

# Installation, Marking and Identification

When purchasing valves, reference should also be made to MSS SP92 "Valve Users Guide." Inquiries relating specifically to Crane products may be referred to our factory or customer service department.

Marking and identification of Crane steel valves conforms to ASME B16.34 and MSS SP-25.

It is important to properly identify valves in service to allow for the ordering of replacement parts or address questions or concerns relating to our products. Body markings and information shown on the identification plate helps to properly identify valves, allowing timely and accurate responses to such inquiries.

Integrally cast body marking data includes the following information and helps to provide traceability:

- Crane logo
- Pressure class
- Valve size
- "Steel" symbol for the grade of material (i.e., WCB for carbon steel)
- Heat number – on body and bonnet (cast or stamped)
- Individual serialization

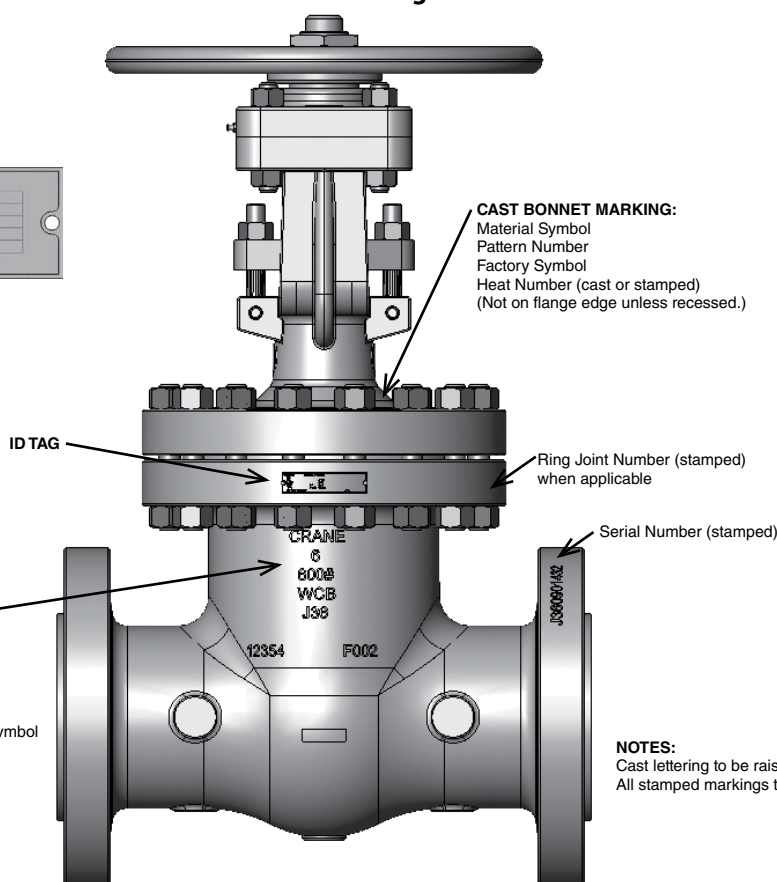
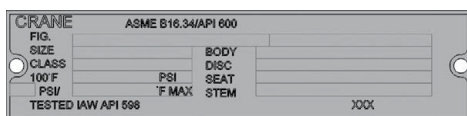
The body markings are supplemented by an identification plate which, depending on valve type and size, is mounted in the most practicable position. Tag location for gate and globe valves is typically on the valve yoke or body/bonnet flange. Check valve tags are typically mounted on the rim of the cap.

Identification plates bear the following information:

- Catalog number
- Valve size
- Body material
- Disc material
- Stem material
- Seat and trim material
- Pressure and temperature rating

## Product Marking

### I.D. Tag Marking Information



# Overview Class 150, 300, 600, 900 & 1500 Gate 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 624
- API 622
- 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.
- \*Guide hard facing and machining on gate valves >24" is available upon request.

# Class 150 • Outside Screw & Yoke • Flexible Wedge Disc

**Figure 47**

- Gate, Flanged

**Figure 47½**

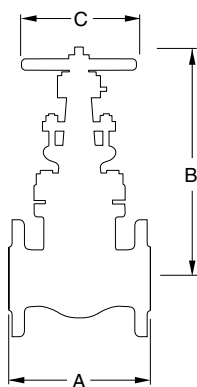
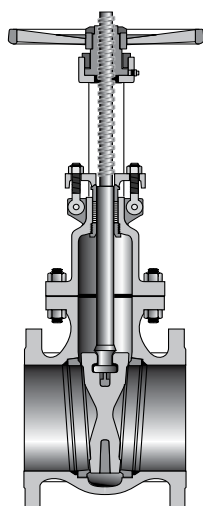
- Gate, Butt Weld

**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)


**Material of Construction\***

| Description      | Material                                    |
|------------------|---------------------------------------------|
| Body             | ASTM A216 GR.WCB                            |
| Seat Ring        | ASTM A105N + Alloy 6 Hardfaced              |
| Disc             | ASTM A216 GR.WCB + 13Cr Faced               |
| Stem             | ASTM A182 GR.F6a                            |
| Gasket           | 304SS + Graphite                            |
| Bonnet Bolts     | ASTM A193 GR.B7                             |
| Bonnet Bolt Nuts | ASTM A194 GR.2H                             |
| Bonnet           | ASTM A216 GR.WCB                            |
| Bonnet Bushing   | ASTM A276 Type 410                          |
| Spacer Ring      | ASTM A276 Type 410                          |
| Eye Bolt Pins    | ASTM A29 GR.1045                            |
| Stem Packing     | Braided Graphite & Die formed Graphite Ring |
| Gland            | ASTM A276 Type 410                          |
| Gland Flange     | ASTM A216 GR.WCB                            |
| Gland Eye Bolts  | ASTM A193 GR.B7                             |
| Eye Bolt Nuts    | ASTM A194 GR.2H                             |
| Grease Nipple    | ASTM A29 GR.1020                            |
| Stem Nut         | ASTM A439 GR.D-2                            |
| Retaining Nut    | ASTM A29 GR.1045                            |
| Handwheel        | ASTM A536 GR.60-40-18                       |
| Handwheel Nut    | ASTM A29 GR.1045                            |
| Screw            | ASTM A29 GR.1035                            |
| Nameplate        | SS304                                       |
| Screw            | SS304                                       |

\*Standard construction: WCB-Trim 8, other options are available.

Crane recommends the use of manual or powered gear assistance for sizes 10" and larger.

