

Class 300 • Outside Screw & Yoke • Flexible Wedge Disc

Material of Construction

Description	Material
Body	WCB
Bonnet	WCB
Seat Rings	Hardfaced
Disc	CA-15 or 13% CR Overlay
Stem	410 SS
Packing	Graphite
Bonnet Gasket	316 Spiral Wound Graphite
Back Seat	410 SS
Yoke Sleeve	D2 Ni-Resist
Retaining Nut	Malleable or Steel
Gland	Steel
Gland Flange	Steel
Eye Bolt	Steel
Eye Bolt Nuts	Steel
Pins	Steel
Bonnet Studs	A193 Gr. B7
Bonnet Nuts	A194 Gr. 2H
Handwheel	Malleable, Ductile, or Steel
Handwheel Nut	Ductile or Steel
I.D. Tags	SS
I.D. Pins	Steel
Spacer	Steel
Grease Fittings	Steel

Figure 33

Flanged

Figure 33½

Butt Weld

Size Range:

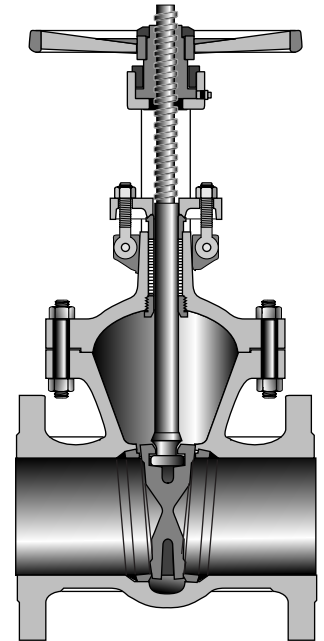
2 through 24 inches

Pressure Temperature Rating

Carbon Steel

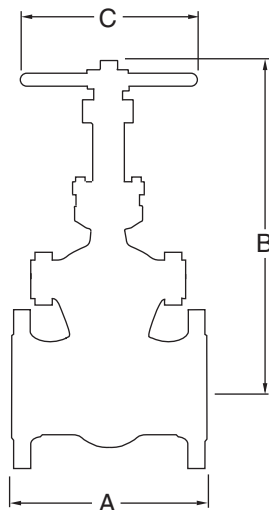
ASTM A216 Grade WCB

740 psi @ -20°F to 100°F



Industry Standards

Steel Valves	ASME B16.34
Face-to-Face/End-to-End	ASME B16.10
Flange Dimensions	ASME B16.5
Weld End	ASME B.16.25
Basic Design	API 600
Testing	API 598
Acceptance	API RP591



Dimensions and Weights

Valve Size	Weight (pounds)		Dimensions (inches)		
			A	B	C
	33	33½	33 & 33½	Valve Open	
2	74	49	8.50	17.50	8.00
2½	80	74	9.50	17.50	8.00
3	108	85	11.12	20.25	9.00
4	165	120	12.00	24.00	10.00
5	235	185	15.00	28.38	12.00
6	320	245	15.88	32.75	14.00
8	500	410	16.50	41.25	16.00
10	760	625	18.00	49.50	18.00
12	1020	890	19.75	57.50	20.00
14	1380	1220	30.00	61.25	20.00
16	1960	1620	33.00	71.50	24.00
18	2450	2000	36.00	78.50	23.62
20	3890	3370	39.00	86.50	28.35
24	6292	4675	45.00	104.00	35.43

Materials of Construction

Steel bolted bonnet valves described in this catalog are typically manufactured of carbon steel. When specified, the valves are available in the alloys shown below which are suitable for steam, water, oil, oil vapor, gas and general services. Please contact factory or customer service for availability and material breakdowns.

Body and Bonnet or Cap Materials

Part No. Suffix	ASTM Classification	Material Classification	Service Conditions
None	A216 WCB	Carbon Steel	For service up to 1000° F where corrosion and oxidation are not a factor. (1) (4) (5)
6	A217 WC6	1 ¼ CR, ½ Mo	For service up to 1000° F. (3) (4) (5)
9	A217 WC9	2 ¼ CR, 1 Mo	For service up to 1100° F where good creep strength is required. (3) (4) (5)
5	A217 C5	5% CR, ½ Mo	For service up to 1200° F. Best corrosion and oxidation resistance plus high creep strength are required.
12	A217 C12	9% CR, 1 Mo	For service up to 1200° F. Best corrosion and oxidation resistance than other grades.
2	A351 LCC	Low Carbon Steel	For service from -50° F to 650° F. This material must be quenched and tempered to obtain tensile and impact properties needed at sub-zero temperatures.

(1) Upon prolonged exposure to temperatures above 800° F, the carbide phase of carbon steel may be converted to graphite. Permissible, but not recommended for prolonged usage above 800° F.

