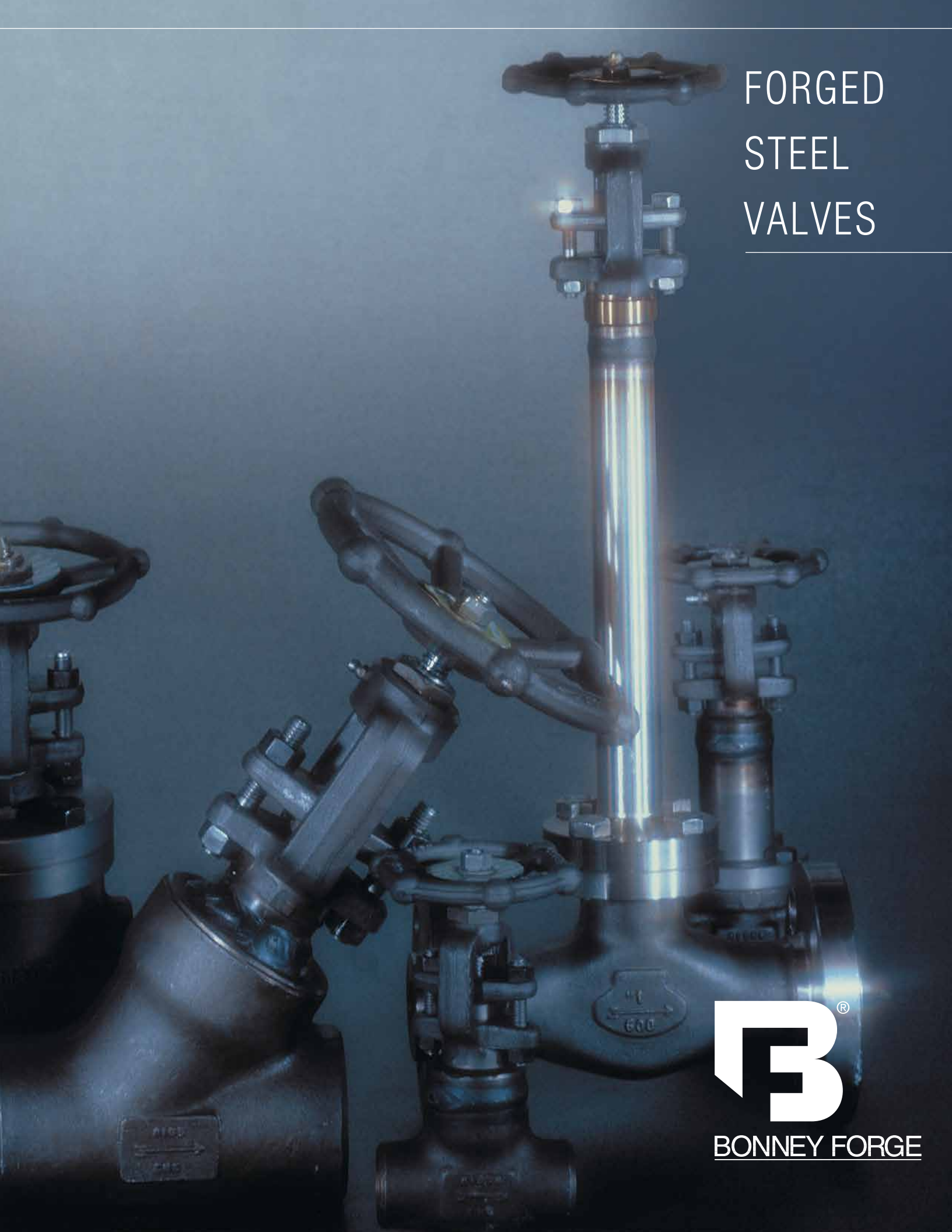


FORGED
STEEL
VALVES



BONNEY FORGE



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Bonney Forge—The Name You Trust for Forged Steel Valves

Bonney Forge's forged steel valves and piping components have led the way for over eighty years in state-of-the-art design and dependable performance. It is qualities like these, combined with a customer-driven culture, that maintains Bonney Forge's leadership position within the industry for exceeding customer expectations. Our goal is to make Bonney Forge your number one world-wide choice for forged valves.



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The Industry's Widest Range of Forged Steel Valves

Bonney Forge's forged steel valve range includes carbon steel, alloys, stainless steel, and exotic alloys. Valve types include gate, globe and check with ratings of 150 lbs. to 4500 lbs. There are also bellows sealed valves, cryogenic valves for temperatures to -321°F (-196°C) and valves with extended bodies. All available from one source!

Production Capabilities that Meet Your Demands

Bonney Forge is an integrated supplier with in-house forging, machining and assembly-test operations. Our forge shop contains a complete line of forging and support equipment, including a forge die shop, all located in one modern facility. Automated production lines and next generation machining systems

offer high volume capabilities with uncompromising quality.

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Bonney Forge products are manufactured and tested in strict accordance to ASTM, ASME, ANSI, API and other applicable industry codes and specifications. Chemical and mechanical properties of all Bonney Forge products are fully traceable to the original forging lot and raw material heat. Our extensive quality control system carefully monitors our manufacturing processes to assure a product that performs to the highest industry standards. Quality assurance procedures include 100% hydrostatic



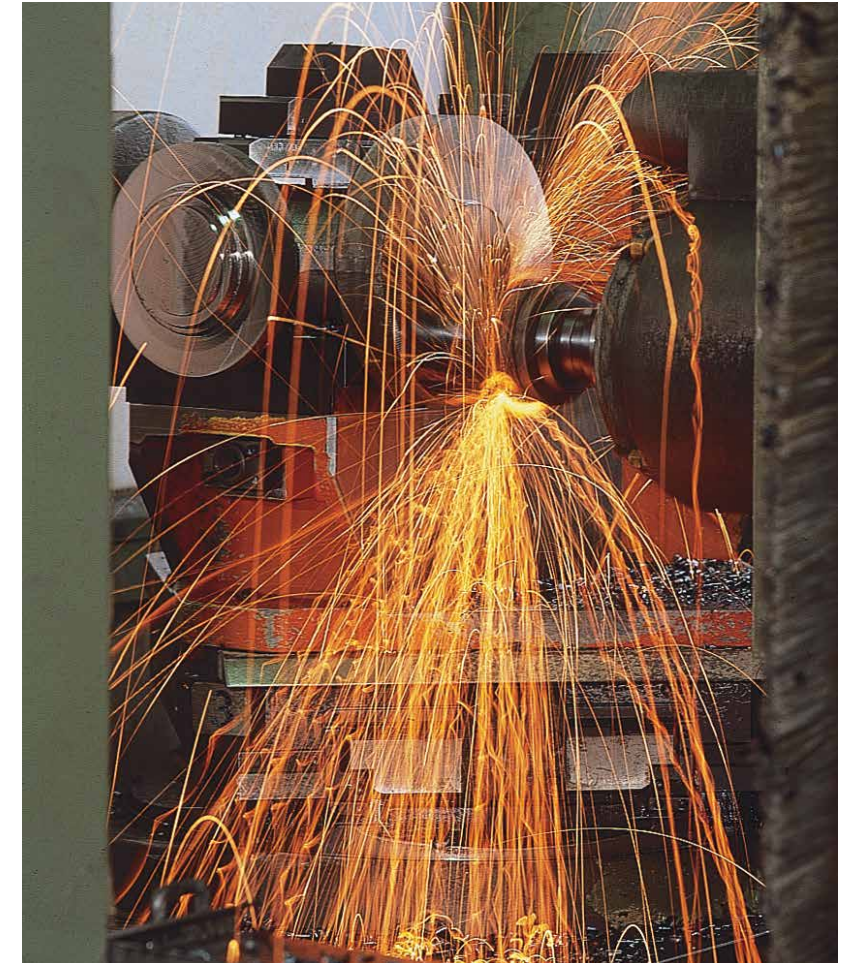
and pneumatic testing of all valves in full conformance to applicable API standards and industry codes. Bonney Forge has earned ISO 9001 designation through uncompromising, company-wide controls.

We're Here for You

This catalog offers a vast amount of product information and specifications. In the event that you need additional information or technical assistance please call our friendly and knowledgeable customer service personnel at 1-800-231-0655 or visit our web site at www.bonneyforge.com.



The Best Value - Price, Quality, Service All The Time.



1. Specify Valve Size
2. Select Valve Description from Section A
3. Select Valve Type desired from Section B
4. Indicate Body/Bonnet and Trim Material from Section C
5. Select End Configuration from Section D
6. Select Special Requirement(s) from Section E
7. Specify as a Suffix String, after Section D or E, any Body/Bonnet Material, Trim Material or Special Requirements not listed below

SECTION A- VALVE DESCRIPTION

H	Full Port, 800#, Bolted Bonnet
HL	Standard Port, 800#, Bolted Bonnet
W	Full Port, 800#, Welded Bonnet
WL	Standard Port, 800#, Welded Bonnet
9H	Full Port, 1500#, Bolted Bonnet
9HL	Standard Port, 1500#, Bolted Bonnet
9HR	Full Port, 1500#, RTJ Bolted Bonnet
25HR	Full Port, 2500#, RTJ Bolted Bonnet
9W	Full Port, 1500#, Welded Bonnet
9WL	Standard Port, 1500#, Welded Bonnet
25W	Full Port, 2500#, Welded Bonnet
45W	Full Port, 4500#, Welded Bonnet
Y	Full Port, 800#, Y-Pattern Body, Welded Bonnet
9Y	Full Port, 1500#, Y-Pattern Body, Welded Bonnet
1690Y	Full Port, 1690#, Y-Pattern Body, Welded Bonnet
25Y	Full Port, 2500#, Y-Pattern Body, Welded Bonnet
2680Y	Full Port, 2680#, Y-Pattern Body, Welded Bonnet
45Y	Full Port, 4500#, Y-Pattern Body, Welded Bonnet
1	150# Integral Flange, Full Port, Bolted Bonnet
3	300# Integral Flange, Full Port, Bolted Bonnet
6	600# Integral Flange, Full Port, Bolted Bonnet
15F	1500# Integral Flange, Full Port, Bolted Bonnet
25F	2500# Integral Flange, Full Port, Bolted Bonnet
L1	150# Integral Flange, Standard Port, Bolted Bonnet
L3	300# Integral Flange, Standard Port, Bolted Bonnet
L6	600# Integral Flange, Standard Port, Bolted Bonnet
C	Cryogenic, Full Port, 800#, Bolted Bonnet
CL	Cryogenic, Standard Port, 800#, Bolted Bonnet
CW	Cryogenic, Full Port, 800#, Welded Bonnet
CWL	Cryogenic, Standard Port, 800#, Welded Bonnet
9C	Cryogenic, Full Port, 1500#, Bolted Bonnet
9CL	Cryogenic, Standard Port, 1500#, Bolted Bonnet
9CW	Cryogenic, Full Port, 1500#, Welded Bonnet
9CWL	Cryogenic, Standard Port, 1500#, Welded Bonnet

SECTION A- VALVE DESCRIPTION (CONT.)

1C	Cryogenic, 150# Integral Flange, Full Port, Bolted Bonnet
1CL	Cryogenic, 150# Integral Flange, Standard Port, Bolted Bonnet
1CW	Cryogenic, 150# Integral Flange, Full Port, Welded Bonnet
1CWL	Cryogenic, 150# Integral Flange, Standard Port, Welded Bonnet
3C	Cryogenic, 300# Integral Flange, Full Port, Bolted Bonnet
3CL	Cryogenic, 300# Integral Flange, Standard Port, Bolted Bonnet
3CW	Cryogenic, 300# Integral Flange, Full Port, Welded Bonnet
3CWL	Cryogenic, 300# Integral Flange, Standard Port, Welded Bonnet
6C	Cryogenic, 600# Integral Flange, Full Port, Bolted Bonnet
6CL	Cryogenic, 600# Integral Flange, Standard Port, Bolted Bonnet
6CW	Cryogenic, 600# Integral Flange, Full Port, Welded Bonnet
6CWL	Cryogenic, 600# Integral Flange, Standard Port, Welded Bonnet
15CF	Cryogenic, 1500# Integral Flange, Full Port, Bolted Bonnet
15CWF	Cryogenic, 1500# Integral Flange, Full Port, Welded Bonnet
S	Bellows Sealed, Full Port, 800#, Bolted Bonnet
SL	Bellows Sealed, Standard Port, 800#, Bolted Bonnet
SHW	Bellows Sealed, Full Port, 800#, Welded Bonnet
SHWL	Bellows Sealed, Standard Port, 800#, Welded Bonnet
9S	Bellows Sealed, Full Port, 1500#, Bolted Bonnet
9SL	Bellows Sealed, Standard Port, 1500#, Bolted Bonnet
9SHW	Bellows Sealed, Full Port, 1500#, Welded Bonnet
9SHWL	Bellows Sealed, Standard Port, 1500#, Welded Bonnet
25SHW	Bellows Sealed, Full Port, 2500#, Welded Bonnet
1S	Bellows Sealed, 150# Integral Flange, Full Port, Bolted Bonnet
1SL	Bellows Sealed, 150# Integral Flange, Standard Port, Bolted Bonnet
1SHW	Bellows Sealed, 150# Integral Flange, Full Port, Welded Bonnet
1SHWL	Bellows Sealed, 150# Integral Flange, Standard Port, Welded Bonnet
3S	Bellows Sealed, 300# Integral Flange, Full Port, Bolted Bonnet
3SL	Bellows Sealed, 300# Integral Flange, Standard Port, Bolted Bonnet
3SHW	Bellows Sealed, 300# Integral Flange, Full Port, Welded Bonnet
3SHWL	Bellows Sealed, 300# Integral Flange, Standard Port, Welded Bonnet
6S	Bellows Sealed, 600# Integral Flange, Full Port, Bolted Bonnet
6SL	Bellows Sealed, 600# Integral Flange, Standard Port, Bolted Bonnet
6SHW	Bellows Sealed, 600# Integral Flange, Full Port, Welded Bonnet
6SHWL	Bellows Sealed, 600# Integral Flange, Standard Port, Welded Bonnet
15SF	Bellows Sealed, 1500# Integral Flange, Full Port, Bolted Bonnet
15SHWF	Bellows Sealed, 1500# Integral Flange, Full Port, Welded Bonnet
VOLL	Valvolet ® Extended Body, Lip End, Standard Port, 800#, Welded Bonnet
VOL	Valvolet ® Extended Body, O'Let End, Standard Port, 800#, Welded Bonnet
VLL	Valvolet ® Extended Body, Lip End, Standard Port, 800#, Bolted Bonnet
VL	Valvolet ® Extended Body, O'Let End, Standard Port, 800#, Bolted Bonnet

SECTION B- VALVE TYPE

9VOLL	Valvolet ® Extended Body, Lip End, Standard Port, 1500#, Welded Bonnet
9VOL	Valvolet ® Extended Body, O'Let End, Standard Port, 1500#, Welded Bonnet
9VLL	Valvolet ® Extended Body, Lip End, Standard Port, 1500#, Bolted Bonnet
9VL	Valvolet ® Extended Body, O'Let End, Standard Port, 1500#, Bolted Bonnet
MFL	Extended Body, Standard Port, 800#, Welded Bonnet
ML	Extended Body, Standard Port, 800#, Bolted Bonnet
9MFL	Extended Body, Standard Port, 1500#, Welded Bonnet
9ML	Extended Body, Standard Port, 1500#, Bolted Bonnet

SECTION B- VALVE TYPE

1	Gate
3	Globe
3R	Globe with renewable seats
4	Piston Check
4R	Piston Check with renewable seats
5	Ball Check
5R	Ball Check with renewable seats
6	Swing Check

SECTION C- BODY/BONNET, TRIM MATERIAL (CONT.)

1	A 105, Trim F6/HF, (API Trim #8)
2	A 105, Trim F6/FHF, (API Trim #5)
3	A 105, Trim F316/HF, (API Trim #12)
3F	A 105, Trim F316/FHF
4	A 105, Trim Monel, (API Trim #9) ¹
4S	A 105, Trim Monel 500/HF (API Trim #11) ²
4F	A 105, Trim Monel FHF
5	F22, Trim F6/HF, (API Trim #8)
5F	F22, Trim F6/FHF, (API Trim #5)
6	F5, Trim F6/HF, (API Trim #8)
6F	F5, Trim F6/FHF, (API Trim #5)
7	F304, Trim F304/HF
7F	F304, Trim F304/FHF
7L	F304L, Trim F304/HF
7LF	F304L, Trim F304/FHF
7H	F304H, Trim F304/HF
7HF	F304H, Trim F304/FHF
8	F316, Trim F316/HF, (API Trim #12)
8F	F316, Trim F316/FHF
8L	F316L, Trim F316/HF, (API Trim #12)
8LF	F316L, Trim F316/FHF
8H	F316H, Trim F316/HF, (API Trim #12)
8HF	F316H, Trim F316/FHF

1 - Gate, Swing Check provided with Monel 400 Wedge/Disc and Monel 500 Seat/Stem.
2 - Offered for Globe, Ball, Piston Check only.

SECTION C- BODY/BONNET, TRIM MATERIAL (CONT.)

9	F11, Trim F6/HF, (API Trim #8)
9F	F11, Trim F6/FHF, (API Trim #5)
A	F9, Trim F6/HF, (API Trim #8)
AF	F9, Trim F6/FHF, (API Trim #5)
LS	LF2, Trim F6/HF, (API Trim #8)
LF	LF2, Trim F6/FHF, (API Trim #5)
L3S	LF2, Trim F316/HF, (API Trim #12)
L3F	LF2, Trim F316/FHF
0	Other, to be specified

For an item not listed above, a figure number can be determined from the following.

Body/Bonnet Material	First Code Number/Letter	Trim Material	Second Code Letter
A105	1	F6/HF	S
LF2	L	F6/FHF	F
<hr/>			
F5	6	F304/HF	7
F9	A	F304/FHF	7F
F91	K	F316/HF	3
F11	9	F316/FHF	3F
F22	5	F317/HF	B
<hr/>			
F304, 304L, 304H	7, 7L, 7H	F317/FHF	BF
F316, 316L, 316H	8, 8L, 8H	F321/HF	E
317, 317L	B, BL	F321/FHF	EF
F321, 321H	E, EH	F347/HF	G
F347, 347H	G, GH	F347/FHF	GF
F44	J	F44	J
<hr/>			
Alloy 20	A2	F44/HF	JS
Monel 400	M4	F44/FHF	JF
Monel K-500	M5	F51	D
Hastelloy B	HB	F51/HF	DS
Hastelloy C-276	HC	F51/FHF	DF
Incoloy 800	I800	Alloy 20	A2
Incoloy 825	I825	Alloy 20/HF	A2S
<hr/>			
F51	D	Alloy 20/FHF	A2F
<hr/>			
		Monel 400	M4
		Monel 400/HF	M4S
		Monel 400/FHF	M4F
		Monel 500	M5
		Monel 500/HF	M5S
		Monel 500/FHF	M5F

Body/Bonnet Material	First Code Number/Letter	Trim Material	Second Code Letter
Titanium	T	Hastelloy B	HB
		Hastelloy B/HF	HBS
		Hastelloy B/FHF	HBF
		Hastelloy C	HC
		Hastelloy C/HF	HCS
		Hastelloy C/FHF	HCF
		Incoloy 800/HF	I
		Incoloy 800/FHF	IF
		Incoloy 825/HF	N
		Incoloy 825/FHF	NF
		Titanium/HF	T
		Titanium/FHF	TF

Examples: 1" Standard Port, 800#, Bolted Bonnet, Gate, A 105, Alloy 20/FHF Trim, Threaded Ends **Fig. No. 1" HL-11A2F-T**

3/4" Standard Port, 1500#, Welded Bonnet, Globe, F5, F316/HF Trim, Socket Weld Ends **Fig. No. 3/4" 9WL-363-SW**

SECTION D- END CONFIGURATION

- T = Threaded
- SW = Socket Weld
- SW/T = Socket Weld Inlet x Threaded Outlet
- T/SW = Thread Inlet x Socket Weld Outlet
- BW = Butt Weld
- P = Plain End
- RF = Flanged, Raised Face
- RTJ = Flanged, Ring Type Joint
- FF = Flat Face Finish
- SF = Smooth Face Finish
- N = Nipples, Customer Specify

SECTION E- SPECIAL REQUIREMENTS

- ASME Section I
- NACE
- Oxygen Service
- Hydrogen Service
- PMI
- Special Packing/Gaskets
- Other – Customer Specify

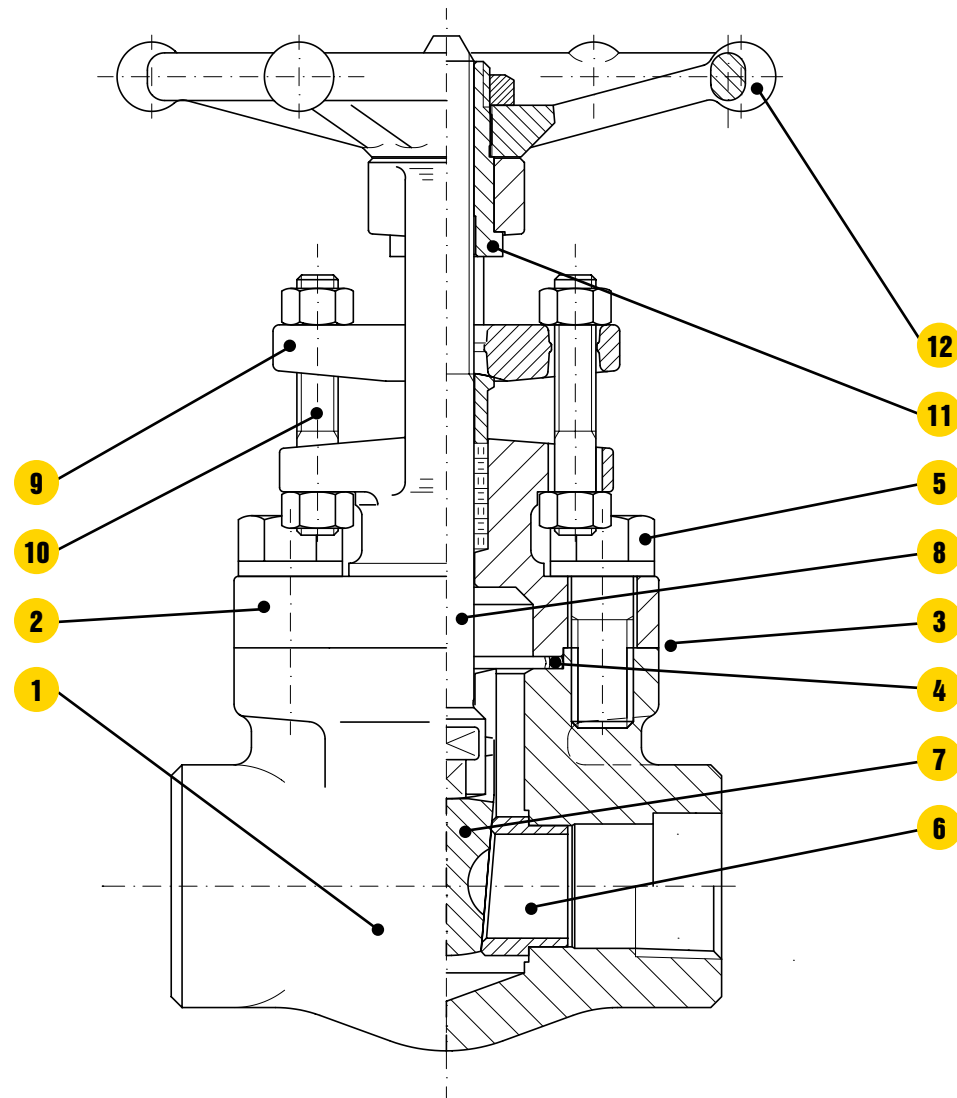
- Overview10
- Bolted Bonnet Gate- 800 lb. & 1500 lb. valves11
- Bolted Bonnet Gate- 1500 lb. & 2500 lb. valves12
- Welded Bonnet Gate- 800 lb. & 1500 lb. valves13
- Welded Bonnet Gate- 2500 lb. & 4500 lb. valves14

GATE VALVES



GATE VALVES

Forged steel, outside screw and yoke (OS&Y), rising stem, non-rising handwheel. Full or standard port. Bolted or welded bonnet joint. Integral backseat.

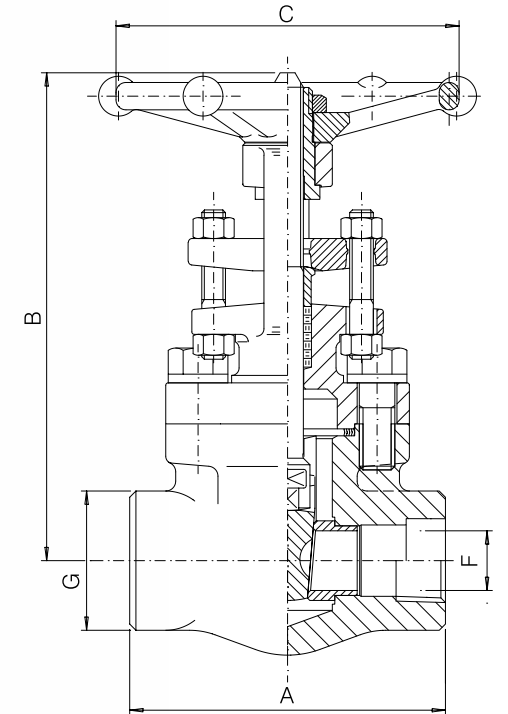


- 1. BODY.** The body is forged steel and designed to the basic dimensional requirements of the applicable specifications such as API 602 and ASME B16.34. The body is available in both the full or standard port design.
- 2. BONNET.** The bonnet is forged steel, has an integral backseat and incorporates the stuffing box, which has dimensions per the applicable specifications such as API 602.
- 3. BODY-BONNET JOINT.** Two different bonnet joint designs are available. These are either the bolted bonnet or the threaded and seal welded type.
- 4. GASKET.** The bolted bonnet joint design valve uses a contained, controlled compression, spiral wound type gasket.
- 5. BONNET BOLTING.** The bonnet bolting is manufactured of alloy steel in accordance with the requirements of the applicable specifications such as API 602 and ASME B16.34.
- 6. SEAT RINGS.** The seat rings are steel and makeup part of the valve trim. They are pressed into the valve body and wedged into place, forming a seal with the body. The seating surfaces are ground and lapped.
- 7. WEDGE.** The wedge, which is solid design, is forged or investment cast steel and is part of the valve trim. The seating surfaces are ground and lapped.

- 8. STEM.** The stem is forged steel and part of the valve trim. It contains an integral back seat shoulder, which mates with the integral backseat of the bonnet. The stem is designed to the basic dimensional requirements of the applicable specifications such as API 602.
- 9. GLAND AND FLANGE.** The gland, gland flange assembly utilizes a separate, two piece design. This self aligning design allows the flange to be unevenly tightened while the gland maintains it's parallel alignment with the stem and stuffing box.
- 10. GLAND BOLTS AND NUTS.** The steel/stainless steel gland bolt and nut assembly is a stud, double nut arrangement. This design allows complete removal from the valve when service is required. The use of industry standard thread full length studs and nuts also allows easy replacement should these items be lost or in need of replacement.
- 11. YOKE SLEEVE.** The yoke sleeve is of forged stainless steel material having a high melting point and is resistant to wear and corrosion.
- 12. HANDWHEEL.** The handwheel is forged carbon steel of an open spoke design. This robust construction along with appropriate sizing allows for ease of operation.

800 LB.
1500 LB.

Design construction:
API 602 - ASME B16.34 - BS 5352
Testing according to API 598
Marking MSS SP25
Outside Screw and Yoke (OS&Y)
Self aligning two piece packing gland
Spiral-wound gasket
Integral backseat
Socket Weld Ends to ASME B16.11
Screwed Ends (NPT) to ASME B1.20.1
Butt Welding Ends to ASME B16.25
Ratings:
- carbon steel class 800 1975 psig @ 100°F
138 bar + 38°C
- carbon steel class 1500 3705 psig @ 100°F
255 bar + 38°C



		FULL PORT - FIG. H 10							
SIZE	inch	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
	mm	6	10	15	20	25	32	40	50
A	inch	3.15	3.15	3.54	4.33	5	5	5.28	6
	mm	80	80	90	110	127	127	134	152
B open	inch	5.98	5.98	6.22	7.72	8.86	10.04	11.42	14.09
	mm	152	152	158	196	225	255	290	358
C	inch	3.46	3.46	3.46	3.82	5.43	5.43	5.43	6.77
	mm	88	88	88	97	138	138	138	172
F	inch	.31	.38	.55	.71	.94	1.18	1.48	1.83
	mm	8	9.6	14	18	24	30	36.5	46.5
G	inch	1.26	1.26	1.50	1.89	2.20	2.52	3.07	3.35
	mm	32	32	38	48	56	64	78	85
Weight	lb.	4.5	4.5	5	8.25	13	16.25	18.3	27.5
	kg	2.1	2.1	2.3	3.7	5.9	7.4	8.3	12.5
PACKING		BH2	BH2	BH2	BH4	BH5	BH6	BY5	BH8
GASKET		G2	G2	G2	G3	G4	G6	G11	G10

		STANDARD PORT - FIG. HL 10						
SIZE	inch	1/2	3/4	1	1 1/2	2	3	
	mm	15	20	25	40	50	80	
A	inch	3.15	3.54	4.33	5	5.28	8.86	
	mm	80	90	110	127	134	225	
B open	inch	5.98	6.22	7.72	10.04	11.42	12.35	
	mm	152	158	196	255	290	313	
C	inch	3.46	3.46	3.82	5.43	5.43	6.77	
	mm	88	88	97	138	138	172	
F	inch	.38	.55	.71	1.18	1.48	1.97	
	mm	9.6	14	18	30	36.5	50	
G	inch	1.26	1.5	1.89	2.52	3.07	4.65	
	mm	32	38	48	64	78	118	
Weight	lb.	4.25	5	7.75	16	16.75	38	
	kg	1.9	2.3	3.6	7.3	7.6	17.2	
PACKING		BH2	BH2	BH4	BH6	BY5	BH8	
GASKET		G2	G2	G3	G6	G11	G10	

		FULL PORT - FIG. 9H 10							
SIZE	inch	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
	mm	6	10	15	20	25	32	40	50
A	inch	3.54	3.54	4.33	5	5	5	5	8.27
	mm	90	90	110	127	127	127	127	210
B open	inch	6.02	6.02	7.48	8.66	9.84	11.10	11.42	13.58
	mm	153	153	190	220	250	282	290	345
C	inch	3.46	3.46	3.82	5.43	5.43	5.43	5.43	6.77
	mm	88	88	97	138	138	138	138	172
F	inch	.31	.38	.55	.71	.94	1.18	1.48	1.89
	mm	8	9.6	14	18	24	30	36.5	48
G	inch	1.50	1.50	1.89	2.20	2.52	3.07	3.07	3.35
	mm	38	38	48	56	64	78	78	85
Weight	lb.	5.25	5.25	9	13.75	17.5	23	24.25	44
	kg	2.4	2.4	4.1	6.2	8	10.5	11	20
PACKING		BH3	BH3	BH5	BH6	2B4	BY7	2B5	9B8
GASKET		G1	G1	G2	G3	G4	G5	G7	G8

		STANDARD PORT - FIG. 9HL 10						
SIZE	inch	1/2	3/4	1	1 1/2	2		
	mm	15	20	25	40	50		
A	inch	3.54	4.33	5	5	8.27		
	mm	90	110	127	127	210		
B open	inch	5.98	7.48	8.66	11.10	13.58		
	mm	152	190	220	282	345		
C	inch	3.46	3.82	5.43	5.43	5.43		
	mm	88	97	138	138	138		
F	inch	.38	.55	.71	1.18	1.48		
	mm	9.6	14	18	30	36.5		
G	inch	1.5	1.89	2.20	3.07	3.35		
	mm	38	48	56	78	85		
Weight	lb.	5.25	8.5	13.25	23.75	45.25		
	kg	2.4	3.9	6.1	10.8	20.5		
PACKING		BH3	BH5	BH6	2B5	BH8		
GASKET		G1	G2	G3	G5	G7		

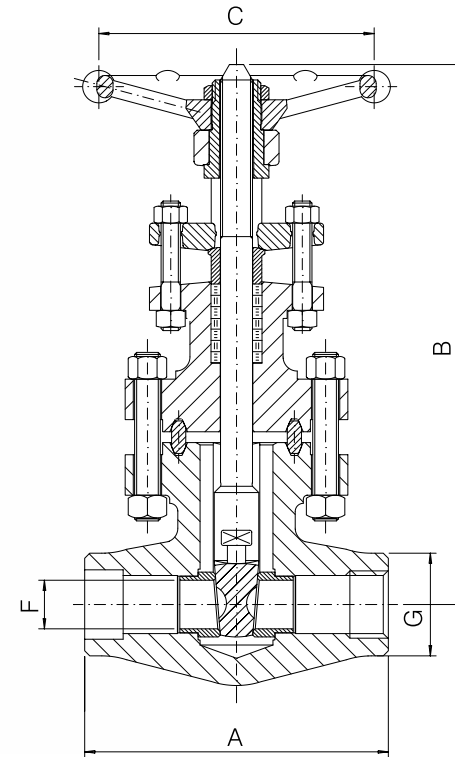
B[®] GATE VALVES- BOLTED BONNET- FULL PORT

BONNEY FORGE

1500 LB.

2500 LB.

Design construction:
 ASME B16.34 - BS 5352
 Outside Screw and Yoke (OS&Y)
 Self aligning two piece packing gland
 Integral backseat
 Oval ring joint gasket
 Socket Weld Ends to ASME B16.11
 Screwed Ends (NPT) to ASME B1.20.1
 Butt Welding Ends to ASME B16.25
 Ratings standard class:
 - carbon steel class 1500 3705 psig @ 100°F
 255 bar + 38°C
 - carbon steel class 2500 6170 psig @ 100°F
 425 bar + 38°C



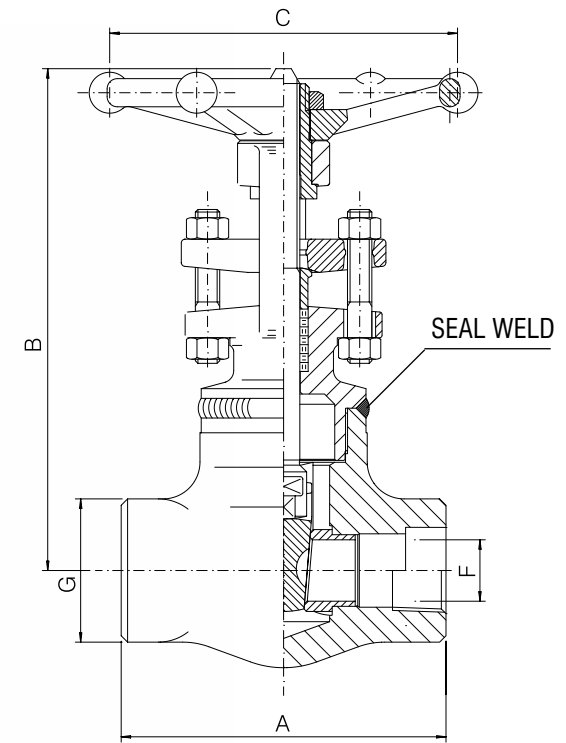
B[®] GATE VALVES- WELDED BONNET- FULL & STANDARD PORT

BONNEY FORGE

800 LB.

1500 LB.

Design construction:
 API 602 - ASME B16.34 - BS 5352
 Testing according to API 598
 Marking MSS SP25
 Outside Screw and Yoke (OS&Y)
 Self aligning two piece packing gland
 Integral backseat
 Body Bonnet Weld to ASME IX
 Socket Weld Ends to ASME B16.11
 Screwed Ends (NPT) to ASME B1.20.1
 Butt Welding Ends to ASME B16.25
 Ratings:
 - carbon steel class 800 1975 psig @ 100°F
 138 bar + 38°C
 - carbon steel class 1500 3705 psig @ 100°F
 255 bar + 38°C



FULL PORT - FIG. 9HR 10							
SIZE	inch	1/2	3/4	1	1 1/4	1 1/2	2
	mm	15	20	25	32	40	50
A	inch	4.33	5.91	5.91	8.27	8.27	9.06
	mm	110	150	150	210	210	230
B open	inch	9.17	11.38	11.54	14.06	14.41	17.76
	mm	233	289	293	357	366	451
C	inch	5.43	5.43	5.43	6.77	6.77	9.21
	mm	138	138	138	172	172	234
F	inch	.55	.71	.94	1.16	1.44	1.89
	mm	14	18	24	29.5	36.6	48
G	inch	1.5	2.17	2.17	2.95	2.95	3.62
	mm	38	55	55	75	75	92
Weight	lb.	11	20.25	20.25	44	44	79.25
	kg	5	9.2	9.2	20	20	36
PACKING		2B3	2B4	2B4	2B5	2B5	9B8
GASKET		R12	R17	R17	R20	R20	R24

