

FORGED
PRESSURE
SEAL
VALVES





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B[®]
BONNEY FORGE

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Bonney Forge—The Name You Trust for Forged Steel Valves

For more than eighty years, Bonney Forge forged steel valves and piping components have defined the state-of-the-art in design and manufacturing. Now our pressure seal valves are leading the way.

FORGING AHEAD OF THE REST

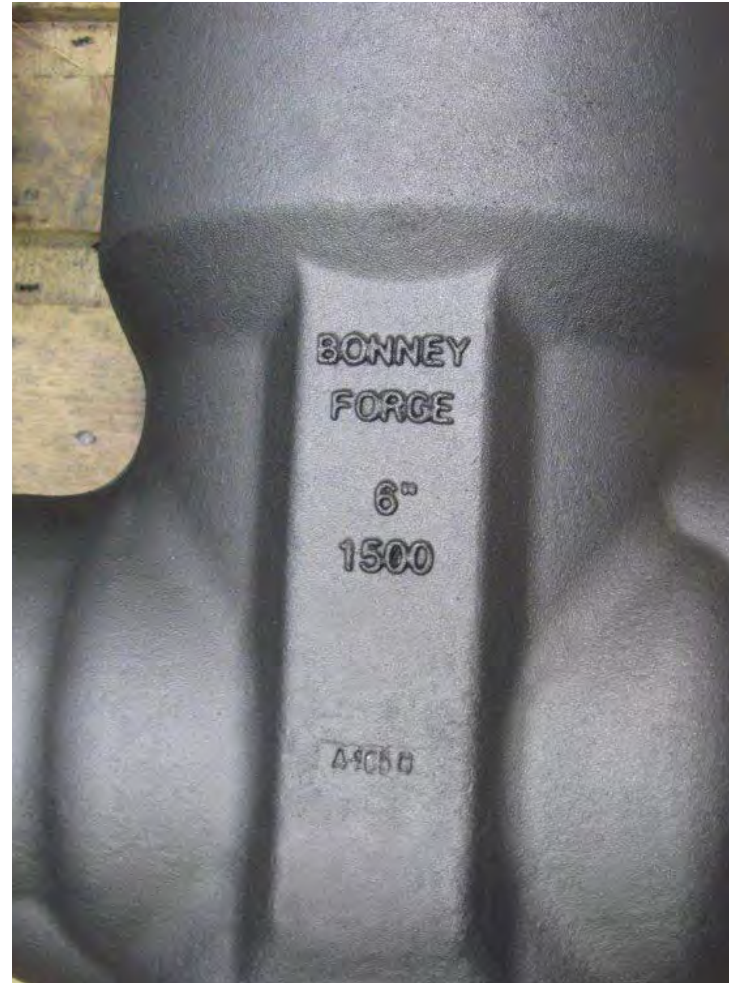
Bonney Forge's forged pressure seal valve range includes carbon steel, alloys, stainless steel, and exotic alloys. Valve types include gate, globe and check with ratings of 900 lbs. to 2500 lbs.

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



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



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 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.

**Global Quality.
Total Reliability.**

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



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

DESIGN, CONSTRUCTION, MARKING FOR PRESSURE SEAL VALVES

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

Ratings: 900 - 1500 and 2500 lbs standard and special class according to ANSI B16.34.

Valve class 4500 is available on request. Valve bodies up to 12” are forged in one operation in a closed die.

Valves larger than 12” are fabricated using two separate bodies, which are then welded together using a full penetration weld in accordance with ASME SECT. IX.

The quality of the weld is verified using an ultrasonic or radiographic testing procedure.

It is universally recognized that forgings are structurally superior to castings and more uniform in composition.

This is due to the continuous flow lines induced by the forging process, particularly in the highly critical areas at the junction of two substantially different volumes.

Furthermore, the quality of the forgings is established without the necessity of x-ray examination and the subsequent excavation, repair and heat treatment necessitated by presence of porosity, traditionally found in castings.

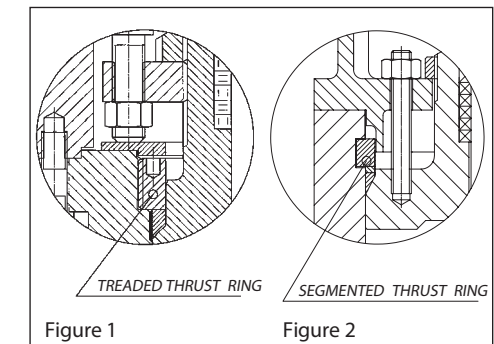
Other properties found in forgings include greater impact resistance and resistance to fatigue cracking while being cycled at either high or cryogenic temperatures.

Face to Face dimensions are in accordance with ASME B16.10 Short pattern.

Butt Welding Ends are machined to ASME B16.25. Marking in accordance with ASME B16.34 and MSS-SP-25.

The pressure seal bonnet is offered in two different designs:

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



When a stainless steel pressure seal gasket is used, the body contact surface is provided with a stainless steel overlay to ensure a tight seal over the life of the valve.

Pressure seal valves were designed using the latest software based analysis tools.

At the design stage, all projects are analyzed using 3D solid modeling tools. Benefits include reduction of development time, and cost and improved product quality.

Finite Element Analysis (FEA) is used in the development stage to ensure the valve meets all design performance requirements. The valves are examined for functional problems, material deformation and flow related forces.

Using FEA for predicting failure due to unknown stresses within the valve body is a superior method of testing the product by saving on manufacturing costs, and real world testing.



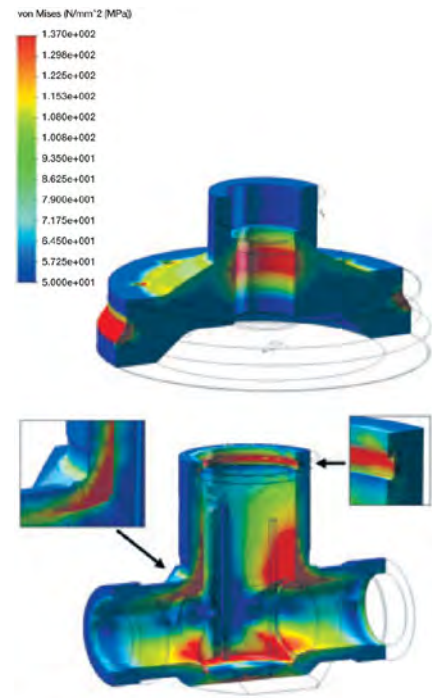
BONNEY FORGE

DESIGN, CONSTRUCTION, MARKING FOR PRESSURE SEAL VALVES

The design process at Bonney Forge follows all accepted valve design practices to the latest requirements of applicable codes and standards. Additionally, the Bonney Forge design process includes understanding both the analytical results and manufacturing processes in the design development phase to optimize for function and engineering requirements that can be manufactured and assembled efficiently.

