



Bronze Valves

Bronze Valve Selection Guide & Figure Number Index

Catalog Page No.	Figure No.	Pressure Rating	Stem: RS or NRS	Bonnet/Cap: TB,UB, SC,UC	End Connections	Seat: IB or SS	Disc
1700 Series Bronze Valves							
8	1700	Class 125	RS	TB	THD	IB	SW
9	1700S	200 CWP	RS	TB	SLD	IB	SW
10	1701	Class 125	NRS	TB	THD	IB	SW
11	1701S	200 CWP	NRS	TB	SLD	IB	SW
12	1702	Class 125	RS	TB	THD	IB	PTFE
13	1702S	200 CWP	RS	TB	SLD	IB	PTFE
14	1703	Class 125	RS	TB	THD	IB	PTFE
15	1703S	200 CWP	RS	TB	SLD	IB	PTFE
16	1707	Class 125		TB	THD	IB	BRZ
17	1707S	200 CWP		TB	SLD	IB	BRZ
Bronze Gate Valves							
19	428	Class 125	RS	TB	THD	IB	SW
20	428UB	Class 125	RS	UB	THD	IB	SW
21	438	Class 125	NRS	TB	THD	IB	SW
22	1324	300 CWP	NRS	TB	SLD	IB	SW
23	431	Class 150	RS	TB	THD	IB	SW
24	431UB	Class 150	RS	UB	THD	IB	SW
25	437	Class 150	NRS	TB	THD	IB	SW
26	429	Class 150	NRS	TB	FLG	IB	SW
27	1320	200 CWP	NRS	TB	SLD	IB	SW
28	1330	200 CWP	RS	TB	SLD	IB	SW
29	422	Class 200	RS	UB	THD	IB	SW
30	424	Class 200	RS	UB	THD	SS	SW
31	426	Class 200	NRS	UB	THD	SS	SW
32	622E	Class 300	RS	UB	THD	IB	SW
33	634E	Class 300	RS	UB	THD	SS	SW
34	636E	Class 300	NRS	UB	THD	SS	SW
Bronze Globe Valves							
37	1	Class 125	RS	TB	THD	IB	BRZ
37	5TF	Class 125	RS	TB	THD	IB	PTFE
38	7TF	Class 150	RS	UB	THD	IB	PTFE
39	1310	300 CWP	RS	TB	SLD	IB	PTFE
40	14 ½P	Class 150	RS	UB	THD	SS	SS
41	212P	Class 200	RS	TB	THD	SS	SS
42	88	Class 200	RS	TB	THD	IB	Needle
43	382P	Class 300	RS	UB	THD	SS	SS
Bronze Angle Valves							
45	17TF	Class 150	RS	UB	THD	IB	PTFE
45	89	Class 200	RS	TB	THD	IB	Needle
46	384P	Class 300	RS	UB	THD	SS	SS
Bronze Swing Check Valves							
49	37	Class 125		SC	THD	IB	BRZ
49	41TF	Class 125		SC	THD	IB	PTFE
50	137	Class 150		SC	THD	IB	BRZ
51	1342	300 CWP		SC	SLD	IB	BRZ
52	141TF	Class 150		SC	THD	IB	PTFE
53	36	Class 200		SC	THD	IB	BRZ
54	1340	200 CWP		SC	SLD	IB	BRZ
55	76E	Class 300		SC	THD	IB	BRZ
Bronze Lift Check Valves							
56	29	Class 125		-	THD	IB	BRZ
57	27TF	Class 150		UC	THD	IB	PTFE
58	366E	Class 300		UC	THD	IB	BRZ

Cross Reference

BRONZE

GLOBE

Class 125	1
Class 300 SS Trim	212P

NIBCO

T-211-B
T-276AP

Milwaukee

502
593A

GATE

Class 125 RS-Thread	428
Class 125 NRS-Thread	438
Class 125 RS-Solder	1330

T-111	148
T-113	105
S-111	149

Class 125 NRS-Solder	1320
Class 150 Union Bonnet	431UB
Class 300 SS Trim	634E

S-113	115
T-134	1151
T-174-SS	1184

CHECK

Class 125 Thread	37
Class 125 Solder	1340
Class 300 Swing Check	76E
Class 300 Lift Check	366E

T-413-BY	509
S-413-B	1509
T-473-B	507
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IRON

GATE

Class 125 NRS	461
Class 125 OS&Y	465 ½
Class 250 OS&Y	7.5E

NIBCO

F-619
F-617-0
F-667-0

Milwaukee

F2882 A
F2885 A
F2894 A

Powell

1787
1793
1797

Walworth

W719F
W726F
W786F

GLOBE

Class 125	351
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NIBCO

F-718-B

Milwaukee

F2981 A

Powell

241

Walworth

W906F

SWING CHECK

Class 125	373
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NIBCO

F-918-B

Milwaukee

F2974 A

Powell

559

Walworth

W928F

STOP CHECK

Class 250 Straight-way Y-Pattern	28E
Class 250 Angle Y-Pattern	30E

F-869-B

Advanced manufacturing techniques and equipment, ongoing engineering research and product development, skilled craftsman, and over fourteen decades of experience in flow control are behind the quality and dependability built into every product.

This catalog presents some of these products, namely: Crane's line of bronze gate, globe and check valves. The information is presented in a comprehensive manner and includes material, construction, rating, principal dimensions, and weight data.

Hydrostatic and Shock Pressures

valves are suitable for liquid working pressures specified on catalog pages only when used in hydraulic installations in which shock is absent or negligible. The sudden closure of a valve in a hydraulic system causes the body of liquid, which may be moving at a rate generally in excess of one foot per second, to stop instantaneously. As liquids are relatively incompressible, the sudden cessation of flow effects a rise in pressure considerably greater than the static working pressure. This pressure increase is termed "SHOCK" and may, in some cases, be sufficient to cause valves or piping to fail.

Pressure increase due to shock is not dependent upon the working pressure in the system but upon the velocity at which the liquid is flowing. This pressure surge, severely limits design velocities...a fact readily understandable if it is remembered that pressure rise resulting from arrest of flow may be as high as 60 psi for each foot per second initial velocity. For example, installations of 100 psi and 1000 psi working pressures, with the same initial velocity of 10 feet per second, will be subject to the same increase in pressure (approximately 600 psi) due to instantaneous closure of a valve.

Shock generally prevails in lines equipped with check or quick-closing valves, or in lines supplied by reciprocating pumps. It may also be produced, to a lesser degree, by rapid closure of gate and globe valves. Therefore, care should be exercised when choosing valves installed in liquid lines.

Where shock is likely to occur, the maximum shock pressure should be added to the working pressure of the line to determine working pressure products in the line...also, hydraulic installations should be equipped with air chambers or other types of shock absorbers to eliminate, as much as possible, increase due to shock.

Testing

Bronze valves described in this section meet or exceed the MSS SP-80 specifications for testing.

Materials

The selection of materials for components of valves is based upon expert metallurgical, engineering, foundry and fabrication knowledge as well as on many years of usage experience. Considerations affecting materials of parts which come in contact with the conveyed fluid include pressure, temperature and chemical composition of the fluid. The materials of moving parts that are subject to rubbing contact are selected on the basis of their resistance to wear, corrosion, seizing or galling, and on their frictional characteristics.

