

DelVal[®] SERIES F

Floating Ball Valves

Sizes 1"-6" / DN 25 - DN 150

ASME Class 150, 300, 600, 900 & 1500 Full and Reduced Bore



Leading the Industry with Innovation by Design

Quality and Performance Where It Counts

The DelVal brand means quality and reliability you can count on. Our design has been developed based on our customers' demanding service conditions. All DelVal ball valves are manufactured in ISO 9001 certified facilities and tested in conformance with the requirements of ANSI B 16.34 and API 6D specifications.

DelTech products are stocked and marketed worldwide by a network of authorizing distributors to service the petroleum producing refinery and industrial marketplace.

Our complete API 6D product offering includes flanged, butt-weld ring type joint (RTJ), and threaded ball valves along with trunnion mounted ball valves. Sizes range from 1/4" To 24" and are available in various pressure classes. Contact DelTech or one of our field representatives today to discuss how DelTech can provide solutions from your upstream wellhead and downstream production needs.

Standard Features on All Series F Ball Valves

Two piece, bolted body flanged end valves are designed to meet or exceed today's abrasive and corrosive applications. All Series F Ball Valves incorporate the following standard features:

- ◆ Stem is back-seated and positively retained: cannot be removed with the valve in service
- ◆ Stem lube fitting and weather seal
- ◆ 316 SS ball for extended life and ease of operation
- ◆ Fire tested and certified to API 6FA and BS 6755 latest addition
- ◆ RTFE seats standard in class 150 & 300, Delrin seats standard in class 600, 900 and 1500
- ◆ Standard locking handle
- ◆ Conforms to NACE MR-01-75 standard with 316 stainless steel trim
- ◆ Available in both standard bore and full bore; Double stem flat design indicates ball position
- ◆ Ball includes pressure equalization hole to prevent trapped pressure in body cavity in open position

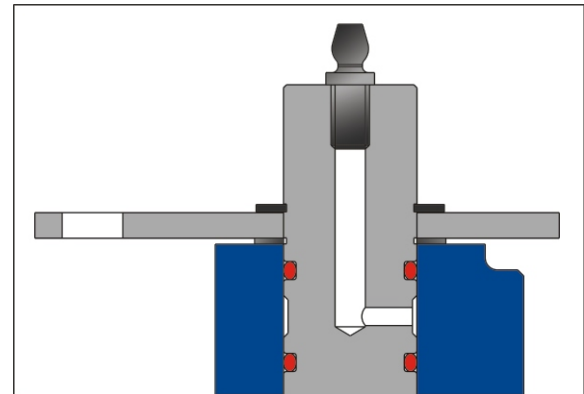
Bolted Body Design

F Series Valve is a rugged two piece bolted design. Our premier ball valve is available in sizes 1"-FP-6"RP and pressures up to 3705 psi. Body materials are available in carbon steel, low temp carbon steel (LCC), and CF8M Stainless Steel.



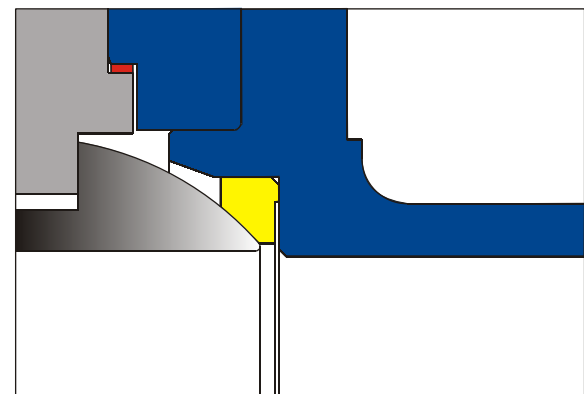
Stem Lube Fitting & Weather Seal

External stem lube fitting and internal lube channel allow for effective lubrication of the stem journal. Weather seal prevents external attack by corrosion and foreign abrasives.