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

All large size valves are verified with a FEA analysis to evaluate the stressed components.



GLOBE VALVES

Design configurations include; straight, angle or y-pattern bodies. The standard valve configuration offered is the straight pattern unless otherwise indicated. Globe valves can be provided with a parabolic, plug, or stop check disc. The disc is fully body guided, and is offered as such on piston check valves as well.

GATE VALVES

Gate Valves 2 inches and smaller are offered with solid wedges, and with flexible wedges on valves larger than 2 inches. Other types of wedges that are available on request are: split, double parallel disc, and slab.

SEAT RING

Seat rings in valves 1-1/2" and smaller are pressed in seats, and valves larger than 1-1/2" are welded in. Globe valves and piston check valves are offered with integral seats; renewable seat rings are available on request.

PACKING

Standard valve packing is constructed of compressed graphite middle rings, and the end rings are constructed of braided graphite. A corrosion inhibitor has been incorporated to prevent pitting of the stem. Valves can be provided with live loading on request.

Valve design and materials have been selected and tested to obtain low emissions. Gate valves can trap liquid in the bonnet of the valve when in the closed position. An increase of temperature will cause the fluid to expand, increasing the pressure within the bonnet. This higher pressure can cause a dangerous over pressure in the bonnet which will damage the pressure retaining components of the valve.

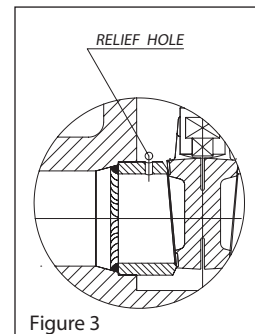


Figure 3

To prevent over pressurization within the bonnet, valves may be offered with the following pressure relief options:

- Pressure relief line from the bonnet to the downstream side of the wedge.
- Pressure relief hole drilled on the valve seat.

OPERATION

Pressure seal valves are offered with the following operators: hand wheel, bevel gear, spur gear or electrical, pneumatic or hydraulic actuators.

Bevel gear operators are offered as a standard on gate and globes to reduce operating torque on the following valves:

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

INSPECTION AND TESTING

All valves are subjected to NDE testing on a routine basis. (i.e. dye penetrant testing of butt weld ends.)

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

Optional examinations include:

- Radiographic
- Magnetic particles
- Ultrasonic
- Helium leak test

Test certificates can be provided for all examinations listed above. Personnel performing these tests are trained and qualified in accordance with EN 473 / ANST-SNT-TC-1A.

Every valve is subject to a pressure test in accordance with the standard API 598 or BS 6755 Part.1.



The rated pressure for the applicable pressure class is in accordance with ANSI B16.34 / EN 12516-1, -2.

MARKING AND IDENTIFICATION

All valves are marked on the nameplate and body in accordance with MSS SP-25 and B16.34. The valve nameplate identifies the following information: rating, size, body and trim material. Customer tags are available at an extra charge.

Valve body markings include the following: material (per /ASME), heat code, valve size, rating, and company trade mark.

Valves offered with relief holes on the seat, are supplementary marked with an arrow to indicate the flow direction.

ACCESSORIES

Valves may be ordered with by-pass lines in accordance with MSS SP-45. Special by-pass arrangements can be provided per customer requirements.

CLASS 900

CLASS 1500

CLASS 2500

Design construction:
ANSI B16.34 - ISO 12516-2
Classes: up to class 4500,
standard class. Special and
intermediate class on request.

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

Outside Screw and Yoke (OS&Y)

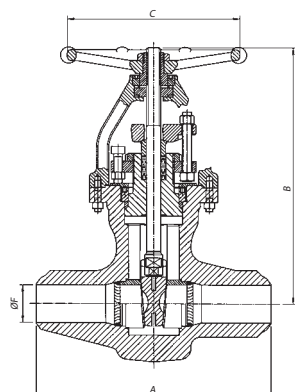
Two piece self aligning packing
gland. Integral back seat
Welded in seats; for 2" and larger.
Disc: integral flexible wedge,
parallel disc or split type on
request

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

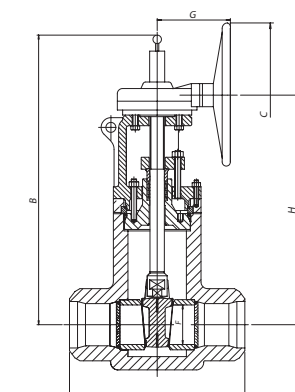
CLASS 900																	
SIZE	inch	1/2	3/4	1	1 1/2	2	3	4	6	8	10	12	14	16	18	20	24
	mm	15	20	25	40	50	75	100	150	200	250	300	350	400	450	500	600
A	inch	8.5	9.00	10.00	12.00	14.5	12.00	14.00	20.00	26.00	31.00	34.00	39.00	43.00	47.00	53.00	58.00
	mm	216	229	254	305	368	305	356	508	660	787	864	991	1092	1194	1346	1473
B close	inch	8.27	9.45	10.43	13.58	15.75	17.52	28.15	41.34	47.83	58.86	66.54	69.69	81.89	83.66	103.15	121.26
	mm	210	240	265	345	400	445	715	1050	1215	1495	1690	1770	2080	2125	2620	3080
stroke	inch	.71	.79	1.02	1.54	2.05	2.66	3.54	5.35	6.89	9.06	10.43	11.61	13.98	14.96	16.93	20.87
	mm	18	20	26	39	52	67.5	90	136	175	230	265	295	355	380	430	530
C	inch	3.82	5.43	5.43	6.77	9.21	16.93	16.93	17.72	23.62	23.62	23.62	23.62	23.62	23.62	31.5	31.5
	mm	97	138	138	172	234	430	430	450	600	600	600	600	600	600	800	800
F	inch	.55	.71	.95	1.44	1.85	2.36	3.15	4.72	6.3	8.27	9.65	10.83	12.99	13.78	15.75	19.49
	mm	14	18	24	36.6	47	60	80	120	160	210	245	275	330	350	400	495
G	inch							7.09	8.27	9.06	13.78	15.35	15.35	18.9	19.69	21.26	
	mm							180	210	230	350	390	390	480	500	540	
H	inch							28.94	34.84	41.73	54.72	62.2	67.72	72.05	86.61	98.82	
	mm							735	885	1060	1390	1580	1720	1830	2200	2510	
Weight	lb.	14.33	23.15	28.66	50.71	99.21	191.8	335.1	753.98	1358.05	2160.53	3406.14	3489.92	6510.25	9490.9	11309.71	18673.15
	kg	6.5	10.5	13	23	45	87	152	342	616	980	1545	1583	2953	4305	5130	8470