**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     | 2 ½   | 3     | 4      | 6      | 8      | 10     | 12     | 14     | 16 <sup>(1)</sup> | 18 <sup>(1)</sup> | 20 <sup>(1)</sup> | 24 <sup>(1)</sup> |
|--------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------------------|-------------------|-------------------|-------------------|
|        | (50)  | (65)  | (80)  | (100)  | (150)  | (200)  | (250)  | (300)  | (350)  | (400)             | (450)             | (500)             | (600)             |
| A      | 7.00  | 7.50  | 8.00  | 9.00   | 10.50  | 11.50  | 13.00  | 14.00  | 15.00  | 16.00             | 17.00             | 18.00             | 20.00             |
| (47)   | (178) | (190) | (203) | (229)  | (267)  | (292)  | (330)  | (356)  | (381)  | (406)             | (432)             | (457)             | (508)             |
| A      | 8.50  | 9.50  | 11.12 | 12.00  | 15.88  | 16.50  | 18.00  | 19.75  | 22.50  | 24.00             | 26.00             | 28.00             | 32.00             |
| (47½)  | (216) | (241) | (282) | (305)  | (403)  | (419)  | (457)  | (502)  | (572)  | (610)             | (660)             | (711)             | (813)             |
| B      | 15.43 | 17.68 | 20.24 | 23.74  | 30.91  | 38.39  | 45.91  | 54.96  | 62.91  | 70.59             | 77.64             | 86.73             | 100.71            |
| (Open) | (392) | (449) | (514) | (603)  | (785)  | (975)  | (1166) | (1396) | (1598) | (1793)            | (1972)            | (2203)            | (2558)            |
| C      | 7.87  | 7.87  | 9.84  | 9.84   | 13.78  | 13.78  | 15.75  | 17.72  | 18.11  | 18.11             | 18.11             | 18.11             | 21.26             |
|        | (200) | (200) | (250) | (250)  | (350)  | (350)  | (400)  | (450)  | (460)  | (460)             | (460)             | (460)             | (540)             |
| Wt.    | 37.48 | 46.30 | 72.75 | 110.23 | 185.19 | 284.40 | 425.49 | 604.07 | 886.26 | 1117.74           | 1450.64           | 1781.34           | 2877.03           |
| (47)   | (17)  | (21)  | (33)  | (50)   | (84)   | (129)  | (193)  | (274)  | (402)  | (507)             | (658)             | (808)             | (1305)            |
| Wt.    | 33.07 | 39.68 | 57.32 | 90.39  | 152.12 | 238.10 | 343.92 | 546.75 | 804.69 | 1062.63           | 1294.11           | 1657.88           | 3097.49           |
| (47½)  | (15)  | (18)  | (26)  | (41)   | (69)   | (108)  | (156)  | (248)  | (365)  | (482)             | (587)             | (752)             | (1405)            |

(1) Dimensions and weights shown with gear actuator.

# Class 300 • Outside Screw & Yoke • Flexible Wedge Disc

**Figure 33**

- Gate, Flanged

**Figure 33½**

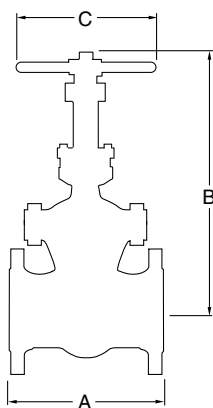
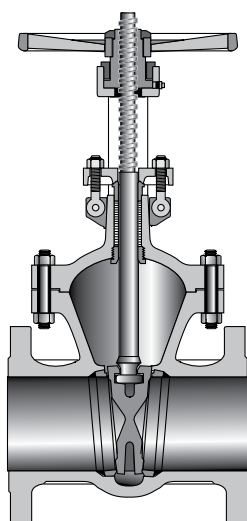
- Gate, Butt Weld

**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)


**Material of Construction\***

| Description      | Material                                    |
|------------------|---------------------------------------------|
| Body             | ASTM A216 GR.WCB                            |
| Seat Ring        | ASTM A105N + Alloy 6 Hardfaced              |
| Disc             | ASTM A216 GR.WCB + 13Cr Faced               |
| Stem             | ASTM A182 GR. F6a                           |
| Gasket           | 304SS + Graphite                            |
| Bonnet           | ASTM A216 GR.WCB                            |
| Bonnet Bolts     | ASTM A193 GR.B7                             |
| Bonnet Bolt Nuts | ASTM A194 GR.2H                             |
| Bonnet Bushing   | ASTM A276 Type 410                          |
| Spacer Ring      | ASTM A276 Type 410                          |
| Stem Packing     | Braided Graphite & Die formed Graphite Ring |
| Gland            | ASTM A276 Type 410                          |
| Gland Flange     | ASTM A216 GRWCB                             |
| Eye Bolt Pins    | ASTM A29 GR.1045                            |
| Gland Eye Bolts  | ASTM A193 GR.B7                             |
| Eye Bolt Nuts    | ASTM A194 GR.2H                             |
| Grease Nipple    | ASTM A29 GR.1020                            |
| Stem Nut         | ASTM A439 GR.D-2                            |
| Retaining Nut    | ASTM A29 GR.1045                            |
| Handwheel        | ASTM A536 GR.60-40-18                       |
| Handwheel Nut    | ASTM A29 GR.1045                            |
| Screw            | ASTM A29 GR.1035                            |
| Nameplate        | SS304                                       |
| Screw            | SS304                                       |

\*Standard construction: WCB-Trim 8, other options are available.

Crane recommends the use of manual or powered gear assistance for sizes 8" and larger.

**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     | 2 ½     | 3      | 4      | 6      | 8      | 10     | 12      | 14 <sup>(1)</sup> | 16 <sup>(1)</sup> | 18 <sup>(1)</sup> | 20 <sup>(1)</sup> | 24 <sup>(1)</sup> |
|--------|-------|---------|--------|--------|--------|--------|--------|---------|-------------------|-------------------|-------------------|-------------------|-------------------|
|        | (50)  | (65)    | (80)   | (100)  | (150)  | (200)  | (250)  | (300)   | (350)             | (400)             | (450)             | (500)             | (600)             |
| A      | 8.50  | 9.50    | 11.12  | 12.00  | 15.88  | 16.50  | 18.00  | 19.75   | 30.00             | 33.00             | 36.00             | 39.00             | 45.00             |
| (33)   | (216) | (241)   | (282)  | (305)  | (403)  | (419)  | (457)  | (502)   | (762)             | (838)             | (914)             | (991)             | (1143)            |
| B      | 17.13 | 20.08   | 21.26  | 24.92  | 32.09  | 40.16  | 47.72  | 56.69   | 63.98             | 71.57             | 80.39             | 87.91             | 102.36            |
| (Open) | (435) | (510)   | (540)  | (633)  | (815)  | (1020) | (1212) | (1440)  | (1625)            | (1818)            | (2042)            | (2233)            | (2600)            |
| C      | 7.87  | 7.87    | 9.84   | 9.84   | 13.78  | 15.75  | 17.72  | 19.69   | 18.11             | 18.11             | 21.26             | 21.26             | 24.02             |
|        | (200) | (200)   | (250)  | (250)  | (350)  | (400)  | (450)  | (500)   | (460)             | (460)             | (540)             | (540)             | (610)             |
| Wt.    | 59.52 | (74.96) | 114.64 | 163.14 | 321.87 | 485.02 | 617.29 | 1047.20 | 1530.01           | 2012.82           | 2722.71           | 3648.65           | 4828.12           |
| (33)   | (27)  | (34)    | (52)   | (74)   | (146)  | (220)  | (280)  | (475)   | (694)             | (913)             | (1235)            | (1655)            | (2190)            |
| Wt.    | 37.48 | 57.32   | 105.82 | 143.30 | 249.12 | 361.56 | 758.39 | 1047.20 | 1245.61           | 1774.72           | 2332.49           | 3112.93           | 5079.45           |
| (33½)  | (17)  | (26)    | (48)   | (65)   | (113)  | (164)  | (344)  | (475)   | (565)             | (805)             | (1058)            | (1412)            | (2304)            |

(1) Dimensions and weights shown with gear actuator.

(2) Flanged end and butt-weld valves share same face-to-face dimensions.

