

CRANE[®]

Energy Flow Solutions

Jenkins Iron Valves

SINCE

1864

JENKINS



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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 industrial iron 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 Working 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, or shock, 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 closing 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 of 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 in pressure due to shock.

Testing

Iron valves described in this section meet or exceed the MSS SP-82, MSS SP-70, MSS SP-71 and MSS SP-85 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.

Metrication

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

Illustrations, Weights and Material & Designs

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

Iron Alloys

Cast Iron

Used primarily for valve pressure retaining parts.
Recommended to 450 °F (232 °C).

ASTM A126, Class B

Chemical Requirements

	Minimum	Maximum
Sulphur	–	0.15
Phosphorus	–	0.75

Tensile Requirements

	Minimum	Maximum
Tensile Strength, psi	31,000	–
Transverse Strength, lbs.	3,300	–
Deflection @ Center, in.		

NI-Resist Iron

A copper-free alloy used where physical properties of cast iron suffice but where greater corrosion resistance is required. Castings are marked “2NR.”

Ni-Resist is a registered trademark of the International Nickel Company, Inc.

ASTM A436, Type 2

Chemical Requirements

	Minimum	Maximum
Carbon	–	3.00
Manganese	0.50	1.50
Sulphur	–	0.12
Silicon	1.00	2.80
Chromium	1.50	2.50
Nickel	18.00	22.00
Copper	–	0.50
Iron	remainder	

Tensile Requirements

	Minimum	Maximum
Tensile Strength, psi	25,000	–
Brinell Hardness (3000 Kg)	118	174

Malleable Iron

Used for valves subjected to expansion and contraction stresses and shock.

ASTM A338. Supplementary: ASTM A47, Grade 32510

Tensile Requirements

	Minimum	Maximum
Tensile Strength, psi	50,000	–
Yield Point, psi	32,500	–
elongation in 2 inches, %	10	–

Introduction to Rating

The pressure-temperature ratings shown below apply to class 125 and 250 iron valves covered in this catalog.

A. Ratings for Class 125 and 250 iron valves are indicated on the relevant catalog page in this manner:

...PSI Steam, Basic Rating: i.e.: is the nominal steam rated pressure of the valve.

...Cold Working Pressure: where "Cold Working Pressure" is the maximum rated pressure of the valve at a temperature up to 150 °F (65 °C).

The full range of allowable pressure and temperature is determined by referring to the main pressure-temperature chart below.

B. Ratings for iron valves falling outside Class 125 and 250 are indicated in various ways on the relevant catalog page.

All ratings represent the maximum allowable non-shock pressure at the indicated temperature. If the operating temperature of your system is not shown, the allowable pressure may be interpolated.

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

Pressure-Temperature Ratings

Jenkins Cast Iron Gate, Globe, Angle and Check Valves

Imperial Units					
Class	125			250	
Temp. °F	Non-Shock-PSI				
	NPS 2"-12"	NPS 14"-24"	NPS 30"-48"	NPS 2"-12"	NPS 14"-24"
-20 to 150	200	150	150	500	300
200	190	135	115	460	280
225	180	130	100	440	270
250	175	125	85	415	260
275	170	120	65	395	250
300	165	110	50	375	240
325	155	105	–	355	230
350	150	100	–	335	220
375	145	–	–	315	210
400	140	–	–	290	200
425	130	–	–	270	–
450	125	–	–	250	–

Metric Units					
Class	125			250	
Temp. °C	Non-Shock-kPa				
	NPS 2"-12"	NPS 14"-24"	NPS 30"-48"	NPS 2"-12"	NPS 14"-24"
-29 to 66	1380	1030	1030	3480	2070
90	1310	930	790	3170	1930
110	1240	900	670	3030	1860
120	1210	860	570	2860	1790
140	1170	830	450	2720	1720
150	1140	760	340	2590	1650
160	1070	720	–	2450	1590
180	1030	690	–	2310	1520
190	1000	–	–	2170	1450
200	970	–	–	2000	1380
220	900	–	–	1860	–
230	860	–	–	1720	–

Manufacturers Standardization Society (MSS)
Standard Practice SP-70, SP-71, SP-85

Gate Valve Features

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.

The straight through design offers little resistance to flow and reduces pressure drop to a minimum. A disc actuated by a stem and handwheel moves up and down at right angles to the path of flow, and seats against two seat faces to shut off flow.

Gate valves are best for services that require infrequent valve operation, and where disc is kept either fully opened or closed. They are not recommended for throttling. With the usual type of gate valve, close flow regulation is impossible. Velocity of flow against a partly opened disc may cause vibration and chattering and result in damage to the seating surfaces. Also, when throttled, the disc is subjected to severe wire-drawing erosive effects.

Each valve in this section is classified by its pressure rating. All valves designated as Class 125 and 250 comply with MSS SP-70 Industry Specifications.

Bronze trimmed valves are recommended for steam, water, air and non-corrosive oil or gas. All have bronze screwed-in seat rings and the discs are solid bronze in sizes 3" (80 mm) and smaller. In larger sizes, bronze rings are rolled into cast iron discs.

All-iron valves have integral seats, some valves have screwed in seat rings (discs are cast iron) and nickel-plated steel stems. They are recommended for oil, gas, gasoline, or fluids that corrode bronze but not iron or steel.

Features

Face-to-Face Dimensions of flanged end valves conform to ASME B16.10 in their pressure class. (See note re MSS SP-70 for flanged clamp gate valves.)

Flanged End Valves adhere to ASME Specification B16.1 for their pressure class.

Body and Bonnet Components are cast with rigorous control to ASTM A126 Class B Specification for cast-iron.

Handwheels are furnished on all valves. Manual gear, hydraulic or motor operators and chainwheels can be supplied when specified.

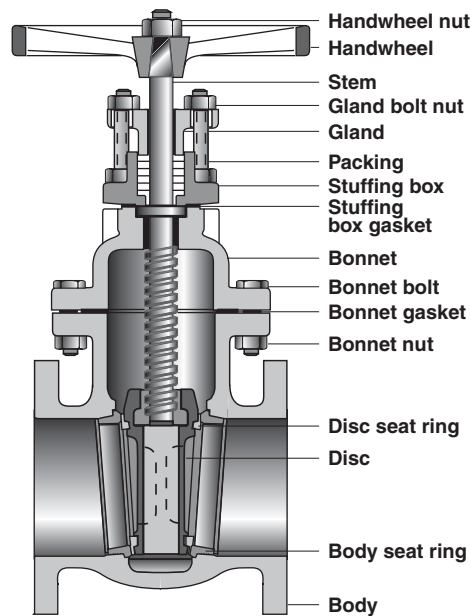
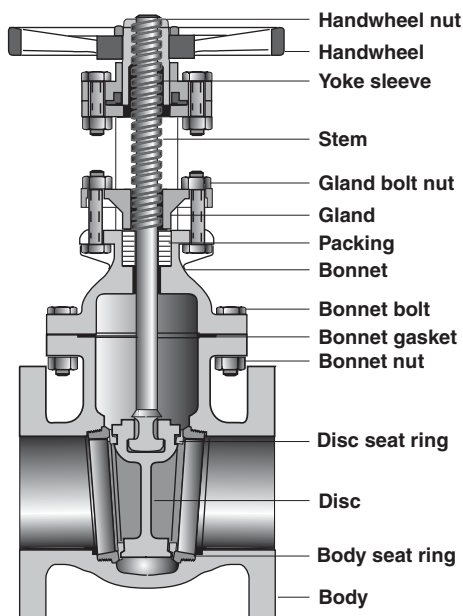
Backseating - Rising stem valves are equipped with backseats. It is recommended that the backseat be used as a means for determining the full open valve position. For normal operation in the open position, the stem should be backed off so that the backseat is not in contact. This permits the stem packing to assume its intended sealing function and not conceal unsatisfactory stem packing. In the event of stem packing

leakage, the backseat can be used to stop stem leakage until circumstances permit a system shutdown and time for packing replacement. Stem packing replacement with the valve under pressure and back-seated represents a hazard and should not be undertaken. The hazard is magnified as fluid pressure or temperature increases or when the fluid is toxic.

Solid Wedge Gate Valve Discs - The strong, simple, single piece design with long disc guides is a proven performer for all service conditions, particularly suitable for conditions of severe turbulence and stem vibration. Seat and disc surfaces are accurately machined and tapered for shut-off without undue strain.

Threaded End Valves have precision cut threads in accordance with ASME B1.20.1.

Jenkins Iron Gate Valves have an identification tag which indicates the valve catalog number and other pertinent data. It provides easy and accurate field reference.



Class 125 • Bolted Bonnet • Non-Rising Stem • Bronze Trim

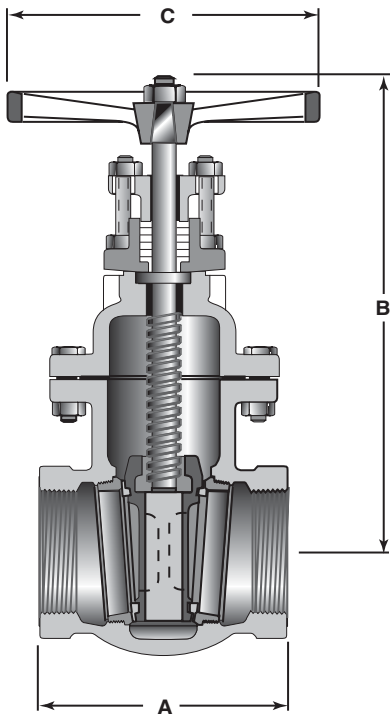
Figure 451J
Threaded with Bronze Trim
Size Range:
2 through 4 inches

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

Features

- Tapered Solid Wedge Disc
- Body Guide Ribs
- Renewable Bronze Seat Rings
- Stem with ACME Double Threads
- Non-Asbestos Packing and Gaskets
- MSS SP-70 and MSS SP-25
- ASME B1.20.1

For more detailed features, refer to Page 7.



