# DelVal® SERIES 7 & 8

## Two-Piece / Three-Piece Trunnion Mounted Ball Valves

ASME Class150, 300, 600, 900, 1500

DelVal®
Flow Controls



*Leading the Industry with Innovation by Design*

# Series 7 & 8 Trunnion Ball Valves

Quality and performance you can count on!

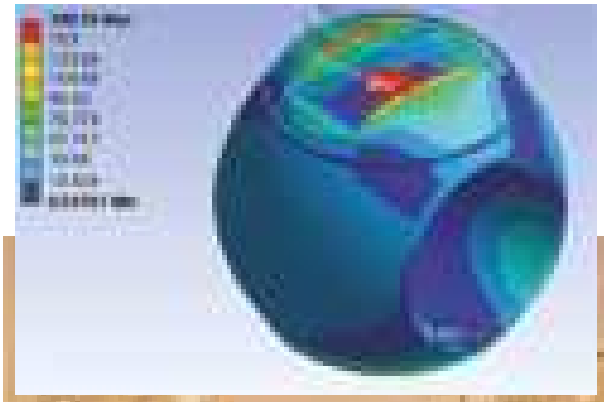
Delval Flow Controls offers a wide range of DelVal® Trunnion Ball Valves. Our designs are proven performers in the harshest of environments. The DelVal® brand means Performance, Quality and Reliability you can count on.

All DelVal® Ball Valves are manufactured and tested in conformance with API 6D specifications and are designed to meet our customers' demanding service conditions.

Most DelVal® Ball Valves are designed to mount directly with DelTorq® Pneumatic and Electric Actuators. On some large sizes where direct mounting is not possible, pre-engineered mounting kits are available for close mounting. The valves are manufactured in a modern plant equipped with state-of-the-art facilities under a robust quality assurance program complying with ISO 9001-2008.

DelVal® Valves and DelTorq® Pneumatic and Electric Actuators and accessories are marketed and sold worldwide by an experienced team of domestic and international representatives. Our sales offices work closely with the representatives to ensure that our customers' expectations are met and exceeded. A network of authorized distributors stock DelVal® and DelTorq® products for immediate delivery to the oil, gas and industrial markets.

Our complete API 6D product offering includes flanged, butt weld, ring joint and threaded ends in floating ball and trunnion mounted ball designs. Sizes range from 2” to 24” in 150 to 1500 ASME classes. Contact DelVal Flow Controls to learn how one of the cost effective products can help provide solutions for your upstream wellheads and downstream production needs.







# Design Features

Ball valves are straight-through flow valves which provide shutoff with minimal pressure drop and flow turbulence. The barrier to flow is a ball which is rotated 90 degrees to the direction of the flow.

In trunnion mounted valves, the ball is held in a fixed axial position by upper and lower trunnions and can move only in a rotational mode. The seats are contained in metal carriers which are spring loaded against the ball. Line pressure applied to a closed valve increases the spring load on the upstream seat to effect a tight seal. The primary seating is therefore on the upstream seat permitting trunnion mounted ball valves to be used for "block and bleed" services.

As the stem motion from full open to full close is 90 degree rotation, ball valves are ideally suited for automatic operation.

All DelVal® Trunnion Ball Valves have a self-relieving seat design. When the body cavity pressure exceeds the downstream seat springs preloaded force, the differential force in the cavity area pushes the downstream seat away from the ball, the body cavity pressure will be relieved automatically. The seat then returns to the ball under spring loaded action.

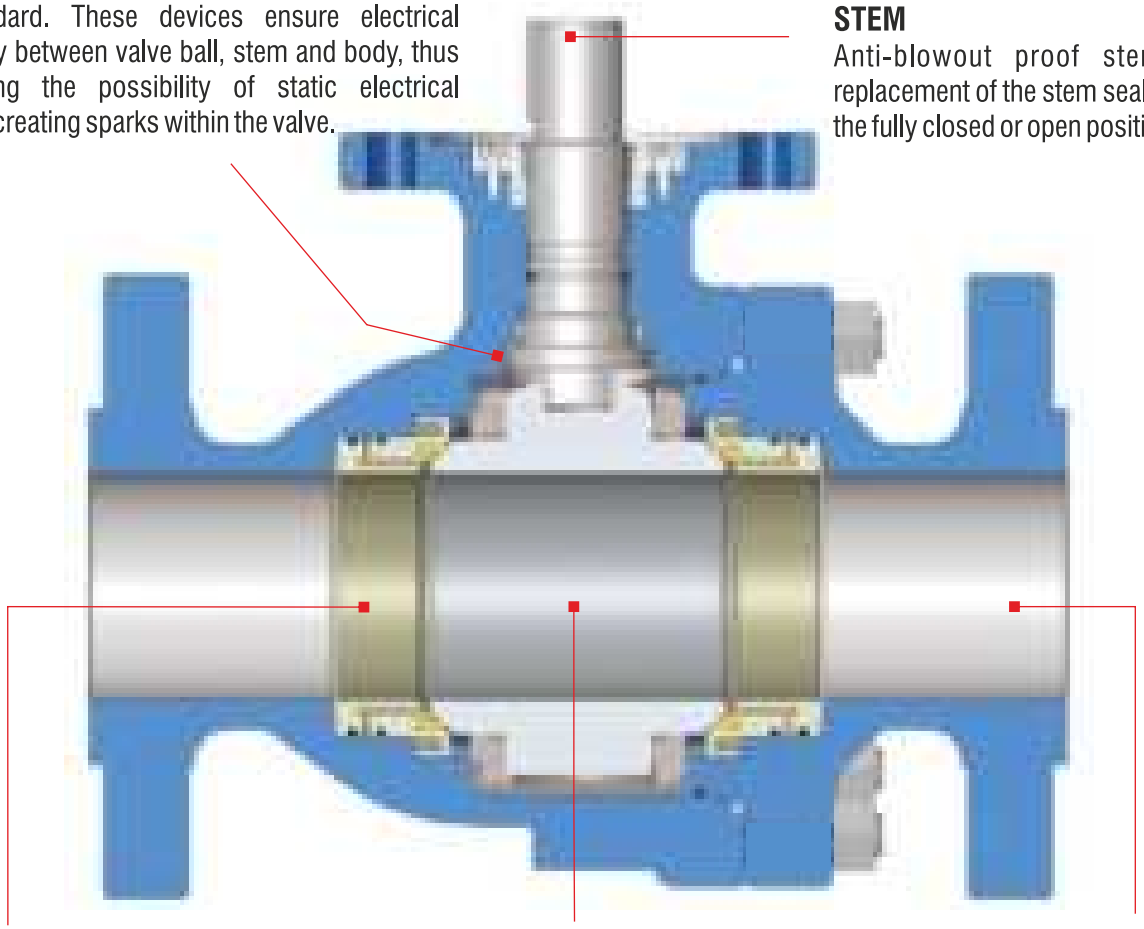
DelVal® Trunnion Ball Valves comply with the design and testing requirements of ANSI B16.34 and API 6D. Installation dimensions comply with ANSI B16.10 / API 6D.

## ANTI-STATIC DESIGN

All DelVal stems feature anti-static grounding device as standard. These devices ensure electrical continuity between valve ball, stem and body, thus eliminating the possibility of static electrical charges creating sparks within the valve.

## STEM

Anti-blowout proof stem permits the replacement of the stem seals with the valve in the fully closed or open position.



## FLOATING SEAT RING

Two independent floating seat rings assure the bi-directional tightness of the valve from zero differential pressure to the maximum rated pressure.

## TRUNNION-MOUNTED BALL

The ball is supported and the seat rings are floating, free to move along the flow axis. As the pressure increases the fluid pressure pushes the seat rings against the ball.

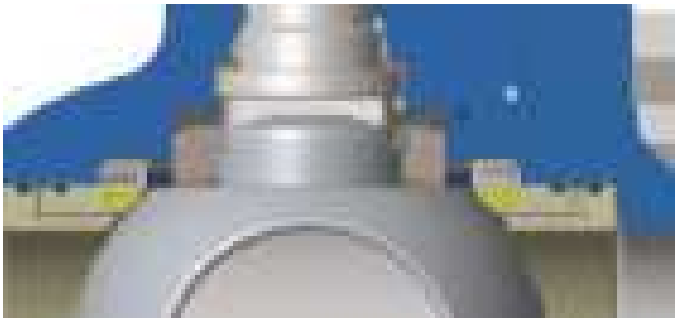
## MACHINED VALVE BORE

The valve body bore is completely machined from the edge of flange to the edge of the ball. This machined bore provides less resistance to flow, thereby increasing flow through the valve.

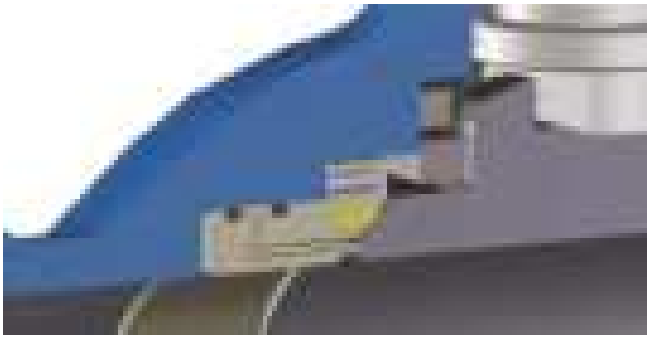
## SELF-RELIEVING SEAT DESIGN

When the valve is in the closed position, media will be trapped in the body cavity. Unless this media is drained, it will be subjected to thermal expansion and contraction. As the temperature rises, the trapped media desires to expand and the pressure increases in the body cavity. In order to avoid excessive pressure build-up, the DelVal® seats are designed to self-relieve, allowing the media in the body to escape into the pipeline.

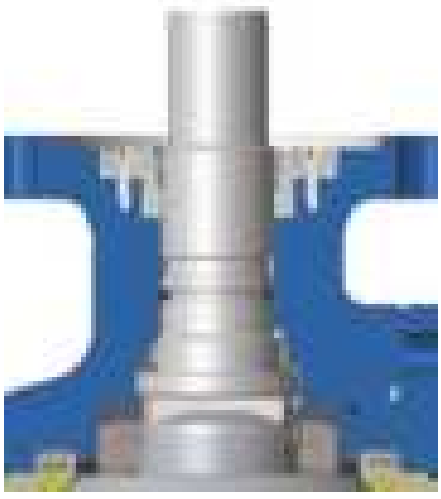
# Design Features



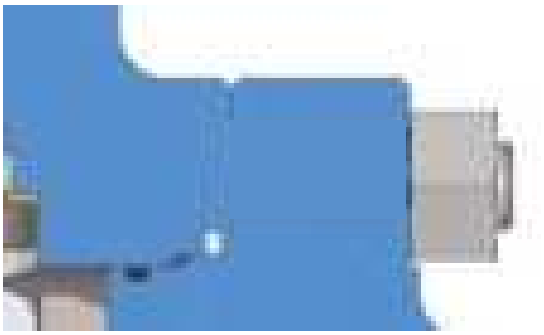
**DOUBLE BLOCK AND BLEED**
Spring loaded floating seats maintain contact with the ball and provide a tight shut off even at low pressure differential. Independent sealing of upstream and downstream sides facilitate draining of fluid from body cavity, and thus double block and bleed operation.



**FIRE SAFE DESIGN**
DelVal® fire safe design consists of a primary soft sealing and a secondary metal seat. A resilient material is inserted into the metal seat holder to provide a soft action in addition to the metal sealing between the ball and the seat rings. In case of fire the soft seat insert burns and allows the spring loaded seat to ensure metal to metal sealing against the ball.