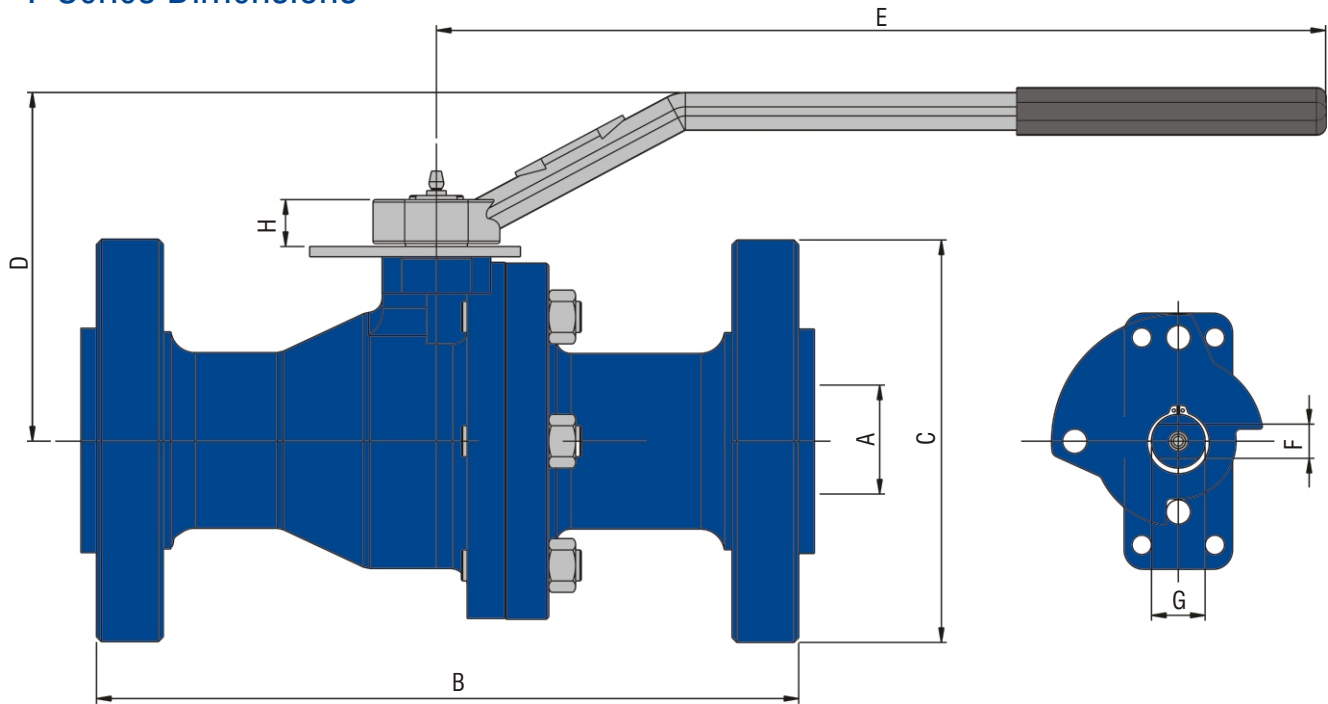


Standard Delrin and Reinforced Teflon Seats

Seats provide bubble-tight sealing at high and low pressures. In the event of seat damage (e.g. fire). The design incorporates metal-to-metal sealing. Optional seat materials include Nylon, PTFE, PEEK and Devlon.



