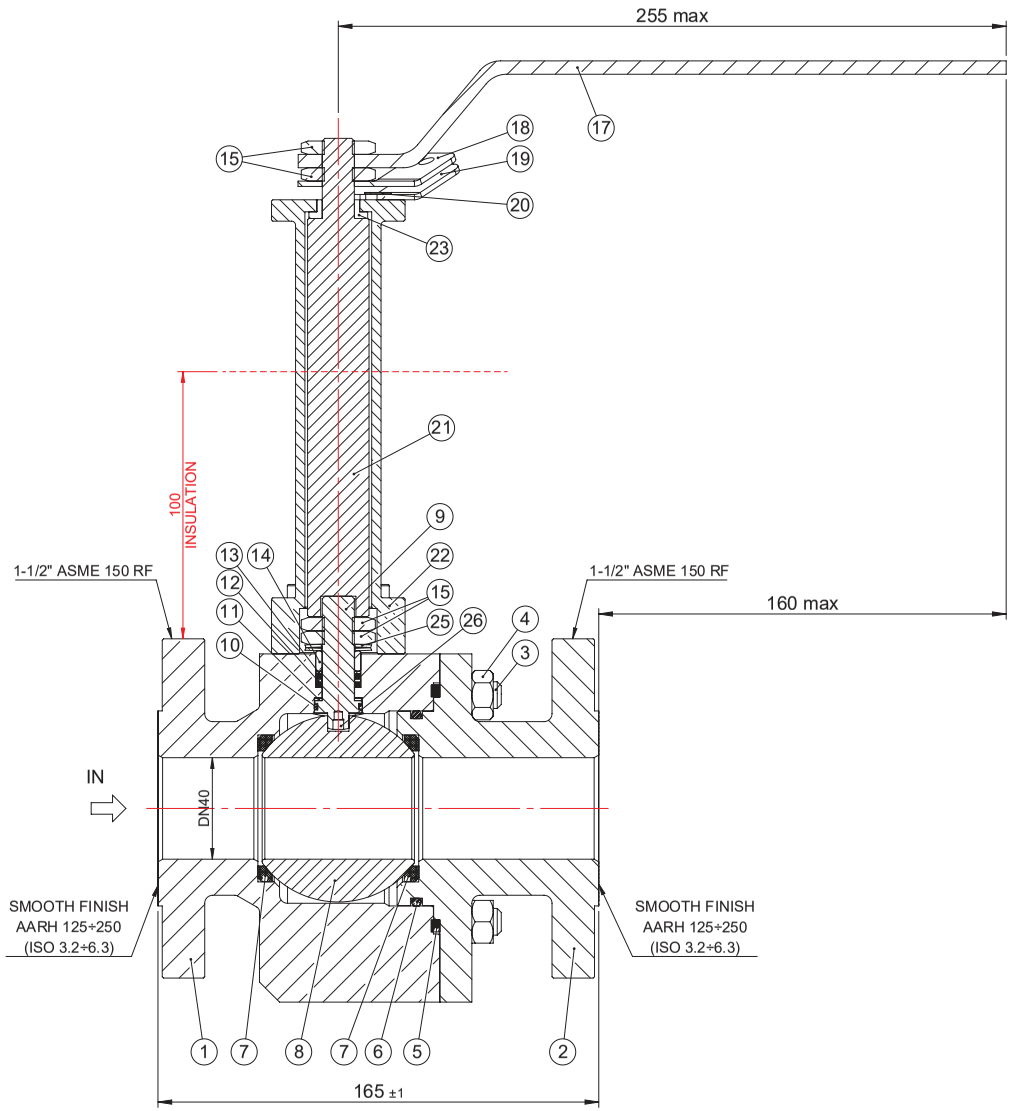
Item	Description	Material
1	VALVE BODY	ASTM A350 LF2 CL.1 NACE
2	CLOSER	ASTM A350 LF2 CL.1 NACE
3	STUD BOLT	ASTM A193 B7M + HDG
4	NUT	ASTM A194 Gr.2HM + HDG
5	CLOSER SEAL RING	GRAPHITE
6	CLOSER O-RING	FKM AED
7	SEAT	RPTFE
8	BALL	ASTM A479 316/316L NACE
9	STEM	ASTM A479 316/316L NACE
10	STEM O-RING	FKM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

SPECIFICATION

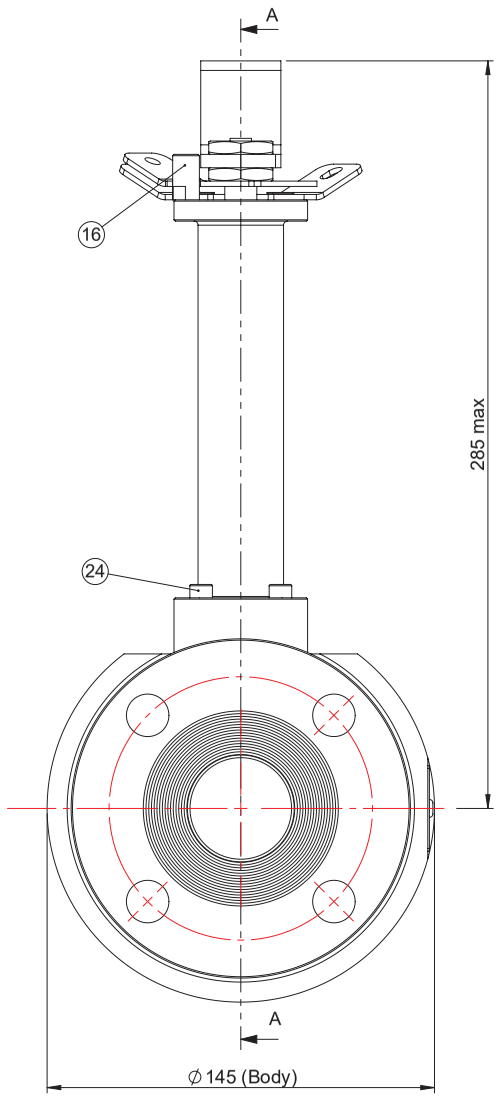
1. Construction: 1 Ball Isolate
2. Inlet: 1-1/2" Cl. 150 RF (ASME B16.5)
3. Outlet: 1-1/2" Cl. 150 RF (ASME B16.5)
4. Design Code: ASME B16.34 / B16.5
5. Bore Size: DN40
6. Face to face dimension according to ASME B16.10
7. Antistatic device
8. Anti-blow out stem
9. Design Temperature: -46°C / +100°C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



3D VIEW



SECTION A-A



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

FLOW DIAGRAM



All dimensions are in mm

indra VALVES - ITALY

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TITOLO: TITLE:	SB BALL VALVE FLANGED - FLANGED	DISEGNO: DWG.:	00.VSF.2691/V
MODELLO: MODEL:	SB-598-40-H150RF3_H	REV.: 02 A	DATA: DATE: 27/06/2024
CODICE: CODE:	00.VSF.2691/V	NOTE / NOTES:	*Rev01: Updated drawing* *Rev02: Updated drawing*
SCALA: SCALE: N/A	FOGLIO: SHEET: 1/1	MATERIALE: MATERIAL: See Table	
DISEGNATO DA: DRAWN BY: S.M	CONTROLLATO DA: CONTROLLED BY: D.R	PESO: WEIGHT: 14,5 kg (max)	
DATA: DATE: 16/05/2024	REVISIONATO DA: REVISED BY: S.M	RICHIESTO DA: REQUESTED BY: G.G	

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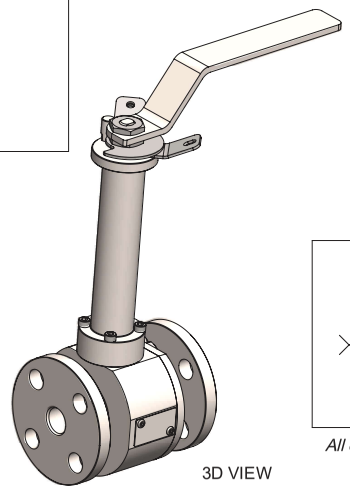
A4 - ORIZ.

SB BALL VALVE

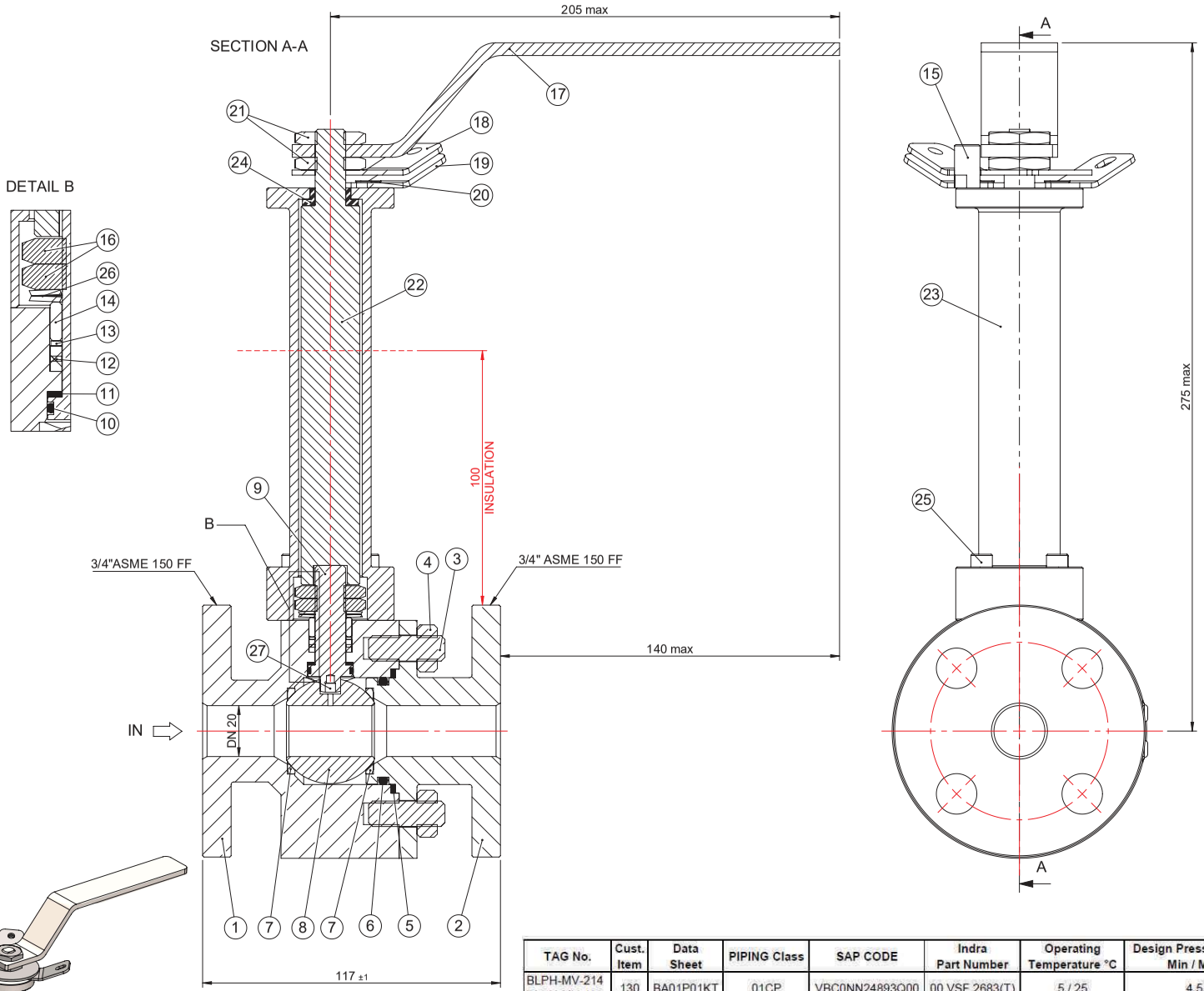
Item	Description	Material
1	VALVE BODY	ASTM B564 HASTELLOY C276 NACE
2	CLOSURE	ASTM B564 HASTELLOY C276 NACE
3	STUD BOLT	ASTM A193 B8M Cl.2
4	NUT	ASTM A194 Gr.8M
5	CLOSURE SEAL RING	GRAPHITE
6	CLOSURE O-RING	FKM AED
7	SEAT	PEEK
8	BALL	ASTM B574 HASTELLOY C276 NACE
9	STEM	ASTM B574 HASTELLOY C276 NACE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

SPECIFICATION

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



3D VIEW



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

FLOW DIAGRAM



All dimensions are in mm

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

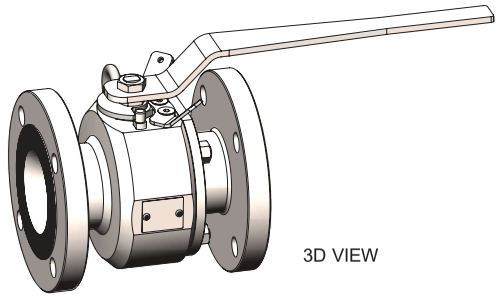
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SB BALL VALVE

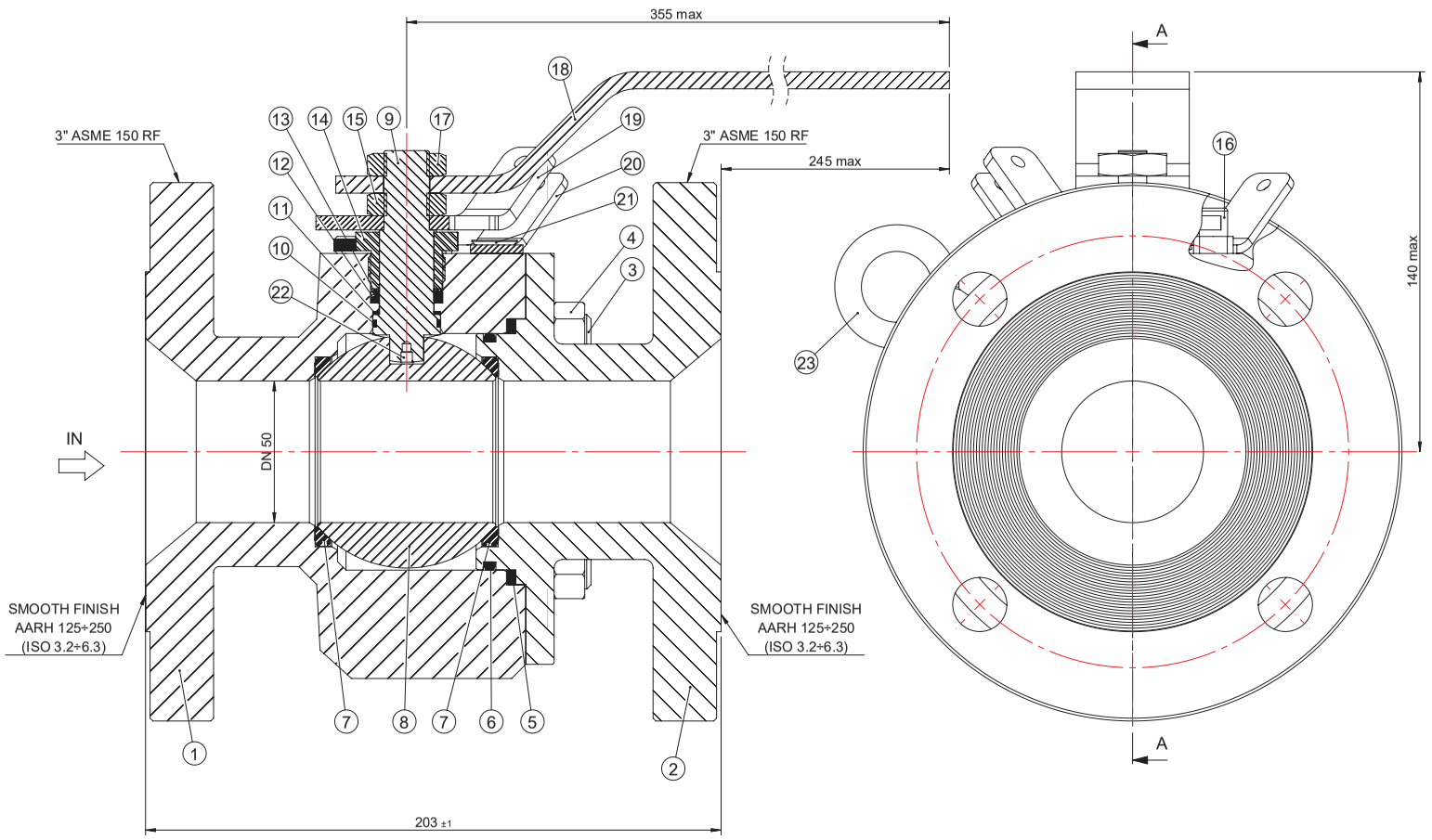
Item	Description	Material
1	VALVE BODY	ASTM A182 F316/136L NACE
2	CLOSER	ASTM A182 F316/136L NACE
3	STUD BOLT	ASTM A193 B8M Cl. 2
4	NUT	ASTM A194 Gr.8M
5	CLOSER SEAL RING	Graphite
6	CLOSER O-RING	FKM AED
7	SEAT	RPTFE
8	BALL	ASTM A479 316/316L NACE
9	STEM	ASTM A479 316/316L NACE
10	STEM O-RING	FKM AED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