Principal Parts & Materials

Fig. No.	Size	Stem	Seating	End Conn.
451J	2" - 4"	Bronze	Bronze	Threaded

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

Valves	2 (50)	2 ½ (65)	3 (80)	4 (100)
A	5.38 (137)	6.62 (168)	7.00 (178)	8.00 (203)
B	11.31 (287)	12.40 (315)	13.25 (337)	16.31 (414)
C	8.00 (203)	8.00 (203)	8.00 (203)	10.00 (254)
Wt.	25 (11)	31 (14)	44 (20)	71 (32)

Iron Body Gate Valve

Figure 452J (326J)

Class 125 • Bolted Bonnet • Non-Rising Stem • Bronze Trim

Features

- Tapered Solid Wedge Disc
- Body Guide Ribs
- Renewable Bronze Seat Rings
- Stem with ACME Double Threads
- Non-Asbestos Packing and Gaskets
- MSS SP-70 and MSS SP-25
- ASME B16.10, ASME B16.1,
- Valves can be equipped with by-passes when specified.

For more detailed features, refer to Page 7.

Figure 452J

Flanged with Bronze Trim

Size Range:

2 through 30 inches

Working Pressures Non-Shock

2" – 12"

125 psi Steam, Basic Rating

200 psi Cold Working Pressure

14" – 24"

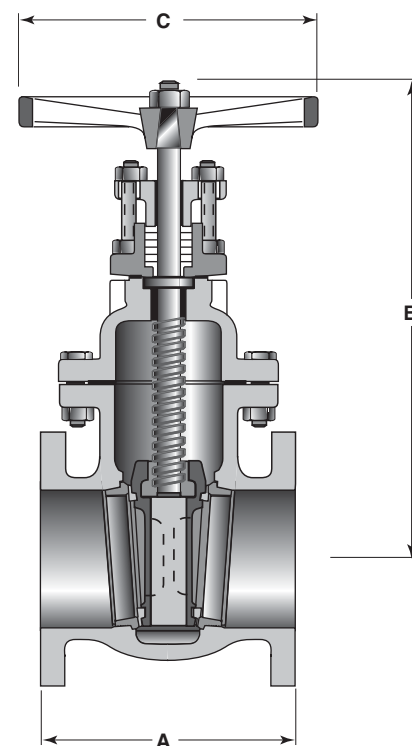
100 psi Steam, Basic Rating

14" – 30"

150 psi Cold Working Pressure

30"

50 psi Steam, Basic Rating



Principal Parts & Materials

Fig. No.	Size	Stem	Seating	End Conn.
452J	2" - 30"	Bronze	Bronze	Flanged

Dimensions and Weights

Inches (millimeters) - pounds (kilograms)

Valves	2 (50)	2 ½ (65)	3 (80)	4 (100)	5 (125)	6 (150)	8 (200)	10 (250)	12 (300)	14 (350)	16 (400)	18 (450)	20 (500)	24 (600)	30 (750)
A	7.00 (178)	7.50 (191)	8.00 (203)	9.00 (229)	10.00 (254)	10.50 (267)	11.50 (292)	13.00 (330)	14.00 (356)	15.00 (381)	16.00 (406)	17.00 (432)	18.00 (457)	20.00 (508)	24.00 (610)
B	11.31 (287)	12.40 (315)	13.25 (337)	16.31 (414)	18.00 (457)	20.69 (526)	24.12 (613)	32.25 (819)	36.00 (914)	40.50 (1029)	48.00 (1219)	50.25 (1276)	56.12 (1426)	64.00 (1626)	86.63 (2200)
C	8.00 (203)	8.00 (203)	8.00 (203)	10.00 (254)	10.00 (254)	12.00 (305)	14.00 (356)	16.00 (406)	18.00 (457)	20.00 (508)	22.00 (559)	22.00 (559)	24.00 (610)	30.00 (762)	30.00 (762)
Wt.	30 (14)	40 (180)	56 (25)	90 (41)	126 (57)	152 (68)	260 (117)	490 (222)	672 (304)	968 (440)	1180 (535)	1701 (772)	2188 (993)	3150 (1432)	6009 (2728)

Class 125 • Bolted Bonnet • Non-Rising Stem • All Iron

Figure 523J

Flanged – All Iron

Size Range:

2 through 12 inches

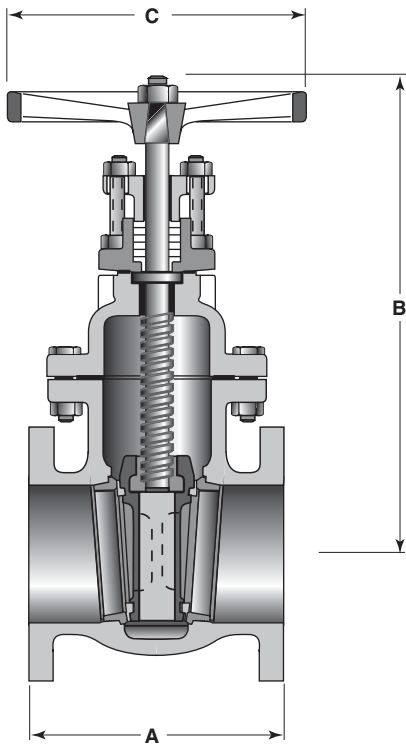
Working Pressures Non-Shock

200 psi Cold Working Pressure

Features

- Tapered Solid Wedge Disc
- Body Guide Ribs
- Integral Seats
- Stem with ACME Double Threads
- Non-Asbestos Packing and Gaskets
- MSS SP-70 and MSS SP-25
- ASME B16.10, ASME B16.1,
- Valves can be equipped with by-passes when specified.

For more detailed features, refer to Page 7.



Principal Parts & Materials

Fig. No.	Size	Stem	Seating	End Conn.
523J	2" - 12"	Steel	Iron	Flanged

Dimensions and Weights

Inches (millimeters) - pounds (kilograms)

Valves	2 (50)	2 ½ (65)	3 (80)	4 (100)	5 (125)	6 (150)	8 (200)	10 (250)	12 (300)
A	7.00 (178)	7.50 (191)	8.00 (203)	9.00 (229)	10.00 (254)	10.50 (267)	11.50 (292)	13.00 (330)	14.00 (355)
B	11.31 (287)	12.40 (315)	13.25 (337)	16.31 (414)	18.00 (457)	20.69 (526)	24.12 (613)	33.00 (838)	36.50 (927)
C	8.00 (203)	8.00 (203)	8.00 (203)	10.00 (254)	10.00 (254)	12.00 (305)	14.00 (356)	20.00 (508)	20.00 (508)
Wt.	30 (14)	44 (20)	56 (25)	91 (41)	126 (57.2)	152 (69)	260 (118)	490 (222)	672 (304)



Iron Body Gate Valve

Figure 453J (650J)

Class 125 • Bolted Bonnet • OS&Y • Bronze Trim

Features

- Tapered Solid Wedge Disc
- Body Guide Ribs
- Renewable Bronze Seat Rings
- Stem with ACME Double Threads
- Non-Asbestos Packing and Gaskets
- MSS SP-70 and MSS SP-25
- ASME B1.20.1

For more detailed features, refer to Page 7.

Figure 453J

Threaded with Bronze Trim

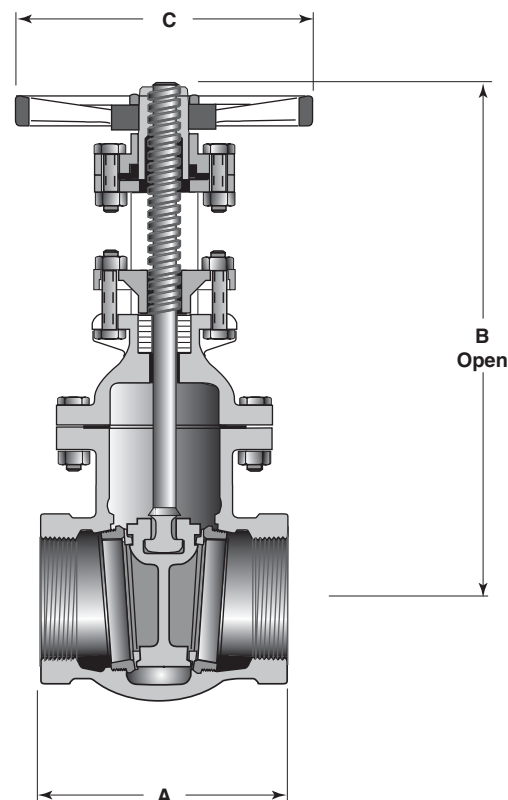
Size Range:

2 through 4 inches

Working Pressures Non-Shock

125 psi Steam, Basic Rating

200 psi Cold Working Pressure



Principal Parts & Materials

Fig. No.	Size	Stem	Seating	End Conn.
453J	2" - 4"	Bronze	Bronze	Threaded

Dimensions and Weights

Inches (millimeters) - pounds (kilograms)

Valves	2 (50)	2 ½ (65)	3 (80)	4 (100)
A	5.38 (137)	6.62 (168)	7.00 (178)	8.00 (203)
B	14.75 (375)	16.06 (408)	17.38 (441)	21.44 (545)
C	8.00 (203)	8.00 (203)	8.00 (203)	10.00 (254)
Wt.	25 (11)	38 (17)	46 (21)	77 (35)

Class 125 • Bolted Bonnet • OS&Y • Bronze Trim

Figure 454J

Flanged with Bronze Trim

Size Range:

2 through 36 inches

Working Pressures Non-Shock

2" – 12"

125 psi Steam, Basic Rating

200 psi Cold Working Pressure

14" – 24"

100 psi Steam, Basic Rating

14" – 36"

150 psi Cold Working Pressure

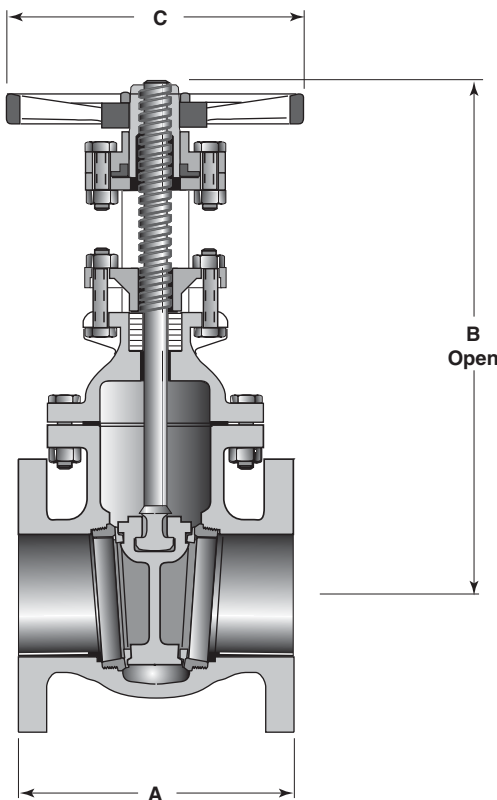
30" – 36"

50 psi Steam, Basic Rating

Features

- Tapered Solid Wedge Disc
- Body Guide Ribs
- Renewable Bronze Seat Rings
- Stem with ACME Double Threads
- Non-Asbestos Packing and Gaskets
- MSS SP-70 and MSS SP-25
- ASME B16.10, ASME B16.1,
- Valves can be equipped with by-passes when specified.