# Class 600 • Outside Screw & Yoke • Flexible Wedge Disc

**Figure 76**

- Gate, Flanged

**Figure 76½**

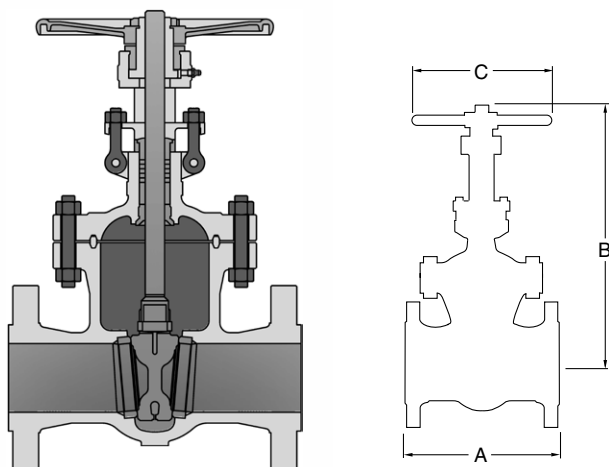
- Gate, Butt Weld

**Size Range:**

- 2 through 24 inches
- (50 - 600 mm)

**Pressure Temperature Rating**

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


**Dimensions and Weights**

Inches (millimeters) - pounds (kilograms)

| Valves | 2     | 2 ½    | 3      | 4      | 6      | 8       | 10      | 12      | 14 <sup>(1)</sup> | 16 <sup>(1)</sup> | 18 <sup>(1)</sup> | 20 <sup>(1)</sup> | 24 <sup>(1)</sup> |
|--------|-------|--------|--------|--------|--------|---------|---------|---------|-------------------|-------------------|-------------------|-------------------|-------------------|
|        | (50)  | (65)   | (80)   | (100)  | (150)  | (200)   | (250)   | (300)   | (350)             | (400)             | (450)             | (500)             | (600)             |
| A      | 11.50 | 13.00  | 14.00  | 17.00  | 22.00  | 26.00   | 31.00   | 33.00   | 35.00             | 39.00             | 43.00             | 47.00             | 55.00             |
| (76)   | (292) | (330)  | (356)  | (432)  | (559)  | (660)   | (787)   | (838)   | (889)             | (991)             | (1092)            | (1194)            | (1397)            |
| B      | 16.81 | 20.55  | 22.68  | 26.10  | 35.87  | 44.13   | 50.67   | 57.80   | 69.41             | 79.72             | 81.57             | 90.24             | 107.17            |
| (Open) | (427) | (522)  | (576)  | (663)  | (911)  | (1121)  | (1287)  | (1468)  | (1763)            | (2025)            | (2072)            | (2292)            | (2722)            |
| C      | 9.84  | 9.84   | 11.81  | 13.78  | 17.72  | 19.69   | 25.20   | 26.77   | 24.02             | 24.02             | 24.02             | 24.02             | 24.02             |
|        | (250) | (250)  | (300)  | (350)  | (450)  | (500)   | (640)   | (680)   | (610)             | (610)             | (610)             | (610)             | (610)             |
| Wt.    | 72.75 | 127.87 | 158.73 | 268.96 | 568.79 | 1031.76 | 1563.08 | 2072.35 | 2524.29           | 3417.17           | 4563.57           | 6558.75           | 9374.06           |
| (76)   | (33)  | (58)   | (72)   | (122)  | (258)  | (468)   | (709)   | (940)   | (1145)            | (1550)            | (2070)            | (2975)            | (4252)            |
| Wt.    | 61.73 | 92.59  | 121.25 | 185.19 | 275.58 | 742.96  | 1208.13 | 1995.18 | 2147.30           | 2965.22           | 3814.00           | 5324.16           | 7528.79           |
| (76½)  | (28)  | (42)   | (55)   | (84)   | (125)  | (337)   | (548)   | (905)   | (974)             | (1345)            | (1730)            | (2415)            | (3415)            |

(1) Dimensions and weights shown with gear actuator.

(2) Flanged end and butt-weld valves share same face-to-face dimensions.

**Material of Construction\***

| Description      | Material                                    |
|------------------|---------------------------------------------|
| Body             | ASTM A216 GR.WCB                            |
| Seat Ring        | ASTM A105N + Alloy 6 Hardfaced              |
| Disc             | ASTM A216 GR.WCB + 13Cr Faced               |
| Stem             | ASTM A182 GR F6a                            |
| Gasket Ring      | Soft Steel                                  |
| Bonnet           | ASTM A216 GR.WCB                            |
| Bonnet Bolts     | ASTM A193 GR.B7                             |
| Bonnet Bolt Nuts | ASTM A194 GR.2H                             |
| Bonnet Bushing   | ASTM A276 Type 410                          |
| Spacer Ring      | ASTM A276 Type 410                          |
| Stem Packing     | Braided Graphite & Die formed Graphite Ring |
| Gland            | ASTM A276 Type 410                          |
| Gland Flange     | ASTM A216 GR.WCB                            |
| Eye Bolt Pins    | ASTM A29 GR.1045                            |
| Gland Eye Bolts  | ASTM A193 GR.B7                             |
| Eye Bolt Nuts    | ASTM A194 GR.2H                             |
| Grease Nipple    | ASTM A29 GR.1020                            |
| Stem Nut         | ASTM A439 GR.D-2                            |
| Retaining Nut    | ASTM A29 GR.1045                            |
| Handwheel        | ASTM A536 GR.60-40-18                       |
| Handwheel Nut    | ASTM A29 GR.1045                            |
| Screw            | ASTM A29 GR.1035                            |
| Bearing          | ASTM A295 GR.S2100                          |
| Yoke             | ASTM A216 GR.WCB                            |
| Yoke Bolts       | ASTM A193 GR.B7                             |
| Yoke Bolt Nuts   | ASTM A194 GR.2H                             |
| Nameplate        | SS304                                       |
| Screw            | SS304                                       |

\*Standard construction: WCB-Trim 8, other options are available.

Crane recommends the use of manual or powered gear assistance for sizes 6" and larger.

**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      |

# Class 900 • Outside Screw & Yoke • Flexible Wedge Disc

**Figure 83**

- Gate, Flanged

**Figure 83½**

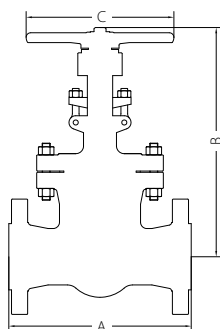
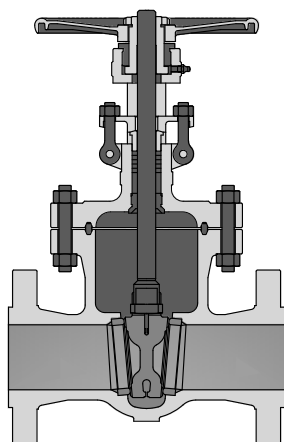
- Gate, Butt Weld

**Size Range:**

- 2 through 24 inches
- (50 - 600 mm)

**Pressure Temperature Rating**

- Carbon Steel
- ASTM A216 Grade WCB
- 2220 psi @ -20°F to 100°F
- (153 bar @ -28°C to 37°C)


**Dimensions and Weights**

Inches (millimeters) - pounds (kilograms)

| Valves | 2      | 3      | 4      | 6      | 8       | 10      | 12      | 14 <sup>(1)</sup> | 16 <sup>(1)</sup> | 18 <sup>(1)</sup> | 24 <sup>(1)</sup> |
|--------|--------|--------|--------|--------|---------|---------|---------|-------------------|-------------------|-------------------|-------------------|
|        | (50)   | (80)   | (100)  | (150)  | (200)   | (250)   | (300)   | (350)             | (400)             | (450)             | (600)             |
| A      | 14.50  | 15.00  | 18.00  | 24.00  | 29.00   | 33.00   | 38.00   | 40.50             | 44.50             | 48.00             | 61.00             |
| (83)   | (368)  | (381)  | (457)  | (610)  | (737)   | (838)   | (965)   | (1029)            | (1130)            | (1219)            | (1549)            |
| B      | 19.88  | 22.95  | 26.02  | 37.01  | 43.43   | 52.60   | 58.66   | 68.74             | 75.98             | 90.16             | 110.55            |
| (Open) | (505)  | (583)  | (661)  | (940)  | (1103)  | (1336)  | (1490)  | (1746)            | (1930)            | (2290)            | (2808)            |
| C      | 11.81  | 13.78  | 15.75  | 22.05  | 25.20   | 26.77   | 29.92   | 24.02             | 24.02             | 31.89             | 31.89             |
|        | (300)  | (350)  | (400)  | (560)  | (640)   | (680)   | (760)   | (610)             | (610)             | (810)             | (810)             |
| Wt.    | 163.14 | 220.46 | 427.70 | 820.12 | 1404.34 | 2347.92 | 3417.17 | 3487.71           | 5291.09           | 6172.94           | 13448.20          |
| (83)   | (74)   | (100)  | (194)  | (372)  | (637)   | (1065)  | (1550)  | (1582)            | (2400)            | (2800)            | (6100)            |
| Wt.    | 119.05 | 154.32 | 242.51 | 584.22 | 1097.90 | 1785.74 | 2707.28 | 4429.09           | 5650.45           | 7275.25           | 13492.29          |
| (83½)  | (54)   | (70)   | (110)  | (265)  | (498)   | (810)   | (1228)  | (2009)            | (2563)            | (3300)            | (6120)            |

(1) Dimensions and weights shown with gear actuator.