SPECIFICATION

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



3D VIEW



SECTION A-A

FLOW DIAGRAM



All dimensions are in mm

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

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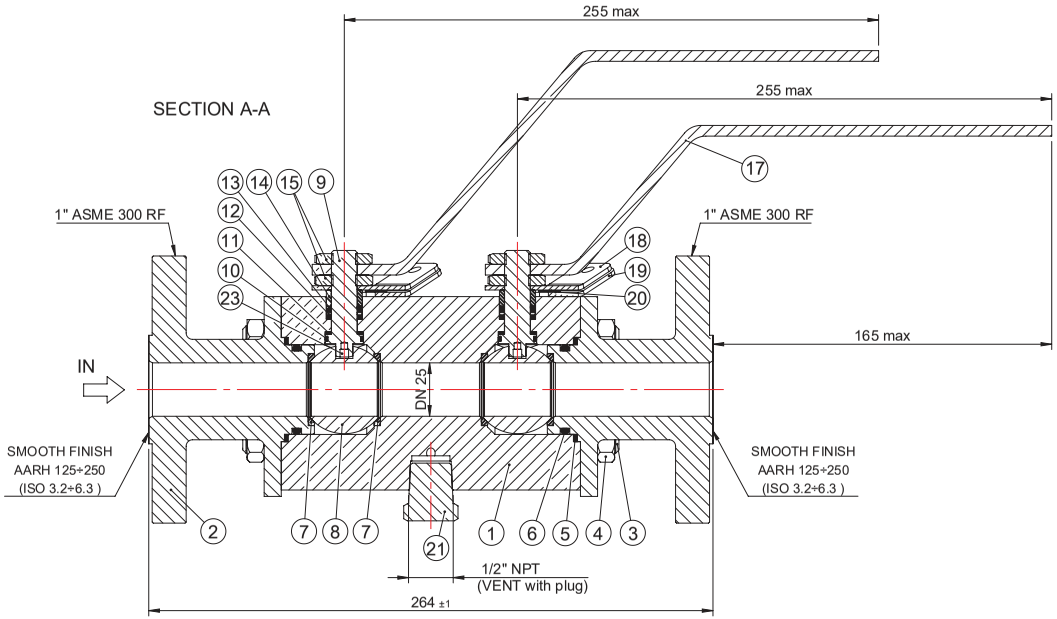
TITOLO: TITLE:	SB BALL VALVE FLANGED - FLANGED	DISEGNO: DWG.:	00.VSF.2695/V
MODELLO: MODEL:	SB-598-HR-50-L150RF3_L	REV.: 02 A	DATA: DATE: 26/06/2024
CODICE: CODE:	00.VSF.2695/V	NOTE / NOTES:	*Rev01: updated drawing* *Rev02: updated drawing*
SCALA: SCALE: N/A	FOGLIO: SHEET: 1/1	MATERIALE: MATERIAL:	See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

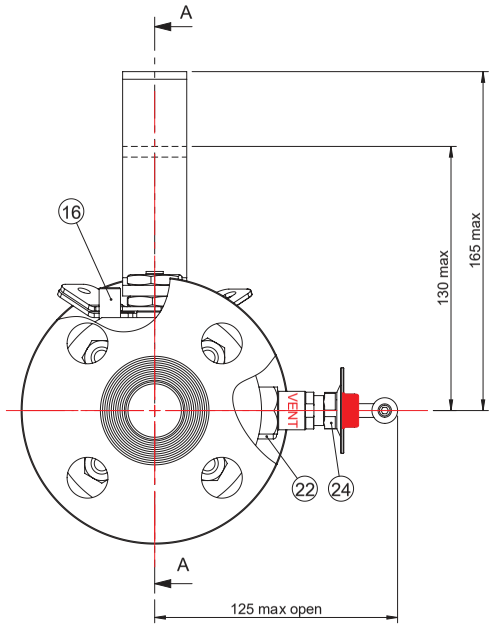
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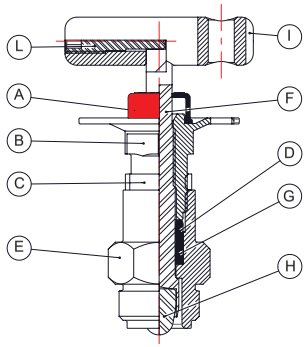
DBB BALL VALVE		
Item	Description	Material
1	VALVE BODY	ASTM A182 F316/316L NACE
2	CLOSURE	ASTM A182 F316/316L NACE
3	STUD BOLT	ASTM A193 B8M CL.2
4	NUT	ASTM A194 Gr. 8M
5	CLOSER SEAL RING	Graphite
6	CLOSER O-RING	FKM AED
7	SEAT	PEEK
8	BALL	ASTM A479 316/316L NACE
9	STEM	ASTM A479 316/316L NACE
10	STEM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

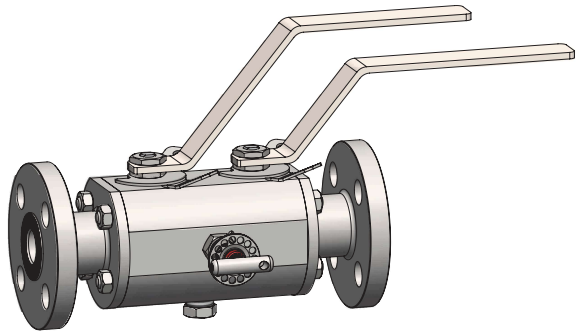
SPECIFICATION

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

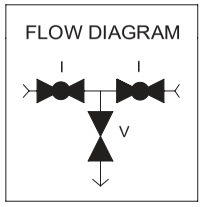








3D VIEW



All dimensions are in mm

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

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A4 - ORIZ.

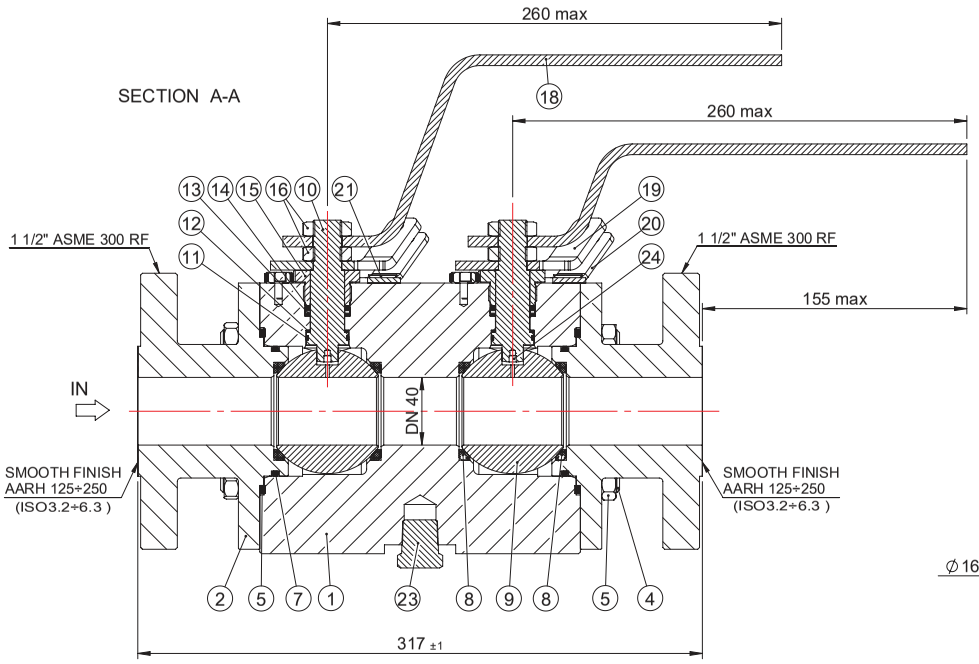
TAG No.	Cust. Item	Data Sheet	PIPING Class	SAP CODE	Indra Part Number	Operating Temperature °C	Design Pressure barg Min / Max
BLPH-MV-003 BLPH-MV-010 BLPH-MV-018 BLPH-MV-029 BLPH-MV-086 BLPH-MV-087 BLPH-MV-088 BLPH-MV-093 BLPH-MV-094 BLPH-MV-098 BLPH-MV-192 BLPH-MV-193 BLPH-MV-195 BLPH-MV-197 BLPH-MV-198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

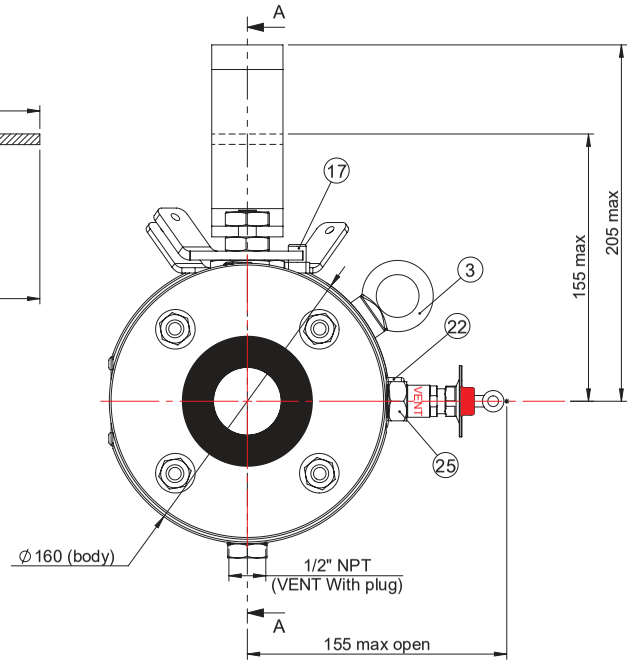
DBB BALL VALVE

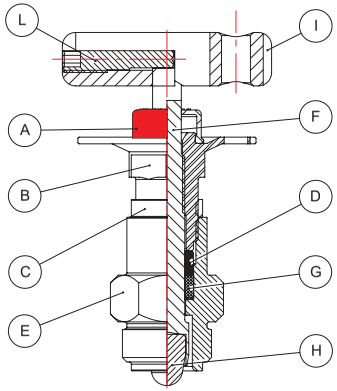
Item	Description	Material
1	VALVE BODY	ASTM A182 F316/316L NACE
2	CLOSER	ASTM A182 F316/316L NACE
3	EYEBOLT	St.St. 316
4	STUD BOLT	ASTM A193 B8M Cl.2
5	NUT	ASTM A194 Gr. 8M
6	CLOSER SEAL RING	Graphite
7	CLOSER O-RING	FKM AED
8	SEAT	PEEK
9	BALL	ASTM A479 316/316L NACE
10	STEM	ASTM A479 316/316L NACE
11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

SPECIFICATION

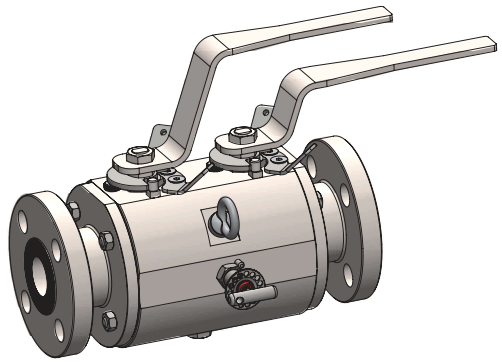
1. Construction: 2 Ball Isolate, 1 Needle Vent
2. Inlet: 1-1/2" Cl.300 RF (ASME B16.5)
3. Outlet: 1-1/2" Cl.300 RF (ASME B16.5)
4. Vent: 1/2" NPT-Female (ASME B1.20.1)
5. Design Code: ASME B16.34 / B16.5 / B1.20.1
6. Bore Size: Ball DN40, Needle 5mm
7. Antistatic device
8. Anti-blow out stem
9. Design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



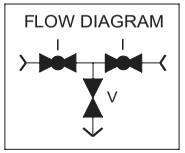




BONNET ASSEMBLY



3D VIEW



All dimensions are in mm

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

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

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A4 - ORIZ.

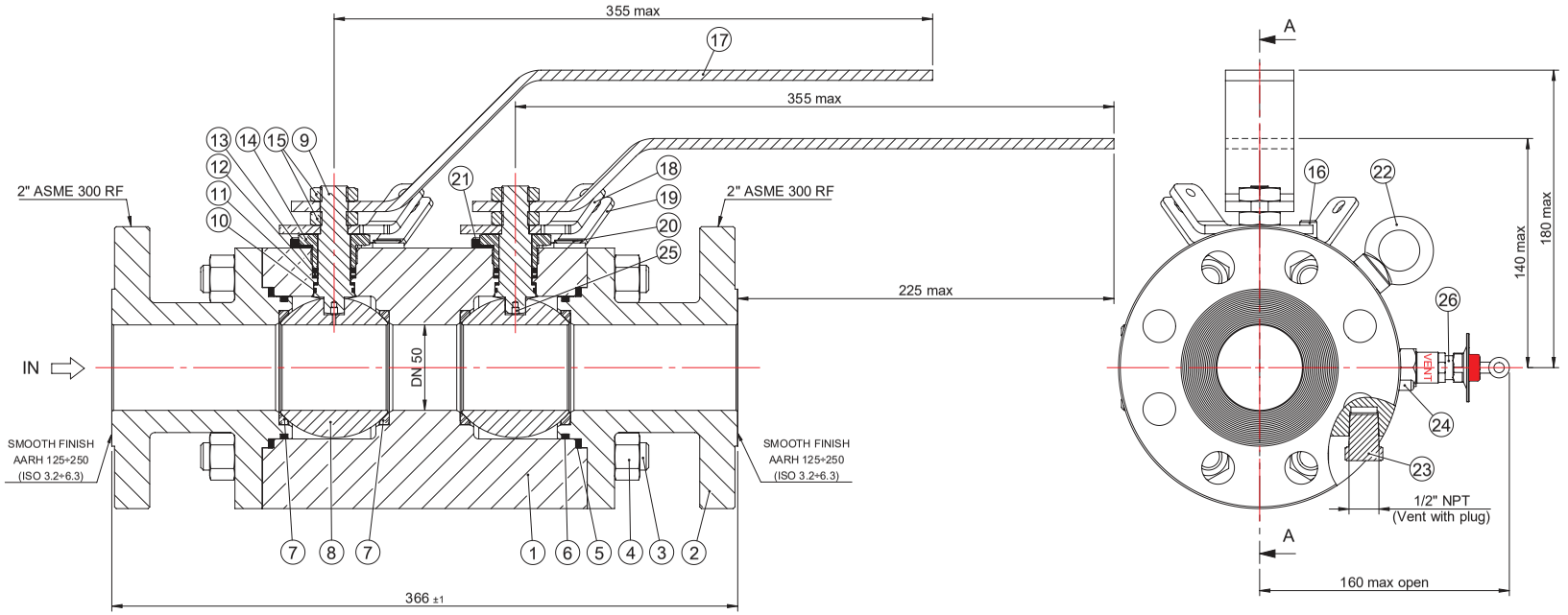
TAG No.	Cust. Item	Data Sheet	PIPING Class	SAP CODE	Indra Part Number	Operating Temperature °C	Design Pressure barg Min / Max
BLPH-MV-032 BLPH-MV-266 BLPH-MV-389 BLPH-MV-416 BLPH-MV-433 BLPH-MV-442 BLPH-MV-468	160/410	DA03C01RFH	03HSS	VLBBNN07201H00	00.VSF.2681/V	-27 / 65	40 / 42,2

DBB BALL VALVE

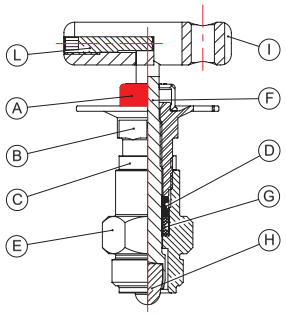
Item	Description	Material
1	VALVE BODY	ASTM A182 F316/316L NACE
2	CLOSER	ASTM A182 F316/316L NACE
3	STUD BOLT	ASTM A193 B8M Cl. 2
4	NUT	ASTM A194 Gr. 8M
5	CLOSER SEAL RING	Graphite
6	CLOSER O-RING	FKM AED
7	SEAT	PEEK
8	BALL	ASTM A479 316/316L NACE
9	STEM	ASTM A479 316/316L NACE
10	STEM O-RING	FKM AED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

