

FORGED
STEEL
VALVES



B[®]
BONNEY FORGE



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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.

FORGING AHEAD OF THE REST

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.

Quality That You Can Count On

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

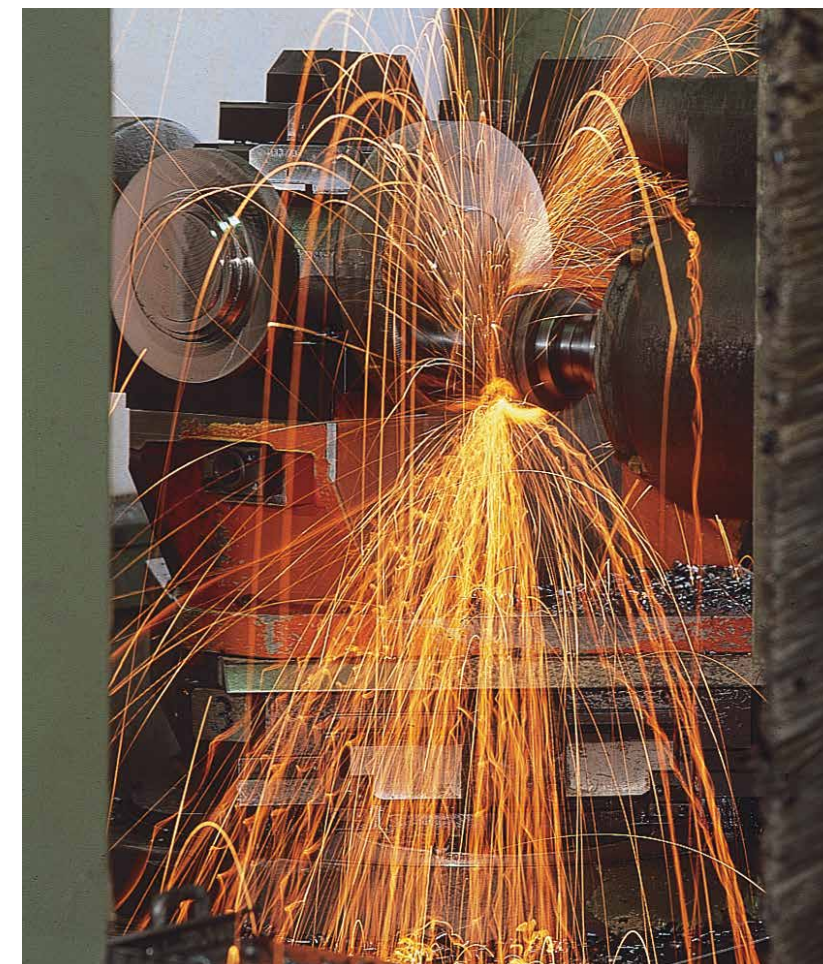
and pneumatic testing of all valves in full conformance to applicable API standards and industry codes. Bonney Forge has earned ISO 9001 designation through uncompromising, company-wide controls.

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

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

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
		F304/HF	7
F5	6	F304/FHF	7F
F9	A	F316/HF	3
F91	K	F316/FHF	3F
F11	9	F317/HF	B
F22	5	F317/FHF	BF
		F321/HF	E
F304, 304L, 304H	7, 7L, 7H	F321/FHF	EF
F316, 316L, 316H	8, 8L, 8H	F347/HF	G
317, 317L	B, BL	F347/FHF	GF
F321, 321H	E, EH	F44	J
F347, 347H	G, GH	F44/HF	JS
F44	J	F44/FHF	JF
		F51	D
Alloy 20	A2	F51/HF	DS
Monel 400	M4	F51/FHF	DF
Monel K-500	M5	Alloy 20	A2
Hastelloy B	HB	Alloy 20/HF	A2S
Hastelloy C-276	HC	Alloy 20/FHF	A2F
Incoloy 800	I800	Monel 400	M4
Incoloy 825	I825	Monel 400/HF	M4S
		Monel 400/FHF	M4F
		Monel 500	M5
F51	D	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

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Bolted Bonnet Gate- 1500 lb. & 2500 lb. valves12

Welded Bonnet Gate- 800 lb. & 1500 lb. valves13

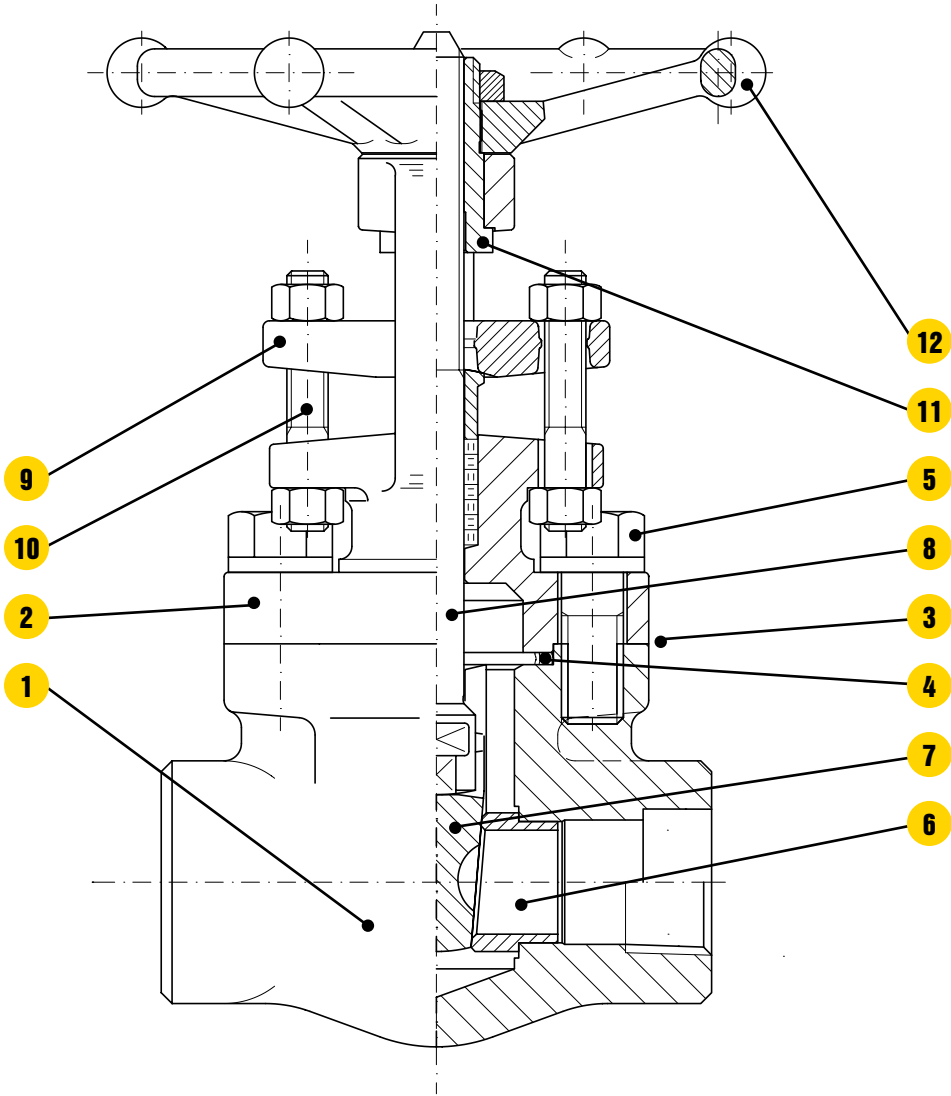
Welded Bonnet Gate- 2500 lb. & 4500 lb. valves14

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.



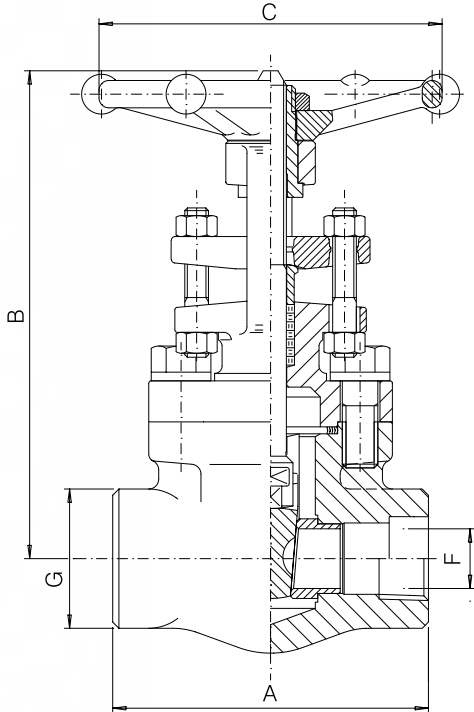
1. **BODY.** The body is forged steel and designed to the basic dimensional requirements of the applicable specifications such as API 602 and ASME B16.34. The body is available in both the full or standard port design.
2. **BONNET.** The bonnet is forged steel, has an integral backseat and incorporates 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



800 LB.	FULL PORT – FIG. H 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	5.28 134	6 152
	B open	inch mm	5.98 152	5.98 152	6.22 158	7.72 196	8.86 225	10.04 255	11.42 290	14.09 358
	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	1.48 36.5	1.83 46.5
	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	4.5 2.1	4.5 2.1	5 2.3	8.25 3.7	13 5.9	16.25 7.4	18.3 8.3	27.5 12.5
	PACKING		BH2	BH2	BH2	BH4	BH5	BH6	BY5	BH8
	GASKET		G2	G2	G2	G3	G4	G6	G11	G10

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

1500 LB.	FULL PORT – FIG. 9H 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	5 127	8.27 210
	B open	inch mm	6.02 153	6.02 153	7.48 190	8.66 220	9.84 250	11.10 282	11.42 290	13.58 345
	C	inch mm	3.46 88	3.46 88	3.82 97	5.43 138	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	1.48 36.5	1.89 48
	G	inch mm	1.50 38	1.50 38	1.89 48	2.20 56	2.52 64	3.07 78	3.07 78	3.35 85
	Weight	lb. kg	5.25 2.4	5.25 2.4	9 4.1	13.75 6.2	17.5 8	23 10.5	24.25 11	44 20
	PACKING		BH3	BH3	BH5	BH6	2B4	BY7	2B5	9B8
	GASKET		G1	G1	G2	G3	G4	G5	G7	G8

1500 LB.	STANDARD PORT — FIG. 9HL 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	5.98 152	7.48 190	8.66 220	11.10 282	13.58 345
	C	inch mm	3.46 88	3.82 97	5.43 138	5.43 138	5.43 138
	F	inch mm	.38 9.6	.55 14	.71 18	1.18 30	1.48 36.5
	G	inch mm	1.5 38	1.89 48	2.20 56	3.07 78	3.35 85
	Weight	lb. kg	5.25 2.4	8.5 3.9	13.25 6.1	23.75 10.8	45.25 20.5
	PACKING		BH3	BH5	BH6	2B5	BH8
	GASKET		G1	G2	G3	G5	G7

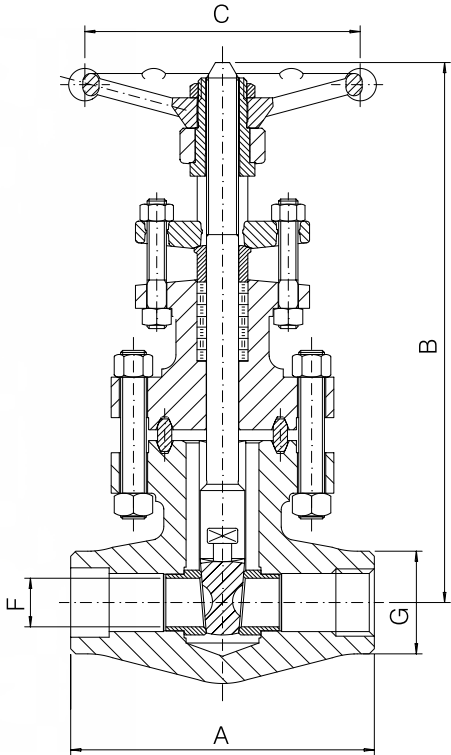
GATE VALVES- BOLTED BONNET- FULL PORT

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



1500 LB.

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

2500 LB.	FULL PORT – FIG. 25HR 10						
	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 open	inch mm	11.10 282	11.3 287	13.70 348	15.98 406	17.20 437
	C	inch mm	5.43 138	5.43 138	6.77 172	9.21 234	9.21 234
	F	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	3.62 92	3.62 92
	Weight	lb. kg	22 10	22 10	48.5 22	81.5 37	79.25 36
	PACKING		2B4	BH8	BH8	9B8	25B8
	GASKET		R16	R16	R17	R20	R22

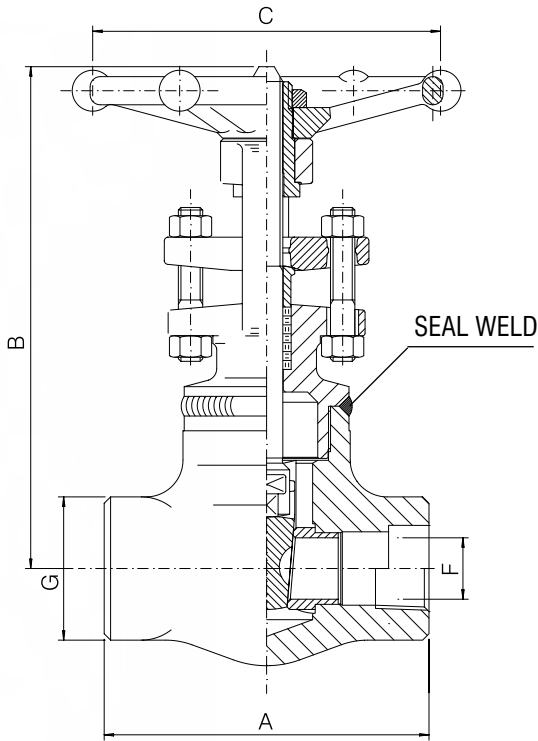
GATE VALVES- WELDED BONNET- FULL & STANDARD PORT

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



800 LB.	FULL PORT – FIG. W 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	5.98 152	5.98 152	6.22 158	7.72 196	8.86 225	10.04 255	11.42 290	14.09 358
	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	3.25 1.5	3.25 1.5	4.25 2	7.75 3.5	11 5	14.25 6.5	20.75 9.5	35.25 16
	PACKING		BH2	BH2	BH2	BH4	BH5	BH6	BY5	BH8

800 LB.	STANDARD PORT – FIG. WL 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	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	1.5 38	1.89 48	2.52 64	3.07 78
	Weight	lb. kg	3.5 1.6	3.75 1.8	6.25 2.9	13.25 6.1	18 8.2
	PACKING		BH2	BH2	BH4	BH6	BY5

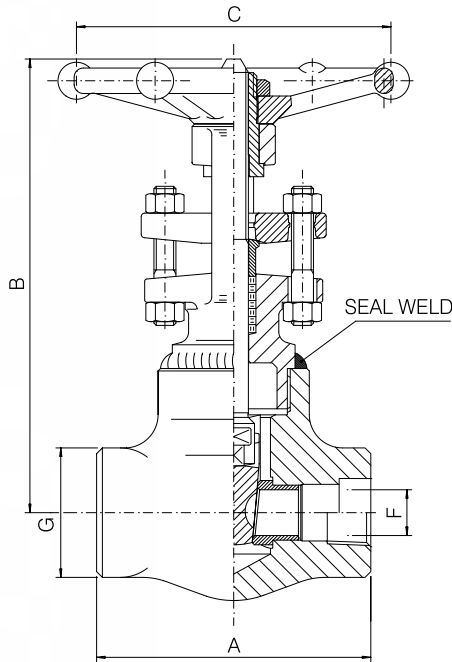
1500 LB.	FULL PORT – FIG. 9W 10									
	SIZE	inch mm	1/4 6	3/8 10	1/2 15	3/4 20	1 25	1 1/4 32	1 1/2 40	2 50
	A	inch mm	3.54 90	3.54 90	4.33 110	5 127	5 127	5 127	5 127	8.27 210
	B open	inch mm	6.02 153	6.02 153	7.48 190	8.66 220	9.84 250	11.10 280	11.42 290	13.58 345
	C	inch mm	3.46 88	3.46 88	3.82 97	5.43 138	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	1.5 38	1.5 38	1.89 48	2.20 56	2.52 64	3.07 78	3.07 78	3.35 85
	Weight	lb. kg	4.25 2.0	4.25 2.0	7.5 3.4	11.25 5.1	15.25 7	22 10	23 10.5	41.75 19
	PACKING		BH3	BH3	BH5	BH6	2B4	BY7	2B5	2B8

1500 LB.	STANDARD PORT – FIG. 9WL 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	6.02 153	7.48 190	8.66 220	11.10 282	13.58 345
	C	inch mm	3.46 88	3.82 97	5.43 138	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	1.5 38	1.89 48	2.20 56	3.07 78	3.35 85
	Weight	lb. kg	4.25 2	7.25 3.3	11.5 5.3	21.5 9.8	40.25 18.3
	PACKING		BH3	BH5	BH6	2B5	BH8

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



2500 LB.	FULL PORT – FIG. 25W 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	9.06
		mm	110	110	127	127	127	127	210	230
	B open	inch	7.20	7.20	8.43	9.61	10.87	10.87	13.27	15.91
		mm	183	183	214	244	276	276	337	404
	C	inch	3.82	3.82	5.43	5.43	5.43	5.43	6.77	9.21
		mm	97	97	138	138	138	138	172	234
	F	inch	.31	.31	.45	.59	.77	.98	1.10	1.38
4500 LB.		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.	11.25	11.5	11.75	15.75	21.5	21.5	43	63.75
		kg	5.2	5.3	5.4	7.2	9.8	9.8	19.5	29
	PACKING		2B4	2B4	2B4	BH8	BH8	2B5	2B5	2B8
	FULL PORT – FIG. 45W 10									
	SIZE	inch	1/2	3/4	1	1 1/2	2			
		mm	15	20	25	40	50			
	A	inch	5	5	9.06	9.06	17.76			
		mm	127	127	230	230	451			
	B open	inch	10.39	10.83	14.37	15.75	17.56			
		mm	264	275	365	400	446			
	C	inch	5.43	6.61	9.21	12.60	12.60			
		mm	138	168	234	320	320			
	F	inch	.30	.45	.59	1.02	1.02			
		mm	7.5	11.5	15	26	26			
	G	inch	3.07	3.07	3.74	3.74	4.72			
		mm	78	78	95	95	120			
	Weight	lb.	22	26.5	40.8	59.5	81.5			
		kg	10	12	18.5	27	37			
	PACKING		2B3	BH6	BY7	2B8	4B8			

Available with Socket Weld or Butt-Weld Ends Only.
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Welded Bonnet (Y type)- 800 lb. &
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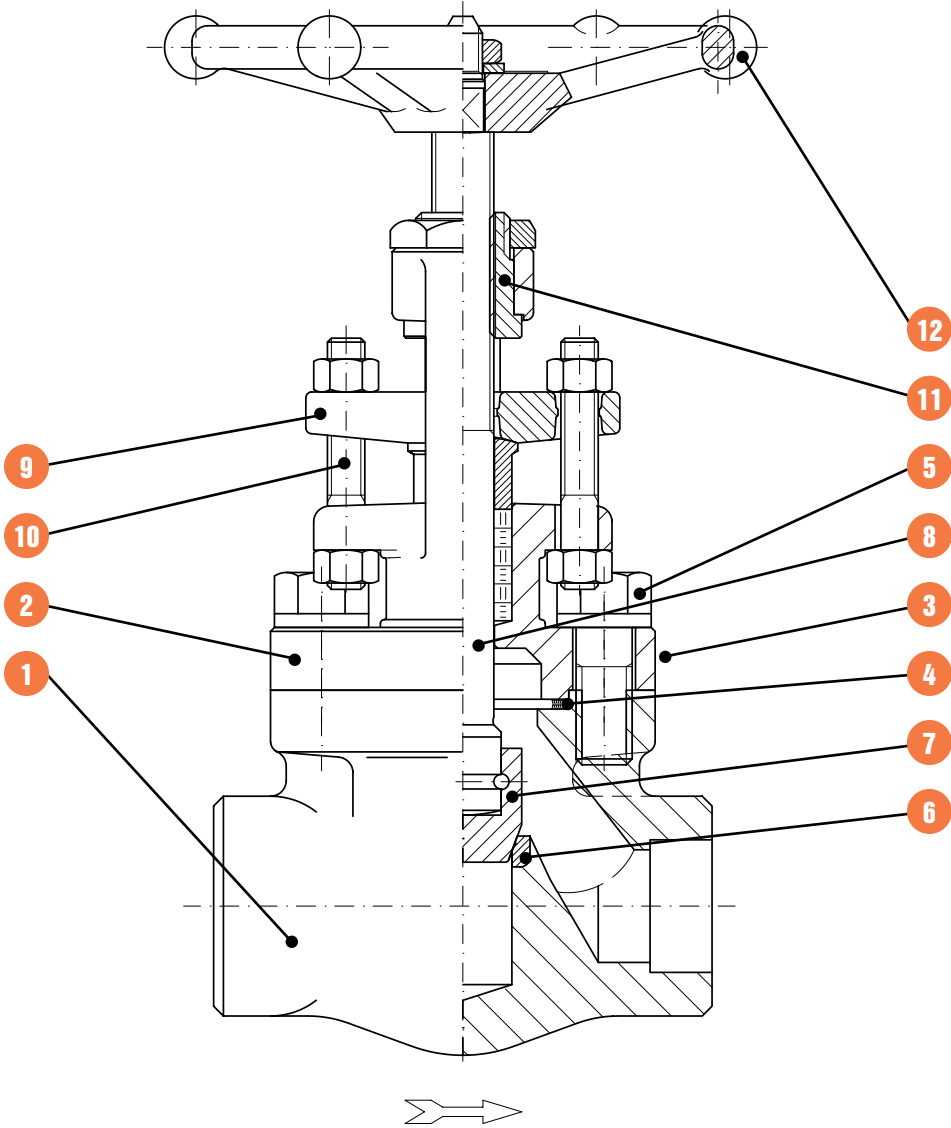
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GLOBE VALVES



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 backseat. Integral body seat.