(2) Flanged end and butt-weld valves share same face-to-face dimensions.

**Material of Construction\***

| Description      | Material                                    |
|------------------|---------------------------------------------|
| Body             | ASTM A216 GR.WCB                            |
| Seat Ring        | ASTM A105N + Alloy 6 Hardfaced              |
| Disc             | ASTM A216 GR.WCB + 13Cr Faced               |
| Stem             | ASTM A182 GR F6a                            |
| Gasket Ring      | Soft steel                                  |
| Bonnet           | ASTM A216 GR.WCB                            |
| Bonnet Bolts     | ASTM A193 GR.B7                             |
| Bonnet Bolt Nuts | ASTM A194 GR.2H                             |
| Bonnet Bushing   | ASTM A276 Type 410                          |
| Spacer Ring      | ASTM A276 Type 410                          |
| Stem Packing     | Braided Graphite & Die formed Graphite Ring |
| Gland            | ASTM A276 Type 410                          |
| Gland Flange     | ASTM A216 GR.WCB                            |
| Eye Bolt Pins    | ASTM A29 GR.1045                            |
| Gland Eye Bolts  | ASTM A193 GR.B7                             |
| Eye Bolt Nuts    | ASTM A194 GR.2H                             |
| Grease Nipple    | ASTM A29 GR.1020                            |
| Stem Nut         | ASTM A439 GR.D-2                            |
| Retaining Nut    | ASTM A29 GR.1045                            |
| Handwheel        | ASTM A536 GR.60-40-18                       |
| Handwheel Nut    | ASTM A29 GR.1045                            |
| Screw            | ASTM A29 GR.1035                            |
| Bearing          | ASTM A295 GR.52100                          |
| Yoke             | ASTM A216 GR.WCB                            |
| Yoke Bolts       | ASTM A193 GR.B7                             |
| Yoke Bolt Nuts   | ASTM A194 GR.2H                             |
| Nameplate        | SS304                                       |
| Screw            | SS304                                       |

\*Standard construction: WCB-Trim 8, other options are available.

Crane recommends the use of manual or powered gear assistance for sizes 6" and larger.

**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      |

# Class 1500 • Outside Screw & Yoke • Flexible Wedge Disc

**Figure 87**

- Gate, Flanged

**Figure 87½**

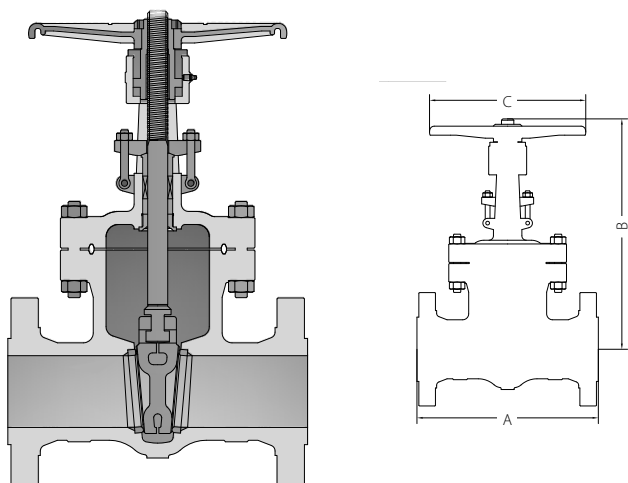
- Gate, Butt Weld

**Size Range:**

- 2 through 16 inches
- (50 - 400 mm)

**Pressure Temperature Rating**

- Carbon Steel
- ASTM A216 Grade WCB
- 3705 psi @ -20°F to 100°F
- (255 bar @ -28°C to 37°C)


**Dimensions and Weights**

Inches (millimeters) - pounds (kilograms)

| Valves | 2      | 3      | 4      | 6       | 8 <sup>(1)</sup> | 10 <sup>(1)</sup> | 12 <sup>(1)</sup> | 14 <sup>(1)</sup> | 16 <sup>(1)</sup> |
|--------|--------|--------|--------|---------|------------------|-------------------|-------------------|-------------------|-------------------|
|        | (50)   | (80)   | (100)  | (150)   | (200)            | (250)             | (300)             | (350)             | (400)             |
| A      | 14.50  | 18.50  | 21.50  | 27.75   | 32.75            | 39.00             | 44.50             | 49.50             | 54.50             |
| (87)   | (368)  | (470)  | (546)  | (705)   | (832)            | (991)             | (1130)            | (1257)            | (1384)            |
| B      | 19.88  | 24.72  | 28.94  | 38.31   | 45.94            | 56.69             | 62.01             | 74.21             | 83.70             |
| (Open) | (505)  | (628)  | (735)  | (973)   | (1167)           | (1440)            | (1575)            | (1885)            | (2126)            |
| C      | 11.81  | 15.75  | 19.69  | 25.20   | 21.26            | 24.02             | 24.02             | 31.89             | 31.89             |
|        | (300)  | (400)  | (500)  | (640)   | (540)            | (610)             | (610)             | (810)             | (810)             |
| Wt.    | 171.96 | 370.38 | 507.06 | 1203.72 | 1563.08          | 2072.35           | 4982.45           | 9038.95           | 13668.66          |
| (87)   | (78)   | (168)  | (230)  | (546)   | (709)            | (940)             | (2260)            | (4100)            | (6200)            |
| Wt.    | 119.05 | 284.40 | 434.31 | 789.25  | 1677.72          | 3615.58           | 4287.99           | 7054.79           | 11684.50          |
| (87½)  | (54)   | (129)  | (197)  | (358)   | (761)            | (1640)            | (1945)            | (3200)            | (5300)            |

(1) Dimensions and weights shown with gear actuator.

(2) Flanged end and butt-weld valves share same face-to-face dimensions.