SPECIFICATION

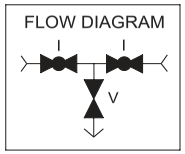
1. Construction: 2 Ball Isolate, 1 Needle Vent
2. Inlet: 2" CL.300 RF (ASME B16.5)
3. Outlet: 2" CL.300 RF (ASME B16.5)
4. Vent: 1/2" NPT-Female (ASME B1.20.1)
5. Design Code: ASME B16.34 / B16.5 / B1.20.1
6. Bore Size: Ball DN50, Needle 5mm
7. Antistatic device
8. Anti-blow out stem
9. Design Temperature: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



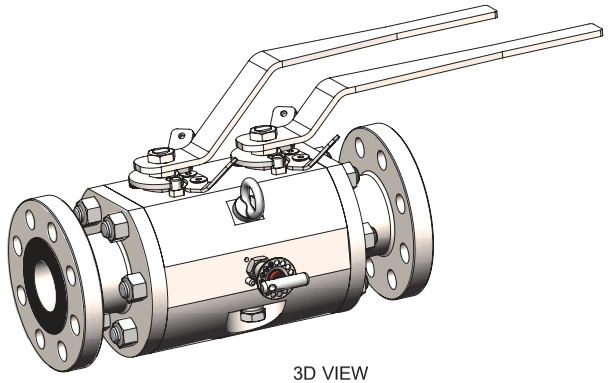
SECTION A-A



BONNET ASSEMBLY



All dimensions are in mm



3D VIEW

TITOLO: TITLE:	DBB BALL VALVE FLANGED - FLANGED	DISEGNO: DWG.:	00.VSF.2682/V
MODELLO: MODEL:	DBB-898-HR-50-J300RF3_J_D	REV.: 02 A	DATA: DATE: 27/06/2024
CODICE: CODE:	00.VSF.2682/V	NOTE / NOTES:	*Rev01: updated drawing* *Rev02: updated drawing*
SCALA: SCALE: N/A	FOGLIO: SHEET: 1/1	MATERIALE: MATERIAL:	See Table
DISEGNATO DA: DRAWN BY: S.M	CONTROLLATO DA: CONTROLLED BY: D.R	PESO: WEIGHT:	42,1 kg (max)
DATA: DATE: 15/05/2024	REVISIONATO DA: REVISED BY: S.M	RICHIESTO DA: REQUESTED BY:	G.G

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

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A4 - ORIZ.

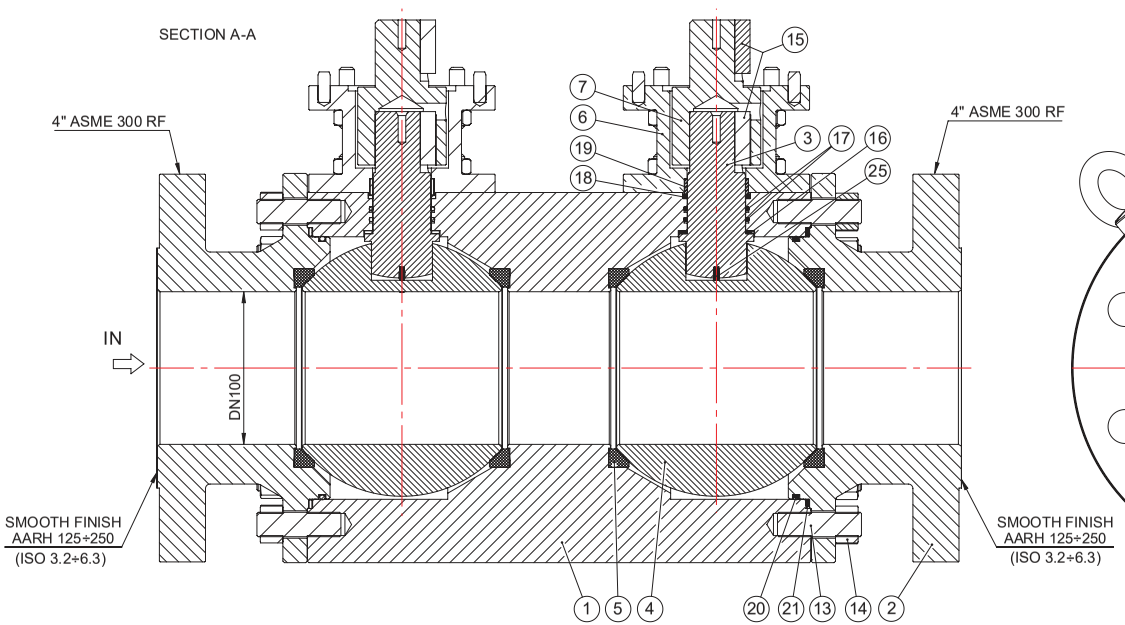
TAG No.	Cust. Item	Data Sheet	PIPING Class	SAP CODE	Indra Part Number	Operating Temperature °C	Design Pressure barg Min / Max
BLPH-MV-019	170	DA03C01RFH	03HSS	VLBBNN07210200	00.VSF.2682/V	-27 / 65	40 / 42,2

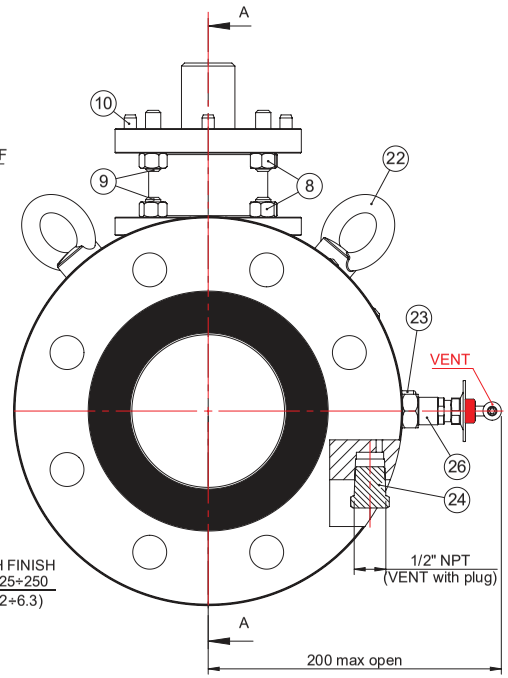
DBB BALL VALVE		
Item	Description	Material
1	BODY	ASTM A182 F316/F316L NACE
2	CLOSURE	ASTM A182 F316/F316L NACE
3	STEM	ASTM A479 316/316L NACE
4	BALL	ASTM A479 316/316L NACE
5	SEAT	RPTFE
6	BRACKET	ASTM A479 316/316L NACE
7	STEM EXTENSION	ASTM A479 316/316L NACE
8	BRACKET NUT	ASTM A194 Gr.8M
9	BRACKET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

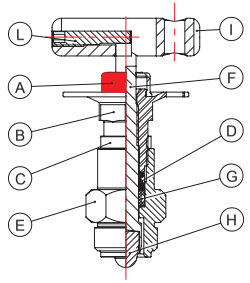
SPECIFICATION

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

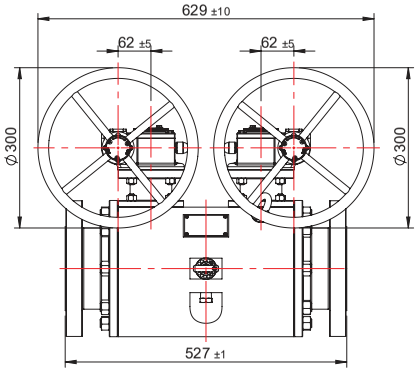
A4 - ORIZ.

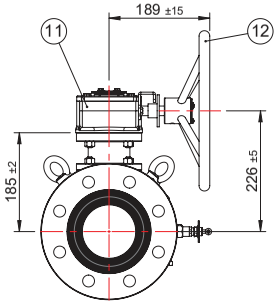


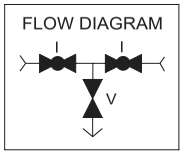




BONNET ASSEMBLY







All dimensions are in mm

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

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

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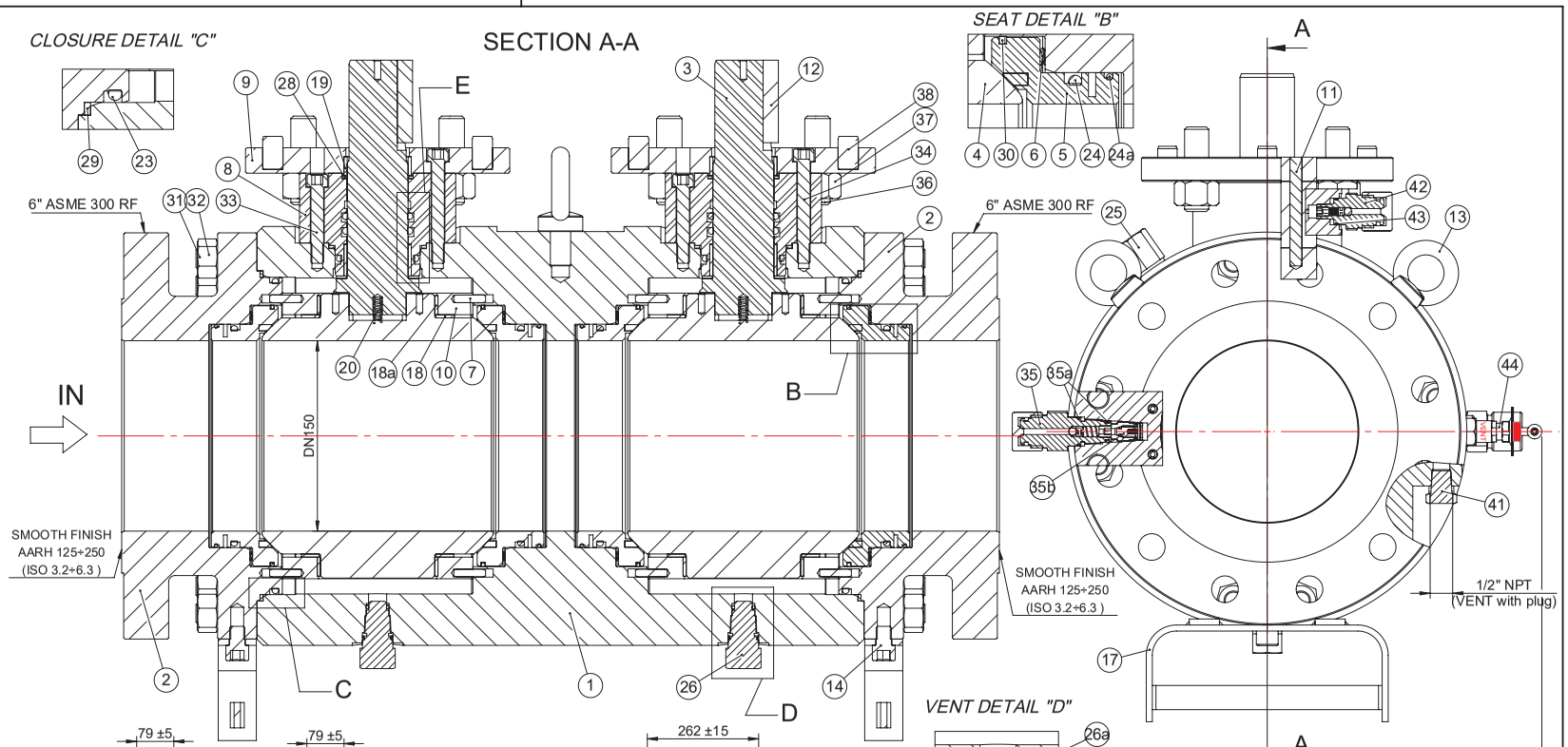
TAG No.	Cust. Item	Data Sheet	PIPING Class	SAP CODE	Indra Part Number	Operating Temperature °C	Design Pressure barg Min / Max
BLPH-MV-034 - BLPH-MV-222 BLPH-MV-387 - BLPH-MV-423 BLPH-MV-431 - BLPH-MV-440	180	DA03C01RFH	03HSS	VLBBNN07230400	00.VSF.2679/V	-27 / 65	40 / 42,2

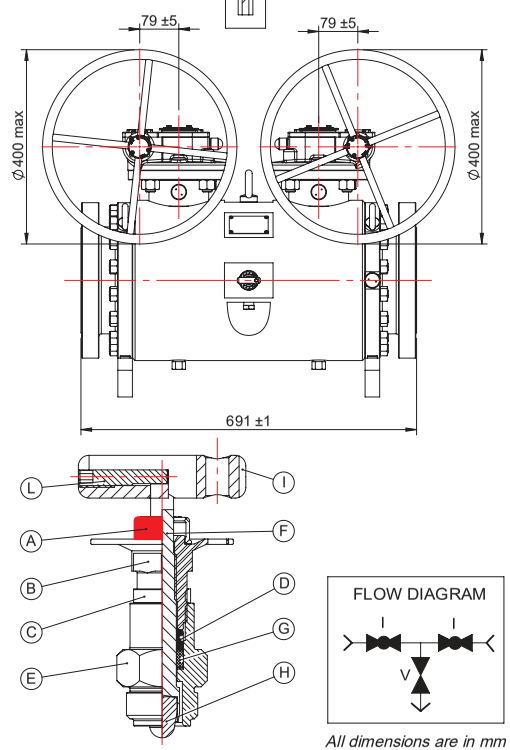
DBB TRUNNION BALL VALVE		
Item	Description	Material
1	BODY	ASTM A182 F316/316L NACE
2	CLOSURE	ASTM A182 F316/316L NACE
3	STEM	ASTM A479 316/316L NACE
4	BALL	ASTM A479 316/316L NACE
5	SEAT + INSERT	ASTM A479 316/316L NACE+RPTFE
6	SEAT SPRING	ELGILOY R30003
7	BALL SUPPORT FLANGE PIN	St.St. 316/316L
8	GLANDE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

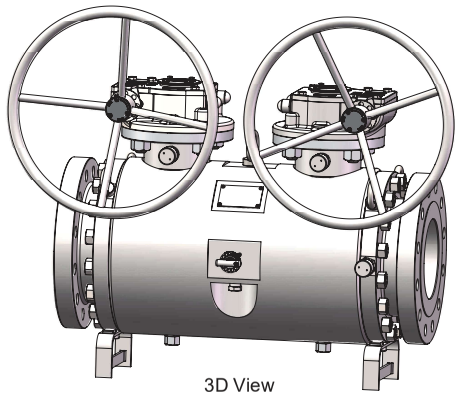
SPECIFICATION

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

A4 - ORIZ.







