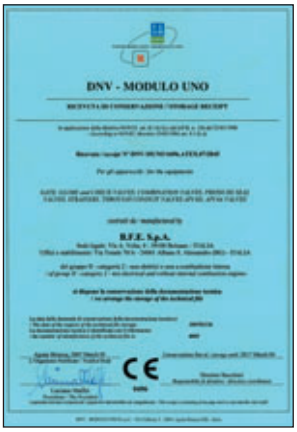
Forged Pressure Seal Valves

B.F.E. SpA

BONNEY FORGE VALVE LICENSEE

Global quality. Total reliability. Two recurrent claims in present-day corporate strategies. But the transition from words to actions demands tangible measures. Specialization and organization underlie what amounts to a "quality culture" at B.F.E., not in the abstract but as a set of specific rules governing every stage of production. An operating model that is good to have in a partner who bears the responsability of supplying valves that are essential to plant safety and regulation.



B.F.E. SpA

DESIGN, CONSTRUCTION, MARKING FOR PRESSURE SEAL VALVES

B.F.E. pressure seal valves are designed in accordance with ASME B16.34 and where applicable with API Std 600 or ISO 10434.

Ratings: 900 - 1500 and 2500 lbs standard and special class according to ANSI B16,34.
Valves class 4500 are available on request.
Body valves for sizes up to 12" are in one integral forged piece made in one operation in the closed die.
For valves more than 12" the body is made in two separate pieces and welded.
The weld is a full penetration type and made in accordance with ASME IX.
To garantie a good quality the weld is verify with ultrasonic or radiographic test.
The integral body for size more than 12" are available on request.
All large size valves are verified with a FEM analysis to evaluate the stressed components.

It is universally recognised that forgings are structurally superior to castings and more uniform in composition.
This is, in part, due to the continuous flow lines induced by the forging process, particularly in the highly critical areas at the junction of two substantially different volumes.
Furthermore, the quality of the forgings is established without the necessity of x-ray examination and the subsequent excavation, repair and heat treatment necessitated by presence of porosity traditionally found in casting.

Other properties found in forgings include greater impact resistance, resistance to fatigue cracking, particularly when cycling at either high or cryogenic temperature.

Face to Face dimensions are in accordance with ASME B16.10 Short pattern.
Butt Welding Ends machined to ASME B16,25.
Marking according to ASME B16.34 and MSS-SP55.

The pressure seal bonnet is obtained in two different design:

- For small sizes the thrust ring, made in stainless steel, is screwed on the body. (see dwg 1)
- For large sizes the thrust ring is a segmented ring inserted in the body cavity. (see dwg 2)

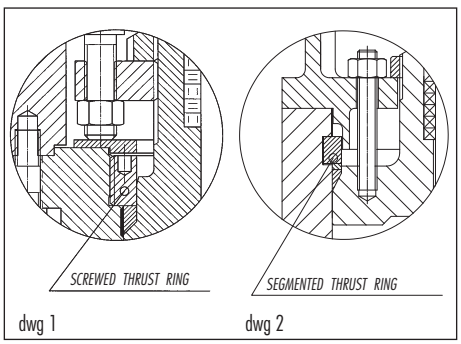
In case of use a stainless steel pressure seal gasket, the body contact surface shall be overlay with stainless steel material to garantie a perfect tighness during the live of valve.

BFE Pressure Seal Valve design is developed using the latest software based analysis tools.

At the design stage, all projects are analysed using 3D solid modeling tools. Benefits include reduction of development time and cost, improved product quality, and ability to solve field problems for customers. Product flexibility and accuracy is assured.

Finite Element Analysis (FEA) is a very important step at the development stage to ensure the best possible performance requirements.
Valves operational problems, pressure/temperature-related deformations and flow-related forces within a valve can be evaluated.

B.F.E. S.p.A. uses the FEA for predicting failure due to unknown stresses by showing problem areas in a material and allowing designers to see all of the theoretical stresses within. This method of product design and testing is far superior to the manufacturing costs which would accrue if each sample was actually built and tested.



dwg 1 dwg 2

During any analysis project, it is the responsibility of the B.F.E. analyst to verify that analysis results conform to the physics of the problem under study. Understanding the response of a structure or manufactured product allows effective design decisions to be made in developing structures and products that are functional, meet all engineering requirements, and can be manufactured and assembled.

Computational Fluid Dynamics (CFD) is used to simulate operating flow conditions. Evaluation of Valve CV coefficient and convective heat transfer coefficient takes place at the design stage.

GLOBE VALVES

B.F.E. design include straight, angle or "Y" type pattern. In case of no indication on customer requisition, B.F.E. offer straight pattern valve configuration.

SEAT RING

The seat rings on the gate and swing check valves are welded on the body for sizes over 1,5 inches,
Pressed in for size up 1.5 inches.
On globe and piston check valves the seat is integral with the body; renewable seat ring are available on request.

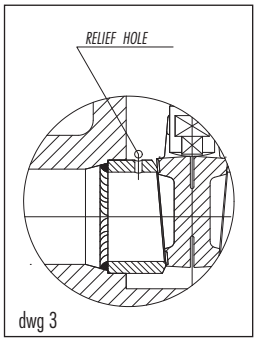
WEDGE

Solid wedge is used on 2 inches and smaller; integral flexible wedge for size over 2 inches.
Other type of wedge, split, double parallel disc or slab, are available on request.
On globe valves, B.F.E. can supply parabolic disc, plug type or stop check design according to customer request; the disc on globe and piston check valves is fully guided on the body.

PACKING

B.F.E. standard packing is made with pure graphite (99%) pressed rings with on top and bottom of braided graphite with corrosion inhibitor to prevent damage of stem surface.
The chamber wall surface roughness is Ra 1,6 and the roughness of stem surface is 0,2 Ra.
Live loading design to reduce the maintenance of packing is available on request.