For more detailed features, refer to Page 7.



Principal Parts & Materials

Fig. No.	Size	Stem	Seating	End Conn.
454J	2" - 36"	Bronze	Bronze	Flanged

Dimensions and Weights

Inches (millimeters) - pounds (kilograms)

Valves	2 (50)	2 ½ (65)	3 (80)	4 (100)	5 (125)	6 (150)	8 (200)	10 (250)	12 (300)	14 (350)	16 (400)	18 (450)	20 (500)	24 (600)	30 (750)	36 (900)
A	7.00 (178)	7.50 (191)	8.00 (203)	9.00 (229)	10.00 (254)	10.50 (267)	11.50 (292)	13.00 (330)	14.00 (356)	15.00 (381)	16.00 (406)	17.00 (432)	18.00 (457)	20.00 (508)	24.00 (610)	28.00 (711)
B	14.75 (375)	16.06 (408)	17.38 (441)	21.44 (545)	25.81 (656)	30.31 (770)	37.75 (959)	44.94 (1141)	53.69 (1364)	64.38 (1635)	75.25 (1911)	82.00 (2083)	90.62 (2302)	105.38 (2677)	129.62 (3292)	155.62 (3953)
C	8.00 (203)	8.00 (203)	8.00 (203)	10.00 (254)	10.00 (254)	12.00 (305)	14.00 (356)	16.00 (406)	18.00 (457)	20.00 (508)	22.00 (559)	22.00 (559)	24.00 (610)	30.00 (762)	36.00 (914)	42.00 (1067)
Wt.	33 (15)	47 (21)	58 (26)	97 (44)	135 (61)	162 (73)	280 (126)	495 (225)	732 (333)	1093 (497)	1425 (647)	1738 (789)	2085 (946)	3183 (1445)	5795 (2360)	7522 (3417)

Iron Body Gate Valve

Figure 525J (100J)

Class 125 • Bolted Bonnet • OS&Y • All Iron

Features

- Tapered Solid Wedge Disc
- Body Guide Ribs
- 2"-8" Integral Seats, 10" and Larger Renewable Cast Iron Seat Rings
- Stem with ACME Double Threads
- Non-Asbestos Packing and Gaskets
- MSS SP-70 and MSS SP-25
- ASME B16.10, ASME B16.1, ASME B1.20.1
- Valves can be equipped with by-passes when specified.

For more detailed features, refer to Page 7.

Figure 525J

Flanged – All Iron

Size Range:

2 through 36 inches

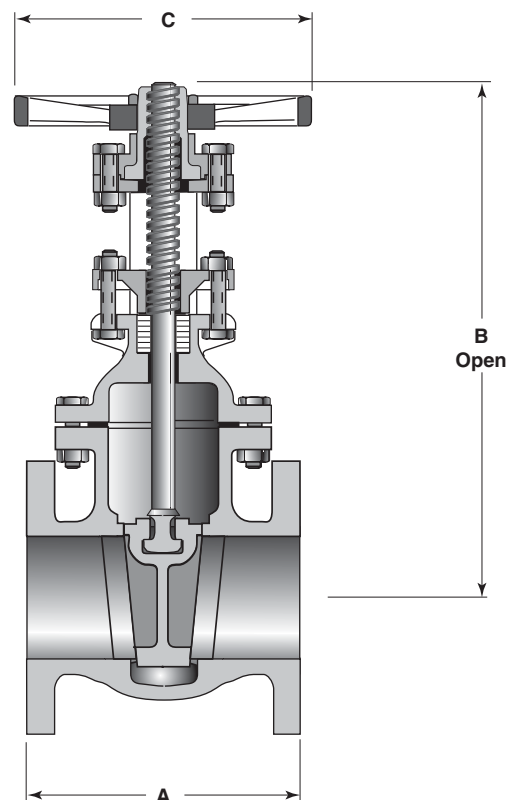
Working Pressures Non-Shock

2" – 12"

200 psi Cold Working Pressure

14" – 36"

150 psi Cold Working Pressure



Principal Parts & Materials

Fig. No.	Size	Stem	Seating	End Conn.
525J	2" - 36"	Steel	Iron	Flanged

Dimensions and Weights

Inches (millimeters) - pounds (kilograms)

Valves	2 (50)	2 ½ (65)	3 (80)	4 (100)	5 (125)	6 (150)	8 (200)	10 (250)	12 (300)	14 (350)	16 (400)	18 (450)	20 (500)	24 (600)	30 (750)	36 (900)
A	7.00 (178)	7.50 (191)	8.00 (203)	9.00 (229)	10.00 (254)	10.50 (267)	11.50 (292)	13.00 (330)	14.00 (356)	15.00 (381)	16.00 (406)	17.00 (432)	18.00 (457)	20.00 (508)	24.00 (610)	28.00 (711)
B	14.75 (375)	16.06 (408)	17.38 (441)	21.44 (545)	25.81 (656)	30.31 (770)	37.75 (959)	44.94 (1141)	53.69 (1364)	64.38 (1635)	75.25 (1911)	82.00 (2083)	90.62 (2302)	105.28 (2674)	129.62 (3292)	155.62 (3953)
C	8.00 (203)	8.00 (203)	8.00 (203)	10.00 (254)	10.00 (254)	12.00 (305)	14.00 (356)	16.00 (406)	18.00 (457)	20.00 (508)	22.00 (559)	22.00 (559)	24.00 (610)	30.00 (762)	36.00 (914)	42.00 (1067)
Wt.	35 (15)	47 (21)	58 (26)	97 (44)	135 (61)	162 (73)	280 (126)	495 (225)	732 (333)	1093 (497)	1425 (647)	1738 (790)	2085 (911)	3183 (1446)	5795 (2360)	7522 (3417)

Figures 40BJ (40BJ) 41J (41J)

Iron Body Gate Valve

Class 125 - 150 • U-Bolt Bonnet • Rising Stem • All Iron

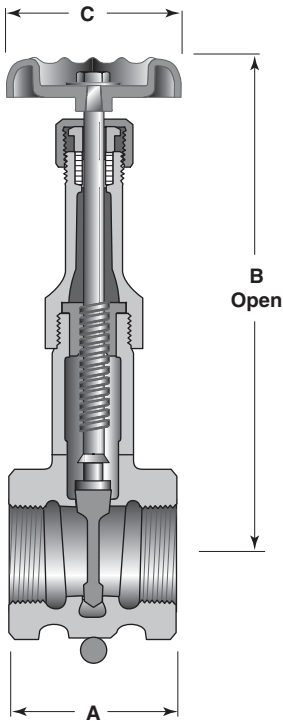
Figure 40BJ
Threaded - All Iron
Size Range:
¼ through 4 inches

Figure 41J
Flanged - All Iron
Size Range:
1-½ through 4 inches

Features

- Compact Design
- Easy Maintenance
- Steel U-Bolt Clamp
- Anti-Clogging Bonnet
- Integral Seats
- Malleable Iron Disc
- Nickel Plated Stem
- Non-Asbestos Packing & Gaskets
- Body and Bonnet Malleable Iron
- ASME B16.1, ASME B1.20.1

For more detailed features, refer to Page 7.