F Series Dimensions

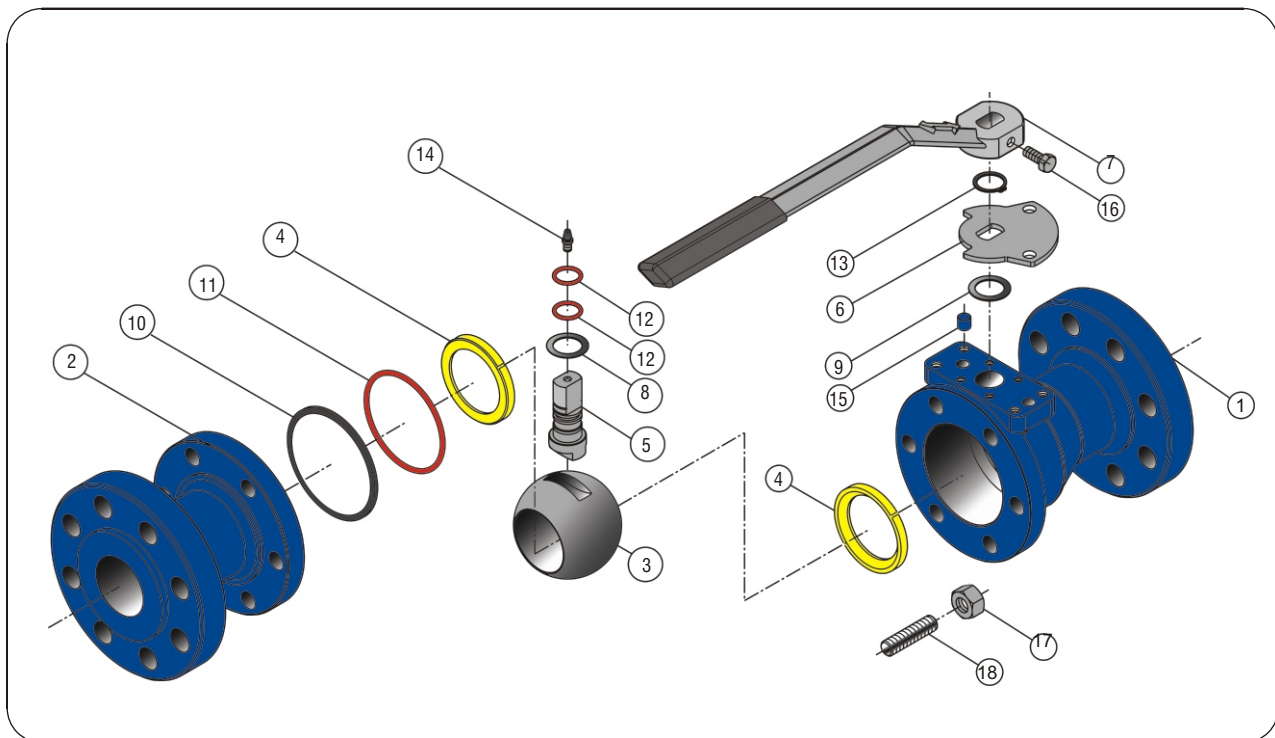


F Series Dimensional Data (In Inches)