FULL PORT - FIG. 25HR 10						
SIZE	inch	1/2	3/4	1	1 1/2	2
	mm	15	20	25	40	50
A	inch	5.91	5.91	8.27	9.06	9.06
	mm	150	150	210	230	230
B open	inch	11.10	11.3	13.70	15.98	17.20
	mm	282	287	348	406	437
C	inch	5.43	5.43	6.77	9.21	9.21
	mm	138	138	172	234	234
F	inch	.45	.59	.77	1.10	1.38
	mm	11.5	15	19.5	28	35
G	inch	2.17	2.17	2.95	3.62	3.62
	mm	55	55	75	92	92
Weight	lb.	22	22	48.5	81.5	79.25
	kg	10	10	22	37	36
PACKING		2B4	BH8	BH8	9B8	25B8
GASKET		R16	R16	R17	R20	R22

FULL PORT - FIG. W 10									
SIZE	inch	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
	mm	6	10	15	20	25	32	40	50
A	inch	3.15	3.15	3.54	4.33	5	5	5	8.27
	mm	80	80	90	110	127	127	127	210
B open	inch	5.98	5.98	6.22	7.72	8.86	10.04	11.42	14.09
	mm	152	152	158	196	225	255	290	358
C	inch	3.46	3.46	3.46	3.82	5.43	5.43	5.43	6.77
	mm	88	88	88	97	138	138	138	172
F	inch	.31	.38	.55	.71	.94	1.18	1.44	1.89
	mm	8	9.6	14	18	24	30	36.6	48
G	inch	1.26	1.26	1.5	1.89	2.20	2.52	3.07	3.35
	mm	32	32	38	48	56	64	78	85
Weight	lb.	3.25	3.25	4.25	7.75	11	14.25	20.75	35.25
	kg	1.5	1.5	2	3.5	5	6.5	9.5	16
PACKING		BH2	BH2	BH2	BH4	BH5	BH6	BY5	BH8

STANDARD PORT - FIG. WL 10						
SIZE	inch	1/2	3/4	1	1 1/2	2
	mm	15	20	25	40	50
A	inch	3.15	3.54	4.33	5	5
	mm	80	90	110	127	127
B open	inch	5.98	6.22	7.72	10.04	11.42
	mm	152	158	196	255	290
C	inch	3.46	3.46	3.82	5.43	5.43
	mm	88	88	97	138	138
F	inch	.38	.55	.71	1.18	1.44
	mm	9.6	14	18	30	36.6
G	inch	1.26	1.5	1.89	2.52	3.07
	mm	32	38	48	64	78
Weight	lb.	3.5	3.75	6.25	13.25	18
	kg	1.6	1.8	2.9	6.1	8.2
PACKING		BH2	BH2	BH4	BH6	BY5

FULL PORT - FIG. 9W 10									
SIZE	inch	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
	mm	6	10	15	20	25	32	40	50
A	inch	3.54	3.54	4.33	5	5	5	5	8.27
	mm	90	90	110	127	127	127	127	210
B open	inch	6.02	6.02	7.48	8.66	9.84	11.10	11.42	13.58
	mm	153	153	190	220	250	282	290	345
C	inch	3.46	3.46	3.82	5.43	5.43	5.43	5.43	6.77
	mm	88	88	97	138	138	138	138	172
F	inch	.31	.38	.55	.71	.94	1.18	1.44	1.89
	mm	8	9.6	14	18	24	30	36.6	48
G	inch	1.5	1.5	1.89	2.20	2.52	3.07	3.07	3.35
	mm	38	38	48	56	64	78	78	85
Weight	lb.	4.25	4.25	7.5	11.25	15.25	22	23	41.75
	kg	2.0	2.0	3.4	5.1	7	10	10.5	19
PACKING		BH3	BH3	BH5	BH6	2B4	BY7	2B5	2B8

STANDARD PORT - FIG. 9WL 10						
SIZE	inch	1/2	3/4	1	1 1/2	2
	mm	15	20	25	40	50
A	inch	3.54	4.33	5	5	8.27
	mm	90	110	127	127	210
B open	inch	6.02	7.48	8.66	11.10	13.58
	mm	153	190	220	282	345
C	inch	3.46	3.82	5.43	5.43	5.43
	mm	88	97	138	138	138
F	inch	.38	.55	.71	1.18	1.44
	mm	9.6	14	18	30	36.6
G	inch	1.5	1.89	2.20	3.07	3.35
	mm	38	48	56	78	85
Weight	lb.	4.25	7.25	11.5	21.5	40.25
	kg	2	3.3	5.3	9.8	18.3
PACKING		BH3	BH5	BH6	2B5	BH8

B[®] GATE VALVES- WELDED BONNET- FULL PORT

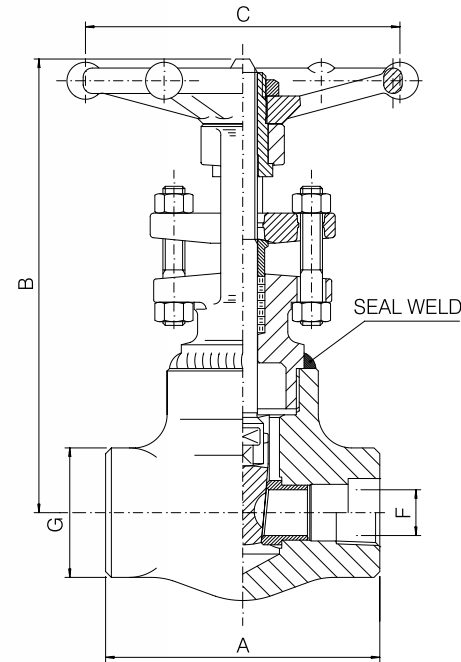
BONNEY FORGE

2500 LB.

4500 LB.

Design construction:

- ASME B16.34
- Outside Screw and Yoke (OS&Y)
- Self aligning two piece packing gland
- Integral backseat
- Body Bonnet Weld to ASME IX
- Socket Weld Ends to ASME B16.11
- Screwed Ends (NPT) to ASME B1.20.1
- Butt Welding Ends to ASME B16.25
- Ratings standard class:
- carbon steel class 2500 6170 psig @ 100°F
425 bar + 38°C
- carbon steel class 4500 11100 psig @ 100°F
765 bar + 38°C



		FULL PORT – FIG. 25W 10									
SIZE	inch mm	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2		
		6	10	15	20	25	32	40	50		
A	inch mm	4.33 110	4.33 110	5 127	5 127	5 127	5 127	8.27 210	9.06 230		
B open	inch mm	7.20 183	7.20 183	8.43 214	9.61 244	10.87 276	10.87 276	13.27 337	15.91 404		
C	inch mm	3.82 97	3.82 97	5.43 138	5.43 138	5.43 138	5.43 138	6.77 172	9.21 234		
F	inch mm	.31 8	.31 8	.45 11.5	.59 15	.77 19.5	.98 25	1.10 28	1.38 35		
G	inch mm	1.89 48	1.89 48	2.20 56	2.52 64	3.07 78	3.07 78	3.35 85	3.74 95		
Weight	lb. kg	11.25 5.2	11.5 5.3	11.75 5.4	15.75 7.2	21.5 9.8	21.5 9.8	43 19.5	63.75 29		
PACKING		2B4	2B4	2B4	BH8	BH8	2B5	2B5	2B8		

		FULL PORT – FIG. 45W 10				
SIZE	inch mm	1/2	3/4	1	1 1/2	2
		15	20	25	40	50
A	inch mm	5 127	5 127	9.06 230	9.06 230	17.76 451
B open	inch mm	10.39 264	10.83 275	14.37 365	15.75 400	17.56 446
C	inch mm	5.43 138	6.61 168	9.21 234	12.60 320	12.60 320
F	inch mm	.30 7.5	.45 11.5	.59 15	1.02 26	1.02 26
G	inch mm	3.07 78	3.07 78	3.74 95	3.74 95	4.72 120
Weight	lb. kg	22 10	26.5 12	40.8 18.5	59.5 27	81.5 37
PACKING		2B3	BH6	BY7	2B8	4B8

Available with Socket Weld or Butt-Weld Ends Only.
Materials and trim specifications Page 91

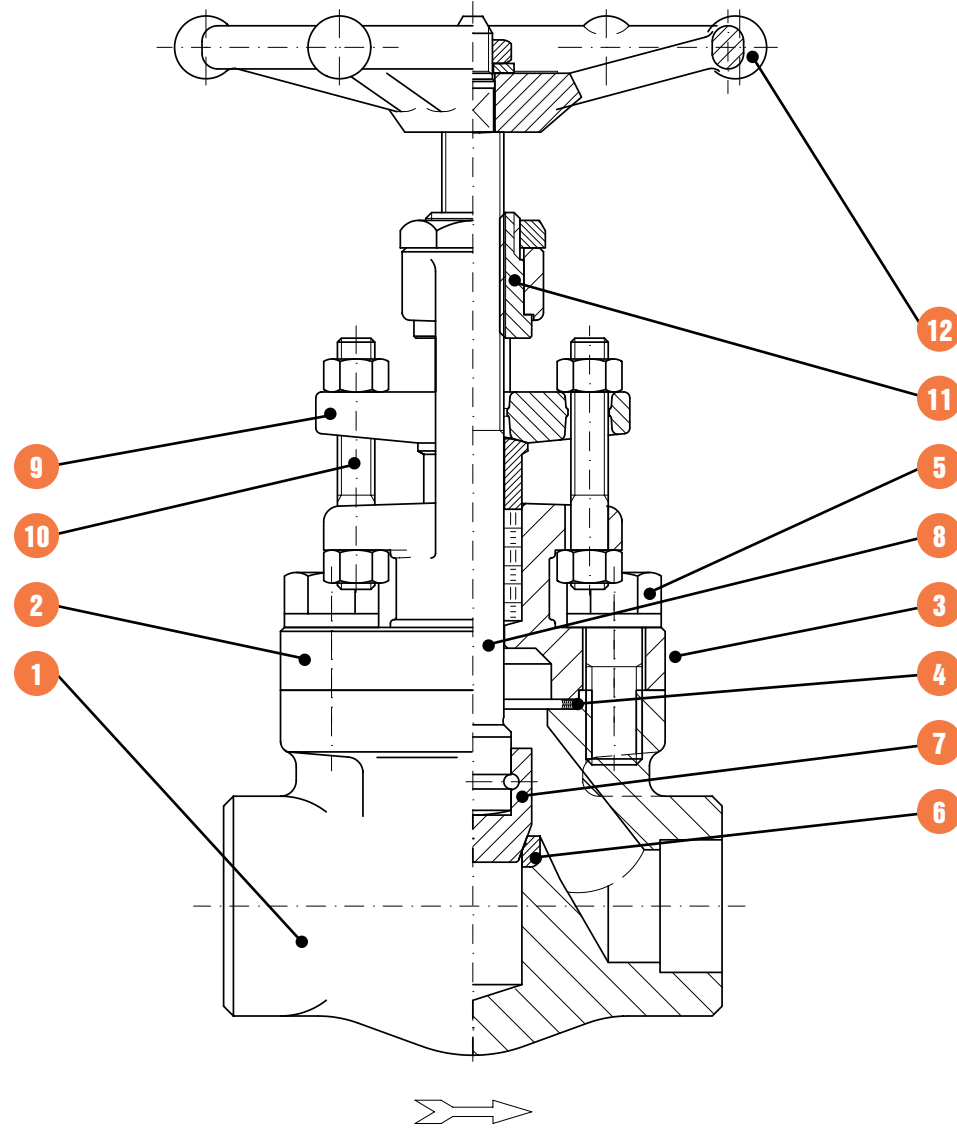
- Overview16
- Bolted Bonnet- 800 lb. &
1500 lb. valves17
- Bolted Bonnet- 1500 lb. &
2500 lb. valves18
- Welded Bonnet- 800 lb. &
1500 lb. valves19
- Welded Bonnet- 2500 lb. &
4500 lb. valves20
- Welded Bonnet (Y type)- 800 lb. &
1690 lb. valves21
- Welded Bonnet (Y type)- 2680 lb. &
4500 lb. valves22

GLOBE VALVES



GLOBE VALVES

Forged steel, outside screw and yoke (OS&Y), rotating rising stem, rising handwheel. Full or standard port. Bolted or welded bonnet joint. T-Pattern or Y-Pattern. Integral back-seat. Integral body seat.

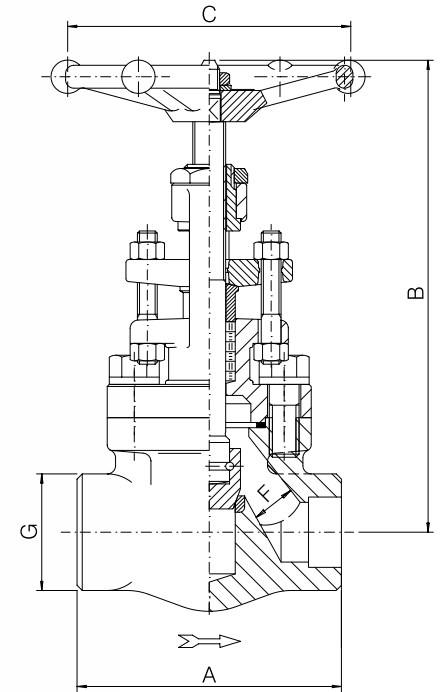


- 1. BODY.** The body is forged steel and designed to the basic dimensional requirements of the applicable specifications such as API 602 and ASME B16.34. The body is available in both the full or standard port design. It is also available in either T-pattern or Y-pattern configuration.
- 2. BONNET.** The bonnet is forged steel, has an integral backseat and incorporates the stuffing box, which has dimensions per the applicable specifications such as API 602.
- 3. BODY-BONNET JOINT.** Two different bonnet joint designs are available. These are either the bolted bonnet or the threaded and seal welded type.
- 4. GASKET.** The bolted bonnet joint design valve uses a contained, controlled compression, spiral wound type gasket.
- 5. BONNET BOLTING.** The bonnet bolting is manufactured of alloy steel in accordance with the requirements of the applicable specifications such as API 602 and ASME B16.34.
- 6. SEAT.** The body seat is an integral weld overlay and is part of the valve trim.
- 7. DISC.** The disc is forged steel and is part of the valve trim. The disc seating surface is of the tapered or plug type design. The disc is attached to the stem using a loose or swivel disc arrangement.

- 8. STEM.** The stem is forged steel and part of the valve trim. It contains an integral back seat shoulder, which mates with the integral backseat of the bonnet. The stem is designed to the basic dimensional requirements of the applicable specifications such as API 602.
- 9. GLAND AND FLANGE.** The gland, gland flange assembly utilizes a separate, two piece design. This self aligning design allows the flange to be unevenly tightened while the gland maintains its parallel alignment with the stem and stuffing box.
- 10. GLAND BOLTS AND NUTS.** The steel/stainless steel gland bolt and nut assembly is a stud, double nut arrangement. This design allows complete removal from the valve when service is required. The use of industry standard thread full length studs and nuts also allows easy replacement should these items be lost or in need of replacement.
- 11. YOKE SLEEVE.** The yoke sleeve is of forged stainless steel material having a high melting point and is resistant to wear and corrosion.
- 12. HANDWHEEL.** The handwheel is forged carbon steel of an open spoke design. This robust construction along with appropriate sizing allows for ease of operation.

800 LB.
1500 LB.

Design construction:
ASME B16.34 - BS 5352
Testing according to API 598
Marking MSS SP25
Outside Screw and Yoke (OS&Y)
Self aligning two piece packing gland
Spiral-wound gasket
Integral backseat
Loose solid disc
Socket Weld Ends to ASME B16.11
Screwed Ends (NPT) to ASME B1.20.1
Butt Welding Ends to ASME B16.25
Ratings:
- carbon steel class 800 1975 psig @ 100°F
138 bar + 38°C
- carbon steel class 1500 3705 psig @ 100°F
255 bar + 38°C



800 LB.		FULL PORT - FIG. H 30									
		SIZE	inch	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
		mm	6	10	15	20	25	32	40	50	
A	inch	3.15	3.15	3.54	4.33	5	6	7.09	8.27		
	mm	80	80	90	110	127	150	180	210		
B open	inch	6.54	6.54	6.73	8.39	9.72	10.16	11.81	14.76		
	mm	166	166	171	213	247	258	300	375		
C	inch	3.46	3.46	3.46	3.82	5.43	5.43	6.77	6.77		
	mm	88	88	88	97	138	138	172	172		
F	inch	.28	.35	.51	.69	.89	1.16	1.38	1.79		
	mm	7	9	13	17.5	22.5	29.5	35	45.5		
G	inch	1.26	1.26	1.5	1.89	2.20	2.52	3.07	3.35		
	mm	32	32	38	48	56	64	78	85		
Weight	lb.	4.75	4.75	5.25	8.25	13.25	16.75	27.5	43.25		
	kg	2.2	2.2	2.4	3.8	6.1	7.6	12.5	19.6		
PACKING		BH3	BH3	BH3	BH5	BY5	BY5	BY7	BH8		
GASKET		G2	G2	G2	G3	G4	G6	G7	G9		

800 LB.		STANDARD PORT - FIG. HL 30					
		SIZE	inch	1/2	3/4	1	1 1/2
		mm	15	20	25	40	50
A	inch	3.15	3.54	4.33	6	7.09	
	mm	80	90	110	150	180	
B open	inch	6.54	6.73	8.39	10.16	11.81	
	mm	166	171	213	258	300	
C	inch	3.46	3.46	3.82	5.43	6.77	
	mm	88	88	97	138	172	
F	inch	.35	.51	.69	1.16	1.38	
	mm	9	13	17.5	29.5	35	
G	inch	1.26	1.5	1.89	2.52	3.07	
	mm	32	38	48	64	78	
Weight	lb.	4.5	5	8	16.25	26.25	
	kg	2.1	2.3	3.7	7.4	11.9	
PACKING		BH3	BH3	BH5	BY5	BY7	
GASKET		G2	G2	G3	G6	G7	

1500 LB.		FULL PORT - FIG. 9H 30									
		SIZE	inch	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
		mm	6	10	15	20	25	32	40	50	
A	inch	3.54	3.54	4.33	5	6	7.09	8.27	9.06		
	mm	90	90	110	127	150	180	210	230		
B open	inch	6.54	6.54	8.27	9.72	10.08	11.81	14.76	16.85		
	mm	166	166	210	247	256	300	375	428		
C	inch	3.46	3.46	3.82	5.43	5.43	6.77	6.77	9.21		
	mm	88	88	97	138	138	172	172	234		
F	inch	.28	.35	.47	.59	.79	1.06	1.26	1.57		
	mm	7	9	12	15	20	27	32	40		
G	inch	1.5	1.5	1.89	2.20	2.52	3.07	3.35	3.74		
	mm	38	38	48	56	64	78	85	95		
Weight	lb.	5.75	5.75	9.25	14.25	18.75	27.5	49	79.25		
	kg	2.6	2.6	4.2	6.5	8.5	12.5	22.3	36		
PACKING		BH3	BH3	BH5	2B4	2B4	2B5	BH8	9B8		
GASKET		G1	G1	G2	G3	G4	G5	G7	G8		

1500 LB.		STANDARD PORT - FIG. 9HL 30					
		SIZE	inch	1/2	3/4	1	1 1/2
		mm	15	20	25	40	50
A	inch	3.54	4.33	5	7.09	8.27	
	mm	90	110	127	180	210	
B open	inch	6.54	8.27	9.84	11.81	14.76	
	mm	166	210	250	300	375	
C	inch	3.46	3.82	5.43	6.77	6.77	
	mm	88	97	138	172	172	
F	inch	.35	.47	.59	1.06	1.26	
	mm	9	12	15	27	32	
G	inch	1.5	1.89	2.20	3.07	3.35	
	mm	38	48	56	78	85	
Weight	lb.	5.25	8.75	14.25	28.5	48.5	
	kg	2.4	4	6.5	13	22	
PACKING		BH3	BH5	2B4	2B5	BH8	
GASKET		G1	G2	G3	G5	G7	

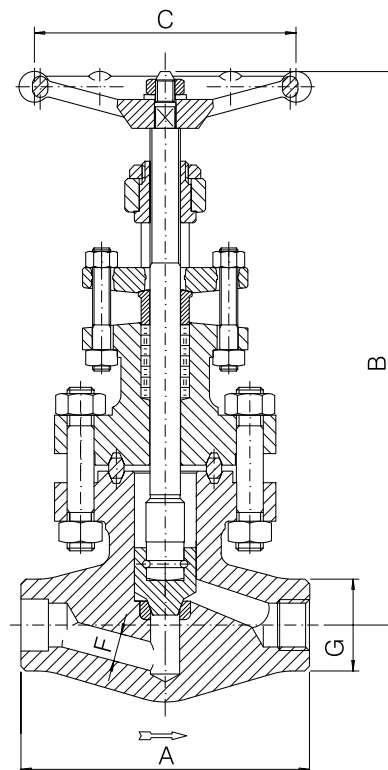
B[®] GLOBE VALVES- BOLTED BONNET- FULL PORT

BONNEY FORGE

1500 LB.
2500 LB.

Design construction:
ASME B16.34 - BS 5352
Testing according to API 598
Marking MSS SP55
Outside Screw and Yoke (OS&Y)
Self aligning two piece packing gland
Integral backseat
Oval ring joint gasket
Loose solid disc
Socket Weld Ends to ASME B16.11
Screwed Ends (NPT) to ASME B1.20.1
Butt Welding Ends to ASME B16.25
Ratings standard class:

- carbon steel class 1500 3705 psig @ 100°F
255 bar + 38°C
- carbon steel class 2500 6170 psig @ 100°F
425 bar + 38°C



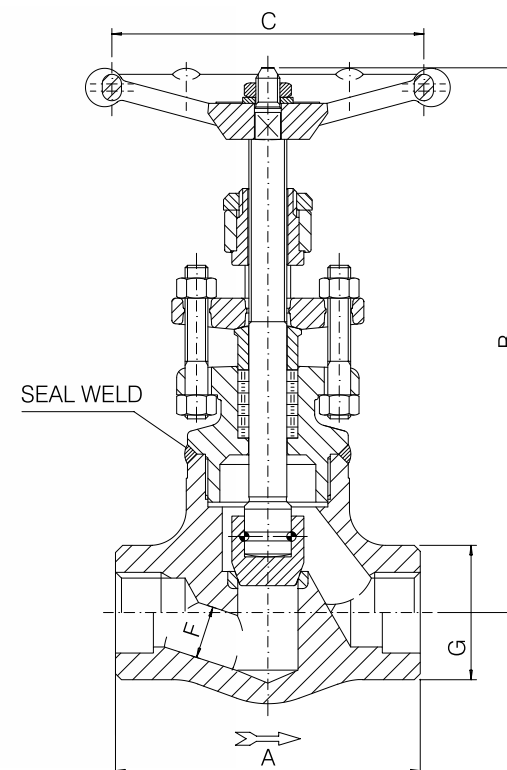
B[®] GLOBE VALVES- WELDED BONNET- FULL & STANDARD PORT

BONNEY FORGE

800 LB.
1500 LB.

Design construction:
ASME B16.34 - BS 5352
Testing according to API 598
Marking MSS SP25
Outside Screw and Yoke (OS&Y)
Self aligning two piece packing gland
Integral backseat
Body bonnet weld to ASME IX
Loose solid disc
Socket Weld Ends to ASME B16.11
Screwed Ends (NPT) to ASME B1.20.1
Butt Welding Ends to ASME B16.25
Ratings:

- carbon steel class 800 1975 psig @ 100°F
138 bar + 38°C
- carbon steel class 1500 3705 psig @ 100°F
255 bar + 38°C



SIZE	inch mm	FULL PORT — FIG. 9HR 30					
		1/2 15	3/4 20	1 25	1 1/2 40	2 50	
A	inch mm	4.33 110	5.91 150	5.91 150	8.27 210	9.06 230	
B open	inch mm	9.53 242	12.20 310	12.20 310	14.57 370	18.31 465	
C	inch mm	5.43 138	5.43 138	5.43 138	6.77 172	9.21 234	
F	inch mm	.47 12	.59 15	.75 19	1.26 32	1.57 40	
G	inch mm	1.5 38	2.17 55	2.17 55	2.95 75	3.74 95	
Weight	lb. kg	11 5	22 10	22 10	46.25 21	79.25 36	
PACKING		2B3	2B4	2B4	2B5	2B8	
GASKET		R12	R17	R17	R20	R24	

SIZE	inch mm	FULL PORT — FIG. W 30								
		1/4 6	3/8 10	1/2 15	3/4 20	1 25	1 1/4 32	1 1/2 40	2 50	
A	inch mm	3.15 80	3.15 80	3.54 90	4.33 110	5 127	5.91 150	7.09 180	8.27 210	
B open	inch mm	6.54 166	6.54 166	6.73 171	8.39 213	9.72 247	10.12 258	11.81 300	14.76 375	
C	inch mm	3.46 88	3.46 88	3.46 88	3.82 97	5.43 138	5.43 138	6.77 172	6.77 172	
F	inch mm	.28 7	.35 9	.51 13	.69 17.5	.89 22.5	1.16 29.5	1.38 35	1.77 45	
G	inch mm	1.26 32	1.26 32	1.5 38	1.89 48	2.20 56	2.52 64	3.07 78	3.35 85	
Weight	lb. kg	3.75 1.7	3.75 1.8	4.25 2	6.5 3	11 5	14.75 6.8	24.25 11	36.25 16.5	
PACKING		BH3	BH3	BH3	BH5	BY5	BY5	BY7	BH8	

SIZE	inch mm	STANDARD PORT — FIG. WL 30					
		1/2 15	3/4 20	1 25	1 1/2 40	2 50	
A	inch mm	3.15 80	3.54 90	4.33 110	5.91 150	7.09 180	
B open	inch mm	6.54 166	6.73 171	8.39 213	10.12 258	11.81 300	
C	inch mm	3.46 88	3.46 88	3.82 97	5.43 138	6.77 172	
F	inch mm	.35 9	.51 13	.69 17.5	1.16 29.5	1.38 35	
G	inch mm	1.26 32	1.5 38	1.89 48	2.52 64	3.07 78	
Weight	lb. kg	3.75 1.7	4.25 2	6.5 3	14.5 6.6	22.75 10.4	
PACKING		BH3	BH3	BH5	BY5	BY7	

SIZE	inch mm	FULL PORT — FIG. 25HR 30					
		1/2 15	3/4 20	1 25	1 1/2 40	2 50	
A	inch mm	5.91 150	5.91 150	8.27 210	9.06 230	9.06 230	
B open	inch mm	11.97 304	11.97 304	14.25 362	17.17 436	17.17 436	
C	inch mm	5.43 138	5.43 138	5.43 138	9.21 234	9.21 234	
F	inch mm	.43 11	.57 14.5	.75 19	1.10 28	1.5 38	
G	inch mm	2.17 55	2.17 55	2.95 75	3.74 95	3.74 95	
Weight	lb. kg	22 10	22 10	48.5 22	83.75 38	83.75 38	
PACKING		2B4	2B4	BH8	2B8	4B8	
GASKET		R16	R16	R17	R20	R20	

SIZE	inch mm	FULL PORT — FIG. 9W 30								
		1/4 6	3/8 10	1/2 15	3/4 20	1 25	1 1/4 32	1 1/2 40	2 50	
A	inch mm	3.54 90	3.54 90	4.33 110	5 127	5.91 150	7.09 180	8.27 210	9.06 230	
B open	inch mm	6.54 166	6.54 166	8.27 210	9.72 247	10.08 256	11.81 300	14.76 375	16.85 428	
C	inch mm	3.46 88	3.46 88	3.82 97	5.43 138	5.43 138	6.77 172	6.77 172	9.21 234	
F	inch mm	.28 7	.35 9	.47 12	.59 15	.79 20	1.06 27	1.26 32	1.57 40	
G	inch mm	1.5 38	1.5 38	1.89 48	2.20 56	2.52 64	3.07 78	3.35 85	3.74 95	
Weight	lb. kg	4.75 2.2	4.75 2.2	7.75 3.5	12 5.5	16.75 7.6	22 10	44 20	66 30	
PACKING		BH3	BH3	BH5	2B4	2B4	2B5	BH8	2B8	

SIZE	inch mm	STANDARD PORT — FIG. 9WL 30					
		1/2 15	3/4 20	1 25	1 1/2 40	2 50	
A	inch mm	3.54 90	4.33 110	5 127	7.09 180	8.27 210	
B open	inch mm	6.54 166	8.27 210	9.72 247	11.81 300	14.76 375	
C	inch mm	3.46 88	3.82 97	5.43 138	6.77 172	6.77 172	
F	inch mm	.35 9	.47 12	.59 15	1.06 27	1.26 32	
G	inch mm	1.5 38	1.89 48	2.20 56	3.07 78	3.35 85	
Weight	lb. kg	4.25 2	7.75 3.5	12 5.5	26.25 12	41.75 19	
PACKING		BH3	BH5	2B4	2B5	BH8	

B[®] GLOBE VALVES- WELDED BONNET- FULL PORT

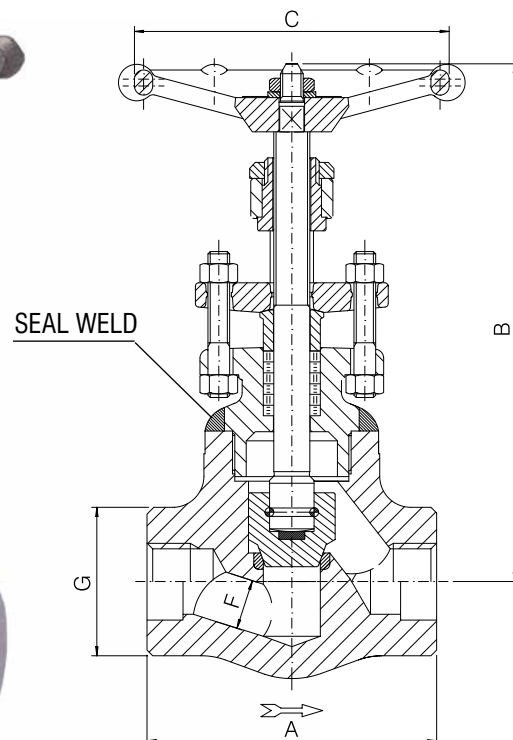
BONNEY FORGE

2500 LTD.

4500 LTD.

Design construction:

- ASME B16.34 Limited Class
- Testing according to API 598
- Marking MSS SP25
- Outside Screw and Yoke (OS&Y)
- Self aligning two piece packing gland
- Integral backseat
- Body bonnet weld to ASME IX
- Loose solid disc
- Socket Weld Ends to ASME B16.11
- Screwed Ends (NPT) to ASME B1.20.1
- Butt Welding Ends to ASME B16.25
- Ratings standard class:
 - carbon steel class 2500 6250 psig @ 100°F
431 bar + 38°C
 - carbon steel class 4500 11250 psig @ 100°F
776 bar + 38°C



B[®] GLOBE VALVES- WELDED BONNET- FULL PORT (Y TYPE)

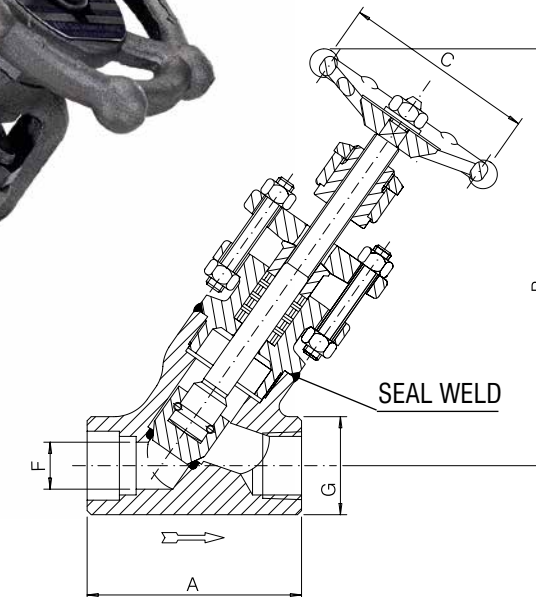
BONNEY FORGE

800 LTD.

1690 LTD.

Design construction:

- ASME B16.34 Limited Class
- Testing according to API 598
- Marking MSS SP25
- Outside Screw and Yoke (OS&Y)
- Self aligning two piece packing gland
- Integral backseat
- Body bonnet weld to ASME IX
- Loose solid disc
- Socket Weld Ends to ASME B16.11
- Screwed Ends (NPT) to ASME B1.20.1
- Butt Welding Ends to ASME B16.25
- Ratings:
 - carbon steel class 800 2000 psig @ 100°F
138 bar + 38°C
 - carbon steel class 1690 4225 psig @ 100°F
291 bar + 38°C



		FULL PORT – FIG. 25W 30								
SIZE	inch mm	1/4 6	3/8 10	1/2 15	3/4 20	1 25	1 1/4 32	1 1/2 40	2 50	
A	inch mm	4.33 110	4.33 110	5 127	5.91 150	7.09 180	7.09 180	8.27 210	9.06 230	
B open	inch mm	7.48 190	7.48 190	8.9 226	9.72 247	11.34 288	11.34 288	14.17 360	16.54 420	
C	inch mm	3.46 88	3.46 88	5.43 138	5.43 138	5.43 138	5.43 138	6.77 172	9.21 234	
F	inch mm	.28 7	.35 9	.43 11	.57 14.5	.75 19	.87 22	1.10 28	1.38 35	
G	inch mm	1.89 48	1.89 48	2.20 56	2.52 64	3.07 78	3.07 78	3.35 85	3.74 95	
Weight	lb. kg	9.75 4.5	10.25 4.7	12 5.5	17.5 8	28.5 13	28.5 13	43.5 19.8	66 30	
PACKING		BH4	BH4	2B3	2B4	2B5	2B5	2B5	2B8	

		FULL PORT – FIG. 45W 30								
SIZE	inch mm	1/4 6	3/8 10	1/2 15	3/4 20	1 25	1 1/4 32	1 1/2 40	2 50	
A	inch mm	5 127	5 127	5 127	7.09 180	7.09 180	9.06 230	9.06 230		
B open	inch mm	9.06 230	9.06 230	9.25 235	11.81 300	11.81 300	14.57 370	15.75 400		
C	inch mm	5.43 138	5.43 138	5.43 138	6.77 172	6.77 172	9.21 234	15.75 400		
F	inch mm	.28 7	.28 7	.31 8	.43 11	.55 14	.98 25	1.26 32		
G	inch mm	2.20 56	2.20 56	2.20 56	3.07 78	3.07 78	3.74 95	4.72 120		
Weight	lb. kg	14.25 6.5	14.25 6.5	14.25 6.5	33 15	33 15	55 25	66 30		
PACKING		2B3	2B3	2B3	4B5	4B5	2B8	4B8		

Available with Socket Weld or Butt-Weld Ends only.
Materials and trim specifications Page 91

		FULL PORT – FIG. Y 30								
SIZE	inch mm	1/4 6	3/8 10	1/2 15	3/4 20	1 25	1 1/4 32	1 1/2 40	2 50	
A	inch mm	3.35 85	3.35 85	3.35 85	4.13 105	4.72 120	6.5 165	6.5 165	7.48 190	
B open	inch mm	6.85 174	6.85 174	6.85 174	8.46 215	10.04 255	10.04 255	12.52 318	14.76 375	
C	inch mm	3.46 88	3.46 88	3.46 88	3.82 97	5.43 138	6.77 172	6.77 172	6.77 172	
F	inch mm	.28 7	.35 9	.51 13	.69 17.5	.89 22.5	1.38 35	1.38 35	1.77 45	
G	inch mm	1.5 38	1.5 38	1.5 38	1.89 48	2.20 56	3.07 78	3.07 78	3.35 85	
Weight	lb. kg	4.25 2	4.25 2	4.25 2	7.25 3.3	11 5	24.25 11	24.25 11	33 15	
PACKING		BH3	BH3	BH3	BH5	BY5	BY7	BY7	BH8	

		FULL PORT – FIG. 1690Y 30								
SIZE	inch mm	1/4 6	3/8 10	1/2 15	3/4 20	1 25	1 1/4 32	1 1/2 40	2 50	
A	inch mm	3.35 85	3.35 85	4.13 105	4.72 120	6.5 165	6.5 165	7.48 190	8.66 220	
B open	inch mm	6.89 175	6.89 175	8.46 215	10.04 255	11.02 280	12.40 315	14.96 380	17.72 450	
C	inch mm	3.46 88	3.46 88	3.82 97	5.43 138	5.43 138	6.77 172	6.77 172	9.21 234	
F	inch mm	.28 7	.35 9	.47 12	.59 15	.79 20	1.06 27	1.26 32	1.57 40	
G	inch mm	1.5 38	1.5 38	1.89 48	2.20 56	3.07 78	3.07 78	3.35 85	3.74 95	
Weight	lb. kg	4.25 2	4.25 2	7.75 3.5	11.5 5.3	24.25 11	24.25 11	36.25 16.5	57.25 26	
PACKING		BH3	BH3	BH5	2B4	2B4	BY7	BH8	2B8	

Materials and trim specifications Page 91

B[®] GLOBE VALVES- WELDED BONNET- FULL PORT (Y TYPE)

BONNEY FORGE

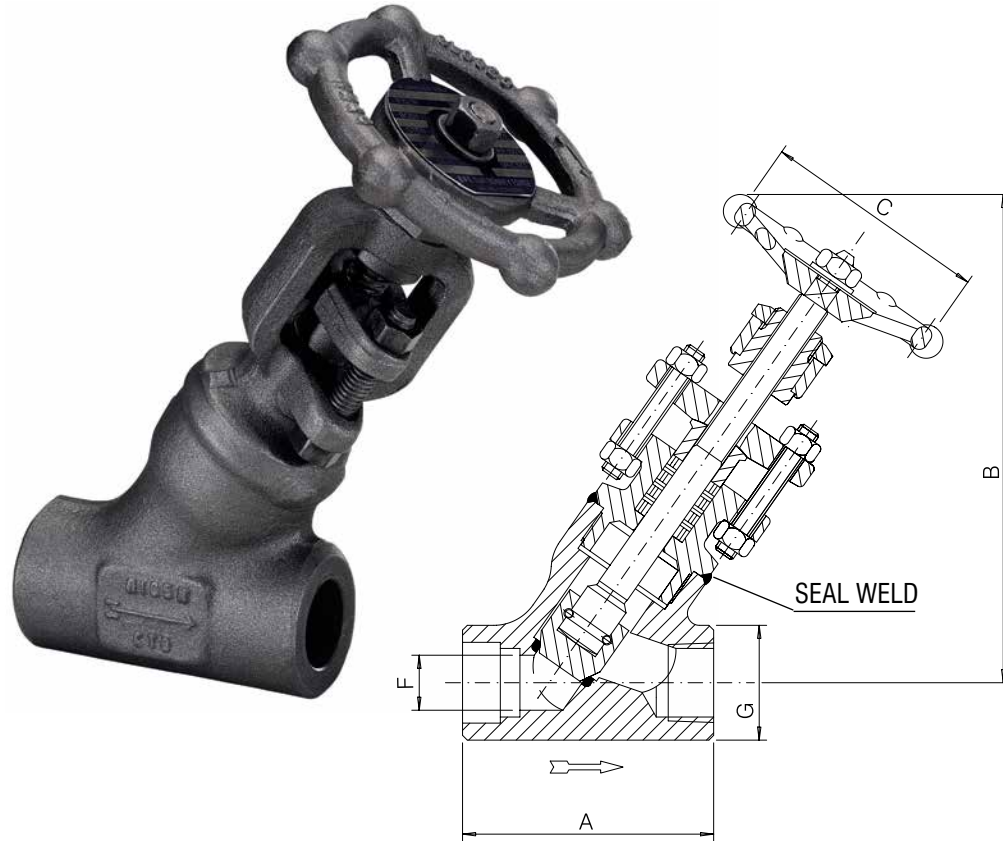
2680 LTD.

