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Energy Flow Solutions

# Jenkins Bronze Valves

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Jenkins also manufactures bronze ball valves, iron wafer and lug butterfly valves, and iron gate, globe, and check valves. Brochures and Catalogs are available on request.

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## General Data

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 Jenkins product.

This catalog presents some of these products, namely: Jenkins' 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

Jenkins 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 Jenkins 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 Jenkins Valves products as made from patterns in use at time weights were compiled.

## Jenkins 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	(%)
<b>STEAM OR VALVE BRONZE CASTINGS</b>											<b>ASTM B61, C92200</b>				
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*						
<b>COMPOSITION BRONZE CASTINGS</b>											<b>ASTM B62, C83600</b>				
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*						
<b>COPPER-ZINC SILICON ALLOY ROD</b>											<b>ASTM B371, C69400</b>				
Min.	80.0						remainder	3.5			80	550	40	250	15
Max.	83.0		0.30	0.20				4.5							
<b>LEADED SEMI-RED BRASS</b>											<b>ASTM B584, C84400</b>				
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							
<b>SILICONE BRASS CASTINGS</b>											<b>ASTM B584, C87600</b>				
Min.	88.0						4.0	3.5			60	414	30	207	16
Max.			0.50				7.0	5.5							
<b>FREE CUTTING BRASS ROD/BAR</b>											<b>ASTM B16, C36000, H02</b>				
Min.	60.0		2.5				remainder				+	+	+	+	+
Max.	63.0		3.7	0.35					0.50**		+	+	+	+	+
<b>NAVAL BRASS ROD</b>											<b>ASTM B16, C48200, H02</b>				
Min.	59.0	0.5	0.4				remainder				+	+	+	+	+
Max.	62.0	1.0	1.0	0.15					0.10**		+	+	+	+	+
<b>ALUMINUM SILICONE BRONZE ROD</b>											<b>ASTM B150, C64200</b>				
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***	+	+	+	+	+
<b>LEADED RED BRASS CONTINUOUS CASTINGS</b>											<b>ASTM B505, C83600</b>				
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							
<b>BRASS PLATE/SHEET STRIP</b>											<b>ASTM B36, C26000, H04</b>				
Min.	68.5						remainder				71	489			
Max.	71.5		0.07	0.05							81	558			
<b>BRASS WIRE</b>											<b>ASTM B134, C26000, H02</b>				
Min.	68.5						remainder				57	395			
Max.	71.5		0.07	0.05							67	460			
<b>ALUMINUM SILICONE BRONZE FORGINGS</b>											<b>ASTM B283, C64200</b>				
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***	+	+	+	+	+
<b>COPPER SILICON ALLOY ROD/BAR</b>											<b>ASTM B98, C65100, H02</b>				
Min.	96.0							0.80			55	379	20	138	11
Max.			0.05	0.08		0.7		1.5	2.00						
<b>SEAMLESS COPPER WATER TUBE</b>											<b>ASTM B88, C12200</b>				
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 7 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 7.

- 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 7.

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).

# Ratings: Bronze Valves



## 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 Catalog pages.

## Technical Data: Flow Data (Cv Values)

The flow coefficient Cv 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											
108BJ	–	1.6	3.1	5.1	9.2	16	28	39	66	–	–
592J	–	1.1	2.1	3.3	6.0	10	18	26	44	64	100
594J	–	1.5	3.0	4.9	9.0	15	27	38	64	–	–
106BPJ	–	–	2.1	3.8	5.9	11	21	28	49	–	–
106BJ, 2032J, 2050J, 101J, 105J	–	1.3	2.4	3.9	7.0	12	21	30	50	74	115
Check Valves											
119J	–	1.3	2.5	4.1	7.6	13	23	31	54	78	125
117ATJ	–	0.9	1.8	3.0	5.4	9	16	22	39	–	–
518AJ	–	1.1	2.1	3.3	6.0	10	18	26	44	64	100
4449J, 4962J, 4092J, 4093J, 4037J, 4475TJ, 4041TJ	–	2.3	4.3	7.2	13	22	39	56	92	135	215
Miscellaneous											
743J, 744J	0.3	0.6	1.1	1.9	3.4	–	–	–	–	–	–

## Bronze Gate Valve Features

Jenkins gate valves offer the ultimate in dependable service wherever minimum pressure drop is important. They serve as efficient stop valves with fluid flow in either direction. Gate valves are best for services that require infrequent valve operation and where the disc is kept either in the fully opened or fully closed position.

### FEATURES AND BENEFITS

The Jenkins gate valve design provides the following benefits to the user:

- Streamlined design has eliminated sharp body contours while providing maximum strength without added weight.
- Body design increases the resistance to shock and distortion.
- Body design reinforces seat against the wedging action to the disc.
- Wide-faced hexagon ends provide a firm wrench grip and help to prevent damage to the valve.