TEMPERATURE		WORKING PRESSURES, NON-SHOCK					
		Threaded ¼" to 2" (6mm to 50mm)		Flanged 1 ½" to 2" (40mm to 50mm)		All 2 ½" to 4" (65mm to 100mm)	
Valve Ratings		150 psi, Sat. Steam 225 psi, CWP		125 psi, Sat. Steam 200 psi, CWP		125 psi, Sat. Steam 175 psi, CWP	
°F	°C	PSI	kPa	PSI	kPa	PSI	kPa
-20 to 150	-30 to 65	225	1550	200	1380	175	1210
200	93	210	1450	185	1280	165	1140
225	107	200	1380	175	1210	160	1100
250	121	190	1310	165	1140	150	1030
275	135	185	1280	155	1070	145	1000
300	149	175	1210	145	1000	140	970
325	163	165	1140	135	930	135	930
350	177	160	1100	130	900	125	860
375	191	150	1030	120	830	120	830

Principal Parts & Materials

Fig. No.	Size	Stem	Seating	End Conn.
40BJ	¼" - 4"	Steel	Iron	Threaded
41J	1 ½" - 4"	Steel	Iron	Flanged

Dimensions and Weights

Inches (millimeters) - pounds (kilograms)

Valves		¼ (6)	¾ (10)	½ (15)	¾ (20)	1 (25)	1 ¼ (32)	1 ½ (40)	2 (50)	2 ½ (65)	3 (80)	4 (100)
40BJ	A	3.00 (76)	3.00 (76)	2.06 (52)	2.32 (59)	2.56 (65)	2.87 (73)	3.15 (80)	3.62 (92)	4.13 (105)	4.57 (116)	5.55 (141)
41J	A	- (-)	- (-)	- (-)	- (-)	3.19 (81)	- (-)	3.74 (95)	4.25 (108)	4.92 (125)	5.08 (129)	6.77 (172)
All	B	5.08 (129)	5.08 (129)	5.08 (129)	6.18 (157)	7.40 (188)	8.90 (226)	9.96 (253)	11.61 (295)	12.91 (328)	15.35 (390)	19.76 (502)
All	C	2.06 (52)	2.06 (52)	2.06 (52)	2.56 (65)	2.76 (70)	3.06 (78)	3.62 (92)	4.06 (103)	4.76 (121)	5.98 (152)	9.02 (229)
40BJ	Wt.	1.4 (0.64)	1.4 (0.64)	1.86 (.84)	2.40 (1.09)	3.50 (1.59)	5.80 (2.63)	7.00 (3.17)	11.20 (5.08)	19.20 (8.71)	23.10 (10.47)	52.10 (23.61)
41J	Wt.	- (-)	- (-)	- (-)	- (-)	5.50 (2.49)	- (-)	10.40 (4.71)	14.30 (6.48)	22.00 (9.97)	32.0 (14.5)	60.0 (27.19)

Iron Body Gate Valve

Figure 203J (203J)

Class 250 • Bolted Bonnet • Non-Rising Stem • Bronze Trim

Features

- Renewable Bronze Seat Rings
- Non-Asbestos Packing & Gaskets
- Solid Wedge Disc
- Valves can be equipped with by-passes when specified
- Valves 6" and larger have bosses cast into the bodies and bonnets, and can be equipped with taps and drains to prevent fluids from accumulating and possibly causing damage. Orders must specify location of taps and drains.
- MSS SP-25, MSS SP-70, ASME B16.10, ASME B16.1

For more detailed features, refer to Page 7.

Figure 203J

Flanged with Bronze Trim

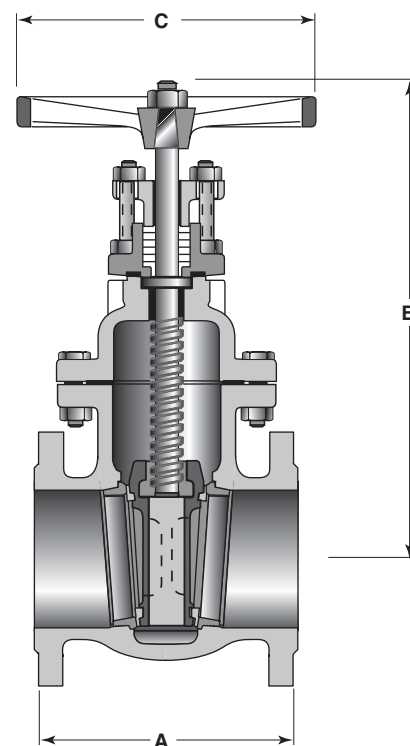
Size Range:

2 through 12 inches

Working Pressures Non-Shock

250 psi Steam, Basic Rating

500 psi Cold Working Pressure



Principal Parts & Materials

Fig. No.	Size	Stem	Seating
203J	2" - 12"	Bronze	Bronze

Dimensions and Weights

Inches (millimeters) - pounds (kilograms)

Valves	2 (50)	2 ½ (65)	3 (80)	4 (100)	6 (150)	8 (200)	10 (250)	12 (300)
A	8.50 (216)	9.50 (241)	11.12 (282)	12.00 (305)	15.88 (403)	16.50 (419)	18.00 (457)	19.75 (502)
B	11.94 (303)	12.94 (329)	14.50 (368)	17.38 (441)	23.00 (584)	30.75 (781)	38.25 (914)	42.12 (1010)
C	8.00 (203)	8.00 (203)	10.00 (254)	12.00 (305)	16.00 (406)	20.00 (508)	22.00 (559)	24.00 (610)
Wt.	47 (21)	84 (39)	113 (51)	175 (79)	335 (151)	545 (246)	854 (387)	1250 (567)

Class 250 • Bolted Bonnet • OS&Y • Bronze Trim

Figure 204J

Flanged with Bronze Trim

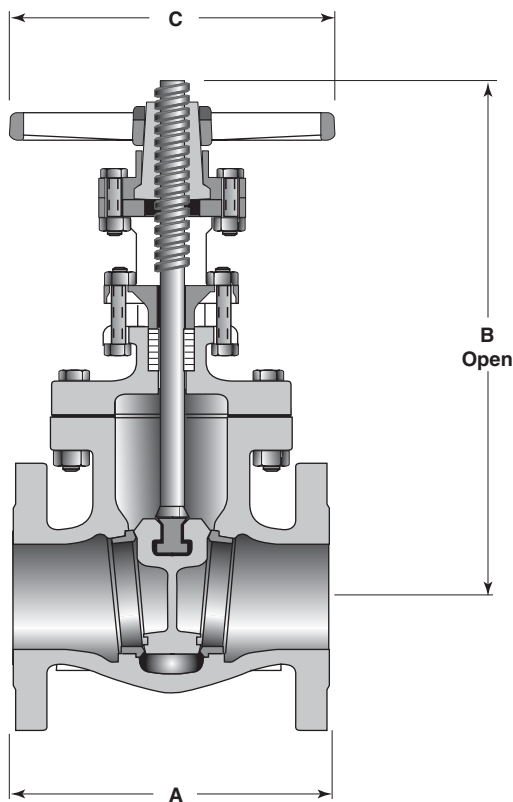
Size Range:

2 through 12 inches

Working Pressures Non-Shock

250 psi Steam, Basic Rating

500 psi Cold Working Pressure



Features

- Solid Wedge Disc
- Non Asbestos Packing and Gaskets
- Manganese Bronze Stem
- Renewable Bronze Seat Rings
- ACME Double Stem Threads
- Valves can be equipped with by-passes when specified.
- Valves 6" and larger have bosses cast into the bodies and bonnets, and can be equipped with taps and drains to prevent fluids from accumulating and possibly causing damage. Orders must specify location of taps and drains.
- MSS SP-25, MSS SP-70, ASME B16.10, ASME B16.1

For more detailed features, refer to Page 7.

Principal Parts & Materials

Fig. No.	Size	Stem	Seating
204J	2" - 12"	Bronze	Bronze

Dimensions and Weights

Inches (millimeters) - pounds (kilograms)

Valves	2 (50)	2 ½ (65)	3 (80)	4 (100)	5 (125)	6 (150)	8 (200)	10 (250)	12 (300)
A	8.50 (216)	9.50 (241)	11.12 (282)	12.00 (305)	15.00 (381)	15.88 (403)	16.50 (419)	18.00 (457)	19.75 (502)
B	15.06 (382)	16.69 (424)	18.75 (476)	23.44 (595)	24.00 (609)	31.75 (806)	39.88 (1012)	41.75 (1060)	47.00 (1193)
C	8.00 (203)	8.00 (203)	10.00 (254)	12.00 (305)	14.00 (356)	16.00 (406)	18.00 (457)	22.00 (559)	24.00 (610)
Wt.	54 (24)	80 (36)	114 (52)	174 (79)	280 (127)	332 (152)	600 (270)	920 (417)	1400 (635)

Iron Globe and Angle Valve Features

Iron Globe and Angle Valve Features

Jenkins globe and angle valves are highly efficient for throttling service because disc and seat designs 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.

Body and Bonnet are cast with rigorous control to ASTM A126 Class B Specification for cast-iron.

Bolted Bonnet is used because there is practically no limitation on size. Multiple bolting permits equalized sealing pressure on the gasket against the highest pressures encountered in iron globe and angle valve applications.

Disc is fully guided throughout its travel, minimizing vibration of internal parts and assuring true seating. The disc stem connection is designed to securely hold the disc yet permit swivel action. Disc materials are bronze or iron faced with bronze.

Seats are screwed in and can be reground or replaced whenever necessary.

Stem material is matched to service recommendations for improved operating dependability and life.

Packing is non-asbestos rings.

Backseating: Rising stem valves are equipped with backseats. It is recommended that the backseat be used as a means for determining the full open valve position. For normal operation in the open position, the stem should be backed off so that the backseat is not in contact. This permits the stem packing to assume its intended sealing function and not conceal unsatisfactory stem packing. In the event of stem packing leakage, the backseat can be used to stop stem leakage until circumstances permit a system shutdown and time for packing replacement. Stem packing replacement with the valve under pressure and backseated represents a hazard and should not be undertaken. The hazard is magnified as fluid pressure or temperature increases or when the fluid is toxic.

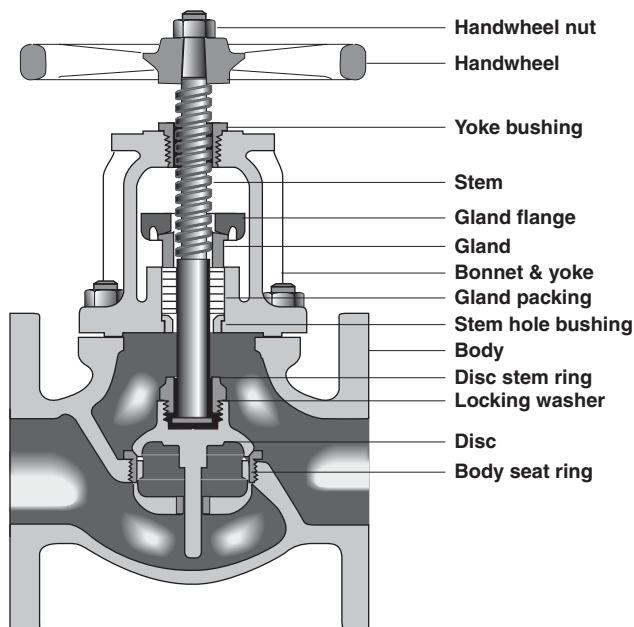
Handwheels are furnished on all valves. Manual gear, hydraulic or motor operators and chainwheels can be supplied when specified.