Utilization of materials to their full capability is assured by the use of stress analysis techniques that include extensive laboratory testing as well as the application of analytical theory. Stress levels for all materials used are maintained within the levels established by applicable codes, standards and specifications.

Illustrations & Weights

This catalog shows equivalent metric values to the customary imperial units. The "soft" conversion was arrived at by following MSS SP-86 guidelines.

Illustrations – Catalog illustrations are representative of a certain size of each line of product but do not necessarily represent all sizes in all details.

Material & design – We reserve the right to institute changes in materials, designs, dimensions and specifications without notice in keeping with our policy of continuing product development.

Weights – shown are approximate and are not guaranteed. They represent the average weight of Valves products as made from patterns in use at time weights were compiled.

Materials

Copper Alloys

CHEMICAL REQUIREMENTS (%) MECHANICAL PROPERTIES

	Copper	Tin	Lead	Iron	Nickel	Manganese	Aluminum	Zinc	Silicon	Other	Tensile Strength		Yield Strength		Elongation in 2" (50mm)
	Cu	Sn	Pb	Fe	Ni	Mn	Al	Zn	Si		ksi	MPa	ksi	MPa	(%)
STEAM OR VALVE BRONZE CASTINGS ASTM B61, C92200															
Min.	86.0	5.5	1.0					3.0			34	235	16	110	24
Max.	90.0	6.5	2.0	0.25	1.0		0.005	5.0	0.005	0.05*					
COMPOSITION BRONZE CASTINGS ASTM B62, C83600															
Min.	84.0	4.0	4.0					4.0			30	205	14	95	20
Max.	86.0	6.0	6.0	0.30	1.0		0.005	6.0	0.005	0.05*					
COPPER-ZINC SILICON ALLOY ROD ASTM B371, C69400															
Min.	80.0							remainder	3.5		80	550	40	250	15
Max.	83.0		0.30	0.20					4.5						
LEADED SEMI-RED BRASS ASTM B584, C84400															
Min.	78.0	2.3	6.0					7.0			29	200	13	90	18
Max.	82.0	3.5	8.0		1.0		0.005	10.0	0.005						
SILICONE BRASS CASTINGS ASTM B584, C87600															
Min.	88.0							4.0	3.5		60	414	30	207	16
Max.			0.50					7.0	5.5						
FREE CUTTING BRASS ROD/BAR ASTM B16, C36000, H02															
Min.	60.0		2.5					remainder			+	+	+	+	+
Max.	63.0		3.7	0.35						0.50**	+	+	+	+	+
NAVAL BRASS ROD ASTM B16, C48200, H02															
Min.	59.0	0.5	0.4					remainder			+	+	+	+	+
Max.	62.0	1.0	1.0	0.15						0.10***	+	+	+	+	+
ALUMINUM SILICONE BRONZE ROD ASTM B150, C64200															
Min.	87.5						6.3		1.5		+	+	+	+	+
Max.	92.5	0.20	0.05	0.30	0.25	0.10	7.6	0.50	2.2	0.50***	+	+	+	+	+
LEADED RED BRASS CONTINUOUS CASTINGS ASTM B505, C83600															
Min.	84.0	4.0	4.0					4.0			36	248	19	131	15
Max.	86.0	6.0	6.0	0.30	1.0		0.005	6.0	0.005						
BRASS PLATE/SHEET STRIP ASTM B36, C26000, H04															
Min.	68.5							remainder			71	489			
Max.	71.5		0.07	0.05							81	558			
BRASS WIRE ASTM B134, C26000, H02															
Min.	68.5							remainder			57	395			
Max.	71.5		0.07	0.05							67	460			
ALUMINUM SILICONE BRONZE FORGINGS ASTM B283, C64200															
Min.	88.7						6.3		1.5		+	+	+	+	+
Max.	90.1	0.20	0.05	0.30	0.25	0.10	7.6	0.50	2.2	0.15***	+	+	+	+	+
COPPER SILICON ALLOY ROD/BAR ASTM B98, C65100, H02															
Min.	96.0								0.80		55	379	20	138	11
Max.			0.05	0.08		0.7		1.5	2.00						
SEAMLESS COPPER WATER TUBE ASTM B88, C12200															
Min.	99.9										30	207			
Max.															

* Also may include maximum of 0.05% phosphorus.

** Maximum percent of elements permissible other than those indicated.

*** Also may include maximum of 0.15% arsenic.

+ Depends on diameter or thickness (surface to surface) of material: data on request.

Introduction to Ratings

- A) Ratings for Class 125, 150, 200 and 300 bronze valves are indicated on page 6 in this catalog:
- PSI Steam, Basic Rating; i.e., the nominal rated pressure of the valve.
 - PSI Cold Working Pressure; i.e., the maximum rated pressure of the valve at a temperature range of -20° to 150°F (-30° to 65°C).
- B) Ratings for Class 125 and 150 bronze valves equipped with non-metallic discs are indicated on the relevant catalog pages in this manner;
- PSI Saturated Steam; where "Saturated Steam" is the maximum rated pressure of the valve at the corresponding temperature of saturated steam.
 - PSI Cold Working Pressure; where "Cold Working Pressure" is the maximum rated pressure of the valve at a temperature range of -20°F to 150°F (-30°C to 65°C).

The full range of allowable pressures and temperatures for these valves is determined by referring to the pressure-temperature charts shown on page 6.

- C) Ratings for bronze valves falling outside Class 125, 150, 200 and 300 are indicated in various ways on the relevant catalog pages. The full range of allowable pressures and temperatures for these valves is determined by referring to the relevant catalog page.

General

All ratings represent the maximum allowable non-shock pressure at the indicated temperature. If the temperature is different from indicated, the allowable pressure may be interpolated.

Rating Temperature

The operating temperature of the valve is considered the temperature of the media flowing through it. This temperature must not exceed the maximum allowable temperature as stated in the pressure-temperature chart on page 6.

The safe pressure-temperature rating of a solder joint piping system is dependent, not only on valve, fitting and tubing strength but also on the composition of the solder used for joints. It shall be the responsibility of the user to select a solder composition that is compatible with the service conditions.

The safe pressure-temperature rating of valves fitted with non-metallic discs (some Globe, Angle Valves and Check Valves) is dependent upon the composition of the disc material. It shall be the responsibility of the user to specify the service application. PTFE discs are suitable for a maximum service temperature of 400°F (200°C), nitrile composition discs are suitable for a maximum service temperature of 200°F (90°C).