4500 LTD.

Design construction:

- ASME B16.34 Limited Class
- Testing according to API 598
- Marking MSS SP25
- Outside Screw and Yoke (OS&Y)
- Self aligning two piece packing gland
- Integral backseat
- Body bonnet weld to ASME IX
- Loose solid disc
- Socket Weld Ends to ASME B16.11
- Screwed Ends (NPT) to ASME B1.20.1
- Butt Welding Ends to ASME B16.25

- Ratings:
- carbon steel class 2680 6700 psig @ 100°F
462 bar + 38°C
 - carbon steel class 4500 11250 psig @ 100°F
776 bar + 38°C



		FULL PORT – FIG. 2680Y 30							
SIZE	inch	1/4	3/8	1/2	3/4	1	1 1/2	2	
	mm	6	10	15	20	25	40	50	
A	inch mm	4.13 105	4.13 105	4.72 120	6.5 165	6.5 165	7.48 190	8.66 220	
B open	inch mm	8.66 220	8.66 220	9.45 240	10.83 275	12.20 310	14.17 360	17.32 440	
C	inch mm	3.46 88	3.46 88	5.43 138	5.43 138	5.43 138	6.77 172	9.21 234	
F	inch mm	.28 7	.35 9	.43 11	.57 14.5	.75 19	1.10 28	1.38 35	
G	inch mm	1.89 48	1.89 48	2.20 56	3.07 78	3.07 78	3.35 85	3.74 95	
Weight	lb. kg	7.75 3.5	7.75 3.5	11 5	25.25 11.5	27.5 12.5	37.25 17	67 30	
PACKING		BH4	BH4	2B3	2B4	2B5	2B5	2B8	

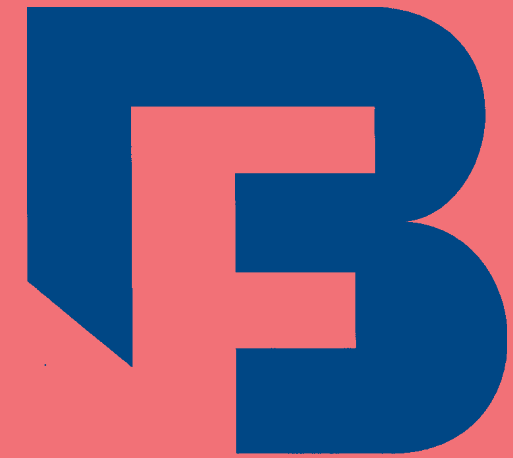
Note: Thread End Valves are limited to ASME B16.34, 2500 Pressure Class.

		FULL PORT – FIG. 45Y 30							
SIZE	inch	1/4	3/8	1/2	3/4	1	1 1/2	2	
	mm	6	10	15	20	25	40	50	
A	inch mm	4.72 120	4.72 120	4.72 120	6.5 165	6.5 165	8.66 220	9.06 230	
B open	inch mm	9.45 240	9.45 240	9.65 245	12.01 305	12.20 310	16.54 420	17.72 450	
C	inch mm	5.43 138	5.43 138	5.43 138	6.77 172	6.77 172	9.21 234	15.75 400	
F	inch mm	.28 7	.28 7	.31 8	.43 11	.55 14	.98 25	1.26 32	
G	inch mm	2.20 56	2.20 56	2.20 56	3.07 78	3.07 78	3.74 95	4.72 120	
Weight	lb. kg	12 5.5	12 5.5	12.25 5.6	30.75 14	30.75 14	61.75 28	70.5 32	
PACKING		2B3	2B3	2B3	2B4A	4B5	2B8	4B8	

Available with Socket Weld or Butt-Weld Ends only.
Materials and trim specifications Page 91

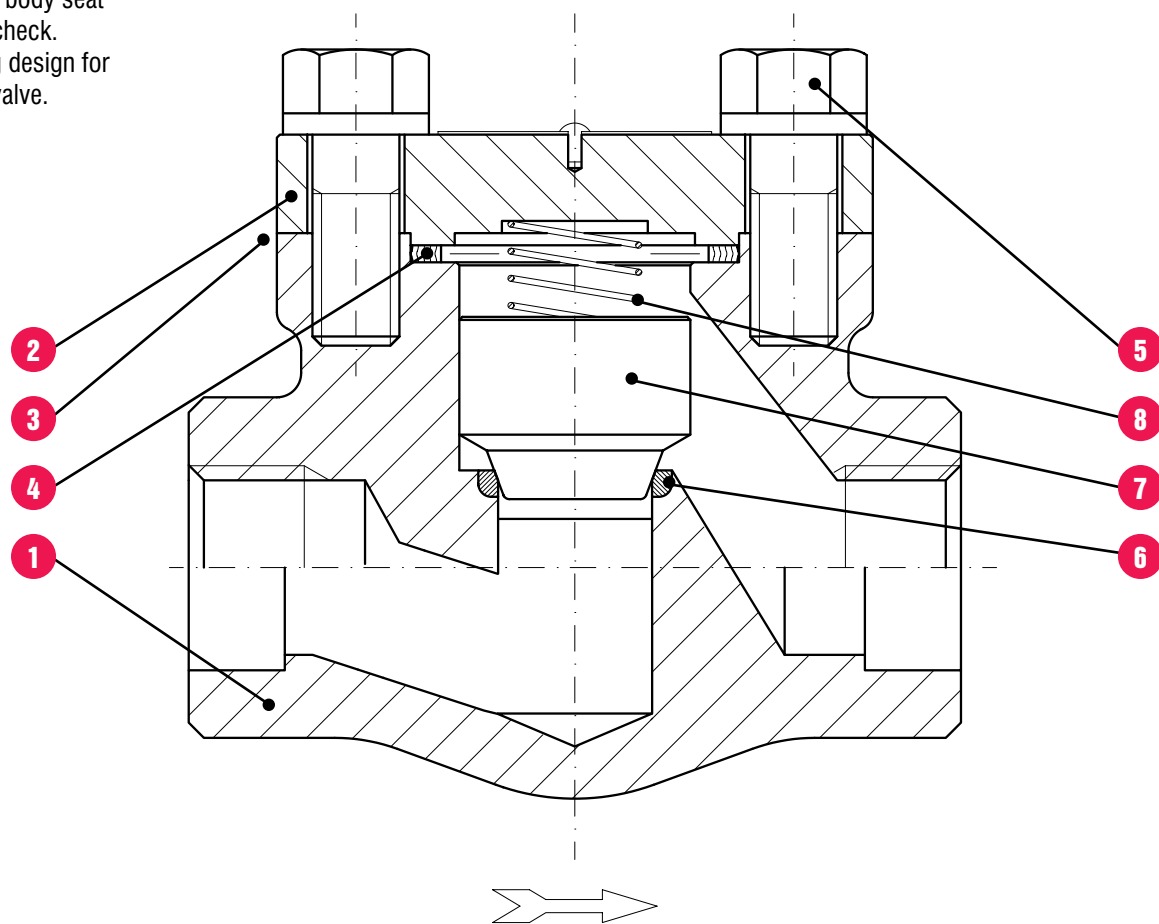
- Overview24
- Bolted Bonnet- 800 lb. & 1500 lb. valves25
- Bolted Bonnet- 1500 lb. & 2500 lb. valves26
- Welded Bonnet- 800 lb. & 1500 lb. valves27
- Welded Bonnet- 2500 lb. & 4500 lb. valves28
- Welded Bonnet (Y type)- 800 lb. & 1690 lb. valves29
- Welded Bonnet (Y type)- 2680 lb. & 4500 lb. valves30

CHECK VALVES



CHECK VALVES

Forged steel, piston, ball or swing check. Full or standard port. Bolted or welded cover joint. T-Pattern or Y-Pattern. Integral body seat for piston or ball check. Separate seat ring design for the swing check valve.

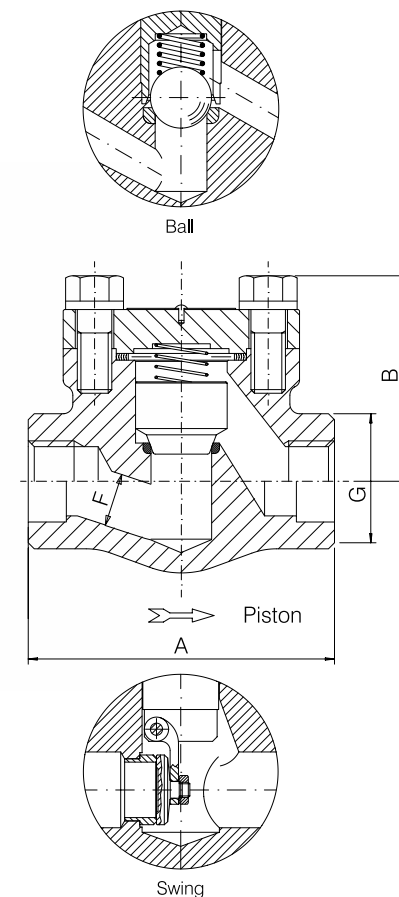


- 1. BODY.** The body is forged steel and designed to the basic dimensional requirements of the applicable specifications such as API 602 and ASME B16.34. The body is available in both the full or standard port design. It is also available in either T-Pattern or Y-Pattern configurations.
- 2. COVER.** The cover is forged steel and designed to the basic dimensional requirements of the applicable specifications such as API 602 and ASME B16.34.
- 3. BODY-COVER JOINT.** Two different cover joint designs are available. These are either the bolted cover or the threaded and seal welded type.
- 4. GASKET.** The bolted cover joint design valve uses a contained, controlled compression, spiral wound type gasket.

- 5. COVER BOLTING.** The cover bolting is manufactured of alloy steel in accordance with the requirements of the applicable specifications such as API 602 and ASME B16.34.
- 6. SEAT.** The body seat for the piston and ball check valves is an integral weld overlay and is part of the valve trim. The swing check valve is supplied with a separate seat ring which is pressed into the valve body and wedged into place, forming a seal with the body.
- 7. PISTON, BALL OR DISC.** The piston, ball or disc is forged steel and is part of the valve trim. The seating surface of the piston and ball check is of the tapered or plug type design. The seating surface of the swing check is of the flat seat design.
- 8. SPRING.** The spring is optional and supplied only upon request.

800 LB.
1500 LB.

Design construction:
ASME B16.34 - BS 5352
Testing according to API 598
Marking MSS SP25
Spring on request only
Spiral-wound gasket
Socket Weld Ends to ASME B16.11
Screwed Ends (NPT) to ASME B1.20.1
Butt Welding Ends to ASME B16.25
Ratings:
- carbon steel class 800 1975 psig @ 100°F
138 bar + 38°C
- carbon steel class 1500 3705 psig @ 100°F
255 bar + 38°C



		FULL PORT - FIG. H 40 - H 50 - H 60								
SIZE	inch	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	
	mm	6	10	15	20	25	32	40	50	
A	inch	3.15	3.15	3.54	4.33	5	5.91	7.09	8.27	
	mm	80*	80	90	110	127	150	180	210	
B	inch	2.17	2.17	2.36	3.07	3.46	3.62	4.25	5.71	
	mm	55	55	60	78	88	92	108	145	
F Piston/ F Ball	inch	.28	.35	.51	.69	.89	1.16	1.38	1.77	
	mm	7	9	13	17.5	22.5	29.5	35	45	
F Swing	inch	.31	.38	.55	.71	.94	1.18	1.44	1.89	
	mm	8	9.6	14	18	24	30	36.6	48	
G	inch	1.26	1.26	1.50	1.89	2.20	2.52	3.07	3.35	
	mm	32	32	38	48	56	64	78	85	
Weight	lb.	3	3	3.5	6.5	9.5	12.25	22	35.25	
	kg	1.4	1.4	1.6	3	4.3	5.6	10	16	
GASKET		G2	G2	G2	G3	G4	G6	G7	G9	

*For swing type only A=90mm 3.54inch

		STANDARD PORT - FIG. HL 40 - HL 50 - HL 60					
SIZE	inch	1/2	3/4	1	1 1/2	2	
	mm	15	20	25	40	50	
A	inch	3.15	3.54	4.33	5.91	7.09	
	mm	80	90	110	150	180	
B	inch	2.17	2.36	3.07	3.62	4.25	
	mm	55	60	78	92	108	
F Piston/ F Ball	inch	.35	.51	.69	1.16	1.38	
	mm	9	13	17.5	29.5	35	
F Swing	inch	.38	.55	.71	1.18	1.44	
	mm	9.6	14	18	30	36.6	
G	inch	1.26	1.5	1.89	2.52	3.07	
	mm	32	38	48	64	78	
Weight	lb.	2.75	3.5	6.25	12.25	19.75	
	kg	1.3	1.6	2.8	5.6	9.0	
GASKET		G2	G2	G3	G6	G7	

		FULL PORT - FIG. 9H 40 - 9H 50 - 9H 60								
SIZE	inch	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	
	mm	6	10	15	20	25	32	40	50	
A	inch	3.54	3.54	4.33	5	5.91	7.09	8.27	8.27	
	mm	90	90	110	127	150	180	210	210	
B	inch	2.36	2.36	3.07	3.46	3.62	4.25	5.71	5.91	
	mm	60	60	78	88	92	108	145	150	
F Piston/ F Ball	inch	.28	.35	.47	.59	.79	1.06	1.26	1.57	
	mm	7	9	12	15	20	27	32	40	
F Swing	inch	-	-	.55	.71	.94	1.18	1.44	1.89	
	mm	-	-	14	18	24	30	36.6	48	
G	inch	1.5	1.5	1.89	2.20	2.52	3.07	3.35	3.74	
	mm	38	38	48	56	64	78	85	95	
Weight	lb.	3.75	3.75	6.75	10	14.25	23.25	41.75	41.75	
	kg	1.7	1.7	3.1	4.6	6.5	10.6	19	19	
GASKET		G1	G1	G2	G3	G4	G5	G7	G8	

		STANDARD PORT - FIG. 9HL 40 - 9HL 50 - 9HL 60					
SIZE	inch	1/2	3/4	1	1 1/2	2	
	mm	15	20	25	40	50	
A	inch	3.54	4.33	5	7.09	8.27	
	mm	90	110	127	180	210	
B	inch	2.36	3.07	3.46	4.25	5.71	
	mm	60	78	88	108	145	
F Piston/ F Ball	inch	.35	.47	.59	1.06	1.26	
	mm	9	12	15	27	32	
F Swing	inch	.38	.55	.71	1.18	1.44	
	mm	9.6	14	18	30	36.6	
G	inch	1.5	1.89	2.20	3.07	3.35	
	mm	38	48	56	78	85	
Weight	lb.	3.75	6.5	9.75	22	39.5	
	kg	1.7	3	4.4	10	18	
GASKET		G1	G2	G3	G5	G7	

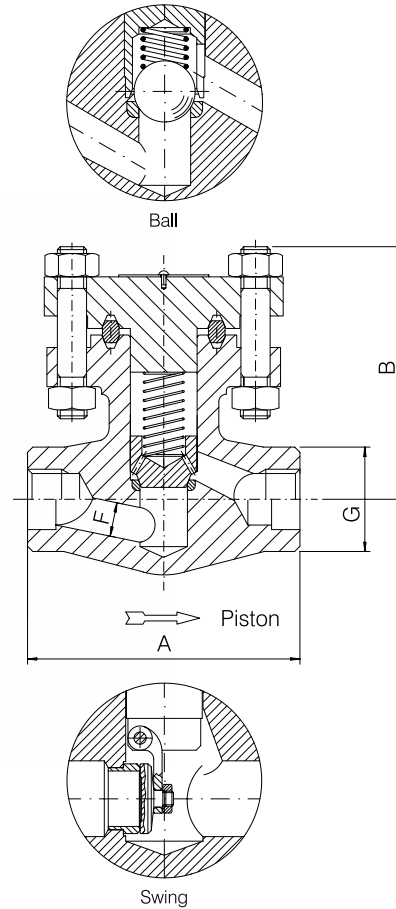
B[®] CHECK VALVES- BOLTED BONNET- FULL PORT

BONNEY FORGE

1500 LB.

2500 LB.

Design construction:
 ASME B16.34 - BS 5352
 Testing according to API 598
 Marking MSS SP25
 Spring on request only
 Oval ring joint gasket
 Socket Weld Ends to ASME B16.11
 Screwed Ends (NPT) to ASME B1.20.1
 Butt Welding Ends to ASME B16.25
 Ratings standard class:
 - carbon steel class 1500 3705 psig @ 100°F
 255 bar + 38°C
 - carbon steel class 2500 6170 psig @ 100°F
 425 bar + 38°C



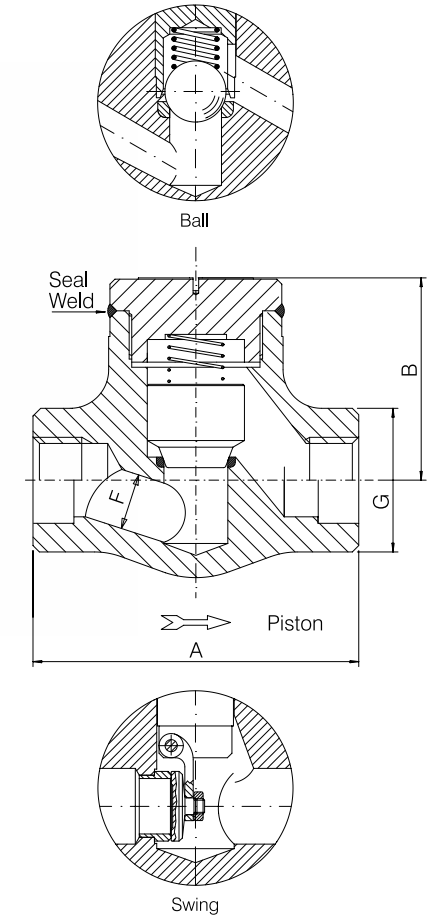
B[®] CHECK VALVES- WELDED BONNET- FULL & STANDARD PORT

BONNEY FORGE

800 LB.

1500 LB.

Design construction:
 ASME B16.34 - BS 5352
 Testing according to API 598
 Marking MSS SP25
 Spring on request only
 Body bonnet weld to ASME IX
 Socket Weld Ends to ASME B16.11
 Screwed Ends (NPT) to ASME B1.20.1
 Butt Welding Ends to ASME B16.25
 Ratings:
 - carbon steel class 800 1975 psig @ 100°F
 138 bar + 38°C
 - carbon steel class 1500 3705 psig @ 100°F
 255 bar + 38°C



FULL PORT - FIG. 9HR 40 - 9HR 50 - 9HR 60						
SIZE	inch mm	1/2 15	3/4 20	1 25	1 1/2 40	2 50
A	inch mm	4.33 110	5.91 150	5.91 150	8.27 210	9.06 230
B	inch mm	3.78 96	5.04 128	5.04 128	6.10 155	7.68 195
F Piston/ F Ball	inch mm	.47 12	.59 15	.75 19	1.26 32	1.5 38
F Swing	inch mm	.55 14	.71 18	.94 24	1.44 36.6	1.89 48
G	inch mm	1.5 38	2.17 55	2.17 55	2.95 75	3.62 92
Weight	lb. kg	7 3.2	16 7.3	16 7.3	37.5 17	63.75 29
GASKET		R12	R17	R17	R20	R24

FULL PORT - FIG. 25HR 40 - 25HR 50 - 25HR 60						
SIZE	inch mm	1/2 15	3/4 20	1 25	1 1/2 40	2 50
A	inch mm	5.91 150	5.91 150	8.27 210	9.06 230	9.06 230
B	inch mm	5.04 128	5.04 128	5.98 152	7.48 190	7.48 190
F Piston/ F Ball	inch mm	.43 11	.57 14.5	.75 19	1.10 28	1.38 35
F Swing	inch mm	.45 11.5	.59 15	.77 19.5	1.10 28	1.38 35
G	inch mm	2.17 55	2.17 55	2.95 75	3.74 95	3.74 95
Weight	lb. kg	16.5 7.5	16.5 7.5	40.75 18.5	66 30	66 30
GASKET		R16	R16	R17	R20	R20

FULL PORT - FIG. W 40 - W 50 - W 60									
SIZE	inch mm	1/4 6	3/8 10	1/2 15	3/4 20	1 25	1 1/4 32	1 1/2 40	2 50
A	inch mm	3.15 80	3.15 80	3.54 90	4.33 110	5 127	5.91 150	7.09 180	8.27 210
B	inch mm	2.17 55	2.17 55	2.36 60	3.07 78	3.46 88	3.62 92	4.33 110	5.91 150
F Piston/ F Ball	inch mm	.28 7	.35 9	.51 13	.69 17.5	.89 22.5	1.16 29.5	1.38 35	1.77 45
F Swing	inch mm	.31 8	.38 9.6	.55 14	.71 18	.94 24	1.18 30	1.44 36.6	1.89 48
G	inch mm	1.26 32	1.26 32	1.50 38	1.89 48	2.20 56	2.52 64	3.07 78	3.35 85
Weight	lb. kg	2 1	2 1	2.5 1.2	5 2.3	7.25 3.3	11.5 5.2	19 8.7	30.75 14

STANDARD PORT - FIG. WL 40 - WL 50 - WL 60						
SIZE	inch mm	1/2 15	3/4 20	1 25	1 1/2 40	2 50
A	inch mm	3.15 80	3.54 90	4.33 110	5.91 150	7.09 180
B	inch mm	2.13 54	2.36 60	3 76	3.62 92	4.33 110
F Piston/ F Ball	inch mm	.35 9	.51 13	.69 17.5	1.16 29.5	1.38 35
F Swing	inch mm	.38 9.6	.55 14	.71 18	1.18 30	1.44 36.6
G	inch mm	1.26 32	1.50 38	1.89 48	2.52 64	3.07 78
Weight	lb. kg	1.75 0.9	2.25 1.1	5 2.3	11.5 5	18.25 8.3

FULL PORT - FIG. 9W 40 - 9W 50 - 9W 60									
SIZE	inch mm	1/4 6	3/8 10	1/2 15	3/4 20	1 25	1 1/4 32	1 1/2 40	2 50
A	inch mm	3.54 90	3.54 90	4.33 110	5 127	5.91 150	7.09 180	8.27 210	9.06 230
B	inch mm	2.17 55	2.17 55	3 76	3.31 84	3.54 90	4.33 110	5.91 150	9.06 230
F Piston/ F Ball	inch mm	.28 7	.35 9	.47 12	.59 15	.79 20	1.06 27	1.26 32	1.57 40
F Swing	inch mm	.31 8	.38 9.6	.55 14	.71 18	.94 24	1.18 30	1.44 36.6	1.89 48
G	inch mm	1.50 38	1.50 38	1.89 48	2.20 56	2.52 64	3.07 78	3.35 85	3.74 95
Weight	lb. kg	3 1.4	3 1.4	5.5 2.5	8 3.7	13.25 6	22 10	34.25 15.5	48.5 22

STANDARD PORT - FIG. 9WL 40 - 9WL 50 - 9WL 60						
SIZE	inch mm	1/2 15	3/4 20	1 25	1 1/2 40	2 50
A	inch mm	3.54 90	4.33 110	5 127	7.09 180	8.27 210
B	inch mm	2.13 54	3 76	3.39 86	4.33 110	5.91 150
F Piston/ F Ball	inch mm	.35 9	.47 12	.59 15	1.06 27	1.26 32
F Swing	inch mm	.38 9.6	.55 14	.71 18	1.18 30	1.44 36.6
G	inch mm	1.5 38	1.89 48	2.20 56	3.07 78	3.35 85
Weight	lb. kg	3 1.4	4.75 2.2	6.5 3	21 9.6	35.25 16

B[®] CHECK VALVES- WELDED BONNET- FULL PORT

BONNEY FORGE

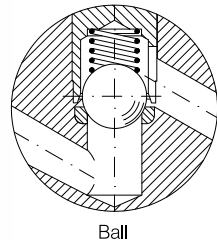
2500 LTD.

4500 LTD.

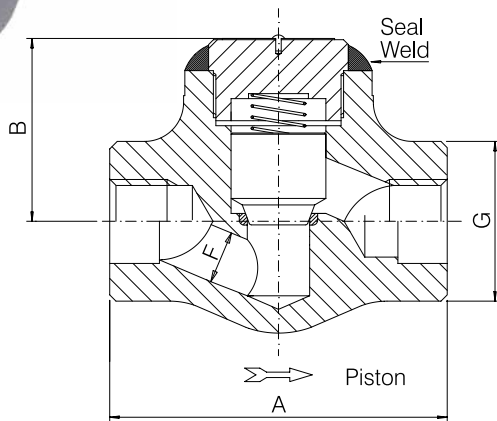
Design construction:

ASME B16.34 Limited Class
 Testing according to API 598
 Marking MSS SP25
 Spring on request only
 Body bonnet weld to ASME IX
 Socket Weld Ends to ASME B16.11
 Screwed Ends (NPT) to ASME B1.20.1
 Butt Welding Ends to ASME B16.25

Ratings:
 - carbon steel class 2500 6250 psig @ 100°F
 431 bar + 38°C
 - carbon steel class 4500 11250 psig @ 100°F
 776 bar + 38°C



Ball



Seal Weld

Piston

B[®] CHECK VALVES- WELDED BONNET- FULL PORT (Y TYPE)

BONNEY FORGE

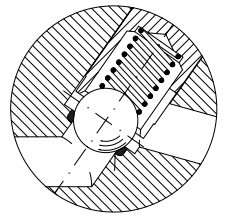
800 LTD.

1690 LTD.

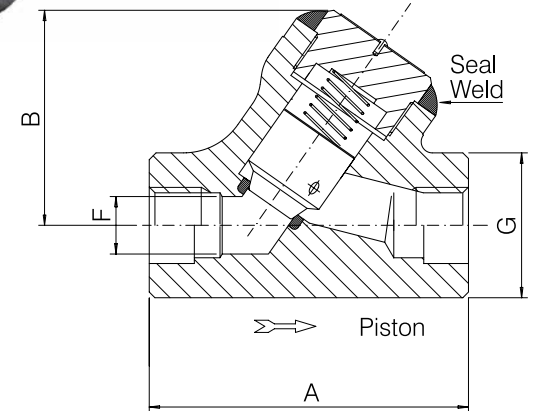
Design construction:

ASME B16.34 Limited Class - BS 5352
 Testing according to API 598
 Marking MSS SP25
 Body bonnet weld to ASME IX
 Spring on request only
 Socket Weld Ends to ASME B16.11
 Screwed Ends (NPT) to ASME B1.20.1
 Butt Welding Ends to ASME B16.25

Ratings:
 - carbon steel class 800 2000 psig @ 100°F
 138 bar + 38°C
 - carbon steel class 1690 4225 psig @ 100°F
 291 bar + 38°C



Ball



Seal Weld

Piston

FULL PORT – FIG. 25W 40 - 25W 50								
SIZE	inch	1/4	3/8	1/2	3/4	1	1 1/2	2
	mm	6	10	15	20	25	40	50
A	inch	4.33	4.33	5	5.91	7.09	8.27	9.06
	mm	110	110	127	150	180	210	230
B	inch	2.76	2.76	3.39	3.62	4.33	5.91	7.09
	mm	70	70	86	92	110	150	180
F	inch	.28	.35	.43	.57	.75	1.10	1.38
	mm	7	9	11	14.5	19	28	35
G	inch	1.89	1.89	2.20	2.52	3.07	3.35	3.74
	mm	48	48	56	64	78	85	95
Weight	lb.	7	7	8.25	12.25	22	35.25	46.25
	kg	3.2	3.2	3.8	5.6	10	16	21

FULL PORT – FIG. 45W 40 - 45W 50								
SIZE	inch	1/4	3/8	1/2	3/4	1	1 1/2	2
	mm	6	10	15	20	25	40	50
A	inch	5	5	5	7.09	7.09	9.06	9.06
	mm	127	127	127	180	180	230	230
B	inch	3.54	3.54	3.54	4.33	4.33	7.09	7.68
	mm	90	90	90	110	110	180	195
F	inch	.28	.28	.31	.43	.55	.98	1.26
	mm	7	7	8	11	14	25	32
G	inch	2.20	2.20	2.20	3.07	3.07	3.74	4.72
	mm	56	56	56	78	78	95	120
Weight	lb.	8.5	8.5	8.5	23	23	55.5	59.5
	kg	3.9	3.9	3.9	10.5	10.5	25.2	27

Available with Socket Weld or Butt-Weld Ends only.

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FULL PORT – FIG. Y 40 - Y 50									
SIZE	inch	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
	mm	6	10	15	20	25	32	40	50
A	inch	3.35	3.35	3.35	4.13	4.72	6.5	6.5	7.48
	mm	85	85	85	105	120	165	165	190
B	inch	2.76	2.76	2.76	3.54	3.93	5.12	5.12	6.3
	mm	70	70	70	90	100	130	130	160
F	inch	.28	.35	.51	.69	.89	1.16	1.38	1.77
	mm	7	9	13	17.5	22.5	29.5	35	45
G	inch	1.50	1.50	1.50	1.89	2.20	3.07	3.07	3.35
	mm	38	38	38	48	56	78	78	85
Weight	lb.	2.5	2.5	2.5	5	6.5	17.5	17.5	26.25
	kg	1.2	1.2	1.2	2.3	3	8	8	12

FULL PORT – FIG. 1690Y 40 - 1690Y 50									
SIZE	inch	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
	mm	6	10	15	20	25	32	40	50
A	inch	3.35	3.35	4.13	4.72	6.5	6.5	7.48	8.66
	mm	85	85	105	120	165	165	190	220
B	inch	2.76	2.76	3.54	3.93	5.12	5.12	6.3	7.68
	mm	70	70	90	100	130	130	160	195
F	inch	.28	.35	.47	.59	.79	1.06	1.26	1.57
	mm	7	9	12	15	20	27	32	40
G	inch	1.50	1.50	1.89	2.20	3.07	3.07	3.35	3.74
	mm	38	38	48	56	78	78	85	95
Weight	lb.	2.5	2.5	5.25	7.75	20.5	28.5	29.75	39.5
	kg	1.2	1.2	2.4	3.6	9.3	13	13.5	18

Materials and trim specifications Page 91

B[®] CHECK VALVES- WELDED BONNET- FULL PORT (Y TYPE)

BONNEY FORGE

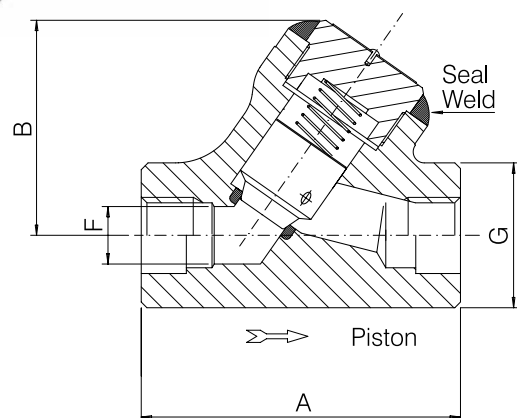
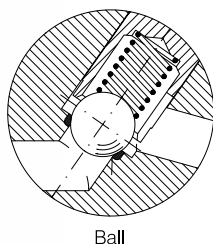
2680 LTD.

4500 LTD.

Design construction:

ASME B16.34 Limited Class - BS 5352
 Testing according to API 598
 Marking MSS SP25
 Body bonnet weld to ASME IX
 Spring on request only
 Socket Weld Ends to ASME B16.11
 Screwed Ends (NPT) to ASME B1.20.1
 Butt Welding Ends to ASME B16.25

Ratings:
 - carbon steel class 2680 6700 psig @ 100°F
 462 bar + 38°C
 - carbon steel class 4500 11250 psig @ 100°F
 776 bar + 38°C



		FULL PORT – FIG. 2680Y 40 - 2680Y 50							
SIZE	inch	1/4	3/8	1/2	3/4	1	1 1/2	2	
	mm	6	10	15	20	25	40	50	
A	inch	4.13	4.13	4.72	6.5	6.5	7.48	8.66	
	mm	105	105	120	165	165	190	220	
B	inch	3.35	3.35	3.74	4.53	4.72	5.71	7.28	
	mm	85	85	95	115	120	145	185	
F	inch	.28	.35	.43	.57	.75	1.10	1.38	
	mm	7	9	11	14.5	19	28	35	
G	inch	1.89	1.89	2.20	3.07	3.07	3.35	3.74	
	mm	48	48	56	78	78	85	95	
Weight	lb.	7	7	8	19.75	19.75	29.75	44	
	kg	3.2	3.2	3.7	9	9	13.5	20	

Note: Thread End Valves are limited to ASME B16.34 2500 Pressure Class.

		STANDARD PORT – FIG. 45Y 40 - 45Y 50							
SIZE	inch	1/4	3/8	1/2	3/4	1	1 1/2	2	
	mm	6	10	15	20	25	40	50	
A	inch	4.72	4.72	4.72	6.5	6.5	8.66	9.06	
	mm	120	120	120	165	165	220	230	
B	inch	3.74	3.74	3.74	4.53	4.72	7.28	7.68	
	mm	95	95	95	115	120	185	195	
F	inch	.28	.28	.31	.43	.55	.98	1.26	
	mm	7	7	8	11	14	25	32	
G	inch	2.20	2.20	2.20	3.07	3.07	3.74	4.72	
	mm	56	56	56	78	78	95	120	
Weight	lb.	8	8	8	19.75	19.75	44	50.5	
	kg	3.7	3.7	3.7	9	9	20	23	

Available with Socket Weld or Butt-Weld Ends only.