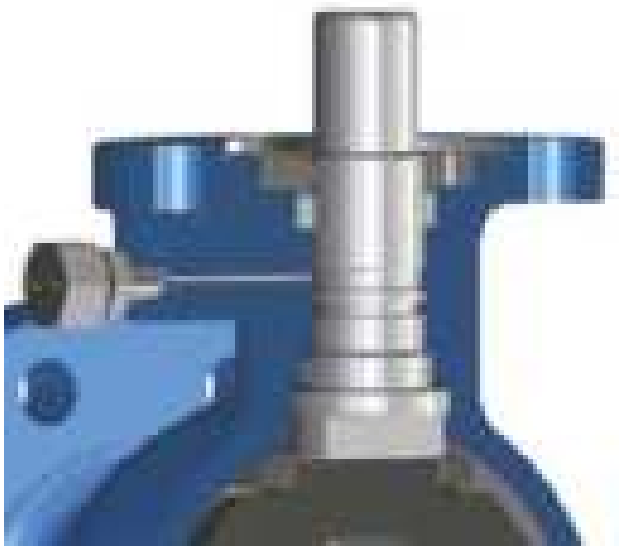
**STEM SEALING**
A multiple stem sealing arrangement prevents leakage to the atmosphere. The unique arrangement consists of a double sealing arrangement with o-rings around the stem, and two pre-energized graphite seal rings are also provided.



**BODY JOINTS**
Double seal combination of o-ring and fire safe spiral wound gasket ensures perfect body joint sealing. DelVal® Trunnion Ball Valves meet or exceed the fugitive emission requirements across a wide range of pressure and temperature applications. Valves are suitable for both above and underground installations.

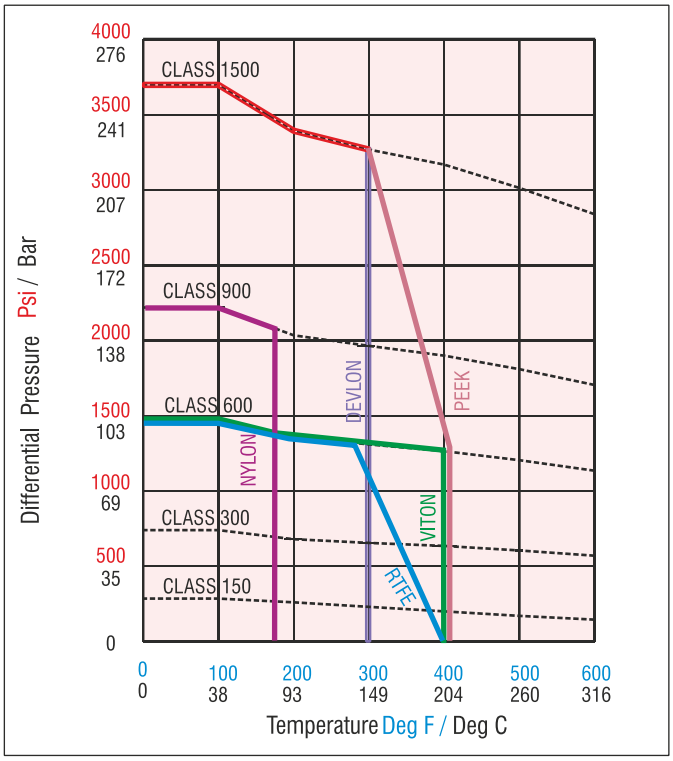


**EMERGENCY SEAT SEALANT INJECTION**
An emergency sealant injection system is available on request. Each DelVal® Trunnion Ball Valve has a port for sealant injection feature.



**EMERGENCY STEM SEALANT INJECTION**
An emergency sealant injection system is available on request. Each DelVal® Trunnion Ball Valve has a port for sealant injection feature.

## Pressure Temperature Ratings:




Pressure - temperature seat ratings of valves are as given in the graph for body material ASTM A 216 - Gr. WCB. With the exception of body seat rings and primary soft seals, all valve components are capable of withstanding the pressure - temperature ratings as specified in ASME B 16.34.

### Temperature Limits :

| | | Lower limit | | Upper limit | |
|---|---|---|---|---|---|
| | | Deg.F | Deg.C | Deg.F | Deg.C |
| Body Matl. | WCB | -20 | -29 | 797 | 425 |
| | LCB | -50 | -46 | 653 | 345 |
| | CF8 | -320 | -196 | 1000 | 538 |
| | CF8M | -320 | -196 | 1000 | 538 |
| Seat | RTFE | -58 | -50 | 400 | 204 |
| | DEVLON | -58 | -50 | 302 | 150 |
| | PEEK | -58 | -50 | 400 | 204 |
| | VITON | -10 | -23 | 400 | 204 |
| | NYLON 12 | -58 | -50 | 176 | 80 |

Note : These ratings are a guide for general service.
Please consult DelVal® for specific recommendations.

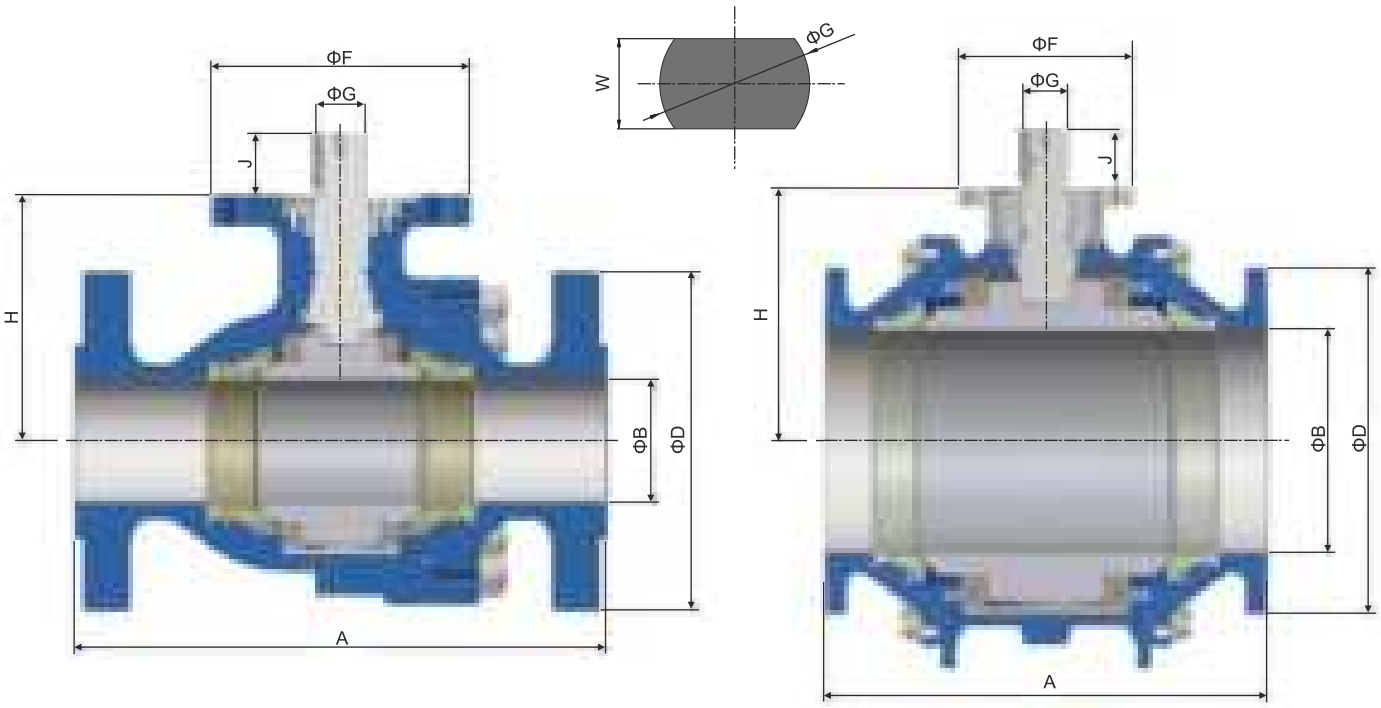
## Range:

| VALVE TYPE | ASME CLASS | 2 | | 3 | | 4 | | 6 | | 8 | | 10 | | 12 | | 14 | | 16 | | 18 | | 20 | | 24 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | FP | RP | FP | RP | FP | RP | FP | RP | FP | RP | FP | RP | FP | RP | FP | RP | FP | RP | FP | RP | FP | RP | FP | RP |
| 2 PIECE | 150 | • | | • | • | • | • | • | • | • | • | • | • | • | • | • | • | | • | | | | | | |
| | 300 | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | | • | | | | | | |
| | 600 | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | | • | | | | | | |
| | 900 | • | • | • | • | • | • | • | • | • | • | • | • | • | • | | • | | • | | | | | | |
| | 1500 | • | • | • | • | • | • | • | • | • | • | | • | | | | | | | | | | | | |
| 3 PIECE | 150 | | | | | | | | | | | | | | | | | • | | • | • | • | • | • | • |
| | 300 | | | | | | | | | | | | | | | | | • | | • | • | • | • | • | • |
| | 600 | | | | | | | | | | | | | | | | | • | | • | • | • | • | • | • |
| | 900 | | | | | | | | | | | | | | | • | | • | | | • | | | | |
| | 1500 | | | | | | | | | | | • | | • | • | | • | | | | | | | | |

## Specification and Codes:

| | | |
|---|---|---|
| Design | | API 6D / ASME B16.34 / BS EN ISO 17292 |
| Pressure & Temperature Rating | | ASME B16.34 |
| Testing | | API 6D / API 598 / BS EN 1226 -1 |
| Ends | Face to Face/End to End Dimensions | API 6D / ASME B16.10 |
| | End Flange Dimensions | ASME B16.5 / ASME B16.47 |
| | Butt Weld End Dimensions | ASME B16.25 |
| Fire Safe Test | | API 607 |
| Compliance | | PED 2014 / 68 / EU |
| NACE | | ANSI / NACE MRO 175 / ISO 15156 - 2 |

# Engineering (Full Port)




## ASME CLASS 150 (mm)

| SIZE | 2-Piece | | | | | | | | | | | | 3-Piece | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ΦB | A | | | H | ISO TOP | ΦG | W | J | KEY SIZE | ΦD | WT(Kg)# | ΦB | A | | | H | ISO TOP | ΦG | W | J | KEY SIZE | ΦD | WT(Kg)# |
| NPS | | RF | RTJ | BWE | | | | | | | | FL | | RF | RTJ | BWE | | | | | | | | FL |
| 2 | 49 | 178 | 191 | 216 | 130 | F10 | 30 | 22 | 35 | - | 150 | 11 | - | - | - | - | - | - | - | - | - | - | - | - |
| 3 | 74 | 203 | 216 | 283 | 160 | F12 | 35 | 24 | 40 | - | 190 | 25 | - | - | - | - | - | - | - | - | - | - | - | - |
| 4 | 100 | 229 | 241 | 305 | 185 | F12 | 35 | 24 | 40 | - | 230 | 43 | - | - | - | - | - | - | - | - | - | - | - | - |
| 6 | 150 | 394 | 406 | 457 | 250 | F12 | 40 | 29 | 40 | - | 280 | 122 | - | - | - | - | - | - | - | - | - | - | - | - |
| 8 | 201 | 457 | 470 | 521 | 302 | F16 | 55 | - | 80 | 16 x 10 | 345 | 200 | - | - | - | - | - | - | - | - | - | - | - | - |
| 10 | 252 | 533 | 546 | 559 | 340 | F16 | 55 | - | 80 | 16 x 10 | 405 | 315 | - | - | - | - | - | - | - | - | - | - | - | - |
| 12 | 303 | 610 | 622 | 635 | 375 | F25 | 63.5 | - | 102 | 15.88 x 15.88 | 485 | 470 | - | - | - | - | - | - | - | - | - | - | - | - |
| 14 | 334 | 686 | 699 | 762 | 390 | F25 | 70 | - | 102 | 20 x 12 | 535 | 600 | - | - | - | - | - | - | - | - | - | - | - | - |
| 16 | - | - | - | - | - | - | - | | - | - | - | - | 385 | 762 | 775 | 838 | 460 | F25 | 76.2 | - | 102 | 19.05 x 19.05 | 595 | 995 |
| 18 | - | - | - | - | - | - | - | | - | - | - | - | 436 | 864 | 876 | 914 | 500 | F30 | 88.9 | - | 134 | 22.23 x 15.86 | 635 | 1315 |
| 20 | - | - | - | - | - | - | - | | - | - | - | - | 487 | 914 | 927 | 991 | 525 | F30 | 88.9 | - | 134 | 22.23 x 15.86 | 700 | 1700 |
| 24 | - | - | - | - | - | - | - | | - | - | - | - | 589 | 1067 | 1080 | 1143 | 650 | F35 | 120 | - | 150 | 32 x 18 | 815 | 2750 |