Adjusted Pressure/Temperature Ratings

Joints made of Copper Tube and Solder End Valves (pounds per square inch) Extracted from MSS SP-80

Solder used in joints	Service Temperature Degrees F	Water, including other noncorrosive liquids and gases			Saturated Steam (psig)
		Valve Sizes			Valves Sizes ¼" - 4"
		¼" - 1"	1 ¼" - 2"	2 ½" - 4"	
50-50 Tin-Lead (ASTM B-32, Alloy Grade 50-A)	100	200	175	150	-
	150	150	125	100	-
	200	100	90	75	-
	250	85	75	50	15
95-5 Tin-Antimony	100	500	400	300	-
	150	400	350	275	-
	200	300	250	200	-
	250	200	175	150	15

Bronze Valves Ratings

Pressure-Temperature Ratings

IMPERIAL UNITS						
Press. Class	125		150		200	300
End Conn.	THD	THD	FLG	THD	THD**	THD
Temp °F	PRESSURE – PSI NON-SHOCK					
	ASTM B-62			ASTM B-61		
-20 to 150	200	300	225	400	1000	600
200	185	270	210	375	920	560
250	170	240	195	350	830	525
300	155	210	180	325	740	490
350	140	180	165	300	650	450
400	–	–	–	275	560	410
406	125	150	150	–	–	–
450	120*	145*	–	250	480	375
500	–	–	–	225	390	340
550	–	–	–	200	300	300

METRIC UNITS						
Press. Class	125		150		200	300
End Conn.	THD	THD	FLG	THD	THD**	THD
Temp °C	PRESSURE – kPa NON-SHOCK					
	ASTM B-62			ASTM B-61		
-30 to 70	1380	2070	1550	2760	6890	4140
90	1280	1860	1450	2590	6340	3860
120	1170	1660	1340	2410	5720	3620
150	1070	1450	1240	2240	5100	3380
180	970	1240	1140	2070	4490	3100
200	–	–	–	1800	3860	2830
208	860	1030	1030	–	–	–
230	830*	1000*	–	1720	3310	2590
260	–	–	–	1550	2690	2340
290	–	–	–	1380	2070	2070

* Some codes (i.e. ASME BPVC, Section 1) limit the rating temperatures of the indicated material to 406°F (208°C).

** Alternative ratings for valve size 1/8" - 2" having threaded ends and union bonnet, when so indicated on the relevant catalogue pages.

Technical Data: Flow Data

The flow coefficient expresses flow rate in usg per minute of water at 60°F, with 1.0 psi pressure drop across the valve.

Bronze Gate Valves	1/8"	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"
All	–	8	8	16	36	60	90	140	270	470	680
Globe and Angle Valves											
17TF	–	1.6	3.1	5.1	9.2	16	28	39	66	–	–
382P	–	1.1	2.1	3.3	6.0	10	18	26	44	64	100
384P	–	1.5	3.0	4.9	9.0	15	27	38	64	–	–
1310	–	–	2.1	3.8	5.9	11	21	28	49	–	–
7TF, 14 1/2P, 212P	–	1.3	2.4	3.9	7.0	12	21	30	50	74	115
Check Valves											
29	–	1.3	2.5	4.1	7.6	13	23	31	54	78	125
27TF	–	0.9	1.8	3.0	5.4	9	16	22	39	–	–
366E	–	1.1	2.1	3.3	6.0	10	18	26	44	64	100
76E, 137, 1342, 141TF	–	2.3	4.3	7.2	13	22	39	56	92	135	215
Miscellaneous											
88, 89	0.3	0.6	1.1	1.9	3.4	–	–	–	–	–	–

Light Industrial Series

Quality and Performance in a Competitively Priced Bronze Line

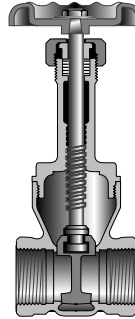
The line of Class 125 bronze valves is designed and priced to meet the needs of today's competitive business environment. This complete line of gate, globe and check valves conforms to the specifications set by the Manufacturers Standardization Society (MSS).*

Perfectly suited for many industrial applications, these valves are manufactured to exacting specifications and quality standards. Rigid quality control during and after manufacture is your assurance that you'll get a perfect valve every time.

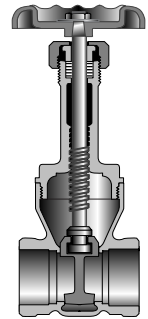
Engineered to the design and quality standards of the Manufacturers Standardization Society (MSS)

- Economically priced
- Uncompromising quality
- Distributor stocking to reduce your costs
- Application assistance from trained representatives
- Backed by product performance warranty

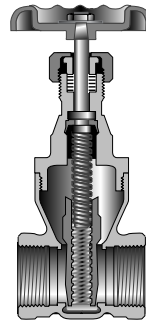
**All valves conform to MSS SP-80.
Thread ends conform to ASME B1.20.1
Solder joint ends conform to ASME B16.18.*



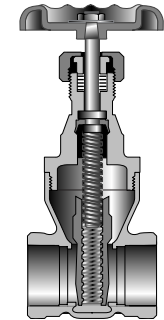
Rising Stem Gate
Threaded



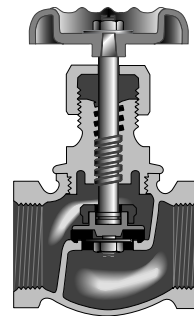
Rising Stem Gate
Solder End



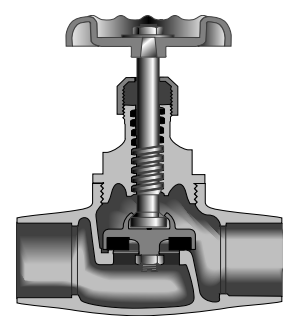
Non-Rising Stem Gate
Threaded



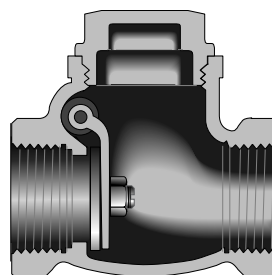
Non-Rising Stem Gate
Solder End



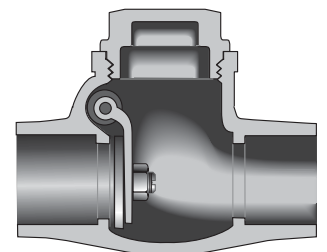
Globe, Screwed



Globe, Solder Joint



Check, Bronze Disc, Threaded



Check, Bronze Disc, Solder End

Figure 1702 1700 Series Bronze Globe Valve

Class 125 • Inside Screw • Rising Stem • PTFE Disc • Threaded Ends

Features

- Rising Stem
- Bronze Disc
- Threaded Ends
- Internal Bronze Seat
- MSS SP-80, Type 1

Figure 1702

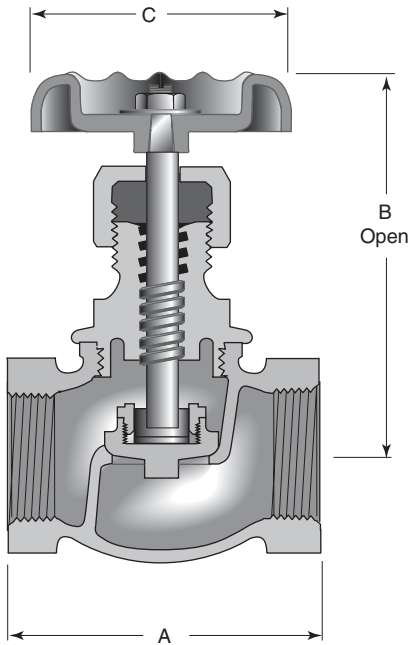
Size Range:

¼" through 2"

Working Pressures Non-Shock:

125 psi Steam, Basic Rating

200 psi Cold Working Pressure



Principal Parts & Materials

Part	Sizes	Material	ASTM
Body	All	Bronze	B62 alloy C83600
Bonnet	All	Bronze	B62 alloy C83600
Disc	All	Bronze	—
Stem	All	Bronze	B21 alloy C48200

Dimensions and Weights

Inches (millimeters) - pounds (kilograms)

	¼ (6)	⅜ (10)	½ (15)	¾ (20)	1 (25)	1 ¼ (32)	1 ½ (40)	2 (50)
A	1.85 (47)	1.85 (47)	2.28 (58)	2.83 (72)	3.46 (88)	4.02 (102)	4.57 (116)	5.35 (136)
B	2.87 (73)	2.87 (73)	3.62 (92)	4.25 (108)	4.65 (118)	5.24 (133)	6.06 (154)	6.54 (166)
C	2.13 (54)	2.13 (54)	2.40 (61)	3.03 (77)	3.03 (77)	3.70 (94)	4.72 (120)	5.28 (134)
WTS.	0.70 (0.32)	0.70 (0.32)	0.96 (0.43)	1.43 (0.65)	2.15 (0.98)	3.20 (1.45)	4.18 (1.90)	4.78 (2.17)

200 CWP • Inside Screw • Rising Stem • PTFE Disc • Solder Ends

Figure 1702S

Size Range:

3/8" through 2"

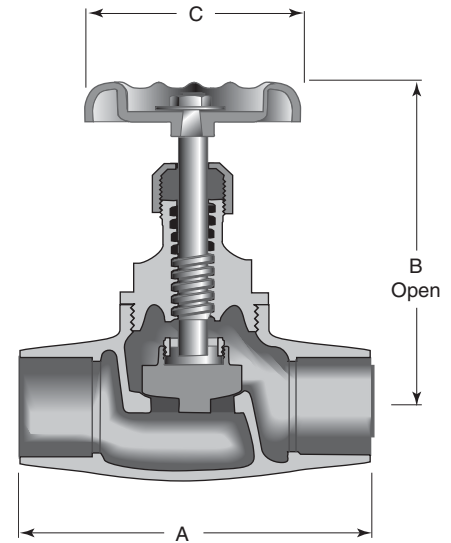
Working Pressures Non-Shock:

200 psi Cold Working Pressure

Features

- Recommended for 200 psi CWP
- Rising Stem
- Screwed Bonnet
- Solder Joint Ends
- Bronze Disc
- Internal Bronze Seat
- MSS SP-80, Type 2

Caution: Before installing solder joint valves, be sure solder or brazing alloy melting point is high enough to withstand line pressure/temperature conditions, and is compatible with fluid medium. See page 5 for adjusted pressure/temperature ratings.



Principal Parts & Materials

Part	Sizes	Material	ASTM
Body	All	Bronze	B62 alloy C83600
Bonnet	All	Bronze	B62 alloy C83600
Disc	All	Bronze	—
Stem	All	Bronze	B21 C48200

Dimensions and Weights

Inches (millimeters) - pounds (kilograms)

	3/8 (10)	1/2 (15)	3/4 (20)	1 (25)	1 1/4 (32)	1 1/2 (40)	2 (50)
A	2.56 (65)	2.83 (72)	3.62 (92)	4.25 (108)	5.04 (128)	5.75 (146)	6.93 (176)
B	2.87 (73)	3.62 (92)	4.25 (108)	4.65 (118)	5.24 (133)	6.06 (154)	6.54 (166)
C	2.13 (54)	2.40 (61)	3.03 (77)	3.03 (77)	3.70 (94)	4.72 (120)	5.28 (134)
WTS.	0.61 (0.28)	0.88 (0.40)	1.36 (0.62)	2.15 (0.98)	3.25 (1.48)	4.30 (1.95)	4.30 (1.95)

Figure 1703 1700 Series Bronze Globe Valve

Class 125 • Inside Screw • Rising Stem • Brass Disc • Threaded Ends

Features

- Recommended for 200 psi CWP
- Rising Stem
- Screwed Bonnet
- Threaded Ends
- PTFE Disc
- Internal Bronze Seat
- MSS SP-80, Type 2

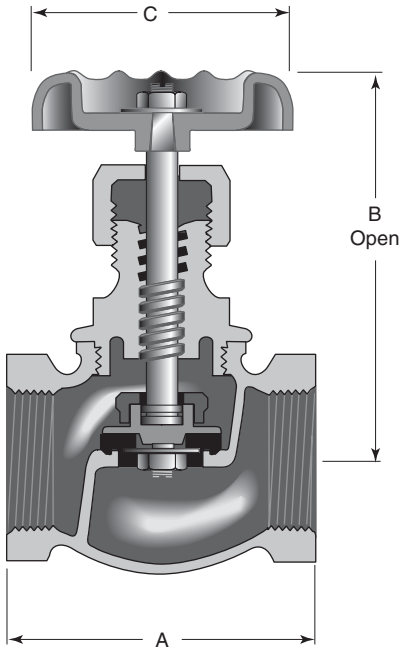
Figure 1703

Size Range:

¼" through 2"

Working Pressures Non-Shock:

200 psi Cold Working Pressure



Principal Parts & Materials

Part	Sizes	Material	ASTM
Body	All	Bronze	B62 alloy C83600
Bonnet	All	Bronze	B62 alloy C83600
Disc	All	PTFE	—
Stem	All	Bronze	B21 alloy C48200

Dimensions and Weights

Inches (millimeters) - pounds (kilograms)

	¼ (6)	⅜ (10)	½ (15)	¾ (20)	1 (25)	1 ¼ (32)	1 ½ (40)	2 (50)
A	1.85 (47)	1.85 (47)	2.28 (58)	2.83 (72)	3.46 (88)	4.02 (102)	4.57 (116)	5.35 (136)
B	2.87 (73)	2.87 (73)	3.62 (92)	4.25 (108)	4.65 (118)	5.24 (133)	6.06 (154)	6.54 (166)
C	2.13 (54)	2.13 (54)	2.40 (61)	3.03 (77)	3.03 (77)	3.70 (94)	4.72 (120)	5.28 (134)
WTS.	0.70 (0.32)	0.70 (0.32)	0.96 (0.43)	1.43 (0.65)	2.15 (0.98)	3.20 (1.45)	4.18 (1.90)	4.78 (2.17)

200 CWP • Inside Screw • Rising Stem • Brass Disc • Solder Ends

Figure 1703S

Size Range:

3/8" through 2"

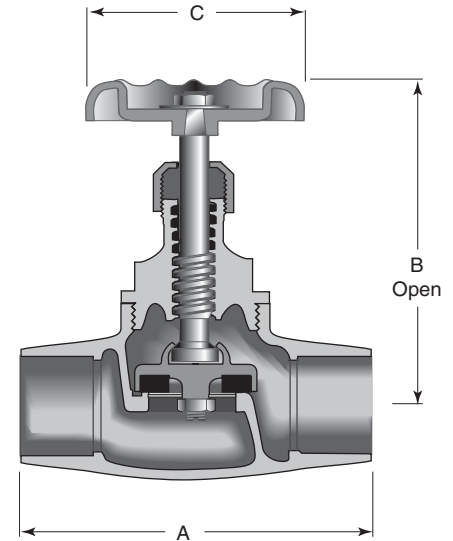
Working Pressures Non-Shock:

200 psi Cold Working Pressure

Features

- Recommended for 200 psi CWP
- Rising Stem
- Screwed Bonnet
- Solder Joint Ends
- PTFE Disc
- Internal Bronze Seat
- MSS SP-80, Type 2

Caution: Before installing solder joint valves, be sure solder or brazing alloy melting point is high enough to withstand line pressure/temperature conditions, and is compatible with fluid medium. See page 5 for adjusted pressure/temperature ratings.