Particular design and materials has been selected and tested in our internal laboratory to obtain a low emission from packing room.
In a gate valves only the internal cavity of body neck can retain water; increment of temperature cause a consequently increase of the internal pressure. This cause a very dangerous damage of the pressure retains components of valve.



dwg 3

To exclude that, B.F.E. suggest two different solution to connect the body neck cavity to the inlet flow pipe area:
- Use a balance pipe
- Relief hole on seat.

OPERATION

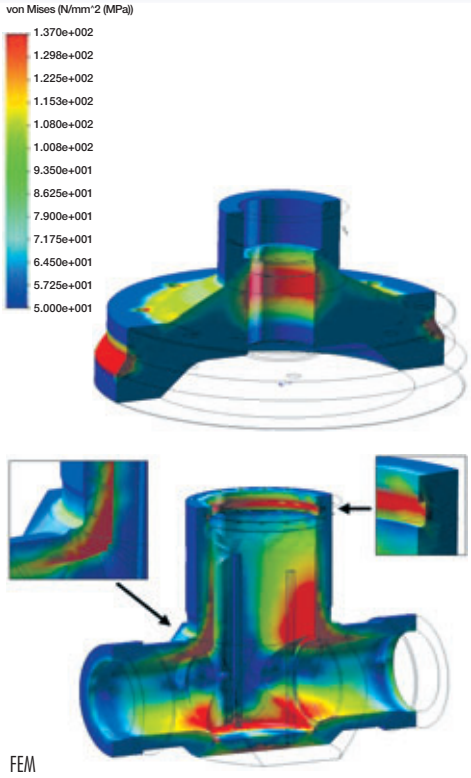
B.F.E. valves are available with hand wheel, bevel gear, spur gear or actuator.
Electrical, pneumatic or hydraulic actuators can be supplied on customer request.
Bevel gear operator is supplied on gate and globe valves to reduce operating torque on follow valves:

Gate class 900 for Dn 6" and over
Gate class 1500 for Dn 4" and over
Gate class 2500 for Dn 3" and over
Globe class 900 for Dn 4" and over
Globe class 1500 for Dn 3" and over
Globe class 2500 for Dn 3" and over

INSPECTION AND TESTING

Every valve is subjected on routine base to different non-destructive testing, like the dye penetrant test on butt weld ends, on all hard faced areas.

Non-destructive test are also carried out on the critical areas as defined by ANSI B.16.34.



FEM

Optional examinations like:
Radiographic
Magnetic particicles
Ultrasonic
Helium leak test
Can be performed and test certificate.
Personal performing NDT are trained and qualified to EN 473/ ASNT-SNT-TC-1A.

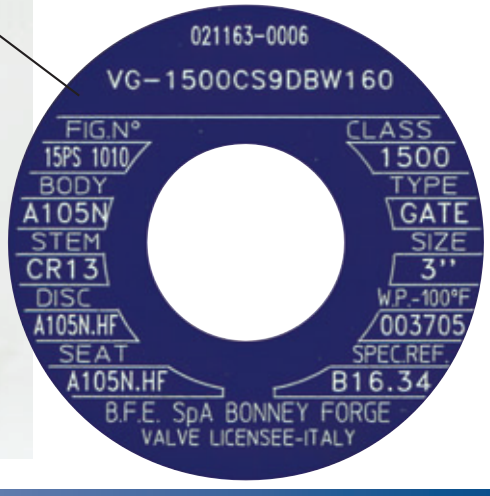
Every valve is subject to a pressure test in accordance with the standard API 598 or BS 6755 Part.1.
The rated pressure for the applicable pressure class is in accordance with ANSI B.16.34 / EN 12516-1-2.

MARKING AND IDENTIFICATION

Each valve is identified on proper name plate and on valve body as required by MSS- SP 25, B 16.34 Name plate carries all information on rating, size, valve body and trim material, customer tags.
On body, marking includes material designations (per ASTM) and heat code, size, rating and of course the trade mark.
Globe, check, gate valves with relief hole on seat, are supplementary marked with an arrow indicating flow direction.

ACCESSORIES

B.F.E. valves can be supplied with by-pass according to MSS-SP45; special by-pass arrangement is available on customer requirement.



PRESSURE SEAL VALVES
Type: Gate

Design Construction: ANSI B16.34 - ISO 12516-2
Classes: up to 4500 lbs, standard and special, intermediate classes on request

Testing according to API 598, BS 6755
Marking to MSS SP25

Outside Screw and Yoke (OS&Y)

Self aligning packing gland in two parts
Integral back seat
Welded in seats; for 2" and over
Disc: integral flexible wedge, parallel disc or split type on request

Butt Welding Ends according to ANSI B16.25
Face to face according to ANSI B16.10 short pattern

GATE VALVES CLASS 900

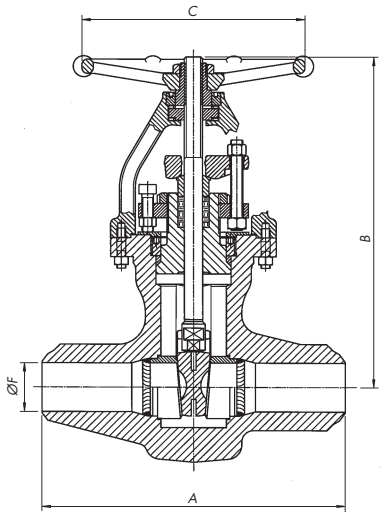
SIZE	1/2"	3/4"	1"	1 1/2"	2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"
A	216	229	254	305	368	305	356	508	660	787	864	991	1092	1194	1346	1473
B close	210	240	265	345	400	445	715	1050	1215	1495	1690	1770	2080	2125	2620	3080
stroke	18	20	26	39	52	67,5	90	136	175	230	265	295	355	380	430	530
C	97	138	138	172	234	430	430	450	600	600	600	600	600	600	800	800
F	14	18	24	36,6	47	60	80	120	160	210	245	275	330	350	400	495
G	-	-	-	-	-	-	-	180	210	230	350	390	390	480	500	540
H	-	-	-	-	-	-	-	735	885	1060	1390	1580	1720	1830	2200	2510
Weight Kg	6,5	10,5	13	23	45	87	152	342	616	980	1545	1583	2953	4305	5130	8470
Figure N°	9PS103	9PS104	9PS105	9PS107	9PS108	9PS1010	9PS1011	9PS1013	9PS1014	9PS1015	9PS1016	9PS1017	9PS1018	9PS1019	9PS1020	9PS1024