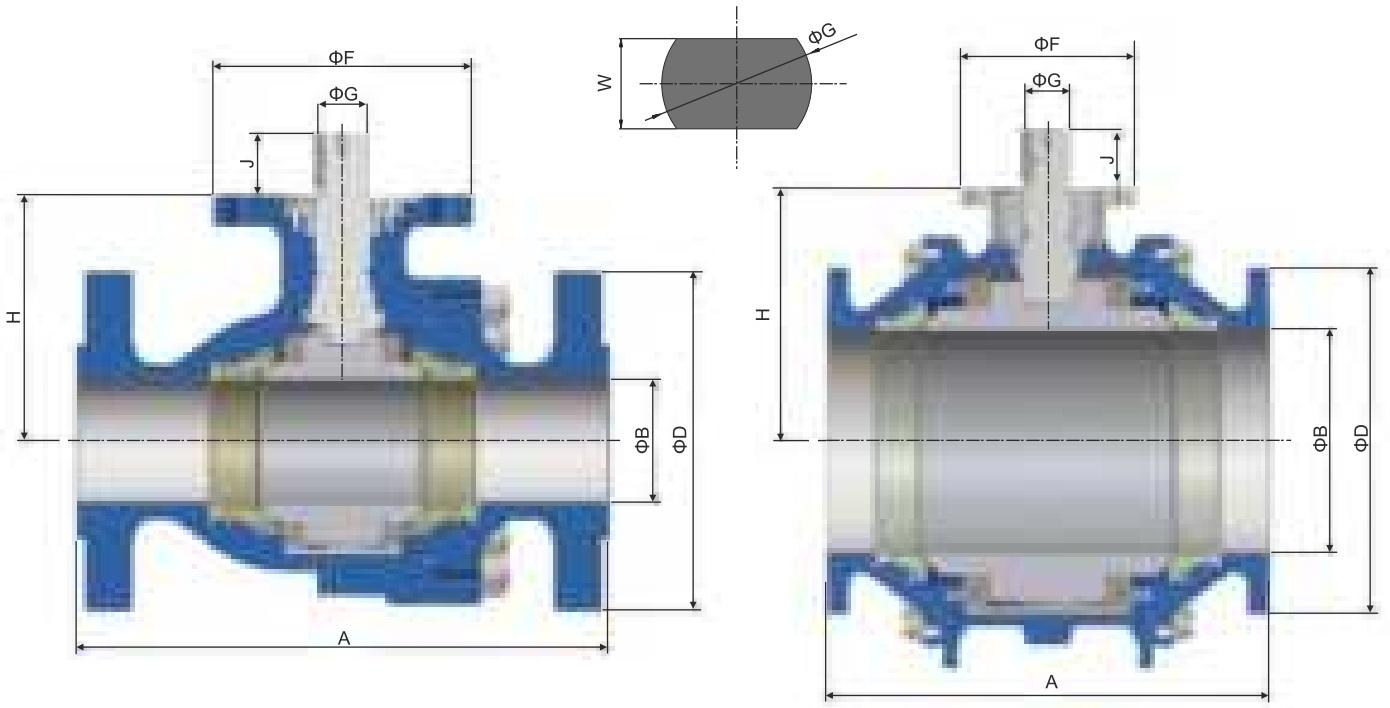
## ASME CLASS 150 (INCH)

| SIZE | 2-Piece | | | | | | | | | | | | 3-Piece | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ΦB | A | | | H | ISO TOP | ΦG | W | J | KEY SIZE | ΦD | WT(LBS)# | ΦB | A | | | H | ISO TOP | ΦG | W | J | KEY SIZE | ΦD | WT(LBS)# |
| NPS | | RF | RTJ | BWE | | | | | | | | FL | | RF | RTJ | BWE | | | | | | | | FL |
| 2 | 1.94 | 7.00 | 7.50 | 8.50 | 5.12 | F10 | 1.18 | 0.87 | 1.38 | -- | 6.00 | 24 | - | - | - | - | - | - | - | - | - | - | - | - |
| 3 | 2.94 | 8.00 | 8.50 | 11.13 | 6.30 | F12 | 1.38 | 0.94 | 1.57 | -- | 7.50 | 55 | - | - | - | - | - | - | - | - | - | - | - | - |
| 4 | 3.94 | 9.00 | 9.50 | 12.00 | 7.28 | F12 | 1.38 | 0.94 | 1.57 | -- | 9.00 | 95 | - | - | - | - | - | - | - | - | - | - | - | - |
| 6 | 5.94 | 15.50 | 16.00 | 18.00 | 9.84 | F12 | 1.57 | 1.18 | 1.57 | -- | 11.00 | 268 | - | - | - | - | - | - | - | - | - | - | - | - |
| 8 | 7.94 | 18.00 | 18.50 | 20.50 | 11.89 | F16 | 2.16 | - | 3.15 | 0.63 x 0.39 | 13.50 | 440 | - | - | - | - | - | - | - | - | - | - | - | - |
| 10 | 9.94 | 21.00 | 21.50 | 22.00 | 13.39 | F16 | 2.16 | - | 3.15 | 0.63 x 0.39 | 16.00 | 693 | - | - | - | - | - | - | - | - | - | - | - | - |
| 12 | 11.94 | 24.00 | 24.50 | 25.00 | 14.76 | F25 | 2.50 | - | 4.01 | 0.63 x 0.63 | 19.00 | 1034 | - | - | - | - | - | - | - | - | - | - | - | - |
| 14 | 13.19 | 27.00 | 27.50 | 30.00 | 15.35 | F25 | 2.76 | - | 4.01 | 0.79 x 0.47 | 21.00 | 1320 | - | - | - | - | - | - | - | - | - | - | - | - |
| 16 | - | - | - | - | - | - | - | | - | - | - | - | 15.19 | 30 | 30.5 | 33 | 18.11 | F25 | 3 | - | 4.01 | 0.75 x 0.75 | 23.5 | 2189 |
| 18 | - | - | - | - | - | - | - | | - | - | - | - | 17.19 | 34 | 34.5 | 36 | 19.7 | F30 | 3.5 | - | 5.27 | 0.88 x 0.63 | 25 | 2893 |
| 20 | - | - | - | - | - | - | - | | - | - | - | - | 19.19 | 36 | 36.5 | 39 | 20.67 | F30 | 3.5 | - | 5.27 | 0.88 x 0.63 | 27.5 | 3740 |
| 24 | - | - | - | - | - | - | - | | - | - | - | - | 23.19 | 42.00 | 42.50 | 45.00 | 25.60 | F35 | 4.72 | - | 5.91 | 1.26 x 0.71 | 32.00 | 6050 |

# Approximate Value

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# Engineering (Full Port)




## ASME CLASS 300 (mm)

| SIZE | 2-Piece | | | | | | | | | | | | 3-Piece | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ΦB | A | | | H | ISO TOP | ΦG | W | J | KEY SIZE | ΦD | WT(Kg) # | ΦB | A | | | H | ISO TOP | ΦG | W | J | KEY SIZE | ΦD | WT(Kg) # |
| NPS | | RF | RTJ | BWE | | | | | | | | FL | | RF | RTJ | BWE | | | | | | | | FL |
| 2 | 49 | 216 | 232 | 216 | 130 | F10 | 30 | 22 | 35 | - | 165 | 14 | - | - | - | - | - | - | - | - | - | - | - | - |
| 3 | 74 | 283 | 298 | 283 | 160 | F12 | 35 | 24 | 40 | - | 210 | 40 | - | - | - | - | - | - | - | - | - | - | - | - |
| 4 | 100 | 305 | 321 | 305 | 185 | F12 | 35 | 24 | 40 | - | 255 | 50 | - | - | - | - | - | - | - | - | - | - | - | - |
| 6 | 150 | 403 | 419 | 457 | 250 | F16 | 45 | - | 60 | 14 x 9 | 320 | 138 | - | - | - | - | - | - | - | - | - | - | - | - |
| 8 | 201 | 502 | 518 | 521 | 302 | F16 | 55 | - | 80 | 16 x 10 | 380 | 245 | - | - | - | - | - | - | - | - | - | - | - | - |
| 10 | 252 | 568 | 584 | 559 | 340 | F16 | 55 | - | 80 | 16 x 10 | 445 | 366 | - | - | - | - | - | - | - | - | - | - | - | - |
| 12 | 303 | 648 | 664 | 635 | 375 | F25 | 63.5 | - | 102 | 15.88 x 15.88 | 520 | 550 | - | - | - | - | - | - | - | - | - | - | - | - |
| 14 | 334 | 762 | 778 | 762 | 390 | F25 | 70 | - | 102 | 20 x 12 | 585 | 820 | - | - | - | - | - | - | - | - | - | - | - | - |
| 16 | - | - | - | - | - | - | - | - | - | - | - | - | 385 | 838 | 854 | 838 | 460 | F25 | 76.2 | - | 102 | 19.05 x 19.05 | 650 | 1187 |
| 18 | - | - | - | - | - | - | - | - | - | - | - | - | 436 | 914 | 930 | 914 | 500 | F30 | 88.9 | - | 134 | 22.23 x 15.88 | 710 | 1560 |
| 20 | - | - | - | - | - | - | - | - | - | - | - | - | 487 | 991 | 1010 | 991 | 565 | F35 | 88.9 | - | 134 | 22.23 x 15.88 | 775 | 2200 |
| 24 | - | - | - | - | - | - | - | - | - | - | - | - | 589 | 1143 | 1165 | 1143 | 670 | F35 | 120 | - | 150 | 32 x 18 | 915 | 3500 |

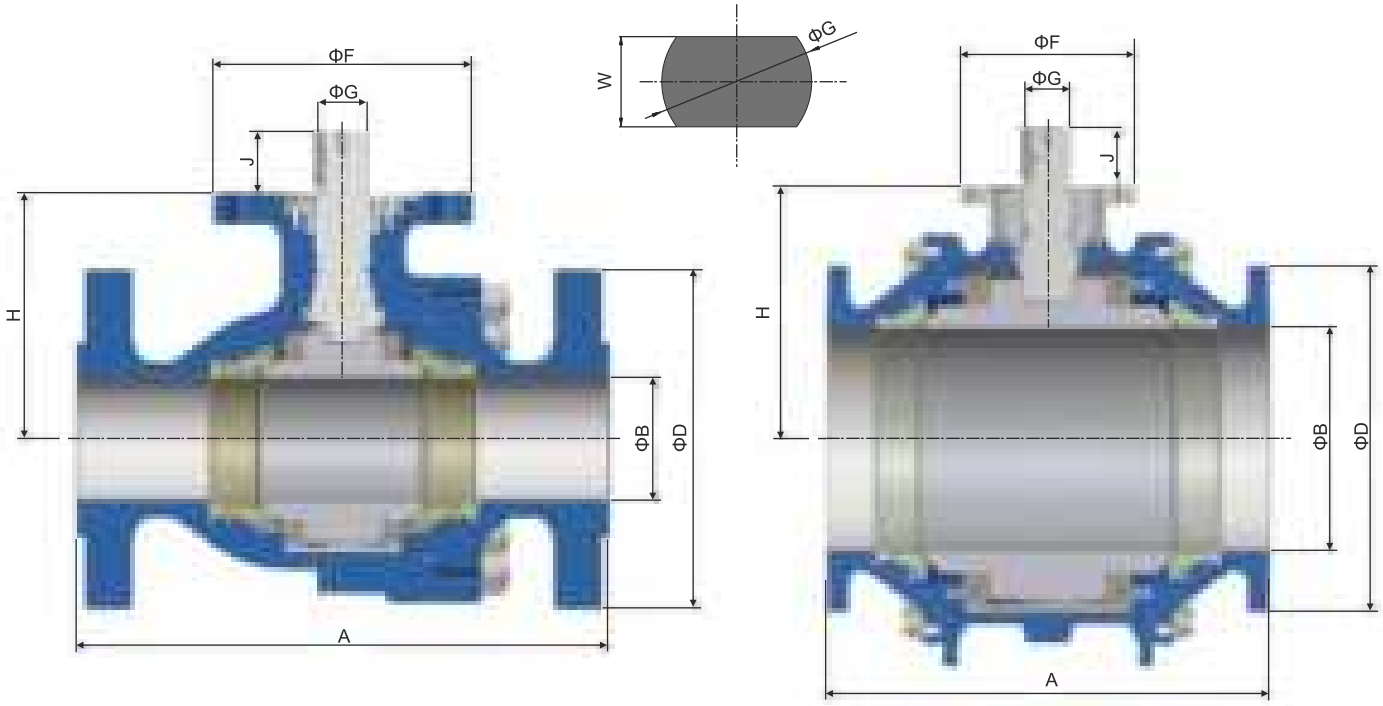
## ASME CLASS 300 (INCH)