3D View

BONNET ASSEMBLY

All dimensions are in mm

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

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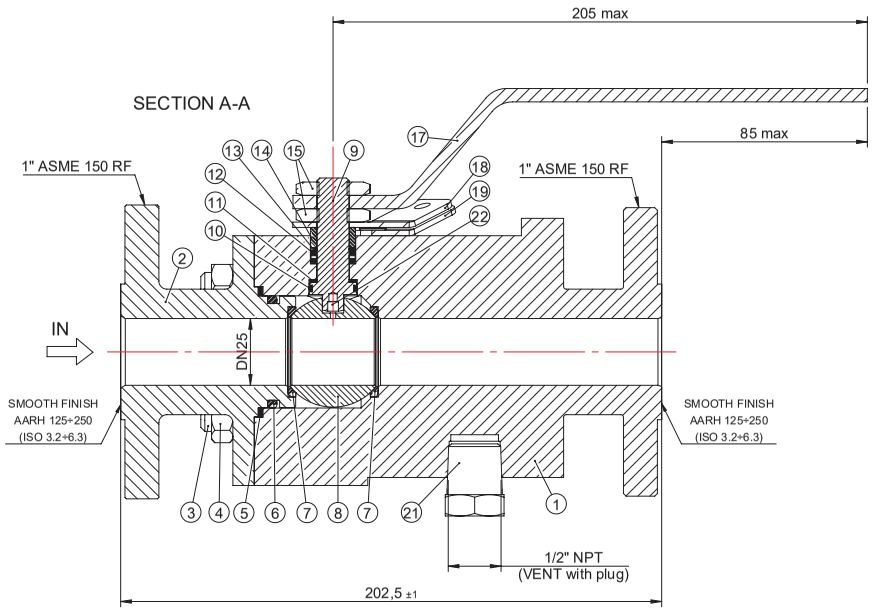
TAG No.	Cust. Item	Data Sheet	PIPING Class	SAP CODE	Indra Part Number	Operating Temperature °C	Design Pressure barg Min / Max
BLPH-MV-035 BLPH-MV-264 BLPH-MV-388 BLPH-MV-424 BLPH-MV-432 BLPH-MV-441	190	DA03C01RFH	03HSS	VLBBNN07240600	00.VSFT.0223/V	-27 / 65	40 / 42,2

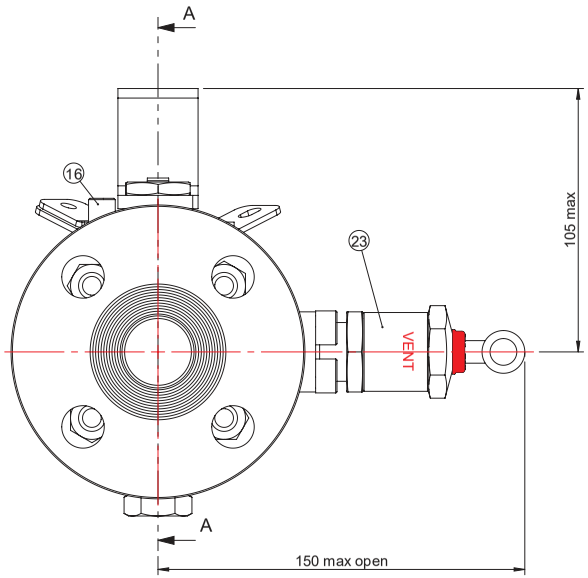
SBB BALL VALVE

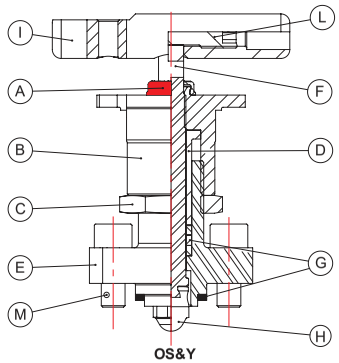
Item	Description	Material
1	VALVE BODY	ASTM A350 LF2 Cl.1 NACE
2	CLOSER	ASTM A350 LF2 Cl.1 NACE
3	STUD BOLT	ASTM A193 B7M + HDG
4	NUT	ASTM A194 Gr. 2HM + HDG
5	CLOSER SEAL RING	Graphite
6	CLOSER O-RING	FKM AED
7	SEAT	PEEK
8	BALL	ASTM A479 316/316L NACE
9	STEM	ASTM A479 316/316L NACE
10	STEM O-RING	FKM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

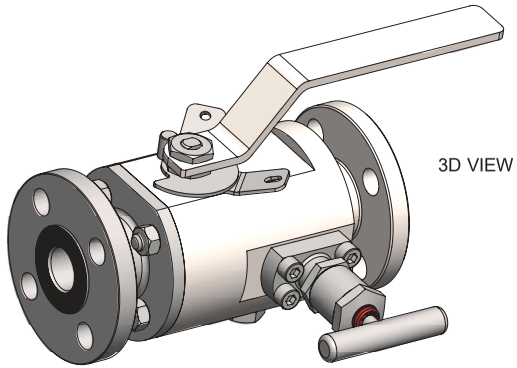
SPECIFICATION

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

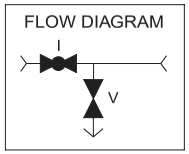








FLOW DIAGRAM



All dimensions are in mm

indra VALVES - ITALY
20013 Magenta (MI) - Italy - Via Novara, 10/B
Tel. 02.97.29.86.63 r.a. - Fax 02.97.29.18.55
E-mail: indra@indra.it - http://www.indra.it

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

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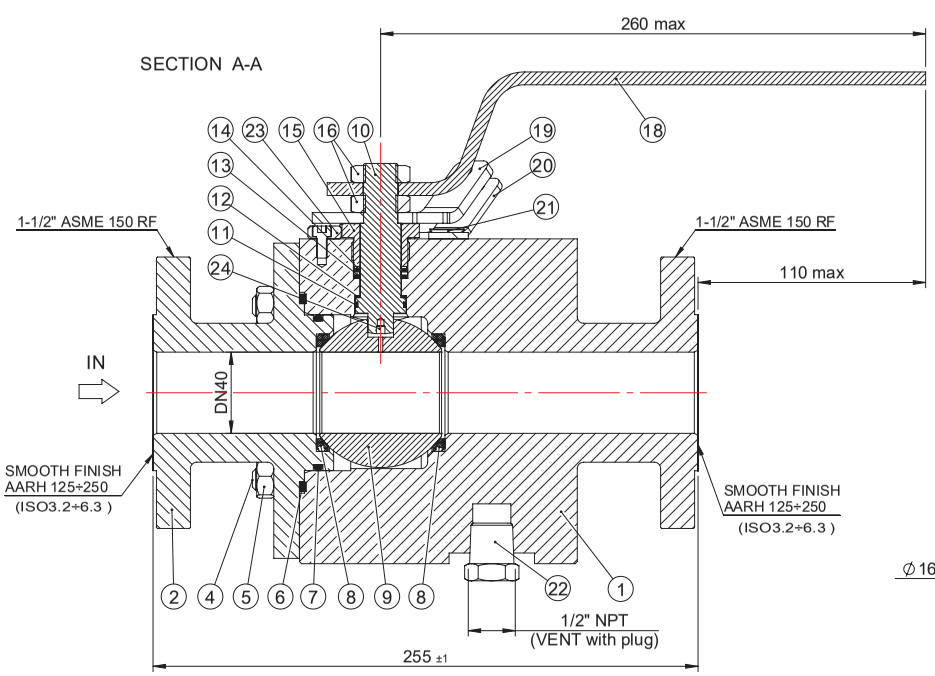
TAG No.	Cust. Item	Data Sheet	PIPING Class	SAP CODE	Indra Part Number	Operating Temperature °C	Design Pressure barg Min / Max
BLPH-MV-269 BLPH-MV-271 BLPH-MV-409	200	BS01B01RFS	01CS	VLBLNN01280100	00.VSF.2697/V	-10 /70	10 / 17,7

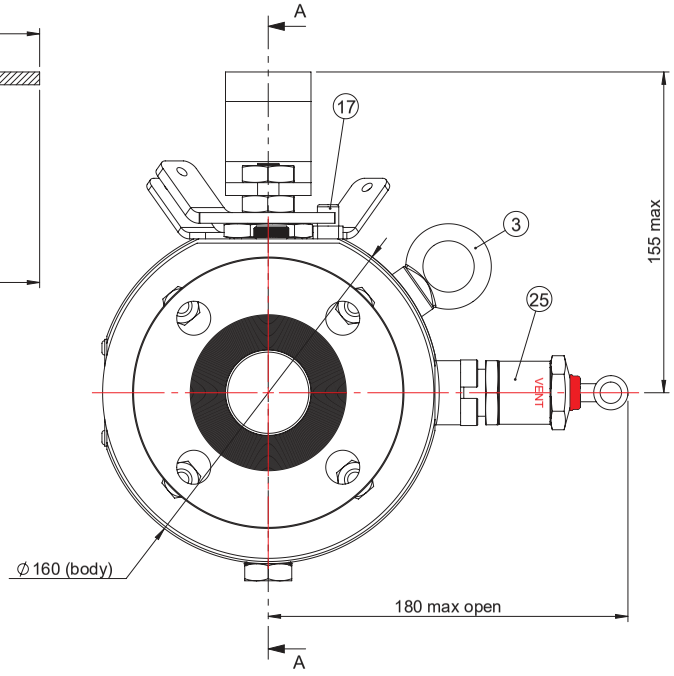
SBB BALL VALVE

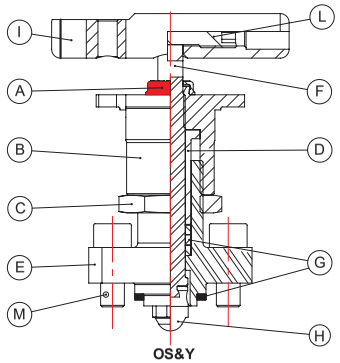
Item	Description	Material
1	VALVE BODY	ASTM A350 LF2 Cl.1 NACE
2	CLOSER	ASTM A350 LF2 Cl.1 NACE
3	EYEBOLT	St.St. 316
4	STUD BOLT	ASTM A193 B7M + HDG
5	NUT	ASTM A194 Gr.2HM + HDG
6	CLOSER SEAL RING	Graphite
7	CLOSER O-RING	FKM AED
8	SEAT	PEEK
9	BALL	ASTM A479 316/316L NACE
10	STEM	ASTM A479 316/316L NACE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

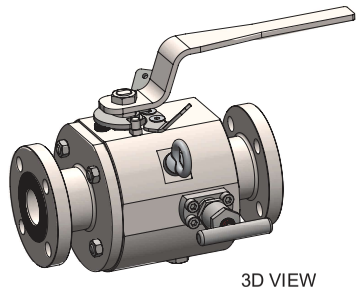
SPECIFICATION

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

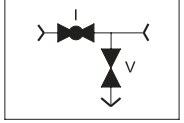







3D VIEW

FLOW DIAGRAM



All dimensions are in mm

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

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

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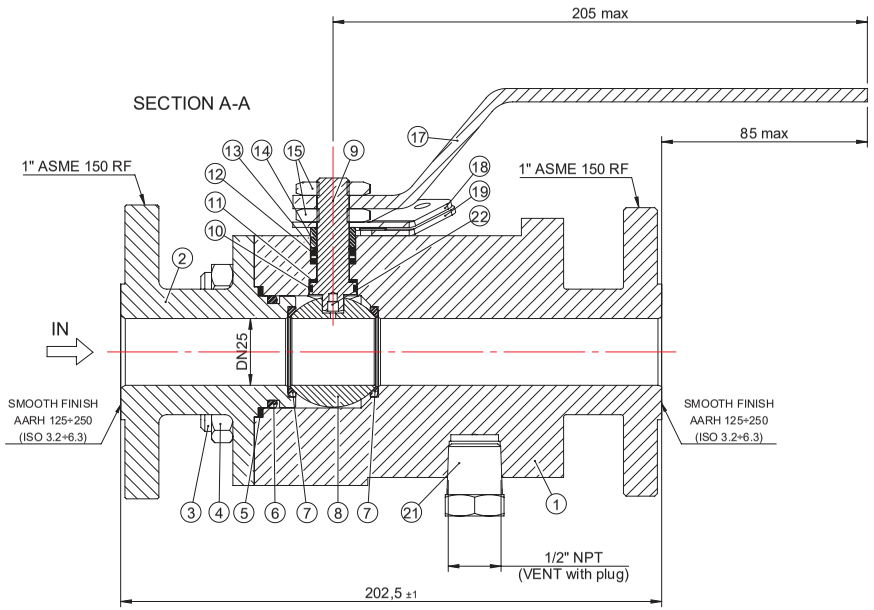
TAG No.	Cust. Item	Data Sheet	PIPING Class	SAP CODE	Indra Part Number	Operating Temperature °C	Design Pressure barg Min / Max
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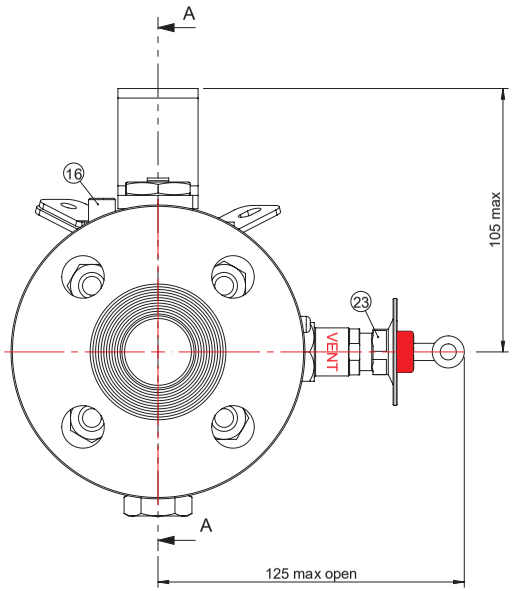
SBB BALL VALVE

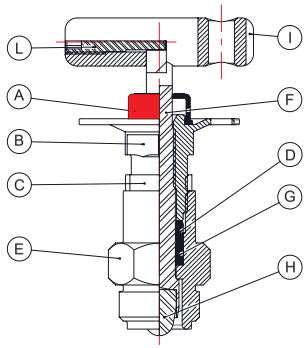
Item	Description	Material
1	VALVE BODY	ASTM A182 F316/316L NACE
2	CLOSER	ASTM A182 F316/316L NACE
3	STUD BOLT	ASTM A193 B8M Cl. 2
4	NUT	ASTM A194 Gr. 8M
5	CLOSER SEAL RING	Graphite
6	CLOSER O-RING	FKM AED
7	SEAT	PEEK
8	BALL	ASTM A479 316/316L NACE
9	STEM	ASTM A479 316/316L NACE
10	STEM O-RING	FKM AED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

SPECIFICATION

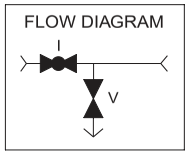
1. Construction: 1 Ball Isolate, 1 Needle Vent
2. Inlet: 1" Cl.150 RF (ASME B16.5)
3. Outlet: 1" Cl.150 RF (ASME B16.5)
4. Vent: 1/2" NPT Female (ASME B1.20.1)
5. Design Code: ASME B16.34 / B16.5 / ASME B1.20.1
6. Bore Size: Ball DN25, Needle 5mm
7. Antistatic device
8. Anti-blow out stem
9. Design Temperature: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



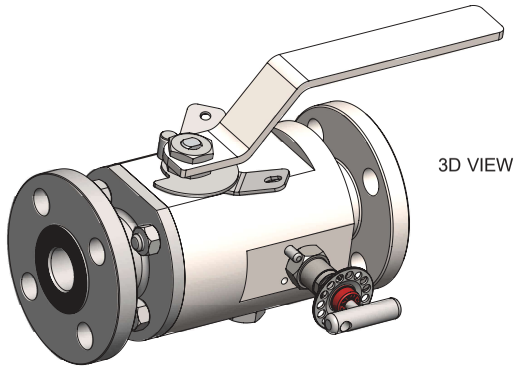




BONNET ASSEMBLY



All dimensions are in mm



3D VIEW

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

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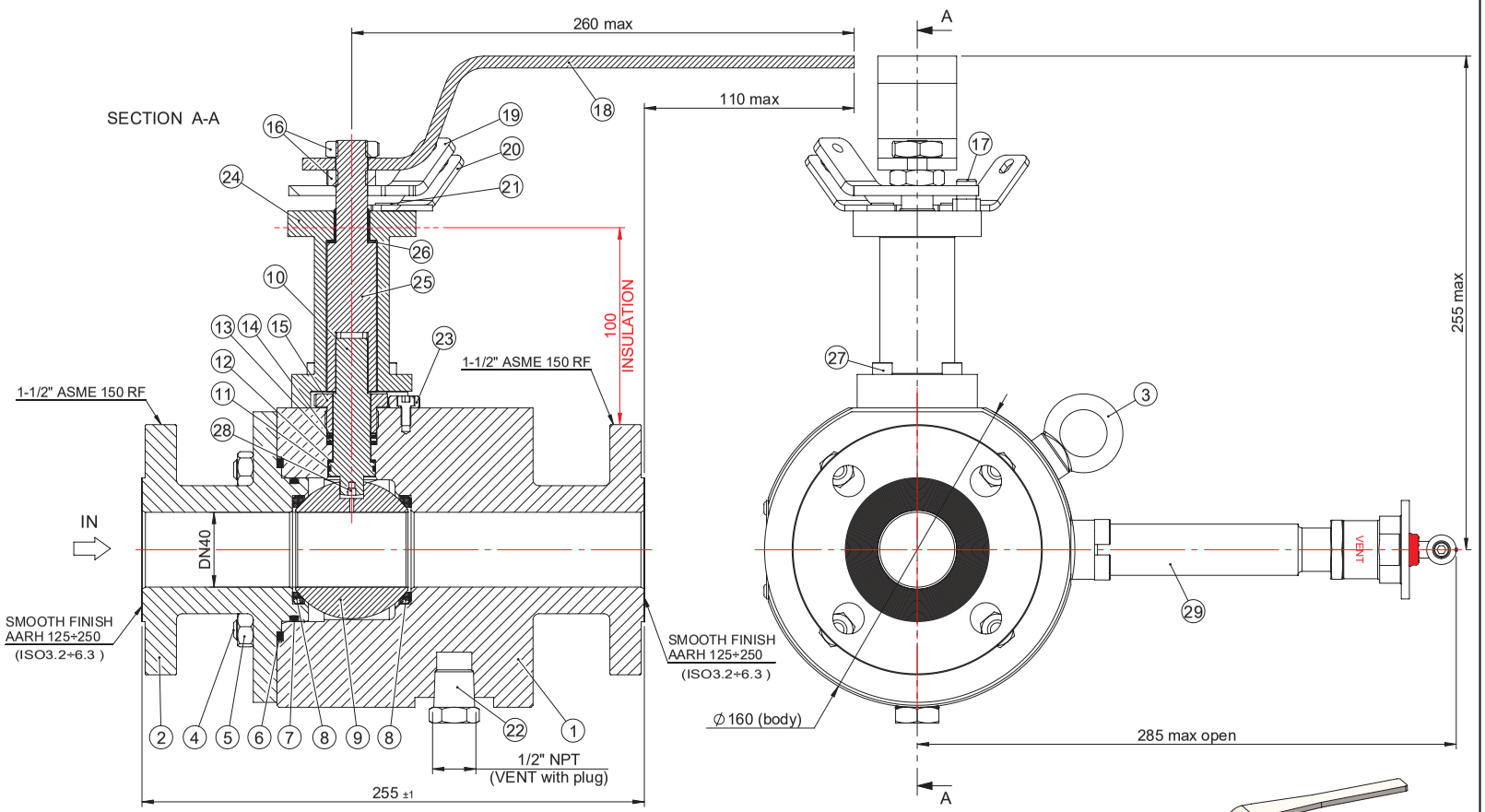
TAG No.	Cust. Item	Data Sheet	PIPING Class	SAP CODE	Indra Part Number	Operating Temperature °C	Design Pressure barg Min / Max
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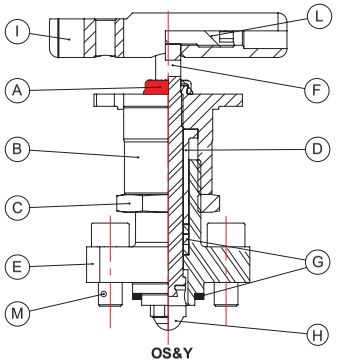
SBB BALL VALVE