Other design features have been incorporated into our gate valves, making Jenkins one of the most trusted valve manufacturers in the myriad of industries we serve.

### BONNET OPTIONS

#### Screwed Bonnets

Screwed bonnets have optimum sized hexagons for easy and positive wrench grip. To ensure a leak tight joint and to provide high unit loading with minimal torque, the flat bonnet sealing face contacts on the 5 degree inclined face of the body.

#### Union Bonnets

Union bonnets are supplied with optimum sized hexagon shaped, high tensile bronze rings to provide a leak-tight joint for maximum security under pressure. It also simplifies inspection of the valve interior.

### STEM OPTIONS

#### Rising Stems

Rising stems provide positive indication of the disc position.

#### Non-Rising Stems

Valves provided with non-rising stems are ideal for applications where space is limited.

### WEDGE OPTIONS

#### Solid Wedge Discs

The single piece design is ideal for a variety of applications, particularly for conditions of severe turbulence. Discs are reversible in the body and machined to provide for smooth operation. Accurate guiding throughout its travel prevents disc-to-seat contact until the point of closure, thus minimizing seat wear.

#### Split Wedge Discs

The last turn of the handwheel in the closing operation presses the discs against the seats giving tight shutoff. Also assists for ease of opening. Caution: Double disc valves should be installed in an upright position, the stem being vertical.

### VALVE SEAT COMPONENTS

#### Back Seat

All Jenkins gate valves are provided with a back seat which can be used as an indication of valve position. For normal operation, the stem should be backed off so that the back seat is not in contact. This permits the stem packing to assume its intended sealing function. In the unlikely event of stem packing leakage, the back seat can be used to stop the leakage until the packing can be replaced. Packing replacement should not be undertaken while the valve is under pressure as it represents a safety hazard.

#### Stainless Steel Seat Rings

Stainless steel (AISI 410) seat rings provide high resistance to wear, temperature, galling and scoring. Normal seating wear is absorbed by the disc which can be easily replaced.

### END OPTIONS

#### Flanged Ends

Valves supplied with flanged ends conform to ASME B16.24 (Class 150). Flanges are plain faced with two V-Shaped concentric grooves between the port and bolt holes.

#### Threaded Ends

Valves supplied with threaded ends conform to ASME B1.20.1

#### Solder Joint Ends

Valves supplied with solder joint ends comply with ASME B16.18.

### PACKING

#### Packing

Graphite composition packing provides a tight seal.

### HEAT DISPENSING HANDWHEELS

#### Standard Handwheel

The open rim, multi-rib design provides easy manual operation. Handles are sized to provide adequate torque to operate the valve without the aid of levers, hickies or wrenches.

### MARKING

#### Identification Plate

Each valve is identified and marked in accordance with industry standard MSS SP-25. The identification plate is located under the handwheel nut permitting easy field reference.

### INDUSTRY STANDARDS AND APPROVALS

Depending on design, the following specifications and standard are also applicable to Jenkins gate valves. See individual catalogs for specific standard/specification compliance.

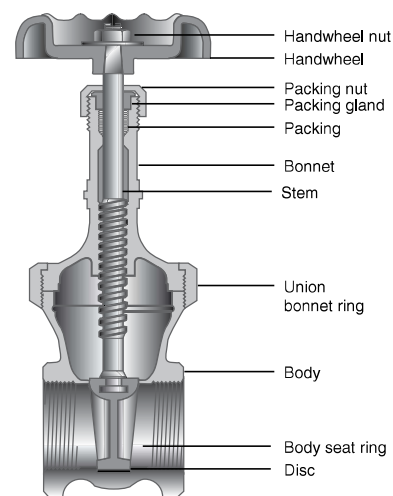
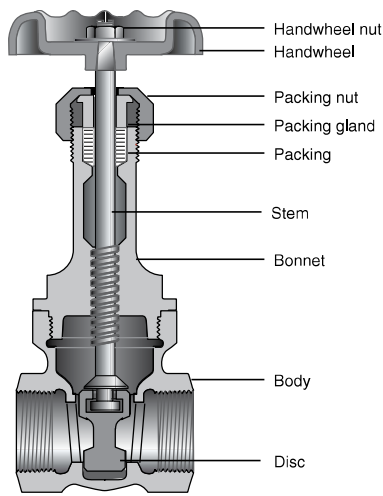
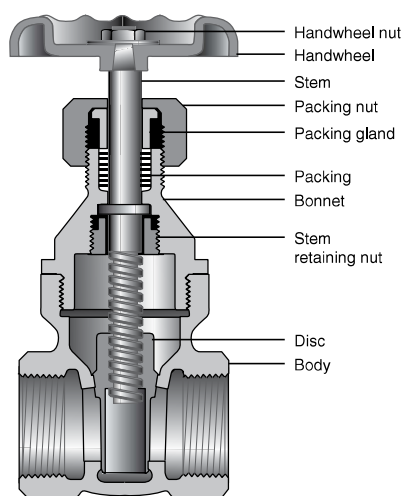
#### Design Specifications for Bronze Gate Valves

- MSS SP-80
- ASME B16.10, Class 125 for face-to-face dimensions
- ASME B16.24, Class 150 for flanged valves
- ASME B16.18 for solder joint ends

#### Approvals:

- ULC Listed

**CAUTION:** Gate valves are not recommended for throttling service since flow against a partially opened disc may cause vibration or chattering, resulting in damage to the seating surfaces of the valve.