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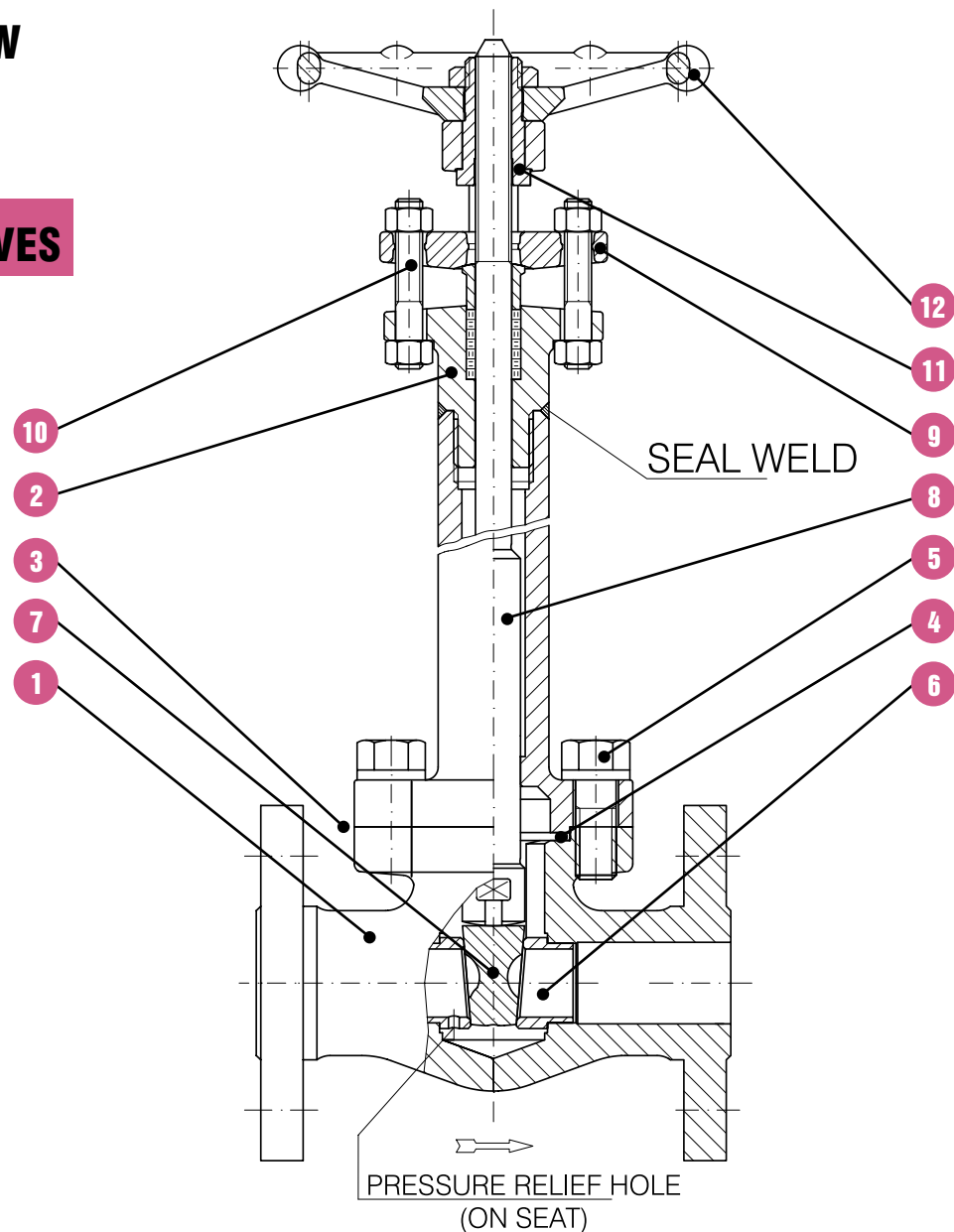
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CRYOGENIC VALVES



CRYOGENIC VALVES

Typical cryogenic gate valve shown. Forged steel, outside screw and yoke (OS&Y), rising stem, non-rising handwheel. Full or standard port. Bolted or welded bonnet joint. Integral backseat.



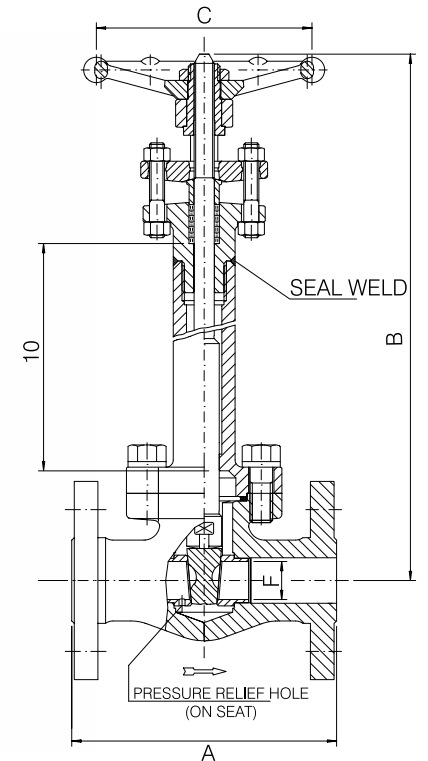
- 1. BODY.** The body is forged steel and designed to the basic dimensional requirements of the applicable specifications such as API 602 and ASME B16.34. The body is available in both the full or standard port design.
- 2. BONNET.** The bonnet is forged steel and extended to act as a gas column to keep stem packing at a sufficient distance away from the frost line. The bonnet also has an integral backseat and incorporates the stuffing box, which has dimensions per the applicable specifications such as API 602.
- 3. BODY-BONNET JOINT.** Two different bonnet joint designs are available. These are either the bolted bonnet or the threaded and seal welded type.
- 4. GASKET.** The bolted bonnet joint design valve uses a contained, controlled compression, spiral wound type gasket.
- 5. BONNET BOLTING.** The bonnet bolting is manufactured of alloy steel in accordance with the requirements of the applicable specifications such as API 602 and ASME B16.34.
- 6. SEAT RINGS.** The seat rings are steel and make up part of the valve trim. They are pressed into the valve body and wedged into place, forming a seal with the body. The seat ring is vented on the up-stream side to prevent high pressure build up if the temperature rises in the column. The seating surfaces are ground and lapped.

- 7. WEDGE.** The wedge, which is a solid design, is forged or investment cast steel and is part of the valve trim. The seating surfaces are ground and lapped.
- 8. STEM.** The stem is forged steel and part of the valve trim. It contains an integral back seat shoulder, which mates with the integral backseat of the bonnet. The stem is designed to the basic dimensional requirements of the applicable specifications such as API 602.
- 9. GLAND AND FLANGE.** The gland, gland flange assembly utilizes a separate, two piece design. This self aligning design allows the flange to be unevenly tightened while the gland maintains its parallel alignment with the stem and stuffing box.
- 10. GLAND BOLTS AND NUTS.** The steel/stainless steel gland bolt and nut assembly is a stud, double nut arrangement. This design allows complete removal from the valve when service is required. The use of industry standard thread full length studs and nuts also allows easy replacement should these items be lost or in need of replacement.
- 11. YOKE SLEEVE.** The yoke sleeve is of forged stainless steel material having a high melting point and is resistant to wear and corrosion.
- 12. HANDWHEEL.** The handwheel is forged carbon steel of an open spoke design. This robust construction along with appropriate sizing allows for ease of operation.

150 LB.

300 LB.

Design construction:
API 602- ASME B16.34- BS 5352- BS 6364
Testing according to API 598
Marking MSS SP25
Outside Screw and Yoke (OS&Y)
Self aligning two piece packing gland
Spiral wound gasket
Integral backseat
Face to face according to ASME B16.10
Flanges according to ASME B16.5
Welded body- bonnet joint also available
Ratings: stainless steel A182- F316
- class 150 = 275 psig @ 100°F
19 bar + 38°C
- class 300 = 720 psig @ 100°F
49 bar + 38°C



		FULL PORT — FIG. 1C 10					
SIZE		inch	1/2	3/4	1	1 1/2	2
		mm	15	20	25	40	50
150 LB.	A	inch	4.25	4.62	5	6.5	7.01
		mm	108	117,5	127	165	178
	B open	inch	16.93	17.52	18.50	21.06	23.42
		mm	430	445	470	535	595
	C	inch	3.46	3.82	5.43	5.43	6.77
		mm	88	97	138	138	172
	F	inch	.55	.71	.94	1.44	1.89
		mm	14	18	24	36,6	48
	Weight	lb.	10.5	13	19.25	32.5	42
		kg	4.8	5.9	8.7	14.7	19
	PACKING		BH2	BH4	BH5	BY5	BY7
	GASKET		G2	G3	G4	G7	G8

		STANDARD PORT — FIG. 1CL 10					
SIZE		inch	1/2	3/4	1	1 1/2	2
		mm	15	20	25	40	50
150 LB.	A	inch	4.25	4.62	5	6.5	7.01
		mm	108	117,5	127	165	178
	B open	inch	16.54	17.13	17.72	20.08	21.06
		mm	420	435	450	510	535
	C	inch	3.46	3.46	3.82	5.43	5.43
		mm	88	88	97	138	138
	F	inch	.38	.55	.71	1.18	1.44
		mm	9,6	14	18	30	36,6
	Weight	lb.	9.5	11.25	14	27.25	35.25
		kg	4.3	5.1	6.4	12.4	16
	PACKING		BH2	BH2	BH4	BH6	BY5
	GASKET		G2	G2	G3	G5	G7

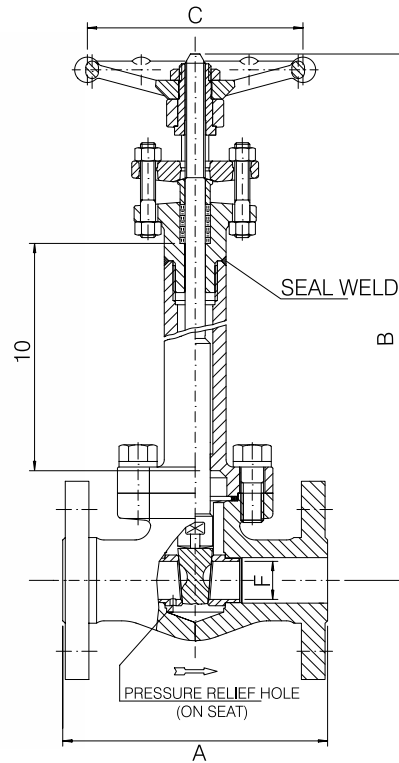
		FULL PORT — FIG. 3C 10					
SIZE		inch	1/2	3/4	1	1 1/2	2
		mm	15	20	25	40	50
300 LB.	A	inch	5.51	6.00	6.5	7.52	8.50
		mm	140	152,5	165	191	216
	B open	inch	16.93	17.52	18.50	21.06	23.42
		mm	430	445	470	535	595
	C	inch	3.46	3.82	5.43	5.43	6.77
		mm	88	97	138	138	172
	F	inch	.55	.71	.94	1.44	1.89
		mm	14	18	24	36,6	48
	Weight	lb.	11.25	15.75	21.75	35.25	48.5
		kg	5,1	7,2	9,9	16	22
	PACKING		BH2	BH4	BH5	BY5	BY7
	GASKET		G2	G3	G4	G7	G8

		STANDARD PORT — FIG. 3CL 10					
SIZE		inch	1/2	3/4	1	1 1/2	2
		mm	15	20	25	40	50
300 LB.	A	inch	5.51	6.00	6.5	7.52	8.50
		mm	140	152,5	165	191	216
	B open	inch	16.53	17.12	17.72	20.08	21.06
		mm	420	435	450	510	535
	C	inch	3.46	3.46	3.82	5.43	5.43
		mm	88	88	97	138	138
	F	inch	.38	.55	.71	1.18	1.44
		mm	9,6	14	18	30	36,6
	Weight	lb.	11.25	14.25	17.25	33	42
		kg	5,1	6,5	7,8	15	19
	PACKING		BH2	BH2	BH4	BH6	BY5
	GASKET		G2	G2	G3	G5	G7

B CRYOGENIC VALVES- GATE TYPE- BOLTED BONNET-
FULL & STANDARD PORT
BONNEY FORGE

600 LB.

Design construction:
API 602- ASME B16.34- BS 5352- BS 6364
Testing according to API 598
Marking MSS SP25
Outside Screw and Yoke (OS&Y)
Self aligning two piece packing gland
Spiral wound gasket
Integral backseat
Face to face according to ASME B16.10
Flanges according to ASME B16.5
Welded body- bonnet Joint also available
Ratings: stainless steel A182- F316
-class
600 = 1440 psig @ 100°F
99 bar + 38°C

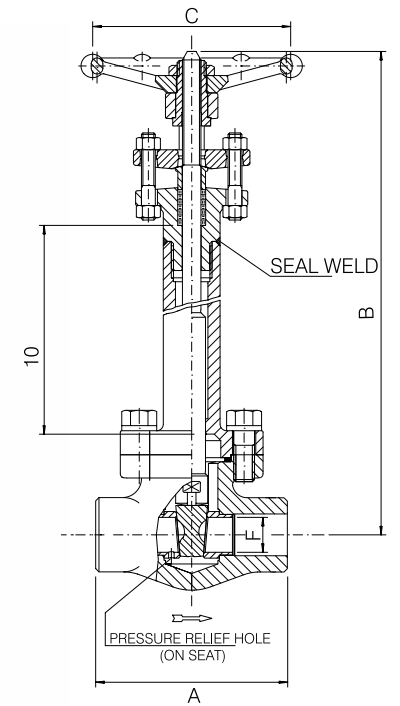


B CRYOGENIC VALVES- GATE TYPE- BOLTED BONNET-
FULL & STANDARD PORT
BONNEY FORGE

800 LB.

1500 LB.

Design construction:
API 602- ASME B16.34- BS 5352- BS 6364
Testing according to API 598
Marking MSS SP25
Outside Screw and Yoke (OS&Y)
Self aligning two piece packing gland
Spiral wound gasket
Integral backseat
Welded body- bonnet joint also available
Socket Weld Ends to ASME B16.11
Screwed Ends (NPT) to ASME B1.20.1
Butt Welding Ends to ASME B16.25
Ratings: stainless steel A182- F316
-class 800 1920 psig @ 100°F
132 bar + 38°C
-class 1500 3600 psig @ 100°F
248 bar + 38°C



600 LB. FULL PORT – FIG. 6C 10						
SIZE	inch mm	1/2 15	3/4 20	1 25	1 1/2 40	2 50
A	inch mm	6.5 165	7.52 191	8.50 216	9.49 241	11.5 292
B open	inch mm	16.93 430	17.52 445	18.50 470	21.06 535	23.42 595
C	inch mm	3.46 88	3.82 97	5.43 138	5.43 138	6.77 172
F	inch mm	.55 14	.71 18	.94 24	1.44 36.6	1.89 48
Weight	lb. kg	13.75 6.2	18.5 8.4	23 10.5	44 20	70.5 32
PACKING		BH2	BH4	BH5	BY5	BH8
GASKET		G2	G3	G4	G7	G9

600 LB. STANDARD PORT – FIG. 6CL 10						
SIZE	inch mm	1/2 15	3/4 20	1 25	1 1/2 40	2 50
A	inch mm	6.5 165	7.52 191	8.50 216	9.49 241	11.5 292
B open	inch mm	16.53 420	17.12 435	17.72 450	20.08 510	21.06 535
C	inch mm	3.46 88	3.46 88	3.82 97	5.43 138	5.43 138
F	inch mm	.38 9.6	.55 14	.71 18	1.18 30	1.44 36.6
Weight	lb. kg	11.75 5.3	16.25 7.4	21.5 9.8	39.75 18	53 24
PACKING		BH2	BH2	BH4	BH6	BY5
GASKET		G2	G2	G3	G6	G7

800 LB. FULL PORT – FIG. C 10									
SIZE	inch mm	1/4 6	3/8 10	1/2 15	3/4 20	1 25	1 1/4 32	1 1/2 40	2 50
A	inch mm	3.15 80	3.15 80	3.54 90	4.33 110	5 127	5 127	5 127	8.27 210
B open	inch mm	15.75 400	15.75 400	15.75 400	17.52 445	18.70 475	19.88 505	20.87 530	23.54 598
C	inch mm	3.46 88	3.46 88	3.46 88	3.82 97	5.43 138	5.43 138	5.43 138	6.77 172
F	inch mm	.31 8	.38 9.6	.55 14	.71 18	.94 24	1.18 30	1.44 36.6	1.89 48
G	inch mm	1.26 32	1.26 32	1.5 38	1.89 48	2.20 56	2.52 64	3.07 78	3.35 85
Weight	lb. kg	7.5 3.4	7.5 3.4	7.75 3.5	11.25 5.1	18 8.2	26.5 12	35.25 16	50.75 23
PACKING		BH2	BH2	BH2	BH4	BH5	BH6	BY5	BH8
GASKET		G2	G2	G2	G3	G4	G6	G7	G9

800 LB. STANDARD PORT – FIG. CL 10						
SIZE	inch mm	1/2 15	3/4 20	1 25	1 1/2 40	2 50
A	inch mm	3.15 80	3.54 90	4.33 110	5 127	5 127
B open	inch mm	15.75 400	15.75 400	17.52 445	19.88 505	20.87 530
C	inch mm	3.46 88	3.46 88	3.82 97	5.43 138	5.43 138
F	inch mm	.38 9.6	.55 14	.71 18	1.18 30	1.44 36.6
G	inch mm	1.26 32	1.5 38	1.89 48	2.52 64	3.07 78
Weight	lb. kg	7.5 3.4	7.75 3.5	11 5	21 9.6	27.5 12.5
PACKING		BH2	BH2	BH4	BH6	BY5
GASKET		G2	G2	G3	G6	G7

1500 LB. FULL PORT – FIG. 9C 10									
SIZE	inch mm	1/4 6	3/8 10	1/2 15	3/4 20	1 25	1 1/4 32	1 1/2 40	2 50
A	inch mm	3.54 90	3.54 90	4.33 110	5 127	5 127	5 127	8.27 210	9.05 230
B open	inch mm	15.55 395	15.55 395	17.12 435	18.50 470	19.49 495	20.47 520	23.03 585	24.41 620
C	inch mm	3.46 88	3.46 88	3.82 97	5.43 138	5.43 138	5.43 138	6.77 172	9.21 234
F	inch mm	.31 8	.38 9.6	.55 14	.71 18	.94 24	1.18 30	1.44 36.6	1.89 48
G	inch mm	1.5 38	1.5 38	1.89 48	2.20 56	2.52 64	3.07 78	3.35 85	3.74 95
Weight	lb. kg	7.75 3.5	7.75 3.5	12 5.5	17 7.8	24.25 11	40 14.5	56.5 25.6	94.75 43
PACKING		BH3	BH3	BH5	BH6	2B4	BY7	2B5	9B8
GASKET		G1	G1	G2	G3	G4	G5	G7	G8

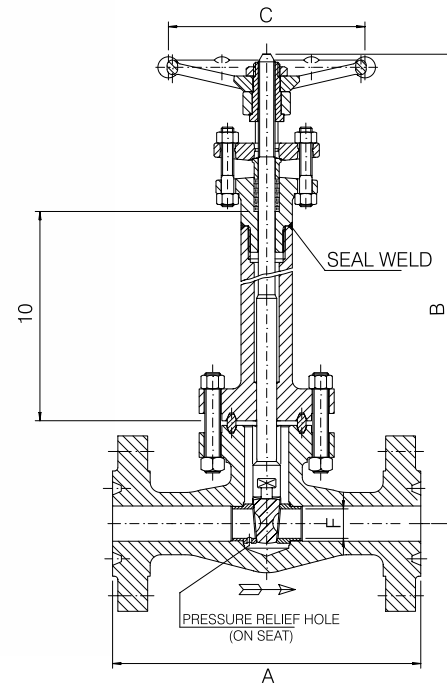
1500 LB. STANDARD PORT – FIG. 9CL 10						
SIZE	inch mm	1/2 15	3/4 20	1 25	1 1/2 40	2 50
A	inch mm	3.54 90	4.33 110	5 127	5 127	8.27 210
B open	inch mm	15.94 405	17.32 440	18.50 470	20.67 525	23.23 590
C	inch mm	3.46 88	3.82 97	5.43 138	5.43 138	6.77 172
F	inch mm	.38 9.6	.55 14	.71 18	1.18 30	1.44 36.6
G	inch mm	1.26 32	1.5 38	1.89 48	2.52 64	3.07 78
Weight	lb. kg	8 3.7	11.5 5.3	18.75 8.5	30 13.6	57.25 26
PACKING		BH3	BH5	BH6	2B5	BH8
GASKET		G1	G2	G3	G5	G7



CRYOGENIC VALVES- GATE TYPE- BOLTED BONNET- FULL PORT

1500 LB.

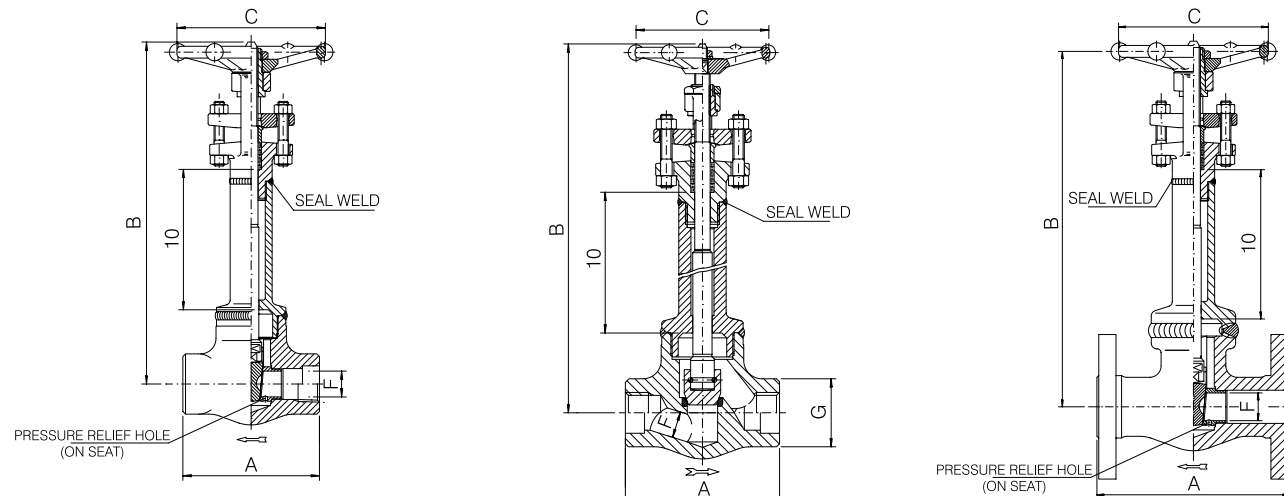
Design construction:
 ASME B16.34- BS 5352
 Full Port type
 Testing according to API 598
 Marking MSS SP25
 Outside Screw and Yoke (OS&Y)
 Self aligning two piece packing gland
 Body bonnet gasket ring joint type
 Spiral wound type gasket on request
 Integral backseat
 Integral body flanges
 Face to face according to ASME B16.10
 Flanges according to ASME B16.5
 Welded body bonnet joint also available
 Ratings: stainless steel A182- F316
 -class 1500 3600 psig @ 100°F
 248 bar + 38°C



FULL PORT - FIG. 15CFR 10						
SIZE	inch	1/2	3/4	1	1 1/2	2
	mm	15	20	25	40	50
A	inch	8.50	9.01	10	12.01	14.62
	mm	216	229	254	305	371.5
B open	inch	17.91	19.29	19.68	22.64	24.80
	mm	455	490	500	575	630
C	inch	3.82	5.43	5.43	6.77	9.21
	mm	97	138	138	172	234
F	inch	.55	.71	.94	1.44	1.89
	mm	14	18	24	36.6	48
Weight	lb.	22.5	30.75	38.5	68.25	130
	kg	10.2	14	17.5	31	59
PACKING		BH5	BH6	2B4	BH8	4B8
GASKET		R12	R16	R16	R20	R22

Materials and trim specifications Page 91

TYPICAL DRAWING FOR GATE AND GLOBE WELDED BONNET CONSTRUCTION

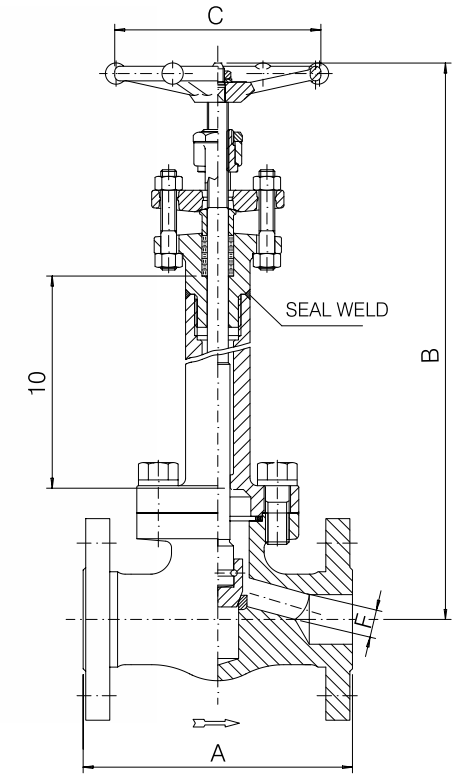


CRYOGENIC VALVES- GLOBE TYPE- BOLTED BONNET- FULL & STANDARD PORT

150 LB.

300 LB.

Design construction:
 ASME B16.34- BS 5352- BS 6364
 Testing according to API 598
 Marking MSS SP25
 Outside Screw and Yoke (OS&Y)
 Self aligning two piece packing gland
 Spiral wound gasket
 Integral backseat
 Loose disc stem assembly
 Integral body flanges
 Face to face according to ASME B16.10
 Flanges according to ASME B16.5
 Welded body - bonnet joint also available
 Ratings: stainless steel A182- F316
 - class 150 275 psig @ 100°F
 19 bar + 38°C
 - class 300 720 psig @ 100°F
 49 bar + 38°C



FULL PORT - FIG. 1C 30						
SIZE	inch	1/2	3/4	1	1 1/2	2
	mm	15	20	25	40	50
A	inch	4.25	4.62	5	6.5	7.99
	mm	108	117.5	127	165	203
B open	inch	17.52	18.50	19.68	22.05	24.80
	mm	445	470	500	560	630
C	inch	3.46	3.82	5.43	5.43	6.77
	mm	88	97	138	138	172
F	inch	.51	.69	.88	1.38	1.77
	mm	13	17.5	22.5	35	45
Weight	lb.	10.5	13	19.25	32.5	46.25
	kg	4.8	5.9	8.7	14.7	21
PACKING		BH3	BH5	BY5	BY7	BY7
GASKET		G2	G3	G4	G7	G8

STANDARD PORT - FIG. 1CL 30						
SIZE	inch	1/2	3/4	1	1 1/2	2
	mm	15	20	25	40	50
A	inch	4.25	4.62	5	6.5	7.99
	mm	108	117.5	127	165	203
B open	inch	15.16	17.12	18.11	20.27	21.46
	mm	385	435	460	515	545
C	inch	3.46	3.46	3.82	5.43	6.77
	mm	88	88	97	138	172
F	inch	.35	.51	.69	1.16	1.38
	mm	9	13	17.5	29.5	35
Weight	lb.	10	11.5	14.75	27.5	42
	kg	4.6	5.2	6.7	12.5	19
PACKING		BH3	BH3	BH5	BY5	BY7
GASKET		G2	G2	G3	G5	G8

FULL PORT - FIG. 3C 30						
SIZE	inch	1/2	3/4	1	1 1/2	2
	mm	15	20	25	40	50
A	inch	6.00	7.01	7.99	9.01	10.51
	mm	152.5	178	203	229	267
B open	inch	16.53	18.11	20.08	21.65	24.01
	mm	420	460	510	550	610
C	inch	3.46	3.82	5.43	6.77	6.77
	mm	88	97	138	172	172
F	inch	.51	.69	.88	1.38	1.77
	mm	13	17.5	22.5	35	45
Weight	lb.	13.75	17.5	26.5	46.25	68.25
	kg	6.2	7.9	12	21	31
PACKING		BH3	BH5	BY5	BY7	BH8
GASKET		G2	G3	G4	G7	G9

STANDARD PORT - FIG. 3CL 30						
SIZE	inch	1/2	3/4	1	1 1/2	2
	mm	15	20	25	40	50
A	inch	6.00	7.01	7.99	9.01	10.51
	mm	152.5	178	203	229	267
B open	inch	15.35	17.32	18.90	21.26	22.24
	mm	390	440	480	540	565
C	inch	3.46	3.46	3.82	5.43	6.77
	mm	88	88	97	138	172
F	inch	.35	.51	.69	1.16	1.38
	mm	9	13	17.5	29.5	35
Weight	lb.	12.25	14.75	21.5	38.5	54
	kg	5.6	6.7	9.8	17.5	24.5
PACKING		BH3	BH3	BH5	BY5	BY7
GASKET		G2	G2	G3	G6	G7

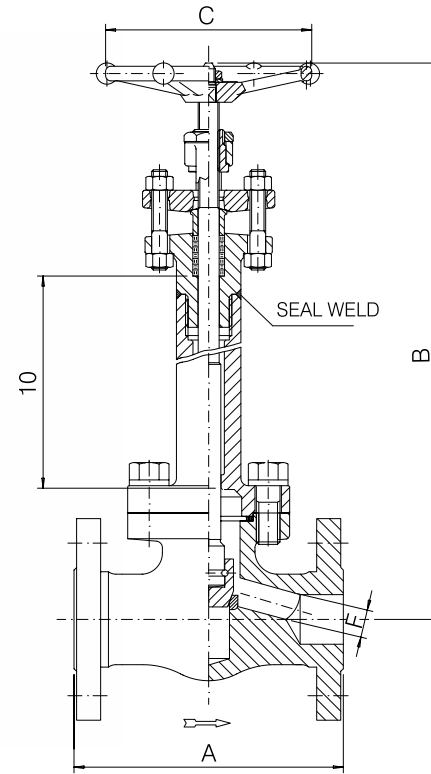
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CRYOGENIC VALVES- GLOBE TYPE- BOLTED BONNET- FULL & STANDARD PORT

600 LB.

Design construction:
 ASME B16.34- BS 5352- BS 6364
 Testing according to API 598
 Marking MSS SP25
 Outside Screw and Yoke (OS&Y)
 Self aligning two piece packing gland
 Spiral wound gasket
 Integral backseat
 Loose disc stem assembly
 Integral body flanges
 Face to face according to ASME B16.10
 Flanges according to ASME B16.5
 Welded body - bonnet joint also available
 Ratings: stainless steel A182 - F316
 -class 600 1440 psig @ 100°F
 99 bar + 38°C

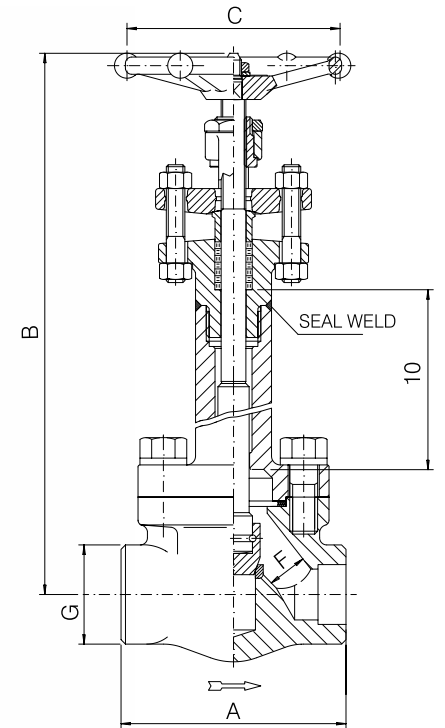


CRYOGENIC VALVES- GLOBE TYPE- BOLTED BONNET- FULL & STANDARD PORT

800 LB.

1500 LB.

Design construction:
 ASME B16.34- BS5352- BS6364
 Testing according to API 598
 Marking MSS SP25
 Outside Screw and Yoke (OS&Y)
 Self aligning two piece packing gland
 Spiral wound gasket
 Integral backseat
 Loose disc stem assembly
 Socket Weld Ends to ASME B16.11
 Screwed Ends (NPT) to ASME B1.20.1
 Butt Welding Ends to ASME B16.25
 Welded body - bonnet joint also available
 Ratings: stainless steel A182- F316
 - class 800 1920 psig @ 100°F
 132 bar + 38°C
 - class 1500 3600 psig @ 100°F
 248 bar + 38°C



600 LB. FULL PORT - FIG. 6C 30						
SIZE	inch mm	1/2 15	3/4 20	1 25	1 1/2 40	2 50
A	inch mm	6.5 165	7.52 191	8.50 216	9.49 241	11.5 292
B open	inch mm	16.53 420	18.11 460	20.08 510	21.65 550	24.01 610
C	inch mm	3.46 88	3.82 97	5.43 138	6.77 172	6.77 172
F	inch mm	.51 13	.69 17.5	.88 22.5	1.38 35	1.77 45
Weight	lb. kg	14.25 6.5	19.25 8.7	27.75 12.6	48.5 22	75 34
PACKING		BH3	BH5	BY5	BY7	BH8
GASKET		G2	G3	G4	G7	G9

600 LB. STANDARD PORT - FIG. 6CL 30						
SIZE	inch mm	1/2 15	3/4 20	1 25	1 1/2 40	2 50
A	inch mm	6.5 165	7.52 191	8.50 216	9.49 241	11.5 292
B open	inch mm	15.35 390	17.32 440	18.90 480	21.26 540	22.24 565
C	inch mm	3.46 88	3.46 88	3.82 97	5.43 138	6.77 172
F	inch mm	.35 9	.51 13	.69 17.5	1.16 29.5	1.38 35
Weight	lb. kg	13 5.9	16.75 7.6	22.5 10.2	42 19	57.25 26
PACKING		BH3	BH3	BH3	BY5	BY7
GASKET		G2	G2	G3	G6	G7

800 LB. FULL PORT - FIG. C 30									
SIZE	inch mm	1/4 6	3/8 10	1/2 15	3/4 20	1 25	1 1/4 32	1 1/2 40	2 50
A	inch mm	3.15 80	3.15 80	3.54 90	4.33 110	5 127	5.90 150	7.09 180	8.27 210
B open	inch mm	16.34 415	16.34 415	16.53 420	18.11 460	19.49 495	19.88 505	21.26 540	24.21 615
C	inch mm	3.46 88	3.46 88	3.46 88	3.82 97	5.43 138	5.43 138	6.77 172	6.77 172
F	inch mm	.27 7	.35 9	.51 13	.69 17.5	.88 22.5	1.16 29.5	1.38 35	1.77 45
G	inch mm	1.26 32	1.26 32	1.5 38	1.89 48	2.20 56	2.52 64	3.07 78	3.35 85
Weight	lb. kg	7.75 3.5	7.75 3.5	8 3.6	11.25 5.1	18.5 8.4	27.75 12.6	36.25 16.5	53 24
PACKING		BH3	BH3	BH3	BH5	BY5	BY5	BY7	BH8
GASKET		G2	G2	G2	G3	G4	G6	G7	G9

800 LB. STANDARD PORT - FIG. CL 30						
SIZE	inch mm	1/2 15	3/4 20	1 25	1 1/2 40	2 50
A	inch mm	3.15 80	3.54 90	4.33 110	5.90 150	7.09 180
B open	inch mm	16.34 415	16.53 420	18.11 460	19.92 506	21.26 540
C	inch mm	3.46 88	3.46 88	3.82 97	5.43 138	6.77 172
F	inch mm	.35 9	.51 13	.69 17.5	1.16 29.5	1.38 35
G	inch mm	1.26 32	1.5 38	1.89 48	2.52 64	3.07 78
Weight	lb. kg	7.25 3.3	8.25 3.8	11.5 5.2	21.5 9.8	32.5 14.8
PACKING		BH3	BH3	BH5	BY5	BY7
GASKET		G2	G2	G3	G6	G7

