

Fabri-Valve®

CF134 Bonneted
Knife Gate Valve



ITT

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CF134 Bonneted Knife Gate Valve

The Fabri-Valve C/F134R/S bonneted knife gate valve is used in difficult services to provide high cycle stem sealing and superior stem seal containment. The cylindrical packing around the stem provides a tighter, easier to maintain stem seal. Bonneted valves are available with an optional metal backseat on the stem. In addition, the valve can be supplied with a gate wiper and purge ports in the bonnet to minimize movement of material into the bonnet. If a non-pressurized dirt shield is required, specify a Figure 37 w/dirt shroud. Standard body materials include Figure 304, 316 and 317L stainless steel. Special alloys such as 254 SMO®, Hastelloy C...are also available.

Shutoff Performance

Metal Seat

- Single integral metal seat
 - 1.5" - 24" 40cc / minute / inch of valve size
 - 25" - 48" 60cc / minute / inch of valve size
 - Above 48" consult factory
- Single hardfaced integral metal seat
 - 1.5" - 24" 80cc / minute / inch of valve size
 - 25" - 48" 120cc / minute / inch of valve size
 - Above 48" consult factory
- Single hardfaced replaceable metal seat
 - 1.5" - 24" 80cc / minute / inch of valve size
 - Above 24" consult factory
- Dual metal seats
Consult factory. All sizes

Resilient Seat

- Single "D" ring, or single replaceable resilient seat (excluding PTFE)
Zero leakage. All sizes
- Dual seats
Consult factory. All sizes
- Single replaceable PTFE seat
Consult factory. All sizes

Flow Coefficients

The Cv values below represent U.S. gallons per minute 60°F water through a 100% open valve at a pressure drop of 1 psi. The metric equivalent, Kv, is the flow of water at +16°C through the valve in cubic meters per hour at a pressure drop of 1 kg/cm². To convert Cv to Kv, multiply the Cv by 0.8569.

Specifications

Size Range 1.5" - 96"
Pressure Rating 1.5"-24" 150 psi (10.3 bar) CWP
 Consult Factory for higher pressures.

Bonnet

150 psi (10.3 bar) CWP standard. If a Non-pressurized dirt shield is required, use a Figure 37 w/dirt shroud.

Temperature Rating

1.5"-48" 450°F (232°C)

Designs available to 2000°F, Consult Factory.

Service temperatures above 400°F (204°C) require high temperature fasteners. Specify service temperature on paperwork.

Flanges Drilling ANSI 125/150

Testing

Every Fabri-Valve C/F134 is fully tested prior to shipment. Testing includes a body shell test, a seat test, and a cycling test to insure proper functioning of moving parts. Additional testing is also available. Please let us know your requirements.

Standard Shell test:

- Hydro test at 1.5 times the rated CWP (cold working pressure) – Zero allowable leakage

Standard Seat test:

- Metal Seat: Hydro test at 40 psi and at the rated CWP
- Resilient Seat: Hydro test at 15 psi and rated CWP

| Figure C134 Bonneted Knife Gate Valves | | | | | | | | | | |
|--|-----|---------------|------------------|-------------------|-------------|------------------|-------------------|--------------------------------------|------------------|-------------------|
| Cv Ratings, Port Diameter and Area | | | | | | | | | | |
| Valve Size | | Standard Port | | | With V-Port | | | With Repl. Poly or Repl. Rubber seat | | |
| | | Cv | Port I.D. Inches | Port Area Sq. In. | Cv | Port I.D. Inches | Port Area Sq. In. | Cv | Port I.D. Inches | Port Area Sq. In. |
| 2 | 50 | 288 | 2.00 | 3.1 | 165 | 2.00 | 2.8 | 288 | 2.00 | 3.1 |
| 3 | 75 | 648 | 3.00 | 7.1 | 355 | 3.00 | 6.3 | 648 | 3.00 | 7.1 |
| 4 | 100 | 1,152 | 4.00 | 12.6 | 515 | 4.00 | 9.5 | 1,152 | 4.00 | 12.6 |
| 6 | 150 | 2,592 | 6.00 | 28.3 | 1,350 | 6.00 | 24.9 | 2,592 | 6.00 | 28.3 |
| 8 | 200 | 4,608 | 8.00 | 50.3 | 2,050 | 8.00 | 38.1 | 4,608 | 8.00 | 50.3 |
| 10 | 250 | 7,208 | 10.00 | 78.5 | 3,200 | 10.00 | 59.0 | 7,208 | 10.00 | 78.5 |
| 12 | 300 | 10,400 | 12.00 | 113.1 | 4,450 | 12.00 | 82.3 | 10,400 | 12.00 | 113.1 |
| 14 | 350 | 12,650 | 13.25 | 137.9 | 5,350 | 13.25 | 98.8 | 10,080 | 12.00 | 113.1 |
| 16 | 400 | 16,750 | 15.25 | 182.6 | 6,950 | 15.25 | 128.4 | 14,200 | 14.25 | 159.5 |
| 18 | 450 | 21,450 | 17.25 | 233.7 | 10,700 | 17.25 | 198.2 | 18,500 | 16.25 | 207.4 |
| 20 | 500 | 26,700 | 19.25 | 291.0 | 13,250 | 19.25 | 245.4 | 22,700 | 18.00 | 254.5 |
| 24 | 600 | 38,900 | 23.25 | 424.6 | 15,400 | 23.25 | 284.7 | 33,900 | 22.00 | 380.1 |