Face-to-Face Dimensions of flanged end valves conform to ASME B16.10 in their pressure class.

All Valves are clearly identified and marked to MSS SP-25 Specification.

Flanged End Valves adhere to ASME B16.1 for their pressure classes.

Each valve in this section is identified by its pressure rating. All valves designated as Class 125 and 250 comply with MSS SP-85 Standard Practice.



Class 125 • Bolted Bonnet • OS&Y • Bronze Trim

Figure 2342J

Flanged with Bronze Trim

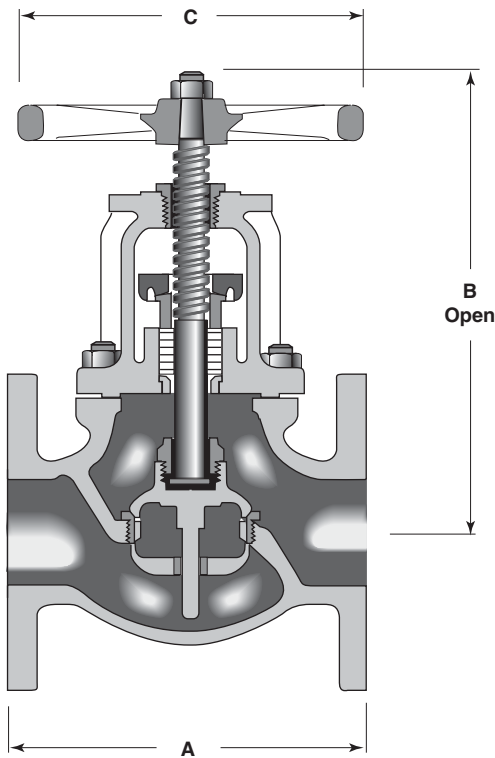
Size Range:

2 through 10 inches

Working Pressures Non-Shock

125 psi Steam, Basic Rating

200 psi Cold Working Pressure



Features

- Integral Yoke Bonnet with upper bronze bushing provides for centering of internal parts
- Non Galling Two-Piece Packing Gland
- Valves are provided with a Back Seat
- Renewable - Re grindable Screwed-in Seat Ring
- Bottom Guided Disc
- Manganese Bronze Stem
- Non-Asbestos Packing & Gasket
- Solid Bronze Disc 6" and smaller

For more detailed features, refer to Page 17.

Principal Parts & Materials

Fig. No.	Size	Stem	Seating
2342J	2" - 10"	Bronze	Bronze

Dimensions and Weights

Inches (millimeters) - pounds (kilograms)

Valves	2 (50)	2 ½ (65)	3 (80)	4 (100)	5 (125)	6 (150)	8 (200)	10 (250)
A	8.00 (203)	8.50 (216)	9.50 (241)	11.50 (292)	13.00 (330)	14.00 (356)	19.50 (495)	24.50 (622)
B	11.12 (282)	11.50 (292)	13.25 (337)	15.50 (394)	17.50 (445)	19.50 (495)	25.00 (635)	30.50 (775)
C	8.00 (203)	8.00 (203)	9.00 (229)	10.00 (254)	10.00 (254)	12.00 (305)	16.00 (406)	18.00 (457)
Wt.	34 (15)	40 (18)	57 (26)	95 (43)	126 (57)	176 (80)	344 (156)	570 (259)

Iron Body Angle Valve

Figure 2344J (615J)

Class 125 • Bolted Bonnet • OS&Y • Bronze Trim

Features

- Integral Yoke Bonnet with upper bronze bushing provides for centering of internal parts
- Non Galling Two-Piece Packing Gland
- Valves are provided with a Back Seat
- Renewable - Re grindable Screwed-in Seat Ring
- Bottom Guided Disc
- Manganese Bronze Stem
- Non-Asbestos Packing & Gasket
- Solid Bronze Disc 6" and smaller

For more detailed features, refer to Page 17.

Figure 2344J

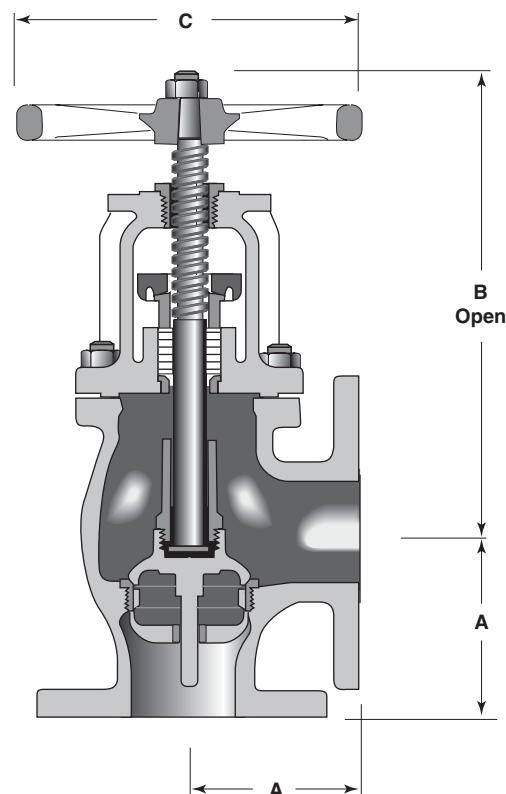
Size Range:

2 through 6 inches

Working Pressures Non-Shock

125 psi Steam, Basic Rating

200 psi Cold Working Pressure



Principal Parts & Materials

Fig. No.	Size	Stem	Seating
2344J	2" - 6"	Bronze	Bronze

Dimensions and Weights

Inches (millimeters) - pounds (kilograms)

Valves	2 (50)	2 ½ (65)	3 (80)	4 (100)	6 (150)
A	4.00 (102)	4.25 (108)	4.75 (121)	5.75 (146)	7.00 (178)
B	11.00 (279)	11.50 (292)	12.75 (324)	15.00 (381)	19.50 (495)
C	8.00 (203)	8.00 (203)	9.00 (229)	10.00 (254)	12.00 (305)
Wt.	32 (15)	38 (17)	54 (25)	88 (40)	158 (72)

Class 250 • Bolted Bonnet • OS&Y • Bronze Trim

Figure 162J

Size Range:

2 through 8 inches

Working Pressures Non-Shock

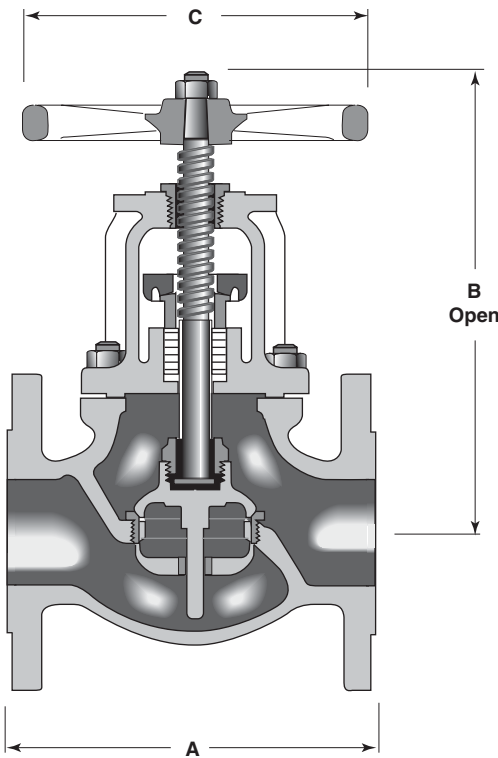
250 psi Steam, Basic Rating

500 psi Cold Working Pressure

Features

- Bronze Seat Ring, ASTM B61
- Disc Stem Ring
- Manganese Bronze Stem
- Non-Asbestos Packing and Gasket
- Valves are provided with a Back Seat
- Renewable - Re grindable, Screwed-in Seat Ring
- Bottom Guided Disc

For more detailed features, refer to Page 17.



Principal Parts & Materials

Fig. No.	Size	Stem	Seating
162J	2" - 8"	Bronze	Bronze

Dimensions and Weights

Inches (millimeters) - pounds (kilograms)

Valves	2 (50)	2 ½ (65)	3 (80)	4 (100)	6 (150)	8 (200)
A	10.50 (267)	11.50 (292)	12.50 (318)	14.00 (356)	17.50 (445)	21.00 (533)
B	13.75 (349)	14.75 (375)	16.50 (419)	18.50 (470)	23.25 (591)	28.50 (724)
C	9.00 (229)	10.00 (254)	10.00 (254)	12.00 (305)	16.00 (406)	20.00 (508)
Wt.	62 (28)	82 (37)	118 (54)	167 (76)	320 (145)	570 (259)

Iron Swing Check Valve Features

Iron Swing Check Valve Features

Check valves permit flow in one direction only and close automatically when flow reverses. They are entirely automatic in action, depending upon differential pressure and velocity of flow within the line to perform their functions of opening and closing.

The disc and any associated moving parts may be in a constant state of movement if the velocity pressure is not sufficient to hold the disc in a wide open and stable position. Premature wear and noisy operation or vibration can be avoided by selecting the size of the check valve on the basis of flow conditions rather than selecting the check valve according to the size of the pipeline.

Below are three formulae that can be used to determine the minimum velocity necessary to hold a check valve in a wide open and stable position. μ is equal to flow in feet per second and v is the specific volume of the fluid in cubic feet per pound.

$$\begin{aligned} \text{Threaded } \mu &= 35 \sqrt{v} \\ \text{Flanged } \mu &= 60 \sqrt{v} \end{aligned}$$

Sizing check valves on this basis may often result in the use of valves that are smaller than the pipe in which they are used, necessitating the use of reducers for installation. The pressure drop will be no greater than that of a larger valve that is partially open. Valve life will be greatly extended, and the added bonus, of course, is the lower cost of the smaller valves.