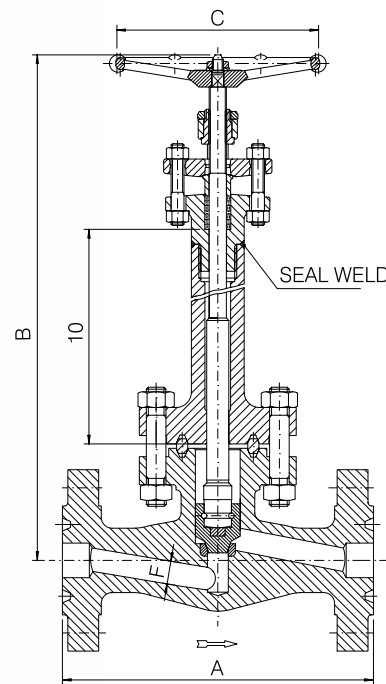
1500 LB. FULL PORT - FIG. 9C 30									
SIZE	inch mm	1/4 6	3/8 10	1/2 15	3/4 20	1 25	1 1/4 32	1 1/2 40	2 50
A	inch mm	3.54 90	3.54 90	4.33 110	5 127	5.90 150	7.09 180	8.27 210	9.05 230
B open	inch mm	16.14 410	16.14 410	17.91 455	19.49 495	19.68 500	21.26 540	24.21 615	25.39 645
C	inch mm	3.46 88	3.46 88	3.82 97	5.43 138	5.43 138	6.77 172	6.77 172	9.21 234
F	inch mm	.27 7	.35 9	.47 12	.59 15	.79 20	1.06 27	1.26 32	1.57 40
G	inch mm	1.5 38	1.5 38	1.89 48	2.20 56	2.52 64	3.07 78	3.35 85	3.74 95
Weight	lb. kg	8.75 4	8.75 4	12 5.5	17.5 8	24.25 11	34 15.5	55 25	90.25 41
PACKING		BH3	BH3	BH5	2B4	2B4	2B5	BH8	9B8
GASKET		G1	G1	G2	G3	G4	G5	G7	G8

1500 LB. STANDARD PORT - FIG. 9CL 30						
SIZE	inch mm	1/2 15	3/4 20	1 25	1 1/2 40	2 50
A	inch mm	3.54 90	4.33 110	5.90 150	7.09 180	8.27 210
B open	inch mm	16.34 415	17.91 455	19.61 498	21.65 550	24.21 615
C	inch mm	3.46 88	3.82 97	5.43 138	6.77 172	6.77 172
F	inch mm	.35 9	.47 12	.59 15	1.06 27	1.26 32
G	inch mm	1.5 38	1.89 48	2.20 56	3.07 78	3.35 85
Weight	lb. kg	8 3.7	12 5.4	19.5 8.9	34.75 15.8	60.5 27.5
PACKING		BH3	BH5	2B4	2B5	BH8
GASKET		G1	G2	G3	G5	G7

CRYOGENIC VALVES- GLOBE TYPE- BOLTED BONNET- FULL PORT

1500 LB.

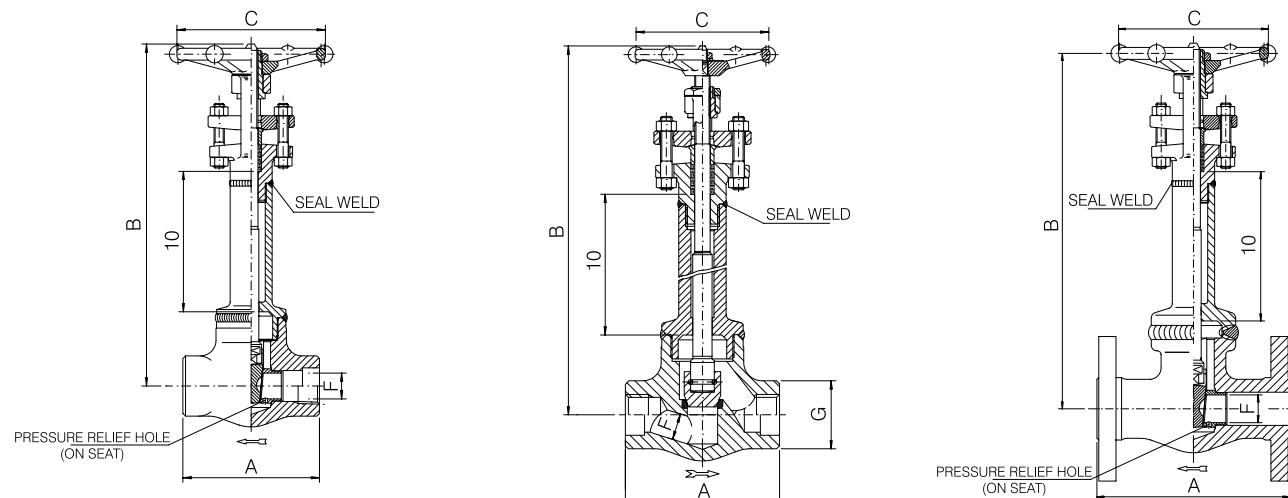
Design construction:
 ASME B16.34- BS 5352- BS6364
 Testing according to API- 598
 Marking MSS- SP25
 Outside Screw and Yoke (OS&Y)
 Self aligning two piece packing gland
 Body bonnet gasket ring joint type
 Spiral wound gasket on request
 Integral backseat
 Loose disc stem assembly
 Integral body flanges
 Face to face according to ASME B16.10
 Flanges according to ASME B16.5
 Welded body bonnet joint also available
 Full port type
 Ratings: stainless steel A182- F316
 - class 1500 3600 psig @ 100°F
 248 bar + 38°C



FULL PORT - FIG. 15CFR 30						
SIZE	inch	1/2	3/4	1	1 1/2	2
	mm	15	20	25	40	50
A	inch	8.50	9.01	10	12.01	14.62
	mm	216	229	254	305	371.5
B open	inch	18.50	20.08	20.67	23.42	25.59
	mm	470	510	525	595	650
C	inch	3.82	5.43	5.43	6.77	9.21
	mm	97	138	138	172	234
F	inch	.47	.57	.75	1.22	1.57
	mm	12	14.5	19	31	40
Weight	lb.	23	30.75	40.75	71.75	136.75
	kg	10.5	14	18.5	32.5	62
PACKING		BH5	2B4	2B4	BH8	9B8
GASKET		R12	R16	R16	R20	R22

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TYPICAL DRAWING FOR GATE AND GLOBE WELDED BONNET CONSTRUCTION



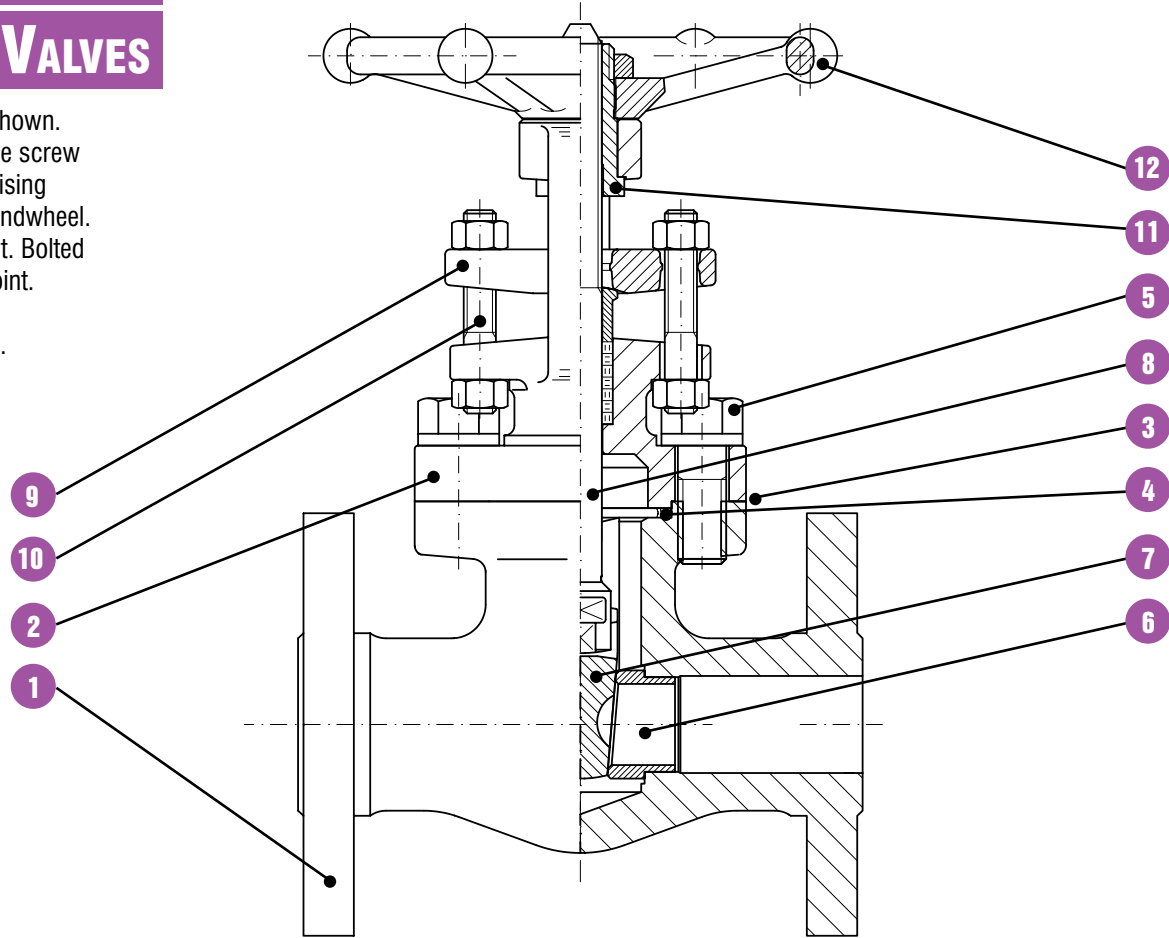
- Overview42
- Gate Type- Bolted Bonnet-
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INTEGRAL FLANGED VALVES



**INTEGRAL
FLANGED VALVES**

Typical gate valve shown.
Forged steel, outside screw
and yoke (OS&Y), rising
stem, non-rising handwheel.
Full or standard port. Bolted
or welded bonnet joint.
Integral backseat
Integral end flanges.



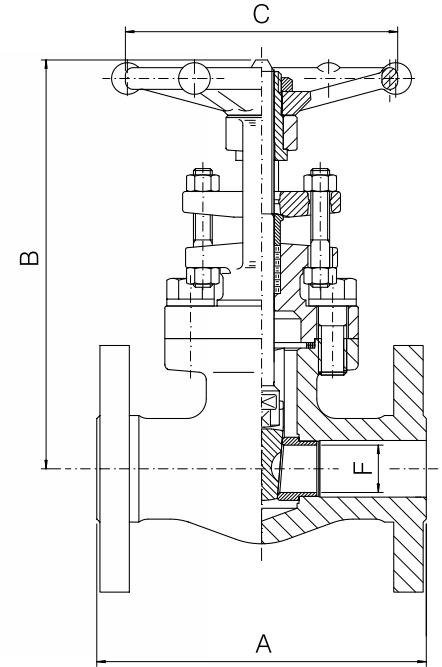
- 1. BODY.** The body is forged steel and designed to the basic dimensional requirements of the applicable specifications such as API 602, ASME B16.34, ASME B16.10 and ASME B16.5. The body is available in both the full or standard port design. End flanges are forged integral with the body.
- 2. BONNET.** The bonnet is forged steel, has an integral backseat and incorporates the stuffing box, which has dimensions per the applicable specifications such as API 602.
- 3. BODY-BONNET JOINT.** Two different bonnet joint designs are available. These are either the bolted bonnet or the threaded and seal welded type.
- 4. GASKET.** The bolted bonnet joint design valve uses a contained, controlled compression, spiral wound type gasket.
- 5. BONNET BOLTING.** The bonnet bolting is manufactured of alloy steel in accordance with the requirements of the applicable specifications such as API 602 and ASME B16.34.
- 6. SEAT RINGS.** The seat rings are steel and make up part of the valve trim. They are pressed into the valve body and wedged into place, forming a seal with the body. The seating surfaces are ground and lapped.
- 7. WEDGE.** The wedge, which is a solid design, is forged or investment cast steel and is part of the valve trim. The seating surfaces are ground and lapped.

- 8. STEM.** The stem is forged steel and part of the valve trim. It contains an integral back seat shoulder, which mates with the integral backseat of the bonnet. The stem is designed to the basic dimensional requirements of the applicable specifications such as API 602.
- 9. GLAND AND FLANGE.** The gland, gland flange assembly utilizes a separate, two piece design. This self aligning design allows the flange to be unevenly tightened while the gland maintains its parallel alignment with the stem and stuffing box.
- 10. GLAND BOLTS AND NUTS.** The steel/stainless steel gland bolt and nut assembly is a stud, double nut arrangement. This design allows complete removal from the valve when service is required. The use of industry standard thread full length studs and nuts also allows easy replacement should these items be lost or in need of replacement.
- 11. YOKE SLEEVE.** The yoke sleeve is of forged stainless steel material having a high melting point and is resistant to wear and corrosion.
- 12. HANDWHEEL.** The handwheel is forged carbon steel of an open spoke design. This robust construction along with appropriate sizing allows for ease of operation.

150 LB.

300 LB.

Design construction:
API 602 - ASME B16.34 - BS 5352
Testing according to API 598
Marking MSS SP25
Outside Screw and Yoke (OS&Y)
Self aligning two piece packing gland
Spiral-wound gasket
Integral backseat
Integral body flanges
Face to face according to ASME B16.10
Flanges according to ASME B16.5
Ratings:
-carbon steel class 150 285 psig@ 100°F
20 bar + 38°C
-carbon steel class 300 740 psig@ 100°F
51 bar + 38°C



		FULL PORT – FIG. 1 10					
SIZE	inch	1/2	3/4	1	1 1/2	2	
	mm	15	20	25	40	50	
A	inch	4.25	4.62	5	6.50	7	
	mm	108	117,5	127	165	178	
B open	inch	6.88	8.26	9.05	11.41	13.39	
	mm	175	210	230	290	340	
C	inch	3.46	3.82	5.43	5.43	6.77	
	mm	88	97	138	138	172	
F	inch	.55	.71	.94	1.44	1.89	
	mm	14	18	24	36,6	48	
Weight	lb.	7	10.25	13.25	25	39.5	
	kg	3,2	4,7	6,1	11,4	18	
PACKING		BH2	BH4	BH5	BY5	BY7	
GASKET		G2	G3	G4	G7	G8	

		STANDARD PORT – FIG. L1 10						
SIZE	inch	1/2	3/4	1	1 1/2	2	3	
	mm	15	20	25	40	50	75	
A	inch	4.25	4.62	5	6.50	7	8	
	mm	108	117,5	127	165	178	203	
B open	inch	6.88	7.16	8.35	10.04	11.41	13.58	
	mm	175	182	212	255	290	345	
C	inch	3.46	3.46	3.82	5.43	5.43	6.77	
	mm	88	88	97	138	138	172	
F	inch	.38	.55	.71	1.18	1.44	1.89	
	mm	9,6	14	18	30	36,6	48	
Weight	lb.	6.25	8	11.25	21	29	46.75	
	kg	2,9	3,7	5,2	9,6	13,2	21,2	
PACKING		BH2	BH2	BH4	BH6	BY5	BH8	
GASKET		G2	G2	G3	G5	G7	G8	

		FULL PORT – FIG. 3 10					
SIZE	inch	1/2	3/4	1	1 1/2	2	
	mm	15	20	25	40	50	
A	inch	5.51	6	6.50	7.51	8.50	
	mm	140	152,5	165	191	216	
B open	inch	6.89	8.26	9.05	11.42	13.39	
	mm	175	210	230	290	340	
C	inch	3.46	3.82	5.43	5.43	6.77	
	mm	88	97	138	138	172	
F	inch	.55	.71	.94	1.44	1.89	
	mm	14	18	24	36,6	48	
Weight	lb.	8.25	12.25	15.5	29.75	41.75	
	kg	3,8	5,6	7,1	13,5	19	
PACKING		BH2	BH4	BH5	BY5	BY7	
GASKET		G2	G3	G4	G7	G8	

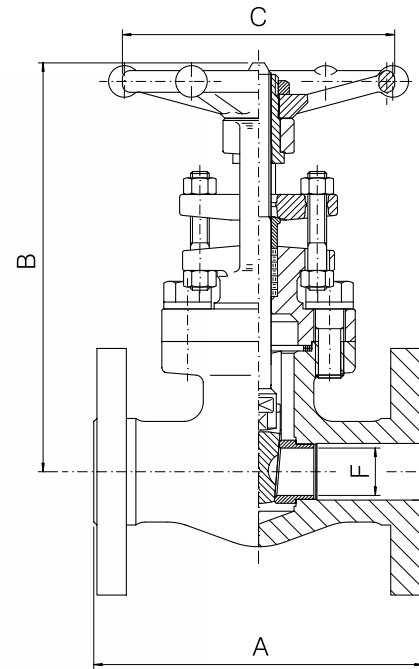
		STANDARD PORT – FIG. L3 10						
SIZE	inch	1/2	3/4	1	1 1/2	2		
	mm	15	20	25	40	50		
A	inch	5.51	6	6.50	7.51	8.5		
	mm	140	152,5	165	191	216		
B open	inch	6.89	7.17	8.35	9.84	11.42		
	mm	175	182	212	250	290		
C	inch	3.46	3.46	3.82	5.43	5.43		
	mm	88	88	97	138	138		
F	inch	.38	.55	.71	1.18	1.44		
	mm	9,6	14	18	30	36,6		
Weight	lb.	7.75	11.25	14.75	28.5	33.5		
	kg	3,6	5,2	6,7	13	15,3		
PACKING		BH2	BH2	BH4	BH6	BY5		
GASKET		G2	G2	G3	G5	G7		



INTEGRAL FLANGED VALVES- GATE TYPE- BOLTED BONNET- FULL & STANDARD PORT

600 LB.

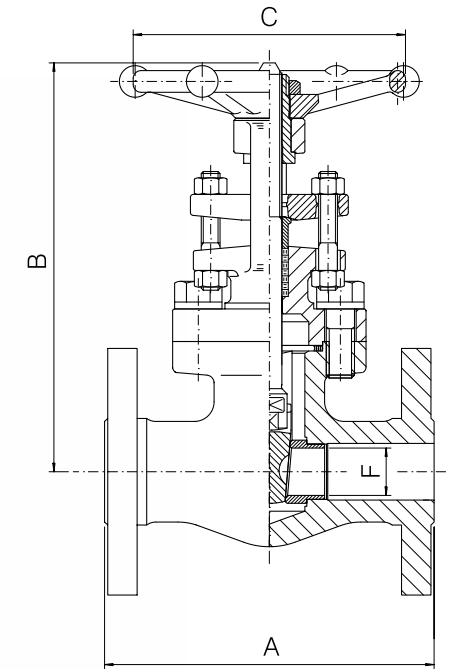
Design construction:
 API 602 - ASME B16.34 - BS 5352
 Testing according to API 598
 Marking MSS SP25
 Outside Screw and Yoke (OS&Y)
 Self aligning two piece packing gland
 Spiral-wound gasket
 Integral backseat
 Integral body flanges
 Face to face according to ASME B16.10
 Flanges according to ASME B16.5
 Ratings:
 - carbon steel class 600 1480 psig @ 100°F
 102 bar + 38°C



INTEGRAL FLANGED VALVES- GATE TYPE- BOLTED BONNET- FULL PORT

1500 LB.

Design construction:
 ASME B16.34 - BS 5352
 Full port type
 Testing according to API 598
 Marking MSS SP25
 Outside Screw and Yoke (OS&Y)
 Self aligning two piece packing gland
 Spiral wound gasket
 Integral backseat
 Integral body flanges
 Face to face according to ASME B16.10
 Flanges according to ASME B16.5
 Ring joint type gasket available on request
 Ratings:
 - carbon steel class 1500 3705 psig @ 100°F
 255 bar + 38°C



600 LB. FULL PORT – FIG. 6 10						
SIZE	inch mm	1/2 15	3/4 20	1 25	1 1/2 40	2 50
A	inch mm	6.50 165	7.51 191	8.50 216	9.50 241	11.50 292
B open	inch mm	6.89 175	8.46 215	9.45 240	11.62 295	14.17 360
C	inch mm	3.46 88	3.82 97	5.43 138	5.43 138	6.77 172
F	inch mm	.55 14	.71 18	.94 24	1.44 36.6	1.88 48
Weight	lb. kg	9.25 4.3	15.25 7	22 10	39.5 18	63.5 28
PACKING		BH2	BH4	BH5	BY5	BH8
GASKET		G2	G3	G4	G7	G9

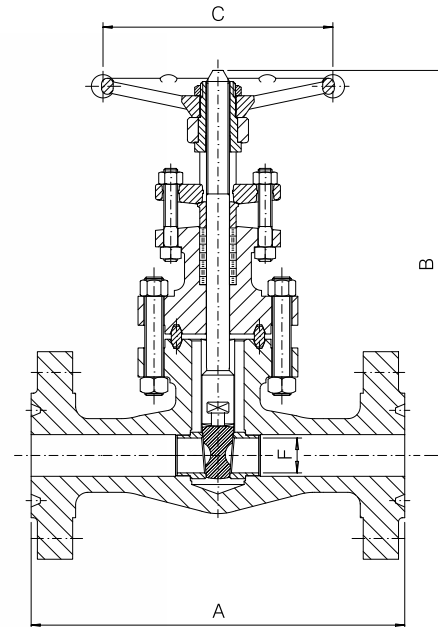
600 LB. STANDARD PORT – FIG. L6 10						
SIZE	inch mm	1/2 15	3/4 20	1 25	1 1/2 40	2 50
A	inch mm	6.50 165	7.51 191	8.50 216	9.50 241	11.50 292
B open	inch mm	6.65 169	7.28 185	8.46 215	10.04 255	12.01 305
C	inch mm	3.46 88	3.46 88	3.82 97	5.43 138	5.43 138
F	inch mm	.38 9.6	.55 14	.71 18	1.18 30	1.44 36.6
Weight	lb. kg	9.25 4.3	15.25 7	22 10	39.5 18	63.5 28
PACKING		BH2	BH2	BH4	BH6	BY5
GASKET		G2	G2	G3	G6	G7

1500 LB. FULL PORT – FIG. 15F 10						
SIZE	inch mm	1/2 15	3/4 20	1 25	1 1/2 40	2 50
A	inch mm	8.50 216	9.02 229	10 254	12.01 305	14.5 368.5
B open	inch mm	8.46 215	9.84 250	10.63 270	13.78 350	17.52 445
C	inch mm	3.82 97	5.43 138	5.43 138	6.77 172	9.21 234
F	inch mm	.55 14	.71 18	.94 24	1.44 36.6	1.89 48
Weight	lb. kg	18 8.2	28.5 13	35.5 16.2	63.75 29	121.25 55
PACKING		BH5	BH6	2B4	BH8	9B8
GASKET		G2	G3	G4	G7	G8

B[®] INTEGRAL FLANGED VALVES- GATE TYPE- BOLTED BONNET- FULL PORT

BONNEY FORGE

2500 LB.



Design construction:
 ASME B16.34 - BS 5352
 Full port type
 Testing according to API 598
 Marking MSS SP25
 Outside Screw and Yoke (OS&Y)
 Self aligning two piece packing gland
 Body Bonnet Gasket ring joint type
 Spiral wound type gasket on request
 Integral backseat
 Integral body flanges
 Face to face according to ASME B16.10
 Flanges according to ASME B16.5
Ratings:
 - carbon steel class 2500 6170 psig @ 100°F
 425 bar + 38°C

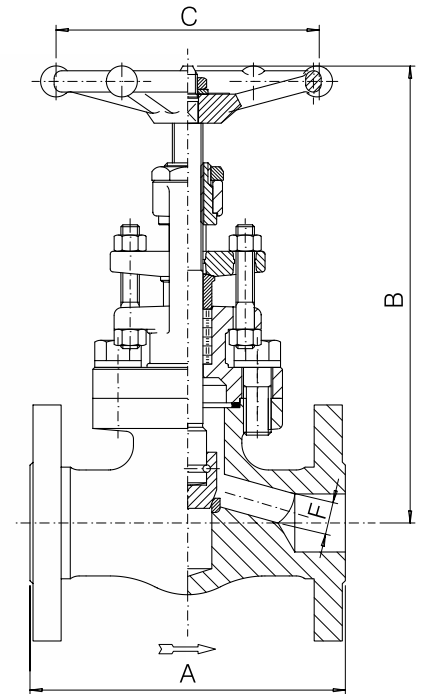
FULL PORT - FIG. 25RR 10						
SIZE	inch	1/2	3/4	1	1 1/2	2
	mm	15	20	25	40	50
A	inch	10.39	10.75	12.13	15.25	17.87
	mm	264	273	308	387.5	454
B open	inch	11.10	11.42	13.19	15.98	16.34
	mm	282	290	335	406	415
C	inch	5.43	5.43	6.77	9.21	12.60
	mm	138	138	172	234	320
F	inch	.45	.59	.76	1.10	1.50
	mm	11.5	15	19.5	28	38
Weight	lb.	35.5	38.75	63.75	132.25	143.25
	kg	16.2	17.6	29	60	65
PACKING		2B4	2B4	BH8	2B8	25B8
GASKET		R16	R16	R16	R19	R22

B[®] INTEGRAL FLANGED VALVES- GLOBE TYPE- BOLTED BONNET- FULL & STANDARD PORT

BONNEY FORGE

150 LB.

300 LB.



Design construction:
 ASME B16.34 - BS 5352
 Testing according to API 598
 Marking MSS SP25
 Outside Screw and Yoke (OS&Y)
 Loose disc stem assembly
 Self aligning two piece packing gland
 Spiral wound gasket
 Integral backseat
 Integral body flanges
 Face to face according to ASME B16.10
 Flanges according to ASME B16.5
Ratings:
 - carbon steel class 150 285 psig @ 100°F
 20 bar + 38°C
 - carbon steel class 300 740 psig @ 100°F
 51 bar + 38°C

FULL PORT - FIG. 130						
SIZE	inch	1/2	3/4	1	1 1/2	2
	mm	15	20	25	40	50
A	inch	4.25	4.62	5	6.50	8
	mm	108	117.5	127	165	203
B open	inch	7.72	9.05	10.55	12.40	13.19
	mm	196	230	268	315	335
C	inch	3.46	3.82	5.43	6.77	6.77
	mm	88	97	138	172	172
F	inch	.51	.68	.88	1.38	1.77
	mm	13	17.5	22.5	35	45
Weight	lb.	8.25	14	19	36.25	55
	kg	3.8	6.4	8.7	16.5	25
PACKING		BH3	BH5	BY5	BY7	BY7
GASKET		G2	G3	G4	G7	G8

STANDARD PORT - FIG. L1 30						
SIZE	inch	1/2	3/4	1	1 1/2	2
	mm	15	20	25	40	50
A	inch	4.25	4.62	5	6.50	8
	mm	108	117.5	127	165	203
B open	inch	7.72	7.72	8.90	10.75	11.81
	mm	196	196	226	273	300
C	inch	3.46	3.46	3.82	5.43	6.77
	mm	88	88	97	138	172
F	inch	.35	.51	.68	1.16	1.38
	mm	9	13	17.5	29.5	35
Weight	lb.	6.5	8.25	12	22.5	34.75
	kg	3	3.8	5.5	10.3	15.8
PACKING		BH3	BH3	BH5	BY5	BY7
GASKET		G2	G2	G3	G5	G8

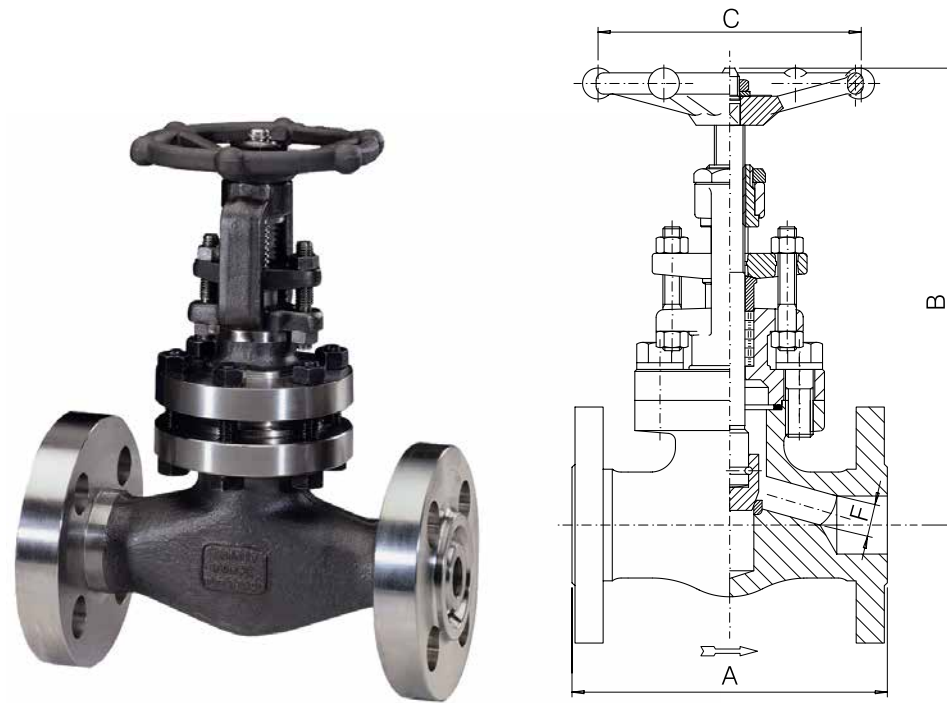
FULL PORT - FIG. 330						
SIZE	inch	1/2	3/4	1	1 1/2	2
	mm	15	20	25	40	50
A	inch	6	7	8	9.02	10.51
	mm	152.5	178	203	229	267
B open	inch	7.72	9.05	10.55	12.40	13.19
	mm	196	230	268	315	335
C	inch	3.46	3.82	5.43	6.77	6.77
	mm	88	97	138	172	172
F	inch	.51	.68	.88	1.38	1.77
	mm	13	17.5	22.5	35	45
Weight	lb.	9	15.25	21.25	40.75	61.5
	kg	4.1	7	9.7	18.5	28
PACKING		BH3	BH5	BY5	BY7	BH8
GASKET		G2	G3	G4	G7	G9

STANDARD PORT - FIG. L3 30						
SIZE	inch	1/2	3/4	1	1 1/2	2
	mm	15	20	25	40	50
A	inch	6	7	8	9.02	10.51
	mm	152.5	178	203	229	267
B open	inch	7.72	7.95	8.90	10.63	12.64
	mm	196	202	226	270	321
C	inch	3.46	3.46	3.82	5.43	6.77
	mm	88	88	97	138	172
F	inch	.35	.51	.68	1.16	1.38
	mm	9	13	17.5	29.5	35
Weight	lb.	9	13	18.25	36.25	47.25
	kg	4.1	6	8.3	15.5	21.5
PACKING		BH3	BH3	BH5	BY5	BY7
GASKET		G2	G2	G3	G6	G7

B INTEGRAL FLANGED VALVES- GLOBE TYPE- BOLTED BONNET-
FULL & STANDARD PORT
BONNEY FORGE

600 LB.

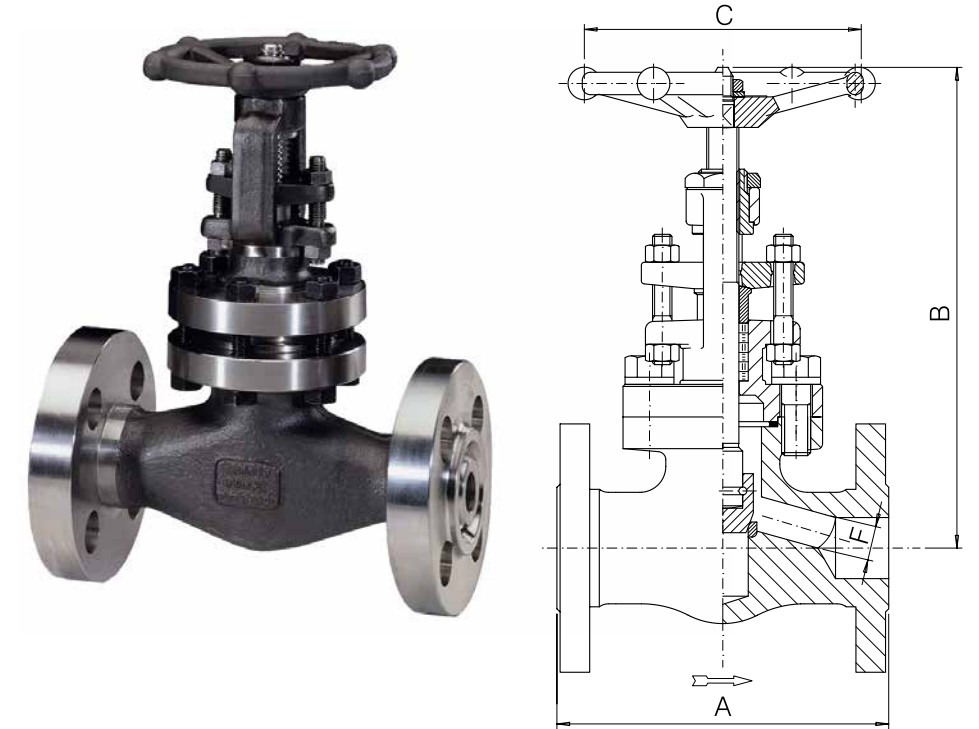
Design construction:
ASME B16.34 - BS 5352
Testing according to API 598
Marking MSS SP25
Loose disc stem assembly
Outside Screw and Yoke (OS&Y)
Self aligning two piece packing gland
Spiral wound gasket
Integral backseat
Integral body flanges
Face to face according to ASME B16.10
Flanges according to ASME B16.5
Ratings:
- carbon steel class 600 1480 psig @ 100°F
102 bar + 38°C



B INTEGRAL FLANGED VALVES- GLOBE TYPE- BOLTED BONNET-
FULL PORT
BONNEY FORGE

1500 LB.

Design construction:
ASME B16.34 - BS 5352
Full port type
Testing according to API 598
Marking MSS SP25
Outside Screw and Yoke (OS&Y)
Loose Disc Stem Assembly
Ring joint type gasket available on request
Self aligning two piece packing gland
Spiral wound gasket
Integral backseat
Integral body flanges
Face to face according to ASME B16.10
Flanges according to ASME B16.5
Ratings:
- carbon steel class 1500 3705 psig @ 100°F
255 bar + 38°C



600 LB. FULL PORT – FIG. 6 30						
SIZE	inch mm	1/2 15	3/4 20	1 25	1 1/2 40	2 50
A	inch mm	6.50 165	7.51 191	8.50 216	9.50 241	11.50 292
B open	inch mm	7.72 196	9.06 230	10.55 268	12.40 315	14.57 370
C	inch mm	3.46 88	3.82 97	5.43 138	6.77 172	6.77 172
F	inch mm	.51 13	.68 17.5	.88 22.5	1.38 35	1.77 45
Weight	lb. kg	13 5.9	17.5 8	23 10.5	43 19.5	62.75 28.5
PACKING		BH3	BH5	BY5	BY7	BH8
GASKET		G2	G3	G4	G7	G9

600 LB. STANDARD PORT – FIG. L6 30						
SIZE	inch mm	1/2 15	3/4 20	1 25	1 1/2 40	2 50
A	inch mm	6.50 165	7.51 191	8.50 216	9.50 241	11.50 292
B open	inch mm	7.72 196	7.95 202	9.21 234	10.63 270	12.64 321
C	inch mm	3.46 88	3.46 88	3.82 97	5.43 138	6.77 172
F	inch mm	.35 9	.51 13	.67 17.5	1.16 29.5	1.38 35
Weight	lb. kg	9.5 4.4	13.5 6.2	19 8.7	36.25 16.5	52 23.6
PACKING		BH3	BH3	BH5	BY5	BY7
GASKET		G2	G2	G3	G6	G7