**Material of Construction\***

| Description      | Material                                    |
|------------------|---------------------------------------------|
| Body             | ASTM A216 GR.WCB                            |
| Seat Ring        | ASTM A105N + Alloy 6 Hardfaced              |
| Disc             | ASTM A216 GR.WCB + 13Cr Faced               |
| Stem             | ASTM A182 GR F6a                            |
| Gasket Ring      | Soft steel                                  |
| Bonnet           | ASTM A216 GR.WCB                            |
| Bonnet Bolts     | ASTM A193 GR.B7                             |
| Bonnet Bolt Nuts | ASTM A194 GR.2H                             |
| Bonnet Bushing   | ASTM A276 Type 410                          |
| Spacer Ring      | ASTM A276 Type 410                          |
| Stem Packing     | Braided Graphite & Die formed Graphite Ring |
| Gland            | ASTM A276 Type 410                          |
| Gland Flange     | ASTM A216 GR.WCB                            |
| Eye Bolt Pins    | ASTM A29 GR.1045                            |
| Gland Eye Bolts  | ASTM A193 GR.B7                             |
| Eye Bolt Nuts    | ASTM A194 GR.2H                             |
| Bearing          | ASTM A295 GR.S2100                          |
| Grease Nipple    | ASTM A29 GR.1020                            |
| Stem Nut         | ASTM A439 GR.D-2                            |
| Retaining Nut    | ASTM A29 GR.1045                            |
| Handwheel        | ASTM A536 GR.60-40-18                       |
| Handwheel Nut    | ASTM A29 GR.1045                            |
| Screw            | ASTM A29 GR.1035                            |
| Yoke             | ASTM A216 GR.WCB                            |
| Yoke Bolts       | ASTM A193 GR.B7                             |
| Yoke Bolt Nuts   | ASTM A194 GR.2H                             |
| Nameplate        | SS304                                       |
| Screw            | SS304                                       |

\*Standard construction: WCB-Trim 8, other options are available.

Crane recommends the use of manual or powered gear assistance for sizes 4" and larger.

**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      |

## NACE Trim Specialty Steel Valves

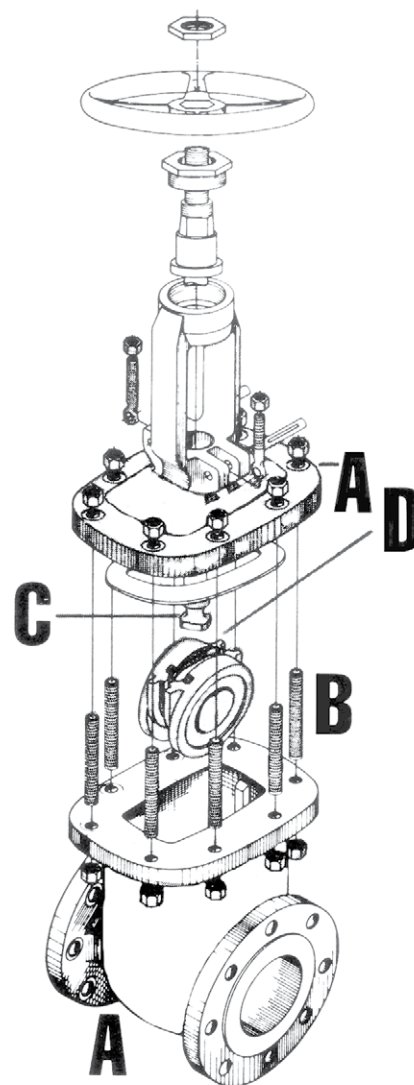
For servicing sour environments of Hydrogen Sulfide (H<sub>2</sub>S) bearing hydrocarbons, Crane offers NACE valves made of component materials specially heat-treated and hardness-controlled in compliance with NACE standard MR0103. Typical NACE material configurations are shown below for Crane cast steel gate valves.

**A** Body & Bonnet – Most NACE requirements for heat treatment and maximum hardness of 22 HRC. Standard material is ASTM A216 Grade WCB.

**B** Bolting – ASTM A193 Grade B7M bolts and ASTM A194 Grade 2HM nuts meet both NACE Classes I and II.

**C** Stem – Offering superior resistance to stress corrosion cracking, standard NACE stem is type 316 stainless steel in conformance with NACE hardness and heat treatment requirements.

**D** Disc – Standard disc is one piece flexible wedge with overlay hardface of ASTM A351 Grade CF8M, type 316 stainless steel in conformance with NACE hardness and heat treatment requirements.



| Valve Parts        | API and Hardness                   | LF Trim NACE                                                   | LUF Trim NACE                                                  |
|--------------------|------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------|
| Body/Bonnet        | ASTM A216 Grade WCB                | ASTM A216 Grade WCB; ≤22HRC<br>Base Metal with trim overlay of | ASTM A216 Grade WCB; ≤22HRC<br>Base Metal with trim overlay of |
| Disc – Solid Metal | ASTM A217 Grade CA15; 250 min.     | ASTM A351 Grade CF8M; ≤22HRC                                   | ASTM A351 Grade CF8M; ≤22HRC                                   |
| Seat Ring          | CoCr Overlayed;<br>Overlay ≥350 HB | 316L Overlayed;<br>Base Metal ≤22 HRC                          | CoCr Overlayed;<br>Base Metal ≤22 HRC                          |
| Gland              | Steel Zinc Plated                  | Steel Zinc Plated;<br>Base Metal ≤22 HRC                       | Steel Zinc Plated;<br>Base Metal ≤22 HRC                       |
| Stem               | 13Cr; 200–275 HB                   | ASTM A182 Grade F316; ≤22HRC                                   | ASTM A182 Grade F316; ≤22HRC                                   |
| Backseat Bushing   | 13Cr; 250 HB min.                  | ASTM 479 Grade T316; ≤22 HRC                                   | ASTM 479 Grade T316; ≤22HRC                                    |
| Body/Bonnet Studs  | ASTM A193 Grade 2H                 | ASTM A193 Grade B7M                                            | ASTM A193 Grade B7M                                            |
| Body/Bonnet Nuts   | ASTM A194 Grade 2H                 | ASTM A194 Grade 2HM                                            | ASTM A194 Grade 2HM                                            |

# Overview Class 150, 300, 600, 900 & 1500 Globe Valves

## Features

### Welded-in Seat Ring

- Seat ring is seal welded to eliminate leak path.

## Basic Standards

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

- API 623
- API 622
- API 624
- API 598
- ASME B16.34
- ASME B16.25
- ASME B16.10
- ASME B16.5

## 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.

# Class 150 • Outside Screw & Yoke • Bolted Bonnet

**Figure 143**

- Globe, Flanged

**Figure 143½**

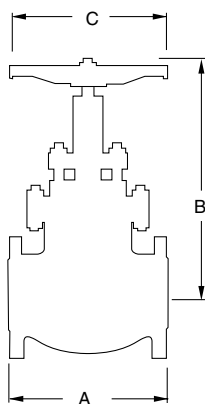
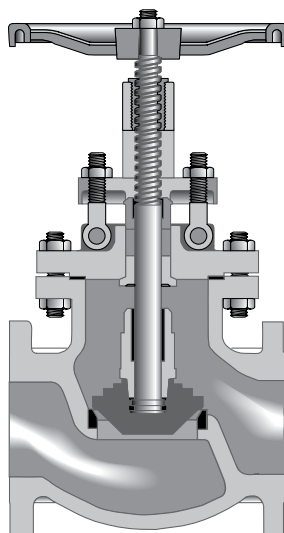
- Globe, Butt Weld

**Size Range:**

- 2 through 12 inches
- (50 - 300 mm)

**Pressure Temperature Rating**

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


**Material of Construction\***

| Description       | Material                                    |
|-------------------|---------------------------------------------|
| Body              | ASTM A216 GR.WCB                            |
| Seat Ring         | ASTM A105N+ Alloy 6 Hardfaced               |
| Disc              | ASTM A105N + 13Cr Faced                     |
| Disc Thrust Plate | ASTM A276 Type 420                          |
| Disc Nut          | ASTM A276 Type 410                          |
| Stem              | ASTM A182 GR F6a                            |
| Bonnet Bolt Nuts  | ASTM A194 GR.2H                             |
| Bonnet Bolts      | ASTM A193 GR.B7                             |
| Gasket            | 304SS + Graphite                            |
| Bonnet            | ASTM A216 GR.WCB                            |
| Bonnet Bushing    | ASTM A276 Type 410                          |
| Packing Spacer    | ASTM A276 Type 410                          |
| Stem Packing      | Braided Graphite & Die formed Graphite Ring |
| Eye Bolt Pins     | ASTM A29 GR.1045                            |
| Gland             | ASTM A276 Type 410                          |
| Gland Flange      | ASTM A216 GR.WCB                            |
| Gland Eye Bolts   | ASTM A193 GR.B7                             |
| Eye Bolt Nuts     | ASTM A194 GR.2H                             |
| Stem Nut          | ASTM A439 GR.D-2                            |
| Screw             | ASTM A29 GR.1035                            |
| Handwheel         | ASTM A536 GR.60-40-18                       |
| Handwheel Nut     | ASTM A29 GR.1045                            |
| Washer            | ASTM A29 GR.1045                            |
| Nameplate         | SS304                                       |

\*Standard construction: WCB-Trim 8, other options are available.