Each valve in this section is classified by its pressure rating. All valves designated as Class 125 and 250 comply with MSS SP-71 Standard Practice.

Swing Check Valves with straight-through body design and wide hinge support provide turbulence-free flow and accurate seating. There is no tendency for seating surfaces to gall or score because the disc meets the flat seat squarely without rubbing. When faster reaction to flow reversal is necessary, certain valves can be equipped with an outside lever and weight.

Jenkins Iron Check Valves have an identification tag which indicates the valve catalog number and other pertinent data. It provides easy and accurate field reference.

Features

Threaded Ends in accordance with ASME B1.20.1.

Flanged Valves conform to applicable requirements of ASME B16.10 in sizes 2" through 24". End flanges on valves conform to applicable requirements of B16.1 for classes 125 and 250.

Bronze Trim Valves are for steam, water, non-corrosive oil and gas and other fluids that do not corrode bronze.

All Iron Valves are for gases, oils and other fluids not corrosive to iron.

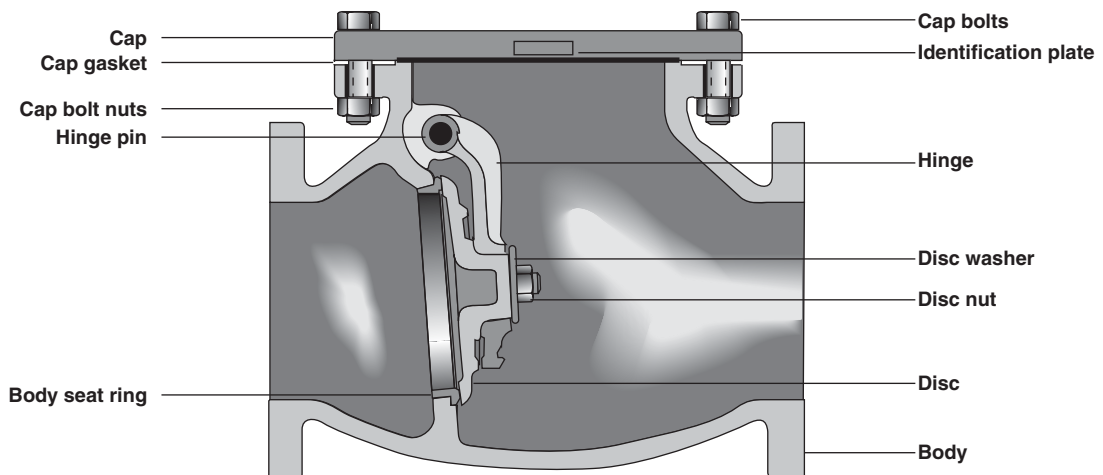
Valves May Be Installed in horizontal or vertical pipe lines. In vertical lines, or any angle from horizontal, they can be used for upward flow only.

Bronze Trim Valves - The disc is solid bronze in sizes 6" and smaller and bronze-faced in larger sizes, all have replaceable bronze seat rings. Hinge-pins are brass/stainless steel and replaceable. Hinges are solid bronze in sizes 6" and smaller and ductile iron in larger sizes.

All-Iron Trim Valves - The disc is solid iron with integral seat face. Body seat faces are integral with the body 8" and smaller, and, replaceable iron seat rings in larger sizes. Hinge pins are stainless steel and replaceable. Hinges are ductile iron.

Large Bolted-On Cover provides easy access to interior for routine maintenance.

Non-Asbestos Gaskets and Packings.





**Figures 477LJ (477LJ)
588J (623J)
587J (624J)**

Iron Body Swing Check

Class 125 • Bolted Cap • Bronze Trim

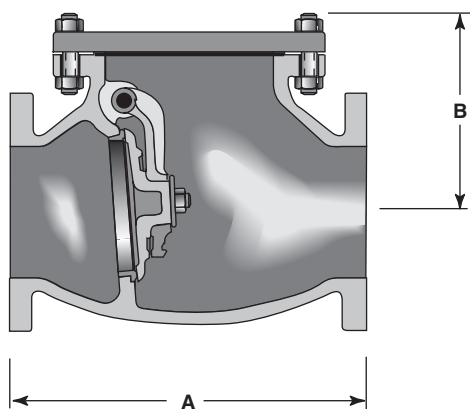


Figure 477LJ

Flanged outside lever and weight with bronze trim

Size Range:

2 through 24 inches

Figure 588J

Threaded with Bronze Trim

Size Range:

2 through 4 inches

Figure 587J

Flanged with Bronze Trim

Size Range:

2 through 24 inches

Figures 477LJ, 588J, 587J

Working Pressures Non-Shock

2"-12"

125 psi Steam, Basic Rating

200 psi Cold Working Pressure

14"-24"

100 psi Steam, Basic Rating

150 psi Cold Working Pressure

Features

- Design prohibits galling or scoring of seating surfaces because the disc meets the flat seat squarely on closing with no rubbing action
- Replaceable Bronze Seat Rings
- Bronze Hinges in 6" and smaller, ductile iron in larger sizes
- Large Bolted-on Cover
- Fig. 447LJ with outside lever and weight is recommended where quick action is necessary to avoid sudden reversal of flow. Weight can be installed to balance the disc when applications require that it open under minimum pressure. Positioning and setting of lever and weight are easily accomplished in the field. Lever can be rotated through 360° and is adjustable in 15° increments. Valves may be installed in horizontal or vertical pipe lines. Basic design of Fig. 447LJ is identical to fig. 587J.

For more detailed features, refer to Page 21.

Principal Parts & Materials

Fig. No.	Size	Stem	Seating
477LJ	2" - 24"	Flanged	Bronze
588J	2" - 4"	Threaded	Bronze
587J	2" - 24"	Flanged	Bronze

Dimensions and Weights

Inches (millimeters) - pounds (kilograms)

588J	2	2 ½	3	4	477LJ	2	2 ½	3	4	5	6	8	10	12	14	16	18	20	24
	(50)	(65)	(80)	(100)		587J	(50)	(65)	(80)	(100)	(125)	(150)	(200)	(250)	(300)	(350)	(400)	(450)	(500)
A	6.12 (155)	7.25 (184)	8.00 (203)	9.25 (235)	A	8.00 (203)	8.50 (216)	9.50 (241)	11.50 (292)	13.00 (330)	14.00 (356)	19.50 (495)	24.50 (622)	27.50 (699)	31.00 (787)	36.00 (914)	36.00 (914)	42.00 (1067)	46.00 (1169)
B	4.50 (114)	5.38 (137)	5.88 (149)	6.62 (168)	B	4.50 (114)	5.38 (137)	5.88 (149)	6.62 (168)	7.75 (197)	8.25 (210)	10.25 (260)	12.00 (300)	13.75 (350)	15.50 (393)	17.63 (447)	19.25 (610)	19.50 (495)	20.50 (521)
Wt.	18 (8)	22 (10)	29 (13)	54 (25)	Wt.	25 (11)	34 (15)	44 (20)	74 (33)	103 (47)	127 (58)	230 (104)	440 (200)	660 (300)	794 (360)	1020 (462)	1304 (591)	2530 (1149)	3366 (1529)
Wt.	Add for lever & weight				Wt.	5 (3)	6 (3)	10 (5)	10 (5)	N/A (5)	10 (5)	10 (5)	35 (16)	50 (23)	Data on larger sizes available on request				

Iron Body Swing Check

Figure 590J (85J)

Class 125 • Bolted Cap • All Iron

Features

- Design prohibits galling or scoring of seating surfaces because the disc meets the flat seat squarely on closing with no rubbing action.
- Large Bolted On Cover

For more detailed features, refer to Page 21.

Figure 590J

Flanged, All Iron

Size Range:

2 through 24 inches

Figure 590J

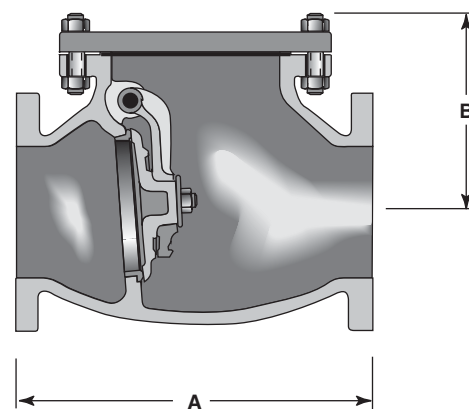
Working Pressures Non-Shock

2"-12"

200 psi Cold Working Pressure

14"-24"

100 psi Cold Working Pressure



Principal Parts & Materials

Fig. No.	Size	Stem	Seating
590J	2" - 24"	Flanged	All iron

Dimensions and Weights

Inches (millimeters) - pounds (kilograms)

590J	2 (50)	2 ½ (65)	3 (80)	4 (100)	5 (125)	6 (150)	8 (200)	10 (250)	12 (300)	14 (350)	16 (400)	18 (450)	20 (500)	24 (600)
A	8.00 (203)	8.50 (216)	9.50 (241)	11.50 (292)	13.00 (330)	14.00 (356)	19.50 (495)	24.50 (622)	27.50 (699)	31.00 (787)	36.00 (914)	36.00 (914)	42.00 (1067)	46.00 (1169)
B	4.50 (114)	5.38 (137)	5.88 (149)	6.62 (168)	7.75 (197)	8.25 (210)	10.25 (260)	12.00 (304)	13.75 (349)	15.75 (400)	17.00 (432)	17.40 (442)	19.50 (495)	20.50 (521)
Wt.	25 (11)	30 (13)	42 (19)	74 (33)	100 (45)	125 (56)	230 (104)	440 (199)	660 (299)	875 (397)	1410 (641)	1901 (864)	2530 (1149)	3366 (1529)
Wt.	30 (14)	40 (18)	54 (24)	85 (38)	N/A N/A	137 (62)	240 (108)	460 (208)	700 (317)	Data on larger sizes available on request				

Class 250 • Bolted Cap • Bronze Trim

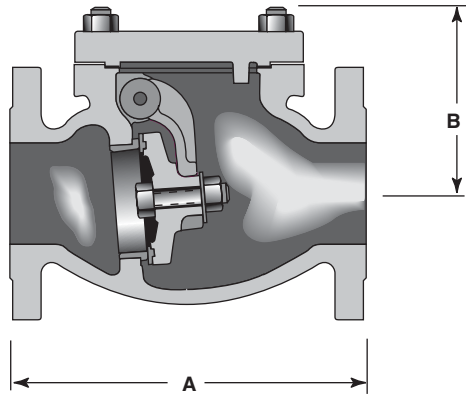


Figure 339RJ

Size Range:

2 through 8 inches

Working Pressures Non-Shock

250 psi Steam, Basic Rating

500 psi Cold Working Pressure

Features

- For steam, water, oil, gas and similar high pressure-temperature conditions which do not warrant steel valves. Valves can be installed horizontally, or vertically for upward flow.
- Body and cap are high-strength cast iron conforming to ASTM A126, Class B.
- Disc is solid bronze in sizes 3" and smaller and iron faced with bronze in larger sizes. Body seat ring is screwed-in bronze.
- Disc moves freely for maximum flow with minimum pressure drop. A disc stop, integral with the cap, prohibits the disc from sticking open when flow is reversed.