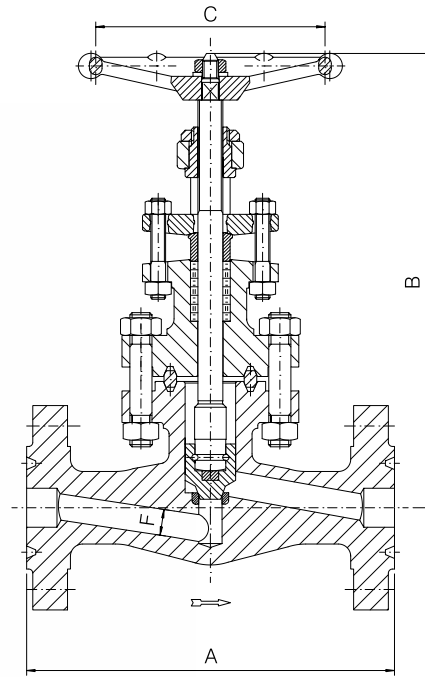
1500 LB. FULL PORT – FIG. 15F 30						
SIZE	inch mm	1/2 15	3/4 20	1 25	1 1/2 40	2 50
A	inch mm	8.50 216	9.02 229	10 254	12.01 305	14.51 368.5
B open	inch mm	9.45 240	11.02 280	11.61 295	14.57 370	18.31 465
C	inch mm	3.82 97	5.43 138	6.77 172	6.77 172	9.21 234
F	inch mm	.47 12	.57 14.5	.75 19	1.22 31	1.57 40
Weight	lb. kg	18.5 8.5	28.25 12.9	37.25 17	66 30	127.75 58
PACKING		BH5	2B4	2B4	BH8	9B8
GASKET		G2	G3	G4	G7	G8

B[®] INTEGRAL FLANGED VALVES- GLOBE TYPE- BOLTED BONNET- FULL PORT

BONNEY FORGE

2500 LB.

Design construction:
 ASME B16.34 - BS 5352
 Full port type
 Testing according to API 598
 Marking MSS SP25
 Outside Screw and Yoke (OS&Y)
 Loose Disc Stem Assembly
 Body Bonnet Gasket ring joint type
 Spiral wound type gasket on request
 Self aligning two piece packing gland
 Integral backseat
 Integral body flanges
 Face to face according to ASME B16.10
 Flanges according to ASME B16.5
 Ratings:
 - carbon steel class 2500 6170 psig @ 100°F
 425 bar + 38°C



FULL PORT - FIG. 25FR 30						
SIZE	inch mm	1/2 15	3/4 20	1 25	1 1/2 40	2 50
A	inch mm	10.39 264	10.75 273	12.13 308	15.25 387.5	17.87 454
B open	inch mm	12.20 310	12.40 315	13.78 350	17.72 450	18.11 460
C	inch mm	5.43 138	5.43 138	6.77 172	9.21 234	12.6 320
F	inch mm	.43 11	.57 14.5	.75 19	1.10 28	1.38 35
Weight	lb. kg	36.25 16.5	40.75 18.5	66 30	135.5 61.5	147.5 67
PACKING		2B4	2B4	BH8	9B8	4B8
GASKET		R16	R16	R16	R19	R20

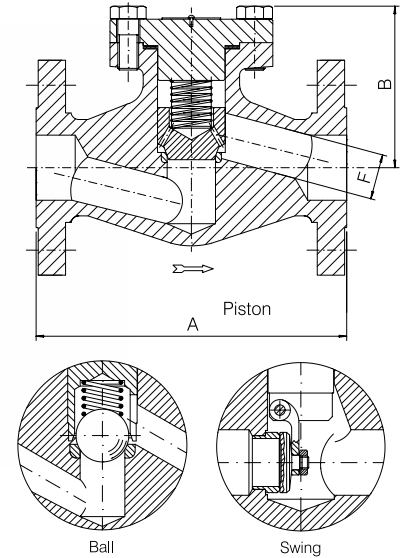
B[®] INTEGRAL FLANGED VALVES- CHECKTYPE- BOLTED BONNET- FULL & STANDARD PORT

BONNEY FORGE

150 LB.

300 LB.

Design construction:
 ASME B16.34 - BS 5352
 Testing according to API 598
 Marking MSS SP25
 Spring available on request for Piston and Ball Check Valves
 Spiral wound gasket
 Integral body flanges
 Face to face according to ASME B16.10
 Flanges according to ASME B16.5
 Ratings:
 - carbon steel class 150 285 psig @ 100°F
 20 bar + 38°C
 - carbon steel class 300 740 psig @ 100°F
 51 bar + 38°C



FULL PORT - FIG. 1 40, 1 50, 1 60						
SIZE	inch mm	1/2 15	3/4 20	1 25	1 1/2 40	2 50
A	inch mm	4.25 108	4.62 117.5	5 127	6.50 165	8 203
B	inch mm	2.95 75	3.35 85	3.94 100	4.92 125	5.51 140
F Piston/ F Ball	inch mm	.51 13	.68 17.5	.88 22.5	1.38 35	1.77 45
F Swing	inch mm	.55 14	.71 18	.94 24	1.46 36.6	1.89 48
Weight	lb. kg	6 2.8	7.75 3.6	11.25 5.2	22 10	35.25 16
GASKET		G2	G3	G4	G7	G8

STANDARD PORT - FIG. L1 40, L1 50, L1 60						
SIZE	inch mm	1/2 15	3/4 20	1 25	1 1/2 40	2 50
A	inch mm	4.25 108	4.62 117.5	5 127	6.50 165	8 203
B	inch mm	2.95 75	2.95 75	3.35 85	4.33 110	4.92 125
F Piston/ F Ball	inch mm	.35 9	.51 13	.68 17.5	1.16 29.5	1.38 35
F Swing	inch mm	.39 9.6	.55 14	.68 17.5	1.16 29.5	1.46 36.6
Weight Piston/ Weight Ball	lb. kg	5 2.3	6.75 3.1	9.75 4.5	18.5 8.4	30.75 14
Weight Swing	lb. kg	4.75 2.2	6.75 3.1	9.5 4.4	18.25 8.3	28.5 13
GASKET		G2	G2	G3	G5	G8

FULL PORT - FIG. 3 40, 3 50, 3 60						
SIZE	inch mm	1/2 15	3/4 20	1 25	1 1/2 40	2 50
A	inch mm	6 152.5	7 178	8* 203*	9.02* 229*	10.51 267
B	inch mm	2.95 75	3.54 90	3.94 100	4.72 120	5.91 150
F Piston/ F Ball	inch mm	.51 13	.68 17.5	.88 22.5	1.38 35	1.77 45
F Swing	inch mm	.55 14	.71 18	.94 24	1.46 36.6	1.89 48
Weight	lb. kg	7.75 3.6	14 6.4	18 8.2	33 15	46.25 21
GASKET		G2	G3	G4	G7	G9

STANDARD PORT - FIG. L3 40, L3 50, L3 60						
SIZE	inch mm	1/2 15	3/4 20	1 25	1 1/2 40	2 50
A	inch mm	6 152.5	7 178	8* 203*	9.02* 229*	10.51 267
B	inch mm	2.95 75	3.15 80	3.46 88	4.53 115	5.12 130
F Piston/ F Ball	inch mm	.35 9	.51 13	.68 17.5	1.16 29.5	1.38 35
F Swing	inch mm	.39 9.6	.55 14	.68 17.5	1.16 29.5	1.46 36.6
Weight Piston/ Weight Ball	lb. kg	7.5 3.4	11.5 5.3	16.5 7.5	30.75 14	41.75 19
Weight Swing	lb. kg	7.25 3.3	11.25 5.2	16.25 7.4	29.75 13.5	39.5 18
GASKET		G2	G2	G3	G6	G7

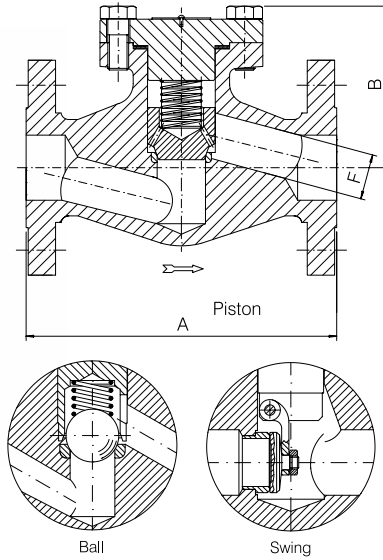
* A - dimensions for Swing Check Valves only are 8.5 in. / 216 mm and 9.5 in. / 241 mm respectively

B[®] INTEGRAL FLANGED VALVES- CHECK TYPE- BOLTED BONNET- FULL & STANDARD PORT

BONNEY FORGE

600 LB.

Design construction:
ASME B16.34 - BS 5352
Testing according to API 598
Marking MSS SP25
Spring available on request for Piston
and Ball Check Valves
Spiral wound gasket
Integral body flanges
Face to face according to ASME B16.10
Flanges according to ASME B16.5
Ratings:
- carbon steel class 600 1480 psig @ 100°F
102 bar + 38°C

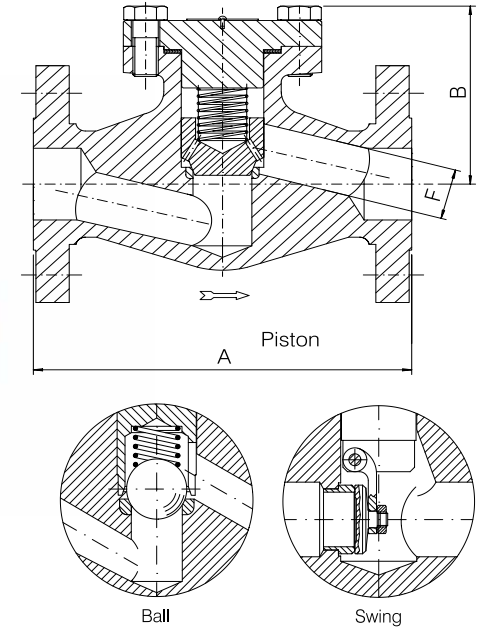


B[®] INTEGRAL FLANGED VALVES- CHECK TYPE- BOLTED BONNET- FULL PORT

BONNEY FORGE

1500 LB.

Design construction:
ASME B16.34 - BS 5352
Full Port Type
Testing according to API 598
Marking MSS SP25
Spring available on request for Piston
and Ball Check Valves
Ring joint type gasket available on request
Spiral wound gasket
Integral body flanges
Face to face according to ASME B16.10
Flanges according to ASME B16.5
Ratings:
- carbon steel class 1500 3705 psig @ 100°F
255 bar + 38°C



600 LB. FULL PORT — FIG. 6 40, 6 50, 6 60						
SIZE	inch mm	1/2 15	3/4 20	1 25	1 1/2 40	2 50
A	inch mm	6.50 165	7.51 191	8.50 216	9.50 241	11.50 292
B	inch mm	2.95 75	3.54 90	3.94 100	4.72 120	5.91 150
F Piston/ F Ball	inch mm	.51 13	.68 17.5	.88 22.5	1.38 35	1.77 45
F Swing	inch mm	.55 14	.71 18	.94 24	1.46 36.6	1.89 48
Weight	lb. kg	8.25 3,8	14.25 6,5	18.5 8,5	35.25 16	50.5 23
GASKET		G2	G3	G4	G7	G9

600 LB. STANDARD PORT — FIG. L6 40, L6 50, L6 60						
SIZE	inch mm	1/2 15	3/4 20	1 25	1 1/2 40	2 50
A	inch mm	6.50 165	7.51 191	8.50 216	9.50 241	11.50 292
B	inch mm	2.83 72	3.15 80	3.35 85	4.53 115	5.12 130
F Piston/ F Ball	inch mm	.35 9	.51 13	.68 17.5	1.16 29.5	1.38 35
F Swing	inch mm	.39 9.6	.55 14	.68 17.5	1.16 29.5	1.46 36.6
Weight	lb. kg	7.5 3,5	12.5 5,7	17.5 8	31.75 14,5	43 19,5
GASKET		G2	G2	G3	G6	G7

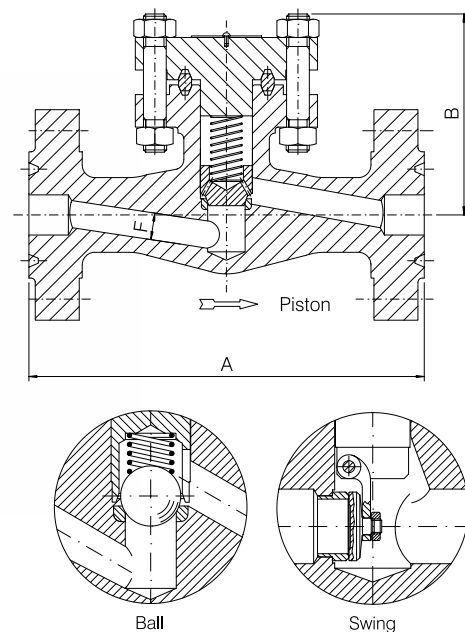
1500 LB. FULL PORT — FIG. 15F 40, 15F 50, 15F 60						
SIZE	inch mm	1/2 15	3/4 20	1 25	1 1/2 40	2 50
A	inch mm	8.50 216	9.02 229	10 254	12.01 305	14.50 368,5
B	inch mm	4.13 105	4.92 125	5.31 135	6.10 155	7.68 195
F Piston/ F Ball	inch mm	.47 12	.57 14,5	.75 19	1.22 31	1.57 40
F Swing	inch mm	.55 14	.71 18	.94 24	1.46 36,6	1.89 48
Weight	lb. kg	16.5 7,5	24.5 11,2	31.75 14,5	58.25 26,5	110 50
GASKET		G2	G3	G4	G7	G8

B INTEGRAL FLANGED VALVES- CHECK TYPE- BOLTED BONNET- FULL PORT

BONNEY FORGE

2500 LB.

Design construction:
 ASME B16.34 - BS 5352
 Full Port Type
 Testing according to API 598
 Marking MSS SP25
 Body Bonnet Gasket ring joint type
 Spiral wound type gasket on request
 Spring available on request for Piston
 and Ball Check Valves
 Integral body flanges
 Face to face according to ASME B16.10
 Flanges according to ASME B16.5
 Ratings:
 - carbon steel class 2500 6170 psig @ 100°F
 425 bar + 38°C



FULL PORT – FIG. 25FR 40, 25FR 50, 25FR 60						
SIZE	inch	1/2	3/4	1	1 1/2	2
	mm	15	20	25	40	50
A	inch	10.39	10.75	12.13	15.25	17.87
	mm	264	273	308	387.5	454
B	inch	5.04	5.12	5.98	7.40	7.48
	mm	128	130	152	188	190
F Piston/ F Ball	inch	.43	.57	.75	1.10	1.38
	mm	11	14.5	19	28	35
F Swing	inch	.45	.59	.76	1.10	1.38
	mm	11.5	15	19.5	28	35
Weight	lb.	31.5	35.25	57.75	119	123.25
	kg	14.3	16	26.3	54	56
GASKET		R16	R16	R16	R19	R20*

Materials and trim specifications Page 91

*R22 for 2" Swing only.

Overview56

Gate Type- Bolted & Welded Bonnet-
800 lb. & 1500 lb. valves57

Gate Type- Welded Bonnet-
2500 lb. valves58

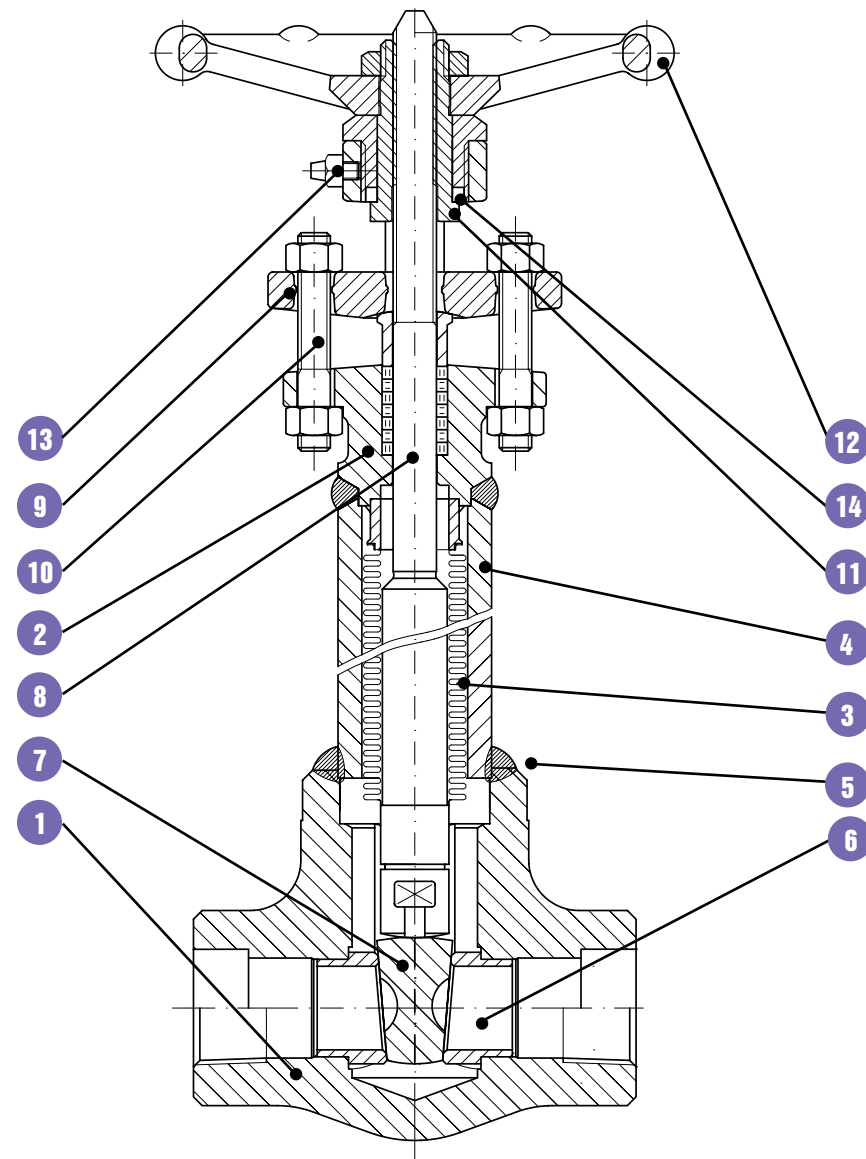
Globe Type- Bolted & Welded Bonnet-
800 lb. & 1500 lb. valves59

BELLOWS SEALED VALVES



**BELLOWS
SEALED VALVES**

Typical forged steel, outside screw and yoke (OS&Y), rising stem, non-rising handwheel. Full or standard port. Bolted or welded bonnet joint. Integral backseat.

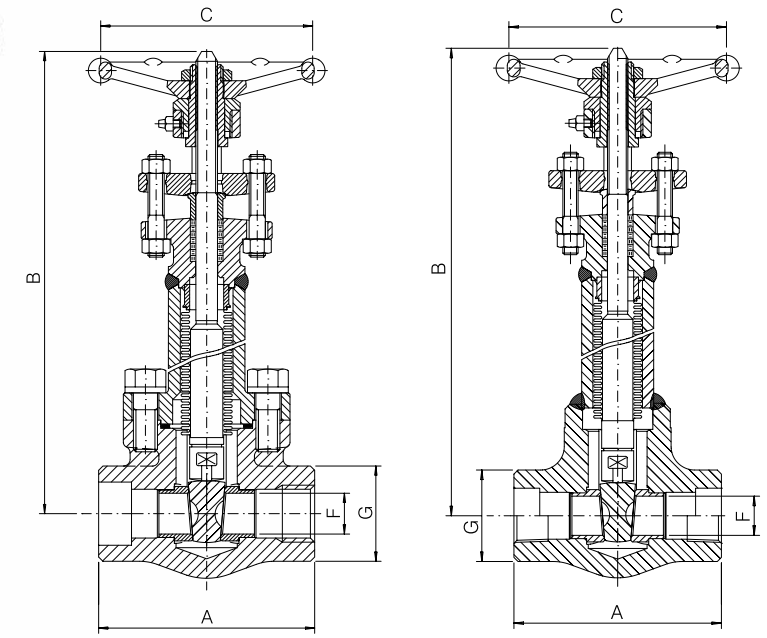


- 1. BODY.** The body is forged steel and designed to the basic dimensional requirements of the applicable specifications such as API 602 and ASME B16.34. The body is available in both the full or standard port design.
- 2. BONNET.** The bonnet is forged steel, has an integral backseat and incorporates the stuffing box, which has dimensions per the applicable specifications such as API 602.
- 3. BELLOWS.** The hydroformed bellows design is in accordance with specifications API 602, and MSS-SP-117.
- 4. BONNET EXTENSION.** The bonnet extension is forged steel and of similar material as the body and bonnet and attached by a welded connection.
- 5. BODY-BONNET JOINT.** Two different bonnet joint designs are available. These are either the welded or the bolted bonnet type. The bolted bonnet joint design valve uses a contained, controlled compression, spiral wound type gasket. The bonnet bolting is manufactured of alloy steel in accordance with the requirements of the applicable specifications such as API 602 and ASME B16.34.
- 6. SEAT RINGS.** The seat rings are steel and make up part of the valve trim. They are pressed into the valve body and wedged into place, forming a seal with the body. The seating surfaces are ground and lapped.
- 7. WEDGE.** The wedge, which is a solid design, is forged or investment cast steel and is part of the valve trim. The seating surfaces are ground and lapped.

- 8. STEM.** The stem is forged steel and part of the valve trim. It contains an integral back seat shoulder, which mates with the integral backseat of the bonnet. The stem is designed to the basic dimensional requirements of the applicable specifications such as API 602.
- 9. GLAND AND FLANGE.** The gland, gland flange assembly utilizes a separate, two piece design. This self aligning design allows the flange to be unevenly tightened while the gland maintains its parallel alignment with the stem and stuffing box.
- 10. GLAND BOLTS AND NUTS.** The steel/stainless steel gland bolt and nut assembly is a stud, double nut arrangement. This design allows complete removal from the valve when service is required. The use of industry standard thread full length studs and nuts also allows easy replacement should these items be lost or in need of replacement.
- 11. YOKE SLEEVE.** The yoke sleeve is of forged stainless steel material having a high melting point and is resistant to wear and corrosion.
- 12. HANDWHEEL.** The handwheel is forged carbon steel of an open spoke design. This robust construction along with appropriate sizing allows for ease of operation.
- 13. GREASE FITTING.** The grease fitting is incorporated in the bonnet for stem and yoke sleeve lubrication to ensure smooth operation.
- 14. THRUST WASHER.** The thrust washer is between the bonnet and yoke sleeve to help prevent excessive wear of the yoke bushing and reduce operating torque.

**800 LB.
1500 LB.**

Design construction:
API 602, ASME B16.34, MSS-SP-117, BS 5352
Testing according to API 598
Marking MSS-SP-25
Outside Screw and Yoke (OS&Y)
Self aligning two piece packing gland
Spiral wound gasket
Body Bonnet Weld to ASME IX
Integral Backseat
Hydroformed bellows
Grease nipple for stem
Socket Weld Ends to ASME B16.11
Screwed Ends (NPT) to ASME B1.20.1
Butt Welding Ends to ASME B16.25
Ratings:
-carbon steel class 800 1975 psig @ 100°F
138 bar + 38°C
-carbon steel class 1500 3705 psig @ 100°F
255 bar + 38°C



SIZE	FULL PORT — BOLTED BONNET FIG. S 10 - WELDED BONNET FIG. SHW 10								
	inch mm	1/4 6	3/8 10	1/2 15	3/4 20	1 25	1 1/4 32	1 1/2 40	2 50
A	inch mm	3.15 80	3.15 80	3.54 90	4.33 110	5 127	5 127	5 127	8.27 210
B open	inch mm	9.05 230	9.05 230	9.64 245	11.22 285	13.19 335	14.96 380	16.42 417	20.87 530
C	inch mm	3.46 88	3.46 88	3.46 88	3.82 97	5.43 138	5.43 138	5.43 138	6.77 172
F	inch mm	.31 8	.38 9.6	.55 14	.71 18	.94 24	1.18 30	1.44 36.6	1.89 48
G	inch mm	1.26 32	1.26 32	1.50 38	1.89 48	2.20 56	2.52 64	3.07 78	3.35 85
Weight	lb.	6	6	6.25	10	15.75	22	28.25	48.5
Bolted B.	kg	2.7	2.7	2.9	4.6	7.2	10	12.8	22
Weight	lb.	5	5	5.5	8.25	13.5	18.5	24.5	44
Welded B.	kg	2.3	2.3	2.5	3.8	6.2	8.4	11.2	20
PACKING		BH2	BH2	BH2	BH4	BH5	BH6	BY5	BH8
GASKET*		G2	G2	G2	G3	G4	G6	G7	G9

SIZE	STANDARD PORT — BOLTED BONNET FIG. SL 10 - WELDED BONNET FIG. SHWL 10					
	inch mm	1/2 15	3/4 20	1 25	1 1/2 40	2 50
A	inch mm	3.15 80	3.54 90	4.33 110	5 127	5 127
B open	inch mm	9.05 230	9.64 245	11.22 285	14.96 380	16.42 417
C	inch mm	3.46 88	3.46 88	3.82 97	5.43 138	5.43 138
F	inch mm	.38 9.6	.55 14	.71 18	1.18 30	1.44 36.6
G	inch mm	1.26 32	1.50 38	1.89 48	2.52 64	3.07 78
Weight	lb.	6	6.5	9.75	20.75	27
Bolted B.	kg	2.7	3	4.4	9.4	12.3
Weight	lb.	4.5	5.25	8.5	19	24.25
Welded B.	kg	2.1	2.4	3.9	8.6	11
PACKING		BH2	BH2	BH4	BH6	BY5
GASKET*		G2	G2	G3	G6	G7

SIZE	FULL PORT — BOLTED BONNET FIG. 9S 10 - WELDED BONNET FIG. 9SHW 10					
	inch mm	1/2 15	3/4 20	1 25	1 1/2 40	2 50
A	inch mm	4.33 110	5 127	5 127	8.27 210	9.05 230
B open	inch mm	13.98 355	14.96 380	17.72 450	21.65 550	23.23 590
C	inch mm	5.43 138	5.43 138	6.77 172	9.21 234	12.6 320
F	inch mm	.55 14	.71 18	.94 24	1.44 36.6	1.89 48
G	inch mm	1.89 48	2.20 56	2.52 64	3.35 85	3.74 95
Weight	lb.	11	15.5	21	51.75	88
Bolted B.	kg	5	7	9.5	23.5	40
Weight	lb.	10	14.25	18.25	48.5	81.5
Welded B.	kg	4.5	6.5	8.3	22	37
PACKING		BH5	BH6	2B4	2B5	9B8
GASKET*		G2	G3	G4	G7	G8

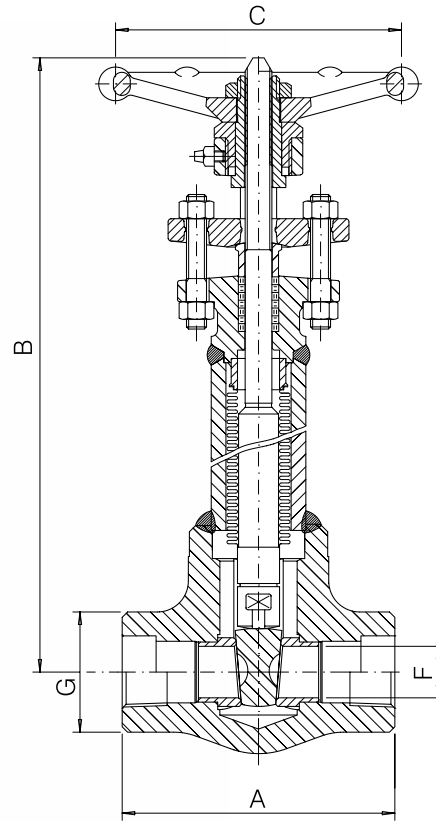
SIZE	STANDARD PORT — BOLTED BONNET FIG. 9SL 10 - WELDED BONNET FIG. 9SHWL 10					
	inch mm	1/2 15	3/4 20	1 25	1 1/2 40	2 50
A	inch mm	3.54 90	4.33 110	5 127	5 127	8.27 210
B open	inch mm	12.60 320	13.98 355	14.96 380	17.72 450	21.65 550
C	inch mm	5.43 138	5.43 138	5.43 138	9.21 234	9.21 234
F	inch mm	.38 9.6	.55 14	.71 18	1.18 30	1.44 36.6
G	inch mm	1.50 38	1.89 48	2.20 56	3.07 78	3.35 85
Weight	lb.	6.5	11	15.5	22	53
Bolted B.	kg	3	5	7	10	24
Weight	lb.	6	10	14.25	19.75	48.5
Welded B.	kg	2.8	4.6	6.5	9	22
PACKING		BH3	BH5	BH6	2B5	BH8
GASKET*		G1	G2	G3	G5	G7

B[®] GATE VALVES- BELLOWS SEALED- WELDED BONNET- FULL PORT

BONNEY FORGE

2500 LB.

Design construction:
 ASME B16.34, MSS-SP-117, BS 5352
 Testing according to API 598
 Marking MSS-SP-25
 Outside Screw and Yoke (OS&Y)
 Self aligning two piece packing gland
 Spiral wound gasket
 Body Bonnet Weld to ASME IX
 Integral Backseat
 Hydroformed bellows
 Grease nipple for stem
 Socket Weld Ends to ASME B16.11
 Screwed Ends (NPT) to ASME B1.20.1
 Butt Welding Ends to ASME B16.25
 Ratings:
 -carbon steel class 2500 6170 psig @ 100°F
 425 bar + 38°C



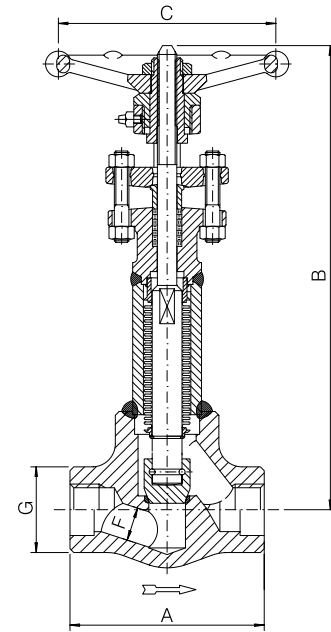
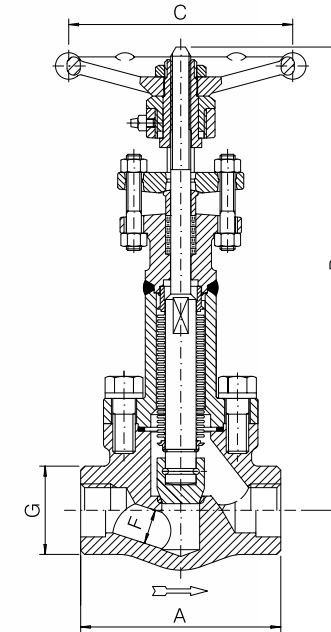
FULL PORT — FIG. 25SHW 10									
SIZE	inch	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
	mm	6	10	15	20	25	32	40	50
A	inch	4.33	4.33	5	5	5	5	8.27	9.05
	mm	110	110	127	127	127	127	210	230
B open	inch	14.96	14.96	16.93	17.72	20.08	24.41	24.80	27.95
	mm	380	380	430	450	510	620	630	710
C	inch	5.43	5.43	5.43	6.77	9.21	9.21	12.60	15.75
	mm	138	138	138	172	234	234	320	400
F	inch	.31	.31	.45	.59	.77	.98	1.10	1.38
	mm	8	8	11.5	15	19.5	25	28	35
G	inch	1.89	1.89	2.20	2.52	3.07	3.07	3.35	3.74
	mm	48	48	56	64	78	78	85	95
Weight	lb.	13.5	13.5	14.25	23	35.25	37.5	63.75	99.25
	kg	6.2	6.2	6.5	10.5	16	17	29	45
PACKING		BH6	BH6	2B4	2B4	BH8	BH8	9B8	25B8

B[®] GLOBE VALVES- BELLOWS SEALED- WELDED & BOLTED BONNET- FULL & STANDARD PORT

BONNEY FORGE

800 LB.
1500 LB.

Design construction:
 ASME B16.34, BS 5352, MSS-SP-117
 Testing according to API 598
 Marking MSS-SP-25
 Outside Screw and Yoke (OS&Y)
 Self aligning two piece packing gland
 Spiral wound gasket
 Body Bonnet Weld to ASME IX
 Integral Backseat
 Loose solid disc
 Socket Weld Ends to ASME B16.11
 Screwed Ends (NPT) to ASME B1.20.1
 Butt Welding Ends to ASME B16.25
 Ratings:
 -carbon steel class 800 1975 psig @ 100°F
 138 bar + 38°C
 -carbon steel class 1500 3705 psig @ 100°F
 255 bar + 38°C



800 LB. FULL PORT — BOLTED BONNET FIG. S 30 - WELDED BONNET FIG. SHW 30									
SIZE	inch	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
	mm	6	10	15	20	25	32	40	50
A	inch	3.15	3.15	3.54	4.33	5	5.90	7.09	8.27
	mm	80	80	90	110	127	150	180	210
B open	inch	8.07	8.07	8.27	9.64	11.22	12.40	13.58	17.52
	mm	205	205	210	245	285	315	345	445
C	inch	3.46	3.46	3.46	3.82	5.43	5.43	6.77	6.77
	mm	88	88	88	97	138	138	172	172
F	inch	.27	.35	.51	.69	.87	1.16	1.38	1.77
	mm	7	9	13	17.5	22.5	29.5	35	45
G	inch	1.26	1.26	1.50	1.89	2.20	2.52	3.07	3.35
	mm	32	32	38	48	56	64	78	85
Weight	lb.	5.5	5.5	7.75	11.5	19.25	22	40.75	67.25
Bolted B.	kg	2.5	2.5	3.5	5.2	8.7	10	18.5	30.5
Weight	lb.	5	5	7	11	17.5	19.75	37.5	61.75
Welded B.	kg	2.3	2.3	3.2	5	8	9	17	28
PACKING		BH2	BH2	BH2	BH4	BH5	BH6	BY5	BH8
GASKET*		G2	G2	G2	G3	G4	G6	G7	G9

800 LB. STANDARD PORT — BOLTED BONNET FIG. SL 30 - WELDED BONNET FIG. SHWL 30						
SIZE	inch	1/2	3/4	1	1 1/2	2
	mm	15	20	25	40	50
A	inch	3.15	3.54	4.33	5.90	7.09
	mm	80	90	110	150	180
B open	inch	8.07	8.27	9.64	12.40	13.58
	mm	205	210	245	315	345
C	inch	3.46	3.46	3.82	5.43	6.77
	mm	88	88	97	138	172
F	inch	.35	.51	.69	1.16	1.38
	mm	9	13	17.5	29.5	35
G	inch	1.26	1.50	1.89	2.52	3.07
	mm	32	38	48	64	78
Weight	lb.	5.5	6	9.5	19.5	29.75
Bolted B.	kg	2.5	2.7	4.3	8.8	13.5
Weight	lb.	4.75	5.25	7.75	17.75	26
Welded B.	kg	2.2	2.4	3.5	8.1	11.8
PACKING		BH2	BH2	BH4	BH6	BY5
GASKET*		G2	G2	G3	G6	G7

1500 LB. FULL PORT — BOLTED BONNET FIG. 9S 30 - WELDED BONNET FIG. 9SHW 30						
SIZE	inch	1/2	3/4	1	1 1/2	2
	mm	15	20	25	40	50
A	inch	4.33	5	5.90	8.27	9.05
	mm	110	127	150	210	230
B open	inch	11.02	12.60	14.17	17.52	20.08
	mm	280	320	360	445	510
C	inch	5.43	6.77	9.21	12.60	12.60
	mm	138	172	234	320	320
F	inch	.47	.59	.79	1.26	1.57
	mm	12	15	20	32	40
G	inch	1.89	2.20	2.52	3.35	3.74
	mm	48	56	64	85	95
Weight	lb.	10	15.5	19.75	50.75	83.75
Bolted B.	kg	4.5	7	9	23	38
Weight	lb.	8.75	14.25	18.25	48.5	80.5
Welded B.	kg	4	6.5	8.3	22	36.5
PACKING		BH5	2B4	2B4	BH8	9B8
GASKET*		G2	G3	G4	G7	G8

1500 LB. STANDARD PORT — BOLTED BONNET FIG. 9SL 30 - WELDED BONNET FIG. 9SHWL 30						
SIZE	inch	1/2	3/4	1	1 1/2	2
	mm	15	20	25	40	50
A	inch	3.54	4.33	5	7.09	8.27
	mm	90	110	127	180	210
B open	inch	9.45	11.02	12.60	14.17	17.52
	mm	240	280	320	360	445
C	inch	5.43	5.43	6.77	9.21	12.60
	mm	138	138	172	234	320
F	inch	.35	.47	.59	1.06	1.26
	mm	9	12	15	27	32
G	inch	1.50	1.89	2.20	3.07	3.35
	mm	38	48	56	78	85
Weight	lb.	7.75	10	15.5	19.75	50.75
Bolted B.	kg	3.5	4.5	7	9	23
Weight	lb.	6.5	10	14.25	19.5	47.25
Welded B.	kg	3	4.6	6.5	8.9	21.5
PACKING		BH3	BH5	2B4	2B5	BH8
GASKET*		G1	G2	G3	G5	G7



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Overview62

Valvolet® End- Bolted & Welded
Bonnet- 800 lb. & 1500 lb. valves63

Lip End- Bolted & Welded Bonnet-
800 lb. & 1500 lb. valves63

Socket Weld End- Bolted & Welded
Bonnet- 800 lb. & 1500 lb. valves64

Butt Weld End- Bolted & Welded
Bonnet- 800 lb. & 1500 lb. valves64

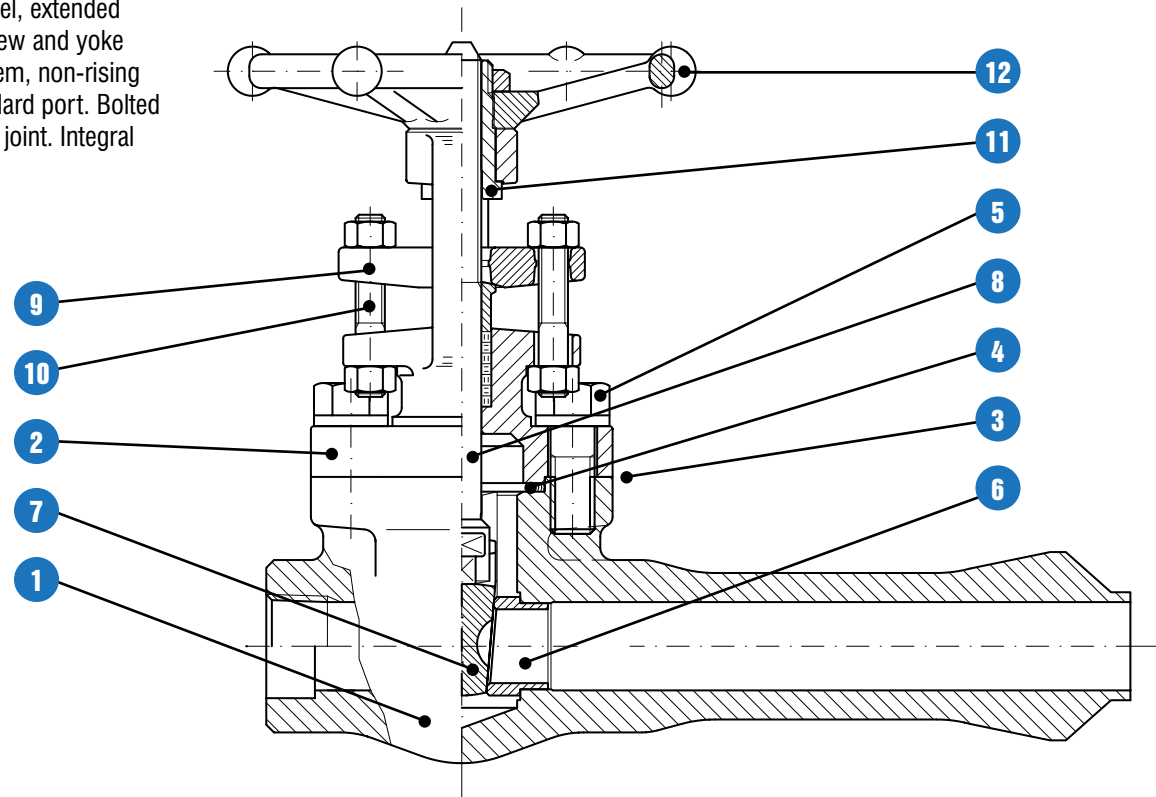
Threaded End- Bolted & Welded
Bonnet- 800 lb. & 1500 lb. valves64

EXTENDED BODY GATE VALVES



**EXTENDED BODY
GATE VALVES**

Typical forged steel, extended body, outside screw and yoke (OS&Y), rising stem, non-rising handwheel. Standard port. Bolted or welded bonnet joint. Integral backseat.