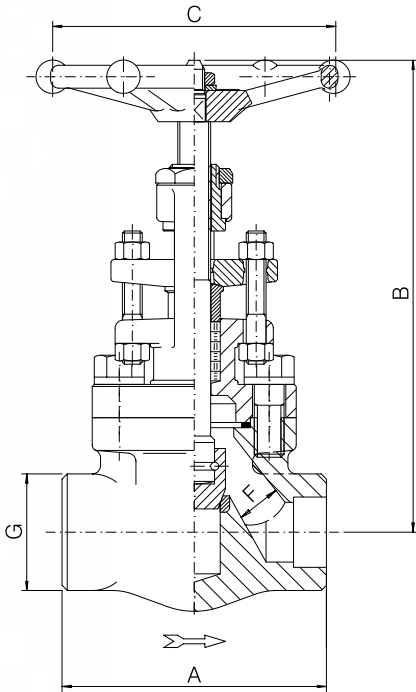
1. **BODY.** The body is forged steel and designed to the basic dimensional requirements of the applicable specifications such as API 602 and ASME B16.34. The body is available in both the full or standard port design. It is also available in either T-pattern or Y-pattern configuration.
2. **BONNET.** 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
	A	inch	3.15	3.54	4.33	6
	mm		80	90	110	150
	B open	inch	6.54	6.73	8.39	10.16
	mm		166	171	213	258
	C	inch	3.46	3.46	3.82	5.43
	mm		88	88	97	138
	F	inch	.35	.51	.69	1.16
mm		9	13	17.5	29.5	35
G		inch	1.26	1.5	1.89	2.52
mm		32	38	48	64	78
Weight		lb.	4.5	5	8	16.25
kg			2.1	2.3	3.7	7.4
PACKING			BH3	BH3	BH5	BY5
GASKET			G2	G2	G3	G6

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
	A	inch	3.54	4.33	5	7.09
	mm		90	110	127	180
	B open	inch	6.54	8.27	9.84	11.81
	mm		166	210	250	300
	C	inch	3.46	3.82	5.43	6.77
	mm		88	97	138	172
	F	inch	.35	.47	.59	1.06
mm		9	12	15	27	32
G		inch	1.5	1.89	2.20	3.07
mm		38	48	56	78	85
Weight		lb.	5.25	8.75	14.25	28.5
kg			2.4	4	6.5	13
PACKING			BH3	BH5	2B4	2B5
GASKET			G1	G2	G3	G5

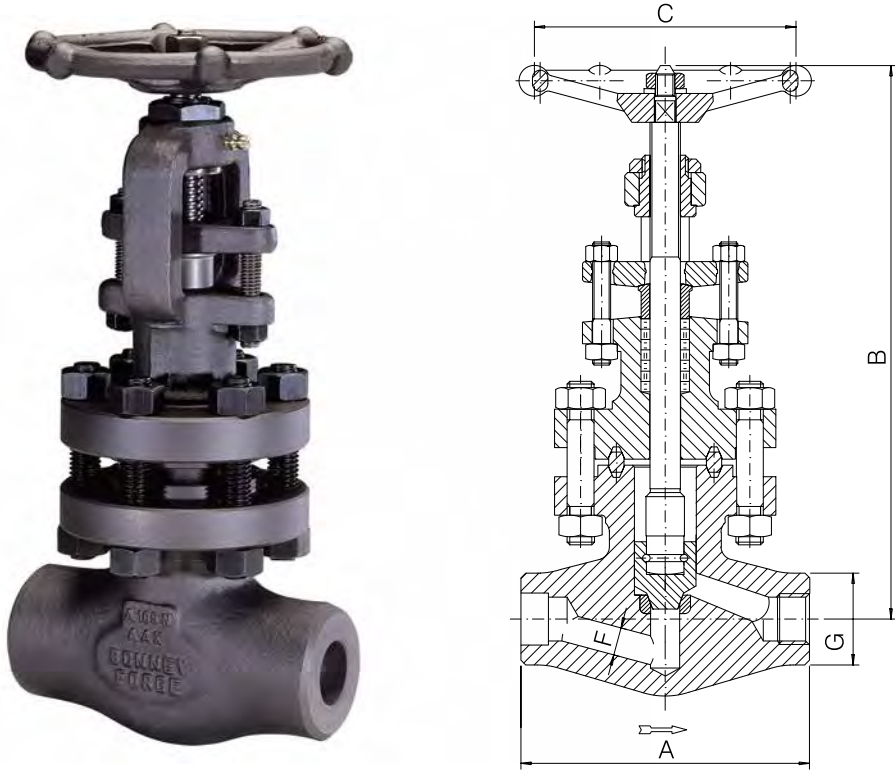
GLOBE VALVES- BOLTED BONNET- FULL PORT

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



1500 LB.	FULL PORT – FIG. 9HR 30						
	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 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

2500 LB.	FULL PORT – FIG. 25HR 30						
	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 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

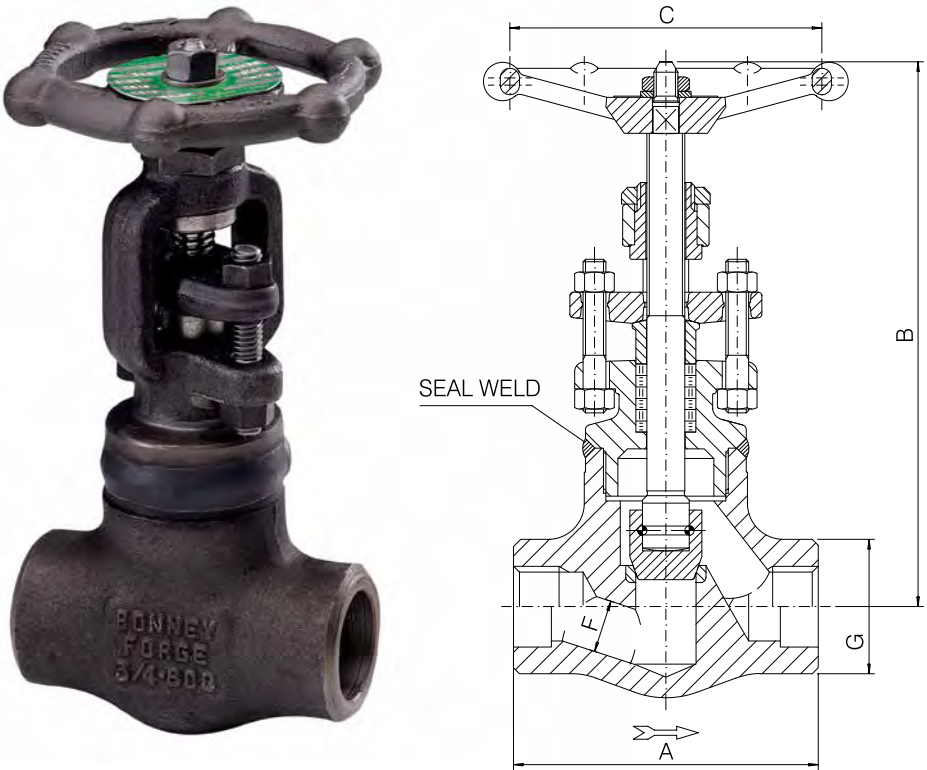
GLOBE VALVES- WELDED BONNET- FULL & STANDARD PORT

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



800 LB.	FULL PORT – FIG. W 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	5.91 150	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

800 LB.	STANDARD PORT – FIG. WL 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	5.91 150	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

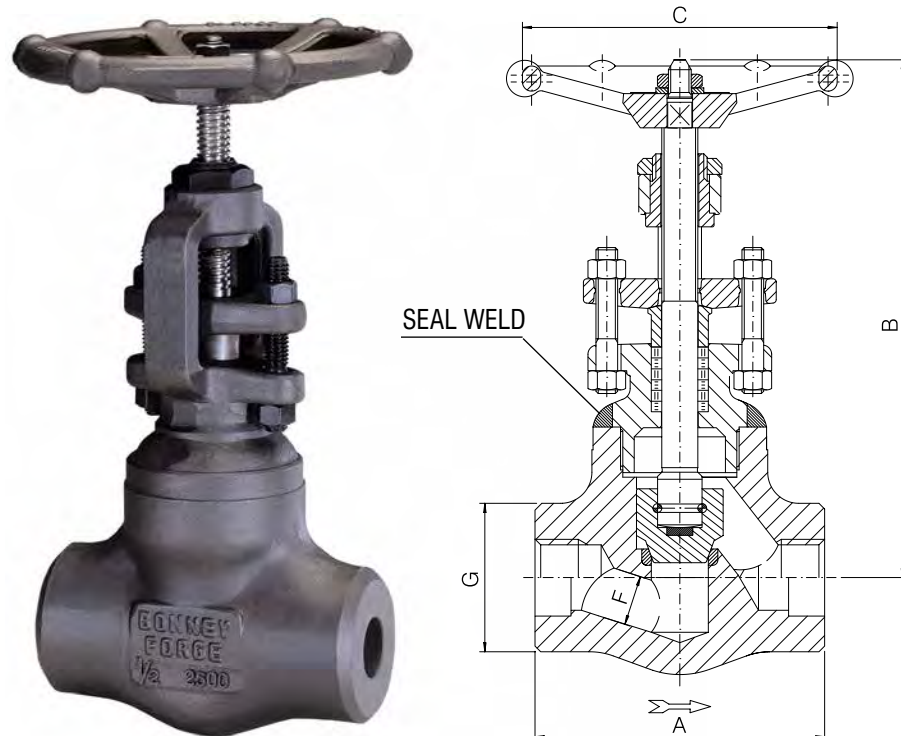
1500 LB.	FULL PORT – FIG. 9W 30									
	SIZE	inch mm	1/4 6	3/8 10	1/2 15	3/4 20	1 25	1 1/4 32	1 1/2 40	2 50
	A	inch mm	3.54 90	3.54 90	4.33 110	5 127	5.91 150	7.09 180	8.27 210	9.06 230
	B open	inch mm	6.54 166	6.54 166	8.27 210	9.72 247	10.08 256	11.81 300	14.76 375	16.85 428
	C	inch mm	3.46 88	3.46 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

1500 LB.	STANDARD PORT – FIG. 9WL 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	5 127	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

BONNEY FORGE

4500 LTD.

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



4500 LTD.

FULL PORT – FIG. 45W 30								
SIZE	inch mm	1/4 6	3/8 10	1/2 15	3/4 20	1 25	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

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BONNEY FORGE

1690 LTD.

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



1690 LTD.	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	17.7 450
	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	57.2 26
	PACKING		BH3	BH3	BH5	2B4	2B4	BY7	BH8	2B8

Materials and trim specifications Page 91



R[®] 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

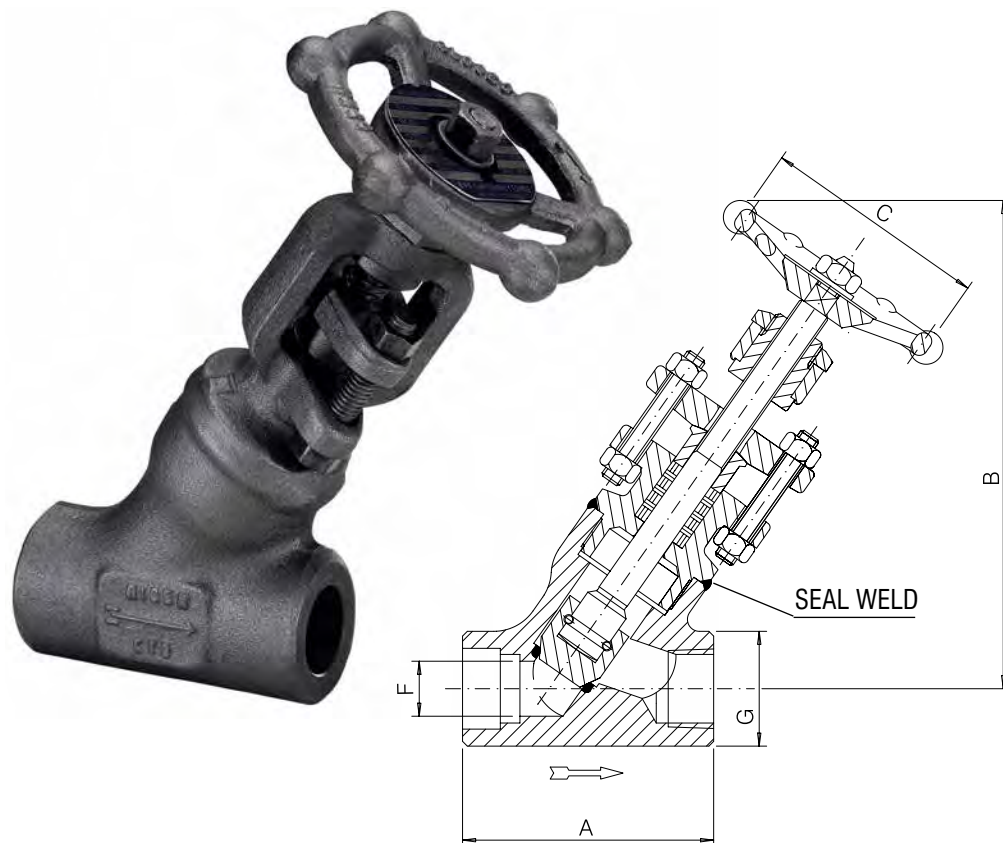
Ratings:

- carbon steel class 2680 6700 psig @ 100°F

462 bar + 38°C

- carbon steel class 4500 11250 psig @ 100°F

776 bar + 38°C



2680 LTD.

FULL PORT — FIG. 2680Y 30								
SIZE	inch mm	1/4 6	3/8 10	1/2 15	3/4 20	1 25	1 1/2 40	2 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 mm	1/4 6	3/8 10	1/2 15	3/4 20	1 25	1 1/2 40	2 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

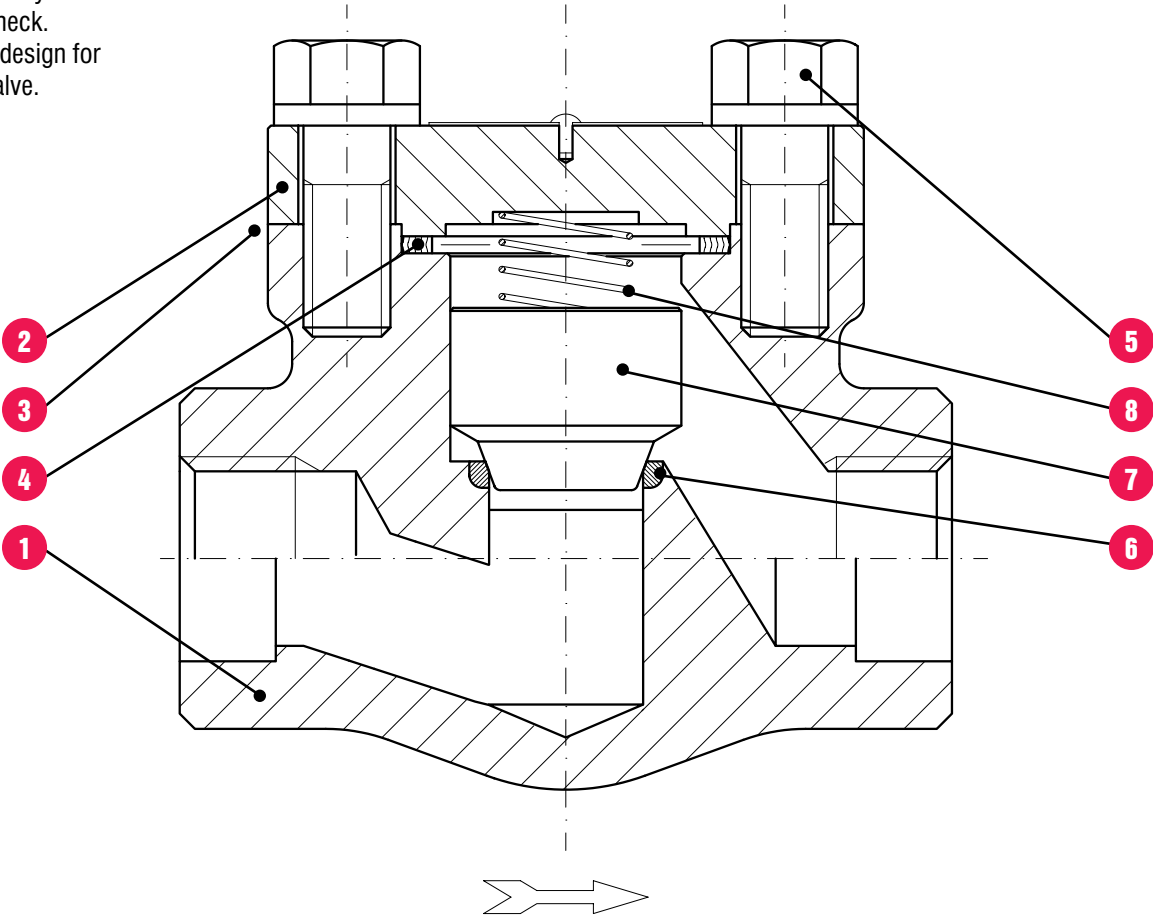
CHECK VALVES



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Bolted Bonnet- 800 lb. & 1500 lb. valves	25
Bolted Bonnet- 1500 lb. & 2500 lb. valves	26
Welded Bonnet- 800 lb. & 1500 lb. valves	27
Welded Bonnet- 2500 lb. & 4500 lb. valves	28
Welded Bonnet (Y type)- 800 lb. & 1690 lb. valves	29
Welded Bonnet (Y type)- 2680 lb. & 4500 lb. valves	30

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.