Crane recommends the use of manual or powered gear assistance for sizes 6" and larger.

**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 |
| Testing                 | API 598      |
| Basic Design            | API 623      |

**Dimensions and Weights**

Inches (millimeters) - pounds (kilograms)

| Valves | 2     | 2 ½   | 3     | 4      | 6      | 8      | 10     | 12     | 14 <sup>(1)</sup> | 16 <sup>(1)</sup> |
|--------|-------|-------|-------|--------|--------|--------|--------|--------|-------------------|-------------------|
|        | (50)  | (65)  | (80)  | (100)  | (150)  | (200)  | (250)  | (300)  | (350)             | (400)             |
| A      | 8.00  | 8.50  | 9.50  | 11.50  | 16.00  | 19.50  | 24.50  | 27.50  | 31.00             | 36.00             |
| (143)  | (203) | (216) | (241) | (292)  | (406)  | (495)  | (622)  | (698)  | (787)             | (914)             |
| B      | 13.90 | 16.00 | 15.79 | 18.23  | 21.10  | 24.45  | 27.99  | 35.94  | 44.13             | 46.61             |
| (Open) | (353) | (406) | (401) | (463)  | (536)  | (621)  | (711)  | (913)  | (1121)            | (1184)            |
| C      | 7.87  | 8.00  | 9.84  | 11.81  | 13.78  | 17.72  | 17.72  | 25.20  | 24.02             | 24.02             |
|        | (200) | (203) | (250) | (300)  | (350)  | (450)  | (450)  | (640)  | (610)             | (610)             |
| Wt.    | 44.09 | 70.00 | 88.18 | 132.28 | 224.87 | 352.74 | 601.86 | 928.15 | 1360.25           | 1543.24           |
| (143)  | (20)  | (31)  | (40)  | (60)   | (102)  | (160)  | (273)  | (421)  | (617)             | (700)             |
| Wt.    | 37.48 | 44.09 | 77.16 | 103.62 | 189.60 | 304.24 | 482.81 | 798.07 | 1082.47           | 1433.00           |
| (143½) | (17)  | (20)  | (35)  | (47)   | (86)   | (138)  | (219)  | (362)  | (491)             | (650)             |

(1) Dimensions and weights shown with gear actuator.

(2) Flanged end and butt-weld valves share same face-to-face dimensions.

(3) Hammer Blow hand wheels is a standard offering on sizes 8"-16"

# Class 300 • Outside Screw & Yoke • Bolted Bonnet

**Figure 151**

- Globe, Flanged

**Figure 151½**

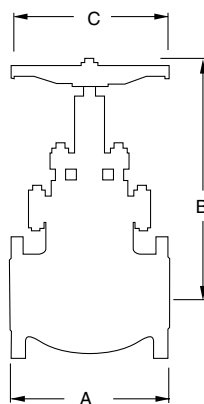
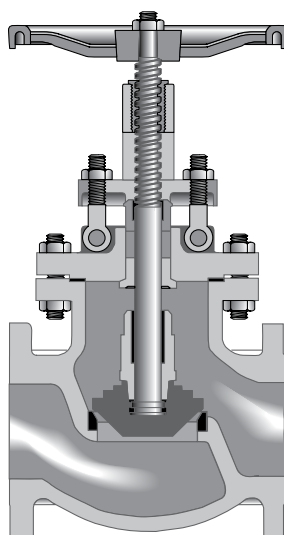
- Globe, Butt Weld

**Size Range:**

- 2 through 12 inches
- (50 - 300 mm)

**Pressure Temperature Rating**

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


**Material of Construction\***

| Description       | Material                                    |
|-------------------|---------------------------------------------|
| Body              | ASTM A216 GR.WCB                            |
| Seat Ring         | ASTM A105N+ Alloy 6 Hardfaced               |
| Disc              | ASTM A105N + 13Cr Faced                     |
| Disc Thrust Plate | ASTM A276 Type 420                          |
| Disc Nut          | ASTM A276 Type 410                          |
| Stem              | ASTM A182 GR F6a                            |
| Gasket            | 304SS + Graphite                            |
| Bonnet            | ASTM A216 GR.WCB                            |
| Bonnet Bolt Nuts  | ASTM A194 GR.2H                             |
| Bonnet Bolts      | ASTM A193 GR.B7                             |
| Bonnet Bushing    | ASTM A276 Type 410                          |
| Packing Spacer    | ASTM A276 Type 410                          |
| Stem Packing      | Braided Graphite & Die formed Graphite Ring |
| Eye Bolt Pins     | ASTM A29 GR.1045                            |
| Gland             | ASTM A276 Type 410                          |
| Gland Flange      | ASTM A216 GR.WCB                            |
| Gland Eye Bolts   | ASTM A193 GR.B7                             |
| Eye Bolt Nuts     | ASTM A194 GR.2H                             |
| Stem Nut          | ASTM A439 GR.D-2                            |
| Screw             | ASTM A29 GR.1035                            |
| Handwheel         | ASTM A536 GR.60-40-18                       |
| Handwheel Nut     | ASTM A29 GR.1045                            |
| Washer            | ASTM A29 GR.1045                            |
| Nameplate         | SS304                                       |

\*Standard construction: WCB-Trim 8, other options are available.

Crane recommends the use of manual or powered gear assistance for sizes 6" and larger.

**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 |
| Testing                 | API 598      |
| Basic Design            | API 623      |

**Dimensions and Weights**

Inches (millimeters) - pounds (kilograms)

| Valves | 2     | 2 ½   | 3      | 4      | 6      | 8      | 10     | 12      | 14 <sup>(1)</sup> | 16 <sup>(1)</sup> |
|--------|-------|-------|--------|--------|--------|--------|--------|---------|-------------------|-------------------|
|        | (50)  | (65)  | (80)   | (100)  | (150)  | (200)  | (250)  | (300)   | (350)             | (400)             |
| A      | 10.50 | 11.50 | 12.50  | 14.00  | 17.50  | 22.00  | 24.50  | 28.00   | 33.00             | 34.00             |
| (151)  | (267) | (292) | (318)  | (356)  | (444)  | (559)  | (622)  | (711)   | (838)             | (864)             |
| B      | 14.33 | 18.00 | 16.89  | 20.55  | 23.74  | 33.82  | 35.63  | 39.92   | 54.76             | 61.10             |
| (Open) | (364) | (457) | (429)  | (522)  | (603)  | (859)  | (905)  | (1014)  | (1391)            | (1552)            |
| C      | 7.87  | 10.00 | 9.84   | 13.78  | 17.72  | 17.72  | 22.05  | 25.20   | 24.02             | 31.89             |
|        | (200) | (254) | (250)  | (350)  | (450)  | (450)  | (560)  | (640)   | (610)             | (810)             |
| Wt.    | 57.32 | 99.00 | 110.23 | 171.96 | 339.51 | 648.16 | 703.27 | 888.46  | 1785.74           | 2127.46           |
| (151)  | (26)  | (44)  | (50)   | (78)   | 154    | (294)  | (319)  | (403)   | (810)             | (965)             |
| Wt.    | 46.30 | 63.93 | 83.78  | 130.07 | 302.03 | 522.50 | 952.40 | 1393.32 | 2149.51           | 3196.70           |
| (151½) | (21)  | (29)  | (38)   | (59)   | (137)  | (237)  | (432)  | (632)   | (975)             | (1450)            |

(1) Dimensions and weights shown with gear actuator.