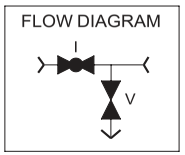
Item	Description	Material
1	VALVE BODY	ASTM A182 F55 NACE
2	CLOSER	ASTM A182 F55 NACE
3	EYEBOLT	St.St. 316
4	STUD BOLT	ASTM A193 B7M + HDG
5	NUT	ASTM A194 Gr.2HM + HDG
6	CLOSER SEAL RING	Graphite
7	CLOSER O-RING	FKM AED
8	SEAT	PEEK
9	BALL	ASTM A479 F55 NACE
10	STEM	ASTM A479 F55 NACE
11	STEM O-RING	FKM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

SPECIFICATION

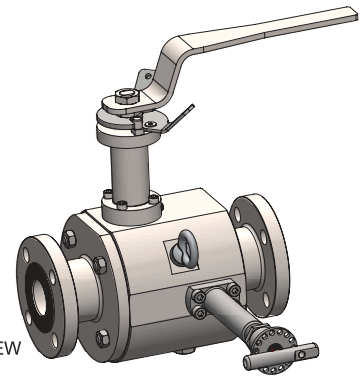
1. Construction: 1 Ball Isolate, 1 Needle Vent
2. Inlet: 1-1/2" Cl.150 RF (ASME B16.5)
3. Outlet: 1-1/2" Cl.150 RF (ASME B16.5)
4. Vent: 1/2" NPT-Female (ASME B1.20.1)
5. Design Code: ASME B16.34 / B16.5 / B1.20.1
6. Bore Size: Ball DN40, Needle 5mm
7. Antistatic device
8. Anti-blow out stem
9. Design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







All dimensions are in mm



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

TITOLO: TITLE:	SBB BALL VALVE FLANGED - FLANGED	DISEGNO: DWG.:	00.VSF.2698
MODELLO: MODEL:	SBB-798-40-H150RF3_H_D	REV.: 02 A	DATA: DATE: 26/07/2024
CODICE: CODE:	00.VSF.2698	NOTE / NOTES:	*Rev02: Updated drawing*
SCALA: SCALE: N/A	FOGLIO: SHEET: 1/1	MATERIALE: MATERIAL:	See Table
DISEGNATO DA: DRAWN BY: D.S	CONTROLLATO DA: CONTROLLED BY: D.R	PESO: WEIGHT:	28 kg (max)
DATA: DATE: 17/05/2024	REVISIONATO DA: REVISED BY: D.S	RICHIESTO DA: REQUESTED BY:	G.G

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A4 - ORIZ.

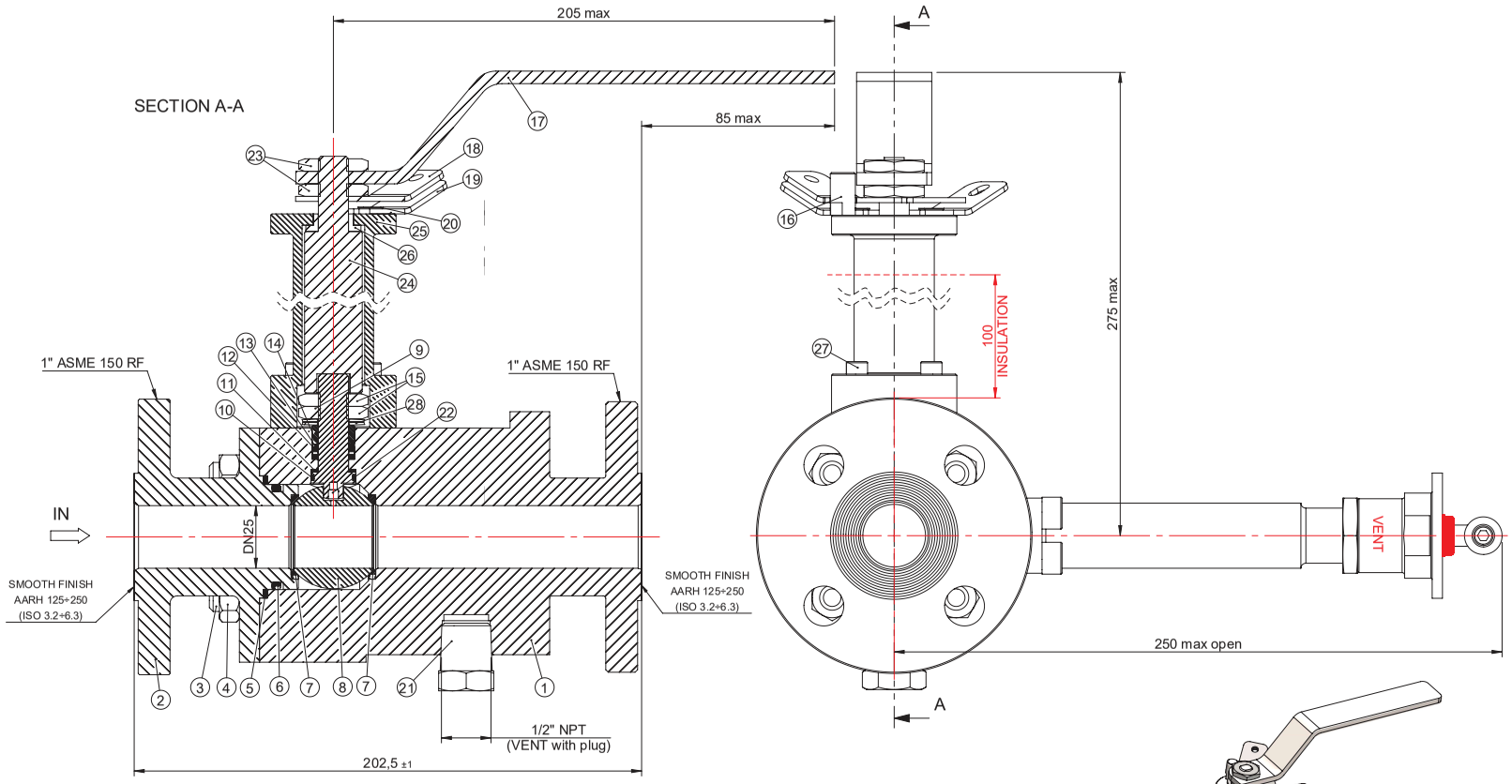
TAG No.	Cust. Item	Data Sheet	PIPING Class	SAP CODE	Indra Part Number	Operating Temperature °C	Design Pressure barg Min / Max
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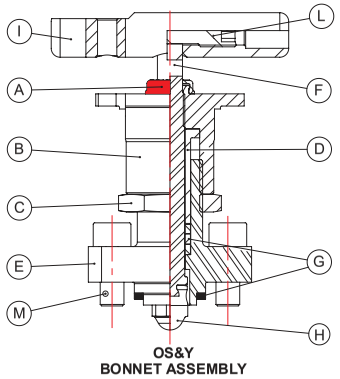
SBB BALL VALVE

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

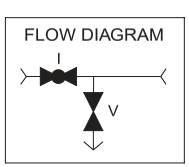
SPECIFICATION

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

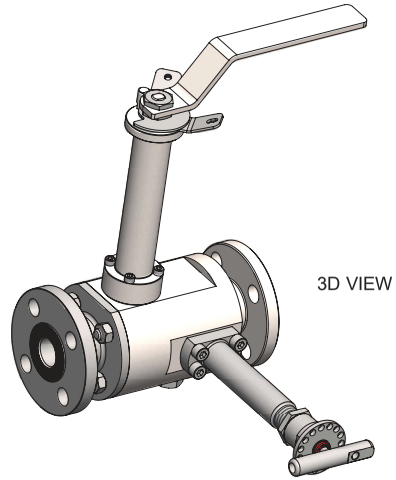




OS&Y
BONNET ASSEMBLY



All dimensions are in mm



3D VIEW

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

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A4 - ORIZ.

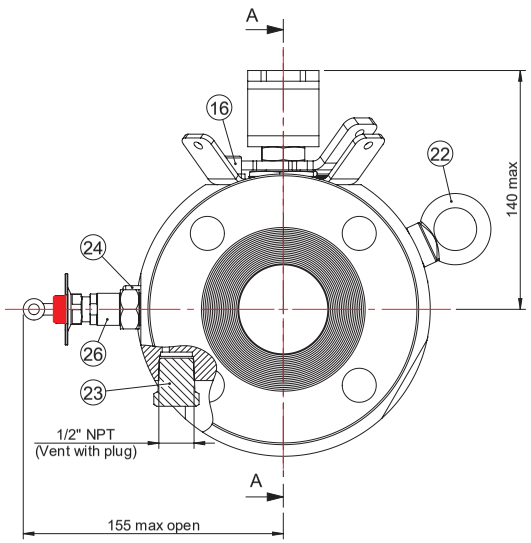
TAG No.	Cust. Item	Data Sheet	PIPING Class	SAP CODE	Indra Part Number	Operating Temperature °C	Design Pressure barg Min / Max
BLPH-MV-001	240	BS01C01RFS	01SS	VLBLNN01410100	00.VSF.2696/V	5 / 35	11 / 16,2

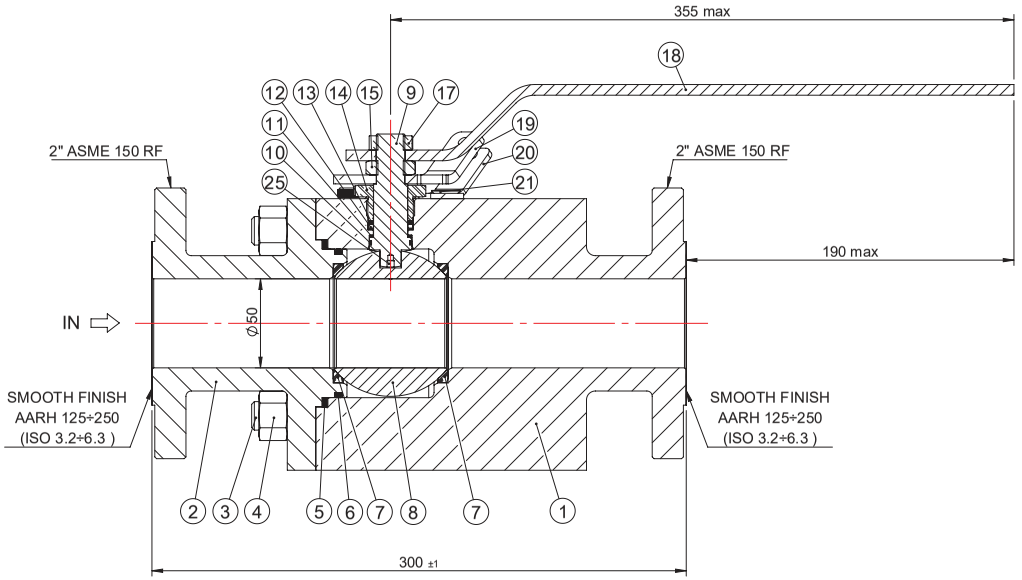
SBB BALL VALVE

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

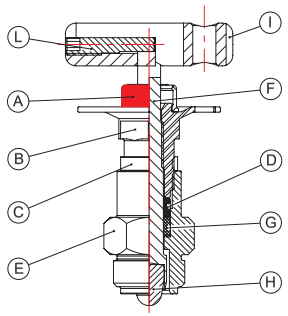
SPECIFICATION

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

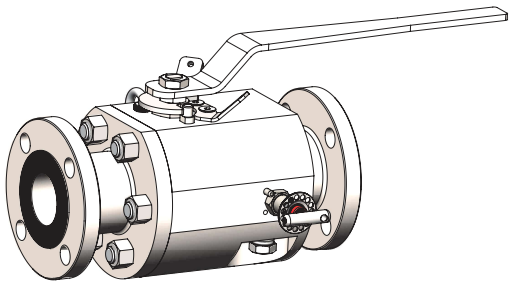




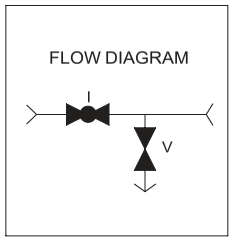
SECTION A-A



BONNET ASSEMBLY



3D VIEW



All dimensions are in mm

indra VALVES - ITALY

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

TITOLO: TITLE:	SBB BALL VALVE FLANGED - FLANGED	DISEGNO: DWG.:	00.VSF.2702/V
MODELLO: MODEL:	SBB-798-HR-50-J150RF3-J-D	REV.: 03 A	DATA: DATE: 26/07/2024
CODICE: CODE:	00.VSF.2702/V	NOTE / NOTES:	*Rev03: updated drawing*
SCALA: SCALE: N/A	FOGLIO: SHEET: 1/1	MATERIALE: MATERIAL:	See Table
DISEGNATO DA: DRAWN BY: S.M	CONTROLLATO DA: CONTROLLED BY: D.R	PESO: WEIGHT:	31,5 kg (max)
DATA: DATE: 15/05/2024	REVISIONATO DA: REVISED BY: D.S	RICHIESTO DA: REQUESTED BY:	G.G

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A4 - ORIZ.