| SIZE | 2-Piece | | | | | | | | | | | | 3-Piece | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ΦB | A | | | H | ISO TOP | ΦG | W | J | KEY SIZE | ΦD | WT(LBS) # | ΦB | A | | | H | ISO TOP | ΦG | W | J | KEY SIZE | ΦD | WT(LBS) # |
| NPS | | RF | RTJ | BWE | | | | | | | | FL | | RF | RTJ | BWE | | | | | | | | FL |
| 2 | 1.94 | 8.5 | 9.13 | 8.5 | 5.12 | F10 | 1.18 | 0.87 | 1.38 | - | 6.5 | 31 | - | - | - | - | - | - | - | - | - | - | - | - |
| 3 | 2.94 | 11.13 | 11.75 | 11.13 | 6.3 | F12 | 1.38 | 0.94 | 1.57 | - | 8.25 | 88 | - | - | - | - | - | - | - | - | - | - | - | - |
| 4 | 3.94 | 12 | 12.63 | 12 | 7.28 | F12 | 1.38 | 0.94 | 1.57 | - | 10 | 110 | - | - | - | - | - | - | - | - | - | - | - | - |
| 6 | 5.94 | 15.88 | 16.5 | 18 | 9.84 | F16 | 1.77 | - | 2.36 | 0.55 x 0.36 | 12.5 | 304 | - | - | - | - | - | - | - | - | - | - | - | - |
| 8 | 7.94 | 19.75 | 20.38 | 20.5 | 11.89 | F16 | 2.16 | - | 3.15 | 0.63 x 0.39 | 15 | 539 | - | - | - | - | - | - | - | - | - | - | - | - |
| 10 | 9.94 | 22.38 | 23 | 22 | 13.39 | F16 | 2.16 | - | 3.15 | 0.63 x 0.39 | 17.5 | 805 | - | - | - | - | - | - | - | - | - | - | - | - |
| 12 | 11.94 | 25.5 | 26.13 | 25 | 14.76 | F25 | 2.5 | - | 4.01 | 0.63 x 0.63 | 20.5 | 1210 | - | - | - | - | - | - | - | - | - | - | - | - |
| 14 | 13.19 | 30 | 30.63 | 30 | 15.35 | F25 | 2.76 | - | 4.01 | 0.79 x 0.47 | 23 | 1804 | - | - | - | - | - | - | - | - | - | - | - | - |
| 16 | - | - | - | - | - | - | - | - | - | - | - | - | 15.19 | 33 | 33.63 | 33 | 18.11 | F25 | 3 | - | 4.01 | 0.75 x 0.75 | 25.5 | 2611 |
| 18 | - | - | - | - | - | - | - | - | - | - | - | - | 17.19 | 36 | 36.63 | 36 | 19.69 | F30 | 3.5 | - | 5.27 | 0.88 x 0.63 | 28 | 3432 |
| 20 | - | - | - | - | - | - | - | - | - | - | - | - | 19.19 | 39 | 39.75 | 39 | 22.24 | F35 | 3.5 | - | 5.27 | 0.88 x 0.63 | 30.5 | 4840 |
| 24 | - | - | - | - | - | - | - | - | - | - | - | - | 23.19 | 45 | 45.88 | 45 | 26.38 | F35 | 4.72 | - | 5.91 | 1.26 x 0.71 | 36 | 7700 |

# Approximate Value

DelVal® reserves rights to change the content without notice.

# Engineering (Full Port)




## ASME CLASS 600 (mm)

| SIZE | 2-Piece | | | | | | | | | | | | 3-Piece | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ΦB | A | | | H | ISO TOP | ΦG | W | J | KEY SIZE | ΦD | WT(Kg)# | ΦB | A | | | H | ISO TOP | ΦG | W | J | KEY SIZE | ΦD | WT(Kg)# |
| NPS | | RF | RTJ | BWE | | | | | | | | FL | | RF | RTJ | BWE | | | | | | | | FL |
| 2 | 49 | 292 | 295 | 292 | 140 | F10 | 30 | 22 | 35 | - | 165 | 32 | - | - | - | - | - | - | - | - | - | - | - | - |
| 3 | 74 | 356 | 359 | 356 | 165 | F12 | 35 | 24 | 40 | - | 210 | 56 | - | - | - | - | - | - | - | - | - | - | - | - |
| 4 | 100 | 432 | 435 | 432 | 200 | F16 | 40 | - | 50 | 12 x 8 | 275 | 108 | - | - | - | - | - | - | - | - | - | - | - | - |
| 6 | 150 | 559 | 562 | 559 | 250 | F16 | 45 | - | 60 | 14 x 9 | 355 | 172 | - | - | - | - | - | - | - | - | - | - | - | - |
| 8 | 201 | 660 | 664 | 660 | 302 | F16 | 55 | - | 80 | 16 x 10 | 420 | 349 | - | - | - | - | - | - | - | - | - | - | - | - |
| 10 | 252 | 787 | 791 | 787 | 343 | F25 | 63.5 | - | 102 | 15.88 x 15.88 | 510 | 621 | - | - | - | - | - | - | - | - | - | - | - | - |
| 12 | 303 | 838 | 841 | 838 | 390 | F25 | 70 | - | 102 | 20 x 12 | 560 | 835 | - | - | - | - | - | - | - | - | - | - | - | - |
| 14 | 334 | 889 | 892 | 889 | 415 | F25 | 76.2 | - | 102 | 19.05 x 19.05 | 605 | 1200 | - | - | - | - | - | - | - | - | - | - | - | - |
| 16 | - | - | - | - | - | - | - | - | - | - | - | - | 385 | 991 | 994 | 991 | 460 | F30 | 88.9 | - | 134 | 22.23 x 15.88 | 685 | 1997 |
| 18 | - | - | - | - | - | - | - | - | - | - | - | - | 436 | 1092 | 1095 | 1092 | 525 | F35 | 120 | - | 150 | 32 x 18 | 745 | 2730 |
| 20 | - | - | - | - | - | - | - | - | - | - | - | - | 487 | 1194 | 1200 | 1194 | 595 | F35 | 120 | - | 150 | 32 x 18 | 815 | 3350 |
| 24 | - | - | - | - | - | - | - | - | - | - | - | - | 589 | 1397 | 1407 | 1397 | 680 | F40 | 140 | - | 210 | 36 x 20 | 940 | 5975 |

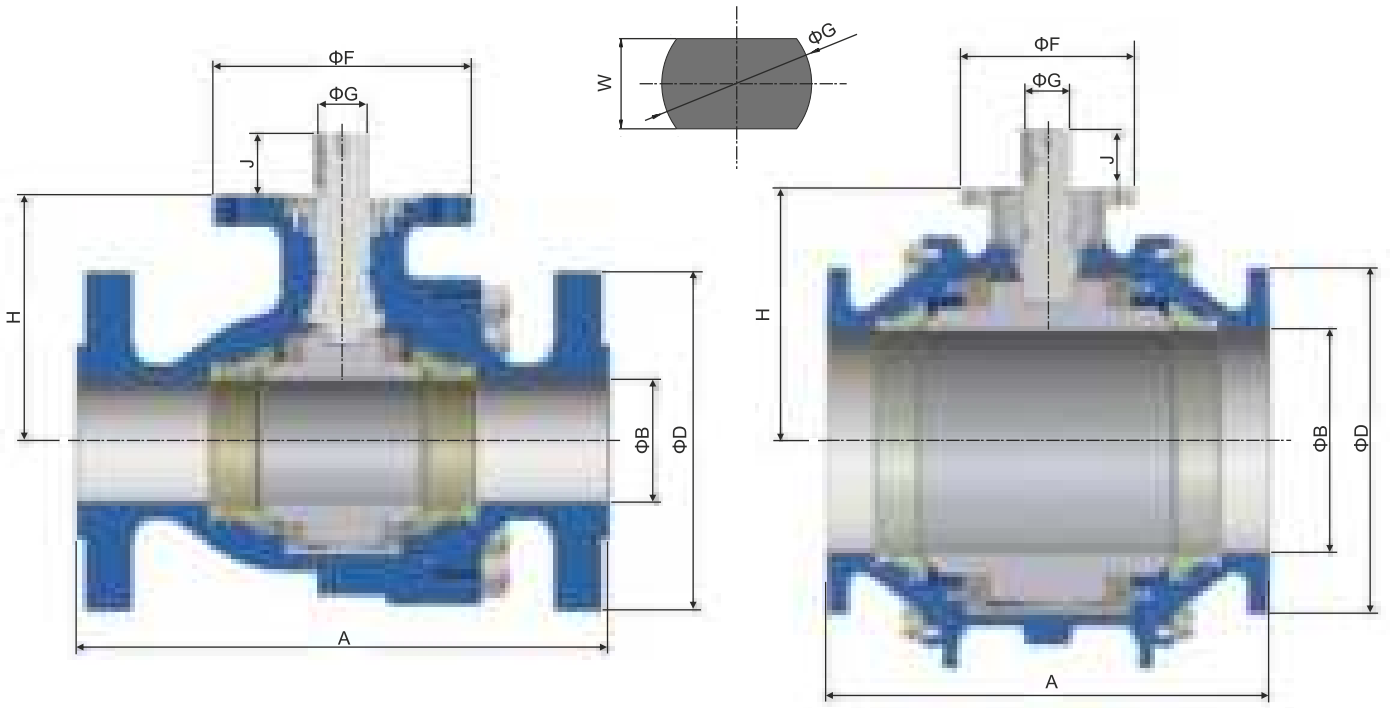
## ASME CLASS 600 (INCH)