| Dimension | 1" FP | 1-1/2" FP | 2" RP | 2" FP | 2-1/2" RP | 3" RP | 3" FP | 4" RP | 4" FP | 6" RP |
|---------------|-------|-----------|--------|--------|-----------|--------|--------|--------|--------|--------|
| A PORT | 1 | 1.5 | 1.5 | 2 | 2 | 2 | 3 | 3 | 4 | 4 |
| B 150 RF | 5 | 6.5 | 7 | 7 | 7.5 | 8 | 8 | 9 | 9 | 10.5 |
| B 300 RF | 6.5 | 7.5 | 8.5 | 8.5 | 9.5 | 11.125 | 11.125 | 12 | 12 | 15.875 |
| B 600 RF | 8.5 | 9.5 | 11.5 | 11.5 | 13 | 14 | 14 | 17 | 17 | 22 |
| B 600 RTJ | 8.5 | 9.5 | 11.625 | 11.625 | 13.125 | 14.125 | 14.125 | 17.125 | 17.125 | 22.125 |
| B 900 RF | 10 | 12 | 14.5 | 14.5 | | 15 | | | | |
| B 900 RTJ | 10 | 12 | 14.625 | 14.625 | | 15.12 | | | | |
| B 1500 RF | 10 | 12 | 14.5 | 14.5 | | | | | | |
| B 1500 RTJ | 10 | 12 | 14.625 | 14.625 | | | | | | |
| C 150 | 4.25 | 5 | 6 | 6 | 7 | 7.5 | 7.5 | 9 | 9 | 11 |
| C 300 | 4.875 | 6.125 | 6.5 | 6.5 | 7.5 | 8.25 | 8.25 | 10 | 10 | 12.5 |
| C 600 | 4.875 | 6.125 | 6.5 | 6.5 | 7.5 | 8.25 | 8.25 | 10.75 | 10.75 | 14 |
| C 900 | 5.875 | 7 | 8.5 | 8.5 | | 9.5 | | | | |
| C 1500 | 5.875 | 7 | 8.5 | 8.5 | | | | | | |
| D | 3.74 | 4.94 | 4.94 | 5.31 | 5.31 | 5.31 | 6.75 | 6.75 | *8.4 | *8.4 |
| E | 6 | 8 | 8 | 8 | 8 | 8 | 15 | 15 | *18 | *18 |
| F | 0.374 | 0.56 | 0.56 | 0.56 | 0.56 | 0.56 | 0.622 | 0.622 | *0.745 | *0.745 |
| G | 0.822 | 0.873 | 0.873 | 0.873 | 0.873 | 0.873 | 1.24 | 1.24 | *1.365 | *1.365 |
| H | 0.64 | 0.77 | 0.77 | 0.77 | 0.77 | 0.77 | 0.99 | 0.99 | *1.13 | *1.13 |
| Weight in lb. | | | | | | | | | | |
| 150 | 14 | 18 | 24 | 27 | 30 | 35 | 55 | 68 | 84 | 108 |
| 300 | 20 | 25 | 29 | 35 | 40 | 50 | 86 | 120 | 139 | 190 |
| 600 | 27 | 31 | 36 | 42 | 55 | 62 | 96 | 139 | 163 | 258 |
| 900 | 44 | 73 | 78 | 89 | – | 170 | – | – | – | – |
| 1500 | 55 | 100 | 111 | 122 | – | – | – | – | – | – |

*Dimensions are for Class 150 lever operated valves only. Class 300, 600, 900 and 1500 require gear operators or actuators.

F Series Materials List / Standards



F Series Materials List

| INDEX | QTY. | DESCRIPTION | MATERIALS (Standard) |
|-------|------|-------------------|---|
| 1 | 1 | Body | ASTM A216 WCB, Carbon Steel |
| 2 | 1 | Adapter | ASTM A216 WCB, Carbon Steel |
| 3 | 1 | Ball | 316 Stainless Steel (NACE) |
| 4 | 2 | Seat | Delrin RTFE |
| 5 | 1 | Stem | 316 Stainless Steel (NACE) |
| 6 | 1 | Stop Plate | Plated Steel |
| 7 | 1 | Handle | Ductile Iron |
| 8 | 1 | Thrust Bearing | Teflon |
| 9 | 1 | Stem Bearing | Nylon |
| 10 | 1 | Body Seal(Gasket) | Graphite |
| 11 | 1 | Body Seal(O-Ring) | Buna-N / Viton (NACE) |
| 12 | 2 | Stem Seal | Buna-N / Viton (NACE) |
| 13 | 1 | Retaining Ring | Spring Steel |
| 14 | 1 | Lube Fitting | Steel |
| 15 | 1 | Stop Pin | Steel |
| 16 | 1 | Handle Bolt | ASTM A193 Gr.B7M (NACE) Carbon Steel |
| 17 | ★ | Hex Nut | ASTM A 194-Gr. 2HM (NACE) Carbon Steel |
| 18 | ★ | Studs | ASTM A193 Gr.B7M (NACE) Carbon Steel |