GATE VALVES CLASS 1500

SIZE	1/2"	3/4"	1"	1 1/2"	2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"
A	216	229	254	305	368	305	406	559	711	864	864	1067	1194	1346	1473	1664
B close	210	240	265	345	400	445	715	1050	1215	1495	1690	1770	2080	2125	2620	3080
stroke	18	20	26	39	52	67,5	90	136	175	230	265	295	355	380	430	530
C	97	138	138	172	234	430	300	450	600	600	600	600	600	600	800	800
F	14	18	24	36,6	47	60	80	120	160	210	245	275	330	350	400	495
G	-	-	-	-	-	-	180	180	210	230	350	390	390	480	500	540
H	-	-	-	-	-	-	540	735	885	1060	1390	1580	1720	1830	2200	2510
Weight Kg	6,5	10,5	13	23	45	87	155	350	630	1015	1545	1620	3050	4410	5290	8750
Figure N°	15PS103	15PS104	15PS105	15PS107	15PS108	15PS1010	15PS1011	15PS1013	15PS1014	15PS1015	15PS1016	15PS1017	15PS1018	15PS1019	15PS1020	15PS1024

GATE VALVES CLASS 2500

SIZE	1/2"	3/4"	1"	1 1/2"	2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"
A	264	273	308	387	451	368	457	610	762	864	864	1117	-	-	-	-
B close	285	320	325	390	430	685	737	1150	1207	1460	1770	1935	-	-	-	-
stroke	14	17	22	31	44	62	81	130	168	211	260	356	-	-	-	-
C	138	138	172	234	320	300	300	600	600	600	600	800	-	-	-	-
F	11,5	15	19,5	28	38	55	72	110	147	185	218	241	-	-	-	-
G	-	-	-	-	-	165	180	220	220	330	400	450	-	-	-	-
H	-	-	-	-	-	516	580	790	925	1275	1495	1705	-	-	-	-
Weight Kg	14,5	15	26	56	60	130	162	510	860	1210	1850	2720	-	-	-	-
Figure N°	25PS103	25PS104	25PS105	25PS107	25PS108	25PS1010	25PS1011	25PS1013	25PS1014	25PS1015	25PS1016	25SP1017	-	-	-	-



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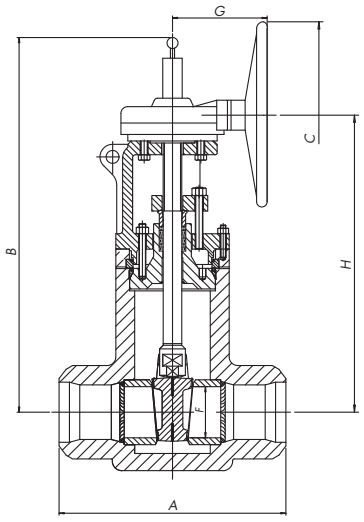


Size ≥ 6"

PRESSURE SEAL VALVES
Type: Globe

Design Construction : ANSI B16.34 - ISO 12516-2
Classes:_ up to 4500 lbs, standard and special, intermediate classes on request

Testing according to API 598, BS 6755
Marking to MSS SP25

Outside Screw and Yoke (OS&Y)

Self aligning packing gland in two parts
Integral back seat
Integral seat
Disc: loose on stem; needle or parabolic on request

Butt Welding Ends according to ANSI B16.25
Face to face according to ANSI B16.10 short pattern

GLOBE VALVES CLASS 900

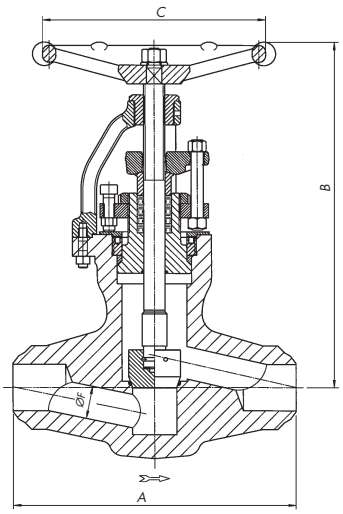
SIZE	1/2"	3/4"	1"	1 1/2"	2"	3"	4"	6"	8"	10"	12"
A	216	229	254	305	368	305	356	508	660	838	965
B close	210	240	265	345	400	635	720	805	1230	1750	1970
stroke	18	20	26	39	52	48	78	100	155	160	190
C	97	138	138	172	234	300	600	600	600	600	600
F	14	18	24	36,6	47	57	80	105	150	195	231
G	-	-	-	-	-	180	200	350	420	480	510
H	-	-	-	-	-	495	570	750	895	1350	1580
Weight Kg	6,5	10,5	13	23	45	90	132	391	765	1195	1910
Figure N°	9PS303	9PS304	9PS305	9PS307	9PS308	9PS3010	9PS3011	9PS3013	9PS3014	9PS3015	9PS3016