CLASS 1500																	
SIZE	inch	1/2	3/4	1	1 1/2	2	3	4	6	8	10	12	14	16	18	20	24
	mm	15	20	25	40	50	75	100	150	200	250	300	350	400	450	500	600
A	inch	8.5	9.00	10	12.00	14.50	12.00	16.00	22.00	28.00	34.00	34.00	42.00	47.00	53.00	58.00	65.50
	mm	216	229	254	305	368	305	406	559	711	864	864	1067	1194	1346	1473	1664
B close	inch	8.27	9.45	10.43	13.58	15.75	17.52	28.15	41.34	47.83	58.86	66.54	69.69	81.89	83.66	103.15	121.26
	mm	210	240	265	345	400	445	715	1050	1215	1495	1690	1770	2080	2125	2620	3080
stroke	inch	.71	.79	1.02	1.54	2.05	2.66	3.54	5.35	6.89	9.06	10.43	11.61	13.98	14.96	16.93	20.87
	mm	18	20	26	39	52	67.5	90	136	175	230	265	295	355	380	430	530
C	inch	3.82	5.43	5.43	6.77	9.21	16.93	11.81	17.72	23.62	23.62	23.62	23.62	23.62	23.62	31.5	31.5
	mm	97	138	138	172	234	430	300	450	600	600	600	600	600	600	800	800
F	inch	.55	.71	.95	1.44	1.85	2.36	3.15	4.72	6.3	8.27	9.65	10.83	12.99	13.78	15.75	19.49
	mm	14	18	24	36.6	47	60	80	120	160	210	245	275	330	350	400	495
G	inch							7.09	7.09	8.27	9.06	13.78	15.35	15.35	18.9	19.69	21.26
	mm							180	180	210	230	350	390	390	480	500	540
H	inch							21.26	28.94	34.84	41.73	54.72	62.2	67.72	72.05	86.61	98.82
	mm							540	735	885	1060	1390	1580	1720	1830	2200	2510
Weight	lb.	14.33	23.15	28.66	50.71	99.21	191.8	341.72	771.62	1388.91	2237.69	3406.14	3571.49	6724.1	9722.39	11662.45	19290.45
	kg	6.5	10.5	13	23	45	87	155	350	630	1015	1545	1620	3050	4410	5290	8750

CLASS 2500																	
SIZE	inch	1/2	3/4	1	1 1/2	2	3	4	6	8	10	12	14	16	18	20	24
	mm	15	20	25	40	50	75	100	150	200	250	300	350	400	450	500	600
A	inch	10.40	10.75	12.15	15.25	17.75	14.50	18.00	24.00	30	34.00	34.00	44.00				
	mm	264	273	308	387	451	368	457	610	762	864	864	1117				
B close	inch	11.22	12.6	12.8	15.35	16.93	26.97	29.02	45.28	47.52	57.48	69.69	76.18				
	mm	285	320	325	390	430	685	737	1150	1207	1460	1770	1935				
stroke	inch	.55	.67	.87	1.22	1.73	2.44	3.19	5.12	6.61	8.31	10.24	14.02				
	mm	14	17	22	31	44	62	81	130	168	211	260	356				
C	inch	5.43	5.43	6.77	9.21	12.6	11.81	11.81	23.62	23.62	23.62	23.62	31.5				
	mm	138	138	172	234	320	300	300	600	600	600	600	800				
F	inch	.45	.59	.77	1.1	1.5	2.17	2.83	4.33	5.79	7.28	8.58	9.49				
	mm	11.5	15	19.5	28	38	55	72	110	147	185	218	241				
G	inch						6.5	7.1	8.66	8.66	12.99	15.75	17.72				
	mm						165	180	220	220	330	400	450				
H	inch						20.31	22.83	31.1	36.42	50.2	58.9	67.13				
	mm						516	580	790	925	1275	1495	1705				
Weight	lb.	31.97	33.07	57.32	123.46	132.28	286.6	357.15	1124.36	1895.98	2667.59	4078.55	5996.57				
	kg	14.5	15	26	56	60	130	162	510	860	1210	1850	2720				



Class 900 - 4" and Less
Class 1500 - 3" and Less
Class 2500 - 2" and less



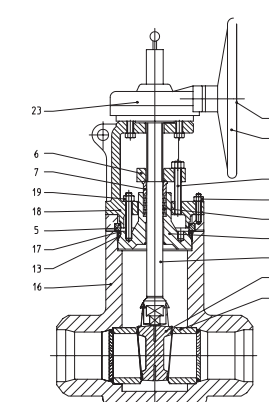
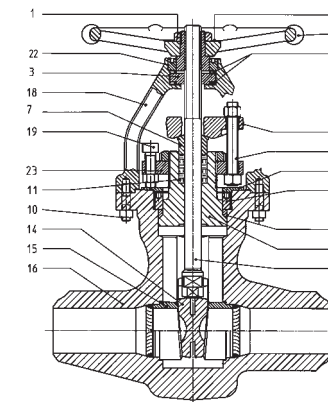
Class 900 - 6" and larger
Class 1500 - 4" and larger
Class 2500 - 3" and larger

