

Class 150 • Outside Screw & Yoke • Flexible Wedge Disc

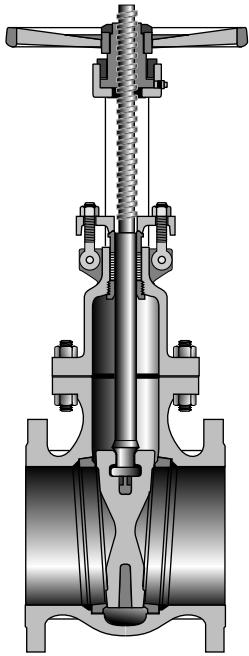
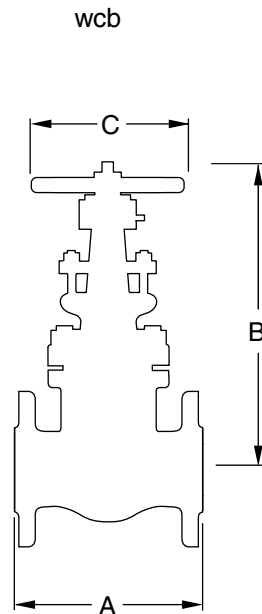


Figure 47
Flanged
Figure 47½
Butt Weld

Size Range:
2 through 24 inches
(50 - 600 mm)

Pressure Temperature Rating
Carbon Steel
ASTM A216 Grade WCB
285 psi @ -20°F to 100°F
(20 bar @ -28°C to 37°C)



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

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	Corrugated Soft Steel or Steel/ Stainless Steel w/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

NOTES:

*Standard construction: WCB-Trim 8, other options are available. Crane recommends the use of manual or powered gear assistance for sizes 10" and larger.

Dimensions and Weights

Inches (millimeters) - pounds (kilograms)

Valves	2 (50)	2½ (65)	3 (80)	4 (100)	6 (150)	8 (200)	10 (250)	12 (300)	14 (350)	16 (400)	18 (450)	20 (500)	24 (600)
A	7.00 (178)	7.50 (191)	8.00 (203)	9.00 (229)	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)
A (47½)	8.50 (216)	9.50 (241)	11.12 (282)	12.00 (305)	15.88 (403)	16.50 (419)	18.00 (457)	19.75 (502)	22.50 (572)	24.00 (610)	26.00 (660)	28.00 (711)	32.00 (813)
B (Open)	17 (432)	17 (432)	19 (483)	23 (584)	31 (787)	39 (990)	47 (1193)	55 (1397)	61 (1549)	71 (1803)	78 (1981)	90 (2286)	99 (2515)
C	8 (203)	8 (203)	9 (229)	10 (254)	12 (305)	14 (356)	16 (406)	18 (457)	22 (559)	24 (610)	25 (635)	27 (686)	30 (762)
Wt. (47)	49 (22)	55 (25)	74 (33)	110 (50)	192 (87)	300 (136)	420 (190)	630 (285)	905 (410)	1260 (571)	1590 (721)	2580 (1170)	3240 (1469)
Wt. (47½)	45 (20)	48 (21)	67 (30)	98 (44)	180 (81)	290 (131)	430 (195)	625 (283)	910 (412)	1260 (571)	1590 (721)	2580 (1170)	3250 (1474)

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	Stainless Steel 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

NOTES:

*Standard construction: WCB-Trim 8, other options are available. Crane recommends the use of manual or powered gear assistance for sizes 8" and larger.

Figure 33

Flanged

Figure 33½

Butt Weld

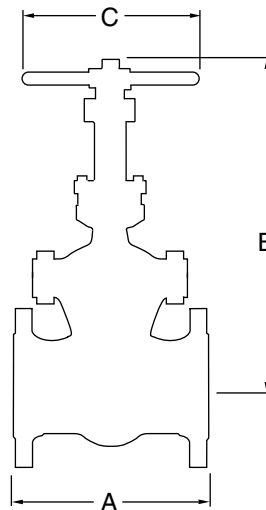
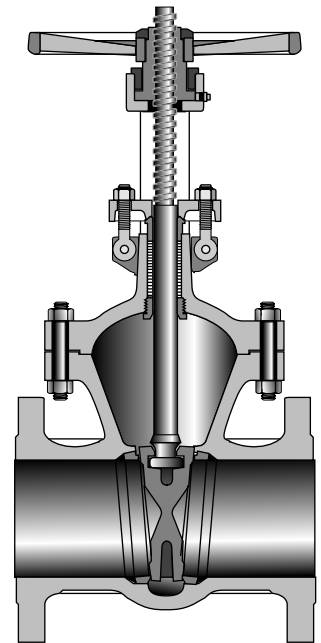
Size Range:

2 through 24 inches
(50 - 600 mm)

Pressure Temperature Rating

Carbon Steel

ASTM A216 Grade WCB
740 psi @ -20°F to 100°F
(51 bar @ -28°C to 37°C)



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

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)	14 (350)	16 (400)	18 (450)	20 (500)	24 (600)
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)	30.00 (762)	33.00 (838)	36.00 (914)	39.00 (990)	45.00 (1143)
B (Open)	18 (457)	18 (457)	21 (533)	24 (609)	33 (838)	42 (1066)	50 (1270)	58 (1473)	62 (1574)	71 (1803)	79 (2006)	85 (2154)	100 (2540)
C	8 (203)	8 (203)	9 (229)	10 (254)	14 (356)	16 (406)	18 (457)	20 (508)	22 (559)	24 (610)	25 (635)	30 (762)	30 (762)
Wt. (33)	69 (31)	77 (34)	112 (50)	165 (74)	310 (140)	500 (226)	760 (344)	1050 (476)	1530 (693)	2380 (1079)	2722 (1234)	3650 (1655)	5115 (2320)
Wt. (33½)	57 (25)	64 (29)	92 (41)	132 (59)	256 (116)	410 (185)	650 (294)	880 (399)	1530 (693)	2380 (1079)	2000 (907)	3370 (1528)	4675 (2120)

Class 600 • Outside Screw & Yoke • Flexible Wedge Disc

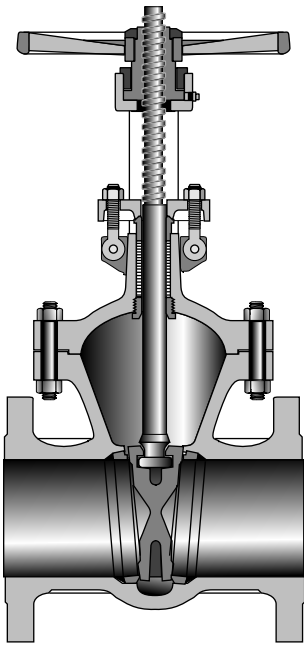
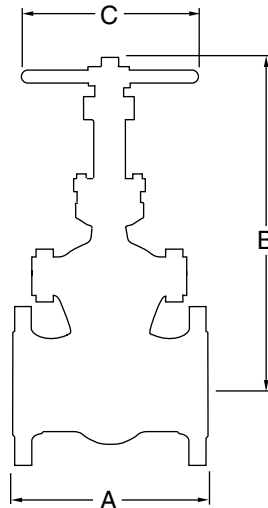


Figure 76
Flanged
Figure 76½
Butt Weld

Size Range:
2 through 12 inches
(50 - 300 mm)

Pressure Temperature Rating
Carbon Steel
ASTM A216 Grade WCB
1480 psi @ -20°F to 100°F
(102 bar @ -28°C to 37°C)



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

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	Ring Type Joint
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

NOTES:

*Standard construction: WCB-Trim 8, other options are available. Crane recommends the use of manual or powered gear assistance for sizes 6" and larger.

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	11.50 (292)	13.00 (330)	14.00 (355)	17.00 (431)	22.00 (558)	26.00 (660)	31.00 (787)	33.00 (838)
B (Open)	17 (431)	19 (482)	23 (584)	27 (685)	36 (914)	42 (1066)	51 (1295)	58 (1473)
C	10 (254)	10 (254)	12 (304)	14 (355)	18 (457)	20 (508)	25 (635)	27 (685)
Wt. (76)	99 (44)	121 (54)	170 (77)	280 (127)	590 (267)	1080 (489)	1660 (752)	2070 (938)
Wt. (76½)	85 (38)	110 (49)	167 (75)	280 (127)	610 (276)	1070 (485)	1670 (757)	2070 (938)

General Information • Class 150, 300, and 600 Valves

Features

Flexible Wedge

- Compensates for deformation of body due to pipe stresses.
- Will not stick when valve is closed hot and allowed to cool.

Welded-in Seat Ring

- Seat ring is seal welded to eliminate leak path.