GLOBE VALVES CLASS 1500

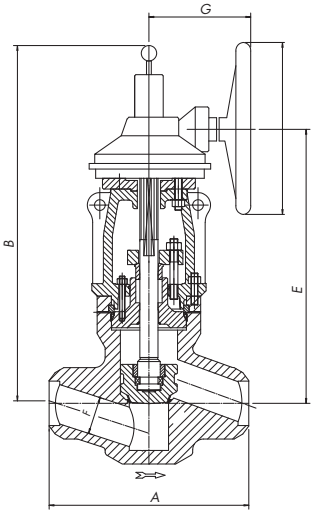
SIZE	1/2"	3/4"	1"	1 1/2"	2"	3"	4"	6"	8"	10"	12"
A	216	229	254	305	368	305	406	559	711	991	1130
B close	233	250	250	365	430	635	720	805	1230	1410	1590
stroke	17	22	24	30	35	48	78	100	155	195	250
C	97	138	138	172	234	300	600	600	600	600	600
F	12	14,5	19	31	40	57	80	105	150	195	231
G	-	-	-	-	-	180	225	350	420	480	480
H	-	-	-	-	-	495	570	750	895	1150	1340
Weight Kg	7,5	10,5	15	26	48	90	135	400	780	1250	1980
Figure N°	15PS303	15PS304	15PS305	15PS307	15PS308	15PS3010	15PS3011	15PS3013	15PS3014	15PS3015	15PS3016

GLOBE VALVES CLASS 2500

SIZE	1/2"	3/4"	1"	1 1/2"	2"	3"	4"	6"	8"	10"	12"
A	264	273	308	387	451	368	457	610	762	914	1041
B close	320	325	360	450	465	723	760	1090	1260	1650	1950
stroke	12	15	18	25	35	73	85	110	160	200	230
C	138	138	172	234	234	600	600	600	600	600	600
F	11	14,5	19	28	38	53	75	105	147	185	218
G	-	-	-	-	-	225	225	480	540	540	540
H	-	-	-	-	-	560	610	910	1070	1360	1470
Weight Kg	16	17	30	65	75	140	250	560	880	1520	1980
Figure N°	25PS303	25PS304	25PS305	25PS307	25PS308	25PS3010	25PS3011	25PS3013	25PS3014	25PS3015	25PS3016



Size ≤ 4"



Size ≥ 6"

PRESSURE SEAL VALVES
Type: Check

Design Construction : ANSI B16.34
Classes:_ up to 4500 lbs, standard and special, intermediate classes on request

Testing according to API 598, BS 6755
Marking to MSS SP25

Integral forged body

Welded in seats; integral seat on piston check only
Disc: swing or fully guided piston type

Butt Welding Ends according to ANSI B16.25
Face to face according to ANSI B16.10 short pattern
Larger sizes available on request

CHECK VALVES CLASS 900

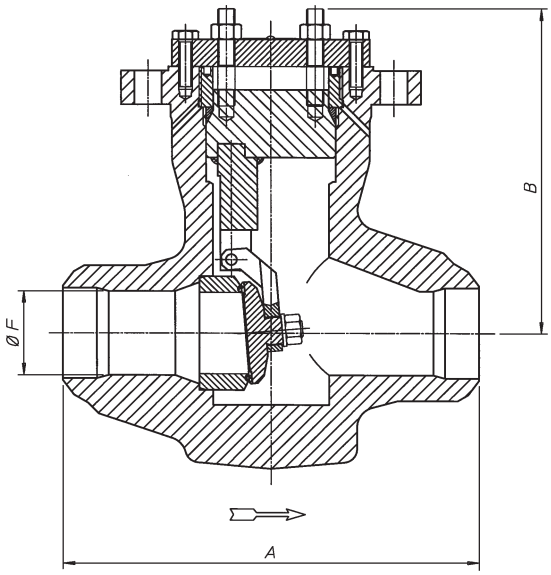
SIZE	1/2"	3/4"	1"	1 1/2"	2"	3"	4"	6"	8"	10"	12"	14"	16"
A	216	229	254	305	368	305	356	508	660	787	864	991	1092
B	105	125	135	155	195	236	292	430	544	505	590	610	698
F	14	18	24	36,6	47	60	80	120	160	210	245	275	330
Weight Kg	6	10	12	14	28	40	77	207	476	885	1620	2082	3405
Figure N°	9PS603	9PS604	9PS605	9PS607	9PS608	9PS6010	9PS6011	9PS6013	9PS6014	9PS6015	9PS6016	9PS6017	9PS6018

CHECK VALVES CLASS 1500

SIZE	1/2"	3/4"	1"	1 1/2"	2"	3"	4"	6"	8"	10"	12"	14"	16"
A	216	229	254	305	368	305	406	559	711	864	864	1067	1194
B	105	125	135	155	195	236	292	430	544	505	590	610	698
F	14	18	24	36,6	47	60	80	120	160	210	245	275	330
Weight Kg	6	10	12	14	28	40	80	215	490	920	1620	2120	3500
Figure N°	15PS603	15PS604	15PS605	15PS607	15PS608	15PS6010	15PS6011	15PS6013	15PS6014	15PS6015	15PS6016	15PS6017	15PS6018

CHECK VALVES CLASS 2500

SIZE	1/2"	3/4"	1"	1 1/2"	2"	3"	4"	6"	8"	10"	12"	14"	16"
A	210	210	230	230	279	368	457	610	762	864	864	1117	-
B	145	150	170	195	210	290	320	350	405	500	600	700	-
F	11,5	15	19,5	28	38	57	75	110	147	185	218	241	-
Weight Kg	11,5	13	21	38	57	40	80	400	620	795	1390	2800	-
Figure N°	25PS603	25PS604	25PS605	25PS607	25PS608	25PS6010	25PS6011	25PS6013	25PS6014	25PS6015	25PS6016	25PS6017	-



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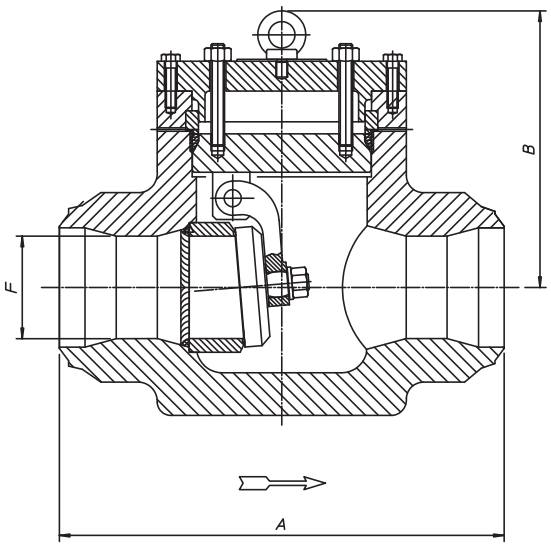