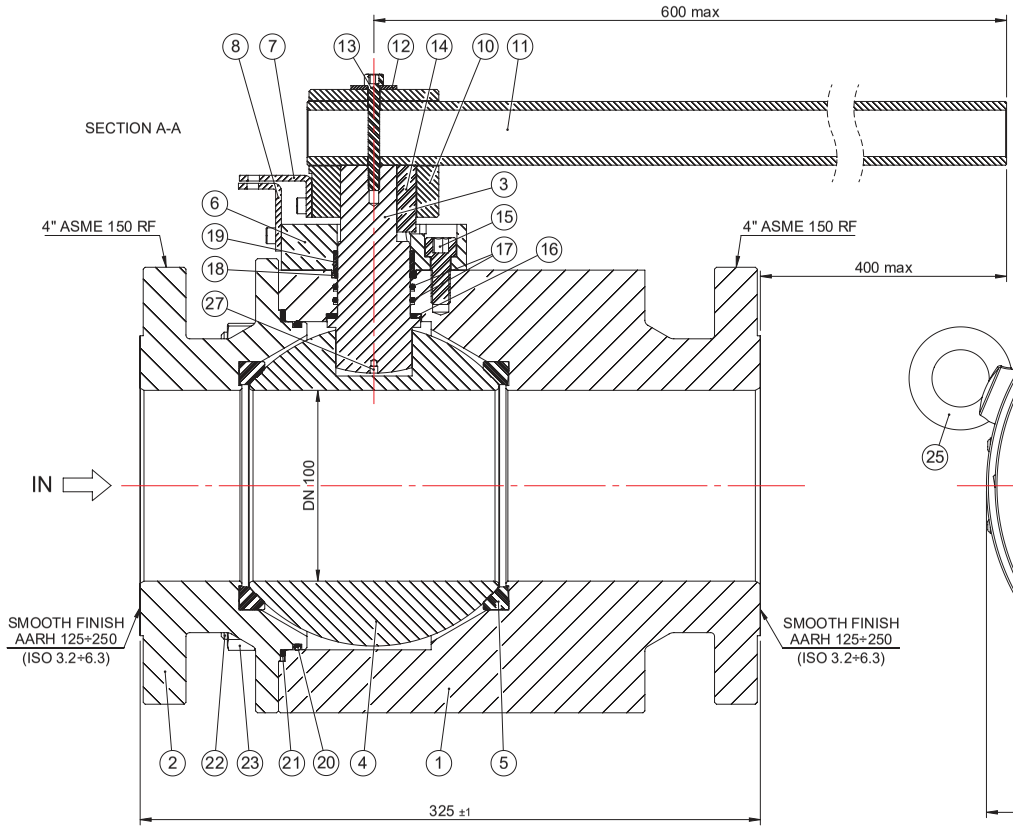
TAG No.	Cust. Item	Data Sheet	PIPING Class	SAP CODE	Indra Part Number	Operating Temperature °C	Design Pressure barg Min / Max
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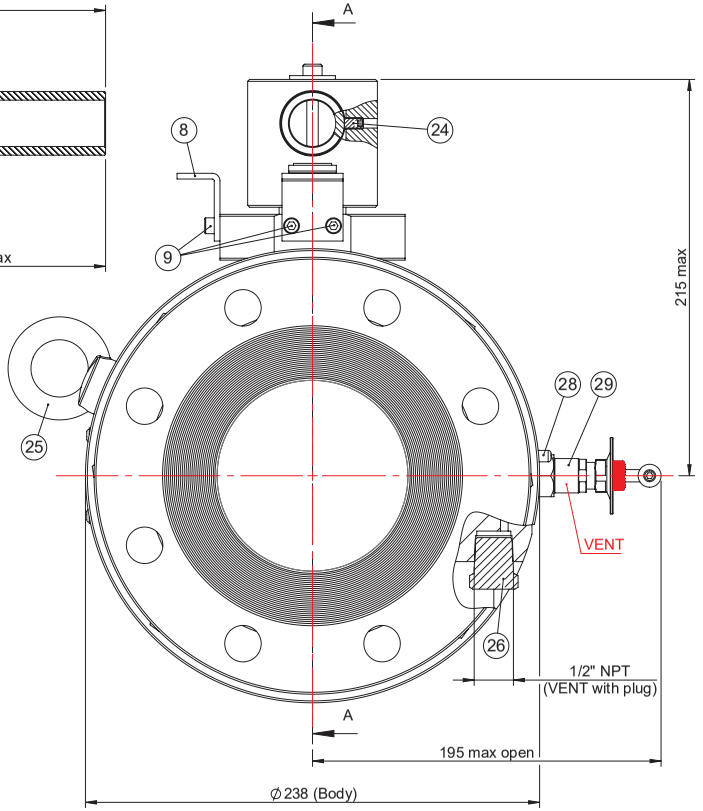
SBB BALL VALVE

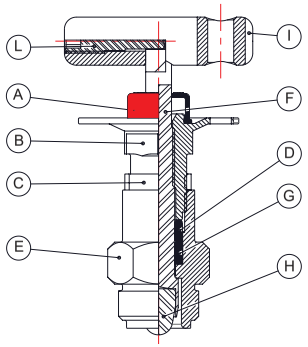
Item	Description	Material
1	BODY	ASTM A182 F316/316L NACE
2	CLOSURE	ASTM A182 F316/316L NACE
3	STEM	ASTM A479 316/316L NACE
4	BALL	ASTM A479 316/316L NACE
5	SEAT	RPTFE
6	COVER PLATE	ASTM A479 316/316L NACE
7	LEVER PLATE	St.St. 316
8	LOCKING PLATE	St.St. 316
9	PLATE BOLT	St.St. 316
10	LEVER	St.St. 316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

SPECIFICATION

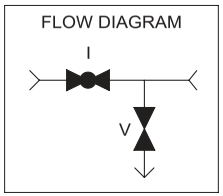
1. Construction: 1 Ball Isolate, 1 Needle Vent
2. Inlet: 4" CL. 150 RF (ASME B16.5)
3. Outlet: 4" CL. 150 RF (ASME B16.5)
4. Vent: 1/2" NPT Female (ASME B1.20.1)
5. Design Code: ASME B16.34, ASME B16.5, ASME B1.20.1, API 6D
6. Bore size: Ball DN100, Needle 5mm
7. Face to face dimension according to ASME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



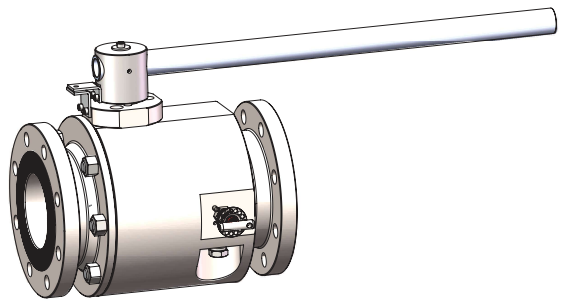




BONNET ASSEMBLY



All dimensions are in mm



3D VIEW

indra VALVES - ITALY

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

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A4 - ORIZ.

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

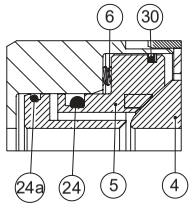
SB TRUNNION BALL VALVE

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

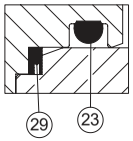
SPECIFICATION

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

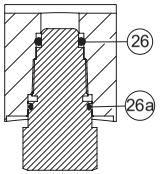
SEAT DETAIL "B"



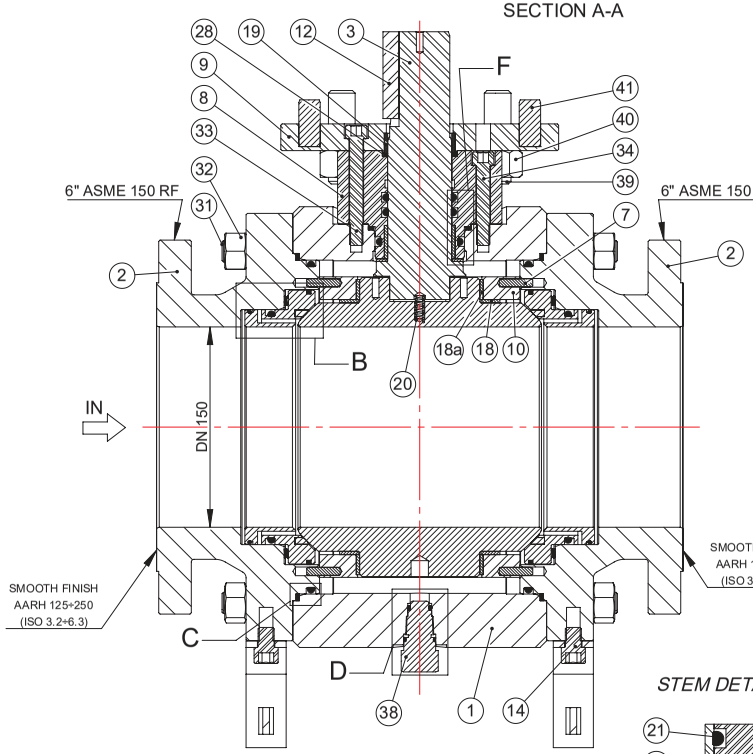
CLOSURE DETAIL "C"

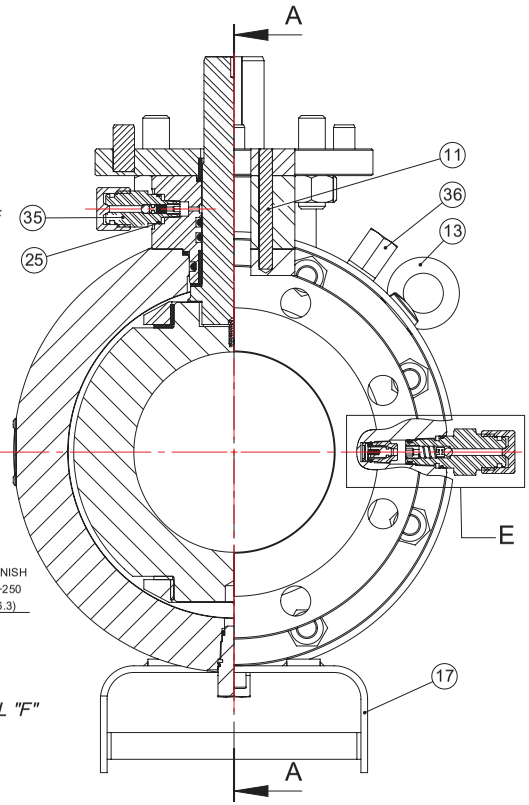


VENT DETAIL "D"

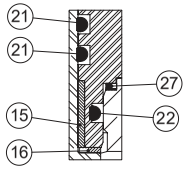


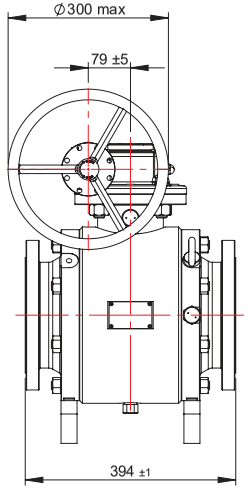
SECTION A-A

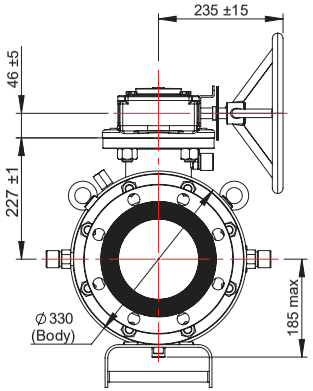




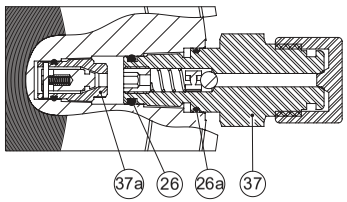
STEM DETAIL "F"

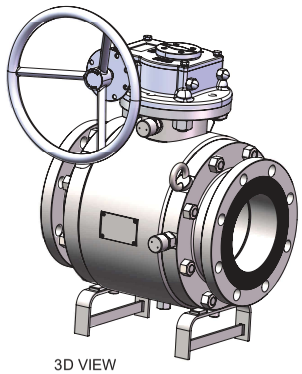






SEAT LUBRICATOR
DETAIL"E"





3D VIEW

FLOW DIAGRAM



All dimensions are in mm

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

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

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A4 - ORIZ.

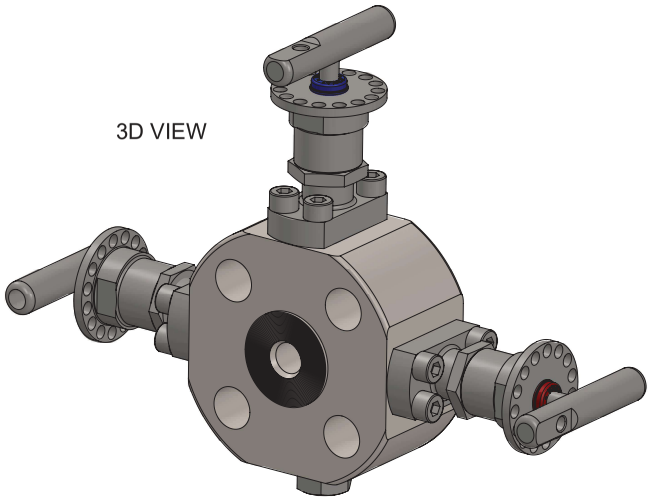
TAG No.	Cust. Item	Data Sheet	PIPING Class	SAP CODE	Indra Part Number	Operating Temperature °C	Design Pressure barg Min / Max
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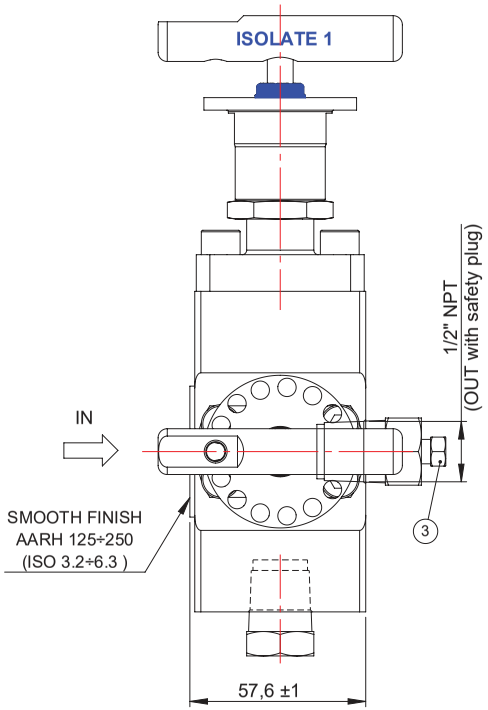
DBB MONOFLANGE VALVE		
Item	Description	Material
1	VALVE BODY	ASTM A182 F316/316L NACE
2	PLUG 1/2" NPT	ASTM A479 316L
3	SAFETY PLUG 1/2" NPT	ASTM A479 316L
4	**O.S.&Y. BONNET ASSEMBLY (ISOLATE, VENT)**	
A	DUST CUP	Plastic
B	COMPRESSION NUT	St.St. 316L
C	LOCKING NUT	St.St. 316/316L
D	FOLLOWER	St.St. 316/316L
E	BONNET BODY	ASTM A479 316/316L NACE
F	STEM	ASTM A479 316/316L NACE
G	PACKING	Graphite
H	TIP	Stellite
I	TEE-BAR	St.St. 316L
L	TEE-BAR SCREW	St.St. 316L
M	BOLTING	ASTM A193 B8M Cl.2

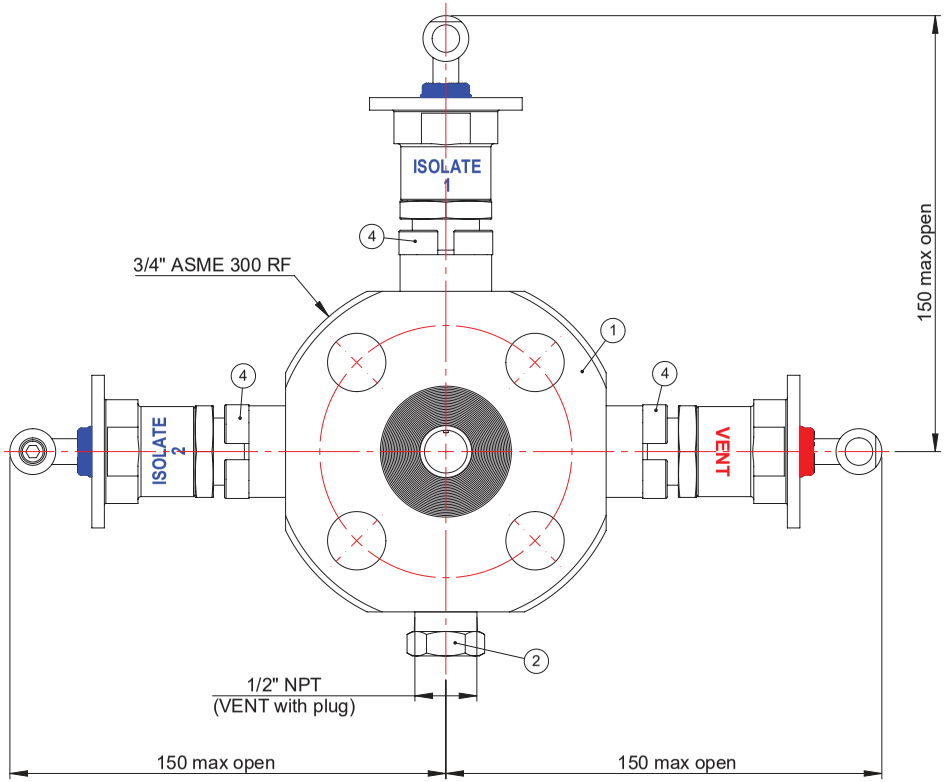
SPECIFICATION

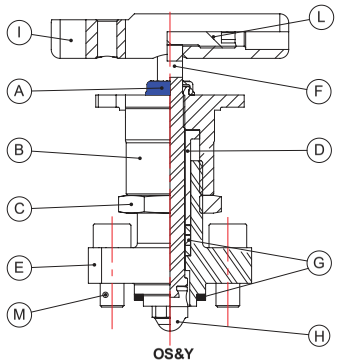
1. Construction: 2 Needle Isolate, 1 Needle Vent
2. Inlet: 3/4" 300 RF (ASME B16.5)
3. Outlet: 1/2" NPT-Female (ASME B1.20.1)
4. Vent: 1/2" NPT-Female (ASME B1.20.1)
5. Pressure Test: API 598, API 6D
6. Design Code: ASME B16.5 / B31.3 / B1.20.1
7. Design Temperature: -46°C / +80°C
8. Pressure Test: API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

3D VIEW





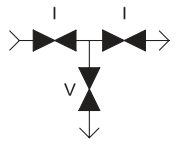




OS&Y
BONNET ASSEMBLY

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

FLOW DIAGRAM



All dimensions are in mm

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

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

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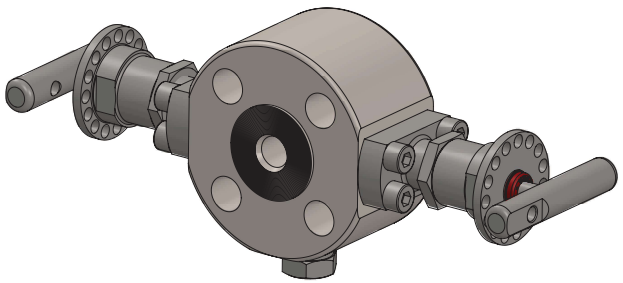
A4 - ORIZ.