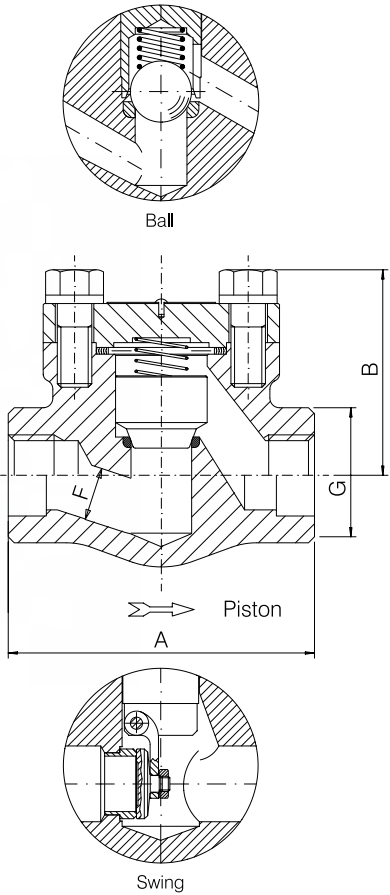
1. **BODY.** The body is forged steel and designed to the basic dimensional requirements of the applicable specifications such as API 602 and ASME B16.34. The body is available in both the full or standard port design. It is also available in either T-Pattern or Y-Pattern configurations.
2. **COVER.** 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



800 LB.	FULL PORT — FIG. H 40 - H 50 - H 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	4.25 108	5.71 145
	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	3 1.4	3 1.4	3.5 1.6	6.5 3	9.5 4.3	12.25 5.6	22 10	35.25 16
	GASKET		G2	G2	G2	G3	G4	G6	G7	G9
	*For swing type only A=90mm 3.54inch									

800 LB.	STANDARD PORT — FIG. HL 40 - HL 50 - HL 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	2.17 55	2.36 60	3.07 78	3.62 92	4.25 108
	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	1.5 38	1.89 48	2.52 64	3.07 78
	Weight	lb. kg	2.75 1.3	3.5 1.6	6.25 2.8	12.25 5.6	19.75 9.0
	GASKET		G2	G2	G3	G6	G7

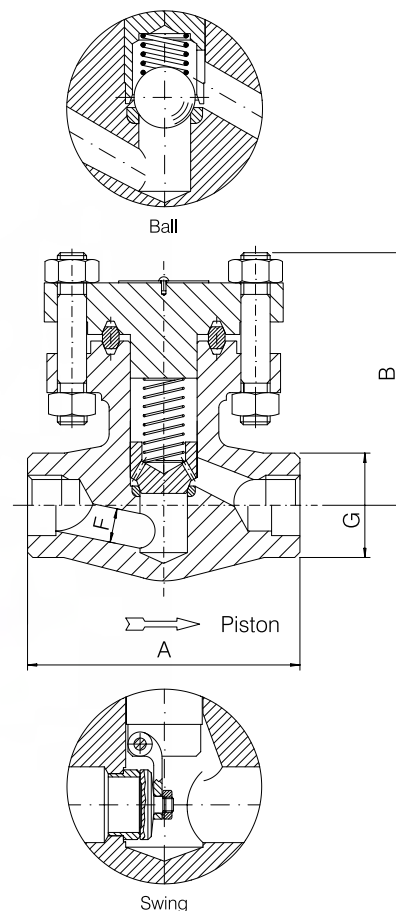
1500 LB.	FULL PORT — FIG. 9H 40 - 9H 50 - 9H 60									
	SIZE	inch mm	1/4 6	3/8 10	1/2 15	3/4 20	1 25	1 1/4 32	1 1/2 40	2 50
	A	inch mm	3.54 90	3.54 90	4.33 110	5 127	5.91 150	7.09 180	8.27 210	8.27 210
	B	inch mm	2.36 60	2.36 60	3.07 78	3.46 88	3.62 92	4.25 108	5.71 145	5.91 150
	F Piston/ F Ball	inch mm	.28 7	.35 9	.47 12	.59 15	.79 20	1.06 27	1.26 32	1.57 40
	F Swing	inch mm	- -	- -	.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	3.75 1.7	3.75 1.7	6.75 3.1	10 4.6	14.25 6.5	23.25 10.6	41.75 19	41.75 19
	GASKET		G1	G1	G2	G3	G4	G5	G7	G8

1500 LB.	STANDARD PORT — FIG. 9HL 40 - 9HL 50 - 9HL 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	2.36 60	3.07 78	3.46 88	4.25 108	5.71 145
	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	3.75 1.7	6.5 3	9.75 4.4	22 10	39.5 18
	GASKET		G1	G2	G3	G5	G7

BONNEY FORGE

2500 LB.

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



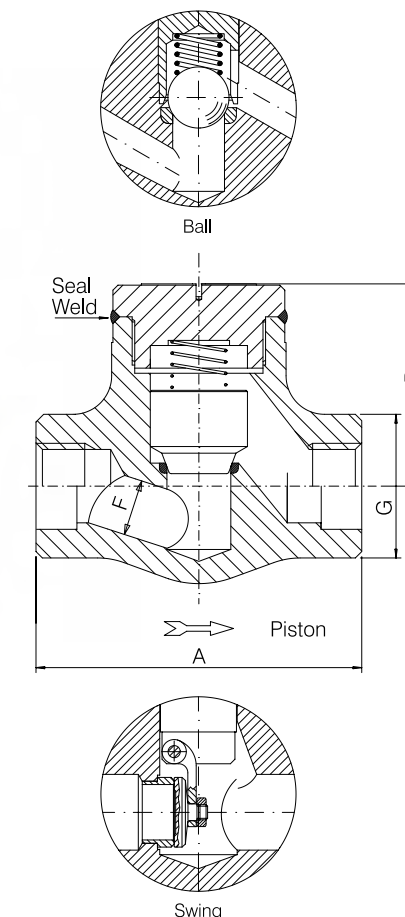
FULL PORT – FIG. 25HR 40 - 25HR 50 - 25HR 60						
SIZE	inch mm	1/2 15	3/4 20	1 25	1 1/2 40	2 50
A	inch mm	5.91 150	5.91 150	8.27 210	9.06 230	9.06 230
B	inch mm	5.04 128	5.04 128	5.98 152	7.48 190	7.48 190
F Piston/ F Ball	inch mm	.43 11	.57 14.5	.75 19	1.10 28	1.38 35
F Swing	inch mm	.45 11.5	.59 15	.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

BONNEY FORGE

1500 LB.

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



1500 LB.	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	9.00 230
	B	inch mm	2.17 55	2.17 55	3 76	3.31 84	3.54 90	4.33 110	5.91 150	9.00 230
	F Piston/ F Ball	inch mm	.28 7	.35 9	.47 12	.59 15	.79 20	1.06 27	1.26 32	1.50 40
	F Swing	inch mm	.31 8	.38 9.6	.55 14	.71 18	.94 24	1.18 30	1.44 36.6	1.81 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	48.3 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	8.2 210	
B	inch mm	2.13 54	3 76	3.39 86	4.33 110	5.9 150	
F Piston/ F Ball	inch mm	.35 9	.47 12	.59 15	1.06 27	1.2 32	
F Swing	inch mm	.38 9.6	.55 14	.71 18	1.18 30	1.4 36	
G	inch mm	1.5 38	1.89 48	2.20 56	3.07 78	3.3 85	
Weight	lb. kg	3 1.4	4.75 2.2	6.5 3	21 9.6	35.2 16	

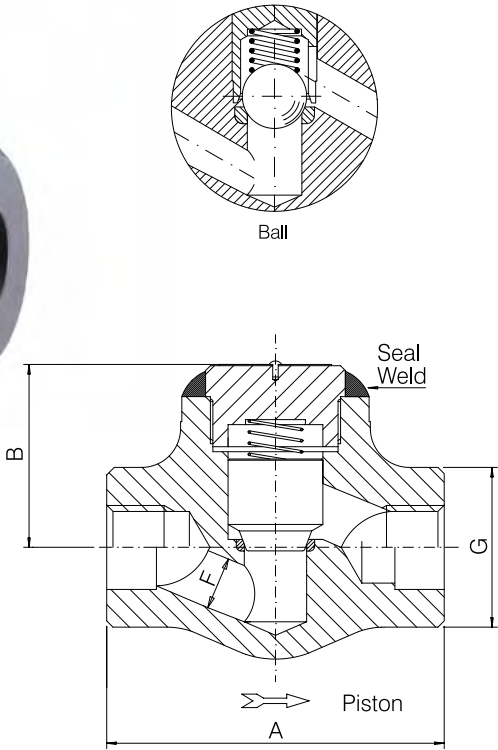
CHECK VALVES- WELDED BONNET- FULL PORT

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



2500 LTD.	FULL PORT – FIG. 25W 40 - 25W 50								
	SIZE	inch mm	1/4 6	3/8 10	1/2 15	3/4 20	1 25	1 1/2 40	2 50
	A	inch mm	4.33 110	4.33 110	5 127	5.91 150	7.09 180	8.27 210	9.06 230
	B	inch mm	2.76 70	2.76 70	3.39 86	3.62 92	4.33 110	5.91 150	7.09 180
	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	2.52 64	3.07 78	3.35 85	3.74 95
	Weight	lb. kg	7 3.2	7 3.2	8.25 3.8	12.25 5.6	22 10	35.25 16	46.25 21
	FULL PORT – FIG. 45W 40 - 45W 50								
	SIZE	inch mm	1/4 6	3/8 10	1/2 15	3/4 20	1 25	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
4500 LTD.	B	inch mm	3.54 90	3.54 90	3.54 90	4.33 110	4.33 110	7.09 180	7.68 195
	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	8.5 3.9	8.5 3.9	8.5 3.9	23 10.5	23 10.5	55.5 25.2	59.5 27

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

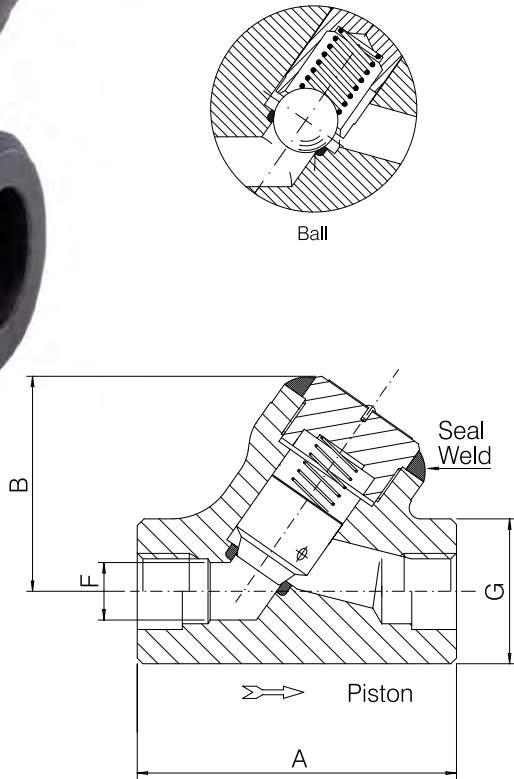
CHECK VALVES- WELDED BONNET- FULL PORT (Y TYPE)

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



800 LTD.	FULL PORT – FIG. Y 40 - Y 50									
	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	inch mm	2.76 70	2.76 70	2.76 70	3.54 90	3.93 100	5.12 130	5.12 130	6.3 160
	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	1.50 38	1.50 38	1.50 38	1.89 48	2.20 56	3.07 78	3.07 78	3.35 85
	Weight	lb. kg	2.5 1.2	2.5 1.2	2.5 1.2	5 2.3	6.5 3	17.5 8	17.5 8	26.25 12
	FULL PORT – FIG. 1690Y 40 - 1690Y 50									
	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
1690 LTD.	B	inch mm	2.76 70	2.76 70	3.54 90	3.93 100	5.12 130	5.12 130	6.3 160	7.68 195
	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	1.50 38	1.50 38	1.89 48	2.20 56	3.07 78	3.07 78	3.35 85	3.74 95
	Weight	lb. kg	2.5 1.2	2.5 1.2	5.25 2.4	7.75 3.6	20.5 9.3	28.5 13	29.75 13.5	39.5 18

Materials and trim specifications Page 91



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

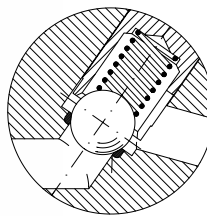
Ratings:

- carbon steel class 2680 6700 psia @ 100°F

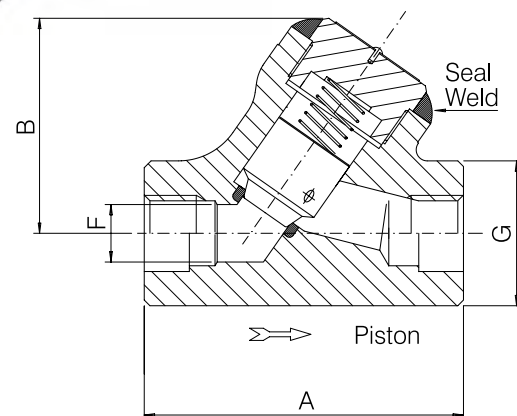
462 bar + 38°C

- carbon steel class 4500 11250 psig @ 100°F

776 bar + 38°C



Ba||



FULL PORT — FIG. 2680Y 40 - 2680Y 50									
2680 LTD.	SIZE	inch mm	1/4 6	3/8 10	1/2 15	3/4 20	1 25	1 1/2 40	2 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	inch mm	3.35 85	3.35 85	3.74 95	4.53 115	4.72 120	5.71 145	7.28 185
	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 3.2	7 3.2	8 3.7	19.75 9	19.75 9	29.75 13.5	44 20

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

STANDARD PORT — FIG. 45Y 40 - 45Y 50								
SIZE	inch mm	1/4 6	3/8 10	1/2 15	3/4 20	1 25	1 1/2 40	2 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	inch mm	3.74 95	3.74 95	3.74 95	4.53 115	4.72 120	7.28 185	7.68 195
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	8 3.7	8 3.7	8 3.7	19.75 9	19.75 9	44 20	50.5 23

Available with Socket Weld or Butt-Weld Ends only.

Materials and trim specifications Page 91

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Overview	32
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Gate Type- Bolted Bonnet- 150 lb., & 300 lb. valves.....	33
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Gate Type- Bolted Bonnet-	
600 lb. valves	34

Gate Type- Bolted Bonnet- 800 lb. & 1500 lb. valves	35
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Gate Type- Bolted Bonnet- 1500 lb. valves
Welded Bonnet- 150 lb.-1500 lb valves36

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& 300 lb. valves.....37

Globe Type- Bolted Bonnet-	
600 lb. valves	38

Globe Type- Bolted Bonnet- 800 lb.
& 1500 lb. valves39

Globe Type- Bolted Bonnet- 1500 lb. valves
Welded Bonnet- 150 lb. & 1500 lb. valves40

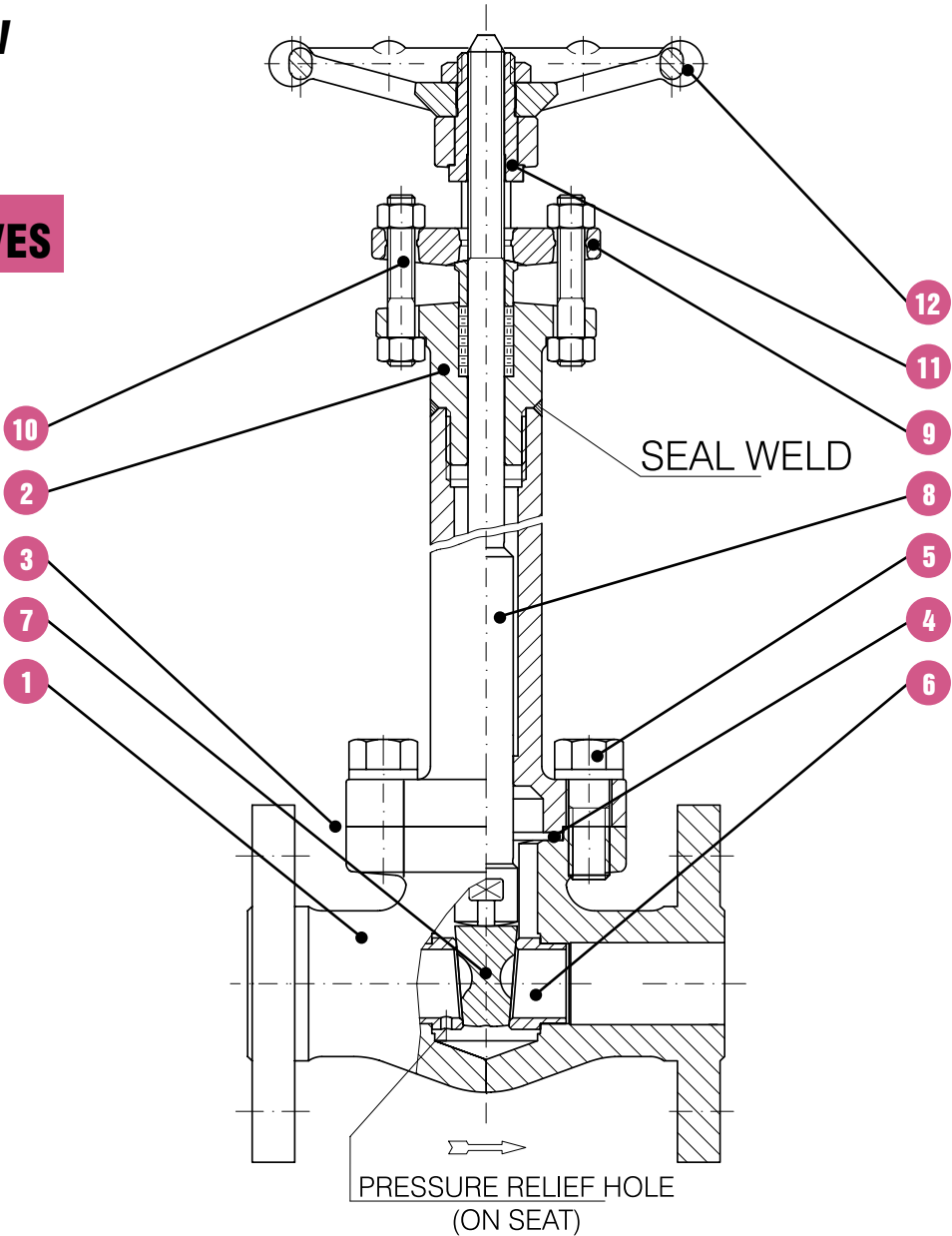
CRYOGENIC VALVES



3

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.