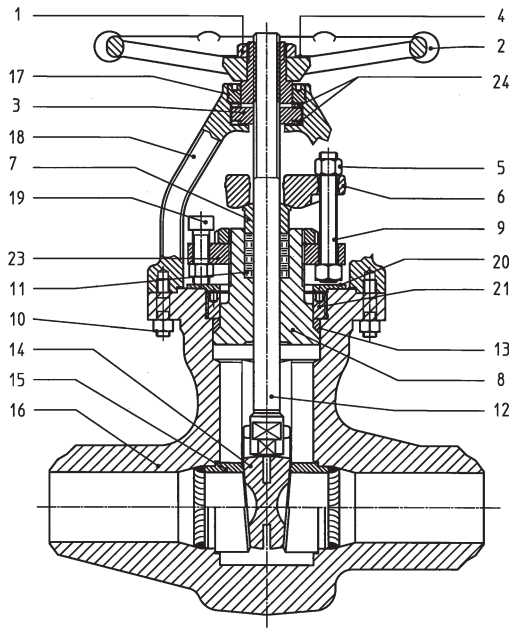
Size ≥ 6"

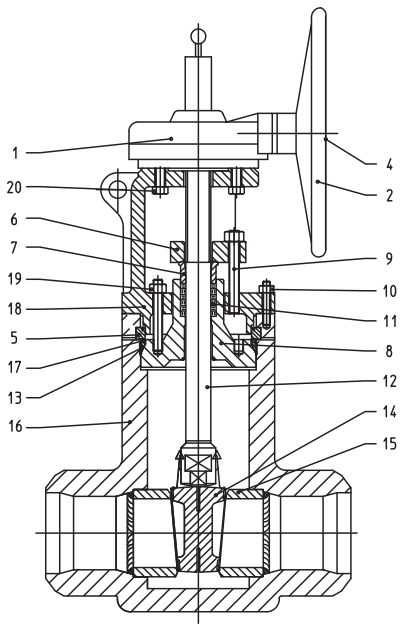
STANDARD MATERIALS SPECIFICATION (GATE)

POS.	PART NAME	MATERIAL							
		A105N/Cr13*	**LF2/Cr13***	**F11/Cr13***	**F22/Cr13***	**F91/Cr13***	**A105N/F316-L***	**F22/F316-L***	**F316-L/F316-L***
1	BEVEL GEAR	COMMERCIAL							
2	HANDWHEEL	CARBON STEEL							
4	NAME PLATE	AISI 316							
5	CUTTED RING	ASTM A479 410							
6	GLAND FLANGE	ASTM A105							
7	PACKING GLAND	AISI 316L							
8	BONNET	ASTM A105N+St.6	A350 LF2+St.6	A182 F11+St.6	A182 F22+St.6	A182 F91+St.6	ASTM A105N+St.6	A182 F22+St.6	A182 F316-L+St.6
9	GLAND STUDS	ASTM A193 B7/A194 2H							A193 B8/A194 Gr.8
10	STUD BOLTS	A193 B7/A194 2H	A320 L7/A194 Gr.4	A193 B16/A194 Gr.4			A193 B7/A194 2H	A193 B16/A194 Gr.4	A193 B8/A194 Gr.8
11	PACKING	GRAPHITE							
12	STEM for CL.1500	ASTM A479 410 (note 1)				ASTM A565 616	ASTM A479 316-L		
	STEM for CL.2500	ASTM A479 410 (note 1)				ASTM A565 616	ASTM A479 XM19 (note 1)		
13	B/B GASKET	GRAPHITE + AISI 316							
14	WEDGE	A216 WCB+St.6	ASTM A351 CA15+Stellite 6				A216 WCB+St.6	ASTM A351 CF8M+Stellite 6	
15	SEAT RING	ASTM A105N+St.6	A350 LF2+St.6	A739 B11+St.6	A739 B22+St.6	A182 F316+St.6	ASTM A105N+St.6	A739 B22+St.6	A182 F316+St.6
16	BODY	ASTM A105N	A350 LF2 QT	A182 F11 CL.2	A182 F22 CL.3	ASTM A182 F91	ASTM A105N	A182 F22 CL.3	ASTM A182 F316-L
17	SPACER RING	ASTM A479 410							
18	YOKE	ASTM A216 WCB							
19	STUD BOLTS	A193 B7/A194 2H	A320 L7/A194 Gr.4	A193 B16/A194 Gr.4			A193 B7/A194 2H	A193 B16/A194 Gr.4	A193 B8/A194 Gr.8
20	SCREW	ASTM A307-B							
POS.	**PART NAME**	**A105N/Cr13***	**LF2/Cr13***	**F11/Cr13***	**F22/Cr13***	**F91/Cr13***	**A105N/F316-L***	**F22/F316-L***	**F316-L/F316-L***
		MATERIAL							