GATE VALVES

POS.	PART NAME	MATERIAL								
		A105N/Cr13*	LF2/Cr13*	F11/Cr13*	F22/Cr13*	F91/Cr13*	A105N/F316-L*	F22/F316-L*	F316-L/F316L*	
1	Handwheel Nut	Carbon Steel								
2	Handwheel	Carbon Steel								
3	Yoke Nut	ASTM A439 DC-2								
4	Name Plate	AISI 316								
5	Thrust Ring	ASTM A479 410								
6	Gland Flange	ASTM A105								
7	Packing Gland	UNS S31603								
8	Bonnet	ASTM A105+St.6	A350 LF2+St.6	A182 F11+St.6	A182 F22+St.6	A182 F91+St.6	ASTM A105N+St.6	A182 F22+St.6	A182 F316-L+St.6	
9	Gland Studs	A193 B7/A194 2H	A320 L7/A194 Gr.4	A193 B16/A194 Gr.4			A193 B7/A194 2H	A193 B16/A194 Gr.4	A193 B8/A194 Gr.8	
10	Stud Bolts	A193 B7/A194 2H	A320 L7/A194 Gr.4	A193 B16/A194 Gr.4			A193 B7/A194 2H	A193 B16/A194 Gr.4	A193 B8/A194 Gr.8	
11	Packing	Graphite								
12	Stem for CL 1500	ASTM A479 410 (note 1)				ASTM A565 616HT		ASTM A479 316-L		
	Stem for CL 2500	ASTM A479 410 (note 1)				ASTM A565 616HT		ASTM A479 XM19 (note 1)		
13	B/B Gasket	Graphite + UNS S31600								
14	Wedge	A216 WCB+St.6	ASTM A351 CA15+Stellite 6				A216 WCB+St.6	ASTM A351 CF8M+Stellite 6		
15	Seat Ring	ASTM A105N+St.6	A350 LF2+St.6	A739 B11+St.6	A739 B22+St.6	A182 F316+St.6	ASTM A105N+St.6	A739 B22+St.6	A182 F316+St.6	
16	Body	ASTM A105N	A350 LF2 QT	A182 F11 CL.2	A182 F22 CL.3	ASTM A182 F91	ASTM A105N	A182 F22 CL.3	ASTM A182 F316-L	
17	Spacer Ring	ASTM A105								
18	Yoke	ASTM A216 WCB								
19	Stud Bolts	A193 B7/A194 2H	A320 L7/A194 Gr.4	A193 B16/A194 Gr.4			A193 B7/A194 2H	A193 B16/A194 Gr.4	A193 B8/A194 Gr.8	
20	Screw	ASTM A307 -Gr. B								
21	Bearing	Carbon Steel								
22	Retainer Ring	A105								
23	Bevel Gear	Commercial								
POS.	PART NAME	MATERIAL								
		A105N/Cr13*	LF2/Cr13*	F11/Cr13*	F22/Cr13*	F91/Cr13*	A105N/F316-L*	F22/F316-L*	F316-L/F316L*	

Note:

1 - For Working Temperature > 842°F use ASTM A565-616HT - UNS S42200
Materials shown above may vary between the pressure classes and valve size.
Subject to change without notice.



CLASS 900

CLASS 1500

CLASS 2500

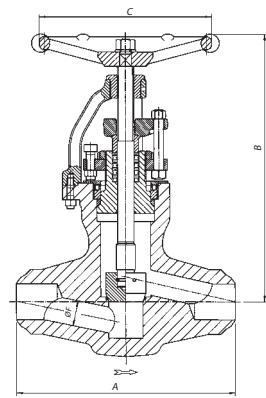
Design Construction :
ANSI B16.34 - ISO 12516-2
Classes: up to class 4500,
standard class. Special and
intermediate class on request.

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

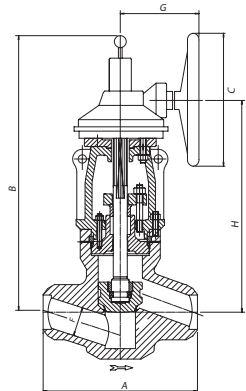
Outside Screw and Yoke (OS&Y)

Two piece self aligning packing
gland. Integral back seat and
body seat. Disc: loose on stem;
needle or parabolic on request

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



Size ≤ 2"



Size ≥ 3"

CLASS 900

SIZE	inch mm	1/2 15	3/4 20	1 25	1 1/2 40	2 50	3 75	4 100	6 150	8 200	10 250	12 300
A	inch mm	8.5 216	9.00 229	10 254	12.00 305	14.50 368	12.00 305	14.00 356	20 508	26.00 660	33.00 838	38.00 965
B close	inch mm	8.27 210	9.45 240	10.43 265	13.58 345	15.75 400	25 635	28.35 720	31.69 805	48.43 1230	68.9 1750	77.56 1970
stroke	inch mm	.71 18	.79 20	1.02 26	1.54 39	2.05 52	1.89 48	3.07 78	3.94 100	6.1 155	6.3 160	7.48 190
C	inch mm	3.82 97	5.43 138	5.43 138	6.77 172	9.21 234	11.81 300	23.62 600	23.62 600	23.62 600	23.62 600	23.62 600
F	inch mm	.55 14	.71 18	.95 24	1.44 36.6	1.85 47	2.24 57	3.15 80	4.13 105	5.91 150	7.68 195	9.09 231
G	inch mm					7.1 180	7.87 200	13.78 350	16.54 420	18.9 480	20.08 510	
H	inch mm					19.49 495	22.44 570	29.53 750	35.24 895	53.15 1350	60.2 1580	
Weight	lb. kg	14.33 6.5	23.15 10.5	28.66 13	50.71 23	99.21 45	198.42 90	291.01 132	862.01 391	1686.54 765	2634.52 1195	4210.83 1910

CLASS 1500

SIZE	inch mm	1/2 15	3/4 20	1 25	1 1/2 40	2 50	3 75	4 100	6 150	8 200	10 250	12 300
A	inch mm	8.5 216	9.00 229	10 254	12.00 305	14.50 368	12.00 305	16.00 406	22.00 559	28.00 711	34.00 991	44.50 1130
B close	inch mm	9.17 233	9.84 250	9.84 250	14.37 365	16.93 430	25 635	28.35 720	31.69 805	48.43 1230	55.51 1410	62.6 1590
stroke	inch mm	.67 17	.87 22	.94 24	1.18 30	1.38 35	1.89 48	3.07 78	3.94 100	6.1 155	7.68 195	9.84 250
C	inch mm	3.82 97	5.43 138	5.43 138	6.77 172	9.21 234	11.81 300	23.62 600	23.62 600	23.62 600	23.62 600	23.62 600
F	inch mm	.47 12	.57 14.5	.75 19	1.22 31	1.57 40	2.24 57	3.15 80	4.13 105	5.91 150	7.68 195	9.1 231
G	inch mm					7.1 180	8.86 225	13.78 350	16.54 420	18.9 480	20.08 510	
H	inch mm					19.49 495	22.44 570	29.53 750	35.24 895	53.15 1350	60.2 1580	
Weight	lb. kg	14.77 6.7	23.15 10.5	33.07 15	57.32 26	105.82 48	198.42 90	297.62 135	881.85 400	1719.61 780	2755.78 1250	4365.15 1980