For more detailed features, refer to Page 21.

Principal Parts & Materials

Fig. No.	Size	End Conn.	Seating	Body
339RJ	2" -8"	Flanged	Bronze	Iron

Dimensions and Weights

Inches (millimeters) - pounds (kilograms)

Valves	2 (50)	2 ½ (65)	3 (80)	4 (100)	6 (150)	8 (200)
A	10.50 (267)	11.50 (292)	12.50 (318)	14.00 (356)	17.50 (445)	21.00 (533)
B	5.25 (133)	6.00 (152)	6.25 (159)	7.25 (184)	9.00 (229)	11.00 (279)
Wt.	46 (21)	64 (29)	90 (41)	133 (60)	250 (113)	410 (185)



Iron Body Stop Check

Figures 540J (540J)
541J (541J)

Class 250 • Bolted Bonnet • OS&Y • Bronze Trim

Features

- For installation between boilers supplying the same steam header, and positioned with pressure under the disc. Straightway is for horizontal or vertical line with upward flow. Angle valves are for "horizontal-downward" or "upward-horizontal" flow.
- These valves will perform the four following important functions:
 1. Act as an automatic-non return valve applied as a containment device to prevent gross backflow of steam from main header to boiler in case the boiler fails.
 2. Assist in cutting out boiler, when ceasing to fire. In this case, valve disc automatically closes to restrict backflow of steam to the boiler.
 3. Assist in returning boiler after a shutdown.
 4. Restricts backflow of steam from header into boiler which has been shut down and accidentally opened. The check valve feature should not be relied upon for primary shut-off.
- Cylindrical shaped disc is the only pressure-actuated part, light in weight with ample guiding surface. It is specially designed to produce a maximum lift at minimum velocities. There are no wing guides to cause "spinning" with resultant rapid wear.
- Long throttling lip on disc retards flow when seating position is approached. Disc chattering is prevented and wiredrawing of seating surfaces is reduced.
- Flat Seats, accurately machined, facilitate true seating.
- Removable cast iron liner guides the disc throughout its full travel. Being entirely independent of the body, it is not subject to distortion by expansion strains.
- Piston Ring 6" and larger adds to dashpot's

Figure 540J

Flanged, Y-Pattern with Bolted Bonnet Straightway

Size Range:
2-½ through 10 inches

Figure 541J

Flanged, Y-Pattern with Bolted Bonnet Angle

Size Range:
2-½ through 10 inches

Working Pressures Non-Shock

250 psi Steam, Basic Rating
500 Cold Working Pressure

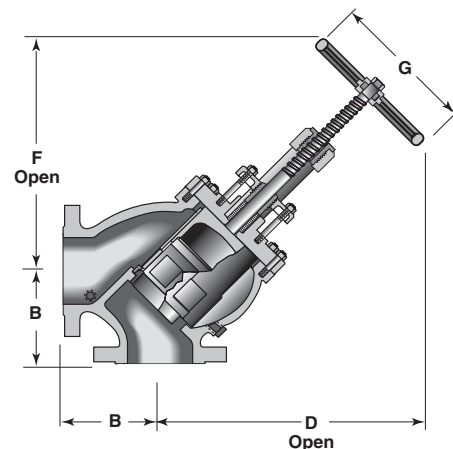


Figure 541J

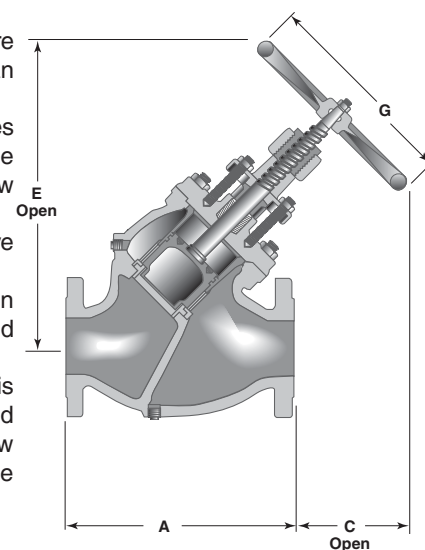


Figure 540J

ability to avoid rapid disc movements. Where pulsations are extremely severe, two rings can be installed.

- Dashpot is self-contained in the liner. It provides an effective cushion for the disc to prevent pipe line vibrations or hammering on the seat at low velocities or on pulsating loads.
- Flanges conform to ASME B16.1. Flanges have 1/16" raised face with concentric grooves.
- The body has integral bosses for drain connections. The bosses are tapped and plugged.
- Determining the proper valve size needed is important. The size of a stop check valve should be based on the boiler capacity and steam flow through the valve, rather than on the size of the boiler outlet or existing piping.

Dimensions and Weights

Inches (millimeters) - pounds (kilograms)

541J	2 ½ (65)	3 (80)	4 (100)	5 (125)	6 (150)	8 (200)	10 (250)	540J	2 ½ (65)	3 (80)	4 (100)	5 (125)	6 (150)	8 (200)	10 (250)
B	5.75 (146)	6.25 (159)	7.00 (178)	7.88 (200)	8.75 (222)	10.50 (267)	12.25 (311)	A	13.00 (330)	14.75 (375)	17.00 (432)	19.00 (483)	21.50 (546)	26.00 (660)	30.00 (762)
D*	14.50 (368)	16.50 (419)	18.50 (470)	22.00 (559)	25.50 (648)	33.25 (845)	37.75 (959)	C*	5.00 (127)	7.25 (184)	7.75 (197)	10.50 (267)	11.75 (298)	16.25 (413)	17.75 (451)
F*	13.25 (337)	14.75 (375)	16.25 (413)	19.50 (495)	22.50 (572)	28.75 (730)	32.50 (826)	E*	15.75 (400)	19.75 (502)	21.75 (552)	25.75 (654)	29.25 (743)	36.75 (933)	41.75 (1060)
G	9.00 (229)	10.00 (254)	10.00 (254)	14.00 (356)	16.00 (406)	20.00 (508)	20.00 (508)	G	9.00 (229)	10.00 (254)	10.00 (254)	14.00 (356)	16.00 (406)	20.00 (508)	20.00 (508)
Wt.	86 (39)	123 (56)	186 (84)	250 (113)	340 (154)	640 (291)	1025 (465)	Wt.	103 (47)	140 (64)	226 (103)	307 (139)	420 (191)	737 (335)	1250 (568)

* Valve Open

Technical Data

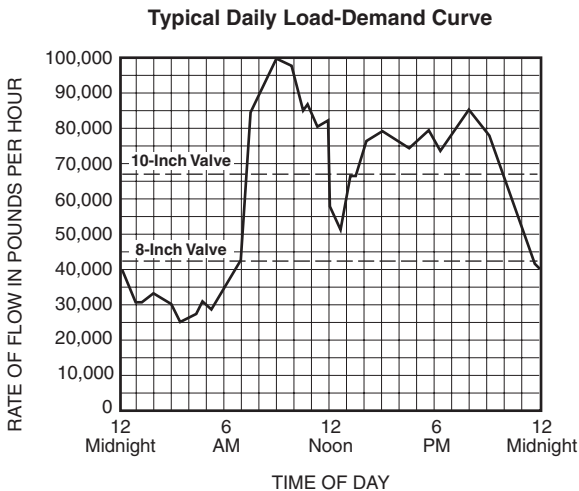
Selecting the Proper Size – Determining Pressure Drop

Since stop-check valves have a floating disc member, it is important the valve be sized to provide full disc lift under flow conditions prevailing during the major portion of the service life. If the valve is too large, the disc will float in a partially open position and may cause fluttering of the disc and rapid wear. Conversely, if the valve is too small, pressure drop will be excessive.

The chart on the following page is a graphic presentation of flow data determined by test. Its use offers a simple method of determining the best size stop-check valve, as well as the pressure drop under varying conditions of flow, without any computation.

How to Use the Chart Shown on the Following Page

Given: Steam Pressure-Temperature...250 psig 450°F
Flow Rate...Typical Daily Demand Curve



Find: Valve Catalog No. and the best size for above installation.

Solution:

1. Enter the Temperature chart at 450°F. Move vertically upward to the curved line for 250 psi, then horizontally to the right to establish a point on the specific volume scale. From this point, draw a line through the flow rate being investigated (100,000 Lb/H) and establish a point on Index 1.

2. From that point, draw another line through the valve size, for example the 8-inch size, and establish a point on Index 2. Now move horizontally to the diagonal pressure drop line on the right side. Where these lines intersect, the pressure drop is 7.5 psi for the 8-inch, Class 250 globe valve and 8.5 psi for the 8-inch Class 250 angle valve.