Quality Codes & Standards

| API 6D | Pipeline Valves |
|-----------------------|---|
| ANSI B 16.34 | Valves, Flanges & Butt weld (When specified) |
| ANSI B 16.10 / API 6D | Face-To-Face of Ferrous Valves |
| ANSI B 16.5 | Pipe Flanges |
| MSS-SP-6 | Standard Finishes for Pipe Flanged Faces |
| MSS-SP-25 | Standard Marking Systems for Valves |
| MSS-SP-55 | Quality Standard for Steel Castings |
| MSS-SP-72 | Flanged Ball valves for General Services |
| API Q1 / ISO 9001 | Quality program Specification |
| MR-01-75 | NACE Specification |
| API 6FA / BS 6755 | Fire Sale Certification |

*Quantity depends on valve size and pressure class

Note: All valves incorporating 316 Stainless Steel Trim conform to NACE MR-01-75.

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Engineering Specifications

Torque Values In/Lbs

| BORE SIZE | PRESSURE (PSI) | | | | |
|-----------|----------------|------|------|------|------|
| | 285 | 740 | 1480 | 2220 | 3405 |
| 1" | 280 | 345 | 585 | 770 | 1180 |
| 1 1/2" | 530 | 710 | 880 | 1150 | 2000 |
| 2" | 590 | 945 | 1180 | 1670 | 2700 |
| 3" | 1300 | 2155 | 2685 | | |
| 4" | 2140 | 3550 | 4423 | | |

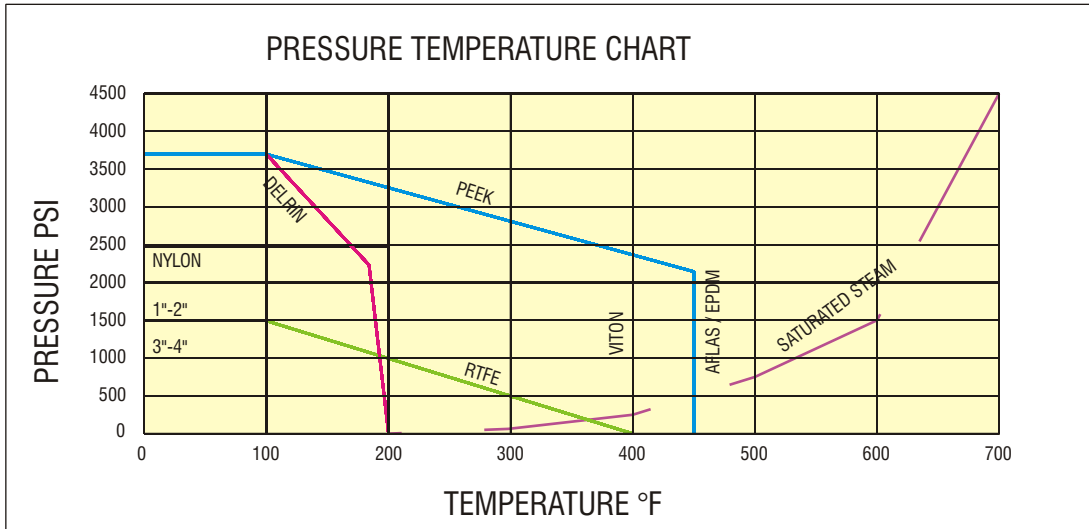
Torques are based on clean wet service. If other conditions exist, a service factor should be applied. Consult DelTech for specific service.

Flanged Valve CV Values

| SIZE | CLASS | | | | |
|-----------|-------|------|------|-----|------|
| | 150 | 300 | 600 | 900 | 1500 |
| 1" FP | 89 | 79 | 68 | 70 | 70 |
| 2" RP | 137 | 128 | 117 | 119 | 119 |
| 2" FP | 490 | 422 | 368 | 365 | 365 |
| 2 1/2" RP | 255 | 238 | 204 | | |
| 3" RP | 238 | 216 | 203 | 175 | |
| 3" FP | 1380 | 1055 | 1000 | | |
| 4" RP | 635 | 610 | 580 | | |
| 4" FP | 2560 | 2100 | 1850 | | |
| 6" RP | 925 | 905 | 895 | | |

Flow in US gallons of water per minute with a 1 psi pressure drop across the valve. Use this value in the flow formulas.