NOTE:
1 – for working temperature > 450°C use ASTM A565 616 - UNS S42200

MATERIALS CAN BE VARY BETWEEN PRESSURE CLASSES AND VALVES DIAMETER AND MAY BE CHANGED WITHOUT NOTICE



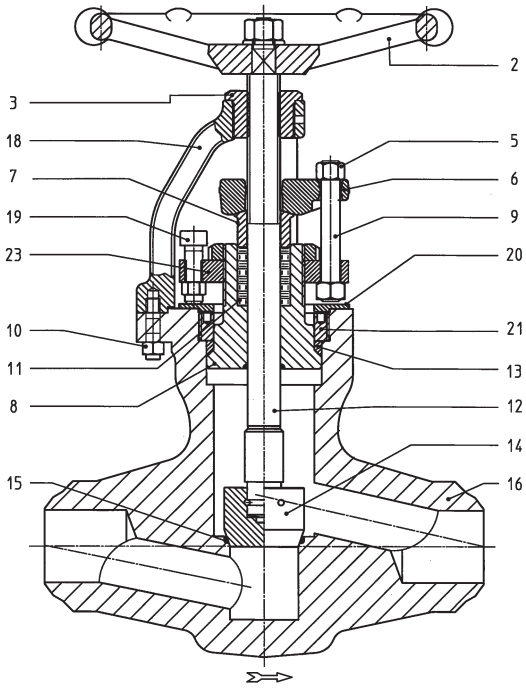


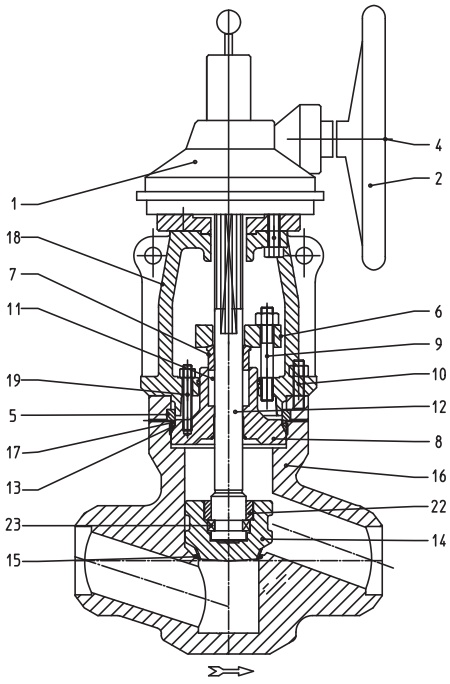
STANDARD MATERIALS SPECIFICATION (GLOBE)

POS.	PART NAME	MATERIAL							
		A105N/Cr13*	LF2/Cr13*	F11/Cr13*	F22/Cr13*	F91/Cr13*	A105N/F316-L*	F22/F316-L*	F316-L/F316-L*
1	BEVEL GEAR	COMMERCIAL							
2	HANDWHEEL	CARBON STEEL							
4	NAME PLATE	AISI 316							
5	CUTTED RING	ASTM A479 410							
6	GLAND FLANGE	ASTM A105							
7	PACKING GLAND	AISI 316L							
8	BONNET	ASTM A105N+St.6	A350 LF2+St.6	A739 B11+St.6	A739 B22+St.6	A182 F91+St.6	ASTM A105N+St.6	A739 B22+St.6	A479 316-L+St6
9	GLAND STUDS	ASTM A193 B7/A194 2H							A193 B8/A194 Gr.8
10	STUD BOLTS	A193 B7/A194 2H	A320 L7/A194 Gr.4	A193 B16/A194 Gr.4			A193 B7/A194 2H		A193 B8/A194 Gr.8
11	PACKING	GRAPHITE							
12	STEM	ASTM A479 410 (note 1)				ASTM A565 616	ASTM A479 XM19 (note 1)		
13	B/B GASKET	GRAPHITE + AISI 316							
14	DISC	ASTM A105+St.6	ASTM A479 410+Stellite 6				ASTM A479 316-L+Stellite 6		
15	INTEGRAL SEAT	STELLITE Gr.6							
16	BODY	ASTM A105N	A350 LF2 QT	A182 F11 CL.2	A182 F22 CL.3	ASTM A182 F91	ASTM A105N	A182 F22 CL.3	ASTM A182 F316-L
17	SPACER RING	ASTM A479 410							
18	YOKE	ASTM A216 WCB							
19	STUD BOLTS	A193 B7/A194 2H	A320 L7/A194 Gr.4	A193 B16/A194 Gr.4			A193 B7/A194 2H	A193 B16/A194 Gr.4	A193 B8/A194 Gr.8
20	SCREW	ASTM A307-B							
22	SCREVED RING	ASTM A479 410					ASTM A479 316-L		
23	SEGMENTED RING	ASTM A479 410					ASTM A479 316-L		
POS.	PART NAME	A105N/Cr13*	LF2/Cr13*	F11/Cr13*	F22/Cr13*	F91/Cr13*	A105N/F316-L*	F22/F316-L*	F316-L/F316-L*
		MATERIAL							

NOTE:
1 – for working temperature > 450°C use ASTM A565 616 - UNS S42200

MATERIALS CAN BE VARY BETWEEN PRESSURE CLASSES AND VALVES DIAMETER AND MAY BE CHANGED WITHOUT NOTICE

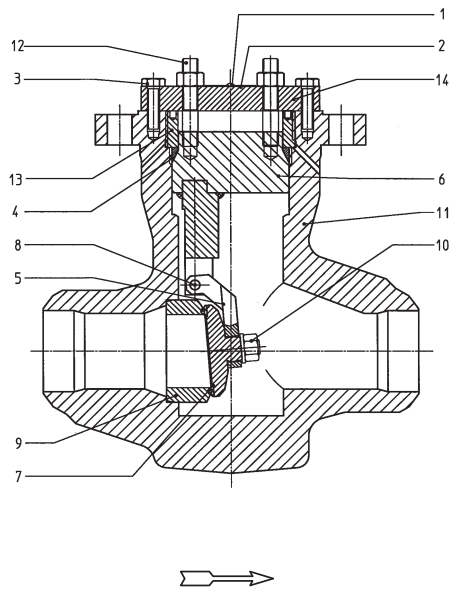


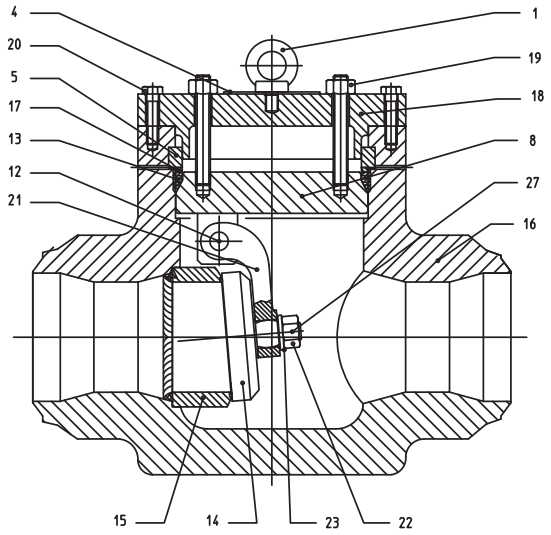


STANDARD MATERIALS SPECIFICATION (CHECK)