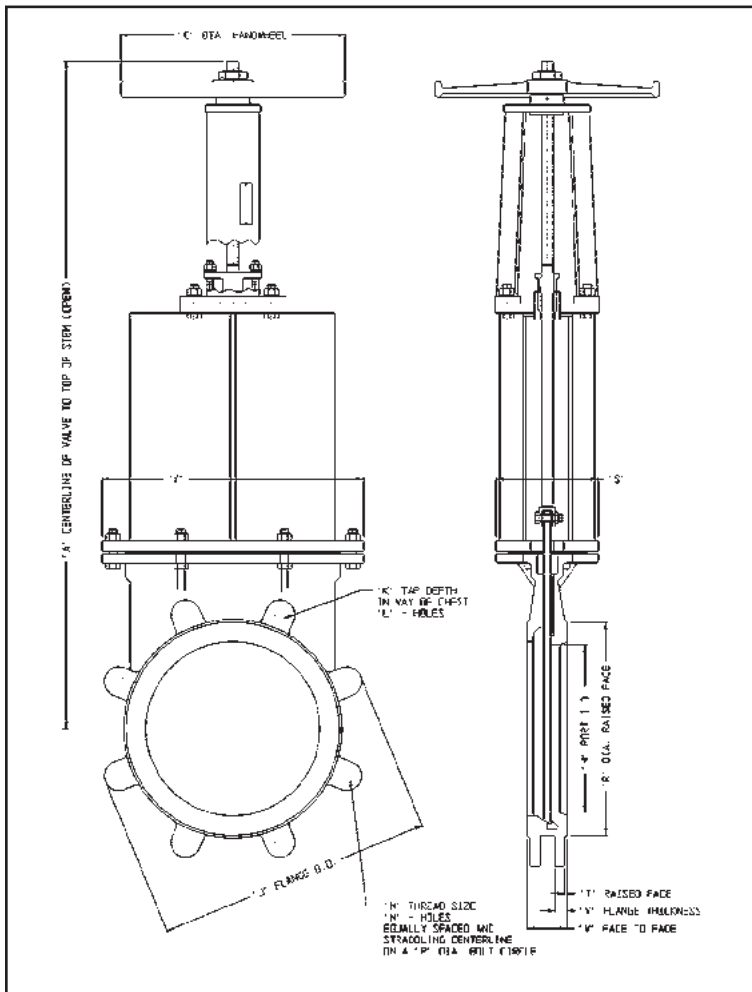
Dimensions

| Valve Size | | DIMENSION Inches (mm) C134 with HANDWHEEL | | | | | | | | | | | | | | | Weight** | |
|------------|-----|---|-------------|-----------------|-----------------|---------------|---|-----------|----|-----------------|-----------------|-----------------|-------------|----------------|----------------|-----------------|----------|-----|
| Inches | DN | A | C | H* | J | K | L | M | N | P | R | S | T | V | W | Y | lb | kg |
| 2 | 50 | 18-5/8 (465) | 8 (203) | 2 (51) | 6 (152) | 3/8 (10) | 2 | 5/8-11NC | 4 | 4-3/4 (121) | 3-5/8 (92) | 6-1/4 (159) | 1/16 (2) | 9/16 (14) | 1-7/8 (48) | 5-1/8 (130) | 40 | 18 |
| 3 | 80 | 22-16 (560) | 8 (203) | 3 (76) | 7-1/2 (191) | 13/32 (10) | 2 | 5/8-11NC | 4 | 6 (152) | 5 (127) | 6-1/4 (159) | 1/16 (2) | 9/16 (14) | 2 (51) | 6-1/8 (156) | 62 | 28 |
| 4 | 100 | 25-13/16 (656) | 8 (203) | 4 (102) | 9 (229) | 13/32 (10) | 2 | 5/8-11NC | 8 | 7-1/2 (191) | 6-3/16 (157) | 6-1/4 (159) | 1/16 (2) | 11/16 (17) | 2 (51) | 7-1/8 (181) | 77 | 35 |
| 6 | 150 | 35-7/16 (900) | 10 (254) | 6 (152) | 11 (279) | 7/16 (11) | 2 | 3/4-10NC | 8 | 9-1/2 (241) | 8-1/2 (216) | 7-3/8 (187) | 1/16 (2) | 5/8 (16) | 2-1/4 (57) | 10 (254) | 110 | 50 |
| 8 | 200 | 46-1/8 (1172) | 12 (305) | 8 (203) | 13-1/2 (343) | 5/8 (16) | 2 | 3/4-10NC | 8 | 11-3/4 (298) | 10-5/8 (270) | 7-3/8 (187) | 1/16 (2) | 13/16 (21) | 2-3/4 (70) | 12-3/4 (324) | 190 | 86 |