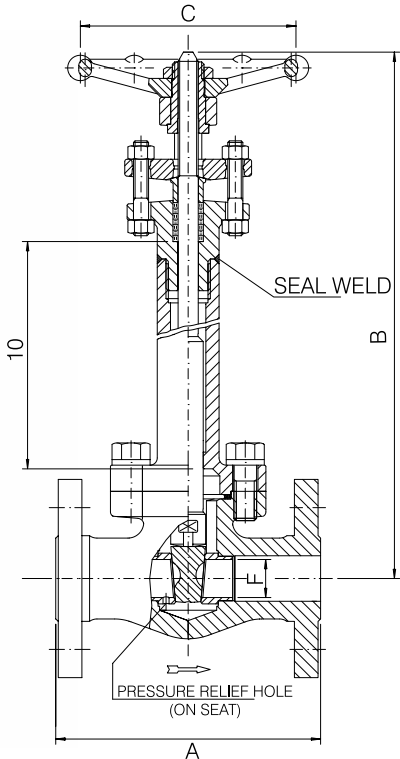
1. **BODY.** The body is forged steel and designed to the basic dimensional requirements of the applicable specifications such as API 602 and ASME B16.34. The body is available in both the full or standard port design.
2. **BONNET.** The bonnet is forged steel and extended to act as a gas column to keep 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



150 LB.	FULL PORT – FIG. 1C 10						
	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	6.5 165	7.01 178
	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	10.5 4,8	13 5,9	19,25 8,7	32,5 14,7	42 19
	PACKING		BH2	BH4	BH5	BY5	BY7
	GASKET		G2	G3	G4	G7	G8

150 LB.	STANDARD PORT – FIG. 1CL 10						
	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	6.5 165	7.01 178
	B open	inch mm	16.54 420	17.13 435	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	9.5 4,3	11,25 5,1	14 6,4	27,25 12,4	35,25 16
	PACKING		BH2	BH2	BH4	BH6	BY5
	GASKET		G2	G2	G3	G5	G7

300 LB.	FULL PORT – FIG. 3C 10						
	SIZE	inch mm	1/2 15	3/4 20	1 25	1 1/2 40	2 50
	A	inch mm	5.51 140	6.00 152,5	6.5 165	7.52 191	8.50 216
	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	11,25 5,1	15,75 7,2	21,75 9,9	35,25 16	48,5 22
	PACKING		BH2	BH4	BH5	BY5	BY7
	GASKET		G2	G3	G4	G7	G8

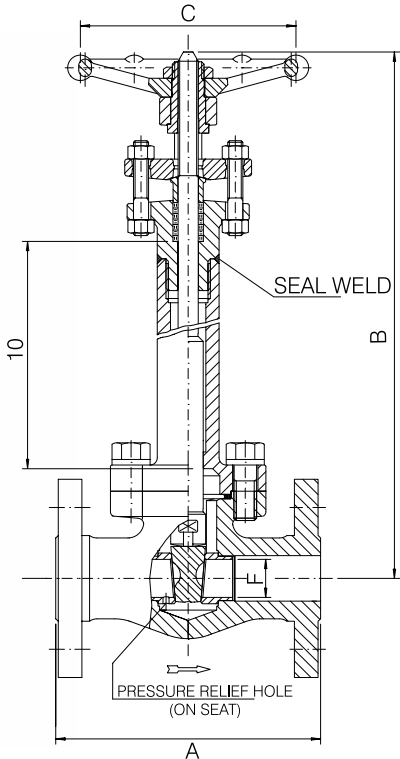
300 LB.	STANDARD PORT – FIG. 3CL 10						
	SIZE	inch mm	1/2 15	3/4 20	1 25	1 1/2 40	2 50
	A	inch mm	5.51 140	6.00 152,5	6.5 165	7.52 191	8.50 216
	B open	inch mm	16.53 420	17.12 435	17.72 450	20.08 510	21.06 535
	C	inch mm	3.46 88	3.46 88	3.82 97	5.43 138	5.43 138
	F	inch mm	.38 9,6	.55 14	.71 18	1.18 30	1.44 36,6
	Weight	lb. kg	11,25 5,1	14,25 6,5	17,25 7,8	33 15	42 19
	PACKING		BH2	BH2	BH4	BH6	BY5
	GASKET		G2	G2	G3	G5	G7

BONNEY FORGE

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

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

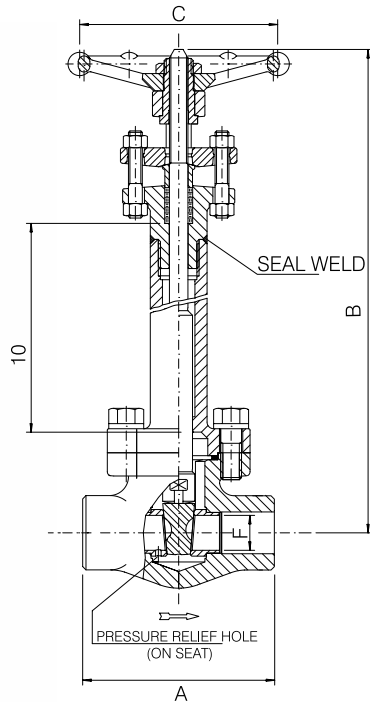


BONNEY FORGE

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

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
	A	inch mm	6.5 165	7.52 191	8.50 216	9.49 241
	B open	inch mm	16.93 430	17.52 445	18.50 470	21.06 535
	C	inch mm	3.46 88	3.82 97	5.43 138	5.43 138
	F	inch mm	.55 14	.71 18	.94 24	1.44 36.6
	Weight	lb. kg	13.75 6.2	18.5 8.4	23 10.5	44 20
	PACKING		BH2	BH4	BH5	BY5
GASKET						G2

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

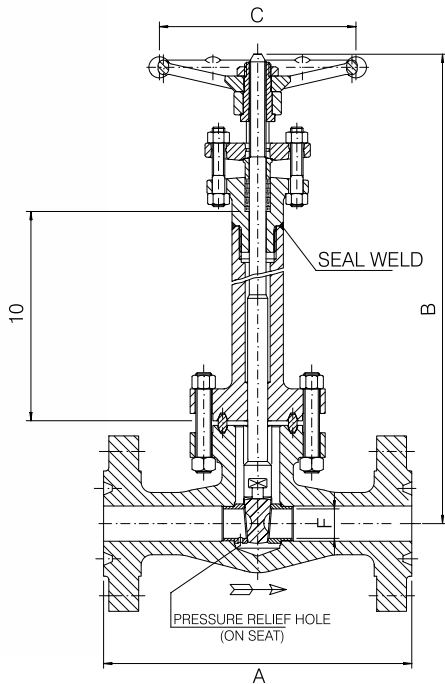
1500 LB.	FULL PORT – FIG. 9C 10								
	SIZE	inch mm	1/4 6	3/8 10	1/2 15	3/4 20	1 25	1 1/4 32	1 1/2 40
	A	inch mm	3.54 90	3.54 90	4.33 110	5 127	5 127	5 127	8.27 210
	B open	inch mm	15.55 395	15.55 395	17.12 435	18.50 470	19.49 495	20.47 520	23.03 585
	C	inch mm	3.46 88	3.46 88	3.82 97	5.43 138	5.43 138	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
	G	inch mm	1.5 38	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	12 5.5	17 7.8	24.25 11	40 14.5	56.5 25.6
PACKING									BH3
GASKET									G1

1500 LB.	STANDARD PORT – FIG. 9CL 10					
	SIZE	inch mm	1/2 15	3/4 20	1 25	1 1/2 40
	A	inch mm	3.54 90	4.33 110	5 127	5 127
	B open	inch mm	15.94 405	17.32 440	18.50 470	20.67 525
	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	1.26 32	1.5 38	1.89 48	2.52 64
	Weight	lb. kg	8 3.7	11.5 5.3	18.75 8.5	30 13.6
PACKING						BH3
GASKET						G1

CRYOGENIC VALVES- GATE TYPE- BOLTED BONNET- FULL PORT

1500 LB.

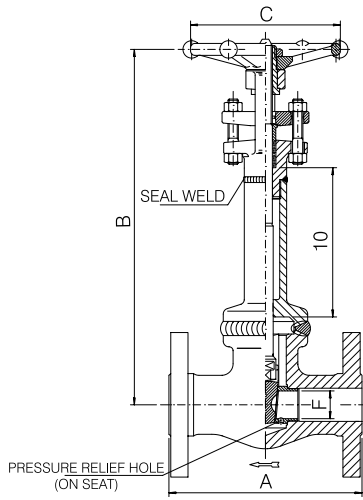
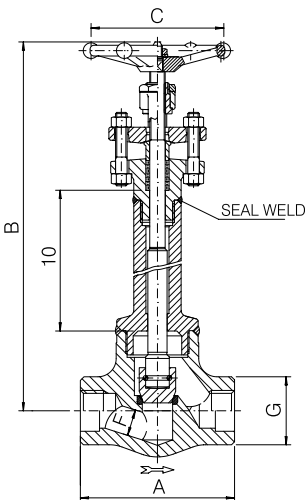
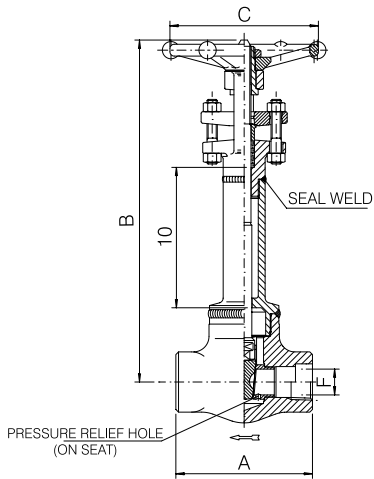
Design construction:
 ASME B16.34- BS 5352
 Full Port type
 Testing according to API 598
 Marking MSS SP25
 Outside Screw and Yoke (OS&Y)
 Self aligning two piece packing gland
 Body bonnet gasket ring joint type
 Spiral wound type gasket on request
 Integral backseat
 Integral body flanges
 Face to 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 mm	1/2 15	3/4 20	1 25	1 1/2 40	2 50
A	inch mm	8.50 216	9.01 229	10 254	12.01 305	14.62 371.5
B open	inch mm	17.91 455	19.29 490	19.68 500	22.64 575	24.80 630
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	22.5 10.2	30.75 14	38.5 17.5	68.25 31	130 59
PACKING		BH5	BH6	2B4	BH8	4B8
GASKET		R12	R16	R16	R20	R22

Materials and trim specifications Page 91

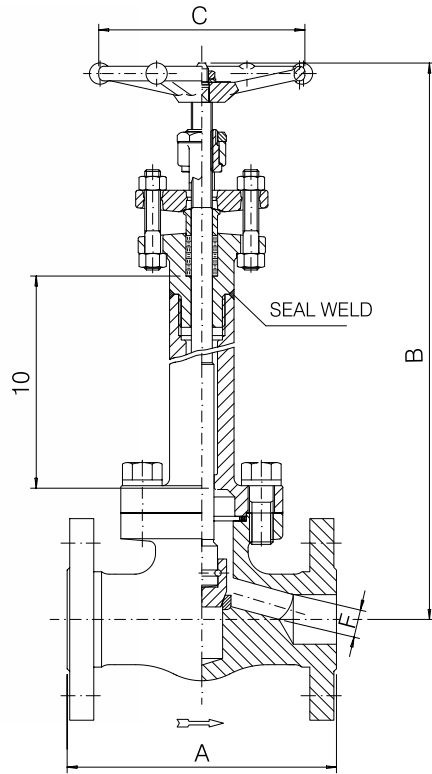
TYPICAL DRAWING FOR GATE AND GLOBE WELDED BONNET CONSTRUCTION



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 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	6.5 165	7.99 203
B open	inch mm	17.52 445	18.50 470	19.68 500	22.05 560	24.80 630
C	inch mm	3.46 88	3.82 97	5.43 138	5.43 138	6.77 172
F	inch mm	.51 13	.69 17.5	.88 22.5	1.38 35	1.77 45
Weight	lb. kg	10.5 4.8	13 5.9	19.25 8.7	32.5 14.7	46.25 21
PACKING		BH3	BH5	BY5	BY7	BY7
GASKET		G2	G3	G4	G7	G8

STANDARD PORT – FIG. 1CL 30						
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	6.5 165	7.99 203
B open	inch mm	15.16 385	17.12 435	18.11 460	20.27 515	21.46 545
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	10 4.6	11.5 5.2	14.75 6.7	27.5 12.5	42 19
PACKING		BH3	BH3	BH5	BY5	BY7
GASKET		G2	G2	G3	G5	G8

FULL PORT – FIG. 3C 30						
SIZE	inch mm	1/2 15	3/4 20	1 25	1 1/2 40	2 50
A	inch mm	6.00 152.5	7.01 178	7.99 203	9.01 229	10.51 267
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	13.75 6.2	17.5 7.9	26.5 12	46.25 21	68.25 31
PACKING		BH3	BH5	BY5	BY7	BH8
GASKET		G2	G3	G4	G7	G9

STANDARD PORT – FIG. 3CL 30						
SIZE	inch mm	1/2 15	3/4 20	1 25	1 1/2 40	2 50
A	inch mm	6.00 152.5	7.01 178	7.99 203	9.01 229	10.51 267
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	12.25 5.6	14.75 6.7	21.5 9.8	38.5 17.5	54 24.5
PACKING		BH3	BH3	BH5	BY5	BY7
GASKET		G2	G2	G3	G6	G7

Materials and trim specifications Page 91

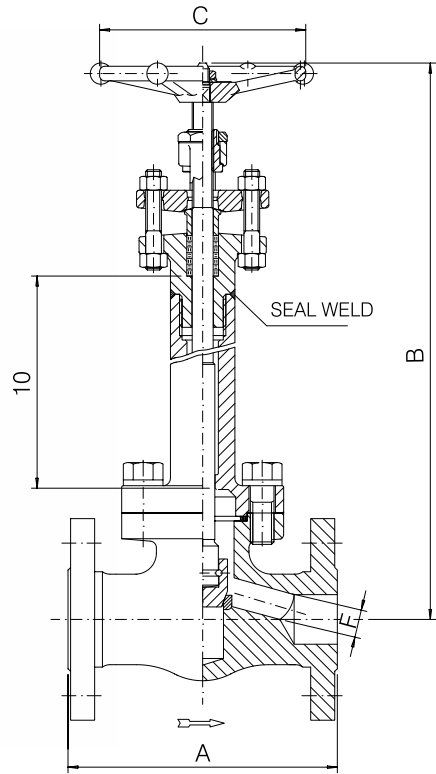
B

BONNEY FORGE

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



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	BH5	BY5	BY7
GASKET			G2	G2	G3	G6	G7

B

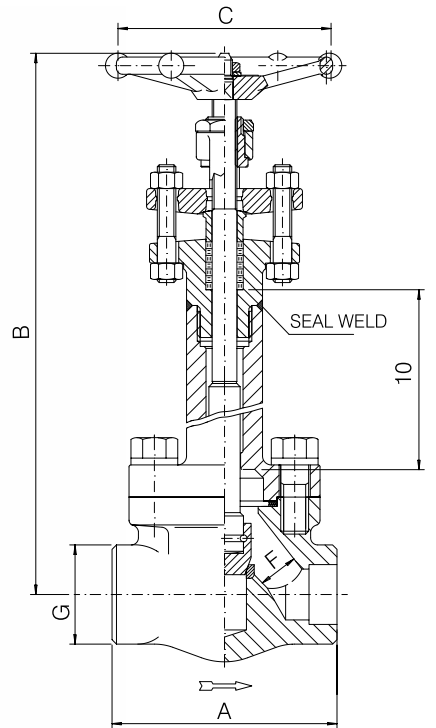
BONNEY FORGE

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



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

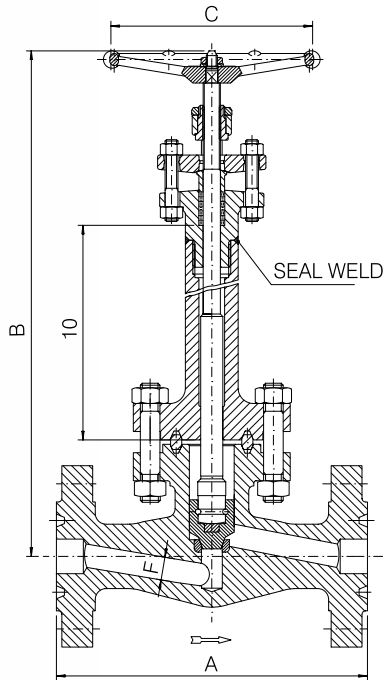
1500 LB.	FULL PORT – FIG. 9C 30									
	SIZE	inch mm	1/4 6	3/8 10	1/2 15	3/4 20	1 25	1 1/4 32	1 1/2 40	2 50
	A	inch mm	3.54 90	3.54 90	4.33 110	5 127	5.90 150	7.09 180	8.27 210	9.05 230
	B open	inch mm	16.14 410	16.14 410	17.91 455	19.49 495	19.68 500	21.26 540	24.21 615	25.39 645
	C	inch mm	3.46 88	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.

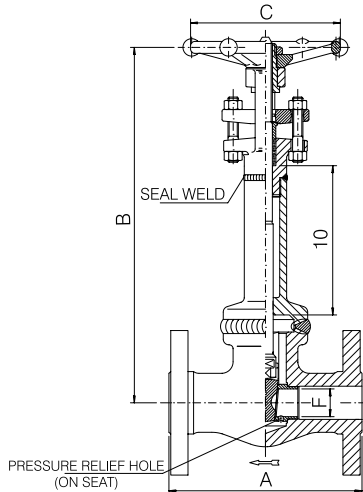
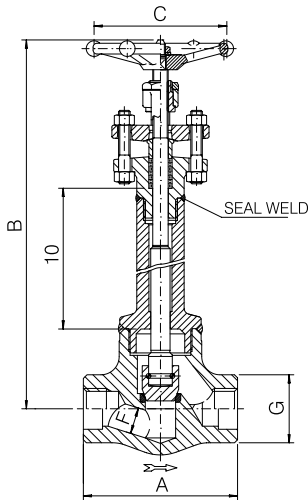
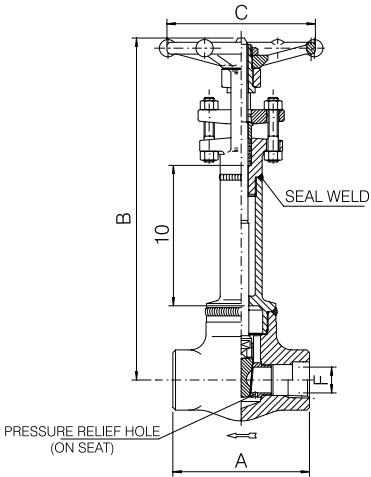
Design construction:
ASME B16.34- BS 5352- BS6364
Testing according to API- 598
Marking MSS- SP25
Outside Screw and Yoke (OS&Y)
Self aligning two piece packing gland
Body bonnet gasket ring joint type
Spiral wound type gasket on request
Integral backseat
Loose disc stem assembly
Integral body flanges
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						
1500 LB.	SIZE	inch mm	1/2 15	3/4 20	1 25	1 1/2 40
	A	inch mm	8.50 216	9.01 229	10 254	12.01 305
	B open	inch mm	18.50 470	20.08 510	20.67 525	23.42 595
	C	inch mm	3.82 97	5.43 138	5.43 138	6.77 172
	F	inch mm	.47 12	.57 14.5	.75 19	1.22 31
	Weight	lb. kg	23 10.5	30.75 14	40.75 18.5	71.75 32.5
	PACKING		BH5	2B4	2B4	BH8
	GASKET		R12	R16	R16	R20
						R22

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TYPICAL DRAWING FOR GATE AND GLOBE WELDED BONNET CONSTRUCTION



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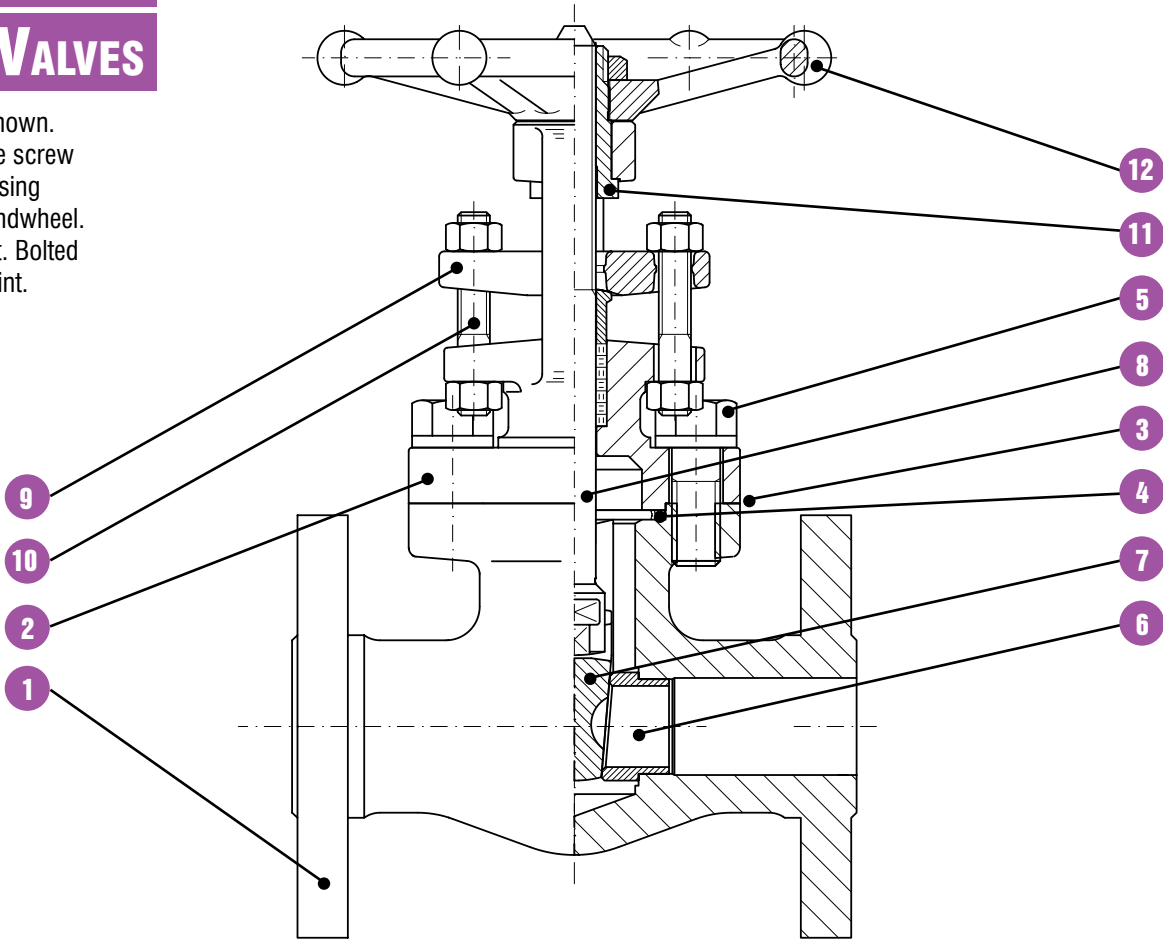
**INTEGRAL
FLANGED VALVES**



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.