CLASS 2500

SIZE	inch mm	1/2 15	3/4 20	1 25	1 1/2 40	2 50	3 75	4 100	6 150	8 200	10 250	12 300
A	inch mm	10.40 264	10.75 273	12.15 308	15.25 387	17.75 451	14.50 368	18.00 457	24.00 610	30 762	36.00 914	41.00 1041
B close	inch mm	12.6 320	12.8 325	14.17 360	17.72 450	18.31 465	28.46 723	29.92 760	42.91 1090	49.61 1260	64.96 1650	76.77 1950
stroke	inch mm	.47 12	.59 15	.71 18	.98 25	1.38 35	2.87 73	3.35 85	4.33 110	6.3 160	7.87 200	9.06 230
C	inch mm	5.43 138	5.43 138	6.77 172	9.21 234	9.21 234	23.62 600	23.62 600	23.62 600	23.62 600	23.62 600	23.62 600
F	inch mm	.43 11	.57 14.5	.75 19	1.1 28	1.5 38	2.09 53	2.95 75	4.13 105	5.79 147	7.28 185	8.58 218
G	inch mm					8.86 225	8.86 225	18.9 480	21.26 540	21.26 540	21.26 540	
H	inch mm					22.05 560	24.02 610	35.83 910	42.13 1070	53.54 1360	57.87 1470	
Weight	lb. kg	35.27 16	37.48 17	66.14 30	143.3 65	165.35 75	308.65 140	551.16 250	1234.59 560	1940.07 880	3351.03 1520	4365.15 1980

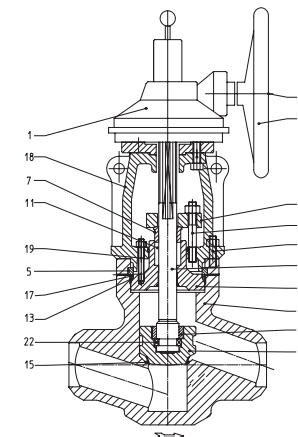
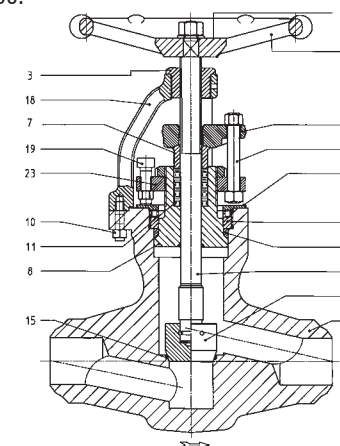
GLOBE VALVES

POS.	PART NAME	MATERIAL								
		A105N/Cr13*	LF2/Cr13*	F11/Cr13*	F22/Cr13*	F91/Cr13*	A105N/F316-L*	F22/F316-L*	F316-L/F316L*	
1	Bevel Gear	Commercial								
2	Handwheel	Carbon Steel								
3	Yoke Sleeve	AISI 410								
4	Name Plate	AISI 316								
5	Thrust Ring	ASTM A479 410								
6	Gland Flange	ASTM A105								
7	Packing Gland	UNS S31603								
8	Bonnet	ASTM A105+St.6	A350 LF2+St.6	A739 B11+St.6	A739 B22+St.6	A182 F91+St.6	ASTM A105N+St.6	A739 B22+St.6	A479 316-L+St.6	
9	Gland Studs	A193 B7/A194 2H	A320 L7/A194 Gr.4	A193 B16/A194 Gr.4			A193 B7/A194 2H		A193 B8/A194 Gr.8	
10	Stud Bolts	A193 B7/A194 2H	A320 L7/A194 Gr.4	A193 B16/A194 Gr.4			A193 B7/A194 2H		A193 B8/A194 Gr.8	
11	Packing	Graphite								
12	Stem	ASTM A479 410 (note 1)				ASTM A565 616HT		ASTM A479 XM19 (note 1)		
13	B/B Gasket	Graphite + UNS S31600								
14	Disc	ASTM A105+St.6	ASTM A479 410+Stellite 6				ASTM A479 316-L+Stellite 6			
15	Integral Seat	STELLITE Gr.6								
16	Body	ASTM A105N	A350 LF2 QT	A182 F11 CL.2	A182 F22 CL.3	ASTM A182 F91	ASTM A105N	A182 F22 CL.3	ASTM A182 F316-L	
17	Spacer Ring	ASTM A479 410								
18	Yoke	ASTM A216 WCB								
19	Stud Bolts	A193 B7/A194 2H	A320 L7/A194 Gr.4	A193 B16/A194 Gr.4			A193 B7/A194 2H	A193 B16/A194 Gr.4	A193 B8/A194 Gr.8	
20	Screw	ASTM A307-Gr. B								
21	Screwed Ring	ASTM A479 410				ASTM A479 316-L				
22	Segmented Ring	ASTM A479 410				ASTM A479 316-L				
POS.	PART NAME	MATERIAL								
		A105N/Cr13*	LF2/Cr13*	F11/Cr13*	F22/Cr13*	F91/Cr13*	A105N/F316-L*	F22/F316-L*	F316-L/F316L*	

Note:

1 – For Working Temperature > 842°F use ASTM A565-616HT - UNS S42200

Materials shown above may vary between the pressure classes and valve size.
Subject to change without notice.



CLASS 900

CLASS 1500

CLASS 2500

Design Construction :
ANSI B16.34 Classes: up to class 4500, standard class. Special and intermediate class on request.

Testing according to API 598, BS 6755

Marking to MSS SP25

Integral forged Body
Welded in seats
Integral seat on piston check
Disc: swing or fully guided
piston type

Butt Welding Ends according to ANSI B16.25

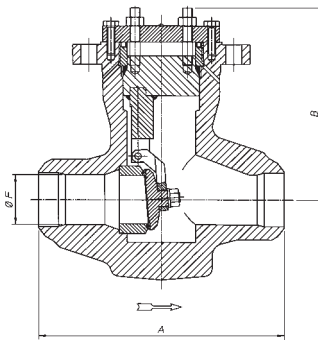
Face to face according to ANSI B16.10

Larger sizes available on request

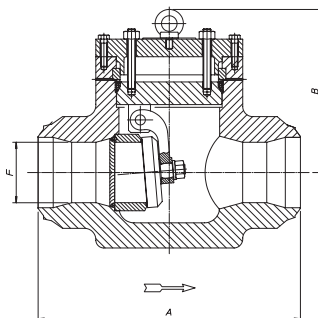
CLASS 900														
SIZE	inch mm	1/2 15	3/4 20	1 25	1 1/2 40	2 50	3 75	4 100	6 150	8 200	10 250	12 300	14 350	16 400
A	inch mm	8.5 216	9.00 229	10 254	12.00 305	14.50 368	12.00 305	14.00 356	20 508	26.00 660	31.00 787	34.00 864	39.00 991	43.00 1092
B	inch mm	4.13 105	4.92 125	5.31 135	6.1 155	7.68 195	9.29 236	11.5 292	16.93 430	21.42 544	19.88 505	23.23 590	24.02 610	27.48 698
F	inch mm	.55 14	.71 18	.94 24	1.44 36.6	1.85 47	2.36 60	3.15 80	4.72 120	6.3 160	8.27 210	9.65 245	10.83 275	12.99 330
Weight	lb. kg	13.23 6	22.05 10	26.46 12	30.86 14	61.73 28	88.18 40	169.76 77	456.36 207	1049.4 476	1951.09 885	3571.49 1620	4590.02 2082	7506.74 3405