| SIZE | 2-Piece | | | | | | | | | | | | 3-Piece | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ΦB | A | | | H | ISO TOP | ΦG | W | J | KEY SIZE | ΦD | WT(LBS)# | ΦB | A | | | H | ISO TOP | ΦG | W | J | KEY SIZE | ΦD | WT(LBS)# |
| NPS | | RF | RTJ | BWE | | | | | | | | FL | | RF | RTJ | BWE | | | | | | | | FL |
| 2 | 1.94 | 11.50 | 11.63 | 11.50 | 5.51 | F10 | 1.18 | 0.87 | 1.38 | - | 6.50 | 70 | - | - | - | - | - | - | - | - | - | - | - | - |
| 3 | 2.94 | 14.00 | 14.13 | 14.00 | 6.50 | F12 | 1.38 | 0.94 | 1.57 | - | 8.25 | 123 | - | - | - | - | - | - | - | - | - | - | - | - |
| 4 | 3.94 | 17.00 | 17.13 | 17.00 | 7.87 | F16 | 1.57 | - | 1.97 | 0.47 x 0.31 | 10.75 | 238 | - | - | - | - | - | - | - | - | - | - | - | - |
| 6 | 5.94 | 22.00 | 22.13 | 22.00 | 9.84 | F16 | 1.77 | - | 2.36 | 0.55 x 0.35 | 14.00 | 378 | - | - | - | - | - | - | - | - | - | - | - | - |
| 8 | 7.94 | 26.00 | 26.13 | 26.00 | 11.89 | F16 | 2.16 | - | 3.15 | 0.63 x 0.39 | 16.50 | 767 | - | - | - | - | - | - | - | - | - | - | - | - |
| 10 | 9.94 | 31.00 | 31.13 | 31.00 | 13.50 | F25 | 2.50 | - | 4.01 | 0.63 x 0.63 | 20.00 | 1366 | - | - | - | - | - | - | - | - | - | - | - | - |
| 12 | 11.94 | 33.00 | 33.13 | 33.00 | 15.35 | F25 | 2.76 | - | 4.01 | 0.79 x 0.47 | 22.00 | 1837 | - | - | - | - | - | - | - | - | - | - | - | - |
| 14 | 13.19 | 35.00 | 35.13 | 35.00 | 16.34 | F25 | 3.00 | - | 4.01 | 0.75 x 0.75 | 23.75 | 2640 | - | - | - | - | - | - | - | - | - | - | - | - |
| 16 | - | - | - | - | - | - | - | - | - | - | - | - | 15.19 | 39 | 39.13 | 39 | 18.11 | F30 | 3.5 | - | 5.27 | 0.88 x 0.63 | 27 | 4393 |
| 18 | - | - | - | - | - | - | - | - | - | - | - | - | 17.19 | 43 | 43.13 | 43 | 20.67 | F35 | 4.72 | - | 5.9 | 1.26 x 0.71 | 29.25 | 6006 |
| 20 | - | - | - | - | - | - | - | - | - | - | - | - | 19.19 | 47 | 47.25 | 47 | 23.43 | F35 | 4.72 | - | 5.9 | 1.26 x 0.71 | 32 | 7370 |
| 24 | - | - | - | - | - | - | - | - | - | - | - | - | 23.19 | 55 | 55.38 | 55 | 26.77 | F40 | 5.51 | - | 8.27 | 1.42 x 0.79 | 37 | 13145 |

# Approximate Value

DelVal® reserves rights to change the content without notice.

# Engineering (Full Port)




## ASME CLASS 900 (mm)

| SIZE | 2-Piece | | | | | | | | | | | | 3-Piece | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ΦB | A | | | H | ISO TOP | ΦG | W | J | KEY SIZE | ΦD | WT(Kg)# | ΦB | A | | | H | ISO TOP | ΦG | W | J | KEY SIZE | ΦD | WT(Kg)# |
| NPS | | RF | RTJ | BWE | | | | | | | | FL | | RF | RTJ | BWE | | | | | | | | FL |
| 2 | 49 | 368 | 371 | 368 | 138 | F12 | 30 | 22 | 35 | - | 215 | 60 | - | - | - | - | - | - | - | - | - | - | - | - |
| 3 | 74 | 381 | 384 | 381 | 180 | F16 | 40 | - | 50 | 12 x 8 | 240 | 88 | - | - | - | - | - | - | - | - | - | - | - | - |
| 4 | 100 | 457 | 460 | 457 | 240 | F16 | 45 | - | 60 | 14 x 9 | 290 | 140 | - | - | - | - | - | - | - | - | - | - | - | - |
| 6 | 150 | 610 | 613 | 610 | 275 | F16 | 55 | - | 80 | 16 x 10 | 380 | 190 | - | - | - | - | - | - | - | - | - | - | - | - |
| 8 | 201 | 737 | 740 | 737 | 350 | F25 | 63.5 | - | 102 | 15.88 x 15.88 | 470 | 593 | - | - | - | - | - | - | - | - | - | - | - | - |
| 10 | 252 | 838 | 841 | 838 | 360 | F30 | 70 | - | 102 | 20 x 12 | 545 | 845 | - | - | - | - | - | - | - | - | - | - | - | - |
| 12 | 303 | 965 | 968 | 965 | 400 | F30 | 70 | - | 102 | 20 x 12 | 610 | 1115 | - | - | - | - | - | - | - | - | - | - | - | - |
| 14 | - | - | - | - | - | - | - | - | - | - | - | - | 322 | 1029 | 1038 | 1029 | 465 | F35 | 88.9 | - | 134 | 22.23 x 15.88 | 640 | 2074 |
| 16 | - | - | - | - | - | - | - | - | - | - | - | - | 373 | 1130 | 1140 | 1130 | 485 | F35 | 88.9 | - | 134 | 22.23 x 15.88 | 705 | 2385 |

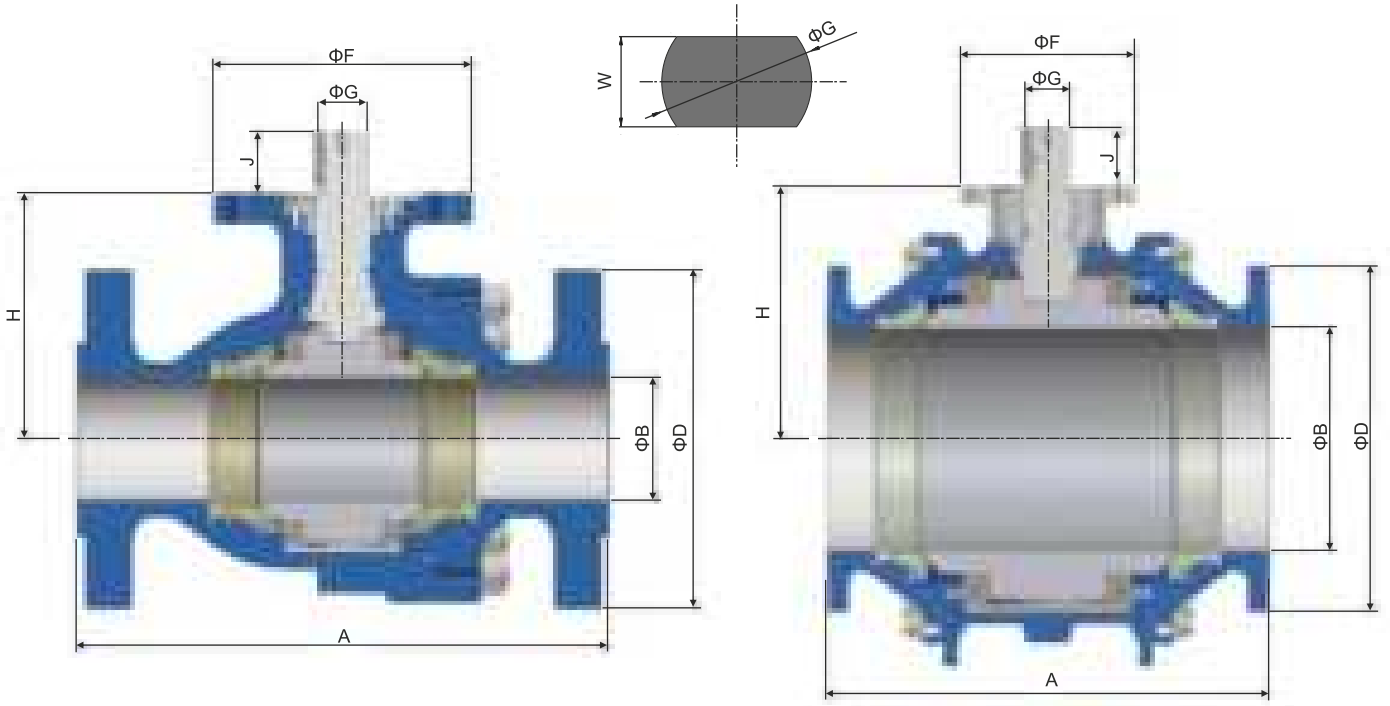
## ASME CLASS 900 (INCH)

| SIZE | 2-Piece | | | | | | | | | | | | 3-Piece | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ΦB | A | | | H | ISO TOP | ΦG | W | J | KEY SIZE | ΦD | WT(LBS)# | ΦB | A | | | H | ISO TOP | ΦG | W | J | KEY SIZE | ΦD | WT(LBS)# |
| NPS | | RF | RTJ | BWE | | | | | | | | FL | | RF | RTJ | BWE | | | | | | | | FL |
| 2 | 1.94 | 14.5 | 14.63 | 14.5 | 5.43 | F12 | 1.18 | 0.87 | 1.38 | - | 8.5 | 132 | - | - | - | - | - | - | - | - | - | - | - | - |
| 3 | 2.94 | 15 | 15.13 | 15 | 7.09 | F16 | 1.57 | - | 1.97 | 0.47 x 0.31 | 9.5 | 194 | - | - | - | - | - | - | - | - | - | - | - | - |
| 4 | 3.94 | 18 | 18.13 | 18 | 9.45 | F16 | 1.77 | - | 2.36 | 0.55 x 0.35 | 11.5 | 308 | - | - | - | - | - | - | - | - | - | - | - | - |
| 6 | 5.94 | 24 | 24.13 | 24 | 10.82 | F16 | 2.16 | - | 3.15 | 0.63 x 0.39 | 15 | 418 | - | - | - | - | - | - | - | - | - | - | - | - |
| 8 | 7.94 | 29 | 29.13 | 29 | 13.78 | F25 | 2.5 | - | 4.01 | 0.63 x 0.63 | 18.5 | 1305 | - | - | - | - | - | - | - | - | - | - | - | - |
| 10 | 9.94 | 33 | 33.13 | 33 | 14.17 | F30 | 2.76 | - | 4.01 | 0.79 x 0.47 | 21.5 | 1859 | - | - | - | - | - | - | - | - | - | - | - | - |
| 12 | 11.94 | 38 | 38.13 | 38 | 15.75 | F30 | 2.76 | - | 4.01 | 0.79 x 0.47 | 24 | 2453 | - | - | - | - | - | - | - | - | - | - | - | - |
| 14 | - | - | - | - | - | - | - | - | - | - | - | - | 12.69 | 40.5 | 40.88 | 40.5 | 18.31 | F35 | 3.5 | - | 5.27 | 0.88 x 0.63 | 25.25 | 4563 |
| 16 | - | - | - | - | - | - | - | - | - | - | - | - | 14.69 | 44.5 | 44.88 | 44.5 | 19.1 | F35 | 3.5 | - | 5.27 | 0.88 x 0.63 | 27.75 | 5247 |

# Approximate Value

DelVal® reserves rights to change the content without notice.