Class 125 • Threaded Bonnet • Non-Rising Stem • Threaded Ends

Features

- Non-Rising Stem
- Screwed Bonnet
- Solid Wedge Disc
- Threaded Ends
- Full Ports
- Back Seat
- Integral Bronze Seat
- Recommended for WOG
- MSS Specification SP-80

For more detailed features, refer to Page 8.

Figure 310J

Size Range:

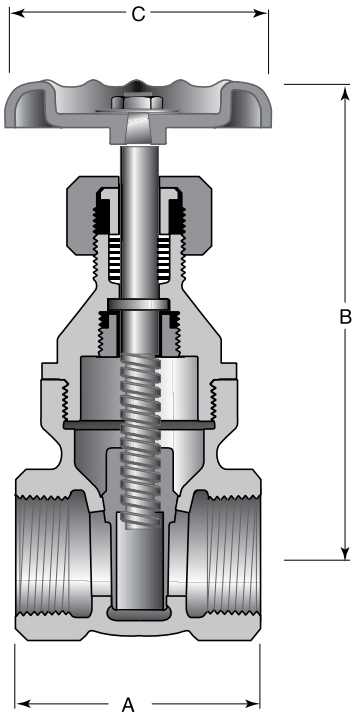
¼ through 3 inches

Working Pressures

Non-Shock:

125 psi Steam, Basic Rating

200 psi Cold Working Pressure



Principal Parts & Materials

Part	Material	ASTM
Body & bonnet	Bronze	B62 alloy C83600
Disc	Bronze	B62 alloy C83600
Stem	Bronze	B371 alloy C69400

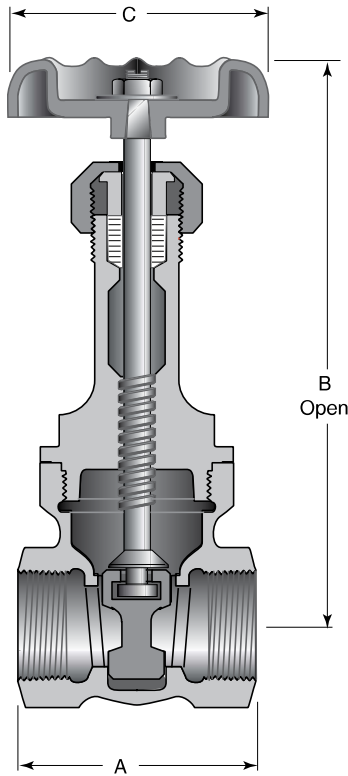
Dimensions and Weights

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	1.65 (42)	1.65 (42)	2.10 (53)	2.14 (54)	2.47 (63)	3.08 (78)	3.21 (82)	3.39 (86)	4.25 (109)	4.59 (117)
B	2.95 (75)	2.95 (75)	3.92 (100)	4.50 (114)	5.08 (129)	5.86 (149)	6.75 (171)	7.81 (198)	9.26 (235)	9.89 (251)
C	2.56 (65)	2.56 (65)	2.13 (54)	2.71 (69)	3.03 (77)	3.03 (77)	3.72 (94)	4.72 (120)	5.28 (134)	5.28 (134)
WTS.	0.5 (0.22)	0.5 (0.22)	1.0 (0.45)	1.5 (0.68)	2.5 (1.13)	3.6 (1.63)	4.5 (2.03)	7.6 (3.43)	12.4 (5.60)	17.4 (7.86)



## Class 125 • Threaded Bonnet • Rising Stem • Threaded Ends



### Figure 810J

#### Size Range:

¼ through 3 inches

#### Working Pressures

##### Non-Shock:

125 psi Steam, Basic Rating

200 psi Cold Working Pressure

### Features

- Rising Stem
- Screwed Bonnet
- Solid Wedge Disc
- Threaded Ends
- Full Ports
- Back Seat
- Integral Bronze Seat
- Recommended for WOG
- MSS Specification SP-80

For more detailed features, refer to Page 8.