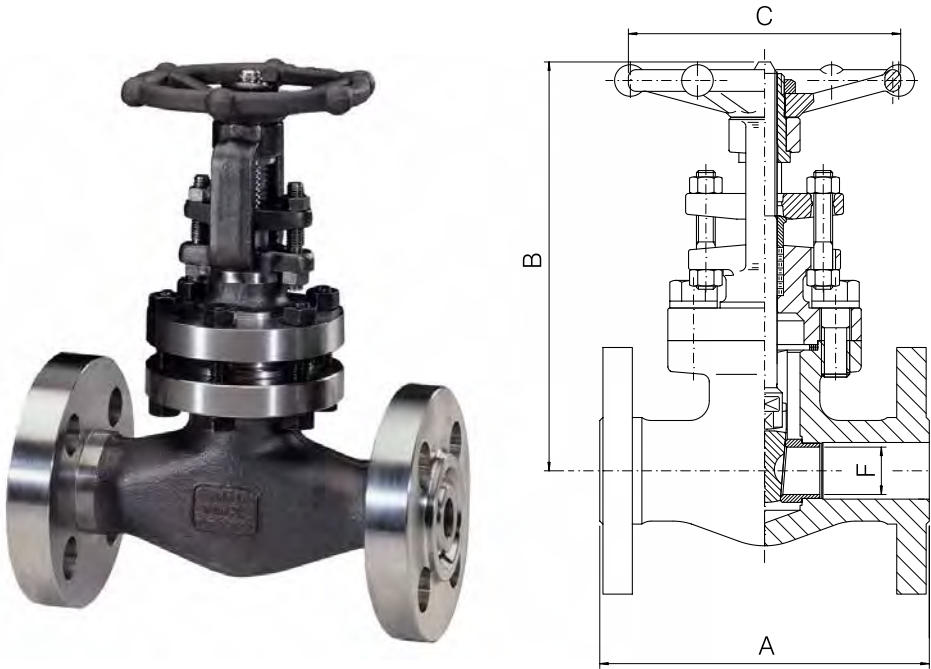
1. **BODY.** The body is forged steel and designed to the basic dimensional requirements of the applicable specifications such as API 602, ASME B16.34, ASME B16.10 and ASME B16.5. The body is available in both the full or standard port design. End flanges are forged integral with the body.
2. **BONNET.** 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



150 LB.	FULL PORT – FIG. 1 10						
	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	7 178
	B open	inch mm	6.88 175	8.26 210	9.05 230	11.41 290	13.39 340
	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	7 3,2	10.25 4,7	13.25 6,1	25 11,4	39.5 18
	PACKING		BH2	BH4	BH5	BY5	BY7
	GASKET		G2	G3	G4	G7	G8

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

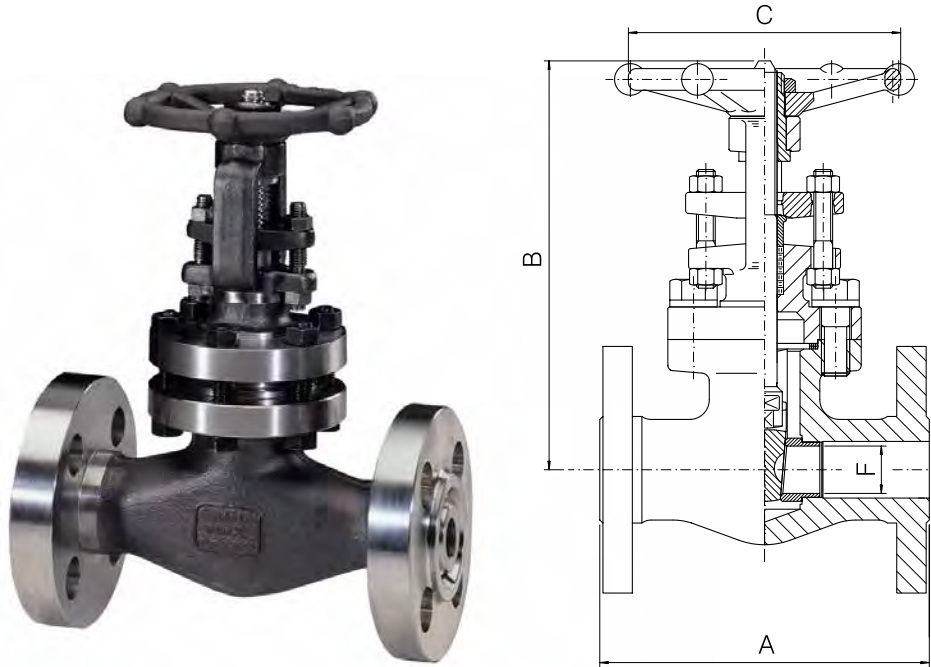
300 LB.	FULL PORT –FIG. 3 10						
	SIZE	inch mm	1/2 15	3/4 20	1 25	1 1/2 40	2 50
	A	inch mm	5.51 140	6 152,5	6.50 165	7.51 191	8.50 216
	B open	inch mm	6.89 175	8.26 210	9.05 230	11.42 290	13.39 340
	C	inch mm	3.46 88	3.82 97	5.43 138	5.43 138	6.77 172
	F	inch mm	.55 14	.71 18	.94 24	1.44 36,6	1.89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

300 LB.	STANDARD PORT – FIG. L3 10							
	SIZE	inch mm	1/2 15	3/4 20	1 25	1 1/2 40	2 50	
	A	inch mm	5.51 140	6 152,5	6.50 165	7.51 191	8.5 216	
	B open	inch mm	6.89 175	7.17 182	8.35 212	9.84 250	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	
	Weight	lb. kg	7.75 3,6	11.25 5,2	14.75 6,7	28.5 13	33.5 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



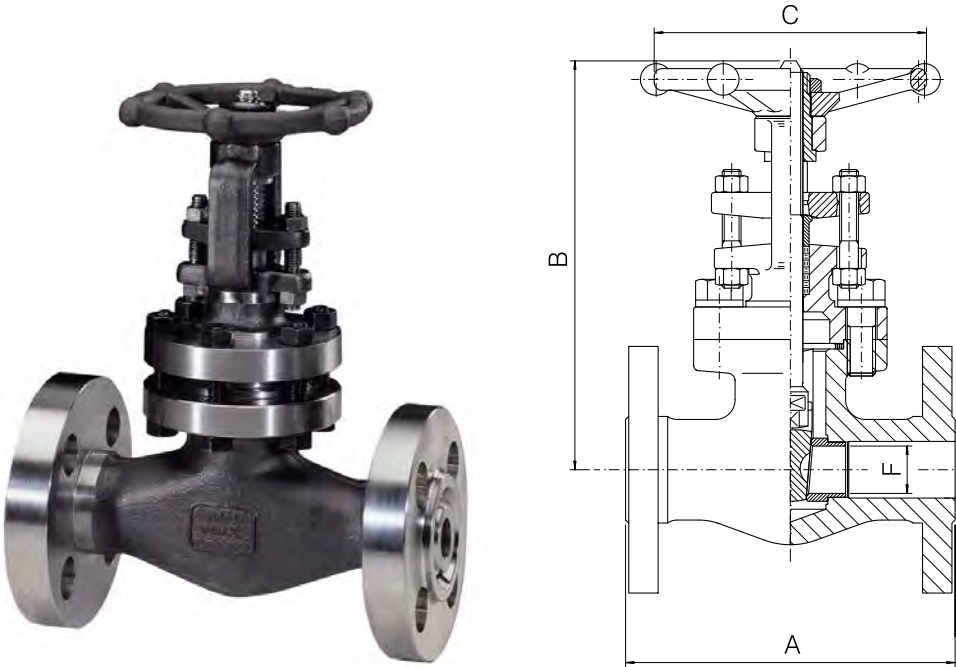
FULL PORT – FIG. 6 10						
SIZE	inch mm	1/2 15	3/4 20	1 25	1 1/2 40	2 50
A	inch mm	6.50 165	7.51 191	8.50 216	9.50 241	11.50 292
B open	inch mm	6.89 175	8.46 215	9.45 240	11.62 295	14.17 360
C	inch mm	3.46 88	3.82 97	5.43 138	5.43 138	6.77 172
F	inch mm	.55 14	.71 18	.94 24	1.44 36.6	1.88 48
Weight	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

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

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

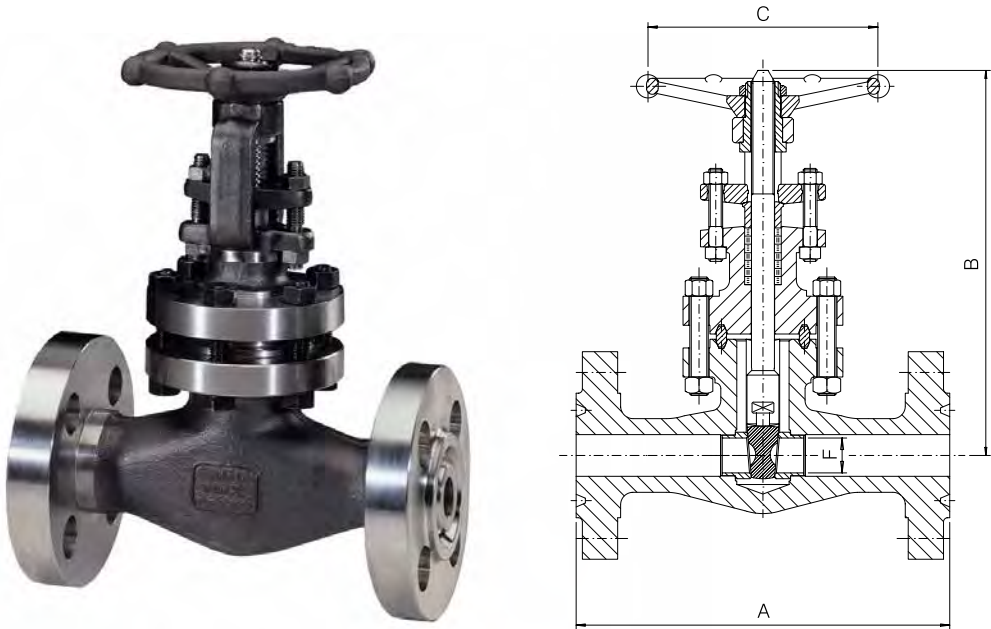


FULL PORT – FIG. 15F 10						
SIZE	inch mm	1/2 15	3/4 20	1 25	1 1/2 40	2 50
A	inch mm	8.50 216	9.02 229	10 254	12.01 305	14.5 368.5
B open	inch mm	8.46 215	9.84 250	10.63 270	13.78 350	17.52 445
C	inch mm	3.82 97	5.43 138	5.43 138	6.77 172	9.21 234
F	inch mm	.55 14	.71 18	.94 24	1.44 36.6	1.89 48
Weight	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

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

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

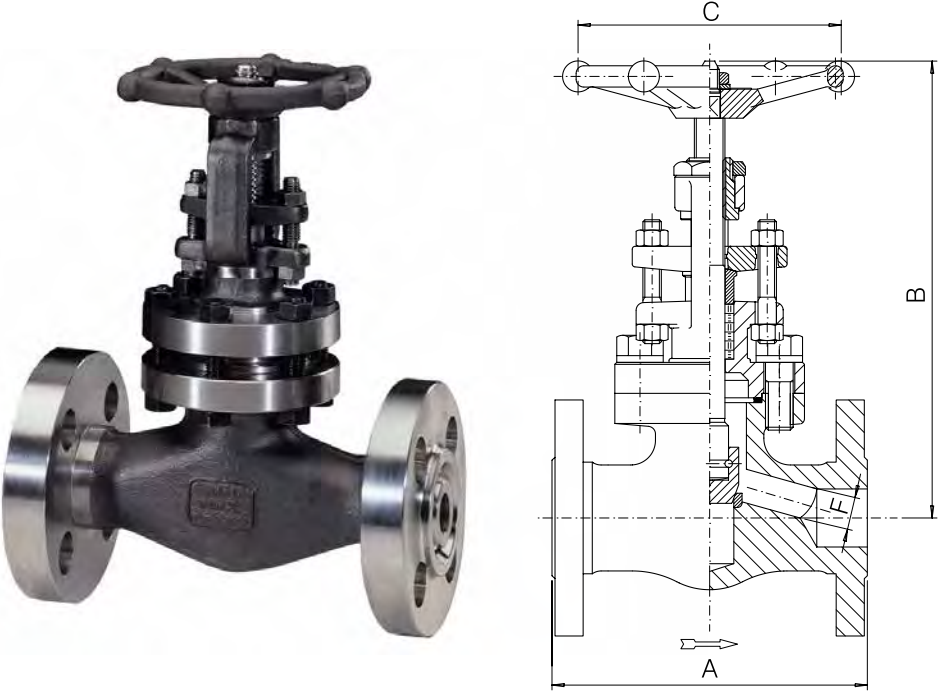


2500 LB.	FULL PORT – FIG. 25RR 10					
	SIZE	inch	1/2	3/4	1	1 1/2
	A	mm	15	20	25	40
		mm				
	B open	inch	10.39	10.75	12.13	15.25
		mm	264	273	308	387.5
	C	inch	11.10	11.42	13.19	15.98
		mm	282	290	335	406
	F	inch	5.43	5.43	6.77	9.21
		mm	138	138	172	234
	Weight	lb.	9.21	9.21	12.60	15.25
		kg	4.18	4.18	5.73	6.91
	PACKING		2B4	2B4	BH8	2B8
						25B8
	GASKET		R16	R16	R16	R19
						R22

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

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



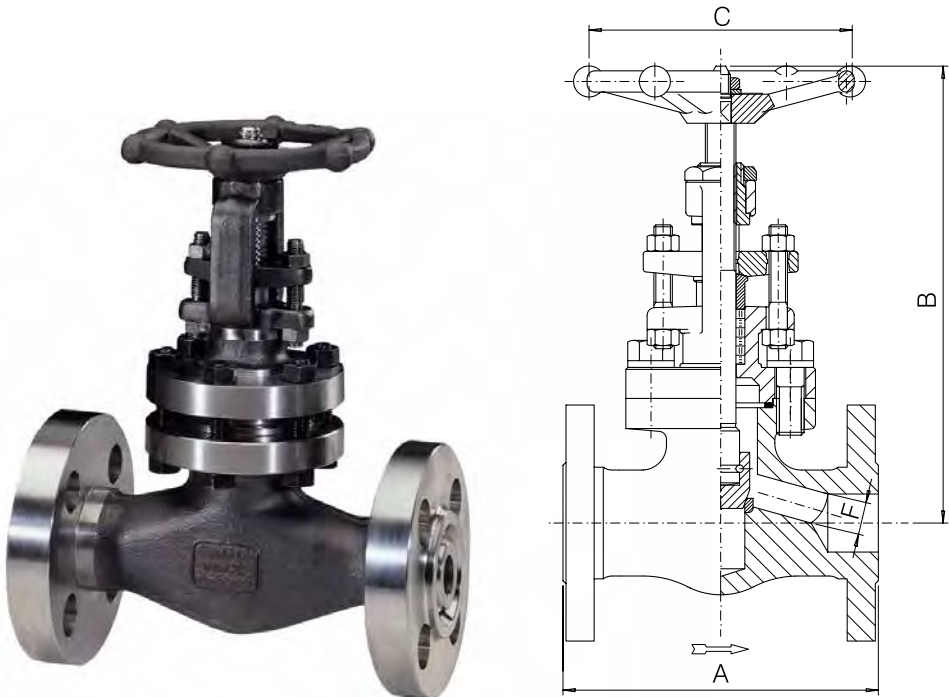
150 LB.	FULL PORT – FIG. 1 30					
	SIZE	inch	1/2	3/4	1	1 1/2
	A	mm	15	20	25	40
		mm	4.25	4.62	5	6.50
	B open	inch	108	117.5	127	165
		mm	273	298	323	418
	C	inch	7.72	9.05	10.55	12.40
		mm	196	230	268	315
	F	inch	3.46	3.82	5.43	6.77
		mm	88	97	138	172
	Weight	lb.	6.77	6.77	1.77	1.77
		kg	3.07	3.07	0.80	0.80
	PACKING		.51	.68	.88	1.38
			13	17.5	22.5	35
	GASKET		BH3	BH5	BY5	BY7

300 LB.	FULL PORT – FIG. 3 30					
	SIZE	inch	1/2	3/4	1	1 1/2
	A	mm	15	20	25	40
		mm	6	7	8	9.02
	B open	inch	152.5	178	203	229
		mm	152.5	178	203	229
	C	inch	7.72	9.05	10.55	12.40
		mm	196	230	268	315
	F	inch	3.46	3.82	5.43	6.77
		mm	88	97	138	172
	Weight	lb.	6.77	6.77	1.77	1.77
		kg	3.07	3.07	0.80	0.80
	PACKING		.51	.68	.88	1.38
			13	17.5	22.5	35
	GASKET		BH3	BH5	BY5	BY7

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

600 LB.

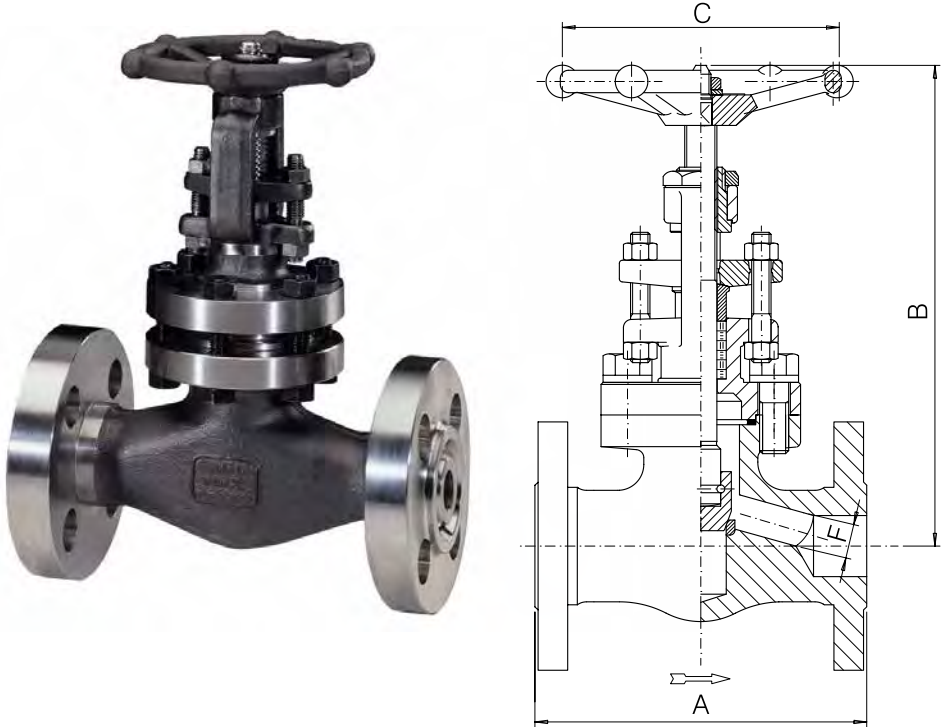
Design construction:
ASME B16.34 - BS 5352
Testing according to API 598
Marking MSS SP25
Loose disc stem assembly
Outside Screw and Yoke (OS&Y)
Self aligning two piece packing gland
Spiral wound gasket
Integral backseat
Integral body flanges
Face to face according to ASME B16.10
Flanges according to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



INTEGRAL FLANGED VALVES- GLOBE 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)
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