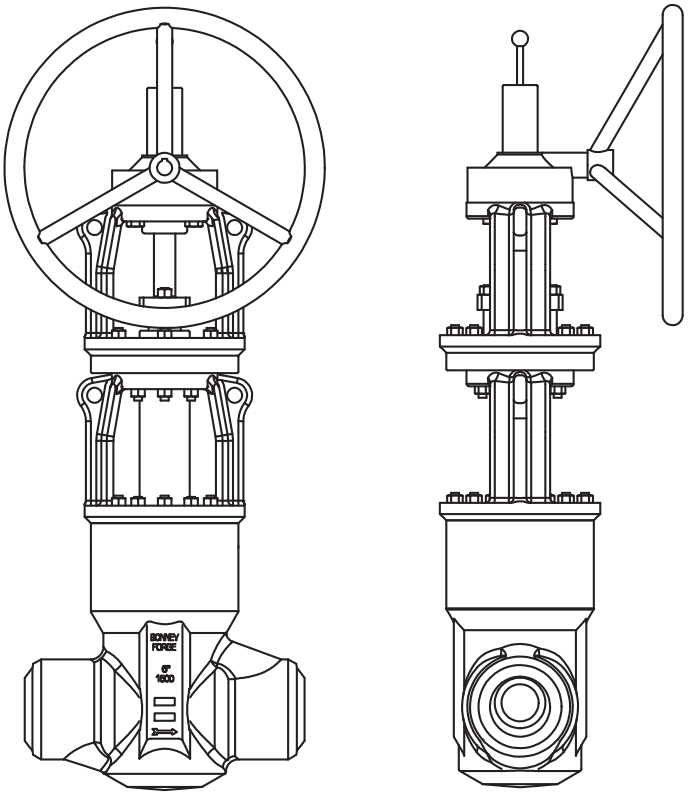
POS.	PART NAME	MATERIAL							
		A105N/Cr13*	**LF2/Cr13***	**F11/Cr13***	**F22/Cr13***	**F91/Cr13***	**A105N/F316-L***	**F22/F316-L***	**F316-L/F316-L***
1	EYEBOLT	CARBON STEEL							
4	NAME PLATE	AISI 316							
5	CUTTED RING	ASTM A479 410							
8	BONNET	ASTM A105N	ASTM A350 LF2	ASTM A739 B11	ASTM A739 B22	ASTM A182 F91	ASTM A105N	ASTM A739 B22	ASTM A182 F316
12	HINGE PIN	ASTM A479 410					ASTM A479 316-L		
13	B/B GASKET	GRAPHITE + AISI 316							
14	DISC	ASTM A105N+St.6	ASTM A479 410 + Stellite 6				ASTM A105N+St.6	ASTM A479 316 + Stellite 6	
15	SEAT RING	ASTM A105N+St.6	A350 LF2+St.6	A739 B11+St.6	A739 B22+St.6	A182 F316+St.6	ASTM A105N+St.6	A739 B22+St.6	A182 F316+St.6
16	BODY	ASTM A105N	A350 LF2 QT	A182 F11 CL.2	A182 F22 CL.3	ASTM A182 F91	ASTM A105N	A182 F22 CL.3	ASTM A182 F316
19	STUD BOLTS	A193 B7/A194 2H	A320 L7/A194 Gr.7	A193 B16/A194 Gr.4			A193 B7/A194 2H	A193 B16/A194 Gr.4	A193 B8/A194 Gr.8
17	SPACER RING	ASTM A479 410							
18	FLANGE	ASTM A105							
20	SCREW	ASTM A193 B7							
21	HINGE	ASTM A105	ASTM A240 316				ASTM A105	ASTM A240 316	
22	DISC NUT	ASTM A194 Gr.8M							
23	WASHER	AISI 316							
27	PIN	ASTM A479 316							
POS.	**PART NAME**	**A105N/Cr13***	**LF2/Cr13***	**F11/Cr13***	**F22/Cr13***	**F91/Cr13***	**A105N/F316-L***	**F22/F316-L***	**F316-L/F316-L***
		MATERIAL							