CLASS 1500														
SIZE	inch mm	1/2 15	3/4 20	1 25	1 1/2 40	2 50	3 75	4 100	6 150	8 200	10 250	12 300	14 350	16 400
A	inch mm	8.5 216	9.00 229	10 254	12.00 305	14.50 368	12.00 305	16.00 406	22.00 559	28.00 711	31.00 864	34.00 864	42.00 1067	47.00 1194
B	inch mm	4.13 105	4.92 125	5.32 135	6.1 155	7.68 195	9.29 236	11.5 292	16.93 430	21.42 544	19.88 505	23.23 590	24.02 610	27.48 698
F	inch mm	.55 14	.71 18	.94 24	1.44 36.6	1.85 47	2.36 60	3.15 80	4.72 120	6.3 160	8.27 210	9.65 245	10.83 275	12.99 330
Weight	lb. kg	13.23 6	22.05 10	26.46 12	30.86 14	61.73 28	88.18 40	176.37 80	473.99 215	1080.27 490	2028.25 920	3571.49 1620	4673.8 2120	7716.18 3500

CLASS 2500														
SIZE	inch mm	1/2 15	3/4 20	1 25	1 1/2 40	2 50	3 75	4 100	6 150	8 200	10 250	12 300	14 350	16 400
A	inch mm	8.25 210	8.25 210	9.00 230	9.00 230	11.00 279	14.50 368	18.00 457	24.00 610	30 762	34.00 864	34.00 864	44.00 1117	
B	inch mm	5.71 145	5.91 150	6.69 170	7.68 195	8.27 210	11.42 290	12.6 320	13.78 350	15.94 405	19.69 500	23.62 600	27.56 700	
F	inch mm	.45 11.5	.59 15	.77 19.5	1.1 28	1.5 38	2.24 57	2.95 75	4.33 110	5.79 147	7.28 185	8.58 218	9.49 241	
Weight	lb. kg	25.35 11.5	28.66 13	46.3 21	83.78 38	125.66 57	88.18 40	176.37 80	881.85 400	1366.87 620	1752.67 795	3064.43 1390	6172.94 2800	



Size ≤ 4"

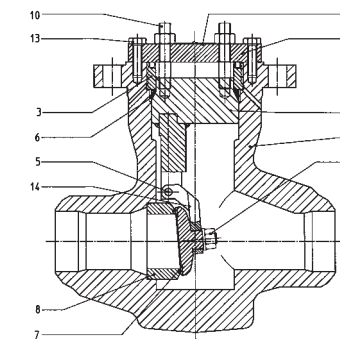


Size ≥ 6"

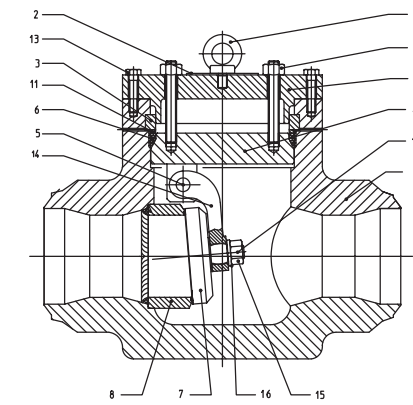
CHECK VALVES

POS.	PART NAME	MATERIAL								
		A105N/Cr13*	LF2/Cr13*	F11/Cr13*	F22/Cr13*	F91/Cr13*	A105N/F316-L*	F22/F316-L*	F316-L/F316L*	
1	Eyebolt	Carbon Steel								
2	Name Plate	AISI 316								
3	Thrust Ring	ASTM A479 410								
4	Bonnet	ASTM A105N	ASTM A350 LF2	ASTM A739 B11	ASTM A739 B22	ASTM A182 F91	ASTM A105N	ASTM A739 B22	ASTM A182 F316	
5	Hinge Pin	ASTM A479 410						ASTM A479 316-L		
6	B/B Gasket	Graphite + UNS S31600								
7	Disc	ASTM A105N+St.6	ASTM A479 410 + Stellite 6				ASTM A105N+St.6	ASTM A479 316 + Stellite 6		
8	Seat Ring	ASTM A105N+St.6	A350 LF2+St.6	A739 B11+St.6	A739 B22+St.6	A182 F316+St.6	ASTM A105N+St.6	A739 B22+St.6	A182 F316+St.6	
9	Body	ASTM A105N	A350 LF2 QT	A182 F11 CL.2	A182 F22 CL.3	ASTM A182 F91	ASTM A105N	A182 F22 CL.3	ASTM A182 F316	
10	Stud Bolts	A193 B7/A194 2H	A320 L7/A194 Gr.7	A193 B16/A194 Gr.4			A193 B7/A194 2H	A193 B16/A194 Gr.4	A193 B8/A194 Gr.8	
11	Spacer Ring	ASTM A479 410								
12	Flange	ASTM A105								
13	Screw	ASTM A193 B7								
14	Hinge	ASTM A105	ASTM A240 316				ASTM A105	ASTM A240 316		
15	Disc Nut	ASTM A194 Gr.8M								
16	Washer	UNS S31600								
17	Pin	ASTM A479 316								
POS.	PART NAME	MATERIAL								
		A105N/Cr13*	LF2/Cr13*	F11/Cr13*	F22/Cr13*	F91/Cr13*	A105N/F316-L*	F22/F316-L*	F316-L/F316L*	