# Engineering (Full Port)




## ASME CLASS 1500 (mm)

| SIZE | 2-Piece | | | | | | | | | | | | 3-Piece | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ΦB | A | | | H | ISO TOP | ΦG | W | J | KEY SIZE | ΦD | WT(Kg) # | ΦB | A | | | H | ISO TOP | ΦG | W | J | KEY SIZE | ΦD | WT(Kg) # |
| NPS | | RF | RTJ | BWE | | | | | | | | FL | | RF | RTJ | BWE | | | | | | | | FL |
| 2 | 49 | 368 | 371 | 368 | 150 | F12 | 30 | 22 | 35 | - | 215 | 62 | - | - | - | - | - | - | - | - | - | - | - | - |
| 3 | 74 | 470 | 473 | 470 | 180 | F16 | 40 | - | 50 | 12 x 8 | 265 | 112 | - | - | - | - | - | - | - | - | - | - | - | - |
| 4 | 100 | 546 | 549 | 546 | 240 | F16 | 45 | - | 60 | 14 x 9 | 310 | 200 | - | - | - | - | - | - | - | - | - | - | - | - |
| 6 | 144 | 705 | 711 | 705 | 325 | F16 | 55 | - | 80 | 16 x 10 | 395 | 500 | - | - | - | - | - | - | - | - | - | - | - | - |
| 8 | 192 | 832 | 841 | 832 | 370 | F30 | 63.5 | - | 102 | 15.88 x 15.88 | 485 | 1000 | - | - | - | - | - | - | - | - | - | - | - | - |
| 10 | - | - | - | - | - | - | - | - | - | - | - | - | 239 | 991 | 1000 | 991 | 470 | F30 | 70 | - | 102 | 20 x 12 | 585 | 1580 |
| 12 | - | - | - | - | - | - | - | - | - | - | - | - | 287 | 1130 | 1146 | 1130 | 480 | F35 | 88.9 | - | 134 | 22.23 x 15.88 | 675 | 2485 |

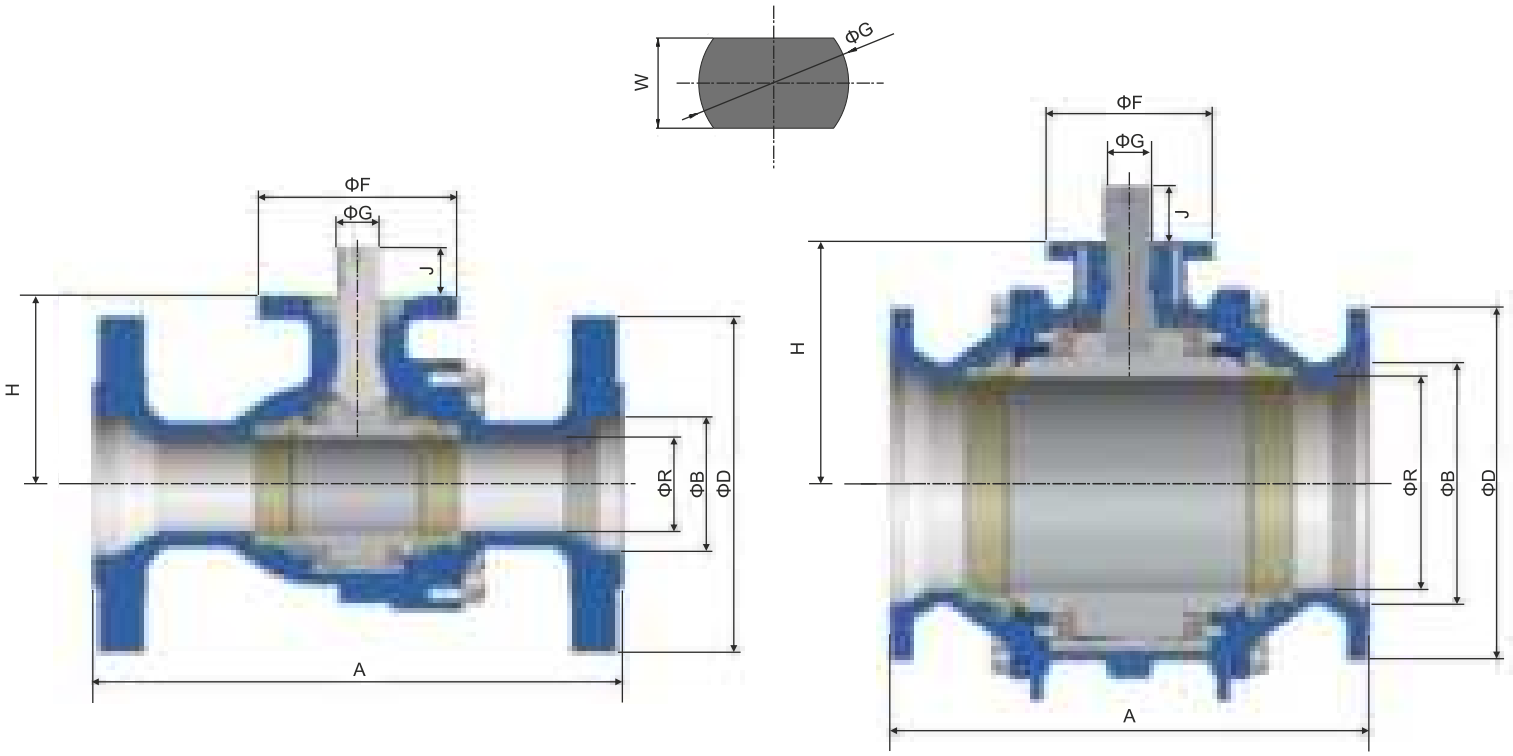
## ASME CLASS 1500 (INCH)

| SIZE | 2-Piece | | | | | | | | | | | | 3-Piece | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ΦB | A | | | H | ISO TOP | ΦG | W | J | KEY SIZE | ΦD | WT(LBS) # | ΦB | A | | | H | ISO TOP | ΦG | W | J | KEY SIZE | ΦD | WT(LBS) # |
| NPS | | RF | RTJ | BWE | | | | | | | | FL | | RF | RTJ | BWE | | | | | | | | FL |
| 2 | 1.94 | 14.5 | 14.63 | 14.5 | 5.91 | F12 | 1.18 | 0.87 | 1.38 | - | 8.5 | 136 | - | - | - | - | - | - | - | - | - | - | - | - |
| 3 | 2.94 | 18.5 | 18.63 | 18.5 | 7.09 | F16 | 1.57 | - | 1.97 | 0.47 x 0.32 | 10.5 | 246 | - | - | - | - | - | - | - | - | - | - | - | - |
| 4 | 3.94 | 21.5 | 21.63 | 21.5 | 9.45 | F16 | 1.77 | - | 2.36 | 0.55 x 0.36 | 12.25 | 440 | - | - | - | - | - | - | - | - | - | - | - | - |
| 6 | 5.69 | 27.75 | 28 | 27.75 | 12.79 | F16 | 2.16 | - | 3.15 | 0.63 x 0.39 | 15.5 | 1100 | - | - | - | - | - | - | - | - | - | - | - | - |
| 8 | 7.56 | 32.75 | 33.13 | 32.75 | 14.57 | F30 | 2.5 | - | 4.01 | 0.63 x 0.63 | 19 | 2200 | - | - | - | - | - | - | - | - | - | - | - | - |
| 10 | - | - | - | - | - | - | - | - | - | - | - | - | 9.44 | 39 | 39.38 | 39 | 18.5 | F30 | 2.76 | - | 4.01 | 0.79 x 0.47 | 23 | 3476 |
| 12 | - | - | - | - | - | - | - | - | - | - | - | - | 11.31 | 44.5 | 45.13 | 44.5 | 18.9 | F35 | 3.5 | - | 5.27 | 0.88 x 0.63 | 26.5 | 5467 |

# Approximate Value

DelVal® reserves rights to change the content without notice.

# Engineering (Reduced Port)




## ASME CLASS 150 (mm)

| SIZE | 2-Piece | | | | | | | | | | | | | 3-Piece | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ΦB | ΦR | A | | | H | ISO TOP | ΦG | W | J | KEY SIZE | ΦD | WT(Kg)# | ΦB | ΦR | A | | | H | ISO TOP | ΦG | W | J | KEY SIZE | ΦD | WT(Kg)# |
| NPS | | | RF | RTJ | BWE | | | | | | | | FL | | | RF | RTJ | BWE | | | | | | | | FL |
| 3 x 2 | 74 | 49 | 203 | 216 | 283 | 130 | F10 | 30 | 22 | 35 | - | 190 | 15 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 4 x 3 | 100 | 74 | 229 | 241 | 305 | 160 | F12 | 35 | 24 | 40 | - | 230 | 40 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 6 x 4 | 150 | 100 | 394 | 406 | 457 | 185 | F12 | 35 | 24 | 40 | - | 280 | 64 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 8 x 6 | 201 | 150 | 457 | 470 | 521 | 250 | F12 | 40 | 29 | 40 | - | 345 | 131 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 10 x 8 | 252 | 201 | 533 | 546 | 559 | 302 | F16 | 55 | - | 80 | 16 x 10 | 405 | 250 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 12 x 10 | 303 | 252 | 610 | 622 | 635 | 340 | F16 | 55 | - | 80 | 16 x 10 | 485 | 351 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 14 x 10 | 334 | 252 | 686 | 699 | 762 | 340 | F16 | 55 | - | 80 | 16 x 10 | 535 | 400 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 16 x 12 | 385 | 303 | 762 | 775 | 838 | 375 | F25 | 63.5 | - | 102 | 15.88 x 15.88 | 595 | 538 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 18 x 16 | - | - | - | - | - | - | - | - | - | - | - | - | - | 436 | 385 | 864 | 876 | 914 | 460 | F25 | 76.2 | - | 102 | 19.05 x 19.05 | 635 | 1032 |
| 20 x 16 | - | - | - | - | - | - | - | - | - | - | - | - | - | 487 | 385 | 914 | 927 | 991 | 460 | F25 | 76.2 | - | 102 | 19.05 x 19.05 | 700 | 1200 |
| 24 x 20 | - | - | - | - | - | - | - | - | - | - | - | - | - | 589 | 487 | 1067 | 1080 | 1143 | 525 | F30 | 88.9 | - | 134 | 22.23 x 15.88 | 815 | 2030 |

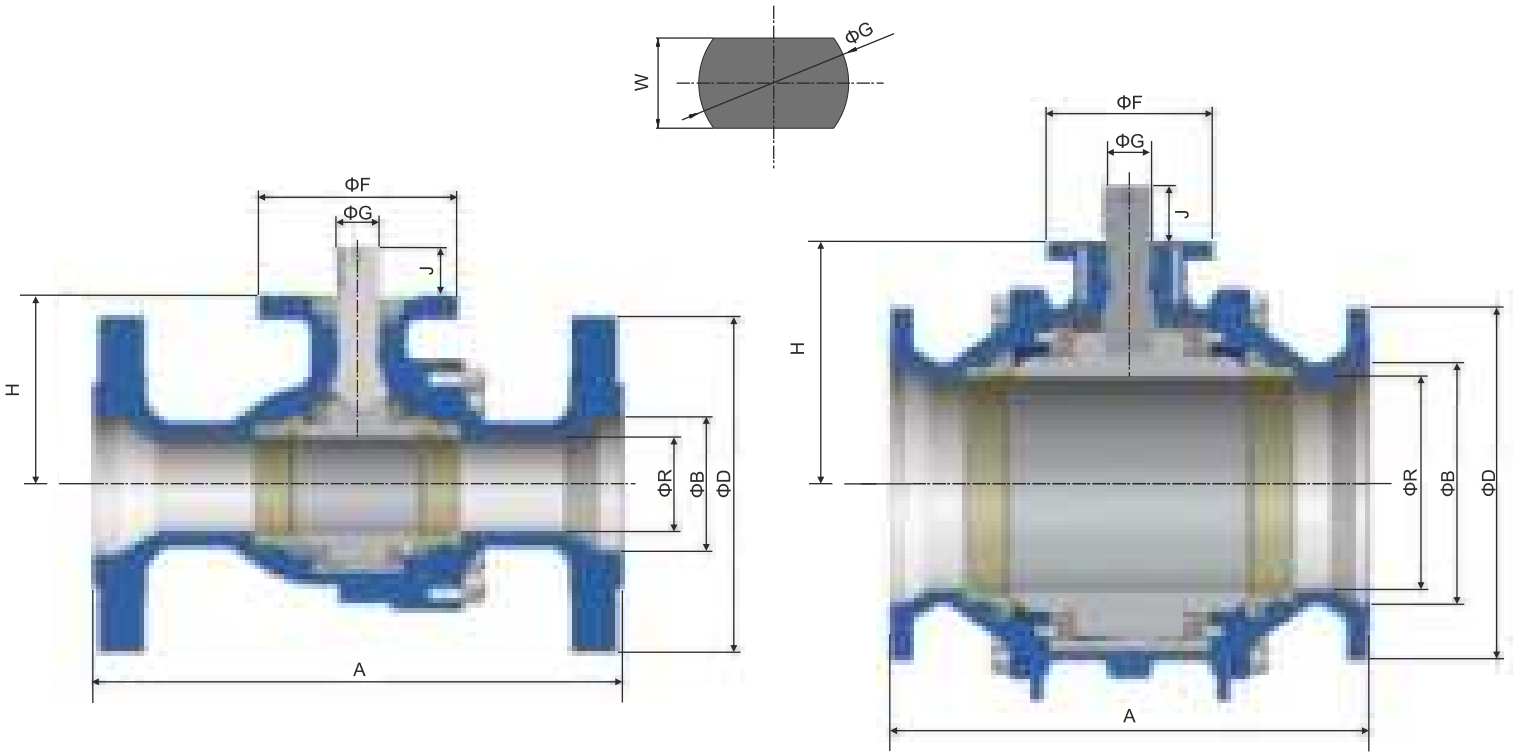
## ASME CLASS 150 (INCH)