Standards

These valves comply with the applicable requirements of the following standards:

- API 600
- API 598
- ASME B16.34
- ASME B16.25
- ASME B16.10
- ASME B16.5

Inspection Policy for Crane Valves

Every Crane cast steel valve is subjected to a 100% pressure test according to API 598 requirements. Manufacturer's material test reports and Inspection and Test Certifications are available upon request. Some of the additional inspections and tests performed are:

- Random Radiograph Inspection of Body and Bonnet Castings to ASME B16.34 Appendix B
- Random Chemical Composition and Mechanical Properties Verification of Fasteners to ASTM A-193/A-194
- Liquid Penetrate Inspection of Seat Rings
- Visual Inspection of Casting to MSS SP-55 and MSS SP-112
- Receiving, In-Process, and Final Dimensional Inspections to Relevant Valve Standards

Other inspections or tests can be performed or evaluation criteria applied when specified by the customer.

Notes

- Standard material is ASTM A216 Grade WCB.
- Standard trim is XU (13% Cr to hardface) which is suitable for a wide range of applications.
- Butt weld end dimensions shall be in accordance with ASME B16.25 Figure 2a or Figure 3a (without backing ring) for standard pipe schedules, unless otherwise specified in the purchase order. Butt weld ends shall not be produced from flanged end castings unless specifically authorized in writing by CRANE Energy Flow Solutions.

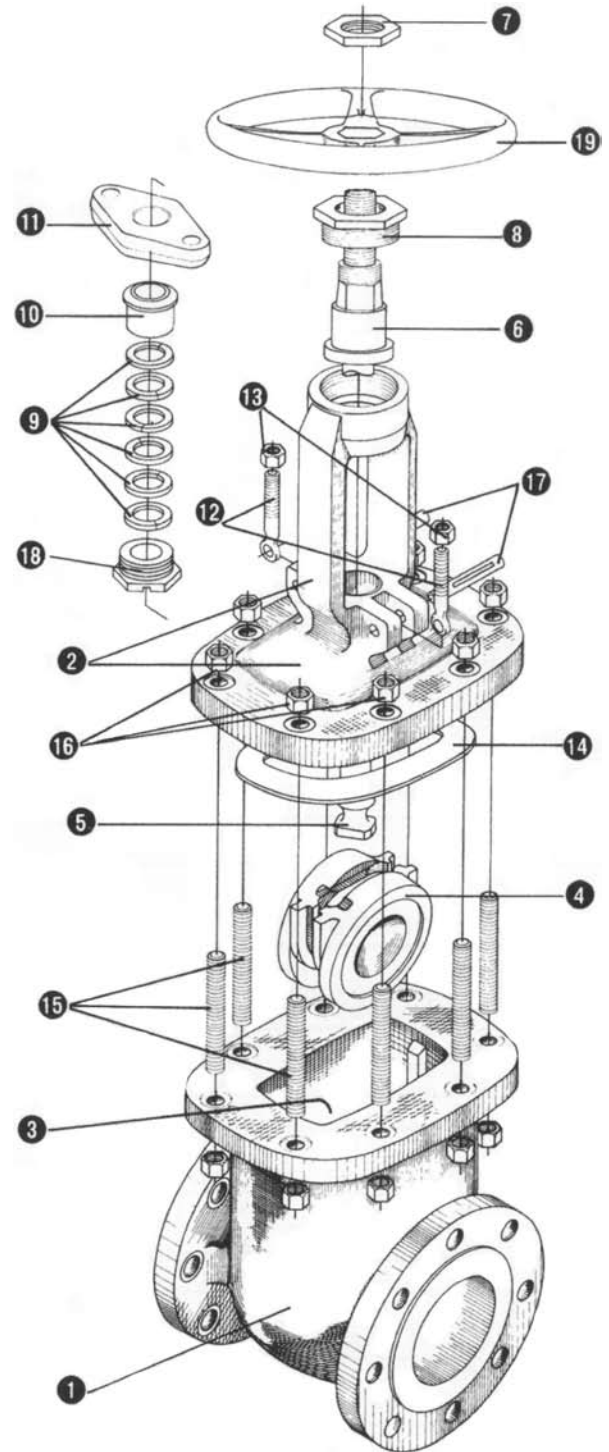
Class	Schedule
150/300	Standard
600	Extra Strong
900/1500	Schedule 160

- See "Technical Data" section for locations of bypasses, taps and drains.

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.
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. **Gland Eyebolt Pins**
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).



NOTE: Crane recommends the use of gear assistance for certain multi-turn valves for optimal functional performance in larger sizes and high flow-rate applications. Please refer to the note on specific product pages.