Principal Parts & Materials

Part	Sizes	Material	ASTM
Body	All	Bronze	B62 alloy C83600
Bonnet	All	Bronze	B62 alloy C83600
Disc	All	PTFE	—
Stem	All	Bronze	B21 C48200

Dimensions and Weights

Inches (millimeters) - pounds (kilograms)

	3/8 (10)	1/2 (15)	3/4 (20)	1 (25)	1 1/4 (32)	1 1/2 (40)	2 (50)
A	2.56 (65)	2.83 (72)	3.62 (92)	4.25 (108)	5.04 (128)	5.75 (146)	6.93 (176)
B	2.87 (73)	3.62 (92)	4.25 (108)	4.65 (118)	5.24 (133)	6.06 (154)	6.54 (166)
C	2.13 (54)	2.40 (61)	3.03 (77)	3.03 (77)	3.70 (94)	4.72 (120)	5.28 (134)
WTS.	0.61 (0.28)	0.88 (0.40)	1.36 (0.62)	2.15 (0.98)	3.25 (1.48)	4.30 (1.95)	4.30 (1.95)

Bronze Globe and Angle Valve Features



Detailed Features

Globe and Angle Valves are highly efficient for regulating flow because disc and seat design provide flow characteristics with proportionate relationships between valve lift and flow rate. This assures accurate regulated flow control. The additional advantage of an angle valve is that it provides a 90° turn in piping so fewer joints are required and make-up time and labor are reduced.

Each valve in this section is classified by its pressure rating. All valves designated as Class 125, 150, 200 or 300 comply with MSS SP-80 Standard Practice.

Body is made of bronze conforming to requirements of ASTM B62 or B61 depending on valve pressure class. Like all parts, bodies are designed to withstand high internal pressures and line strains... and are proportioned to assure a high safety factor under recommended working pressures.

Body Seat Ring is made from high grade material especially selected to perform dependably in the services for which the valve is recommended.

Disc Stem Connection in all valves is designed to hold the disc securely while allowing it to rotate. The result is true, positive sealing with no damage to sealing surfaces.

Conventional Metal Disc has a relatively narrow contact with the body seal. It is recommended for a variety of general services but not for close throttling.

PTFE Disc has the same basic construction as the fully guided metal disc except that the disc is inserted in a disc holder. These pliable discs assure tight sealing and simplify valve maintenance. The PTFE disc is recommended for 150 psi saturated steam, 300 psi maximum non-shock cold water, oil, gas, and air.

Metal Plug Type Disc is conically shaped. This design is universally accepted for rigorous service. Because of the wide sealing surfaces, it is not easily harmed by foreign matter or wire drawing. Uses stainless steel in this design.

Stem is made from high grade materials especially selected to perform dependably in the services for which the valve is recommended.

Multiple Choice Seating are engineered for optimum performance on a wide range of services; renewable PTFE disc, regrind bronze seating, regrind and renewable plug type disc and seat ring in hardened 450 BHN, AISI 420 stainless steel. Hardened stainless steel discs and seat rings are performance proven. Needle or plug type seating provides graduated closure for throttling service. PTFE discs assure tight shut-off and are easy to change.

Cylindrical Shaped Body is the strongest and most successful design for withstanding internal pressures and line strains. The extra rigidity imparted by this shape prevents body distortion from line strain.

Large End Hexagons add additional body reinforcement and provide large surfaces for positive wrench grip.

Screwed Bonnet has generous optimum-sized hexagons for easy and positive wrench grip. For an easily remade and positively leak-tight joint, the flat bonnet seating face contacts a 5° inclined face of the body, providing high unit loading with relatively low torques.

Union Bonnet Where service conditions require, generous union bonnet rings facilitate frequent dismantling and reassembly of the bonnets and reinforce the bonnet joint to ensure a tight joint and maximum security under pressure.

Solder Joint Valves conform to ASME B16.18 specification for depth and diameter.

Heat Dispersing Handwheel Open rim, rounded multi-rib design provides a comfortable, positive grip. Handles are sized to provide adequate torque to operate the valve without the aid of levers, hickies or wrenches.

End Threads are precision cut in accordance to ASME B1.20.1.

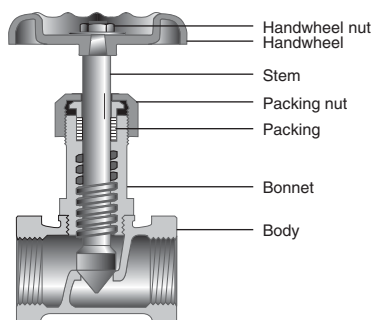
Strong Stem Threads are precision machined to ensure ease of operation and long service.

Bronze Globe and Angle valves have an identification plate which indicates the valve catalog number and the type of disc. Located under the handwheel nut, it permits easy and accurate field reference.

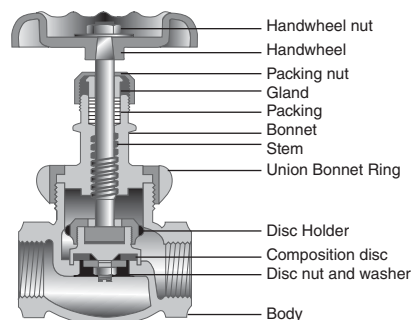
All valves are clearly identified and marked to MSS SP-25 specification.

For pressure-temperature ratings and values, see pages 5-6.

NEEDLE VALVE



GLOBE VALVE WITH PTFE DISC



GLOBE VALVE WITH METAL TYPE PLUG DISC

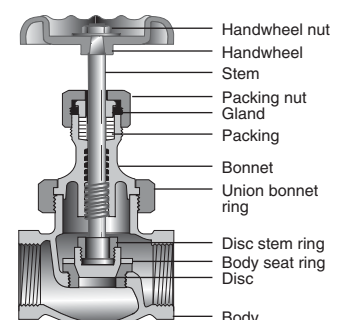


Figure 1 Bronze Globe Valve

Class 125 • Threaded Bonnet • Brass/Bronze Disc • Threaded Ends

Features

- Heavier and more rugged than is usual with Class 125 valves.
- Threaded Ends
- Integral Bronze Seat
- Back Seat
- MSS SP-80, Type 1