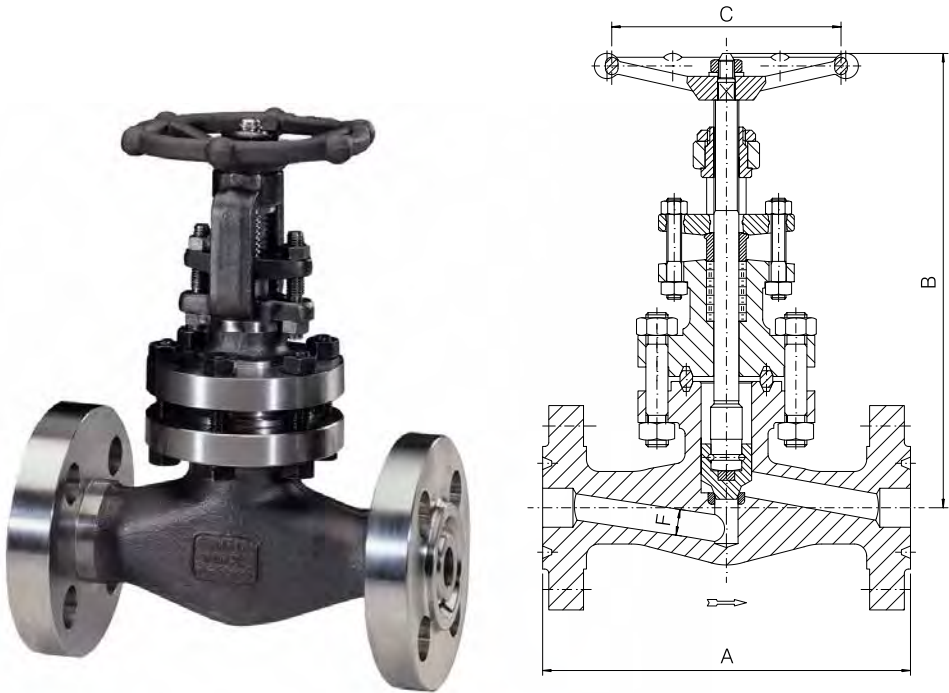
B

ONNEY FORGE

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

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



2500 LB.	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

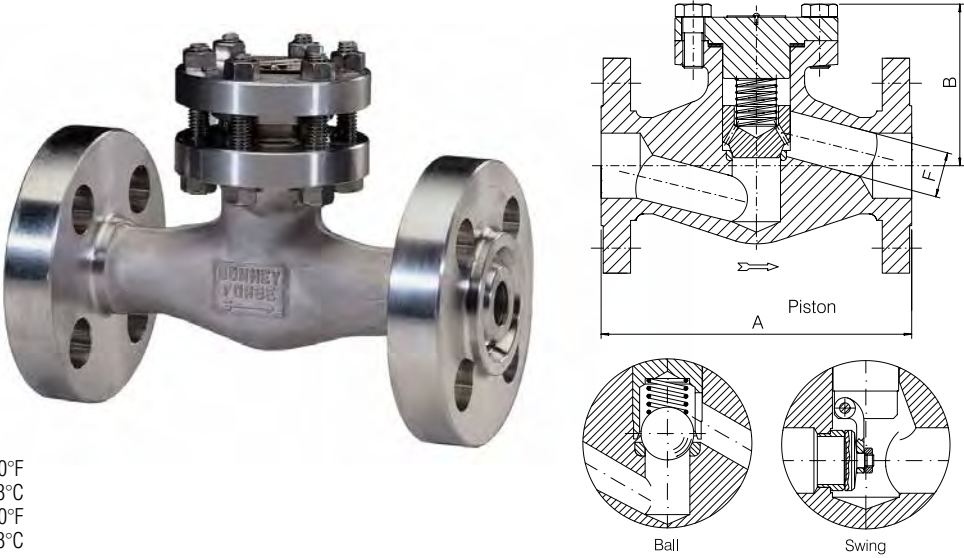
ONNEY FORGE

INTEGRAL FLANGED VALVES- CHECKTYPE- BOLTED BONNET-
FULL & STANDARD PORT

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



150 LB.

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

300 LB.

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

150 LB.

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

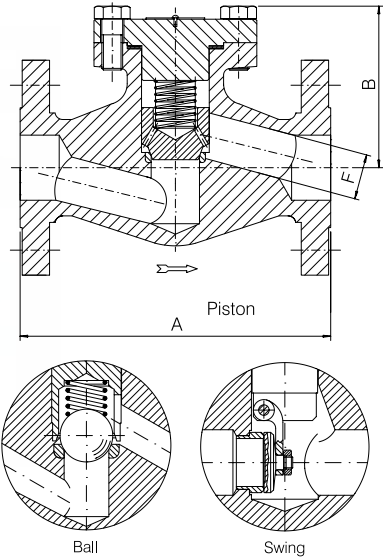
300 LB.	STANDARD PORT – FIG. L3 40, L3 50, L3 60						
	SIZE	inch mm	1/2 15	3/4 20	1 25	1 1/2 40	2 50
	A	inch mm	6 152,5	7 178	8* 203*	9.02* 229*	10.51 267
	B	inch mm	2.95 75	3.15 80	3.46 88	4.53 115	5.12 130
	F Piston/ F Ball	inch mm	.35 9	.51 13	.68 17,5	1.16 29,5	1.38 35
	F Swing	inch mm	.39 9,6	.55 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

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

600 LB.

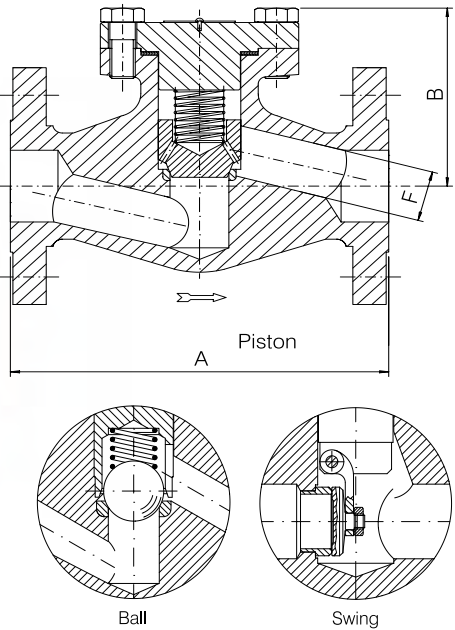
Design construction:
ASME B16.34 - BS 5352
Testing according to API 598
Marking MSS SP25
Spring available on request for Piston
and Ball Check Valves
Spiral wound gasket
Integral body flanges
Face to face according to ASME B16.10
Flanges according to ASME B16.5
Ratings:
- carbon steel class 600 1480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



INTEGRAL FLANGED VALVES- CHECK 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
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

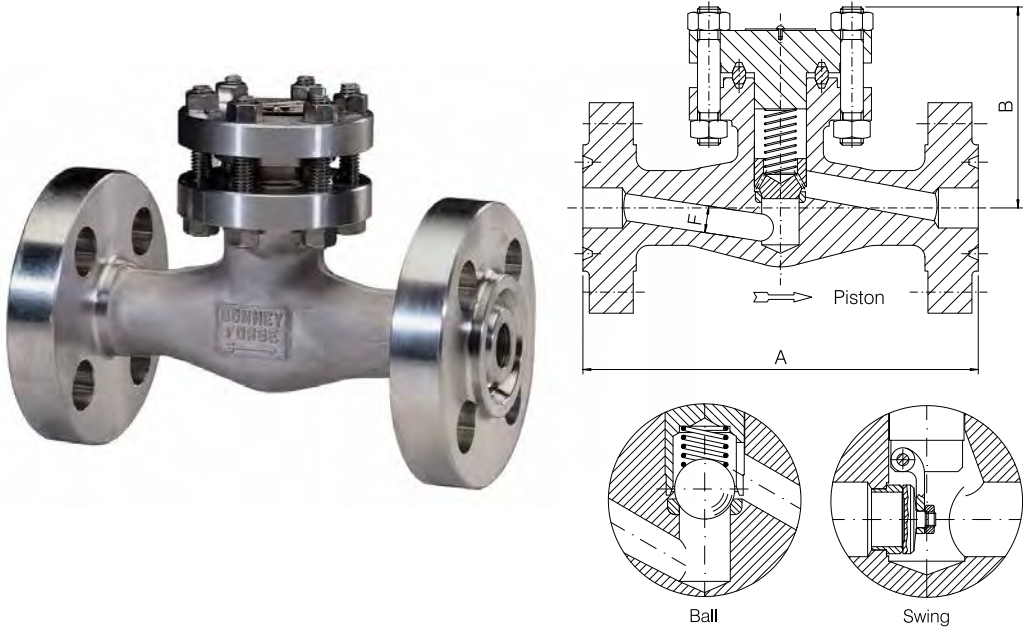
B

BONNEY FORGE

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

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						
2500 LB.	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
	B	inch mm	5.04 128	5.12 130	5.98 152	7.40 188
	F Piston/ F Ball	inch mm	.43 11	.57 14,5	.75 19	1.10 28
	F Swing	inch mm	.45 11,5	.59 15	.76 19,5	1.10 28
	Weight	lb. kg	31.5 14,3	35.25 16	57.75 26,3	119 54
						123.25 56
	GASKET		R16	R16	R16	R19
						R20*

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

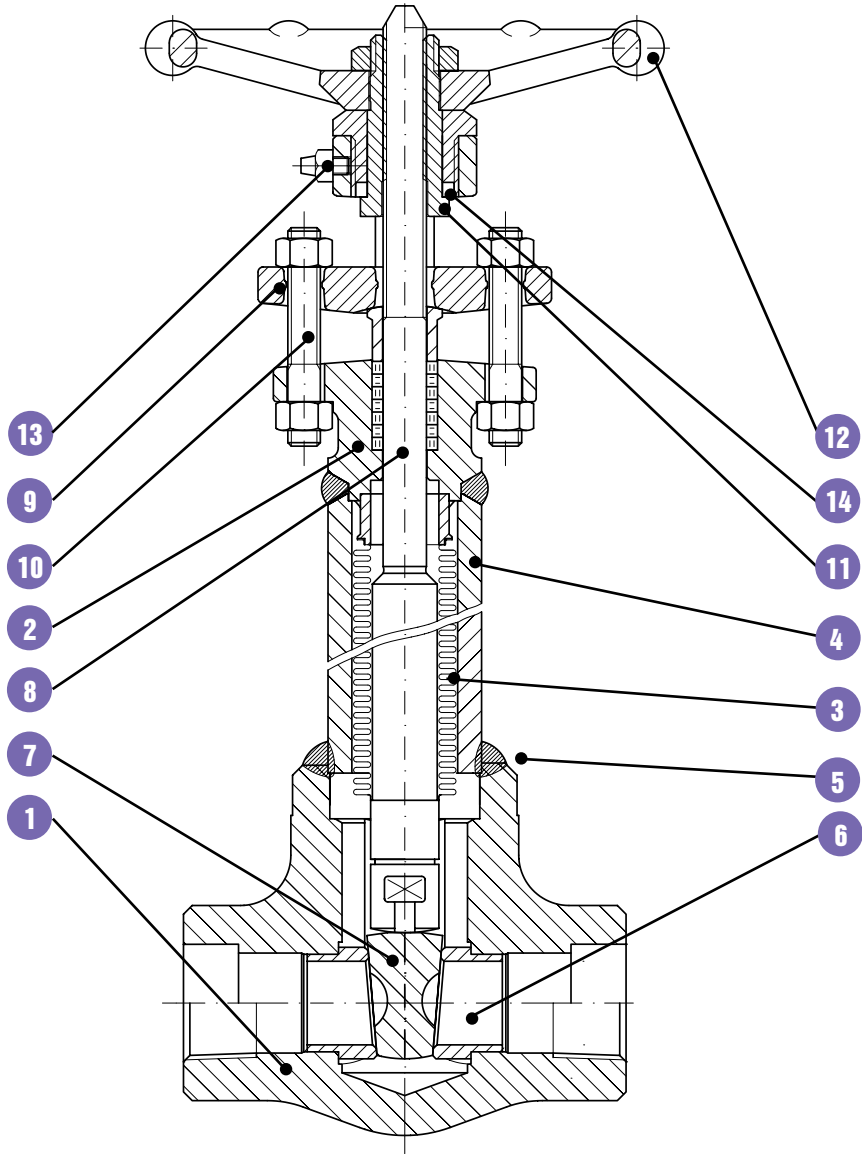
BELLOWS SEALED
VALVES



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.



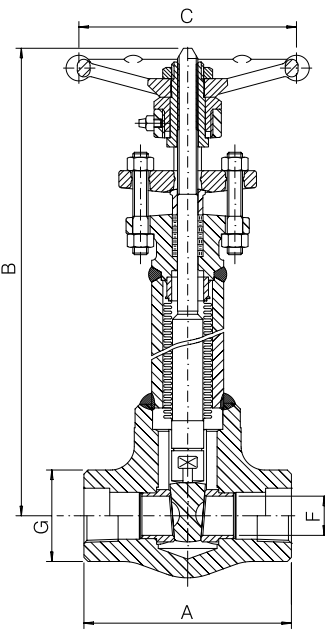
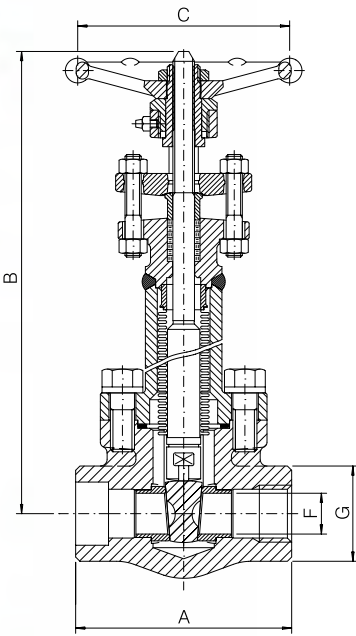
1. **BODY.** The body is forged steel and designed to the basic dimensional requirements of the applicable specifications such as API 602 and ASME B16.34. The body is available in both the full or standard port design.
2. **BONNET.** The bonnet is forged steel, has an integral backseat and incorporates 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



800 LB.	FULL PORT — BOLTED BONNET FIG. S 10 - WELDED BONNET FIG. SHW 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	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

800 LB.	STANDARD PORT — BOLTED BONNET FIG. SL 10 - WELDED BONNET FIG. SHWL 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	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

1500 LB.	FULL PORT — BOLTED BONNET FIG. 9S 10 - WELDED BONNET FIG. 9SHW 10					
	SIZE	inch mm	1/2 15	3/4 20	1 25	1 1/2 40
	A	inch mm	4.33 110	5 127	5 127	8.27 210
	B open	inch mm	13.98 355	14.96 380	17.72 450	21.65 550
	C	inch mm	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
	G	inch mm	1.89 48	2.20 56	2.52 64	3.35 85
	Weight	lb.	11	15.5	21	51.75
	Bolted B.	kg	5	7	9.5	23.5
	Weight	lb.	10	14.25	18.25	48.5
	Welded B.	kg	4.5	6.5	8.3	22
	PACKING		BH5	BH6	2B4	2B5
	GASKET*		G2	G3	G4	G7

1500 LB.	STANDARD PORT — BOLTED BONNET FIG. 9SL 10 - WELDED BONNET FIG. 9SHWL 10					
	SIZE	inch mm	1/2 15	3/4 20	1 25	1 1/2 40
	A	inch mm	3.54 90	4.33 110	5 127	5 127
	B open	inch mm	12.60 320	13.98 355	14.96 380	17.72 450
	C	inch mm	5.43 138	5.43 138	5.43 138	9.21 234
	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
	Weight	lb.	6.5	11	15.5	22
	Bolted B.	kg	3	5	7	10
	Weight	lb.	6	10	14.25	19.75
	Welded B.	kg	2.8	4.6	6.5	9
	PACKING		BH3	BH5	BH6	2B5
	GASKET*		G1	G2	G3	G5

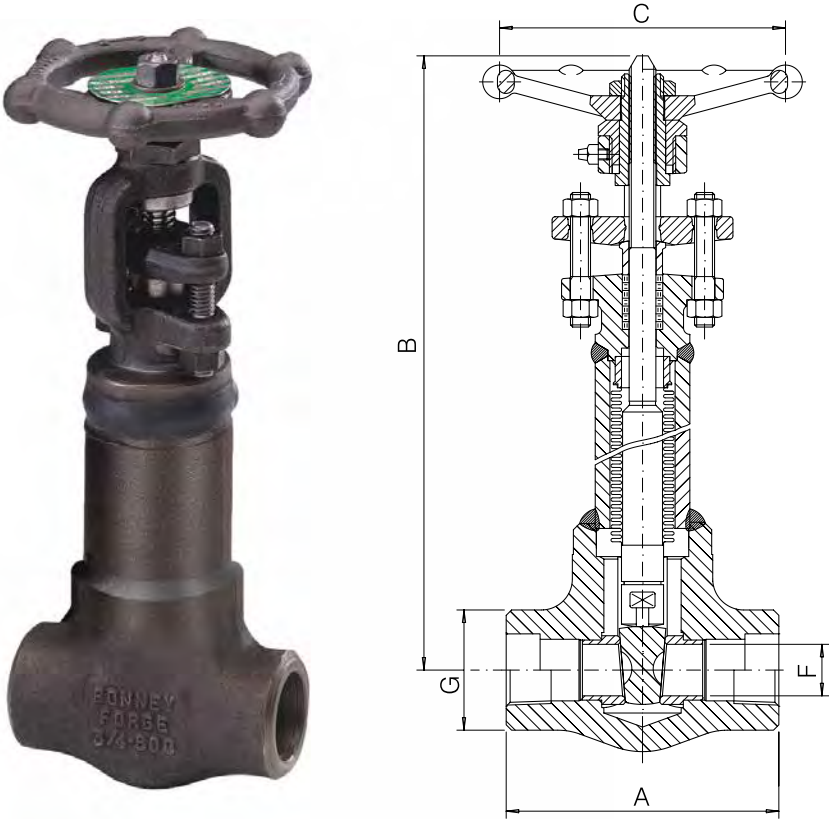
B[®]

BONNEY FORGE

GATE VALVES- BELLOWS SEALED- WELDED BONNET-
FULL PORT

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 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	5 127	5 127	5 127	8.27 210	9.05 230
B open	inch mm	14.96 380	14.96 380	16.93 430	17.72 450	20.08 510	24.41 620	24.80 630	27.95 710
C	inch mm	5.43 138	5.43 138	5.43 138	6.77 172	9.21 234	9.21 234	12.60 320	15.75 400
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	13.5 6.2	13.5 6.2	14.25 6.5	23 10.5	35.25 16	37.5 17	63.75 29	99.25 45
PACKING		BH6	BH6	2B4	2B4	BH8	BH8	9B8	25B8

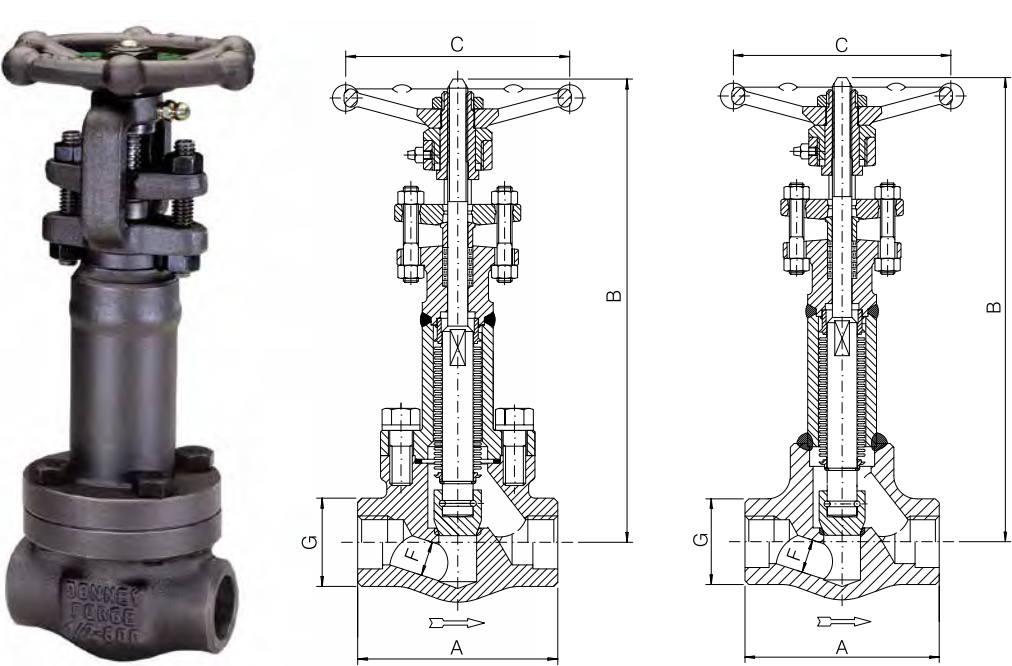
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BONNEY FORGE