### Principal Parts & Materials

Part	Material	ASTM
Body & bonnet	Bronze	B62 alloy C83600
Disc	Bronze	B62 alloy C83600
Stem	Bronze	B371 alloy 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	1.65 (42)	1.65 (42)	2.10 (53)	2.14 (54)	2.47 (63)	3.08 (78)	3.21 (82)	3.39 (86)	4.25 (108)	4.59 (117)
B	4.92 (125)	4.92 (125)	5.48 (139)	6.68 (170)	7.81 (199)	9.26 (235)	10.26 (261)	12.36 (313)	14.53 (369)	16.39 (416)
C	2.13 (54)	2.13 (54)	2.13 (54)	2.71 (69)	3.03 (77)	3.03 (77)	3.72 (94)	4.72 (120)	5.28 (134)	5.28 (134)
WTS.	0.5 (0.22)	0.5 (0.22)	1.10 (0.50)	1.70 (0.77)	2.70 (1.22)	3.80 (1.72)	4.90 (2.21)	7.90 (3.57)	12.70 (5.74)	18.80 (8.49)



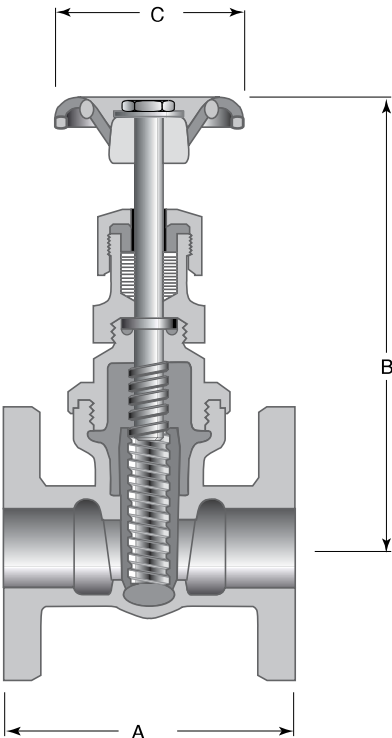
Class 150 • Threaded Bonnet • Non-Rising Stem • Flanged Ends

- Features
- Non-Rising Stem
  - Screwed Bonnet
  - Solid Wedge Disc
  - Flanged Ends are plain faced with two V-shaped concentric grooves between the port and bolt holes.
  - Full Ports
  - Back Seat
  - Integral Bronze Seat
  - Recommended for WOG
  - MSS Specification SP-80

For more detailed features, refer to Page 8.

Figure 2429J  
Size Range:  
1 through 3 inches

Working Pressures  
Non-Shock:  
150 psi Steam, Basic Rating  
225 psi Cold Working Pressure



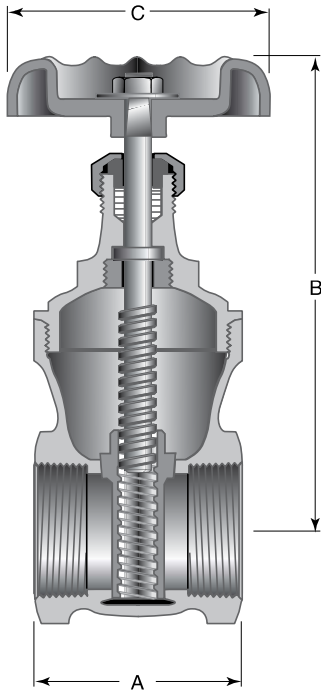
Principal Parts & Materials

Part	Material	ASTM
Body	Bronze	B62 alloy 83600
Bonnet	Bronze	B62 alloy 83600
Disc	Bronze	B62 alloy 83600
Stem	Bronze	B62 alloy 83600

Dimensions and Weights  
Inches (millimeters) - pounds (kilograms)

	1 (25)	1 ¼ (32)	1 ½ (40)	2 (50)	2 ½ (65)	3 (80)
A	3.94 (100)	4.33 (110)	4.72 (120)	5.32 (135)	6.50 (165)	7.28 (185)
B	4.88 (124)	5.71 (145)	6.50 (165)	7.44 (189)	9.19 (233)	10.38 (264)
C	2.56 (66)	2.75 (70)	3.06 (78)	3.62 (92)	4.06 (103)	4.75 (121)
WTS.	5.7 (2.6)	6.3 (2.85)	9.00 (4.06)	12.20 (5.51)	18.50 (8.36)	25.50 (11.52)

## Class 150 • Threaded Bonnet • Non Rising Stem • Threaded Ends



**Figure 2310J**

**Size Range:**

¼ through 3 inches

**Working Pressures**

**Non-Shock:**

150 psi Steam, Basic Rating

300 psi Cold Working Pressure

**Features**

- Non-Rising Stem
- Screwed Bonnet
- Solid Wedge Disc
- Threaded Ends
- Full Ports
- Back Seat
- Integral Bronze Seat
- Recommended for WOG
- MSS Specification SP-80

For more detailed features, refer to Page 8.