| 10 | 250 | 52-5/8 (1337) | 16 (406) | 10 (254) | 16 (406) | 1/2 (13) | 4 | 7/8-9NC | 12 | 14-1/4 (362) | 12-3/4 (324) | 7-3/8 (187) | 1/8 (3) | 15/16 (24) | 2-3/4 (70) | 16-1/8 (410) | 260 | 118 |
| 12 | 300 | 62-1/8 (1578) | 16 (406) | 12 (305) | 19 (483) | 1/2 (13) | 4 | 7/8-9NC | 12 | 17 (432) | 15 (381) | 7-1/2 (191) | 3/16 (5) | 1 (25) | 3 (76) | 18-3/4 (476) | 370 | 168 |
| 14 | 350 | 68-13/16 (1748) | 20 (508) | 13-1/4 (337) | 21 (533) | 7/16 (11) | 4 | 1-8NC | 12 | 18-3/4 (476) | 16-1/4 (413) | 7-3/4 (197) | 3/16 (5) | 15/16 (24) | 3 (76) | 19-7/8 (505) | 441 | 200 |
| 16 | 400 | 78-13/16 (2002) | 20 (508) | 15-1/4 (387) | 23-1/2 (597) | 9/16 (14) | 6 | 1-8NC | 16 | 21-1/4 (540) | 18-1/2 (470) | 11-3/4 (298) | 3/16 (5) | 1-1/16 (27) | 3-1/2 (89) | 22-3/8 (568) | 600 | 272 |
| 18 | 450 | 87-1/16 (2211) | 20 (508) | 17-1/4 (438) | 25 (635) | 5/8 (16) | 6 | 1-1/8-7NC | 16 | 22-3/4 (578) | 21 (533) | 11-3/5 (298) | 3/16 (5) | 1-1/16 (27) | 3-1/2 (89) | 24-3/8 (619) | 714 | 324 |
| 20 | 500 | 95-15/16 (2437) | 20 (508) | 19-1/4 (489) | 27-1/2 (699) | 29/32 (23) | 8 | 1-1/8-7NC | 20 | 25 (635) | 23 (584) | 14 (356) | 3/16 (5) | 1-3/16 (30) | 4-1/2 (114) | 26-3/8 (670) | 825 | 374 |
| 24 | 600 | 111 (2819) | 20 (508) | 23-1/4 (591) | 32 (813) | 13/16 (21) | 8 | 1-1/4-7NC | 20 | 29-1/2 (749) | 27-1/4 (692) | 14-1/8 (359) | 3/16 (5) | 1-5/16 (33) | 4-1/2 (114) | 31 (787) | 1301 | 590 |

Reference Dimensions in (parentheses)

* For 14"-24" valves with rubber replaceable and poly replaceable seats, use the port I.D. dimensions show in the Flow Coefficients Table (See previous page)