GLOBE VALVES- BELLOWS SEALED- WELDED & BOLTED
BONNET- FULL & STANDARD PORT

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



FULL PORT — BOLTED BONNET FIG. S 30 - WELDED BONNET FIG. SHW 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	8.07 205	8.07 205	8.27 210	9.64 245	11.22 285	12.40 315	13.58 345	17.52 445
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	.87 22.5	1.16 29.5	1.38 35	1.77 45
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 Bolted B.	lb. kg	5.5 2.5	5.5 2.5	7.75 3.5	11.5 5.2	19.25 8.7	22 10	40.75 18.5	67.25 30.5
Weight Welded B.	lb. kg	5 2.3	5 2.3	7 3.2	11 5	17.5 8	19.75 9	37.5 17	61.75 28
PACKING		BH2	BH2	BH2	BH4	BH5	BH6	BY5	BH8
GASKET*		G2	G2	G2	G3	G4	G6	G7	G9

STANDARD PORT — BOLTED BONNET FIG. SL 30 - WELDED BONNET FIG. SHWL 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	8.07 205	8.27 210	9.64 245	12.40 315	13.58 345	
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	1.50 38	1.89 48	2.52 64	3.07 78	
Weight Bolted B.	lb. kg	5.5 2.5	6 2.7	9.5 4.3	19.5 8.8	29.75 13.5	
Weight Welded B.	lb. kg	4.75 2.2	5.25 2.4	7.75 3.5	17.75 8.1	26 11.8	
PACKING		BH2	BH2	BH4	BH6	BY5	
GASKET*		G2	G2	G3	G6	G7	

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

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

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

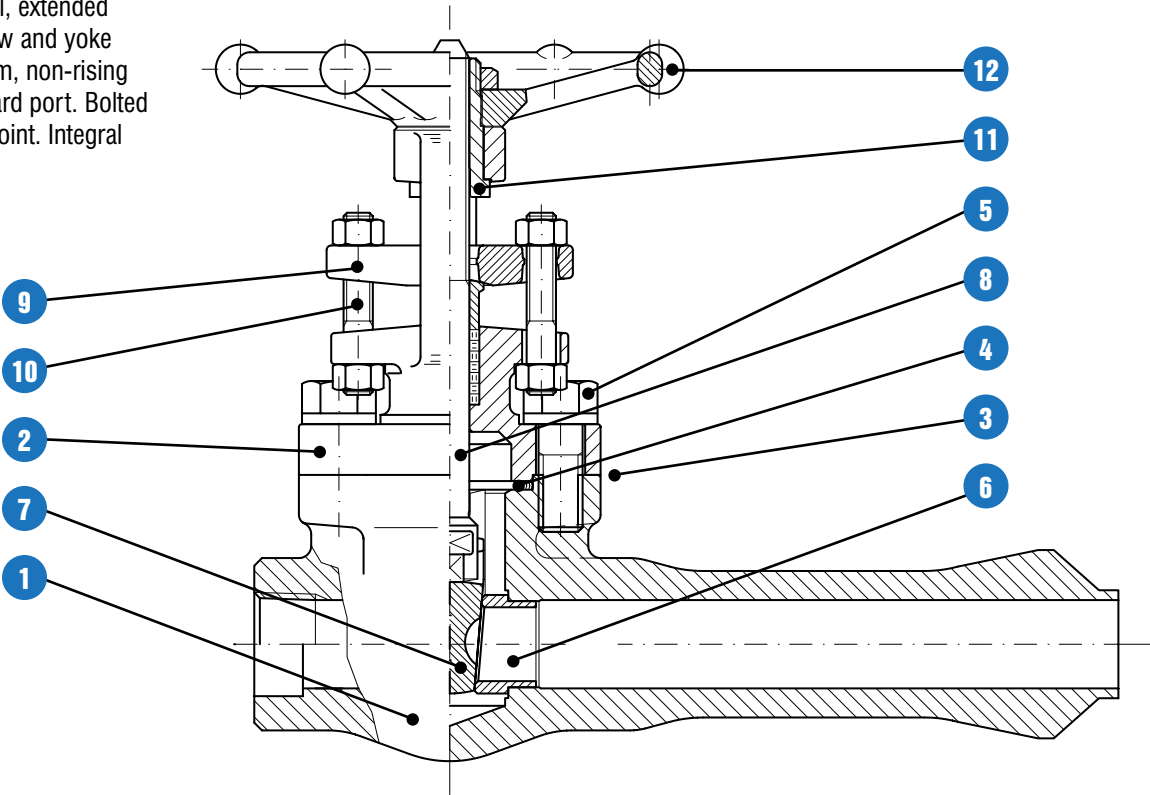
EXTENDED BODY GATE VALVES



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.



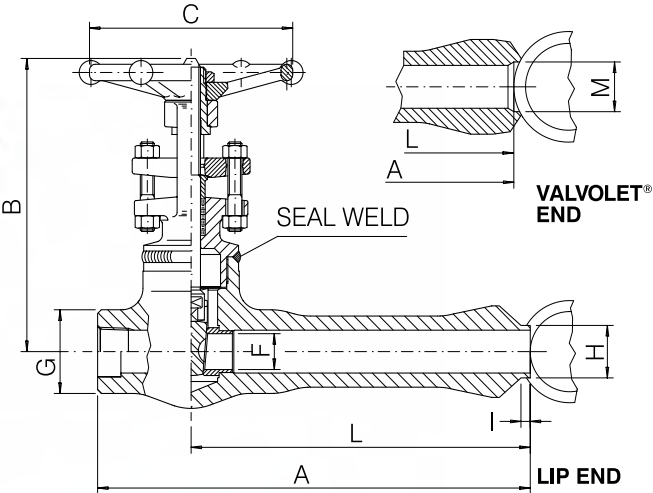
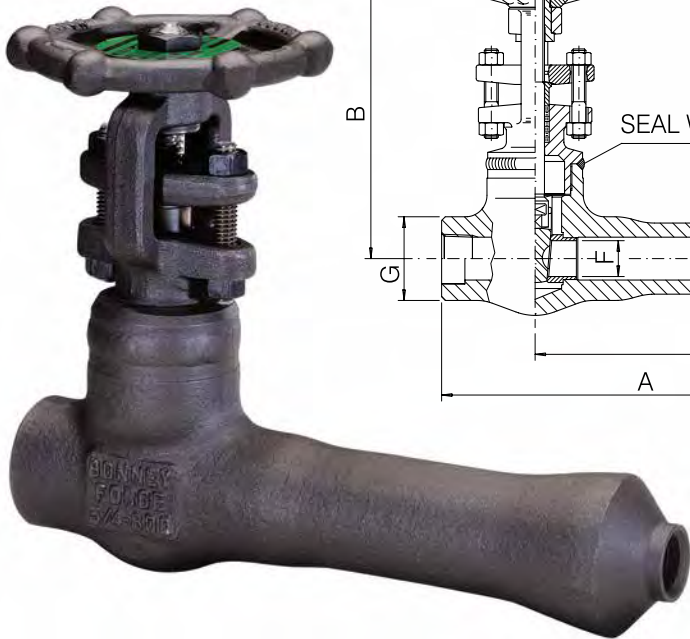
1. **BODY.** The body is forged steel and designed to the basic dimensional requirements of the applicable specifications such as API 602 and ASME B16.34. The body is available in standard port design with Plane End (Socket Weld), Threaded End, Lip End and Weld-O-Let End.
2. **BONNET.** The bonnet is 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.

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



800 LB.	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
	A	inch mm	8.15 207	8.60 218,5	9.62 244,5	10.37 263,5
	B open	inch mm	5.98 152	6.22 158	7.72 196	10.04 255
	C	inch mm	3.46 88	3.46 88	3.82 97	5.43 138
	F	inch mm	.38 9,6	.55 14	.71 18	1.18 30
	G	inch mm	1.26 32	1.50 38	1.89 48	2.52 64
	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	6.57 167	6.81 173	7.48 190	7.87 200
	M	inch mm	.87 22	1.18 30	1.44 36,5	1.99 50,5
	Weight Bolted B.	lb. kg	5.75 2,6	6.75 3,1	11.25 5,1	21 9,5
	Weight Welded B.	lb. kg	5 2,3	6.25 2,9	9.5 4,3	19.5 8,8
	PACKING		BH2	BH2	BH4	BH6
	GASKET*		G2	G2	G3	G6

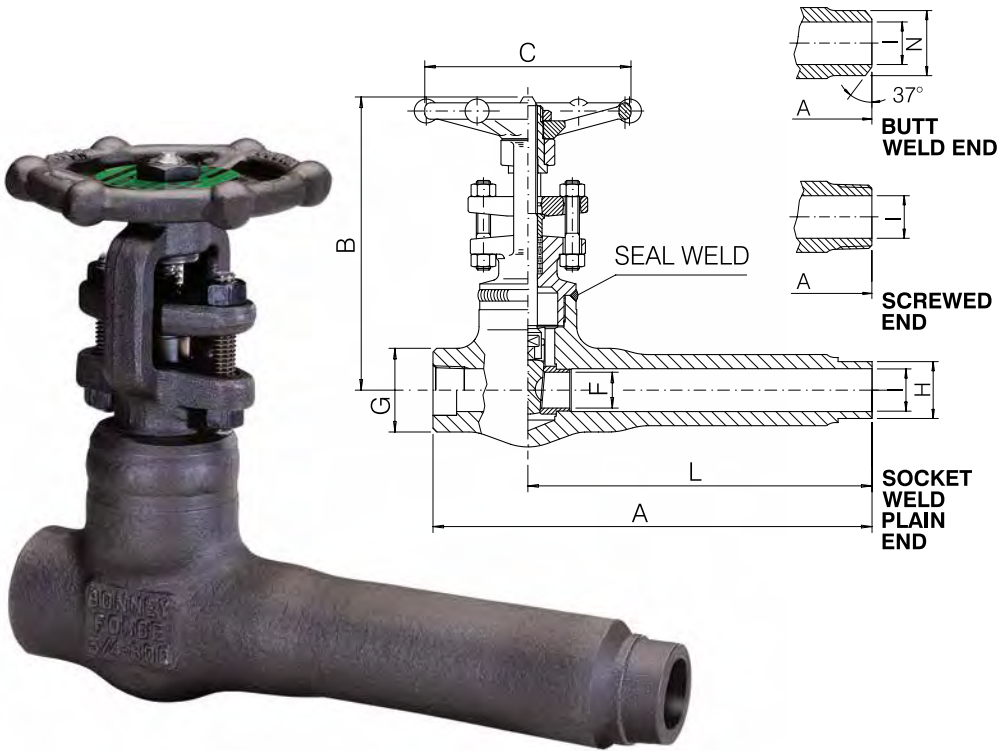
1500 LB.	BOLTED BONNET – FIG. 9VLL 10 / WELDED BONNET – FIG. 9VOLL 10					
	SIZE	inch mm	1/2 15	3/4 20	1 25	1 1/2 40
	A	inch mm	8.60 218,5	9.62 244,5	10.37 263,5	10.53 267,5
	B open	inch mm	6.02 153	7.48 190	8.66 220	11.10 282
	C	inch mm	3.46 88	3.82 97	5.43 138	5.43 138
	F	inch mm	.38 9,6	.55 14	.71 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	BH5
	GASKET*		G1	G2	G3	G5



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



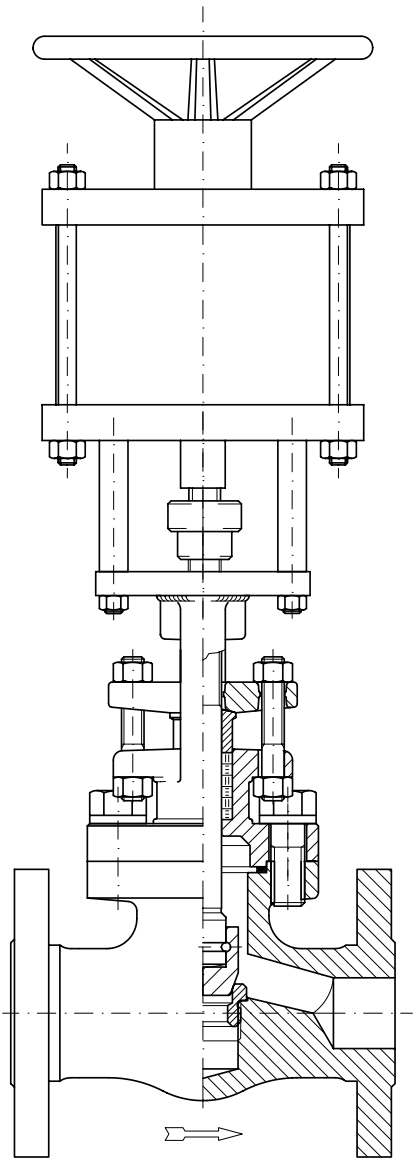
BOLTED BONNET – FIG. 10 / WELDED BONNET – FIG. 10						
SIZE	inch mm	1/2 15	3/4 20	1 25	1 1/2 40	2 50
A	inch mm	5.57 141,5	5.77 146,5	6.53 166	7.50 190,5	8.50 216
B open	inch mm	5.98 152	6.14 156	7.72 196	10.08 256	11.42 290
C	inch mm	3.46 88	3.46 88	3.82 97	5.43 138	5.43 138
F	inch mm	.38 9,6	.55 14	.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.	5.25	5.75	9.25	17.75	26
Bolted B.	kg	2.4	2.6	4.2	8.1	11.8
Weight	lb.	3.75	4.5	7	15.75	22.75
Welded B.	kg	1.7	2.1	3.2	7.2	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.	5.75	10	20	28.5
Bolted B.	kg	2.6	4.6	9.1	13
Weight	lb.	4.5	8.25	17.75	26.5
Welded B.	kg	2.1	3.8	8.1	12
PACKING		BH3	BH5	BH6	2B5
GASKET*		G1	G2	G3	G5

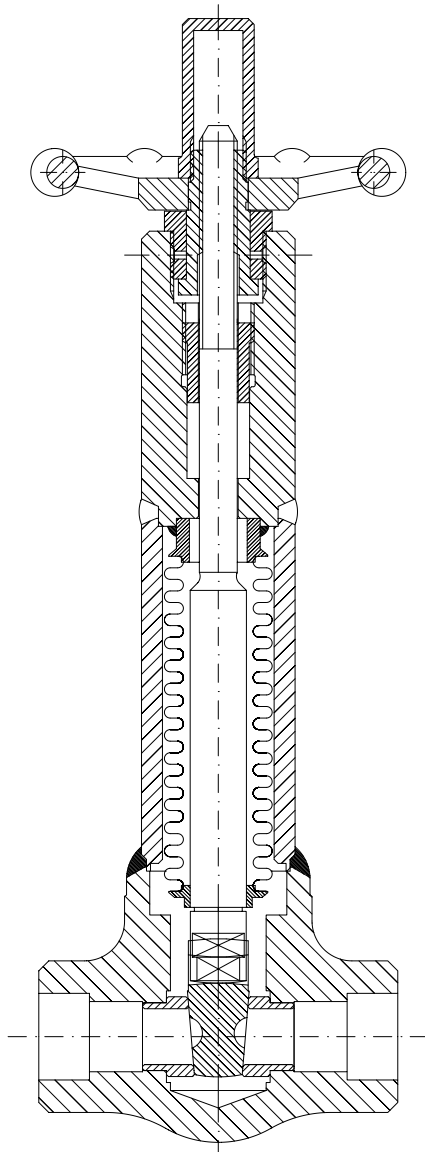
Materials and trim specifications Page 91
* Only for Bolted Bonnet type.

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

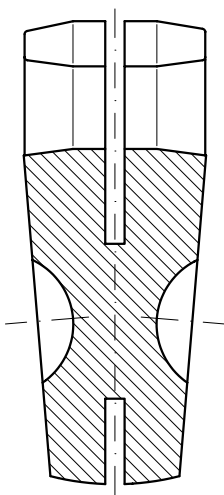
Special features are available on request.



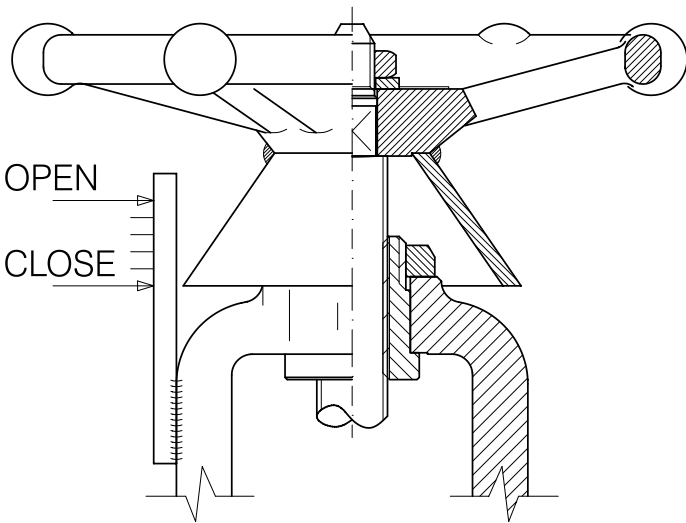
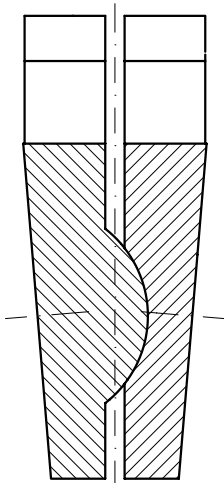
All Gate and Globe valves can be equipped with pneumatic or hydraulic actuator, double effect or spring action.



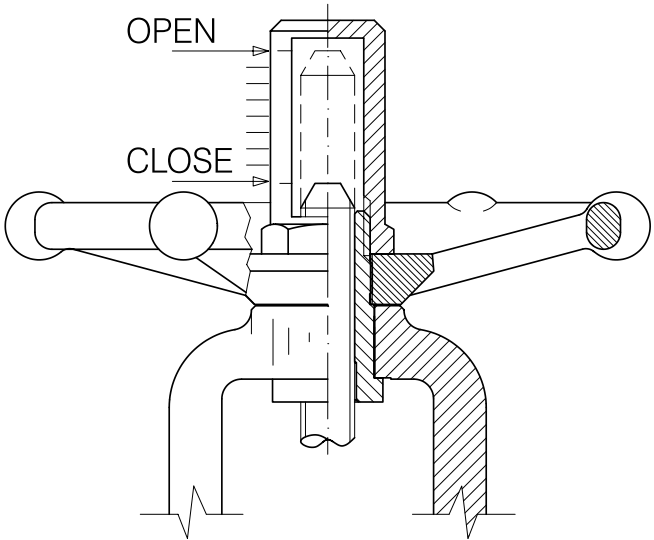
Bellows seal valves full protected.



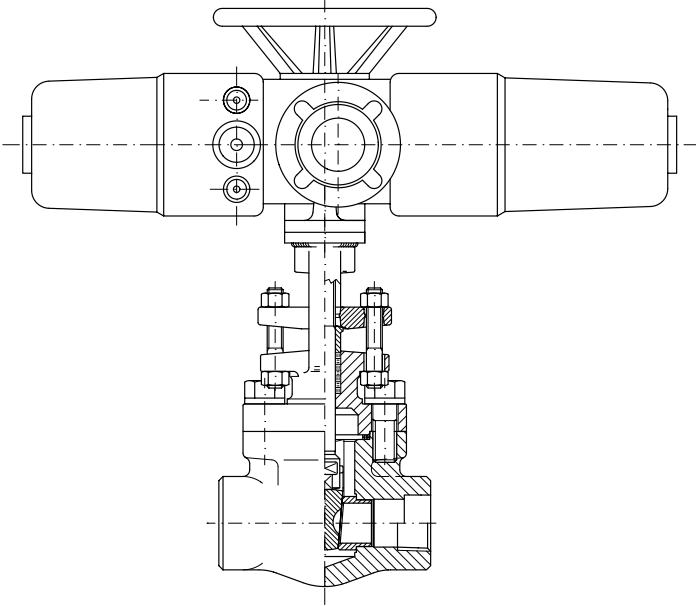
Flexible and split wedge available on request.



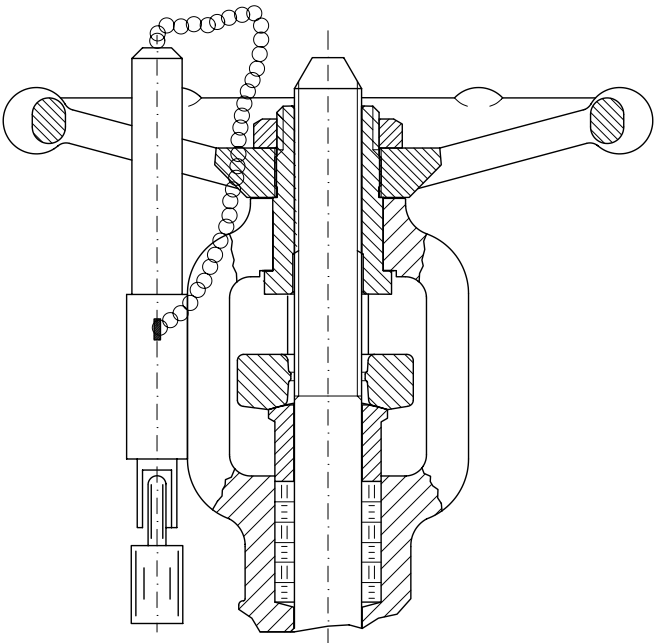
Position indicator and stem protection on Globe valves.