## Principal Parts & Materials

Part	Material	ASTM
Body & bonnet	Bronze	B62 alloy C83600
Disc	Bronze	B62 alloy C83600
Stem	Bronze	B371 alloy 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	1.64 (42)	1.64 (42)	2.10 (53)	2.14 (54)	2.47 (63)	3.08 (78)	3.21 (82)	3.39 (86)	4.25 (108)	4.59 (117)
B	3.52 (84)	3.52 (89)	3.92 (100)	4.50 (114)	5.08 (129)	5.86 (149)	6.75 (171)	7.81 (198)	9.26 (235)	9.89 (251)
C	1.75 (44)	1.75 (44)	2.13 (54)	2.71 (69)	3.03 (77)	3.03 (77)	3.72 (94)	4.72 (120)	5.28 (134)	5.28 (134)
WTS.	0.70 (0.31)	0.70 (0.31)	1.00 (0.44)	1.50 (0.68)	2.50 (1.13)	3.60 (1.63)	4.60 (2.08)	7.60 (3.43)	12.40 (5.69)	17.40 (7.86)

### Class 150 • Union Bonnet • Rising Stem • Threaded Ends

#### Features

- Rising Stem
- Union Bonnet
- Solid Wedge Disc
- Non-Asbestos Composition Packing
- Threaded Ends
- Full Ports
- Back Seat
- Integral Bronze Seat
- Recommended for WOG
- MSS Specification SP-80

For more detailed features, refer to Page 8.

#### Figure 47CUJ

##### Size Range:

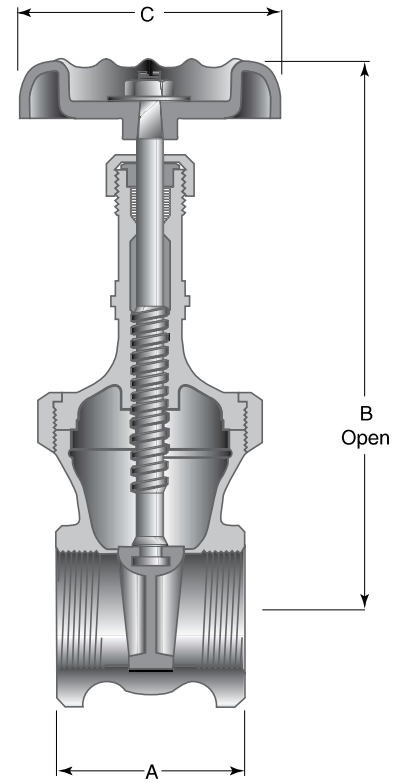
¼ through 3 inches

##### Working Pressures

##### Non-Shock:

150 psi Steam, Basic Rating

300 Cold Working Pressure



#### Principal Parts & Materials

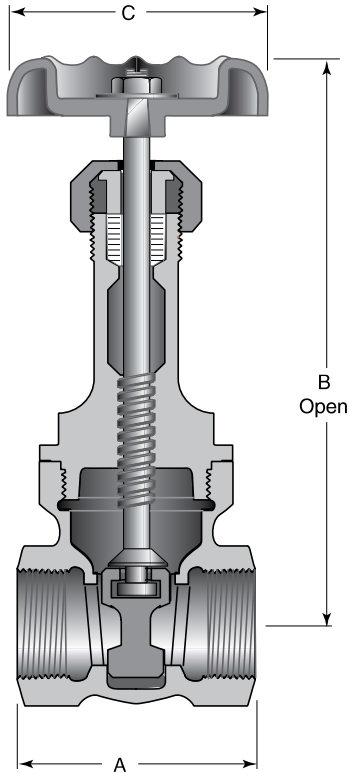
Part	Material	ASTM
Body & bonnet	Bronze	B62 alloy C83600
Disc	Bronze	B62 alloy C83600
Stem	Bronze	B371 alloy C69400

#### 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	1.64 (42)	1.64 (42)	2.10 (53)	2.14 (54)	2.47 (63)	3.08 (78)	3.21 (82)	3.39 (86)	4.25 (108)	4.59 (117)
B	4.77 (121)	4.77 (121)	5.48 (139)	6.68 (170)	7.81 (198)	9.26 (235)	10.26 (261)	12.36 (314)	14.53 (369)	16.39 (416)
C	1.75 (44)	1.75 (44)	2.13 (54)	2.71 (69)	3.03 (77)	3.03 (77)	3.72 (94)	4.72 (120)	5.28 (134)	5.28 (134)
WTS.	0.70 (0.31)	0.80 (0.36)	1.20 (0.54)	1.80 (0.81)	3.00 (1.36)	4.00 (1.81)	5.30 (2.39)	8.70 (3.93)	13.10 (5.92)	20.10 (7.08)

## Class 150 • Threaded Bonnet • Rising Stem • Threaded Ends



**Figure 2810J**  
**Solid Wedge Disc**  
**Size Range:**

¼ through 3 inches

**Working Pressures**

**Non-Shock:**

150 psi Steam, Basic Rating

300 psi Cold Working Pressure

**Features**

- Rising Stem
- Screwed Bonnet
- Threaded Ends
- Full Ports
- Back Seat
- Integral Bronze Seat
- Recommended for WOG
- MSS Specification SP-80

For more detailed features, refer to Page 8.