Pressure / Temperature



These pressure and temperature ratings are the maximum shutoff for each seat combination for continuous service at temperature. For maximum body ratings consult the factory.

Options

Pre-engineered brackets and couplings for other manufacturers' valves



Automation and Specialization

DelTech Controls offers customized Valve Automation Systems. The systems are integrated and tested as per customer specification by assembling high quality accessories with Delval Valves and DelTorq Pneumatic or Electric Actuators. The "direct mount" feature of all Delval Valves, DelTorq Actuators, Manual Gears and Manual Overrides eliminates the need for any brackets and couplings, thus saving costs. It also provides "off the shelf engineered components" and enhances performance by reducing hysteresis. When mounting DelTorq actuators to other valves, pre engineered brackets and couplings provide a custom close mount system.

Three Coat Offshore Protective Coating System.

The basic three - coat offshore protective coating process is a zinc base coat applied to a valve that has been sand blasted to specifications, a tie coat is then applied. The valve is then finished and protected with a light gray polyurethane topcoat. This offshore protective coating system is applied at the factory using newly machined castings. 100% of the valve surface including the area under the handle and under the tag is coated leaving no area for corrosion to start.

PRODUCT SELECTION CODE (HOW TO ORDER)

F series Base No.

| | | | |
|---|---|---|---|
| X | X | X | X |
|---|---|---|---|

| SIZE | CL150 | CL300 | CL600 | CL900 | CL1500 |
|---------|-------|-------|-------|-------|--------|
| 1" FP | F100 | F300 | F600 | F900 | F500 |
| 1.5" FP | F101 | F301 | F601 | F901 | F501 |
| 2" RP | F102 | F302 | F602 | F902 | F502 |
| 2" FP | F103 | F303 | F603 | F903 | F503 |
| 2.5" RP | F104 | F304 | F604 | - | - |
| 3" RP | F105 | F305 | F605 | F905 | - |
| 3" FP | F106 | F306 | F606 | - | - |
| 4" RP | F107 | F307 | F607 | - | - |
| 4" FP | F108 | F308 | F608 | - | - |
| 6" RP | F109 | F309 | F609 | - | - |

Assembly / Option Numbers

X Body/Adapter Material

X Trim Material

X End Connection

X Seats

X Seals

X Actuators

X Pipe Sizes

X Options

1 = Carbon Steel
2 = 316 SS
3 = Low Temp.CS
4 = CS with 3 Coat Paint

Ball/Stem/Seat Carrier
1 = CS
2 = 316 SS / Nace

6 = Flanged RF
7 = Flanged RTJ
8 = Butt Weld
9 = RF x Butt Weld
0 = RTJ x Butt Weld

1 = Nylon
2 = RTFE
3 = Delrin
4 = Peek

1 = Buna N (NBR)
2 = Viton (FKM)
3 = LT Buna N
4 = EPDM
5 = Atlas (400F)
6 = PC Buna-N
7 = Nitrile
8 = James Walker
9 = HNBR

2 = Handle w/Locking Device
3 = Gear operator
4 = Gear operator w/ Locking Device
5 = Pneumatic Actuator
6 = Electric Actuator
8 = Bare Stem

99 = None
E1 = EB Body,Adapter, Bonnet only
E2 = EB Body, Adapter,Bonnet & Bolting only
E3 = EB Body,Adapter, Bolting & Operator only

99 = No Weld End
XX = See Weld End

All statements, technical information and recommendations in the bulletin are for general use only. DelTech is not responsible for suitability or compatibility of these products in relation to system requirements. Consult DelTech distributors or factory for the specific requirements and material selection for your intended application. DelTech reserves the right to change or modify product design or product without prior notice. DelVal® - Registered trademark of DelTech Controls.

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