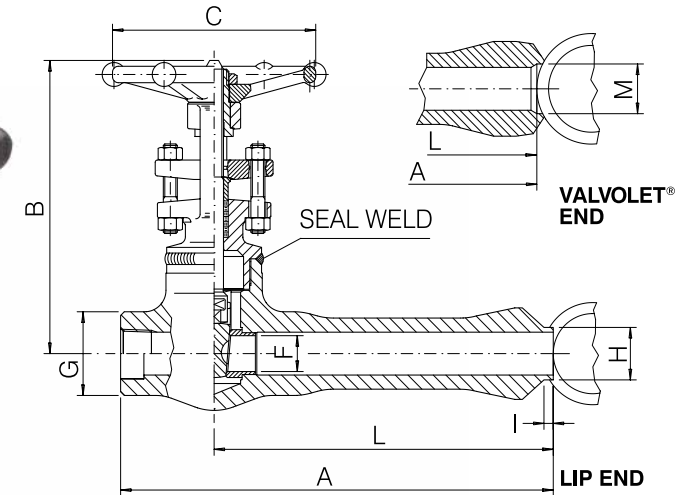
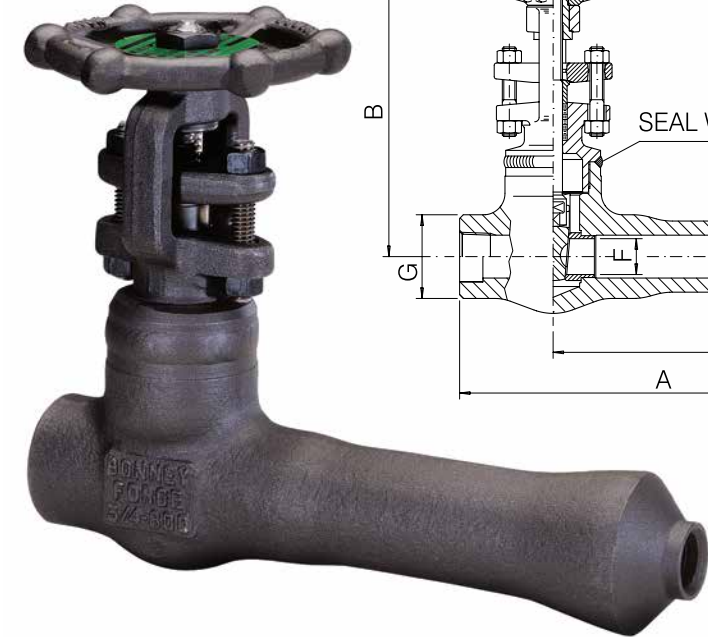
- 1. BODY.** The body is forged steel and designed to the basic dimensional requirements of the applicable specifications such as API 602 and ASME B16.34. The body is available in standard port design with Plane End (Socket Weld), Threaded End, Lip End and Weld-O-Let End.
- 2. BONNET.** The bonnet is forged steel, has an integral backseat and incorporates the stuffing box, which has dimensions per the applicable specifications such as API 602.
- 3. BODY-BONNET JOINT.** Two different bonnet joint designs are available. These are either the threaded and seal welded or bolted bonnet type.
- 4. GASKET.** The bolted bonnet joint design valve uses a contained, controlled compression, spiral wound type gasket.
- 5. BONNET BOLTING.** The bonnet bolting is manufactured of alloy steel in accordance with the requirements of the applicable specifications such as API 602 and ASME B16.34.
- 6. SEAT RINGS.** The seat rings are steel and make up part of the valve trim. They are pressed into the valve body and wedged into place, forming a seal with the body. The seating surfaces are ground and lapped.
- 7. WEDGE.** The wedge, which is a solid design, is forged or investment cast steel and is part of the valve trim. The seating surfaces are ground and lapped.

- 8. STEM.** The stem is forged steel and part of the valve trim. It contains an integral back seat shoulder, which mates with the integral backseat of the bonnet. The stem is designed to the basic dimensional requirements of the applicable specifications such as API 602.
- 9. GLAND AND FLANGE.** The gland, gland flange assembly utilizes a separate, two piece design. This self aligning design allows the flange to be unevenly tightened while the gland maintains its parallel alignment with the stem and stuffing box.
- 10. GLAND BOLTS AND NUTS.** The steel/stainless steel gland bolt and nut assembly is a stud, double nut arrangement. This design allows complete removal from the valve when service is required. The use of industry standard thread full length studs and nuts also allows easy replacement should these items be lost or in need of replacement.
- 11. YOKE SLEEVE.** The yoke sleeve is of forged stainless steel material having a high melting point and is resistant to wear and corrosion.
- 12. HANDWHEEL.** The handwheel is forged carbon steel of an open spoke design. This robust construction along with appropriate sizing allows for ease of operation.

**GATE VALVES- EXTENDED BODY- STANDARD PORT-
INTEGRAL REINFORCED - VALVOLET® END & LIP
END WELDED & BOLTED BONNET**

**800 LB.
1500 LB.**

Design construction:
API 602 - ASME B16.34
Testing according to API 598
Marking MSS-SP-25
Integral extended body
Outside Screw and Yoke (OS&Y)
Self aligning two piece packing gland
Spiral-wound gasket
Body-bonnet weld to ASME IX
Integral backseat
Socket Weld Ends to ASME B16.11
Screwed Ends (NPT) to ASME B1.20.1
Butt Welding Ends to ASME B16.25
Rating:
-carbon steel class 800 1975 psig @ 100°F
138 bar + 38°C
-carbon steel class 1500 3705 psig @ 100°F
255 bar + 38°C



		BOLTED BONNET – FIG. VLL 10 / WELDED BONNET – FIG. VOLL 10					
SIZE	inch mm	1/2 15	3/4 20	1 25	1 1/2 40	2 50	
A	inch mm	8.15 207	8.60 218.5	9.62 244.5	10.37 263.5	10.53 267.5	
B open	inch mm	5.98 152	6.22 158	7.72 196	10.04 255	11.42 290	
C	inch mm	3.46 88	3.46 88	3.82 97	5.43 138	5.43 138	
F	inch mm	.38 9.6	.55 14	.71 18	1.18 30	1.44 36.6	
G	inch mm	1.26 32	1.50 38	1.89 48	2.52 64	3.07 78	
H	inch mm	.69 17.5	.87 22	1.12 28.5	1.61 41	1.81 46	
I	inch mm	.16 4	.19 4.8	.19 4.8	.25 6.3	.31 8	
L	inch mm	6.57 167	6.81 173	7.48 190	7.87 200	8.03 204	
M	inch mm	.87 22	1.18 30	1.44 36.5	1.99 50.5	2.56 65	
Weight Bolted B.	lb. kg	5.75 2.6	6.75 3.1	11.25 5.1	21 9.5	28.5 13	
Weight Welded B.	lb. kg	5 2.3	6.25 2.9	9.5 4.3	19.5 8.8	25.75 11.7	
PACKING		BH2	BH2	BH4	BH6	BY5	
GASKET*		G2	G2	G3	G6	G7	

Materials and trim specifications Page 91
Valvolet® run pipe consolidation sizes Page 93

		BOLTED BONNET – FIG. 9VLL 10 / WELDED BONNET – FIG. 9VOLL 10				
SIZE	inch mm	1/2 15	3/4 20	1 25	1 1/2 40	
A	inch mm	8.60 218.5	9.62 244.5	10.37 263.5	10.53 267.5	
B open	inch mm	6.02 153	7.48 190	8.66 220	11.10 282	
C	inch mm	3.46 88	3.82 97	5.43 138	5.43 138	
F	inch mm	.38 9.6	.55 14	.71 18	1.18 30	
G	inch mm	1.50 38	1.89 48	2.20 56	3.07 78	
H	inch mm	.69 17.5	.87 22	1.12 28.5	1.61 41	
I	inch mm	.16 4	.19 4.8	.19 4.8	.25 6.3	
L	inch mm	6.81 173	7.48 190	7.87 200	8.03 204	
M	inch mm	1.18 30	1.44 36.5	1.99 50.5	2.56 65	
Weight Bolted B.	lb. kg	8 3.6	12.25 5.6	23 10.5	32 14.5	
Weight Welded B.	lb. kg	6.25 2.9	10.25 4.7	19.75 9	27.5 12.5	
PACKING		BH3	BH5	BH6	2B5	
GASKET*		G1	G2	G3	G5	

* Only for Bolted Bonnet type.



GATE VALVES- EXTENDED BODY- STANDARD PORT- SOCKET WELDED- PLAIN END, SCREWED END & BUTT WELD END - WELDED & BOLTED BONNET

800 LB.

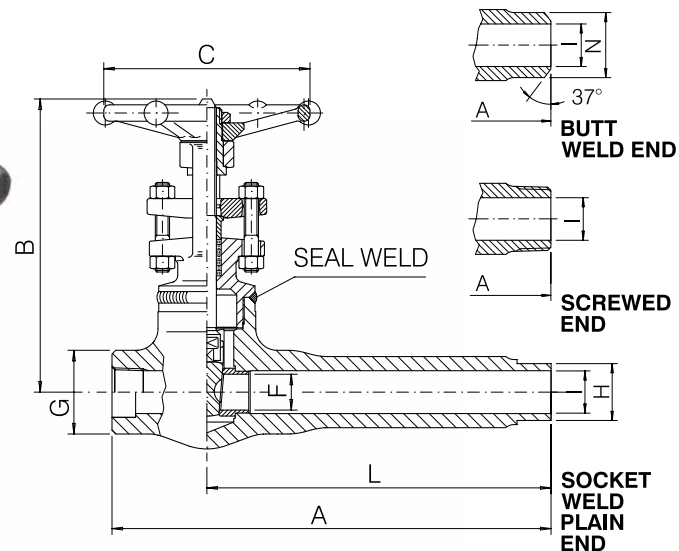
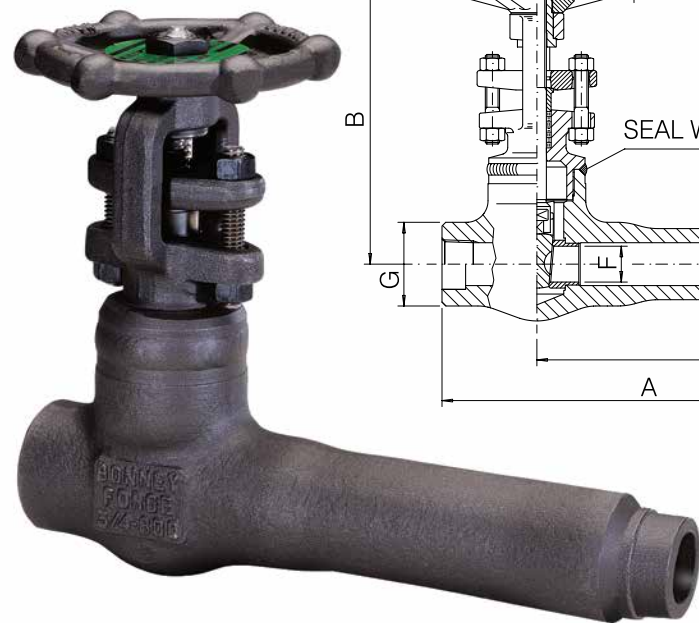
1500 LB.

Design construction:

- API 602 - ASME B16.34
- Testing according to API 598
- Marking MSS-SP-25
- Integral extended body
- Outside Screw and Yoke (OS&Y)
- Self aligning two piece packing gland
- Spiral-wound gasket
- Body-bonnet weld to ASME IX
- Integral backseat
- Socket Weld Ends to ASME B16.11
- Screwed Ends (NPT) to ASME B1.20.1
- Butt Welding Ends to ASME B16.25

Rating:

- carbon steel class 800 1975 psig @ 100°F
138 bar + 38°C
- carbon steel class 1500 3705 psig @ 100°F
255 bar + 38°C



SPECIAL FEATURES



BOLTED BONNET – FIG. 10 / WELDED BONNET – FIG. MFL 10						
SIZE	inch mm	1/2 15	3/4 20	1 25	1 1/2 40	2 50
A	inch mm	5.57 141,5	5.77 146,5	6.53 166	7.50 190,5	8.50 216
B open	inch mm	5.98 152	6.14 156	7.72 196	10.08 256	11.42 290
C	inch mm	3.46 88	3.46 88	3.82 97	5.43 138	5.43 138
F	inch mm	.38 9,6	.55 14	.71 18	1.18 30	1.44 36,6
G	inch mm	1.26 32	1.50 38	1.89 48	2.52 64	3.07 78
H	inch mm	.84 21,3	1.05 26,7	1.31 33,4	1.90 48,3	2.37 60,3
I	inch mm	.51 13	.63 16	.83 21	1.34 34	1.65 42
L	inch mm	4.01 102	4.01 102	4.37 111	5 127	6.02 153
N	inch mm	.90 23	1.10 28	1.42 36	2.05 52	2.44 62
Weight	lb. kg	5.25 2,4	5.75 2,6	9.25 4,2	17.75 8,1	26 11,8
Weight	lb. kg	3.75 1,7	4.5 2,1	7 3,2	15.75 7,2	22.75 10,3
PACKING		BH2	BH2	BH4	BH6	BY5
GASKET*		G2	G2	G3	G6	G7

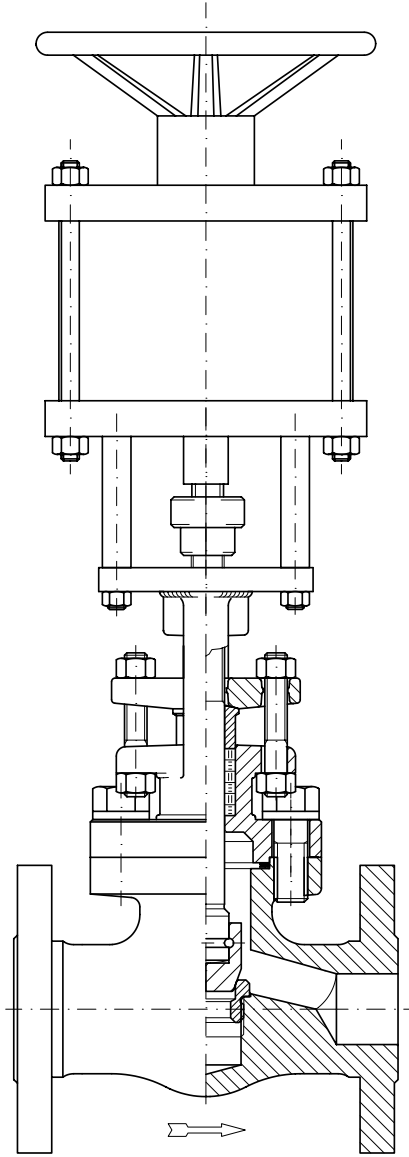
BOLTED BONNET – FIG. 9ML 10 / WELDED BONNET – FIG. 9MFL 10					
SIZE	inch mm	1/2 15	3/4 20	1 25	1 1/2 40
A	inch mm	5.77 146,5	6.53 166	7.50 190,5	8.50 216
B open	inch mm	6.02 153	7.48 190	8.66 220	11.10 282
C	inch mm	3.46 88	3.82 97	5.43 138	5.43 138
F	inch mm	.38 9,6	.55 14	.71 18	1.18 30
G	inch mm	1.50 38	1.89 48	2.52 64	3.35 85
H	inch mm	.84 21,3	1.05 26,7	1.31 33,4	1.90 48,3
I	inch mm	.51 13	.63 16	.83 21	1.34 34
L	inch mm	4.02 102	4.37 111	5 127	6.02 153
N	inch mm	.90 23	1.10 28	1.42 36	2.05 52
Weight	lb. kg	5.75 2,6	10 4,6	20 9,1	28.5 13
Weight	lb. kg	4.5 2,1	8.25 3,8	17.75 8,1	26.5 12
PACKING		BH3	BH5	BH6	2B5
GASKET*		G1	G2	G3	G5

Materials and trim specifications Page 91

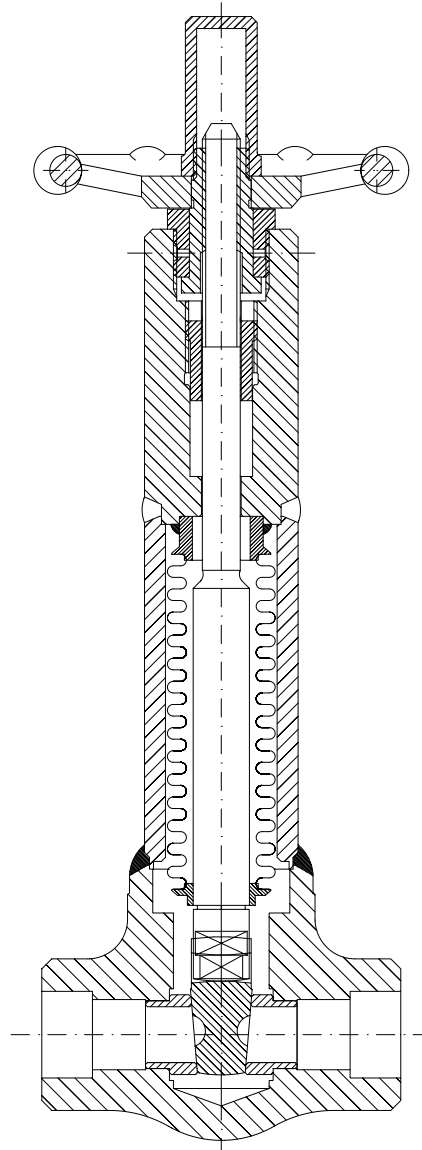
* Only for Bolted Bonnet type.

Male threaded ends in class 1500 lb. and NPS 1/2" in class 800 lb. not permitted by API 602

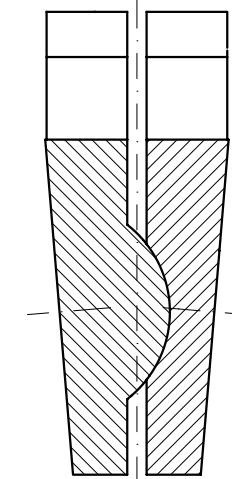
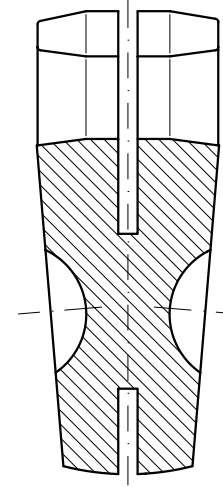
Special features are available on request.



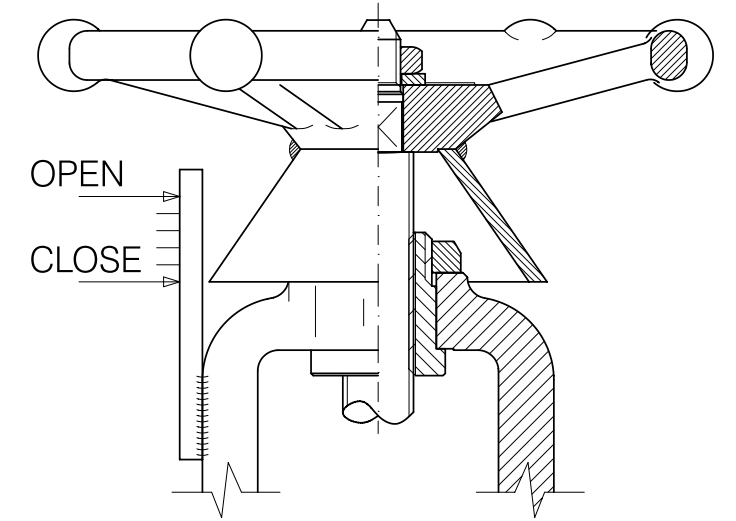
All Gate and Globe valves can be equipped with pneumatic or hydraulic actuator, double effect or spring action.



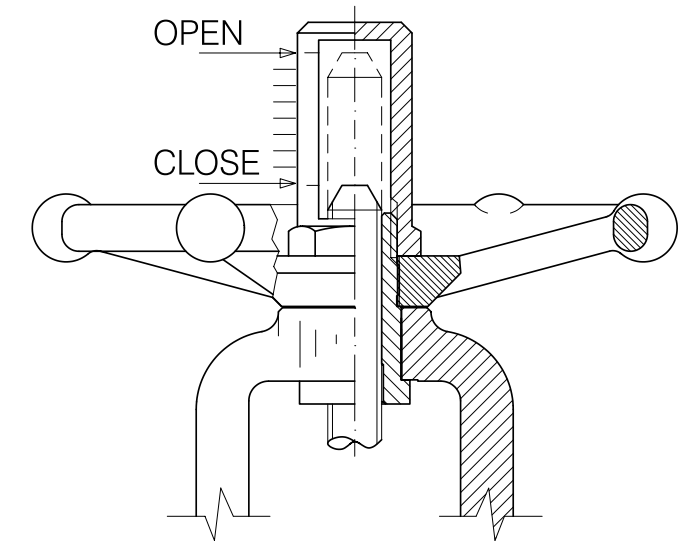
Bellows seal valves full protected.



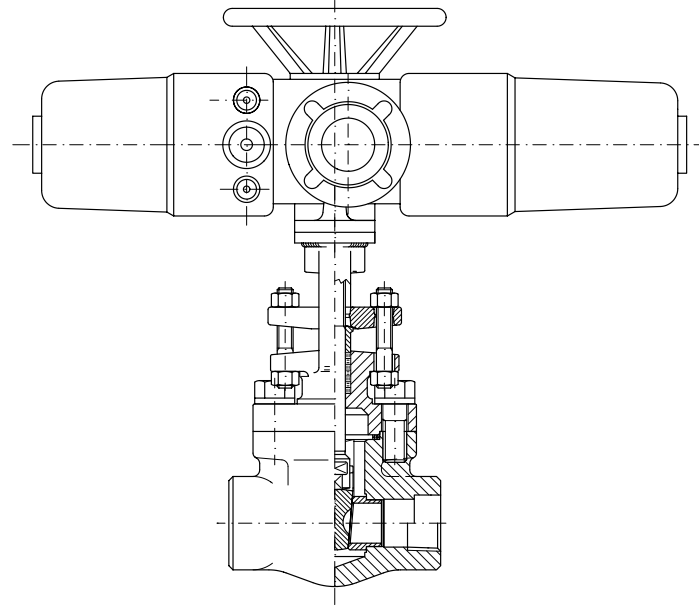
Flexible and split wedge available on request.



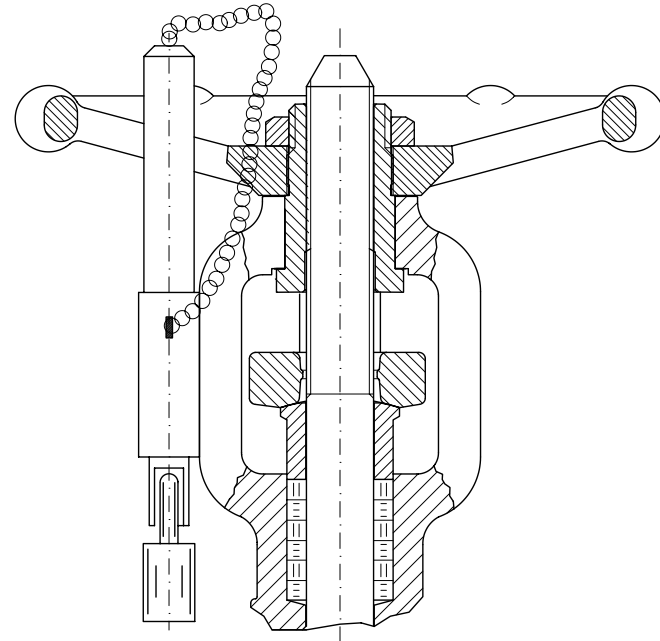
Position indicator and stem protection on Globe valves.



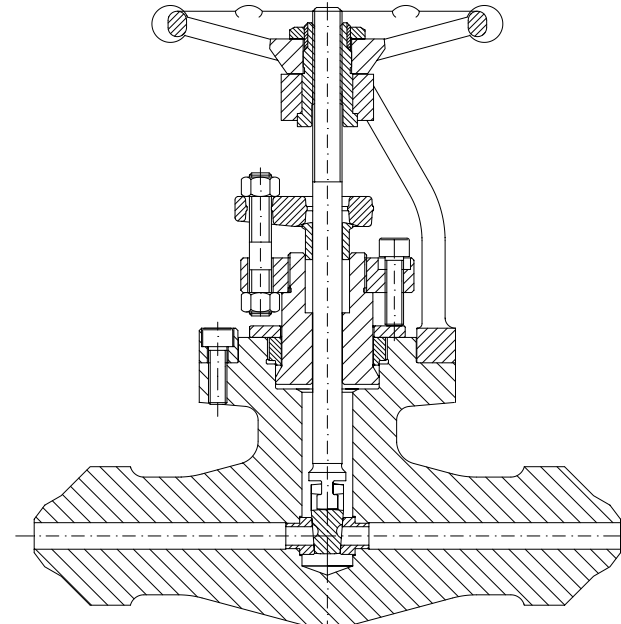
Position indicator and stem protection on Gate valves.



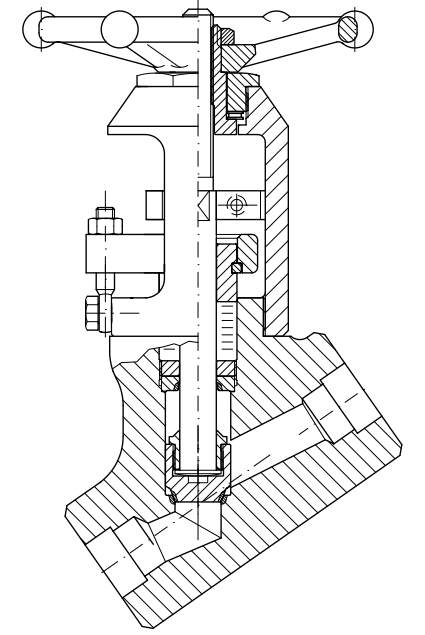
All Gate and Globe valves can be equipped with electric actuator, per customer's specification.



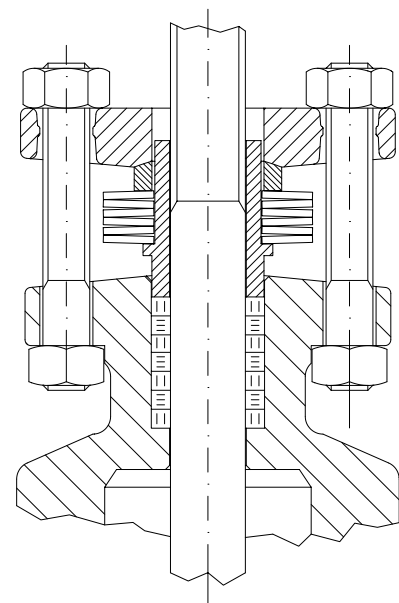
Locking device with padlock. One option shown. Other designs are supplied.



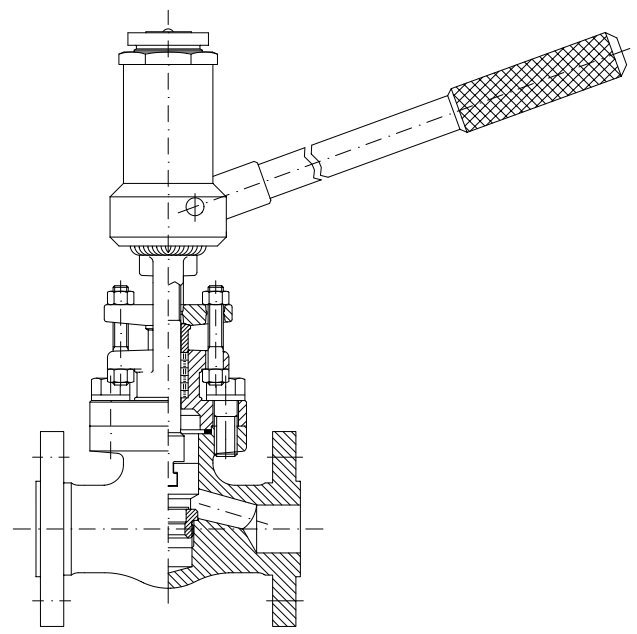
Body Bonnet connection pressure seal design.



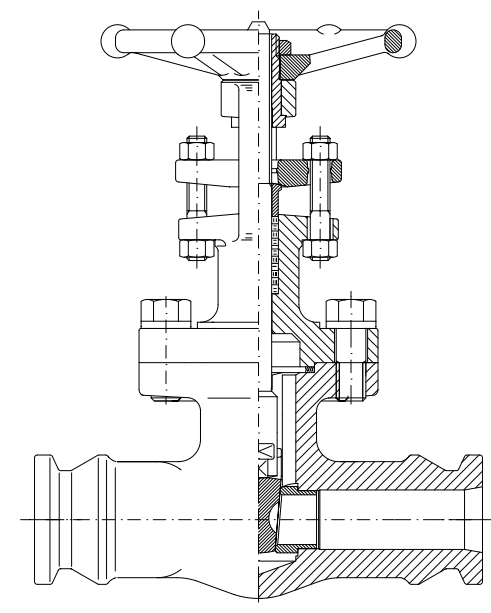
Bonnet-Less type, non rotating stem, no rising handwheel, position indicator.



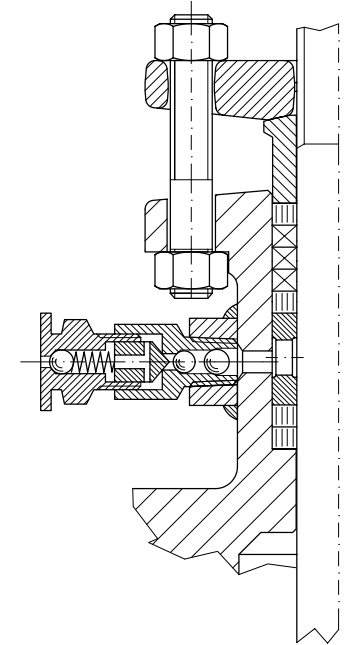
Stuffing box with live loading system. One option shown. Other designs are supplied.



Quick opening Globe and Gate valves.



Special pipe connection such as clamp-lock, special B.W.E., nipples or other customer's request.



Valves can be supplied with a deep stuffing box with lantern ring and a double ball grease injector.

Lined writing area for notes on page 70.

Pressure-Temperature Ratings 72-90
Standard Materials Specification.....91
Recommended Spare Parts
for Forged Valves92
Thread Standard ASME B1.20.193
Socket Weld Standard
ASME B16.1193
Valvolet® Run Pipe Consolidation.....93
Valve Flow Coefficient 94-95

TECHNICAL DATA



PSI - °F **MATERIALS: ASTM A182 F304 (c) - ASTM A182 F304H** **BAR - °C**

STANDARD CLASS. Note: for temperature > 1000°F valves in class 150 lbs are limited to BW Ends only. Table with columns: Temperature °F, 150, 300, 400, 600, 800, 900, 1500, 2500, 4500. Rows include temperatures from -20 to 1500.

SPECIAL CLASS. Table with columns: Temperature °F, 150, 300, 400, 600, 800, 900, 1500, 2500, 4500. Rows include temperatures from -20 to 1500.

STANDARD CLASS Note: for temperature > 540°C valves in class 150 lbs are limited to BW Ends only. Table with columns: Temperature °C, 150, 300, 400, 600, 800, 900, 1500, 2500, 4500. Rows include temperatures from -29 to 815.6.

Table with columns: Temperature °C, 150, 300, 400, 600, 800, 900, 1500, 2500, 4500. Rows include temperatures from -29 to 815.6.

SPECIAL CLASS. Table with columns: Temperature °C, 150, 300, 400, 600, 800, 900, 1500, 2500, 4500. Rows include temperatures from -29 to 815.6.

PSI - °F **MATERIALS: ASTM A182 F316 (c) - ASTM A182 F316H** **BAR - °C**

STANDARD CLASS. Note: for temperature > 1000°F valves in class 150 lbs are limited to BW Ends only. Table with columns: Temperature °F, 150, 300, 400, 600, 800, 900, 1500, 2500, 4500. Rows include temperatures from -20 to 1500.

SPECIAL CLASS. Table with columns: Temperature °F, 150, 300, 400, 600, 800, 900, 1500, 2500, 4500. Rows include temperatures from -20 to 1500.

STANDARD CLASS Note: for temperature > 540°C valves in class 150 lbs are limited to BW Ends only. Table with columns: Temperature °C, 150, 300, 400, 600, 800, 900, 1500, 2500, 4500. Rows include temperatures from -29 to 815.6.

Table with columns: Temperature °C, 150, 300, 400, 600, 800, 900, 1500, 2500, 4500. Rows include temperatures from -29 to 815.6.

SPECIAL CLASS. Table with columns: Temperature °C, 150, 300, 400, 600, 800, 900, 1500, 2500, 4500. Rows include temperatures from -29 to 815.6.