Figure 1

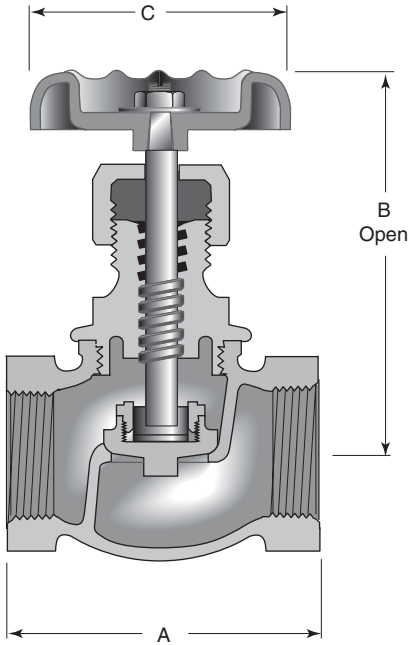
Size Range:

¼" through 2"

Working Pressures Non-Shock:

125 psi Steam, Basic Rating

200 psi Cold Working Pressure



Principal Parts & Materials

Part	Sizes	Material	ASTM
Body	All	Bronze	B62 alloy C83600
Bonnet	All	Bronze	B62 alloy C83600
Disc	All	Bronze	B61 alloy C92200
Stem	All	Bronze	B371 alloy C69400

Dimensions and Weights

Inches (millimeters) - pounds (kilograms)

	¼ (6)	½ (15)	¾ (20)	¾ (10)	1 (25)	1 ¼ (32)	1 ½ (40)	2 (50)
A	1.92 (49)	1.95 (50)	2.57 (65)	2.99 (76)	3.51 (89)	3.88 (99)	4.67 (119)	5.75 (146)
B	3.73 (95)	3.63 (92)	3.41 (87)	4.37 (111)	4.92 (125)	5.24 (133)	5.75 (146)	6.56 (167)
C	1.96 (50)	1.92 (49)	2.14 (54)	2.98 (76)	3.03 (77)	3.70 (94)	4.63 (118)	5.25 (133)
WTS.	0.70 (0.29)	0.60 (0.27)	1.10 (0.48)	2.00 (0.88)	2.80 (1.27)	4.20 (1.88)	6.30 (2.84)	9.80 (4.45)

Bronze Globe Valve Figure 5TF

Class 125 • Threaded Bonnet • PTFE Disc • Threaded Ends

Figure 5TF

Size Range:

3/8" through 2"

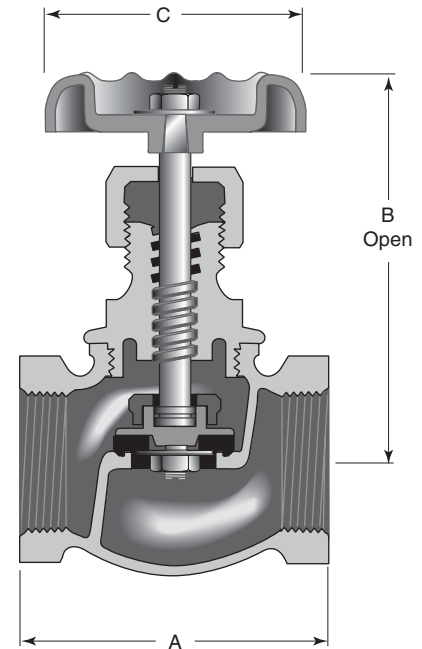
Working Pressures Non-Shock:

125 psi Steam, Basic Rating

200 psi Cold Working Pressure

Features

- PTFE Disc
- Threaded Ends
- Internal Bronze Seat
- Back Seat
- MSS SP-80, Type 2



Principal Parts & Materials

Part	Sizes	Material	ASTM
Body	All	Bronze	B62 alloy C83600
Bonnet	3/8" - 2"	Bronze	B62 alloy C83600
Disc Holder	3/8" - 3/4"	Brass	B16 H02
Disc Holder	1" - 2"	Bronze	B61 alloy 92200
Stem	All	Bronze	B371 alloy C69400
Disc	All	PTFE w/metal retainer	—

Dimensions and Weights

Inches (millimeters) - pounds (kilograms)

	3/8 (10)	1/2 (15)	3/4 (20)	1 (25)	1 1/4 (32)	1 1/2 (40)	2 (50)
A	2.99 (76)	1.94 (49)	2.57 (65)	3.51 (89)	3.88 (99)	4.67 (119)	5.75 (146)
B	4.55 (116)	3.66 (93)	3.55 (90)	5.01 (127)	5.10 (130)	6.05 (154)	6.74 (171)
C	2.98 (76)	1.96 (50)	2.14 (54)	3.03 (77)	3.70 (94)	4.63 (118)	5.24 (133)
WTS.	1.90 (0.86)	0.70 (0.32)	1.10 (0.48)	2.80 (1.25)	4.10 (1.86)	6.20 (2.79)	9.80 (4.45)

Figure 7TF Bronze Globe Valve

Class 150 • Union Bonnet • PTFE Disc • Threaded Ends

Features

- PTFE Disc
- Threaded Ends
- Valves 2" and smaller have union bonnet. Disc holder retains disc and slips on the stem. Sizes 2 ½" and 3" have bolted bonnet; disc holder is fastened by a disc stem ring.
- Back Seat
- Integral Bronze Seat
- MSS SP-80, Type 2

Figure 7TF

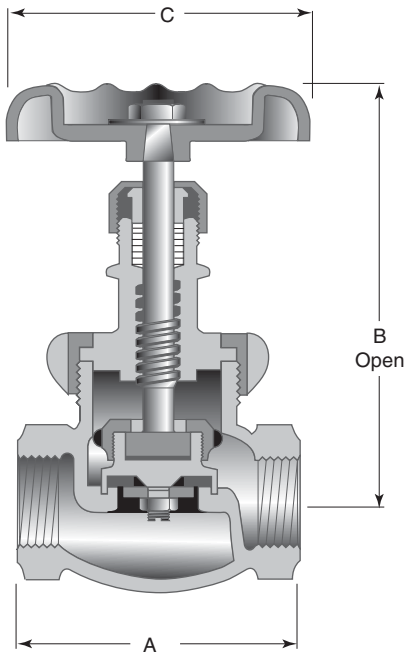
Size Range:

¼" through 3"

Working Pressures Non-Shock:

150 psi Steam, Basic Rating

300 psi Cold Working Pressure



Principal Parts & Materials

Part	Sizes	Material	ASTM
Body	All	Bronze	B62 alloy C83600
Bonnet	¼" - ¾"	Brass	B16 H02
Bonnet	½" - 3"	Bronze	B62 alloy C83600
Disc Holder	¼" - ½"	Brass	B16 H02
Disc Holder	¾" - 3"	Bronze	B62 alloy C83600
Stem	All	Bronze	B371 alloy C69400
Disc	All	PTFE	—

Dimensions and Weights

Inches (millimeters) - pounds (kilograms)