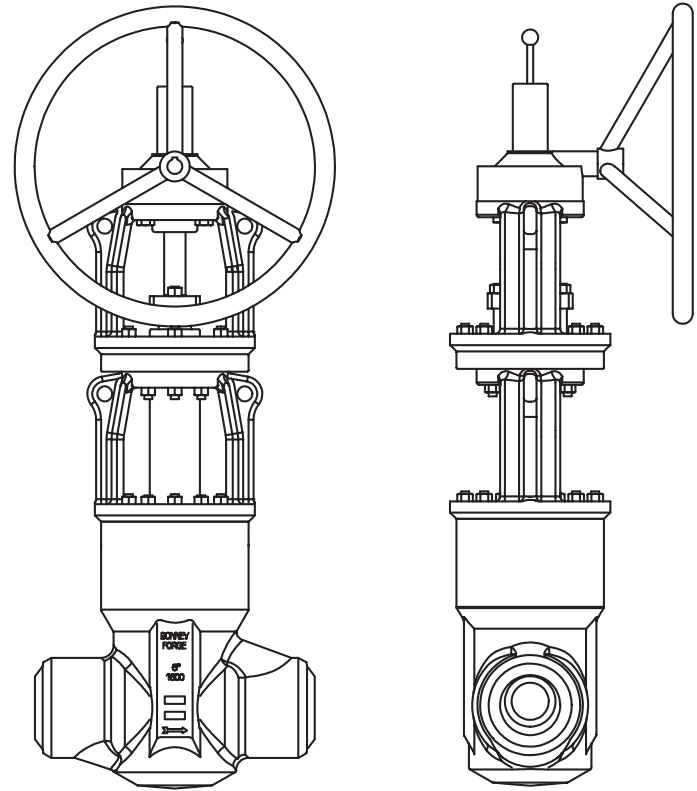
Materials shown above may vary between the pressure classes and valve size. Subject to change without notice.



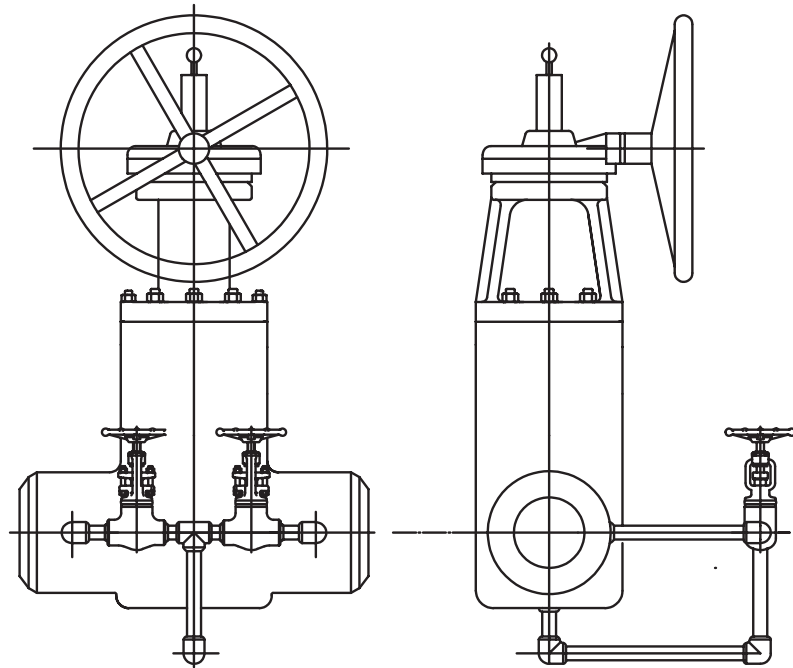
≤ 4"



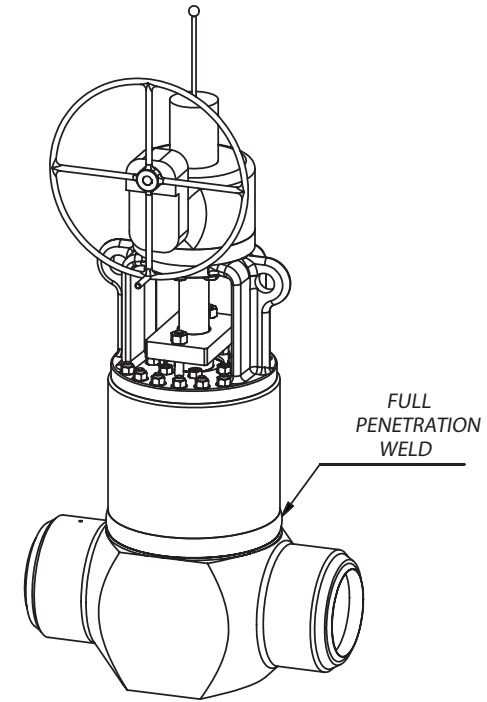
≥ 6"