### Principal Parts & Materials

Part	Material	ASTM
Body & bonnet	Bronze	B62 alloy C83600
Disc	Bronze	B62 alloy C83600
Stem	Bronze	B371 alloy 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	1.64 (42)	1.64 (42)	2.10 (53)	2.14 (54)	2.47 (63)	3.08 (78)	3.21 (82)	3.39 (86)	4.25 (108)	4.59 (117)
B	4.77 (121)	4.77 (121)	5.48 (139)	6.68 (170)	7.81 (198)	9.26 (235)	10.26 (261)	12.36 (314)	14.53 (369)	16.39 (416)
C	1.75 (44)	1.75 (44)	2.13 (54)	2.71 (69)	3.03 (77)	3.03 (77)	3.72 (94)	4.72 (120)	5.28 (134)	5.28 (134)
WTS.	0.80 (0.36)	0.80 (0.36)	1.10 (0.50)	1.70 (0.77)	2.70 (1.22)	3.80 (1.72)	4.90 (2.21)	7.90 (3.57)	12.70 (5.62)	18.80 (8.49)



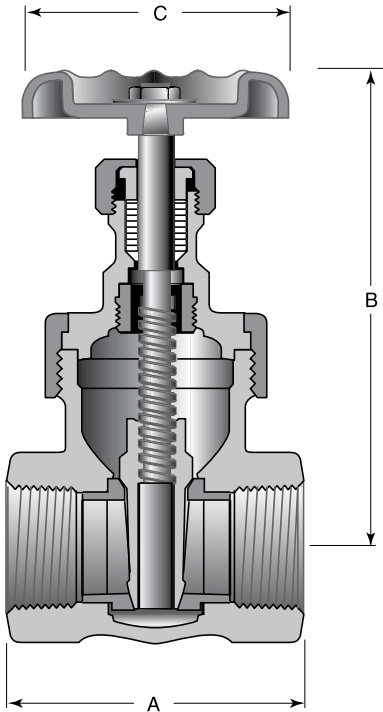
Class 200 • Union Bonnet • Non-Rising Stem • Stainless Steel Seats

- Features
- Non-Rising Stem
  - Union Bonnet
  - Threaded Ends
  - Solid Wedge Disc
  - Full Ports
  - Back Seat
  - Stainless Steel Seat Ring
  - Recommended for WOG
  - MSS Specification SP-80

For more detailed features, refer to Page 8.

Figure 2272J  
Size Range:  
¼ through 2 inches

Working Pressures  
Non-Shock:  
200 psi Steam, Basic Rating  
400 psi Cold Working Pressure



Principal Parts & Materials

Part	Material	ASTM
Body & bonnet	Bronze	B61 alloy C92200
Disc	Bronze	B61 alloy C92200
Stem	Bronze	B371 alloy 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)
A	2.03 (52)	2.13 (54)	2.42 (61)	2.61 (66)	3.06 (78)	3.35 (85)	3.69 (94)	3.96 (101)
B	3.60 (91)	3.51 (89)	4.07 (103)	4.81 (122)	5.26 (134)	6.18 (157)	7.05 (179)	7.93 (201)
C	2.05 (52)	2.13 (54)	2.44 (62)	2.71 (69)	3.03 (77)	3.03 (77)	3.72 (94)	4.72 (120)
WTS.	0.90 (0.41)	0.90 (0.41)	1.40 (0.63)	1.80 (0.81)	3.16 (1.40)	4.90 (2.66)	5.90 (2.66)	10.10 (4.55)

## Class 200 • Union Bonnet • Rising Stem • Stainless Steel Seats • Threaded

### Figure 2270UJ

#### Size Range:

¼ through 3 inches

#### Working Pressures

##### Non-Shock:

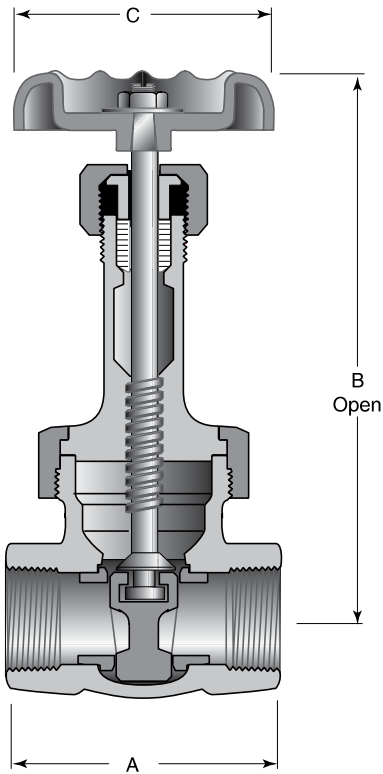
200 psi Steam, Basic Rating

400 psi Cold Working Pressure

### Features

- Rising Stem
- Union Bonnet
- Bolted Bonnet, 2 ½" and 3"
- Solid Wedge Disc
- Threaded Ends
- Full Ports
- Back Seat
- Stainless Steel Seat Rings
- Recommended for WOG
- MSS Specification SP-80

For more detailed features, refer to Page 8.