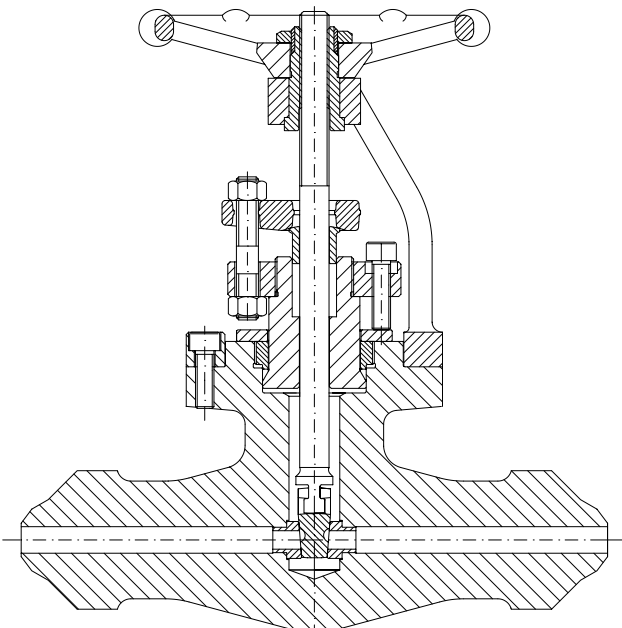
Position indicator and stem protection on Gate valves.



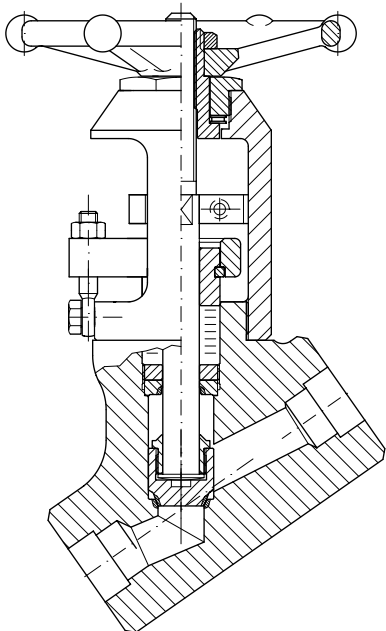
All Gate and Globe valves can be equipped with electric actuator, per customer's specification.



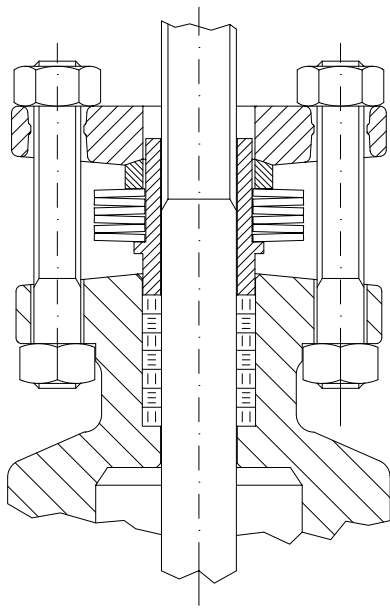
Locking device with padlock. One option shown. Other designs are supplied.



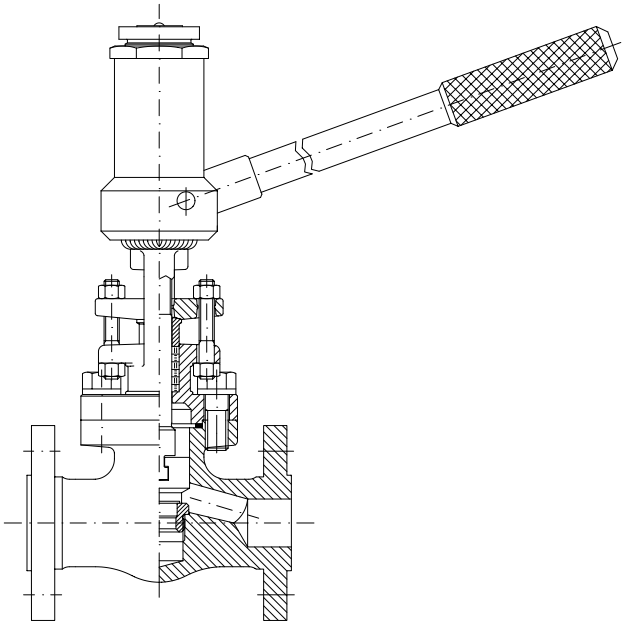
Body Bonnet connection pressure seal design.



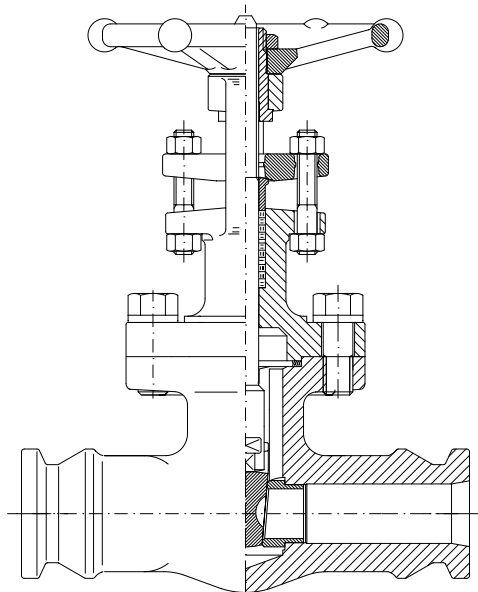
Bonnet-Less type, non rotating stem, no rising handwheel, position indicator.



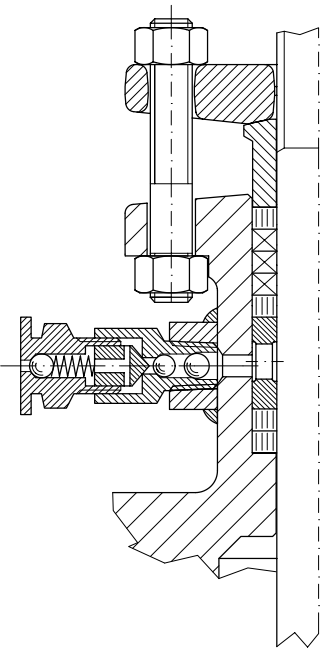
Stuffing box with live loading system. One option shown. Other designs are supplied.



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.

Pressure-Temperature Ratings	72-90
Standard Materials Specification.....	91
Recommended Spare Parts for Forged Valves	92
Thread Standard ASME B1.20.1	93
Socket Weld Standard ASME B16.11	93
Valvolet [®] Run Pipe Consolidation.....	93
Valve Flow Coefficient	94-95

TECHNICAL DATA



PSI - °F		MATERIALS: A 182 F304L (d) - ASTM A182 F316L					BAR - °C				
LIMITED CLASS						LIMITED CLASS					
Temperature °F	800 #LTD	1690 #LTD	2500 #LTD	2680 #LTD	4500 #LTD	Temperature °C	800 #LTD	1690 #LTD	2500 #LTD	2680 #LTD	4500 #LTD
-20 to 100	1,785	3,770	5,570	5,970	10,030	-29 to 38	123,1	259,9	384,0	411,6	691,6
200	1,505	3,185	4,710	5,050	8,480	93,3	103,8	219,6	324,7	348,2	584,7
300	1,350	2,850	4,215	4,520	7,585	148,9	93,1	196,5	290,6	311,6	523,0
400	1,230	2,595	3,840	4,115	6,910	204,4	84,8	178,9	264,8	283,7	476,4
500	1,135	2,400	3,550	3,805	6,390	260,0	78,2	165,5	244,8	262,3	440,6
600	1,070	2,265	3,350	3,590	6,025	315,6	73,8	156,2	231,0	247,5	415,4
650	1,040	2,195	3,250	3,485	5,850	343,3	71,7	151,3	224,1	240,3	403,3
700	1,020	2,150	3,180	3,410	5,720	371,1	70,3	148,2	219,3	235,1	394,4
750	995	2,100	3,110	3,335	5,595	398,9	68,6	144,8	214,4	229,9	385,6
800	980	2,070	3,060	3,280	5,505	426,7	67,6	142,7	211,0	226,1	379,6
850	955	2,020	2,990	3,205	5,385	454,4	65,8	139,3	206,2	221,0	371,3

PSI - °F

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

MATERIALS: A 182 F321 (f) - ASTM A182 F321H (g)

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

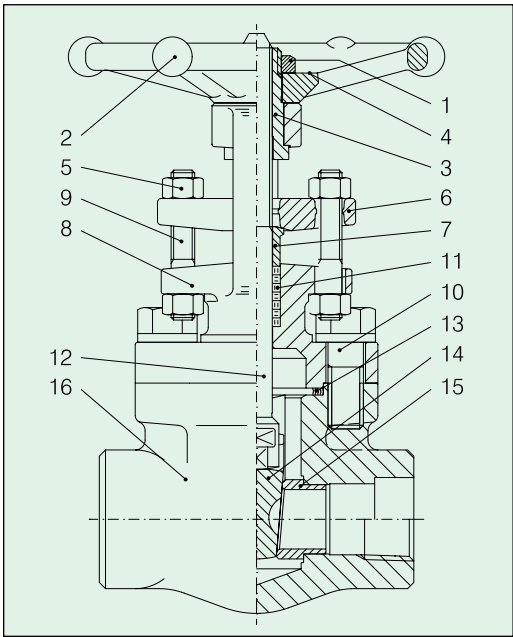
BAR - °C

Notes:

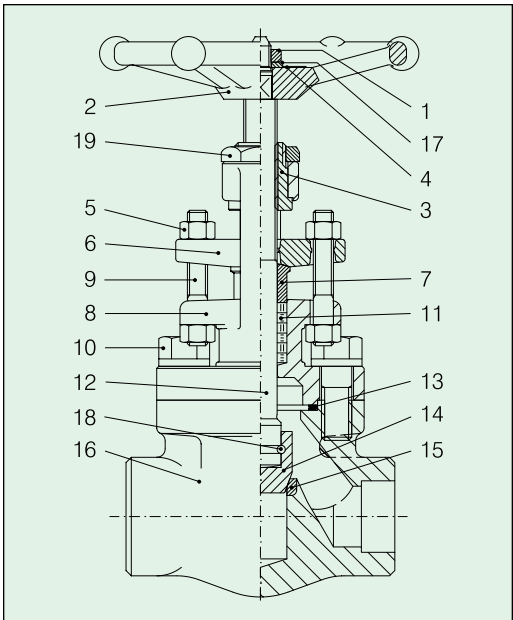
- a - Permissible, but not recommended for prolonged use above 800°F (427°C)
- b - Permissible, but not recommended for prolonged use above 1100°F (593°C)
- c - At temperatures over 1000°F (540°C), use only when the carbon content is 0.04% or higher
- d - Not to be used over 800°F (427°C)
- e - Not to 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)

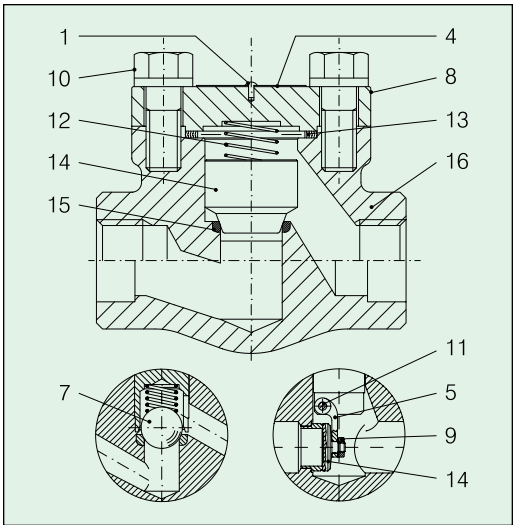
Ratings are in accordance with ASME B16.34a - 1998
 Flanged end valves are rated as Standard Class only
 Class 4500 applies to weld end valves only
 A rating temperature greater than 1000°F (540°C) does not apply to thread end valves
 Limited Class ratings apply to weld end and thread end valves only



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



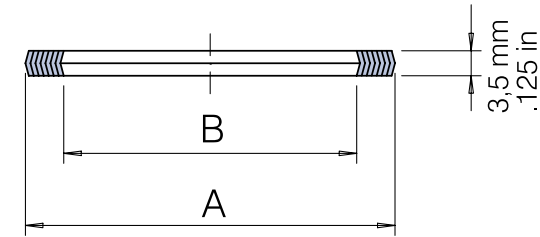
TYPICAL GLOBE		
PART	NAME	MATERIALS
1	Handwheel nut	CARBON STEEL
2	Handwheel	CARBON STEEL
3	Yoke sleeve	AISI 416
4	Name plate	ALUMINUM
5	Gland nuts	ASTM A194 - 2H
6	Gland flange	ASTM A105
7	Packing gland	AISI 316
8	Bonnet	ASTM A105 N
9	Gland studs	ASTM A193 B6
10	B/B bolts	ASTM A193 B7
11	Packing	GRAPHITE
12	Stern	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

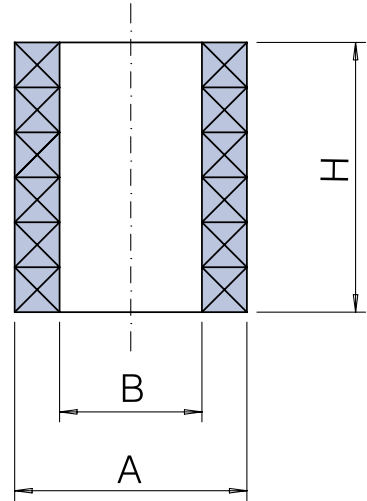
*Supplied Upon Request Only

BOLTED BONNET GASKET



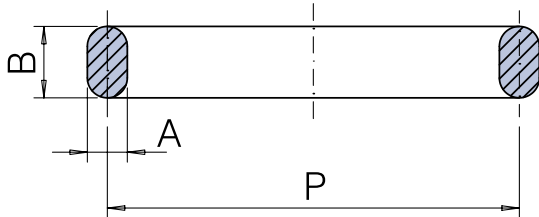
GASKET					
Type	A		B		
	mm	in.	mm	in.	
G1	36	1.42	27	1.06	
G2	40	1.57	31	1.22	
G3	48	1.89	39	1.54	
G4	54	2.13	44	1.73	
G5	62	2.44	52	2.05	
G6	66	2.60	54	2.13	
G7	74	2.91	60	2.36	
G8	85	3.35	73	2.87	
G9	95	3.74	78	3.07	
G10	87	3.43	76	2.99	
G11	70	2.76	60	2.36	

STEM PACKING

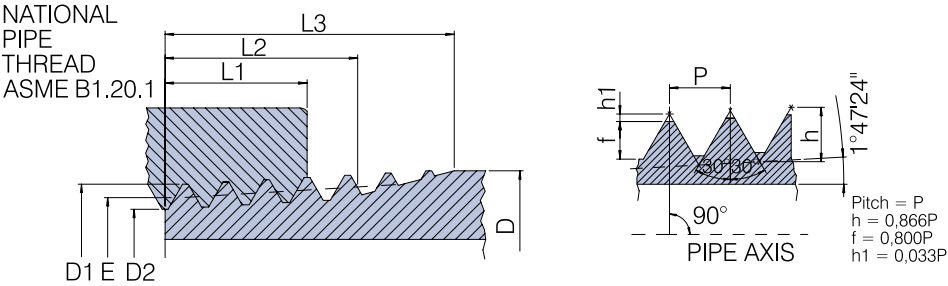


PACKING							
Type	A		B		H		
	mm	in.	mm	in.	mm	in.	
BH2	15,7	.62	9,5	.37	22	.87	
BH3	17,2	.68	11,1	.44	22	.87	
BH4	17,2	.68	11,1	.44	26	1.02	
BH5	19,2	.76	12,7	.50	26	1.02	
BH6/A	24,5	.96	14,5	.57	30	1.18	
BH8	32,2	1.27	19	.75	36	1.42	
BY5/A	26	1.02	16	.63	30	1.18	
BY7	28,2	1.11	19	.75	30	1.18	
2B3	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



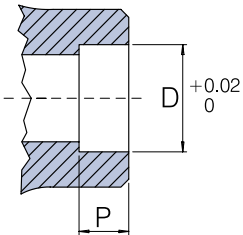
RING JOINT						
RTJ	P		A		B	
	mm	in.	mm	in.	mm	in.
R11	34,1	1.34	6,35	.25	11,1	.44
R12	39,6	1.56	7,94	.31	14,3	.56
R13	42,8	1.69	7,94	.31	14,3	.56
R14	44,4	1.75	7,94	.31	14,3	.56
R15	47,6	1.87	7,94	.31	14,3	.56
R16	50,8	2	7,94	.31	14,3	.56
R17	57,1	2.25	7,94	.31	14,3	.56
R18	60,3	2.37	7,94	.31	14,3	.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
		D	N	P	D1	E	D2	L1	L2	L3
1/8	inch	.41	1.06	.04	.39	.36	.26	.18	.26	.39
	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	.48	.43	.20	.40	.59
	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	.61	.57	.24	.41	.60
	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	.76	.70	.32	.53	.78
	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	.97	.91	.34	.55	.79
	mm	26.67	14	1.814	26.035	24.580	23.139	8.611	13.861	20.155
1	inch	1.31	.45	.09	1.28	1.21	1.14	.40	.68	.98
	mm	33.40	11.1/2	2.210	32.588	30.825	29.058	10.160	17.343	25.006
1 1/4	inch	1.66	.45	.09	1.63	1.56	1.49	.42	.71	1.01
	mm	42.16	11.1/2	2.210	41.326	39.550	37.795	10.668	17.953	25.616
1 1/2	inch	1.90	.45	.09	1.87	1.80	1.73	.42	.72	1.03
	mm	48.26	11.1/2	2.210	47.396	45.621	43.866	10.668	18.377	26.040
2	inch	2.37	.45	.09	2.34	2.27	2.20	.44	.76	1.06
	mm	60.32	11.1/2	2.210	59.411	57.633	55.855	11.074	19.215	26.878

SOCKET WELD STANDARD ASME B16.11

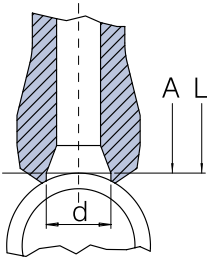
SIZE	inch	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
	mm	6	10	15	20	25	32	40	50
D	inch	.555	.690	.855	1.065	1.330	1.675	1.915	2.406
	mm	14.10	17.53	21.72	27.05	33.78	42.54	48.64	61.11
P min.	inch	.38	.38	.38	.50	.50	.50	.50	.62
	mm	9.6	9.6	9.6	12.7	12.7	12.7	12.7	15.8



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
	mm	15	20	25	40
Run pipe consolidation		1 1/4 ÷ 3/4 36 ÷ 1 1/2	1 1/4 ÷ 1 36 ÷ 4	1 1/2 ÷ 1 1/4 5 ÷ 2 36 ÷ 6	2 1/2 ÷ 2 3 ÷ 5 36 ÷ 6 36 ÷ 10
d - Weldolet bore	inch	.87	1.18	1.44	1.99
	mm	22	30	36.5	50.5

CLASS 1500					
	inch	1/2	3/4	1	1 1/2
	mm	15	20	25	40
Run pipe consolidation		1 1/4 ÷ 1 36 ÷ 6	1 1/2 ÷ 1 1/4 5 ÷ 2 36 ÷ 6	2 1/2 ÷ 2 5 ÷ 3 36 ÷ 6	4 ÷ 3 8 ÷ 5 36 ÷ 10
d - Weldolet bore	inch	1.18	1.44	1.99	2.56
	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.

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
GLOBE	L6-10	STANDARD PORT		6.3	10	25.6	67.5	97
	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
CHECK	L6-30	STANDARD PORT		1.3	3.9	7.1	17.5	21.4
	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

FSV Rev 2 03/16 (1.5M 3/16)