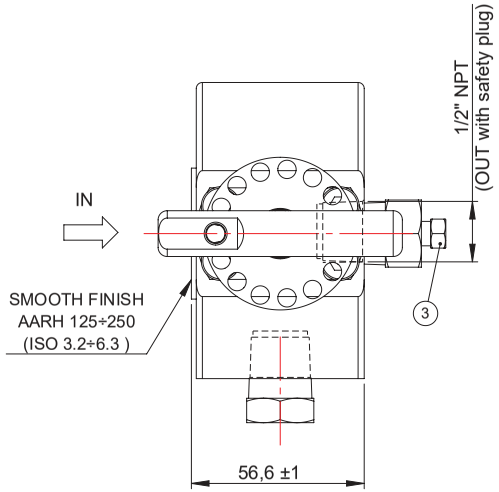
SBB MONOFLANGE VALVE		
Item	Description	Material
1	VALVE BODY	ASTM A182 F316/316L NACE
2	PLUG 1/2" NPT	ASTM A479 316L
3	SAFETY PLUG 1/2" NPT	ASTM A479 316L
4	**O.S.&Y. BONNET ASSEMBLY (ISOLATE, VENT)**	
A	DUST CUP	Plastic
B	COMPRESSION NUT	St.St. 316L
C	LOCKING NUT	St.St. 316/316L
D	FOLLOWER	St.St. 316/316L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

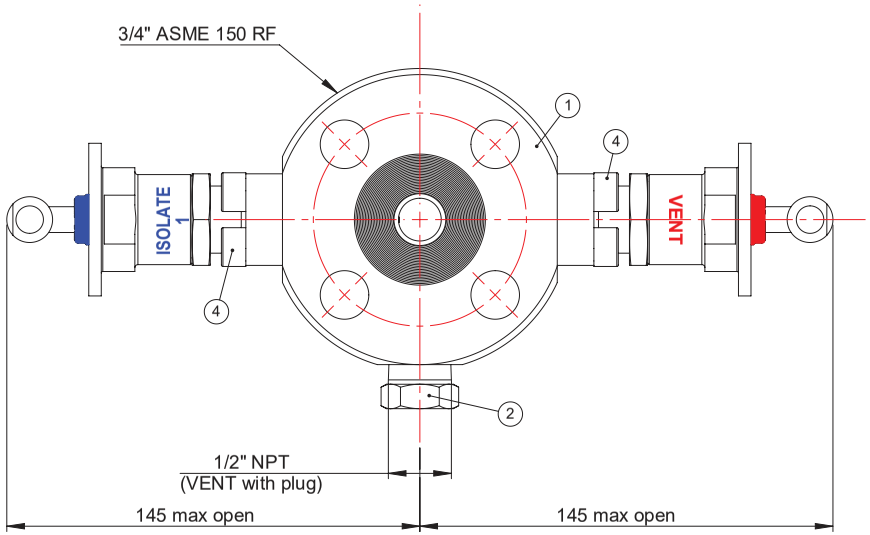
SPECIFICATION

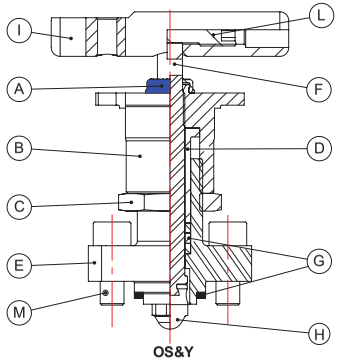
1. Construction: 1 Needle Isolate, 1 Needle Vent
2. Inlet: 3/4" 150 RF (ASME B16.5)
3. Outlet: 1/2" NPT-Female (ASME B1.20.1)
4. Vent: 1/2" NPT-Female (ASME B1.20.1)
5. Pressure Test: API 598, API 6D
6. Design Code: ASME B16.5 / B31.3 / B1.20.1
7. Design Temperature: -29°C / +100°C
8. Pressure Test: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

3D VIEW



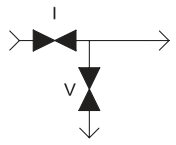






OS&Y
BONNET ASSEMBLY

FLOW DIAGRAM



All dimensions are in mm

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

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

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

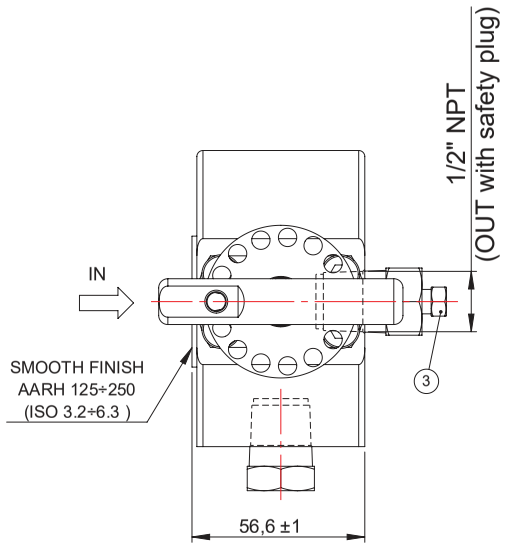
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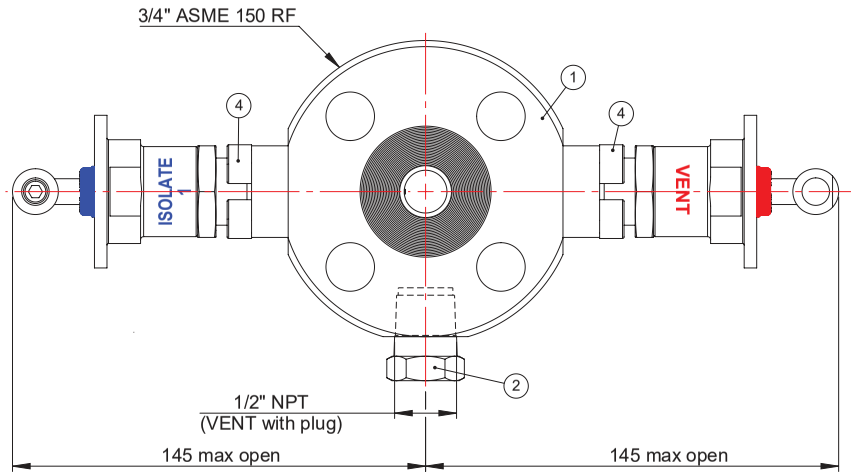
A4 - ORIZ.

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

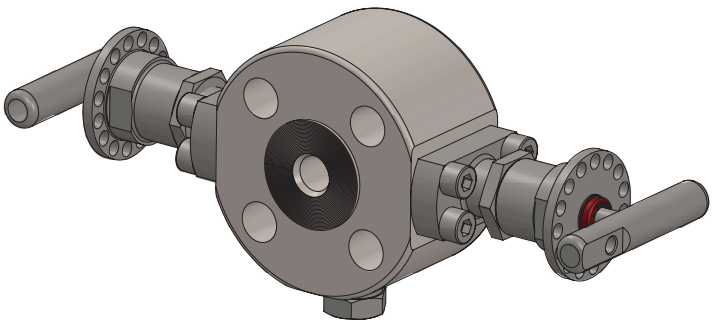
SPECIFICATION

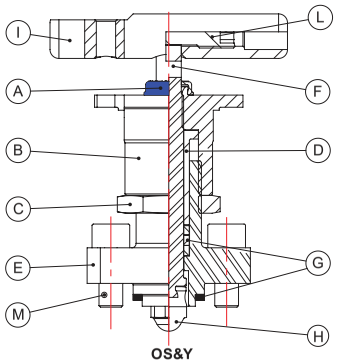
1. Construction: 1 Needle Isolate, 1 Needle Vent
2. Inlet: 3/4" 150 RF (ASME B16.5)
3. Outlet: 1/2" NPT-Female (ASME B1.20.1)
4. Vent: 1/2" NPT-Female (ASME B1.20.1)
5. Pressure Test: API 598, API 6D
6. Design Code: ASME B16.5 / B31.3 / B1.20.1
7. Design Temperature: -29°C / +100°C
8. Pressure Test: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





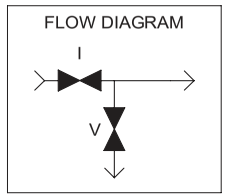
3D VIEW





OS&Y
BONNET ASSEMBLY

FLOW DIAGRAM



All dimensions are in mm

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

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

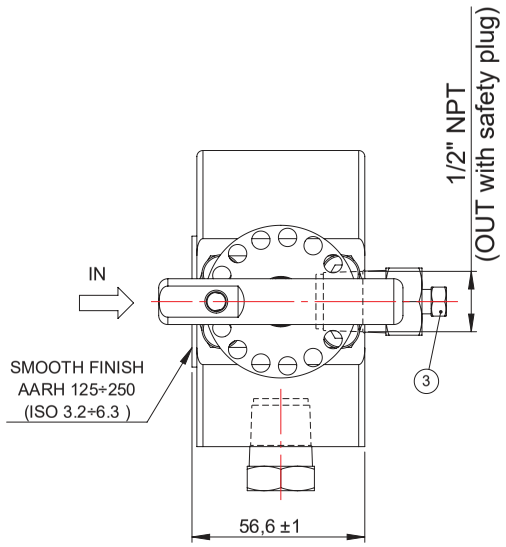
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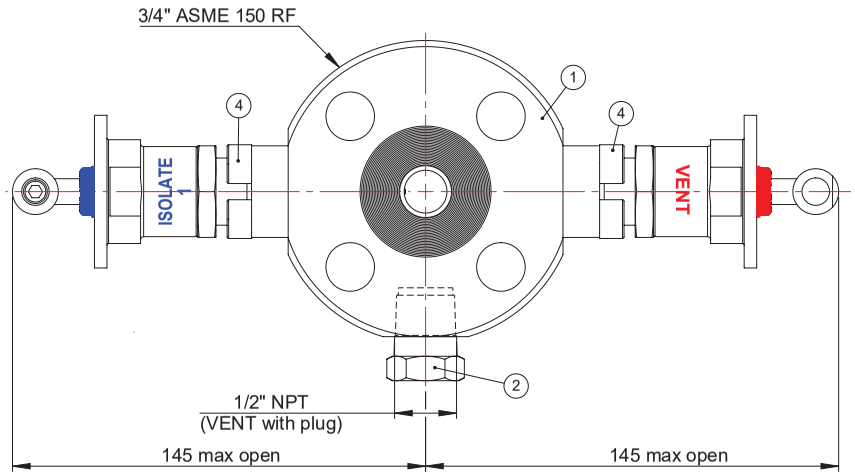
A4 - ORIZ.

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

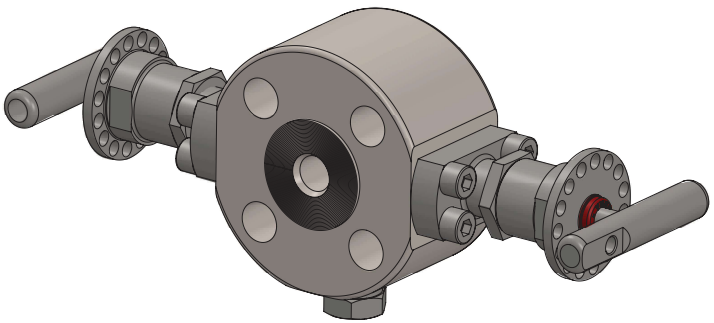
SPECIFICATION

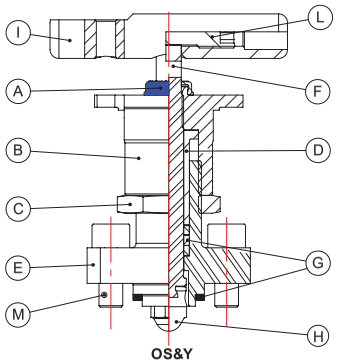
1. Construction: 1 Needle Isolate, 1 Needle Vent
2. Inlet: 3/4" 150 RF (ASME B16.5)
3. Outlet: 1/2" NPT-Female (ASME B1.20.1)
4. Vent: 1/2" NPT-Female (ASME B1.20.1)
5. Pressure Test: API 598, API 6D
6. Design Code: ASME B16.5 / B31.3 / B1.20.1
7. Design Temperature: -46°C / +100°C
8. Pressure Test: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





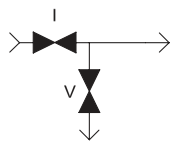
3D VIEW





OS&Y
BONNET ASSEMBLY

FLOW DIAGRAM



All dimensions are in mm

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

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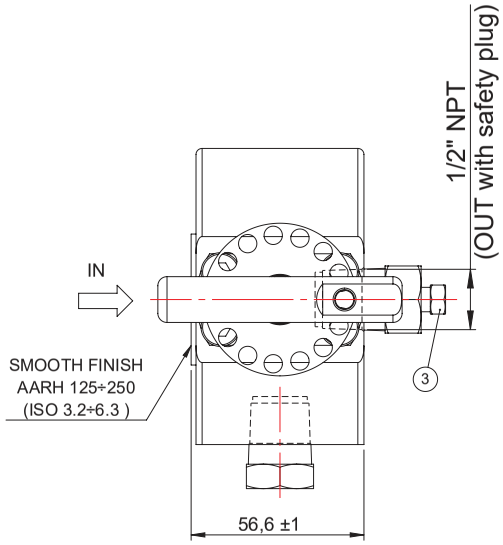
TITOLO: TITLE:	SBB MONOFLANGE VALVE	DISEGNO: DWG.:	00.MNF.0612/V
MODELLO: MODEL:	SBB-727-E150RF3-D-D	REV.: 01 A	DATA: DATE: 27/06/2024
CODICE: CODE:	00.MNF.0612/V	NOTE / NOTES:	*Rev01: Updated drawing*
SCALA: SCALE: N/A	FOGLIO: SHEET: 1/1	MATERIALE: MATERIAL:	See Table
DISEGNATO DA: DRAWN BY: D.R	CONTROLLATO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