(2) Flanged end and butt-weld valves share same face-to-face dimensions.

(3) Hammer Blow hand wheels is a standard offering on sizes 8"-14"

# Class 600 • Outside Screw & Yoke • Bolted Bonnet

**Figure 171**

- Globe, Flanged

**Figure 171½**

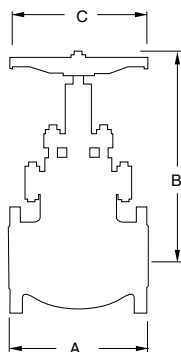
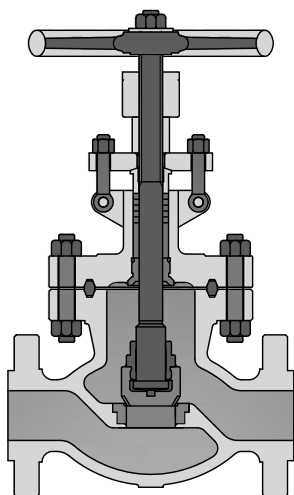
- Globe, Butt Weld

**Size Range:**

- 2 through 16 inches
- (50 - 400 mm)

**Pressure Temperature Rating**

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


**Material of Construction\***

| Description       | Material                                    |
|-------------------|---------------------------------------------|
| Body              | ASTM A216 GR.WCB                            |
| Seat Ring         | ASTM A105N+Alloy 6 Hardfaced                |
| Disc              | ASTM A105N + 13Cr Faced                     |
| Disc Thrust Plate | ASTM A276 Type 420                          |
| Disc Nut          | ASTM A276 Type 410                          |
| Stem              | ASTM A182 GR F6a                            |
| Gasket            | 304SS + Graphite                            |
| Bonnet            | ASTM A216 GR.WCB                            |
| Bonnet Bolt Nuts  | ASTM A194 GR.2H                             |
| Bonnet Bolts      | ASTM A193 GR.B7                             |
| Bonnet Bushing    | ASTM A276 Type 410                          |
| Packing Spacer    | ASTM A276 Type 410                          |
| Stem Packing      | Braided Graphite & Die formed Graphite Ring |
| Eye Bolt Pins     | ASTM A29 GR.1045                            |
| Gland             | ASTM A276 Type 410                          |
| Gland Flange      | ASTM A216 GR.WCB                            |
| Gland Eye Bolts   | ASTM A193 GR.B7                             |
| Eye Bolt Nuts     | ASTM A194 GR.2H                             |
| Stem Nut          | ASTM A439 GR.D-2                            |
| Screw             | ASTM A29 GR.1035                            |
| Handwheel         | ASTM A536 GR.60-40-18                       |
| Handwheel Nut     | ASTM A29 GR.1045                            |
| Washer            | ASTM A29 GR.1045                            |
| Nameplate         | SS304                                       |

\*Standard construction: the WCB-Trim 8, other options are available.

Crane recommends the use of manual or powered gear assistance for sizes 4" and larger.

**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 |
| Testing                 | API 598      |
| Basic Design            | API 623      |

**Dimensions and Weights**

Inches (millimeters) - pounds (kilograms)

| Valves | 2      | 2 ½    | 3      | 4      | 6      | 8       | 10      | 12      | 14 <sup>(1)</sup> | 16 <sup>(1)</sup> |
|--------|--------|--------|--------|--------|--------|---------|---------|---------|-------------------|-------------------|
|        | (50)   | (65)   | (80)   | (100)  | (150)  | (200)   | (250)   | (300)   | (350)             | (400)             |
| A      | 11.50  | 13.00  | 14.00  | 17.00  | 22.00  | 26.00   | 31.00   | 33.00   | 35.00             | 39.00             |
| (171)  | (292)  | (330)  | (356)  | (432)  | (559)  | (660)   | (787)   | (838)   | (889)             | (991)             |
| B      | 18.35  | 21.00  | 22.05  | 26.50  | 31.50  | 36.93   | 39.13   | 43.39   | 55.12             | 59.84             |
| (Open) | (466)  | (528)  | (560)  | (673)  | (800)  | (938)   | (994)   | (1102)  | (1400)            | (1520)            |
| C      | 9.84   | 10.00  | 13.78  | 17.72  | 19.69  | 25.20   | 28.35   | 28.35   | 31.89             | 39.37             |
|        | (250)  | (250)  | (350)  | (450)  | (500)  | (640)   | (720)   | (720)   | (810)             | (1000)            |
| Wt.    | 105.82 | 154.00 | 185.19 | 295.42 | 551.16 | 837.76  | 1496.94 | 2495.63 | 3571.49           | 3747.86           |
| (171)  | (48)   | (70)   | (84)   | (134)  | (250)  | (380)   | (679)   | (1132)  | (1620)            | (1700)            |
| Wt.    | 66.14  | 88.18  | 127.87 | 291.01 | 500.45 | 1014.13 | 1607.17 | 2336.90 | 2932.15           | 3858.09           |
| (171½) | (30)   | (40)   | (58)   | (132)  | (227)  | (460)   | (729)   | (1060)  | (1330)            | (1750)            |

(1) Dimensions and weights shown with gear actuator.

(2) Flanged end and butt-weld valves share same face-to-face dimensions.

(3) Hammer Blow hand wheels is a standard offering on sizes 6"-12"

# Class 900 • Outside Screw & Yoke • Bolted Bonnet

**Figure 183**

- Globe, Flanged

**Figure 183½**

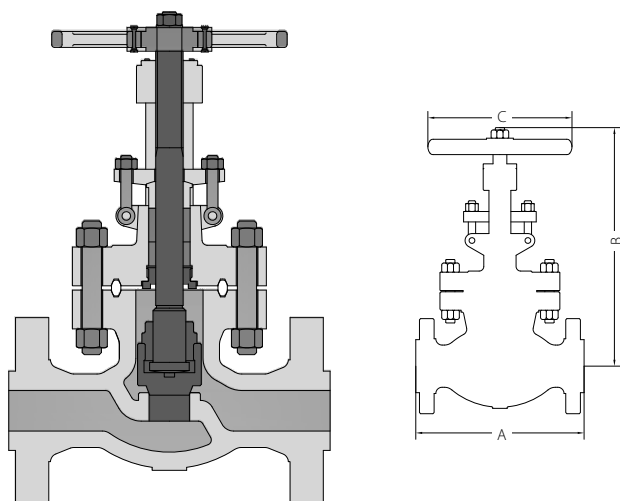
- Globe, Butt Weld

**Size Range:**

- 2 through 12 inches
- (50 - 300 mm)

**Pressure Temperature Rating**

- Carbon Steel
- ASTM A216 Grade WCB
- 2220 psi @ -20°F to 100°F
- (153 bar @ -28°C to 37°C)