Chart solutions resulting in a point on Index 2 that falls below the Line A-A for Class 250 valves indicate the disc will not be fully lifted under the flow conditions used. Operation under such conditions is not recommended but, at times, must be tolerated for short periods during the low loads.

3. Enter the chart where Line A-A intersects Index 2 for Class 250 valves. Move diagonally upward through the size being investigated (8-inch) and establish a second point on Index 1. From this point, extend a line to the specific volume established in Step 1 and at its intersection with the flow rate line, read 48,000 Lb/H as the minimum flow rate at which the disc will be in the fully lifted position. The pressure drop at this flow rate is 1.9 psi for globe and 2.1 psi for angle valves.

4. Repeat Steps 2 and 3 for other possible valve sizes, tabulate results, and make size selection on basis of pressure drop and duration of partial disc lift considerations.

Valve Size (Inches)	Press drop @ Max.Min. Flow rate (100,000 #/Hr.), psi		Flow Rate for Wide open valve #/Hr.
	Globe	Angle	
6	20.5	22.5	26,500
8	7.5	8.5	48,000
10	3.3	3.6	68,000

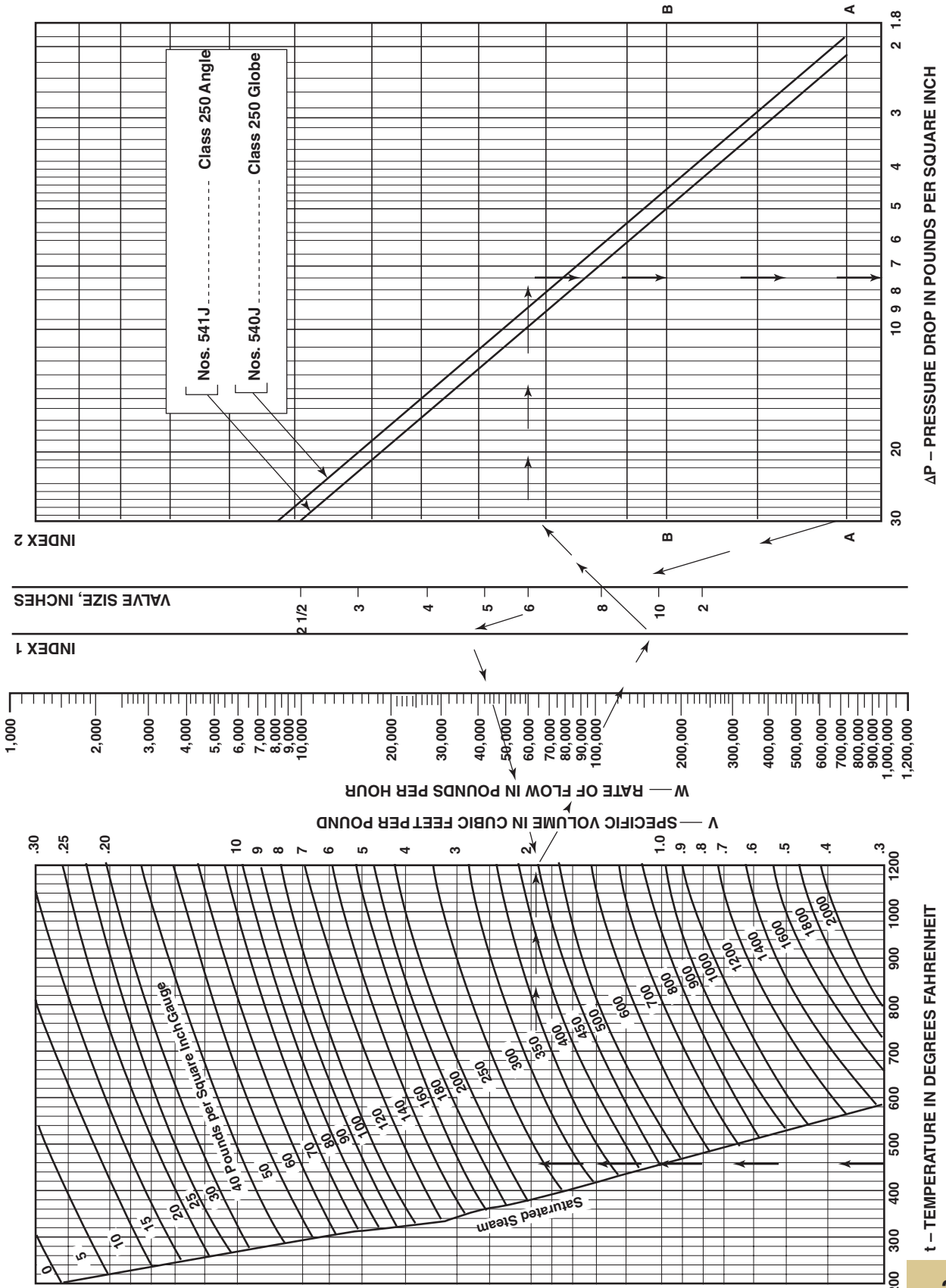
Dotted lines on Demand Curve indicate minimum flow rates for wide open 8" and 10" valves.

5. The best choice for this example would be the 10" size because pressure drop is much lower and duration of partially lifted disc is only slightly greater than for the 8" size.

6. Pressure drop for any intermediate flow condition can be determined as outlined in Steps 1 and 2.

Technical Data

Jenkins Bolted Bonnet Stop-Check Valves Selecting the Proper Size – Determining Pressure Drop

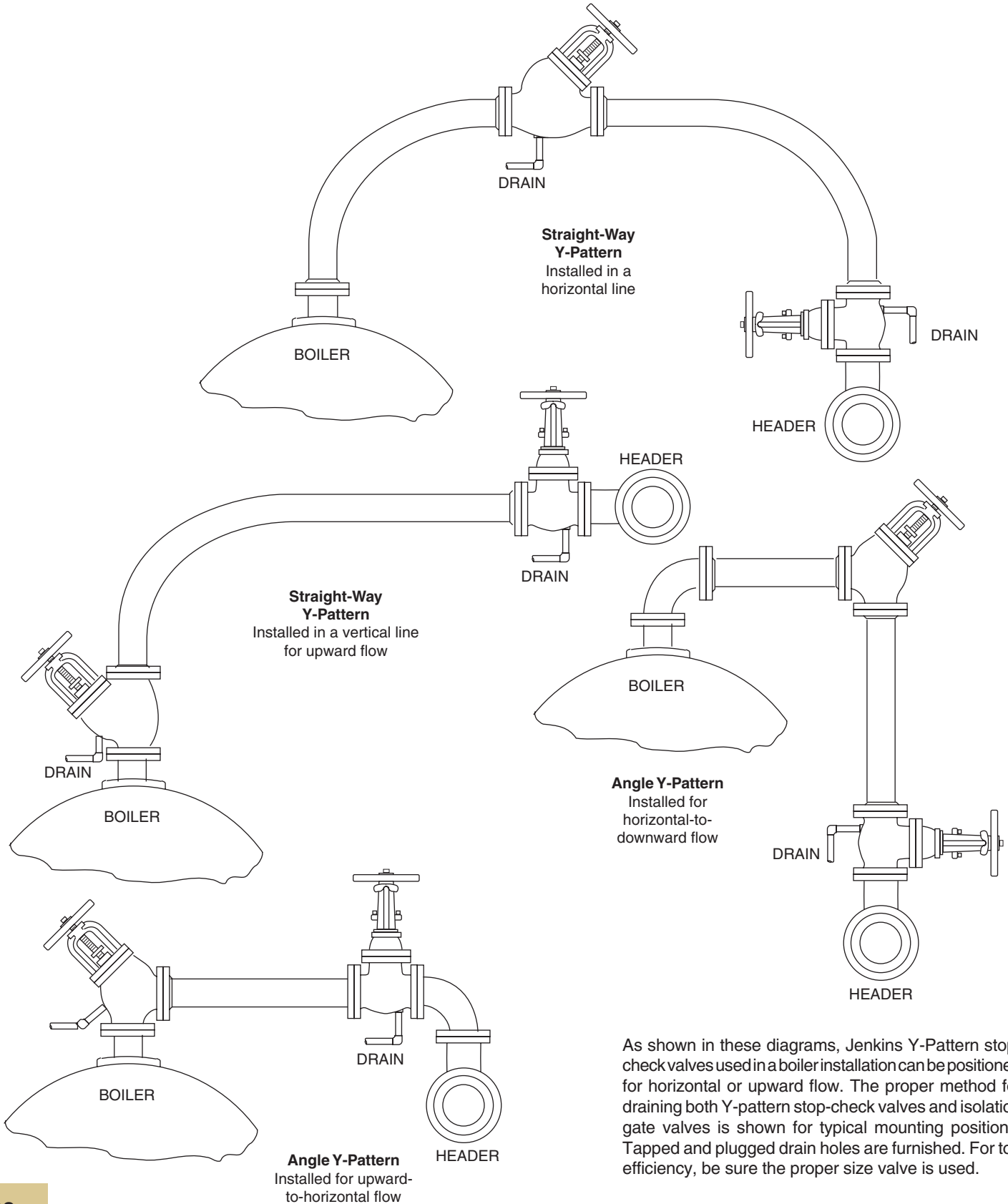


t – TEMPERATURE IN DEGREES FAHRENHEIT

ΔP – PRESSURE DROP IN POUNDS PER SQUARE INCH

Installation Recommendations

Y-Pattern Stop-Check and Isolation Gate Valves



As shown in these diagrams, Jenkins Y-Pattern stop-check valves used in a boiler installation can be positioned for horizontal or upward flow. The proper method for draining both Y-pattern stop-check valves and isolation gate valves is shown for typical mounting positions. Tapped and plugged drain holes are furnished. For top efficiency, be sure the proper size valve is used.

Iron Valves



Notes



Iron Valves

Notes

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