** Figures C134R, C134S, F134R and F134S with Handwheel



Available Options

- "D" Ring Seat
- Lever Operator
- Dual Seats
- Rubber Replaceable Seats
- Poly Replaceable Seats
- UHMW Replaceable Seats
- PTFE Replaceable Seats
- Hard Faced Replaceable Seats
- Hard Faced Integral SS Seats
- Hard Faced Gate Edge
- Hard Gate Material
- Nickel-TFE Coated Gate
- Epoxy Coating
- Thru Drilled Flanges
- Flush Ports
- Chest Buttons: Required on valves without wiper packing
- Centerline Buttons
- Backing Ring
- Extra Wedges
- V-Port
- Cast Ni-Hard Deflection Cones: Available 3" – 16"
- Fabricated Deflection Cones
- Locking Devices
- E-Z Spin Handwheel
- Live Loaded Packing
- Self-Supporting Yokes
- Alternate Flange Drilling
- Gate Wiper
- Back Seat
- Bevel Gear
- Chainwheels
- Cylinder Actuators
- Electric Actuators
- Ratchet
- Extended Stems
- Gate Support Strips
- Rod Boots

Pressure/Temperature Ratings

This table is the maximum pressure/temperature ratings for the metallic components only. When checking pressure/temperature ratings, check the temperature rating and chemical compatibility of the packing material, and if applicable, the resilient seat material. In a majority of knife gate valve designs, the temperature limit or the chemical compatibility of the seat and/or packing material determines the practical pressure/temperature limitations.

Low Pressure Operation

Metal seated knife gate valves are seat tested at 40 psid (2.8 bar) in the preferred flow direction. When pressure falls below the 40 psid (2.8 bar) test pressure, less force is pushing the gate into the seat, which may result in additional seat leakage. When improved low-pressure shutoff performance is required, optional chest buttons and/or centerline buttons should be specified.

| Figure C/F134 | | | | | | |
|-----------------------------------|------|-----|------|-----|------|------|
| Pressure-Temperature Rating - psi | | | | | | |
| Temp | | 304 | 304L | 316 | 316L | 317L |
| °F | °C | | | | | |
| 150 | 66 | 150 | 133 | 150 | 133 | 150 |
| 200 | 93 | 133 | 114 | 141 | 113 | 135 |
| 250 | 121 | 126 | 108 | 133 | 107 | 128 |
| 300 | 149 | 120 | 102 | 124 | 101 | 121 |
| 350 | 177 | 115 | 98 | 119 | 97 | 116 |
| 400 | 204 | 110 | 93 | 114 | 93 | 112 |
| 450 | 232 | 107 | 90 | 110 | 90 | 108 |
| 500 | 260 | 103 | 87 | 106 | 87 | 105 |
| 600 | 316 | 97 | 82 | 101 | 83 | 100 |
| 700 | 371 | 94 | 80 | 97 | 80 | 96 |
| 800* | 427* | 89 | 77 | 93 | 77 | 92 |
| 900* | 482* | 87 | | 92 | | |
| 1000* | 538* | 83 | | 90 | | |
| 1100* | 593* | 64 | | 76 | | |
| 1200* | 649* | 41 | | 46 | | |
| 1300* | 704* | 28 | | 29 | | |
| 1400* | 760* | 18 | | 18 | | |
| 1500* | 816* | 11 | | 10 | | |

* F134R valves have external, non-wetted, carbon steel components.

Standard F134R valves are limited to 700°F (371°C); however alternate F134R constructions are available to 1000°F (538°C)

NOTE: Each valve is identified by Size-Figure-Series-etc. The "How To Order" section explains the Valve Model Codes.

Materials of Construction

| Parts | Materials | |
|-------------------------|---|---|
| | C134R | C134S |
| Body, Chest and Flanges | Stainless steel per customer specification. | Stainless steel per customer specification. |
| Bonnet | Same as body with carbon steel exterior parts | Same as body with carbon steel exterior parts |
| Gate | Same as body material | Same as body material |
| Yoke | Carbon steel | 304 Stainless steel |
| Yoke Fasteners | Plated steel | Stainless steel |
| Stem | Same as body material | Same as body material |
| Stem Nut | Acid Resistant Bronze | Acid Resistant Bronze |
| Grease Fitting | Plated steel | Plated steel |
| Packing | PTFE/Graphite | PTFE/Graphite |
| Packing Follower | Carbon steel/Ductile Iron | 316 Stainless Steel |
| Handwheel | Cast iron | Cast iron |
| Handwheel Retaining Nut | Malleable iron | Stainless steel |
| Tab Washer | Stainless steel | Stainless steel |



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Form CF134