| SIZE | 2-Piece | | | | | | | | | | | | | 3-Piece | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ΦB | ΦR | A | | | H | ISO TOP | ΦG | W | J | KEY SIZE | ΦD | WT(LBS)# | ΦB | ΦR | A | | | H | ISO TOP | ΦG | W | J | KEY SIZE | ΦD | WT(LBS)# |
| NPS | | | RF | RTJ | BWE | | | | | | | | FL | | | RF | RTJ | BWE | | | | | | | | FL |
| 3 x 2 | 2.94 | 1.94 | 8 | 8.5 | 11.13 | 5.12 | F10 | 1.18 | 0.87 | 1.38 | - | 7.5 | 33 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 4 x 3 | 3.94 | 2.94 | 9 | 9.5 | 12 | 6.3 | F12 | 1.38 | 0.94 | 1.57 | - | 9 | 88 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 6 x 4 | 5.94 | 3.94 | 15.5 | 16 | 18 | 7.28 | F12 | 1.38 | 0.94 | 1.57 | - | 11 | 141 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 8 x 6 | 7.94 | 5.94 | 18 | 18.5 | 20.5 | 9.84 | F12 | 1.57 | 1.18 | 1.57 | - | 13.5 | 288 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 10 x 8 | 9.94 | 7.94 | 21 | 21.5 | 22 | 11.89 | F16 | 2.16 | - | 3.15 | 0.63 x 0.39 | 16 | 550 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 12 x 10 | 11.94 | 9.94 | 24 | 24.5 | 25 | 13.39 | F16 | 2.16 | - | 3.15 | 0.63 x 0.39 | 19 | 772 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 14 x 10 | 13.19 | 9.94 | 27 | 27.5 | 30 | 13.39 | F16 | 2.16 | - | 3.15 | 0.63 x 0.39 | 21 | 880 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 16 x 12 | 15.19 | 11.94 | 30 | 30.5 | 33 | 14.75 | F25 | 2.5 | - | 4.01 | 0.63 x 0.63 | 23.5 | 1184 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 18 x 16 | - | - | - | - | - | - | - | - | - | - | - | - | - | 17.19 | 15.19 | 34 | 34.5 | 36 | 18.11 | F25 | 3 | - | 4.01 | 0.75 x 0.75 | 25 | 2270 |
| 20 x 16 | - | - | - | - | - | - | - | - | - | - | - | - | - | 19.19 | 15.19 | 36 | 36.5 | 39 | 18.11 | F25 | 3 | - | 4.01 | 0.75 x 0.75 | 27.5 | 2640 |
| 24 x 20 | - | - | - | - | - | - | - | - | - | - | - | - | - | 23.19 | 19.19 | 42 | 42.5 | 45 | 20.67 | F30 | 3.5 | - | 5.27 | 0.88 x 0.63 | 32 | 4466 |

# Approximate Value

DelVal® reserves rights to change the content without notice.

# Engineering (Reduced Port)




## ASME CLASS 300 (mm)

| SIZE | 2-Piece | | | | | | | | | | | | | 3-Piece | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ΦB | ΦR | A | | | H | ISO TOP | ΦG | W | J | KEY SIZE | ΦD | WT(Kg)# | ΦB | ΦR | A | | | H | ISO TOP | ΦG | W | J | KEY SIZE | ΦD | WT(Kg)# |
| NPS | | | RF | RTJ | BWE | | | | | | | | FL | | | RF | RTJ | BWE | | | | | | | | FL |
| 2 x 1.5 | 49 | 39 | 216 | 232 | 216 | 110 | F10 | 30 | 22 | 35 | - | 165 | 18 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 3 x 2 | 74 | 49 | 283 | 298 | 283 | 130 | F10 | 30 | 22 | 35 | - | 210 | 30 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 4 x 3 | 100 | 74 | 305 | 321 | 305 | 160 | F12 | 35 | 24 | 40 | - | 255 | 51 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 6 x 4 | 150 | 100 | 403 | 419 | 457 | 185 | F12 | 35 | 24 | 40 | - | 320 | 91 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 8 x 6 | 201 | 150 | 502 | 518 | 521 | 250 | F16 | 45 | - | 60 | 14 x 9 | 380 | 181 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 10 x 8 | 252 | 201 | 568 | 584 | 559 | 302 | F16 | 55 | - | 80 | 16 x 10 | 445 | 290 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 12 x 10 | 303 | 252 | 648 | 664 | 635 | 340 | F16 | 55 | - | 80 | 16 x 10 | 520 | 431 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 14 x 10 | 334 | 303 | 762 | 778 | 762 | 340 | F16 | 55 | - | 102 | 16 x 10 | 585 | 500 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 16 x 12 | 385 | 303 | 838 | 854 | 838 | 375 | F25 | 63.5 | - | 102 | 15.88 x 15.88 | 650 | 800 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 18 x 16 | - | - | - | - | - | - | - | - | - | - | - | - | - | 436 | 385 | 914 | 930 | 914 | 460 | F25 | 76.2 | - | 102 | 19.05 x 19.05 | 710 | 1400 |
| 20 x 16 | - | - | - | - | - | - | - | - | - | - | - | - | - | 487 | 385 | 991 | 1010 | 991 | 460 | F25 | 76.2 | - | 102 | 19.05 x 19.05 | 775 | 1465 |
| 24 x 20 | - | - | - | - | - | - | - | - | - | - | - | - | - | 589 | 487 | 1143 | 1165 | 1143 | 565 | F35 | 88.9 | - | 134 | 22.23 x 15.88 | 915 | 2400 |

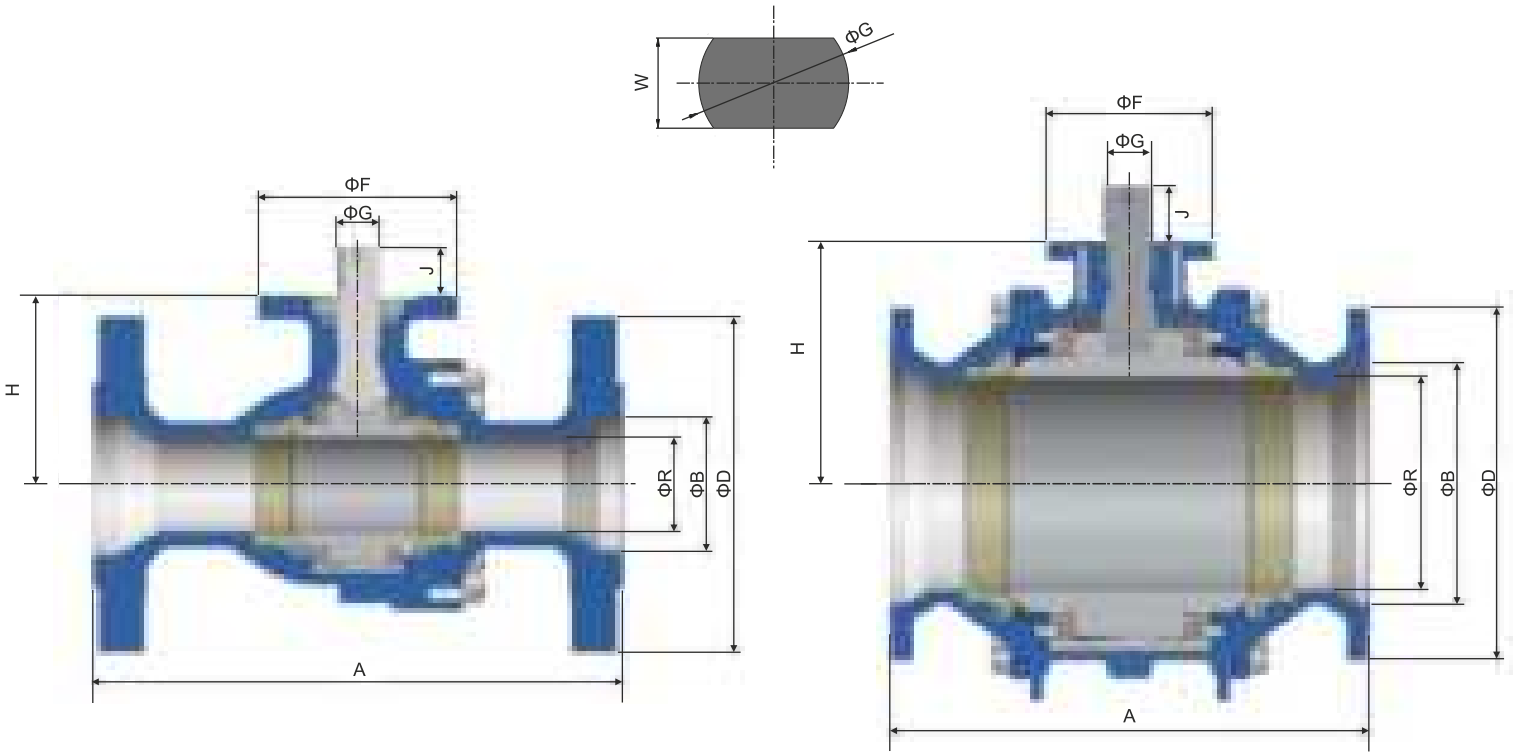
## ASME CLASS 300 (INCH)

| SIZE | 2-Piece | | | | | | | | | | | | | 3-Piece | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ΦB | ΦR | A | | | H | ISO TOP | ΦG | W | J | KEY SIZE | ΦD | WT(LBS)# | ΦB | ΦR | A | | | H | ISO TOP | ΦG | W | J | KEY SIZE | ΦD | WT(LBS)# |
| NPS | | | RF | RTJ | BWE | | | | | | | | FL | | | RF | RTJ | BWE | | | | | | | | FL |
| 2 x 1.5 | 1.94 | 1.5 | 8.5 | 9.13 | 8.5 | 4.33 | F10 | 1.18 | 0.87 | 1.38 | - | 6 | 40 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 3 x 2 | 2.94 | 1.94 | 11.13 | 11.75 | 11.13 | 5.12 | F10 | 1.18 | 0.87 | 1.38 | - | 8.25 | 66 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 4 x 3 | 3.94 | 2.94 | 12 | 12.63 | 12 | 6.3 | F12 | 1.38 | 0.94 | 1.57 | - | 10 | 112 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 6 x 4 | 5.94 | 3.94 | 15.88 | 16.5 | 18 | 7.28 | F12 | 1.38 | 0.94 | 1.57 | - | 12.5 | 200 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 8 x 6 | 7.94 | 5.94 | 19.75 | 20.38 | 20.5 | 9.84 | F16 | 1.77 | - | 2.36 | 0.55 x 0.36 | 15 | 398 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 10 x 8 | 9.94 | 7.94 | 22.38 | 23 | 22 | 11.89 | F16 | 2.16 | - | 3.15 | 0.63 x 0.39 | 17.5 | 638 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 12 x 10 | 11.94 | 9.94 | 25.5 | 26.13 | 25 | 13.39 | F16 | 2.16 | - | 3.15 | 0.63 x 0.39 | 20.5 | 948 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 14 x 10 | 13.19 | 9.94 | 30 | 30.63 | 30 | 13.39 | F16 | 2.16 | - | 3.2 | 0.63 x 0.39 | 23 | 1100 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 16 x 12 | 15.19 | 11.94 | 33 | 33.63 | 33 | 14.76 | F25 | 2.5 | - | 4.01 | 0.63 x 0.63 | 25.5 | 1760 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 18 x 16 | - | - | - | - | - | - | - | - | - | - | - | - | - | 17.19 | 15.19 | 36 | 36.63 | 36 | 18.11 | F25 | 3 | - | 4.01 | 0.75 x 0.75 | 28 | 3080 |
| 20 x 16 | - | - | - | - | - | - | - | - | - | - | - | - | - | 19.19 | 15.19 | 39 | 39.75 | 39 | 18.11 | F25 | 3 | - | 4.01 | 0.75 x 0.75 | 30.5 | 3223 |
| 24 x 20 | - | - | - | - | - | - | - | - | - | - | - | - | - | 23.19 | 19.19 | 45 | 45.88 | 45 | 22.24 | F35 | 3.5 | - | 5.27 | 0.88 x 0.63 | 36 | 5280 |

# Approximate Value

DelVal® reserves rights to change the content without notice.