### Principal Parts & Dimensions

Part	Material	ASTM
Body & bonnet	Bronze	B61 alloy C92200
Disc	Bronze	B61 alloy C92200
Seat ring	Stainless Steel	A276 S41000
Stem	Bronze	B371 alloy 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	2.03 (52)	2.13 (54)	2.42 (61)	2.61 (66)	3.06 (78)	3.35 (85)	3.69 (94)	3.96 (101)	4.60 (117)	5.63 (143)
B	4.86 (123)	4.86 (123)	5.40 (137)	6.60 (168)	7.91 (201)	9.32 (237)	10.45 (265)	13.38 (340)	14.12 (359)	16.78 (426)
C	2.13 (54)	2.13 (54)	2.44 (62)	2.71 (69)	3.03 (77)	3.03 (77)	3.72 (94)	4.72 (120)	5.28 (134)	7.00 (179)
WTS.	0.90 (0.41)	0.90 (0.41)	1.50 (0.68)	2.10 (0.95)	3.30 (1.49)	5.10 (2.30)	6.10 (2.75)	10.40 (4.68)	23.50 (10.61)	36.00 (16.26)





Class 300 • Union Bonnet • Non-Rising Stem • Stainless Steel Seats

- Features
- Non-Rising Stem
  - Union Bonnet
  - Solid Wedge Disc
  - Threaded Ends
  - Full Ports
  - Back Seat
  - Recommended for WOG
  - Stainless Steel Seat Rings
  - MSS Specification SP-80

For more detailed features, refer to Page 8.

Figure 2282J

Size Range:

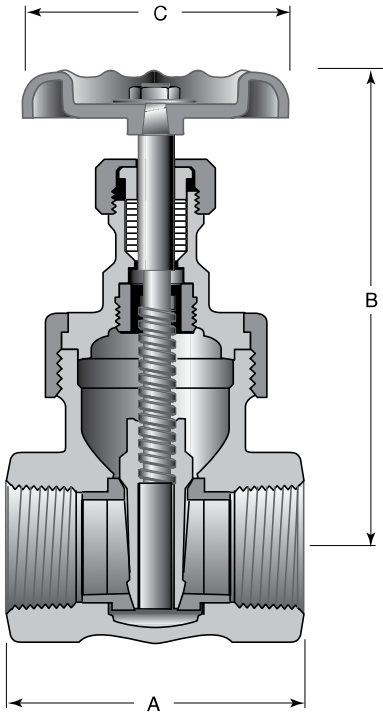
¼ through 2 inches

Working Pressures

Non-Shock:

300 psi Steam, Basic Rating

1000 psi Cold Working Pressure



Principal Parts & Materials

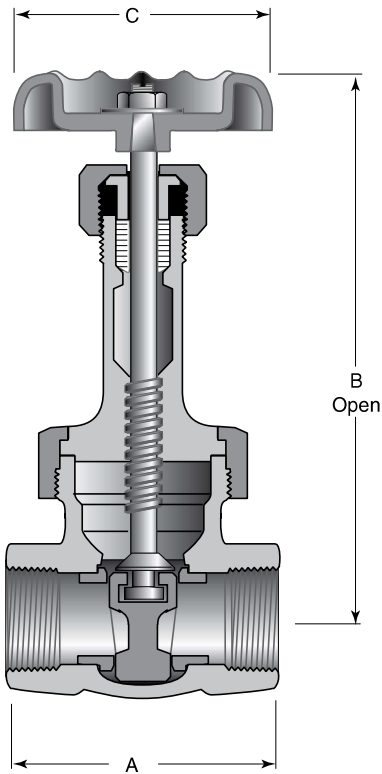
Part	Material	ASTM
Body & bonnet	Bronze	B61 alloy C92200
Disc	Bronze	B61 alloy C92200
Seat ring	Stainless Steel	A276 S41000
Stem	Bronze	B371 alloy C69400