**Material of Construction\***

| Description       | Material                                    |
|-------------------|---------------------------------------------|
| Body              | ASTM A216 GR.WCB                            |
| Integral Seat     | STL Overlay                                 |
| Disc              | ASTM A105N + 13Cr Faced                     |
| Disc Thrust Plate | ASTM A276 Type 420                          |
| Disc Nut          | ASTM A276 Type 410                          |
| Stem              | ASTM A182 GR F6a                            |
| Gasket Ring       | Soft Steel                                  |
| Bonnet            | ASTM A216 GR.WCB                            |
| Bonnet Bolt Nuts  | ASTM A194 GR.2H                             |
| Bonnet Bolts      | ASTM A193 GR.B7                             |
| Bonnet Bushing    | ASTM A276 Type 410                          |
| Packing Spacer    | ASTM A276 Type 410                          |
| Stem Packing      | Braided Graphite & Die formed Graphite Ring |
| Eye Bolt Pins     | ASTM A29 GR.1045                            |
| Gland             | ASTM A276 Type 410                          |
| Gland Flange      | ASTM A216 GR.WCB                            |
| Gland Eye Bolts   | ASTM A193 GR.B7                             |
| Eye Bolt Nuts     | ASTM A194 GR.2H                             |
| Stem Nut          | ASTM A439 GR.D-2                            |
| Screw             | ASTM A29 GR.1035                            |
| Handwheel         | ASTM A536 GR.60-40-18                       |
| Screw             | ASTM A29 GR.1035                            |
| Baffle            | ASTM A29 GR.1045                            |
| Shock block       | ASTM A29 GR.1045                            |
| Handwheel Nut     | ASTM A29 GR.1045                            |
| Washer            | ASTM A29 GR.1045                            |
| Nameplate         | SS304                                       |

\*Standard construction: WCB-Trim 8, other options are available.

Crane recommends the use of manual or powered gear assistance for sizes 4" and larger.

**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 |
| Testing                 | API 598      |
| Basic Design            | API 623      |

**Dimensions and Weights**

Inches (millimeters) - pounds (kilograms)

| Valves | 2      | 3      | 4      | 6      | 8       | 10 <sup>(1)</sup> | 12 <sup>(1)</sup> |
|--------|--------|--------|--------|--------|---------|-------------------|-------------------|
|        | (50)   | (80)   | (100)  | (150)  | (200)   | (250)             | (300)             |
| A      | 15.50  | 15.00  | 18.00  | 24.00  | 29.00   | 33.00             | 38.00             |
| (183)  | (368)  | (381)  | (457)  | (610)  | (737)   | (838)             | (965)             |
| B      | 18.35  | 22.91  | 28.35  | 33.98  | 36.10   | 50.35             | 58.66             |
| (Open) | (466)  | (582)  | (720)  | (863)  | (917)   | (1279)            | (1490)            |
| C      | 13.78  | 13.78  | 17.72  | 22.05  | 28.35   | 31.89             | 31.89             |
|        | (350)  | (350)  | (450)  | (560)  | (720)   | (810)             | (810)             |
| Wt.    | 171.96 | 275.58 | 462.97 | 824.53 | 1653.47 | 2358.95           | 4232.88           |
| (183)  | (78)   | (125)  | (210)  | (374)  | (750)   | (1070)            | (1920)            |
| Wt.    | 165.35 | 246.92 | 348.33 | 793.66 | 1316.16 | 1962.11           | 3725.81           |
| (183½) | (75)   | (112)  | (158)  | (360)  | (597)   | (890)             | (1690)            |

(1) Dimensions and weights shown with gear actuator.

(2) Flanged end and butt-weld valves share same face-to-face dimensions.

(3) Hammer Blow hand wheels is a standard offering on sizes 2"-10"

# Class 1500 • Outside Screw & Yoke • Bolted Bonnet

**Figure 189**

- Globe, Flanged

**Figure 189½**

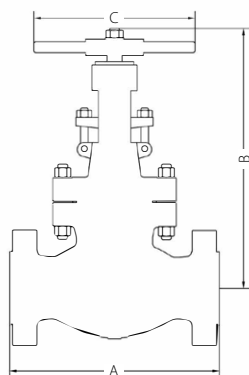
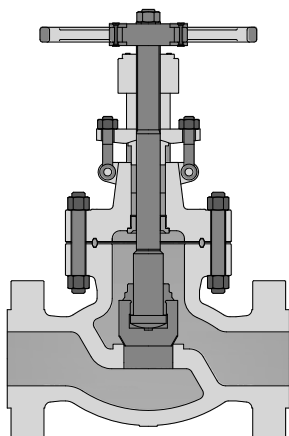
- Globe, Butt Weld

**Size Range:**

- 2 through 8 inches
- (50 - 200 mm)

**Pressure Temperature Rating**

- Carbon Steel
- ASTM A216 Grade WCB
- 3705 psi @ -20°F to 100°F
- (255 bar @ -28°C to 37°C)


**Material of Construction\***

| Description       | Material                                    |
|-------------------|---------------------------------------------|
| Body              | ASTM A216 GR.WCB                            |
| Integral Seat     | STL Overlay                                 |
| Disc              | ASTM A105N + 13Cr Faced                     |
| Disc Thrust Plate | ASTM A276 Type 420                          |
| Disc Nut          | ASTM A276 Type 410                          |
| Stem              | ASTM A182 GR F6a                            |
| Gasket Ring       | Soft Steel                                  |
| Bonnet            | ASTM A216 GR.WCB                            |
| Bonnet Bolt Nuts  | ASTM A194 GR.2H                             |
| Bonnet Bolts      | ASTM A193 GR.B7                             |
| Bonnet Bushing    | ASTM A276 Type 410                          |
| Packing Spacer    | ASTM A276 Type 410                          |
| Stem Packing      | Braided Graphite & Die formed Graphite Ring |
| Eye Bolt Pins     | ASTM A29 GR.1045                            |
| Gland             | ASTM A276 Type 410                          |
| Gland Flange      | ASTM A216 GR.WCB                            |
| Gland Eye Bolts   | ASTM A193 GR.B7                             |
| Eye Bolt Nuts     | ASTM A194 GR.2H                             |
| Stem Nut          | ASTM A439 GR.D-2                            |
| Screw             | ASTM A29 GR.1035                            |
| Handwheel         | ASTM A536 GR.60-40-18                       |
| Screw             | ASTM A29 GR.1035                            |
| Baffle            | ASTM A29 GR.1045                            |
| Shock block       | ASTM A29 GR.1045                            |
| Handwheel Nut     | ASTM A29 GR.1045                            |
| Washer            | ASTM A29 GR.1045                            |
| Nameplate         | SS304                                       |

\*Standard construction: WCB-Trim 8, other options are available.

Crane recommends the use of manual or powered gear assistance for sizes 3" and larger.

**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 |
| Testing                 | API 598      |
| Basic Design            | API 623      |

**Dimensions and Weights**

Inches (millimeters) - pounds (kilograms)

| Valves | 2      | 3      | 4 <sup>(1)</sup> | 6 <sup>(1)</sup> | 8 <sup>(1)</sup> |
|--------|--------|--------|------------------|------------------|------------------|
|        | (50)   | (80)   | (100)            | (150)            | (200)            |
| A      | 14.50  | 18.50  | 21.50            | 27.75            | 32.75            |
| (189)  | (368)  | (470)  | (546)            | (705)            | (832)            |
| B      | 18.35  | 28.35  | 36.61            | 44.25            | 69.65            |
| (Open) | (466)  | (720)  | (930)            | (1124)           | (1769)           |
| C      | 13.78  | 17.72  | 21.26            | 24.02            | 31.89            |
|        | (350)  | (450)  | (540)            | (610)            | (810)            |
| Wt.    | 209.44 | 399.04 | 771.62           | 1234.59          | 2182.58          |
| (189)  | (95)   | (181)  | (350)            | (560)            | (990)            |
| Wt.    | 176.37 | 284.40 | 659.18           | 1018.54          | 5004.49          |
| (189½) | (80)   | (129)  | (299)            | (462)            | (2270)           |

(1) Dimensions and weights shown with gear actuator.

(2) Flanged end and butt-weld valves share same face-to-face dimensions.

(3) Hammer Blow hand wheels is a standard offering on sizes 2"-6"