	¼ (6)	¾ (10)	½ (15)	¾ (20)	1 (25)	1 ¼ (32)	1 ½ (40)	2 (50)	2 ½ (65)	3 (80)
A	1.96 (50)	1.96 (50)	2.58 (66)	2.96 (75)	3.52 (89)	4.03 (102)	4.57 (116)	5.72 (145)	7.27 (185)	8.60 (218)
B	4.25 (108)	4.19 (106)	4.11 (104)	5.16 (131)	5.55 (141)	6.52 (166)	7.34 (186)	7.51 (191)	8.68 (220)	9.75 (248)
C	2.13 (54)	2.13 (54)	2.25 (57)	2.96 (75)	3.03 (77)	3.69 (94)	4.61 (117)	5.24 (133)	6.97 (177)	7.00 (178)
WTS.	0.80 (0.36)	0.80 (0.36)	1.30 (0.59)	2.20 (1.00)	3.20 (1.45)	4.90 (2.22)	7.20 (3.24)	11.50 (5.22)	24.90 (11.29)	40.60 (18.42)

300 CWP • Threaded Bonnet • PTFE Disc • Solder Ends

Figure 1310

Size Range:

3/8" through 2"

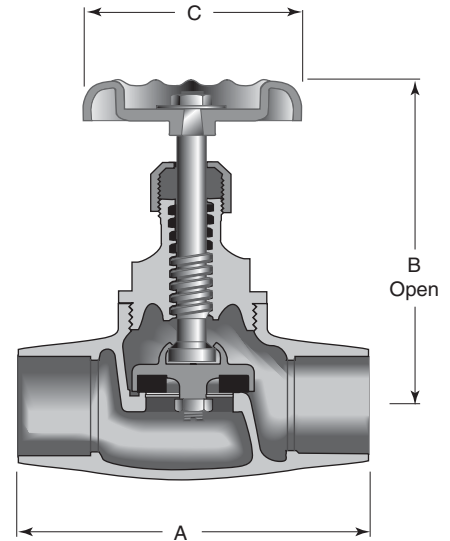
Working Pressures Non-Shock:

300 psi Cold Working Pressure

Features

- Screwed Bonnet
- Solder Joint Ends
- Integral Bronze Seat
- Back Seat
- PTFE Disc
- MSS SP-80, Type 2

Caution: Before installing solder joint valves, be sure solder or brazing alloy melting point is high enough to withstand line pressure/temperature conditions, and is compatible with fluid medium. See page 5 for adjusted pressure/temperature ratings.



Principal Parts & Materials

Part	Sizes	Material	ASTM
Body	All	Bronze	B62 alloy C83600
Bonnet	All	Bronze	B62 alloy C83600
Disc	All	PTFE w/metal retainer	—
Stem	All	Bronze	B371 alloy C69400

Dimensions and Weights

Inches (millimeters) - pounds (kilograms)

	3/8 (10)	1/2 (15)	3/4 (20)	1 (25)	1 1/4 (32)	1 1/2 (40)	2 (50)
A	2.73 (69)	2.73 (69)	3.52 (89)	4.26 (108)	4.70 (119)	5.51 (140)	6.97 (177)
B	4.28 (109)	3.53 (90)	4.55 (116)	5.02 (128)	5.19 (132)	6.22 (158)	6.77 (172)
C	2.13 (54)	2.25 (54)	2.97 (75)	3.04 (77)	3.70 (94)	4.60 (117)	5.24 (133)
WTS.	1.00 (0.45)	1.00 (0.45)	1.70 (0.77)	2.40 (1.09)	3.70 (1.68)	5.20 (2.36)	8.50 (3.86)

Figure 14¹/₂ P Bronze Globe Valve

Class 150 • Union Bonnet • Stainless Steel Disc & Seat Ring • Threaded Ends

Features

- Union Bonnet, 1/4"-2"
- Threaded Ends
- Bolted Bonnet, 2 1/2" and 3"
- Back Seat
- Stainless Steel Seat Ring
- MSS SP-80, Type 3

Figure 14¹/₂ P

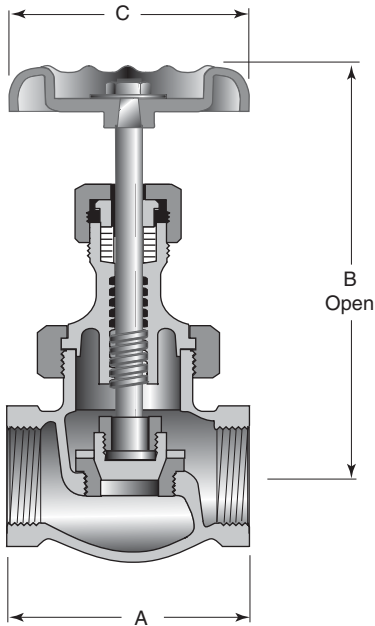
Size Range:

1/4" through 3"

Working Pressures Non-Shock:

150 psi Steam, Basic Rating

300 psi Cold Working Pressure



Principal Parts & Materials

Part	Sizes	Material	ASTM
Body	All	Bronze	B62 alloy C83600
Bonnet	1/4"-3/8"	Brass	B16 H02
Bonnet	1/2"-3"	Bronze	B62 alloy C83600
Disc and seat ring	All	Stainless Steel	A276 S42000
Stem	All	Bronze	B371 alloy C69400

Dimensions and Weights

Inches (millimeters) - pounds (kilograms)

	1/4 (6)	3/8 (10)	1/2 (15)	3/4 (20)	1 (25)	1 1/4 (32)	1 1/2 (40)	2 (50)	2 1/2 (65)	3 (80)
A	1.97 (50)	1.97 (50)	2.63 (67)	2.99 (76)	3.51 (89)	4.04 (103)	4.57 (116)	5.72 (145)	7.28 (185)	8.70 (221)
B	4.43 (113)	4.43 (113)	4.09 (104)	5.10 (130)	5.58 (142)	6.42 (163)	7.17 (182)	7.48 (190)	8.44 (214)	9.79 (249)
C	2.13 (54)	2.13 (54)	2.25 (57)	2.98 (76)	3.02 (77)	3.68 (93)	4.63 (118)	5.24 (133)	6.97 (177)	7.00 (178)
WTS.	0.90 (0.39)	0.90 (0.39)	1.30 (0.59)	2.20 (1.00)	3.20 (1.45)	4.80 (2.18)	7.10 (3.22)	11.50 (5.20)	25.10 (11.37)	40.50 (18.38)

Class 200 • Union Bonnet • Plug Type Disc • Threaded Ends

Figure 212P

Size Range:

¼" through 3"

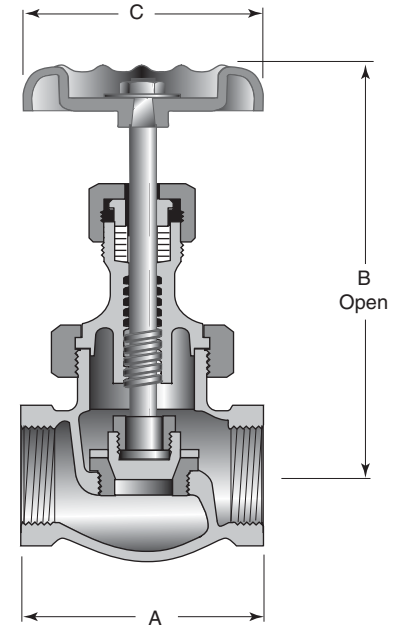
Working Pressures Non-Shock:

200 psi Steam, Basic Rating

400 psi Cold Working Pressure

Features

- Ideal for non-shock, severe service, such as throttling soot blower, blow-off boiler feed, and drip and drain lines
- Union Bonnet
- Tapered Plug Type Disc
- Stainless Steel Seat Ring
- Disc and Seat Ring are Renewable
- Back Seat
- MSS SP-80, Type 3



Principal Parts & Materials

Part	Material	ASTM
Body & bonnet	Bronze	B61 alloy C92200
Stem	Bronze	B371 alloy C69400
Disc & seat ring	Stainless Steel	A276 S42000

Dimensions and Weights

Inches (millimeters) - pounds (kilograms)

	¼ (6)	⅜ (10)	½ (15)	¾ (20)	1 (25)	1 ¼ (32)	1 ½ (40)	2 (50)	2 ½ (65)	3 (80)
A	1.97 (50)	1.97 (50)	2.63 (67)	2.99 (76)	3.51 (89)	4.04 (103)	4.57 (116)	5.72 (145)	7.28 (185)	8.70 (221)
B	4.43 (113)	4.43 (113)	4.09 (104)	5.10 (130)	5.58 (142)	6.42 (163)	7.17 (182)	7.48 (190)	8.44 (214)	9.79 (249)
C	2.13 (54)	2.13 (54)	2.50 (64)	2.98 (76)	3.02 (77)	3.68 (93)	4.63 (118)	5.24 (133)	6.97 (177)	7.00 (178)
WTS.	0.90 (0.39)	0.90 (0.39)	1.30 (0.59)	2.20 (1.00)	3.20 (1.45)	4.80 (2.18)	7.10 (3.22)	11.50 (5.20)	25.10 (11.37)	40.50 (18.38)

Figure 88 Bronze Globe Valve

Class 200 • Threaded Bonnet • Needle Type Disc • Threaded Ends

Features

- Rising Stem
- Threaded Ends
- Screwed Bonnet
- Integral Seat
- Graphite Packing
- MSS Specification SP-80

Figure 88

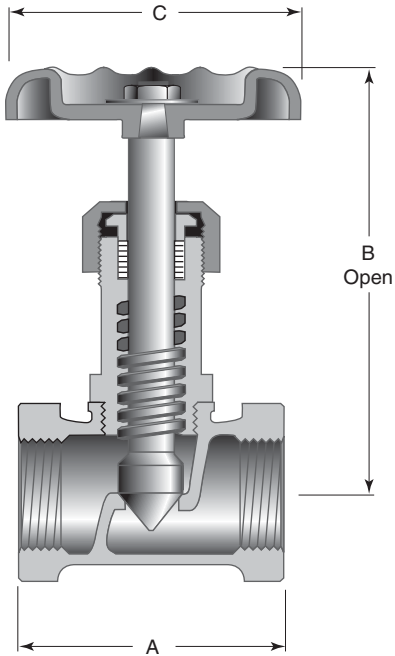
Size Range:

1/8" through 3/4"

Working Pressures Non-Shock:

200 psi Steam, Basic Rating

400 psi Cold Working Pressure



Principal Parts & Materials

Part	Size	Material	ASTM
Body	All	Bronze	B62 C83600
Bonnet	1/8"–3/8"	Bronze	B150 alloy C64200
Bonnet	1/2"–3/4"	Brass	B16 H02
Stem	All	Bronze	B150 alloy C64200

Dimensions and Weights

Inches (millimeters) - pounds (kilograms)

	1/8 (3)	1/4 (6)	3/8 (10)	1/2 (15)	3/4 (20)
A	1.16 (29)	1.53 (39)	1.78 (45)	2.03 (52)	2.28 (58)
B	2.94 (73)	2.88 (73)	3.06 (78)	3.56 (91)	4.12 (105)
C	1.75 (44)	1.75 (44)	1.75 (44)	2.06 (52)	2.56 (65)
WTS.	0.30 (0.14)	0.30 (0.14)	0.50 (0.22)	0.60 (0.27)	1.0 (0.45)

Class 300 • Union Bonnet • Plug Type Disc • Renewable Stainless Steel Seats

Figure 382P

Size Range:

¼" through 3"

Working Pressures Non-Shock:

300 psi Steam, Basic Rating

¼" to 2" - (6mm-50mm)

1000 psi Cold Working Pressure

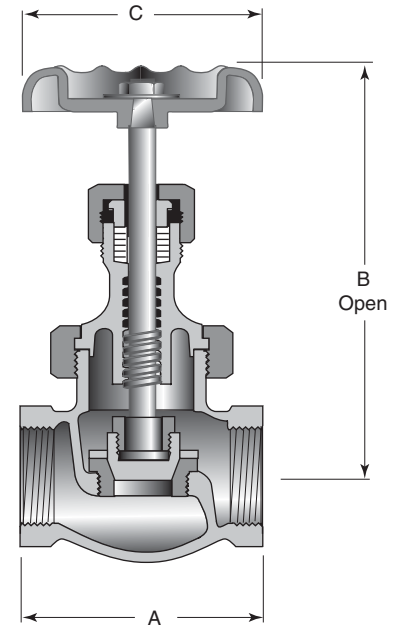
¼" to 2" - (6mm-50mm)

600 psi Cold Working Pressure

2 ½" to 3" - (65mm-80mm)

Features

- Ideal for non-shock, severe service, such as throttling soot blower, blow-off, boiler feed, and drip and drain lines
- Union Bonnet
- Threaded Ends
- Plug Type Disc
- Back Seat
- 450 Brinell hardened Stainless Steel Seat Ring
- Valves 2" (50mm) and smaller have compact union bonnet; 2 ½" (65mm) and 3" (80mm) use bolted bonnet.
- MSS Specification SP-80



Principal Parts & Materials

Part	Sizes	Material	ASTM
Body	All	Bronze	B61 C92200
Bonnet	¼" - ¾"	Brass	B16 H02
Bonnet	½" - 3"	Bronze	B61 C92200
Disc & seat ring	All	Stainless Steel	A276 S42000
Stem	All	Bronze	B371 C69400

Dimensions and Weights

Inches (millimeters) - pounds (kilograms)

	¼ (6)	⅜ (10)	½ (15)	¾ (20)	1 (25)	1 ¼ (32)	1 ½ (40)	2 (50)	2 ½ (65)	3 (80)
A	1.97 (50)	1.97 (50)	2.63 (67)	2.99 (76)	3.51 (89)	4.04 (103)	4.57 (116)	5.72 (145)	7.28 (185)	8.70 (221)
B	4.43 (102)	4.43 (102)	4.09 (97)	5.10 (119)	5.58 (131)	6.42 (146)	7.17 (162)	7.48 (172)	8.44 (192)	9.79 (220)
C	2.13 (54)	2.13 (54)	2.50 (64)	2.98 (76)	3.02 (77)	3.68 (93)	4.63 (118)	5.24 (133)	6.97 (177)	7.00 (178)
WTS.	0.90 (0.39)	0.90 (0.39)	1.30 (0.59)	2.20 (1.00)	3.20 (1.45)	4.80 (2.18)	7.10 (3.22)	11.50 (5.20)	25.10 (11.39)	40.50 (19.37)



KASKO DEMİRÇELİK MAKİNE VE İNŞAAT SANAYİ TİCARET LİMİTED ŞİRKETİ

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