(2) Valve regularly rated to 1000° F.

(3) Considerations should be given to the possibility of excessive oxidation (scaling) when used above 1050° F.

(4) Product used within the jurisdiction of Section 1 Power Boilers of the ASME Boiler and Pressure Vessel code is subject to the same temperature limitations as specified in that document.

(5) Product used within the jurisdiction of Power Piping, ASME Code for Pressure Piping B31.1, is subject to the same maximum temperature limitations placed upon the material in paragraph 124.2.

Trim Material

Part No. Suffix	API Trim Number	Nominal Trim	Seating Surfaces	Stem Material	Temperature
X	1	F6 / F6 (1)	13 Cr ASTM A217 (CA15)	13 Cr (410)	1100° F
UF*	5	HF / HF (2)	Stellite 6	13 Cr (410)	1200° F
A	9	Monel / Monel (4)	Monel	Monel	450° F
L	10	316 / 316 (3)	316 SS	316 SS	850° F
XUF*	8	F6 / HF (1) (2)	13 Cr ASTM A217 (CA 215) Stellite 6	13 Cr (410)	1100° F
AUF*	11	Monel / HF (4) (2)	Monel Stellite 6	Monel	450° F
LUF*	12	316 / HF (3) (2)	316 SS Stellite 6	316 SS	850° F

(1) 13% Chromium AISI Type 410 Stainless Steel.

(2) Hard Facing is weld deposited Cobalt base alloy.

(3) Austenitic Stainless Steel is a Ni-Cr-Mo stainless steel in the AISI Type 316 category.

(4) Ni-Cu Alloy.

*F denotes Flex Wedge (only applies to Gate Valves).

Valve Modification Suffix Identification

S.I.	Description	S.I.	Description	S.I.	Description	S.I.	Description
TD	Drain, Drill, and Tap	ST	Special Trim	SP	Special Paint	OV	(1) Gear (4) Pneumatic
BP	Bypass	BW	Special Butt-Weld End Prep	LD	Locking Device		(2) Chainwheel (5) Hydraulic
PG	Special Packing and/or Gasket	RJ	Ring Joint	LR	Lantern Ring		(3) Electric (6) Other

Typical Bolted Bonnet Gate Valve Features

Crane gate valves offer the ultimate in dependable service for steam, air, gas, oil, oil vapor, and high pressure installations. All have straight-through ports to assure minimum turbulence, erosion, and resistance to flow. They are available in a wide variety of trims.

1. **Body:** Body is cast to provide liberal strength to meet operating conditions and to permit unobstructed flow. Turbulence, erosion and pressure drop are minimized.

Flanged End-Crane cast steel gate valves are available in flanged end and butt weld ends. All flanged and butt welding end valves are designed to conform to ASME B16.5 and ASME B16.34 standards.

2. **Integral Yoke & Bonnet:** Some designs incorporate a two-piece bonnet and yoke. All bonnet assemblies are cast and finished to the same exacting tolerances as the bodies for accurate alignment of stems and ease of sealing. Bonnet joint varies from flat face gasket-joint to ring-type bonnet joint, depending on class.
3. **Seat Rings:** Seat rings are seal welded to eliminate leak path behind rings and for long trouble-free service. The surfaces are precision ground to fit accurately with the disc.
4. **Disc:** Crane's one piece flexible disc provides accurate alignment of mating seating surfaces so the valve can absorb piping strains without leakage. Also, it avoids any tendency to stick in the seated position. Valves are also furnished with solid wedge discs that have proved successful in millions of applications.
5. **Stem:** The tee-head disc-stem connection prevents lateral strain on the stem for smooth, easy operation. Accurately cut threads engage the yoke sleeve for positive control of disc position.
6. **Yoke Sleeve**
7. **Handwheel Nut**
8. **Yoke Sleeve Retaining Nut**
9. **Packing:** Packing contains corrosion inhibitor to avoid stem pitting. Stuffing box is deep, assuring long packing life.
10. **Gland:** Gland is a two-piece ball-type which exerts even pressure on the packing without binding the stem.
11. **Gland Flange**
12. **Gland Eye Bolts:** Eyebolts swing aside for ease in repacking the stuffing box.
13. **Gland Eye Bolt Nuts**
14. **Bonnet Gasket**
15. **Bonnet Studs:** Number is dependent on valve size and class.
16. **Bonnet Nuts:** Number is dependent on valve size and class.
17. **Groove-Pin**
18. **Bonnet Bushing**
19. **Handwheel:** Crane gate valves can also be supplied with gear or motor operators.
20. **Hydraulic Grease Fitting:** Hydraulic grease fitting provides for lubrication of yoke sleeve bearing surfaces (not shown).