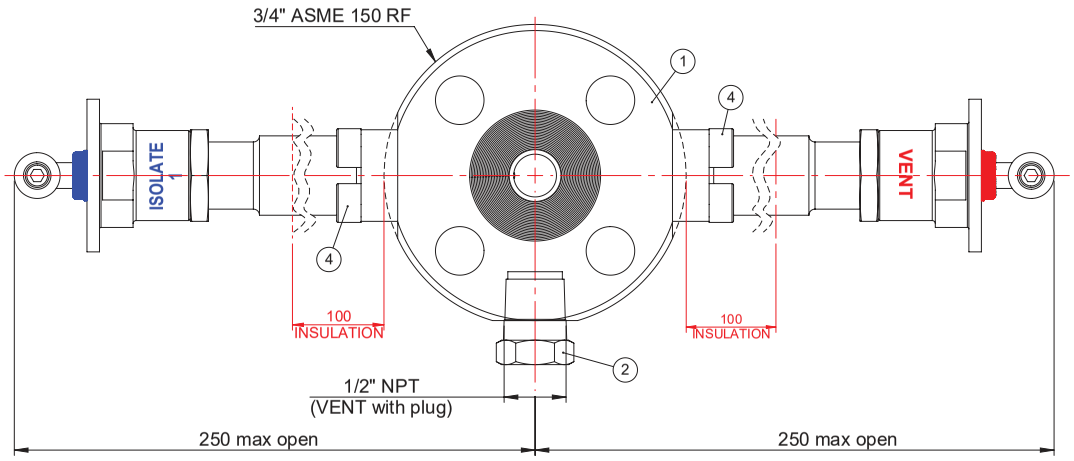
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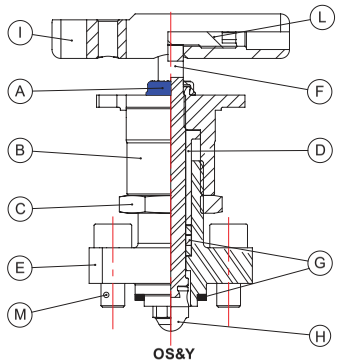
SBB MONOFLANGE VALVE		
Item	Description	Material
1	VALVE BODY	ASTM A350 LF2 CL.1 NACE
2	PLUG 1/2" NPT	ASTM A350 LF2
3	SAFETY PLUG 1/2" NPT	ASTM A350 LF2
4	**O.S.&Y. BONNET ASSEMBLY (ISOLATE, VENT)**	
A	DUST CUP	Plastic
B	COMPRESSION NUT	St.St. 316L
C	LOCKING NUT	St.St. 316/316L
D	FOLLOWER	St.St. 316/316L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

SPECIFICATION

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

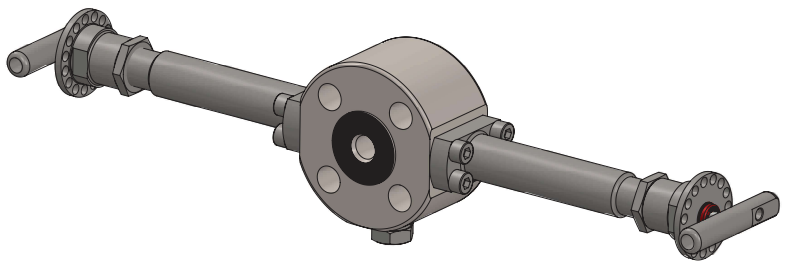




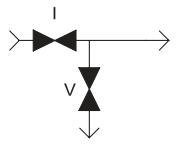


OS&Y
BONNET ASSEMBLY

3D VIEW



FLOW DIAGRAM



All dimensions are in mm

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

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

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

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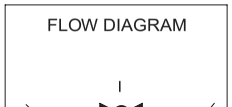
SB BALL VALVE

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

SPECIFICATION

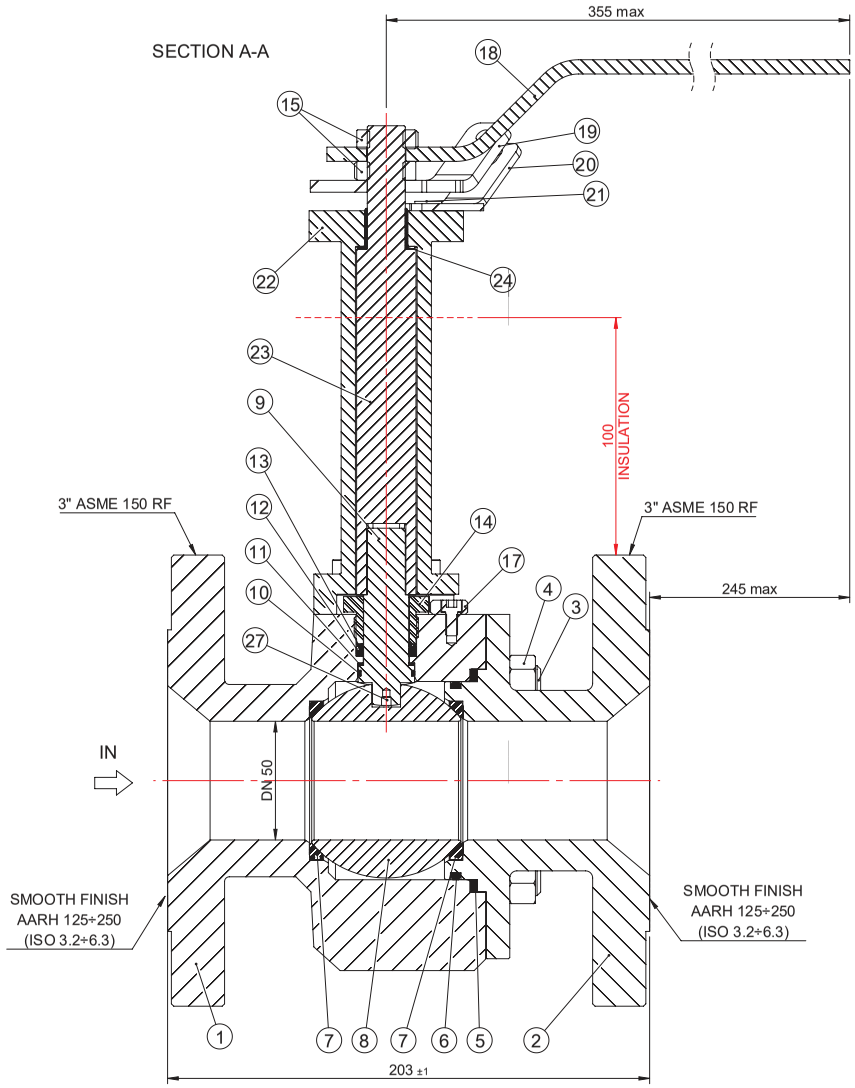
1. Construction: 1 Ball Isolate
2. Inlet: 3" Cl.150 RF (ASME B16.5)
3. Outlet: 3" Cl.150 RF (ASME B16.5)
4. Design Code: ASME B16.34/B16.5
5. Bore Size: DN 50
6. Face to face dimension according to ASME B16.10
7. Antistatic device
8. Anti-blow out stem
9. Design temperature: -46°C / +100°C
10. Pressure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

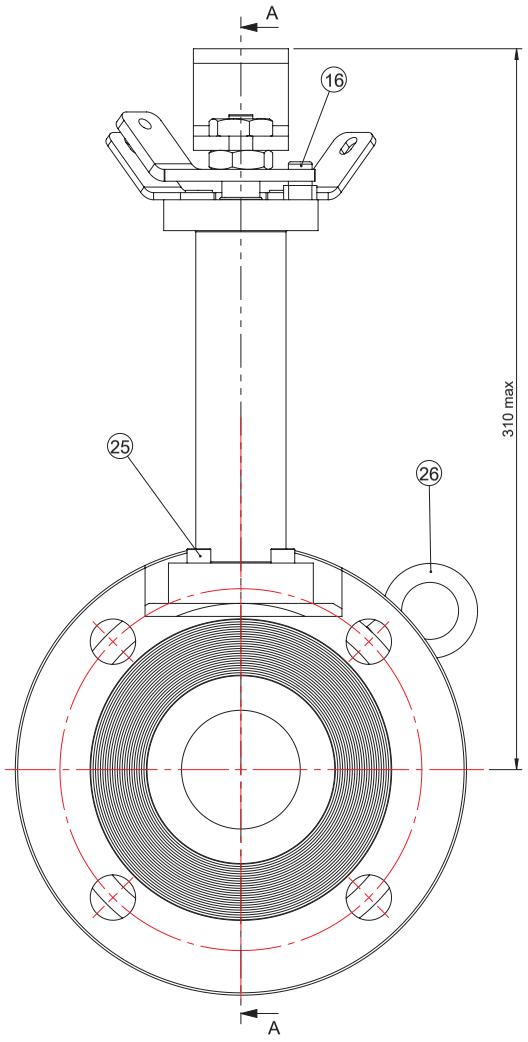
FLOW DIAGRAM

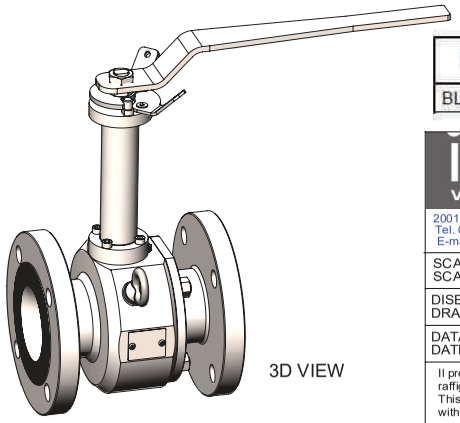


All dimensions are in mm

SECTION A-A







3D VIEW

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

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

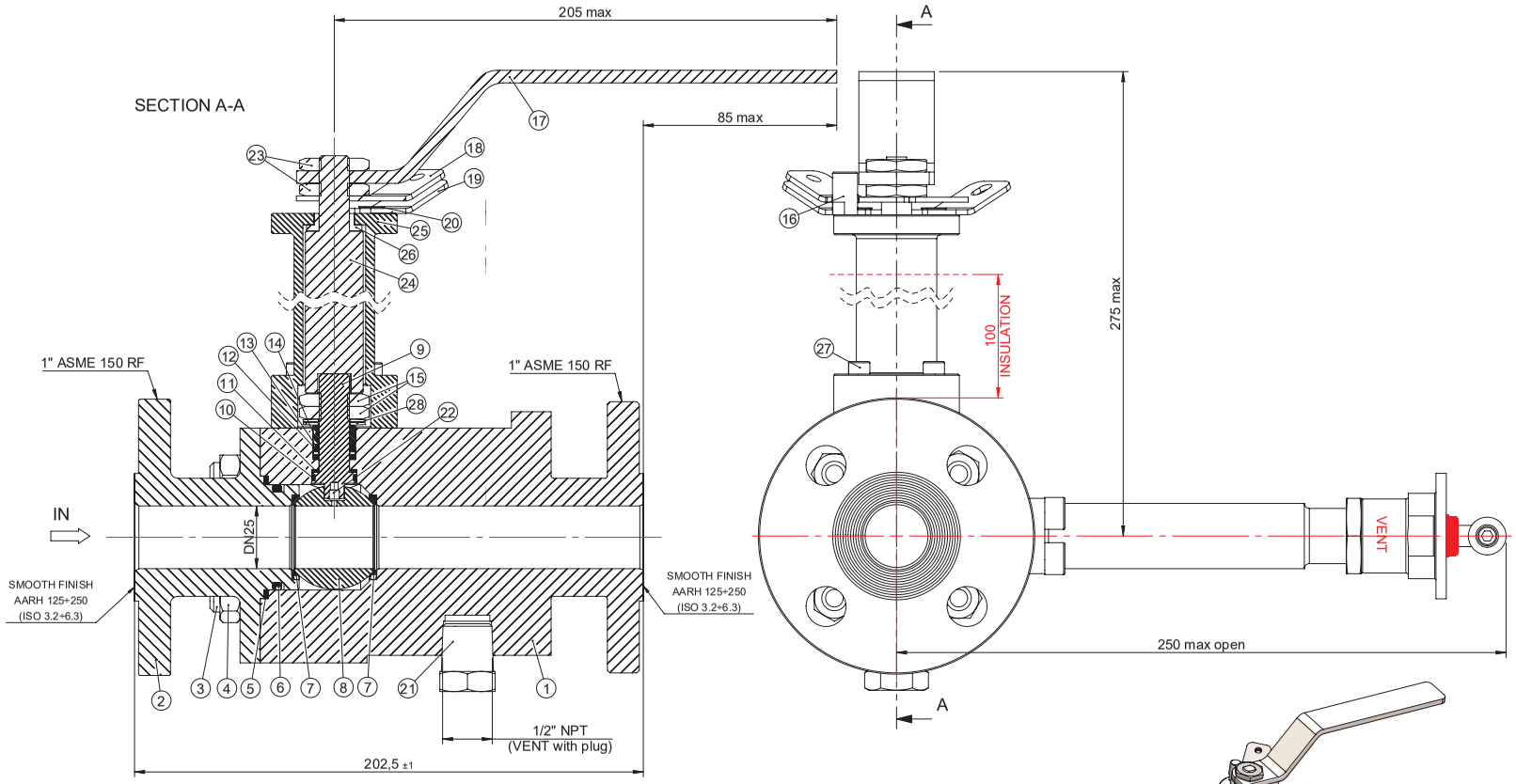
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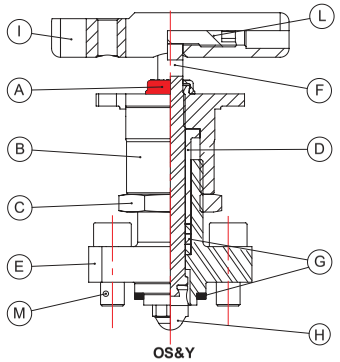
SBB BALL VALVE

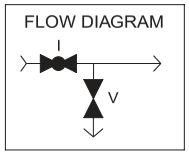
Item	Description	Material
1	VALVE BODY	ASTM A182 F55 NACE
2	CLOSER	ASTM A182 F55 NACE
3	STUD BOLT	ASTM A193 B7M + HDG
4	NUT	ASTM A194 Gr.2HM + HDG
5	CLOSER SEAL RING	Graphite
6	CLOSER O-RING	FKM AED
7	SEAT	PEEK
8	BALL	ASTM A479 F55 NACE
9	STEM	ASTM A479 F55 NACE
10	STEM O-RING	FKM AED
11	STEM THRUST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

SPECIFICATION

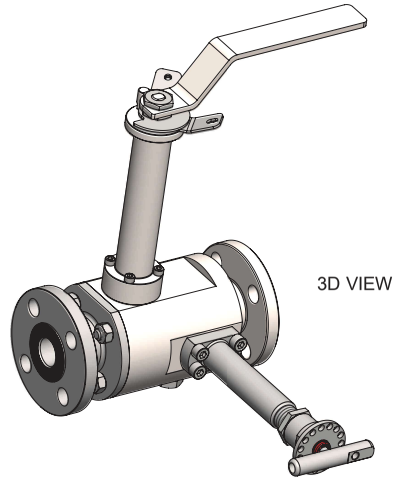
1. Construction: 1 Ball Isolate, 1 Needle Vent
2. Inlet: 1" Cl.150 RF (ASME B16.5)
3. Outlet: 1" Cl.150 RF (ASME B16.5)
4. Vent: 1/2" NPT Female (ASME B1.20.1)
5. Design Code: ASME B16.34 / B16.5 / ASME B1.20.1
6. Bore Size: Ball DN25, Needle 5mm
7. Antistatic device
8. Anti-blow out stem
9. Design Temperature: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







All dimensions are in mm



3D VIEW

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

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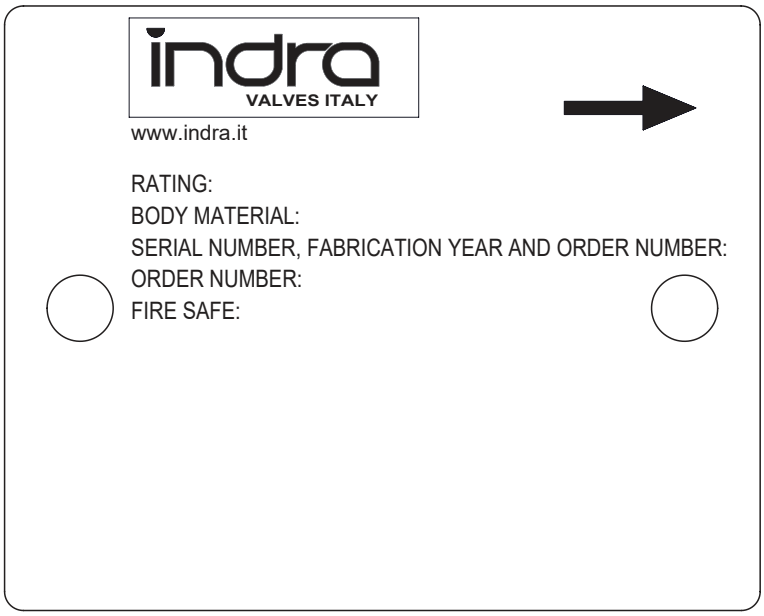
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A4 - ORIZ.

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

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

GENERIC NAMEPLATE





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

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A4_V