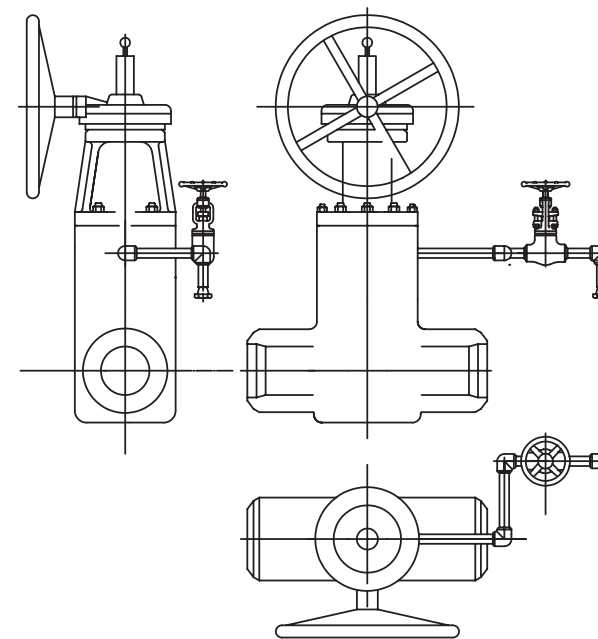
CRYOGENIC CONFIGURATION



SPECIAL BY-PASS



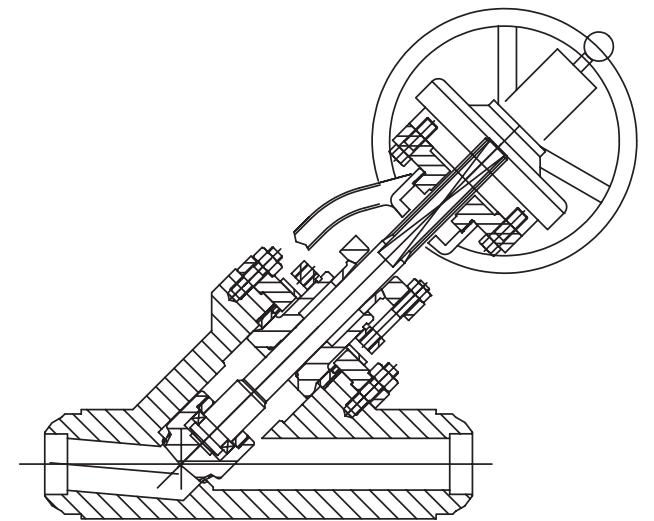
TWO PIECE BODY CONSTRUCTION



SAFETY DEVICE APPLICATION



INTEGRAL BODY CONSTRUCTION



GLOBE VALVE "Y" TYPE

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

WARRANTY	All products are warranted to be free from manufacturing defects for a period of one (1) year from date of shipment, and any found to be defective within that period will be replaced without charge, provided (1) that the product was used as recommended and in accordance with approved installation and operating practices, (2) that its failure resulted from a manufacturing defect and not from damage due to corrosive, abrasive, or other wear normally to be expected in the services involved, (3) that the product was not modified or changed (unless written approval was given by BF), and (4) that written notice of such defect is delivered to BF during such one (1) year period. No labor costs or other expense or liability is assumed. The Uniform Commercial Code shall not apply to the sale, nor the Michigan statutes adopting the Uniform Commercial Code. This express warranty is in lieu of and excludes all other warranties, guarantees, or representations, expressed or implied. THERE ARE NO IMPLIED WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE.
EXCLUSIONS	Do not use BF products in aircraft or aerospace applications. No warranties, guarantees or representations of any kind are made with respect to such applications. Purchaser assumes all risks of any use in such applications and will indemnify and hold harmless BF against and from any claims, costs (including attorney's fees) and liabilities arising out of such use.
PURCHASER'S REMEDIES	The Purchaser's remedies with respect to any product furnished by BF hereunder that is found not to be in conformity with the terms and conditions of the contract because of breach of contract, breach of express or implied warranty, or negligence shall be limited exclusively to the right of replacement of such defective product or, at our option, repayment of our sale price of the product. In no event shall BF be liable for claims (based upon breach of contract, breach of express or implied warranty, or negligence) for any other damages, whether direct, immediate, foreseeable, consequential, or special or for any expenses incurred by reason of the use or misuse, sale or fabrication of products which do or do not conform to the terms and conditions of the contract.
PRICES	Prices, and other terms of sale and payment, are subject to change without notice. Unless a contrary provision appears in this price schedule, quotation or order acknowledgment, prices may be withdrawn without notice at any time. Stenographic or clerical errors are subject to correction.
ACCEPTANCE OF ORDERS	All orders are subject to BF credit department approval prior to acceptance by BF. No assignment of the Purchaser's rights may be made without the written consent of BF.
REMITTANCES	All accounts are payable in United States funds, free of exchange, collection, or any other charges. If, in the sole discretion of BF, the financial condition of the Purchaser at any time so requires, BF retains the right to require full or partial payment in advance.
PARTIAL SHIPMENTS AND PAYMENTS	BF reserves the right to make partial shipments from time to time, and to render invoices therefore, which shall be due and payable as provided in said invoices and the paragraph entitled "Remittances". If the Purchaser becomes overdue in any such partial payment, BF shall be entitled to suspend work and/or avail itself of other legal remedies.
TAXES	Unless otherwise specifically noted, the amount of any sale, use, occupancy, excise tax, or other tax, of any nature, federal, state, or local for which BF is legally liable, either initially or through failure of payment by Purchaser, shall be added or be in addition to the price quoted and Purchaser agrees to pay the same to BF.
SHORTAGES & DAMAGES IN TRANSIT	Claims for shortages must be made in writing within ten days after receipt of shipment, but loss of or damage to material in transit is the responsibility of the carrier.
DELAYS	All promises of shipment are estimated as closely as possible, and we will use our best efforts to ship within the time promised but do not guarantee to do so, and assume no liability for not doing so. Materials stated to be in stock are subject to prior sale.
CANCELLATION & SUSPENSION	The order or contract is subject to cancellation or instructions to suspend or delay work or delivery only upon receipt of written notification and with our consent, and upon agreement to pay BF's adjustment charge. Orders for special products (usually "price on application" items) may be changed and/or cancelled only upon receipt of written instructions with an expressed agreement to make payment for material used and work already performed.
RETURN OF MATERIAL	No product of our manufacture may be returned without written consent. All goods returned are subject to a handling charge plus freight in both directions and charges for any required reconditioning, unless otherwise specified in writing by BF.
PATENTS	Purchaser will indemnify and hold harmless BF against and from any claims, costs (including attorney's fees) and liabilities arising out of any suit alleging infringement of any patents, by any product supplied by BF under the contract and made in accordance with the design and/or specification furnished by the Purchaser to BF.
GOVERNING LAW	The contract shall be governed by, construed, and enforced in accordance with the laws of the Commonwealth of Pennsylvania, without regard to conflict of law principles.
NO WAIVER	The failure of BF to insist, in any one or more instances upon the performance of any of the terms, covenants, or conditions of the contract or to exercise any right thereunder shall not be construed as a waiver or relinquishment of the future performance of any such term, covenant, or condition or the future exercise of such rights, nor shall it be deemed to be a waiver or relinquishment of any other term, covenant, or condition or the exercise of any other rights under the contract.
DIES, TOOLS AND PATTERNS	Dies, tools and patterns required to produce the article quoted on shall remain the property of BF. Preparation charges for dies, tools and patterns represent only a portion of cost. Payment of such charge does not give you any right, title, or interest in such dies, tools, or other products of preparation. We will not be responsible for retention of dies or patterns on which no orders are received for two years or more.
FORCE MAJEURE	Any delays in or failure of performance of BF shall not constitute default or give rise to any claims or damages if and to the extent that such delay or failure is caused by occurrences beyond the control of BF, including but not limited to acts of God or the public enemy, expropriation or confiscation of facilities, compliance with any order or request of any governmental authority, acts of war, rebellion or sabotage or damage resulting therefrom, embargoes or other export restrictions, fires, floods, explosions, accidents, breakdowns, riots or strikes or other conceived acts of workmen, whether direct or indirect, or any other causes whether or not of the same class or kind as those specifically above named which are not within the control of BF and which by the exercise of reasonable diligence, BF is unable to prevent or provide against.
PURCHASER'S ACCEPTANCE OF ABOVE CONDITIONS	The contract shall be subject to the terms and conditions contained or referred to in BF's price schedule, quotation or order acknowledgment and to no others whatsoever. No waiver, alteration, or modification of the terms and conditions in this price schedule, quotation or order acknowledgment shall be binding unless in writing and signed by an authorized representative of BF.

Note: The material in this catalog is for general information. For specific performance data and proper material selection, consult your Bonney Forge representative. Although every attempt has been made to ensure that the information contained in this catalog is correct, Bonney Forge reserves the right to change designs, materials or specifications without notice.