MATERIALS CAN BE VARY BETWEEN PRESSURE CLASSES AND VALVES DIAMETER AND MAY BE CHANGED WITHOUT NOTICE

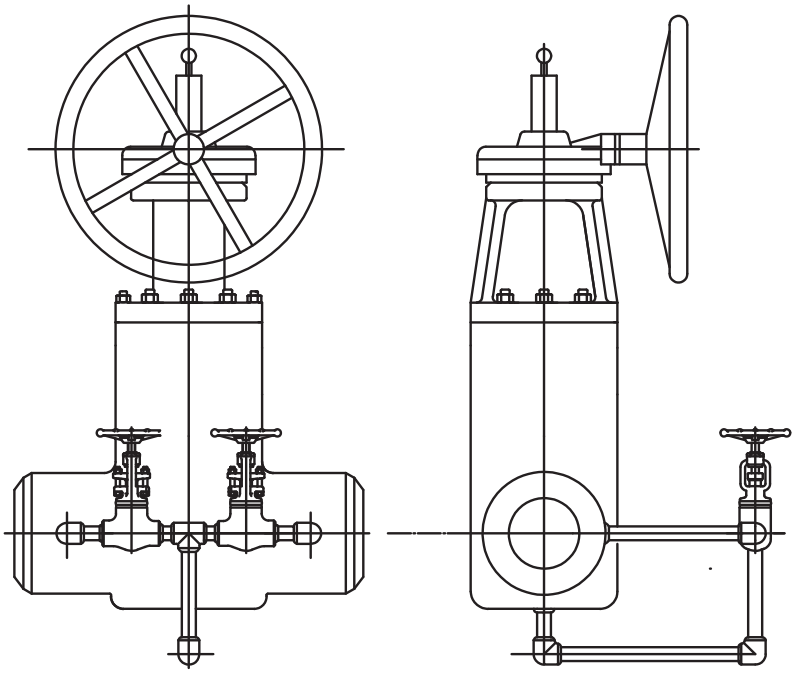




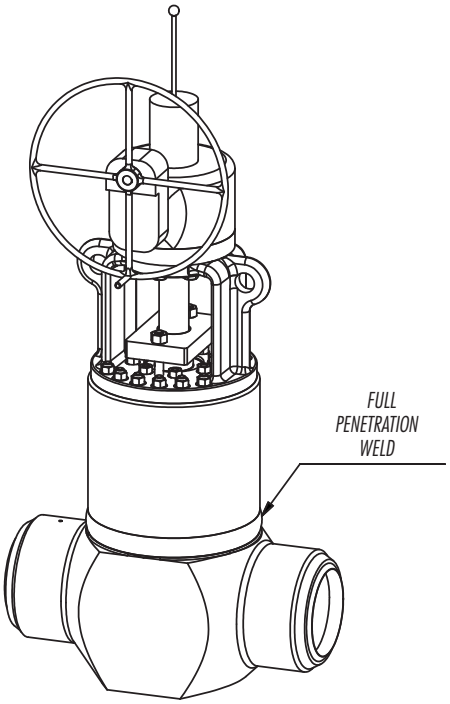
SPECIAL FEATURES



CRYOGENIC CONFIGURATION

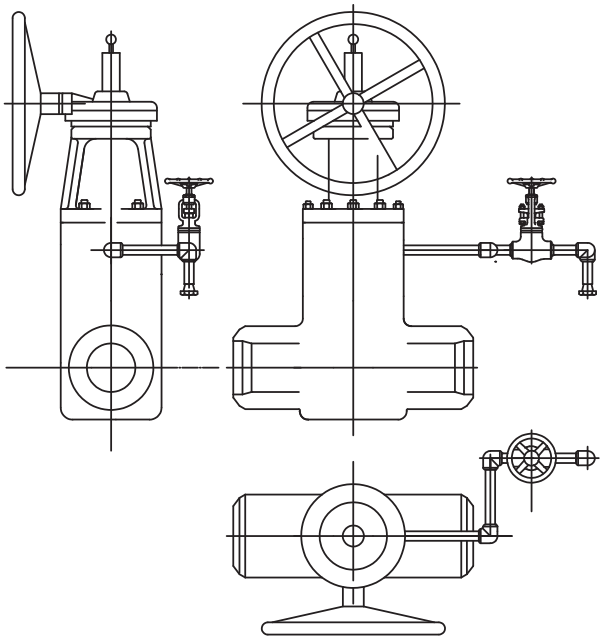


SPECIAL BY-PASS

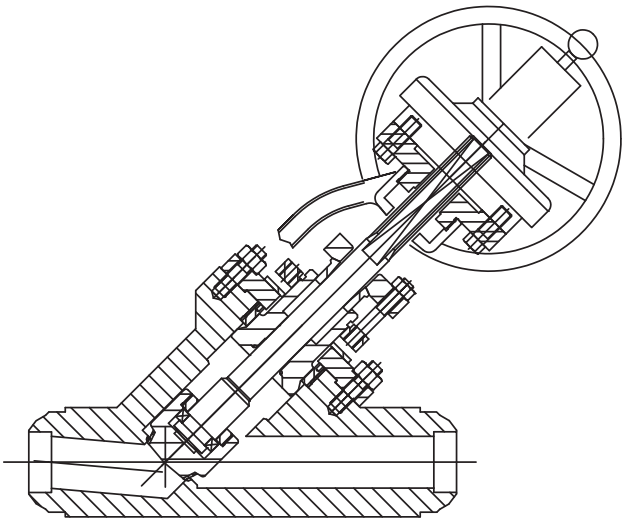


TWO PIECES BODY CONSTRUCTION

INTEGRAL BODY CONSTRUCTION



SAFETY DEVICE APPLICATION



GLOBE VALVE "Y" TYPE

GENERAL SALE CONDITIONS

QUOTATION VALIDITY

Unless otherwise agreed, quotations are valid for four weeks from date of issue.
The delivery terms are always "ex-works" unless otherwise stated.
Prices and sale conditions can be changed without any previous notice.

ORDERS ACCEPTANCE

Orders are considered accepted at our general sale conditions clearly mentioned on order acknowledgment.

GOODS DELIVERY

The Company does not accept any responsability for delays is delivery which are always intended as indicative and not binding. Transport risks are at receiver's charge also in case of CIF delivery.

GUARANTEE

The Company warrantees all its products, from material and/or manufacturing defects, to be used as recommended by standards, and in accordance with approved piping practice and technique, for a period of one year from shipping date, unless otherwise agreed.
The Company liability covers eventual "free of charge" replacements for defective parts or products, providing it has not failed in the observance of above mentioned conditions and in use in compliance with standards, and, anyway, after return of defective goods. Any other liability, neither objective nor subjective will be accepted.

CLAIMS AND ORDER CANCELLATIONS

Claims will be considered only if made within 10 days from goods receipt.
Partial or complete cancellations of order can be accepted only upon previous agreement or by written consent and, however, not later than 15 days from order date.
Any controversy will be handled by the Court of Milan.

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NEW TARGET

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