PSI - °F		MATERIALS: A 182 F304L (d) - ASTM A182 F316L					BAR - °C
LIMITED CLASS							
Temperature °F	800 #LTD	1690 #LTD	2500 #LTD	2680 #LTD	4500 #LTD		
-20 to 100	1,785	3,770	5,570	5,970	10,030		
200	1,505	3,185	4,710	5,050	8,480		
300	1,350	2,850	4,215	4,520	7,585		
400	1,230	2,595	3,840	4,115	6,910		
500	1,135	2,400	3,550	3,805	6,390		
600	1,070	2,265	3,350	3,590	6,025		
650	1,040	2,195	3,250	3,485	5,850		
700	1,020	2,150	3,180	3,410	5,720		
750	995	2,100	3,110	3,335	5,595		
800	980	2,070	3,060	3,280	5,505		
850	955	2,020	2,990	3,205	5,385		

PSI - °F		MATERIALS: A 182 F321 (f) - ASTM A182 F321H (g)					BAR - °C
LIMITED CLASS							
Temperature °F	800 #LTD	1690 #LTD	2500 #LTD	2680 #LTD	4500 #LTD		
-20 to 100	2,000	4,225	6,250	6,700	11,250		
200	1,820	3,835	5,680	6,090	10,220		
300	1,620	3,430	5,070	5,435	9,130		
400	1,475	3,155	4,605	4,935	8,295		
500	1,375	2,895	4,285	4,595	7,715		
600	1,300	2,755	4,070	4,365	7,330		
650	1,280	2,705	4,000	4,290	7,200		
700	1,260	2,655	3,930	4,215	7,070		
750	1,245	2,630	3,895	4,175	7,005		
800	1,235	2,610	3,855	4,135	6,945		
850	1,220	2,585	3,820	4,095	6,880		
900	1,215	2,560	3,785	4,060	6,815		
950	1,215	2,560	3,785	4,060	6,815		
1000	1,120	2,370	3,505	3,755	6,310		
1050	1,085	2,295	3,395	3,640	6,105		
1100	955	2,040	3,020	3,285	5,670		
1150	815	1,795	2,655	2,985	5,495		
1200	640	1,405	2,080	2,335	4,300		
1250	185	1,070	1,580	1,775	3,265		
1300	380	830	1,235	1,385	2,545		
1350	295	650	965	1,085	1,990		
1400	225	495	735	825	1,210		
1450	180	390	575	650	1,195		
1500	130	285	425	480	875		

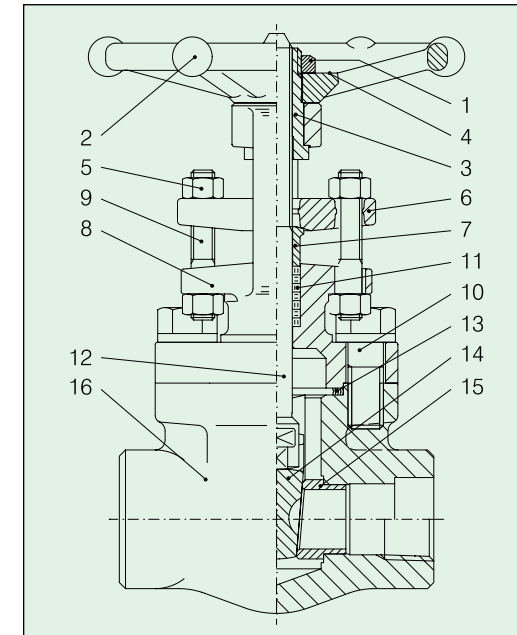
PSI - °F		MATERIALS: A 182 F304L (d) - ASTM A182 F316L					BAR - °C
LIMITED CLASS							
Temperature °C	800 #LTD	1690 #LTD	2500 #LTD	2680 #LTD	4500 #LTD		
-29 to 38	123,1	259,9	384,0	411,6	691,6		
93,3	103,8	219,6	324,7	348,2	584,7		
148,9	93,1	196,5	290,6	311,6	523,0		
204,4	84,8	178,9	264,8	283,7	476,4		
260,0	78,2	165,5	244,8	262,3	440,6		
315,6	73,8	156,2	231,0	247,5	415,4		
343,3	71,7	151,3	224,1	240,3	403,3		
371,1	70,3	148,2	219,3	235,1	394,4		
398,9	68,6	144,8	214,4	229,9	385,6		
426,7	67,6	142,7	211,0	226,1	379,6		
454,4	65,8	139,3	206,2	221,0	371,3		

PSI - °F		MATERIALS: A 182 F321 (f) - ASTM A182 F321H (g)					BAR - °C
LIMITED CLASS							
Temperature °C	800 #LTD	1690 #LTD	2500 #LTD	2680 #LTD	4500 #LTD		
-29 to 38	137,9	291,4	431,0	462,1	775,9		
93,3	125,5	264,5	391,7	420,0	704,8		
148,9	111,7	236,6	349,7	374,8	629,7		
204,4	101,7	217,6	317,6	340,3	572,1		
260,0	94,8	199,7	295,5	316,9	532,1		
315,6	89,7	190,0	280,7	301,0	505,5		
343,3	88,3	186,6	275,9	295,9	496,6		
371,1	86,9	183,1	271,0	290,7	487,6		
398,9	85,9	181,4	268,6	287,9	483,1		
426,7	85,2	180,0	265,9	285,2	479,0		
454,4	84,1	178,3	263,4	282,4	474,5		
482,2	83,8	176,6	261,0	280,8	470,0		
510,0	83,8	176,6	261,0	280,0	470,0		
537,8	77,2	163,4	241,7	259,0	435,2		
565,6	74,8	158,3	234,1	251,0	421,0		
593,3	65,9	140,7	208,3	226,6	391,0		
621,1	56,2	123,8	183,1	205,9	379,0		
648,9	44,1	96,9	143,4	161,0	296,6		
676,7	33,4	73,8	109,0	122,4	225,2		
704,4	26,2	57,2	85,2	95,5	175,5		
732,2	20,3	44,8	66,6	74,8	137,2		
760,0	15,5	23,1	50,7	56,9	83,4		
787,8	12,4	26,9	39,7	44,8	82,4		
815,6	9,0	19,7	29,3	33,1	60,3		

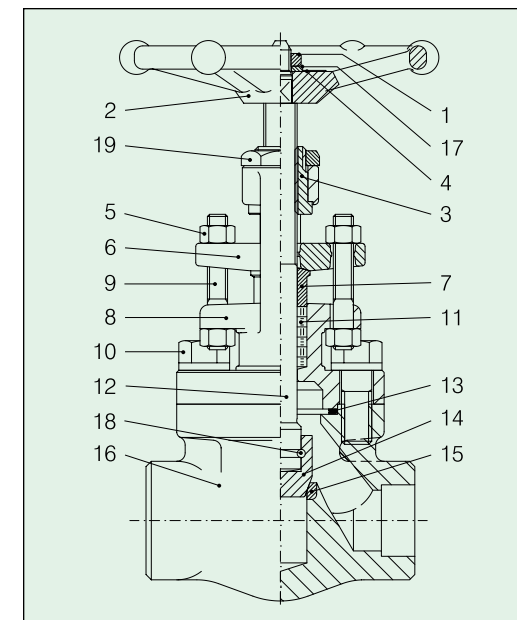
Notes:
a - Permissible, but not recommended for prolonged use above 800°F (427°C)
b - Permissible, but not recommended for prolonged use above 1100°F (593°C)
c - At temperatures over 1000°F (540°C), use only when the carbon content is 0.04% or higher
d - Not to be used over 800°F (427°C)
e - Not to be used over 600°F (316°C)
f - Not to be used over 1000°F (540°C)
g - At temperatures over 1000°F (540°C), use only if the material is heat treated by heating to a minimum temperature of 2000°F (1093°C)

h - Not to be used over 1200°F (649°C) - Alloy N06625 in the annealed condition is subject to severe loss of impact strength at room temperature after exposure in the range of 1000°F to 1400°F (540°C to 742°C)

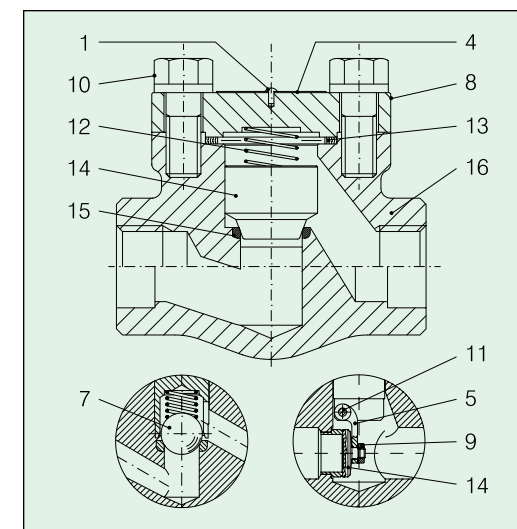
Ratings are in accordance with ASME B16.34a - 1998
Flanged end valves are rated as Standard Class only
Class 4500 applies to weld end valves only
A rating temperature greater than 1000°F (540°C) does not apply to thread end valves
Limited Class ratings apply to weld end and thread end valves only



TYPICAL GATE		
PART	NAME	MATERIALS
1	Handwheel nut	CARBON STEEL
2	Handwheel	CARBON STEEL
3	Yoke sleeve	AISI 416
4	Name plate	ALUMINUM
5	Gland nuts	ASTM A194 2H
6	Gland flange	ASTM A105
7	Packing gland	AISI 316
8	Bonnet	ASTM A105 N
9	Gland studs	ASTM A193 B6
10	B/B bolts	ASTM A193 B7
11	Packing	GRAPHITE
12	Stem	ASTM A479 410
13	B/B gasket	F316L + GRAPHITE
14	Wedge	ASTM A182 F6a
15	Seat rings	ASTM A479 410 HF
16	Body	ASTM A105 N



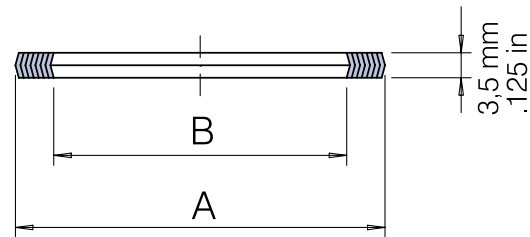
TYPICAL GLOBE		
PART	NAME	MATERIALS
1	Handwheel nut	CARBON STEEL
2	Handwheel	CARBON STEEL
3	Yoke sleeve	AISI 416
4	Name plate	ALUMINUM
5	Gland nuts	ASTM A194 - 2H
6	Gland flange	ASTM A105
7	Packing gland	AISI 316
8	Bonnet	ASTM A105 N
9	Gland studs	ASTM A193 B6
10	B/B bolts	ASTM A193 B7
11	Packing	GRAPHITE
12	Stem	ASTM A479 410
13	B/B gasket	F316L + GRAPHITE
14	Disc	ASTM A479 410
15	Seat rings	INTEGRAL HF
16	Body	ASTM A105 N
17	Washer	CARBON STEEL
18	Connection wire	ASTM A479 316
19	Yoke nut	CARBON STEEL



TYPICAL CHECK		
PART	NAME	MATERIALS
1	Rivet	CARBON STEEL
4	Name plate	ALUMINUM
5	Hinge	AISI 410
7	Ball	AISI 420
8	Bonnet	ASTM A105 N
9	Disc nut	ASTM A194 - 8
10	B/B bolts	ASTM A193 B7
11	Hinge pin	ASTM A479 316
12	Spring*	ASTM A479 316
13	B/B gasket	F316L + GRAPHITE
14	Disc	ASTM A479 410
15	Seat rings	INTEGRAL HF
16	Body	ASTM A105 N

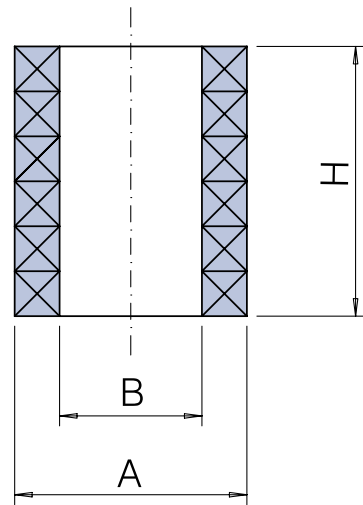
*Supplied Upon Request Only

BOLTED BONNET GASKET



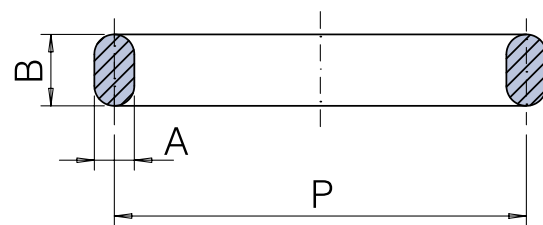
GASKET				
Type	A		B	
	mm	in.	mm	in.
G1	36	1.42	27	1.06
G2	40	1.57	31	1.22
G3	48	1.89	39	1.54
G4	54	2.13	44	1.73
G5	62	2.44	52	2.05
G6	66	2.60	54	2.13
G7	74	2.91	60	2.36
G8	85	3.35	73	2.87
G9	95	3.74	78	3.07
G10	87	3.43	76	2.99
G11	70	2.76	60	2.36

STEM PACKING

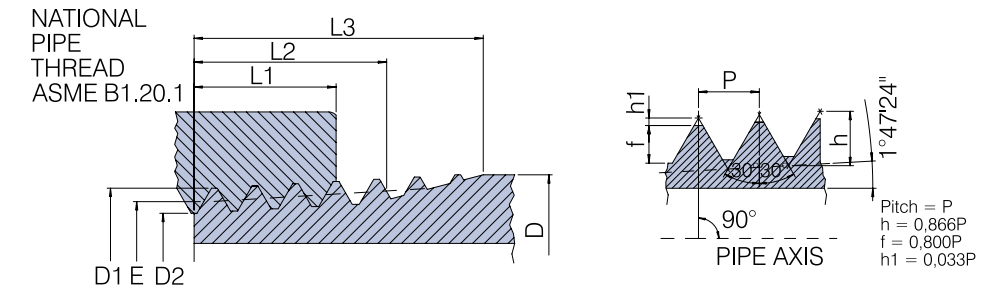


PACKING						
Type	A		B		H	
	mm	in.	mm	in.	mm	in.
BH2	15,7	.62	9,5	.37	22	.87
BH3	17,2	.68	11,1	.44	22	.87
BH4	17,2	.68	11,1	.44	26	1.02
BH5	19,2	.76	12,7	.50	26	1.02
BH6/A	24,5	.96	14,5	.57	30	1.18
BH8	32,2	1.27	19	.75	36	1.42
BY5/A	26	1.02	16	.63	30	1.18
BY7	28,2	1.11	19	.75	30	1.18
2B3	19,2	.76	12,7	.5	35	1.38
2B4/A	26	1.02	16	.75	35	1.38
2B5	28,2	1.11	19	.63	40	1.57
2B8	35,7	1.41	22,2	.87	52	2.05
25B8	38,5	1.52	25,4	1	52	2.05
4B8	40,5	1.59	28,5	1.12	54	2.13
9B8/A	35,7	1.41	22,2	.87	42	1.65
9BE5	40,5	1.59	19	.75	32	1.26

BOLTED BONNET RTJ GASKET



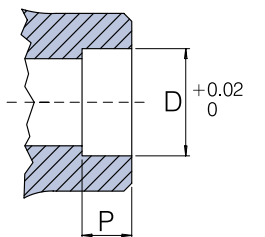
RING JOINT						
RTJ	P		A		B	
	mm	in.	mm	in.	mm	in.
R11	34,1	1.34	6,35	.25	11,1	.44
R12	39,6	1.56	7,94	.31	14,3	.56
R13	42,8	1.69	7,94	.31	14,3	.56
R14	44,4	1.75	7,94	.31	14,3	.56
R15	47,6	1.87	7,94	.31	14,3	.56
R16	50,8	2	7,94	.31	14,3	.56
R17	57,1	2.25	7,94	.31	14,3	.56
R18	60,3	2.37	7,94	.31	14,3	.56
R19	65,0	2.56	7,94	.31	14,3	.56
R20	68,2	2.69	7,94	.31	14,3	.56
R21	72,2	2.84	11,1	.44	17,4	.69
R22	82,5	3.25	7,94	.31	14,3	.56
R23	82,5	3.25	11,1	.44	17,4	.69
R24	95,2	3.75	11,1	.44	17,4	.69
R25	101,6	4	7,94	.31	14,3	.56
R26	101,6	4	11,1	.44	17,4	.69s



NOMINAL PIPE SIZE	O.D. OF PIPE	THREADS PER IN.	PITCH OF THREAD	O.D. AT BEGINNING OF THREAD	PITCH DIA. AT BEGINNING OF EXT. THREAD	ROOT DIA. AT BEGINNING OF EXT. THREAD	HANDTIGHT ENGAGEMENT	EFFECTIVE THREAD EXT. LENGTH	OVERALL LENGTH EXT. THREAD
1/8	inch .41	1.06	.04	.39	9.233	6.484	4.572	.26	.39
1/8	mm 10.29	27	0.940	9.982	9.233	6.484	4.572	6.703	9.967
1/4	inch .54	.71	.06	.52	12.126	8.43	5.080	.40	.59
1/4	mm 13.72	18	1.412	13.259	12.126	10.998	5.080	10.206	15.103
3/8	inch .67	.71	.06	.66	15.545	10.696	6.096	.41	.60
3/8	mm 17.14	18	1.412	16.662	15.545	14.427	6.096	10.358	15.255
1/2	inch .84	.55	.07	.82	19.263	12.70	8.128	.32	.78
1/2	mm 21.34	14	1.814	20.726	19.263	17.805	8.128	13.556	19.850
3/4	inch 1.05	.55	.07	1.03	24.580	14.91	9.611	.34	.79
3/4	mm 26.67	14	1.814	26.035	24.580	23.139	9.611	13.861	20.155
1	inch 1.31	.45	.09	1.28	30.825	17.14	10.668	.40	.98
1	mm 33.40	11.1/2	2.210	32.588	30.825	29.058	10.668	17.343	25.006
1 1/4	inch 1.66	.45	.09	1.63	39.550	21.49	12.668	.42	1.01
1 1/4	mm 42.16	11.1/2	2.210	41.326	39.550	37.795	12.668	17.953	25.616
1 1/2	inch 1.90	.45	.09	1.87	45.621	23.73	13.668	.42	1.03
1 1/2	mm 48.26	11.1/2	2.210	47.396	45.621	43.866	13.668	18.377	26.040
2	inch 2.37	.45	.09	2.34	57.633	27.20	15.668	.44	1.06
2	mm 60.32	11.1/2	2.210	59.411	57.633	55.855	15.668	19.215	26.878

SOCKET WELD STANDARD ASME B16.11

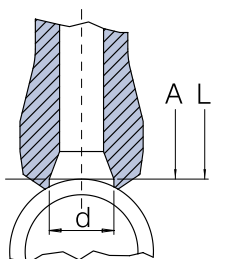
SIZE	inch	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
D	mm	6	10	15	20	25	32	40	50
D	inch	.555	.690	.855	1.065	1.330	1.675	1.915	2.406
D	mm	14.10	17.53	21.72	27.05	33.78	42.54	48.64	61.11
P min.	inch	.38	.38	.38	.50	.50	.50	.50	.62
P min.	mm	9.6	9.6	9.6	12.7	12.7	12.7	12.7	15.8



VALVOLET®

RUN PIPE CONSOLIDATION

The "Lip" extension end shown on Page 61 - Extended Body Valve represents an economical solution to stocking various different items. In fact, the lip is inserted into the corresponding hole in the run pipe, and therefore a valve can be welded on different run sizes, independently. Where a certain number of valves is required and their location is known, we suggest the use of the Weld-o-let end type for which all the well known advantages of the Weld-o-let fitting are utilized.



CLASS 800						
	inch	1/2	3/4	1	1 1/2	2
Run pipe consolidation	mm	15	20	25	40	50
Run pipe consolidation	inch	1 1/4 ÷ 3/4	1 1/4 ÷ 1	1 1/2 ÷ 1 1/4	2 1/2 ÷ 2	4 ÷ 3
Run pipe consolidation	mm	36 ÷ 1 1/2	3 1/2 ÷ 1 1/2	5 ÷ 2	3 ÷ 5	8 ÷ 5
d - Weldolet bore	inch	.87	1.18	1.44	1.99	2.56
d - Weldolet bore	mm	22	30	36.5	50.5	65

CLASS 1500						
	inch	1/2	3/4	1	1 1/2	2
Run pipe consolidation	mm	15	20	25	40	50
Run pipe consolidation	inch	1 1/4 ÷ 1	1 1/2 ÷ 1 1/4	2 1/2 ÷ 2	4 ÷ 3	-
Run pipe consolidation	mm	36 ÷ 6	36 ÷ 6	36 ÷ 6	36 ÷ 6	-
d - Weldolet bore	inch	1.18	1.44	1.99	2.56	-
d - Weldolet bore	mm	30	36.5	50.5	65	-

A - L and other valve dimensions are the same as Page 61 - Extended Body Valves

“CV” factor is the most common data used to determine valve flow characteristics. “CV” indicates the number of U.S. Gallons per minute of water at 70°F which flows through the valve at a pressure drop of one p.s.i.. This data allows computing of pressure drop starting from a known flow rate and is applicable to both fluid and gaseous media.

Formulas hereinafter represent a single example. For gaseous fluids, the engineer should use proper formula factors for the fluid type (vapor, saturated or superheated steam, etc.), differential pressure, temperature, flow velocity, etc., must also be considered.

FLOW RATE

water:

$$Q = C_v \sqrt{\Delta P}$$

fluids other than water:

$$Q = C_v \sqrt{\frac{\Delta P \cdot 62.4}{S}}$$

PRESSURE DROP

$$\Delta P = \left(\frac{Q}{C_v}\right)^2$$

$$\Delta P = \frac{S}{62.4} \left(\frac{Q}{C_v}\right)^2$$

WHERE

Q = flow rate, gallon/minute

Δ P = pressure drop, p.s.i.

S = weight density of fluid handled, pound/cu.ft.

62.4 = weight density of water, pound/cu.ft.

See page 95 for valve flow coefficient chart

PROPER SIZING OF CHECK VALVES

It is the velocity of fluid that opens the disc in a check valve. The minimum velocity required to lift the disc to the full open and stable position can be determined by the following formula:

$$v = 50 \beta^2 \sqrt{V}$$

WHERE

v = flow velocity in feet per second

β = $\frac{\text{seat diameter}}{\text{pipe int. diameter}}$

V = specific volume of fluid in cu.ft. per pound

FLOW COEFFICIENT “CV” FOR FORGED STEEL VALVES							
VALVE TYPE	SIZE	inch mm	1/2 15	3/4 20	1 25	1 1/2 40	2 50
GATE	H -10	FULL PORT	12	23	43	98	197
	HL -10	STANDARD PORT	5.6	11	25.5	77	97
	9H -10	FULL PORT	8.9	18	39	96	185
	9HL -10	STANDARD PORT	5.3	11	21.5	77	97
	15F-10	FULL PORT	9	22	39	140	185
	25W-10	FULL PORT	8.2	18.5	25.7	56.6	82.5
	L1-10	STANDARD PORT	6.3	10	25.6	67.5	97
	L3-10	STANDARD PORT	6.3	10	25.6	67.5	97
L6-10	STANDARD PORT	6.3	10	25.6	67.5	97	
GLOBE	H -30	FULL PORT	3.5	5.2	9.3	21	35
	HL -30	STANDARD PORT	1.5	3.9	6.5	16.5	23.5
	Y -30	FULL PORT	5.5	10	18	48	78
	9H -30	FULL PORT	3.1	4.5	9.5	18	27
	9HL -30	STANDARD PORT	1.4	3.1	5.5	14.5	20
	1690Y-30	FULL PORT	6	11	19	50	82
	15F-30	FULL PORT	4.5	6.5	11	22	39
	25W-30	FULL PORT	3.2	5.9	6.8	18.2	27.6
	2680Y-30	FULL PORT	6.1	11.2	19.5	52	84
	L1-30	STANDARD PORT	1.3	3.9	7.1	17.5	21.4
	L3-30	STANDARD PORT	1.3	3.9	7.1	17.5	21.4
	L6-30	STANDARD PORT	1.3	3.9	7.1	17.5	21.4
CHECK	H -40	FULL PORT	3	4.9	9.8	16	28
	HL -40	STANDARD PORT	1.2	2.8	5	12.5	17.5
	Y -40	FULL PORT	4.8	8.2	13	39	73
	9H -40	FULL PORT	2.7	4.2	8.5	9.7	21
	9HL -40	STANDARD PORT	1.1	2.4	4.3	7	14.8
	1690Y-40	FULL PORT	4.8	7.9	14.6	38.5	61
	15F-40	FULL PORT	4.5	6.5	11	22	39
	25W-40	FULL PORT	2.8	5.2	5.8	21	42
	2680Y-40	FULL PORT	3.4	7.4	11.5	39.6	66.8
	L1-40	STANDARD PORT	1	2.8	5.5	13.2	16
	L3-40	STANDARD PORT	1	2.8	5.5	13.2	16
	L6-40	STANDARD PORT	1	2.8	5.5	13.2	16
	H-50	FULL PORT	2.7	4.5	7.2	14	24
	HL-50	STANDARD PORT	1.1	2.6	4.2	11	14.5
	9H-50	FULL PORT	2.5	3.9	6.9	8.5	19.6
	9HL-50	STANDARD PORT	1	2.2	3.6	6.3	12.3
	15F-50	FULL PORT	4.5	6.5	11	22	39
	H-60	FULL PORT	6.7	13	24	63	115
HL-60	STANDARD PORT	2.7	7.5	12.5	34	58	
9H-60	FULL PORT	5	10.3	21.8	62	108	
9HL-60	STANDARD PORT	2.5	7.5	10.5	33	57	
15F-60	FULL PORT	6	15	30	100	130	

GENERAL TERMS AND CONDITIONS OF SALE OF: BONNEY FORGE (HEREAFTER REFERRED TO AS "BF")

WARRANTY	BF expressly warrants to the Purchaser (the "Purchaser") that all BF products (each, a "Product") will be free from manufacturing defects for the one (1) year period immediately following the date of shipment (the "Warranty Period"). BF HEREBY DISCLAIMS ALL OTHER WARRANTIES WITH RESPECT TO BOTH THE PRODUCTS AND THIS AGREEMENT, INCLUDING THESE TERMS AND CONDITIONS, WHETHER EXPRESS OR IMPLIED INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND OF FITNESS FOR A PARTICULAR PURPOSE AND WARRANTIES ARISING FROM COURSE OF DEALING OR COURSE OF PERFORMANCE. The foregoing warranty shall not apply: (1) to any use of a Product in aircraft or aerospace applications ("Prohibited Applications"), (2) if a Product was not used as recommended and in accordance with approved installation and operating practices, (3) if the failure of a Product results from any cause other than a manufacturing defect, including but not limited to damage due to corrosive, abrasive or other wear normally to be expected in the use of the Product, (4) if the Product was modified or changed (unless written approval was given in advance by BF), and (5) if Purchaser fails to deliver written notice of such defect to BF during the Warranty Period.
EXCLUSIONS	Do not use BF Products in aircraft or aerospace applications. Purchaser assumes all risk of loss that arises from or relates to any use of Product in a Prohibited Application and Purchaser shall, at its own expense, indemnify, defend and hold BF harmless against all claims or losses (including legal and accounting fees) that arise from or relate to the use of any Product in a Prohibited Application.
PURCHASER'S REMEDIES	Purchaser's remedies with respect to any Product furnished by BF hereunder that is found not to be in conformity with the terms and conditions of the contract because of breach of contract, breach of express or implied warranty, or negligence shall be limited exclusively to the right of replacement of such defective Product or, at the option of BF, repayment of the sale price for the particular Product that gives rise to the claim. BF shall have no liability to Purchaser or to any other person, in tort, contract or otherwise, for claims losses, damages or injuries arising out of this purchase or use of any Product, except for the return by BF of an amount not in excess of the payments made by the Purchaser to BF for the particular Products giving rise to Purchaser's claim. No action, whether based on contract, tort or otherwise, arising out of or related to Products furnished pursuant to the Agreement may be brought by Purchaser more than one year after the cause of action has accrued and no claims for breach of warranty may be brought by Purchaser unless Purchaser notifies the BF in writing within 10 days of discovery of the breach. Any claim made after the time periods specified in the foregoing sentence shall be deemed to be null and void. UNDER NO CIRCUMSTANCES WILL BF BE LIABLE TO PURCHASER FOR DAMAGES IN EXCESS OF THE AMOUNTS PAID BY PURCHASER TO BF UNDER THE AGREEMENT OR FOR INDIRECT, INCIDENTAL, CONSEQUENTIAL, SPECIAL OR EXEMPLARY DAMAGES (EVEN IF BF HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES), SUCH AS, BUT NOT LIMITED TO, LOSS OF REVENUE OR ANTICIPATED PROFITS OR LOST BUSINESS.
PRICES	Prices, and other terms of sale and payment, are subject to change by BF without notice. Unless a contrary provision appears in this price schedule, quotation, or order acknowledgement, prices may be withdrawn without notice at any time. Stenographic or clerical errors are subject to correction.
ACCEPTANCE OF ORDERS	All orders are subject to BF credit department approval prior to acceptance by BF.
REMITTANCES	All accounts are payable in United States funds, free of exchange, collection, or any other charges. If, in the sole discretion of BF, the financial condition of the Purchaser at any time so requires, BF retains the right to require full or partial payment in advance.
PARTIAL SHIPMENTS AND PAYMENTS	BF reserves the right to make partial shipments from time to time, and to render invoices therefore which shall be due and payable as provided in said invoices and the paragraph entitled "REMITTANCES". If the Purchaser becomes overdue in any such partial payment, BF shall be entitled to suspend work and/or avail itself of other legal remedies.
TAXES	Unless otherwise specifically noted, the amount of any federal, state or local sales, use, occupancy, excise tax, or other tax of any nature, for which BF is legally liable, either intentionally or through failure of payment by Purchaser, shall be added or be in addition to the price quoted and Purchaser agrees to pay same to BF.
SHORTAGES & DAMAGES IN TRANSIT	All claims for loss, damages, shortages, etc. must be made by Purchaser in writing within 10 days after receipt of shipment. Loss or damage to materials in transit is the responsibility of the carrier and not BF.
FREIGHT POLICY; TITLE AND RISK OF LOSS	Unless otherwise specifically negotiated with the customer, BF's standard freight policy is to ship all product FCA (plant of manufacture) with BF's responsibility ceasing after delivery to the carrier. Title to and all risk of loss or damage to the Products vests in Purchaser at the time BF delivers the Products to the carrier regardless of any shipping and insurance arrangements made by BF on Purchaser's behalf. However, BF reserves and Purchaser grants, until full payment is received, a purchase money security interest in each of the Products delivered. Purchaser hereby authorizes BF to file such financing statements and deliver such notices as BF may reasonably require to perfect such purchase money security interest. BF shall have all rights and may exercise all remedies of a secured creditor under Article 9 of the Uniform Commercial Code as adopted from time to time in the Commonwealth of Pennsylvania. The remedies reserved herein shall be cumulative and in addition to any other remedies provided in law or equity. No waiver of the remedy for any breach of any provision in these terms shall constitute a waiver of any other remedy.
DELAYS	All shipping dates are good faith estimates by BF. BF makes no guarantee to ship on any date. BF shall assume no obligation to ship Products on any date and BF shall not be liable for the failure to ship Product on any date. Materials slated to be in stock are subject to prior sales.
CANCELLATION & SUSPENSION	Purchaser may cancel this order or contract, or delay work or delivery, only upon receipt of written notification by BF from Purchaser and with BF's prior consent, and upon agreement to pay BF's adjustment charge. Orders for special products (usually "price on application items") may be changed and/or cancelled only upon receipt of written instructions by BF from Purchaser and with BF's prior consent, and Purchaser shall make payment to BF for material used and work already performed.
RETURN OF MATERIAL	No Product may be returned without the prior written consent of BF. All goods returned are subject to a handling charge plus freight in both directions and charges for any required reconditioning, unless otherwise specified in writing by BF.
INDEMNITY	Purchaser shall defend, indemnify and hold BF and its affiliates harmless from any and all loss or damage sustained by BF and from and against all claims asserted against BF with respect to the Products covered hereunder arising in whole or in part out of (1) failure of Purchaser, its agents, employees, or customers to follow specifications, instructions, warnings or recommendations furnished by BF or others; (2) failure of Purchaser, its agents, employees or customers to comply with all applicable legal requirements; (3) misuse of the Products by Purchaser, its agents, employees or customers; (4) misrepresentation by Purchaser, its agents, employees or customers; (5) the full extent of the negligence of Purchaser, its agents, employees or customers; or, (6) alleged infringement of any patent, trademark, trade secret, copyright, or other intellectual property or proprietary right of Purchaser or a third party as a result of BF's performance in accordance with Purchaser's designs, plans or specifications. Purchaser hereby waives and releases BF and its affiliates from all rights of contribution or indemnity to which it may otherwise be entitled.
GOVERNING LAW	The contract shall be governed by, construed, and enforced in accordance with the laws of the Commonwealth of Pennsylvania without regard to the conflict-of-law principles of any jurisdiction. Purchaser and BF (i) agree that all actions and proceedings arising out of or relating to this Agreement shall be litigated exclusively in the state courts located in Huntingdon County, Pennsylvania and/or the United States District Court for the Middle District of Pennsylvania; (ii) consent to the jurisdiction and venue of such courts; and (iii) waive any and all rights to object to the jurisdiction and venue of such courts, to transfer or change the venue of any such action or proceeding, including but not limited to upon the basis of forum non conveniens. PURCHASER AND BF FURTHER EACH WAIVE THE RIGHT TO TRIAL BY JURY IN ANY ACTION OR PROCEEDING BASED UPON, ARISING OUT OF, OR IN ANY WAY RELATING TO, THIS AGREEMENT.
NO WAIVER	The failure of BF to exercise any of its rights under this Agreement for a breach thereof shall not be deemed to be a waiver of such rights nor shall the same be deemed to be a waiver of any subsequent breach.
DIES, TOOLS AND PATTERNS	Dies, tools and patterns used by BF to produce any Product (collectively, the "Material") shall be and remain the exclusive property of BF. Payment by Purchaser of any preparation charge with respect to such Material shall not give the Purchaser any right, title or interest in or to such Material. BF shall not be responsible for retention of dies or patterns on which no orders are received for two years or more.
FORCE MAJEURE	Neither party shall be liable to the other under this Agreement if delayed or prevented from performance by causes beyond its control including, but not limited to, fires, floods, strikes, acts of God, war, insurrection, government restrictions, or other causes of a like or different nature.
ASSIGNMENT	No assignment of the Purchaser's rights or obligations may be made without the prior, written consent of BF.
PURCHASER'S ACCEPTANCE OF BF TERMS	BF is not bound by any terms on the Purchaser's order form or any other document emanating from the Purchaser which attempts to impose any condition at variance with BF's terms and conditions of sale included herein or stated on BF's packages, invoices, technical data sheets or any other BF documents. BF's failure to object to provisions contained in the aforementioned forms of the Purchaser shall not be deemed a waiver of the provisions of BF's terms and conditions of sale which shall constitute the entire contract between BF and the Purchaser. No waiver, alteration, or modification of the terms and conditions of this document shall be binding unless in writing and signed by an authorized representative of BF. These BF terms and conditions constitute the entire understanding between the parties with respect to the subject matter hereof and supersede any and all prior understandings, statements, warranties, representations and agreements, oral and written, relating hereto. In the event of any discrepancy or inconsistency between these terms and conditions and any other purchase order or acceptance form used by the Purchaser in connection herewith, these BF terms and conditions shall govern, and such Purchaser purchase order, or acceptance form shall not amend, modify or add to the BF terms and conditions stated herein.
PROPRIETARY INFORMATION	Any Purchaser information provided to BF shall not be considered confidential unless otherwise agreed to by BF in a separate agreement. All drawings, works of authorship, trade secrets, inventions, improvements or other items made or developed by or for BF in connection with the performance of its obligations hereunder (the "Works") shall be BF's property. Purchaser hereby assigns all right and title in and to such Works to BF. Purchaser shall not use or disclose any of BF's trade secrets or other confidential information, whether or not designated as such, except as required in connection with the use of the Products covered hereunder.
SEVERABILITY	If any provisions of this Agreement are held to be invalid or unenforceable, such invalidity or unenforceability shall not affect the validity or enforceability of the other portions hereof, all of which provisions are hereby declared severable.