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)
A	2.03 (52)	2.13 (54)	2.42 (61)	2.61 (66)	3.06 (78)	3.35 (85)	3.69 (94)	3.96 (101)
B	3.70 (94)	3.70 (94)	4.07 (103)	4.81 (122)	5.26 (134)	6.18 (157)	7.05 (179)	7.93 (201)
C	2.13 (54)	2.13 (54)	2.44 (62)	2.71 (69)	3.03 (77)	3.03 (77)	3.72 (94)	4.72 (120)
WTS.	0.80 (0.36)	0.90 (0.41)	1.40 (0.63)	1.80 (0.81)	3.10 (1.40)	4.70 (2.12)	5.90 (2.67)	10.30 (4.65)

## Class 300 • Union Bonnet • Rising Stem • Stainless Steel Seats • Threaded



### Figure 2280UJ

#### Size Range:

¼ through 3 inches

#### Working Pressures

##### Non-Shock:

300 psi Steam, Basic Rating

1000 psi Cold Working Pressure

¼" to 2" - (6mm - 50mm)

600 psi Cold Working Pressure

2 ½" to 3" - (65mm-80mm)

### Features

- Rising Stem
- Union Bonnet
- Bolted Bonnet, 2 ½" - 3"
- Solid Wedge Disc
- Threaded Ends
- Full Ports
- Back Seat
- Stainless Steel Seat Rings
- Recommended for WOG
- MSS Specification SP-80

For more detailed features, refer to Page 8.

### Principal Parts & Materials

Part	Sizes	Material	ASTM
Body & bonnet	All	Bronze	B61 alloy C92200
Disc	All	Bronze	B61 alloy C92200
Seat ring	All	Stainless Steel	A276 S41000
Stem	All	Bronze	B371 alloy 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	2.03 (52)	2.13 (54)	2.42 (61)	2.61 (86)	3.06 (78)	3.35 (65)	3.69 (94)	3.96 (101)	4.60 (117)	5.63 (143)
B	4.86 (123)	4.86 (123)	5.40 (137)	6.60 (168)	7.91 (201)	9.32 (237)	10.45 (265)	13.38 (340)	14.12 (359)	16.78 (426)
C	2.13 (54)	2.13 (54)	2.44 (62)	2.71 (69)	3.03 (77)	3.03 (77)	3.72 (95)	4.72 (120)	5.28 (134)	7.00 (178)
WTS.	0.90 (0.41)	0.90 (0.41)	1.40 (0.63)	2.10 (0.95)	3.30 (1.49)	4.80 (2.17)	6.10 (2.76)	10.40 (4.69)	20.50 (9.31)	44.00 (19.98)

### 300 CWP • Threaded Bonnet • Non-Rising Stem • Solder Ends

#### Features

- Non-Rising Stem
- Screwed Bonnet
- Solid Wedge Disc
- Solder Joint Ends
- Full Ports
- Back Seat
- Integral Bronze Seat
- Soldered Connections
- MSS Specification SP-80

For more detailed features, refer to Page 8.

**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.

#### Figure 313J

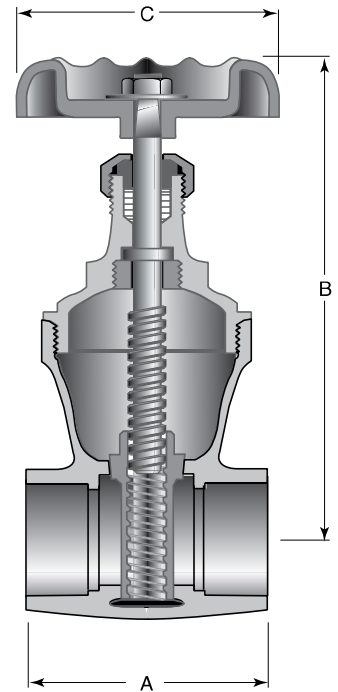
##### Size Range:

½ through 3 inches

##### Working Pressures

##### Non-Shock:

300 psi Cold Working Pressure



#### Principal Parts & Materials

Part	Material	ASTM
Body & bonnet	Bronze	B62 alloy C83600
Disc	Bronze	B62 alloy C83600
Stem	Bronze	B371 alloy C69400

#### Dimensions and Weights

Inches (millimeters) - pounds (kilograms)

	½ (15)	¾ (20)	1 (25)	1 ¼ (32)	1 ½ (40)	2 (50)	2 ½ (65)	3 (80)
A	1.81 (46)	2.44 (62)	2.90 (74)	3.19 (81)	3.68 (93)	4.40 (112)	4.91 (125)	5.97 (152)
B	3.92 (100)	4.50 (114)	5.11 (130)	5.86 (149)	6.75 (171)	7.81 (198)	9.26 (235)	9.89 (251)
C	2.13 (54)	2.71 (69)	3.03 (77)	3.03 (77)	3.72 (94)	4.72 (120)	5.28 (134)	5.28 (134)
WTS.	0.90 (0.41)	1.50 (0.68)	2.60 (1.18)	3.00 (1.36)	4.40 (2.00)	7.30 (3.30)	11.50 (5.19)	16.30 (7.36)