# Engineering (Reduced Port)




## ASME CLASS 600 (mm)

| SIZE | 2-Piece | | | | | | | | | | | | | 3-Piece | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ΦB | ΦR | A | | | H | ISO TOP | ΦG | W | J | KEY SIZE | ΦD | WT(Kg)# | ΦB | ΦR | A | | | H | ISO TOP | ΦG | W | J | KEY SIZE | ΦD | WT(Kg)# |
| NPS | | | RF | RTJ | BWE | | | | | | | | FL | | | RF | RTJ | BWE | | | | | | | | FL |
| 2 x 1.5 | 49 | 38 | 292 | 295 | 292 | 110 | F10 | 30 | 22 | 35 | - | 165 | 25 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 3 x 2 | 74 | 49 | 356 | 359 | 356 | 140 | F10 | 30 | 22 | 35 | - | 210 | 43 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 4 x 3 | 100 | 74 | 432 | 435 | 432 | 165 | F12 | 35 | 24 | 40 | - | 275 | 88 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 6 x 4 | 150 | 100 | 559 | 562 | 559 | 200 | F16 | 40 | - | 50 | 12 x 8 | 355 | 133 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 8 x 6 | 201 | 150 | 660 | 664 | 660 | 250 | F16 | 45 | - | 60 | 14 x 9 | 420 | 304 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 10 x 8 | 252 | 201 | 787 | 791 | 787 | 302 | F16 | 55 | - | 80 | 16 x 10 | 510 | 600 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 12 x 10 | 303 | 252 | 838 | 841 | 838 | 343 | F25 | 63.5 | - | 102 | 15.88 x 15.88 | 560 | 980 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 14 x 10 | 334 | 252 | 889 | 892 | 889 | 343 | F25 | 63.5 | - | 102 | 15.88 x 15.88 | 605 | 1000 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 16 x 12 | 385 | 334 | 991 | 994 | 991 | 415 | F25 | 70 | - | 102 | 20 x 12 | 685 | 1200 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 18 x 16 | - | - | - | - | - | - | - | - | - | - | - | - | - | 436 | 385 | 1092 | 1095 | 1092 | 460 | F30 | 88.9 | - | 134 | 22.23 x 15.88 | 745 | 2150 |
| 20 x 16 | - | - | - | - | - | - | - | - | - | - | - | - | - | 487 | 385 | 1194 | 1200 | 1194 | 460 | F30 | 88.9 | - | 134 | 22.23 x 15.88 | 815 | 2600 |
| 24 x 20 | - | - | - | - | - | - | - | - | - | - | - | - | - | 589 | 487 | 1397 | 1407 | 1397 | 595 | F35 | 120 | - | 150 | 32 x 18 | 940 | 3430 |

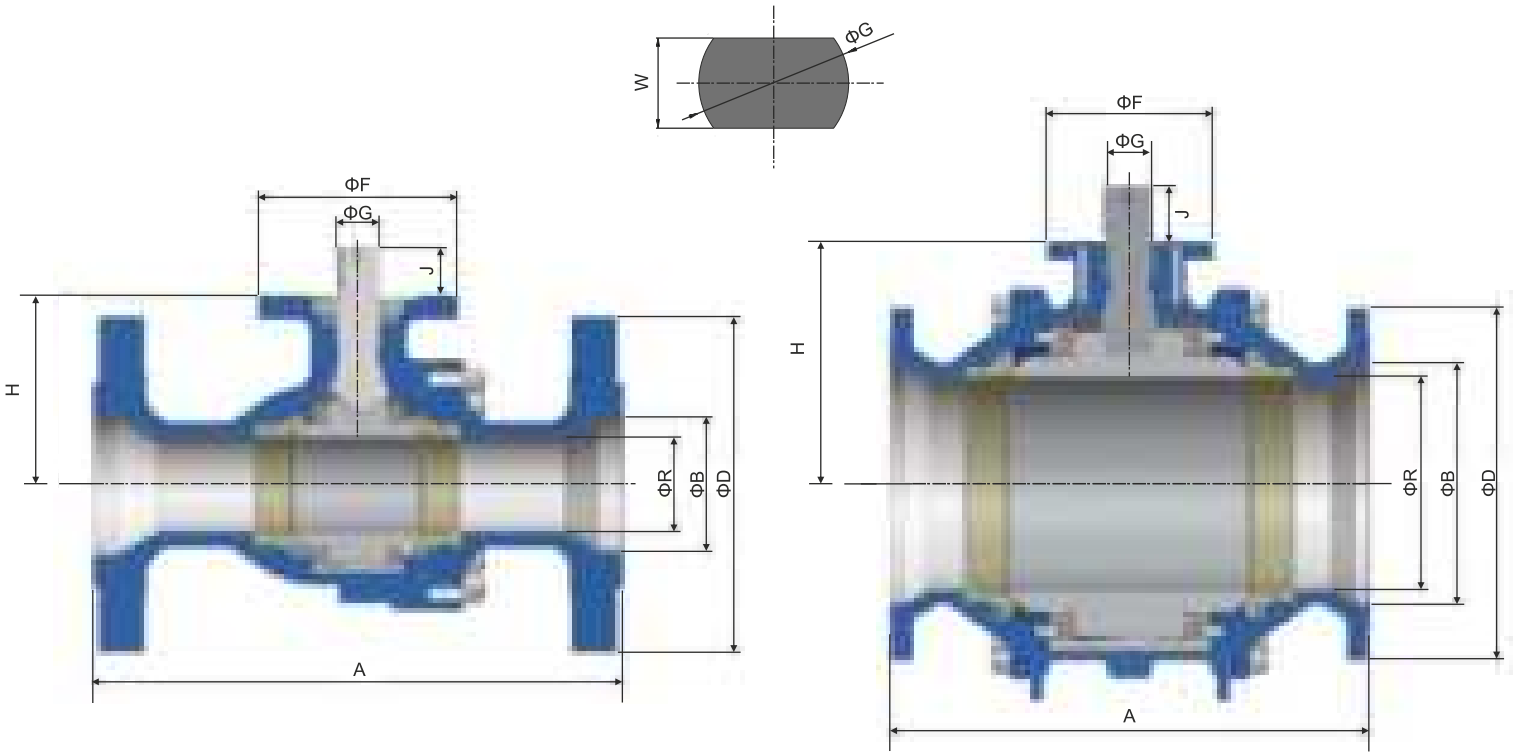
## ASME CLASS 600 (INCH)

| SIZE | 2-Piece | | | | | | | | | | | | | 3-Piece | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ΦB | ΦR | A | | | H | ISO TOP | ΦG | W | J | KEY SIZE | ΦD | WT(LBS)# | ΦB | ΦR | A | | | H | ISO TOP | ΦG | W | J | KEY SIZE | ΦD | WT(LBS)# |
| NPS | | | RF | RTJ | BWE | | | | | | | | FL | | | RF | RTJ | BWE | | | | | | | | FL |
| 2 x 1.5 | 1.94 | 1.5 | 11.5 | 11.63 | 11.5 | 4.33 | F10 | 1.18 | 0.87 | 1.38 | - | 6 | 55 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 3 x 2 | 2.94 | 1.94 | 14 | 14.13 | 14 | 5.51 | F10 | 1.18 | 0.87 | 1.38 | - | 8.25 | 95 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 4 x 3 | 3.94 | 2.94 | 17 | 17.13 | 17 | 6.5 | F12 | 1.38 | 0.94 | 1.57 | - | 10.75 | 194 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 6 x 4 | 5.94 | 3.94 | 22 | 22.13 | 22 | 7.87 | F16 | 1.57 | - | 1.97 | 0.47 x 0.31 | 14 | 293 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 8 x 6 | 7.94 | 5.94 | 26 | 26.13 | 26 | 9.84 | F16 | 1.77 | - | 2.36 | 0.55 x 0.35 | 16.5 | 669 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 10 x 8 | 9.94 | 7.94 | 31 | 31.13 | 31 | 11.89 | F16 | 2.16 | - | 3.15 | 0.63 x 0.39 | 20 | 1320 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 12 x 10 | 11.94 | 9.94 | 33 | 33.13 | 33 | 13.5 | F25 | 2.5 | - | 4.01 | 0.63 x 0.63 | 22 | 2156 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 14 x 10 | 13.19 | 9.94 | 35 | 35.13 | 35 | 13.5 | F25 | 2.5 | - | 4.01 | 0.63 x 0.63 | 23.75 | 2200 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 16 x 12 | 15.19 | 11.94 | 39 | 39.13 | 39 | 15.35 | F25 | 2.76 | - | 4.01 | 0.79 x 0.47 | 27 | 2640 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 18 x 16 | - | - | - | - | - | - | - | - | - | - | - | | - | 17.19 | 15.19 | 43 | 43.13 | 43 | 18.11 | F30 | 3.5 | - | 5.27 | 0.88 x 0.63 | 29.25 | 4730 |
| 20 x 16 | - | - | - | - | - | - | - | - | - | - | - | | - | 19.19 | 15.19 | 47 | 47.25 | 47 | 18.11 | F30 | 3.5 | - | 5.27 | 0.88 x 0.63 | 32 | 5720 |
| 24 x 20 | - | - | - | - | - | - | - | - | - | - | - | | - | 23.19 | 19.19 | 55 | 55.38 | 55 | 23.43 | F35 | 4.72 | - | 5.9 | 1.26 x 0.71 | 37 | 7546 |

# Approximate Value

DelVal® reserves rights to change the content without notice.

# Engineering (Reduced Port)




## ASME CLASS 900 (mm)

| SIZE | 2-Piece | | | | | | | | | | | | | 3-Piece | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NPS | ΦB | ΦR | A RF | A RTJ | A BWE | H | ISO TOP | ΦG | W | J | KEY SIZE | ΦD | WT(Kg)# FL | ΦB | ΦR | A RF | A RTJ | A BWE | H | ISO TOP | ΦG | W | J | KEY SIZE | ΦD | WT(Kg)# FL |
| 2x1.5 | 49 | 38 | 368 | 371 | 368 | 110 | F12 | 30 | 22 | 35 | - | 215 | 34 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 3x2 | 74 | 49 | 381 | 384 | 381 | 138 | F12 | 30 | 22 | 35 | - | 240 | 59 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 4x3 | 100 | 74 | 457 | 460 | 457 | 180 | F16 | 40 | - | 50 | 12x8 | 290 | 115 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 6x4 | 150 | 100 | 610 | 613 | 610 | 240 | F16 | 45 | - | 60 | 14x9 | 380 | 170 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 8x6 | 201 | 150 | 737 | 740 | 737 | 275 | F16 | 55 | - | 80 | 16x10 | 470 | 348 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 10x8 | 252 | 201 | 838 | 841 | 838 | 350 | F25 | 63.5 | - | 102 | 15.88x15.88 | 545 | 783 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 12x10 | 303 | 252 | 965 | 968 | 965 | 360 | F30 | 70 | - | 102 | 20x12 | 610 | 984 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 14x10 | 322 | 252 | 1029 | 1038 | 1029 | 360 | F30 | 70 | - | 102 | 20x12 | 640 | 1115 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 16x12 | - | - | - | - | - | - | - | - | - | - | - | - | - | 373 | 303 | 1130 | 1140 | 1130 | 400 | F30 | 70 | - | 102 | 20x12 | 705 | 1440 |
| 18x16 | - | - | - | - | - | - | - | - | - | - | - | - | - | 423 | 373 | 1219 | 1232 | 1219 | 465 | F35 | 88.9 | - | 134 | 22.23x15.88 | 785 | 2650 |

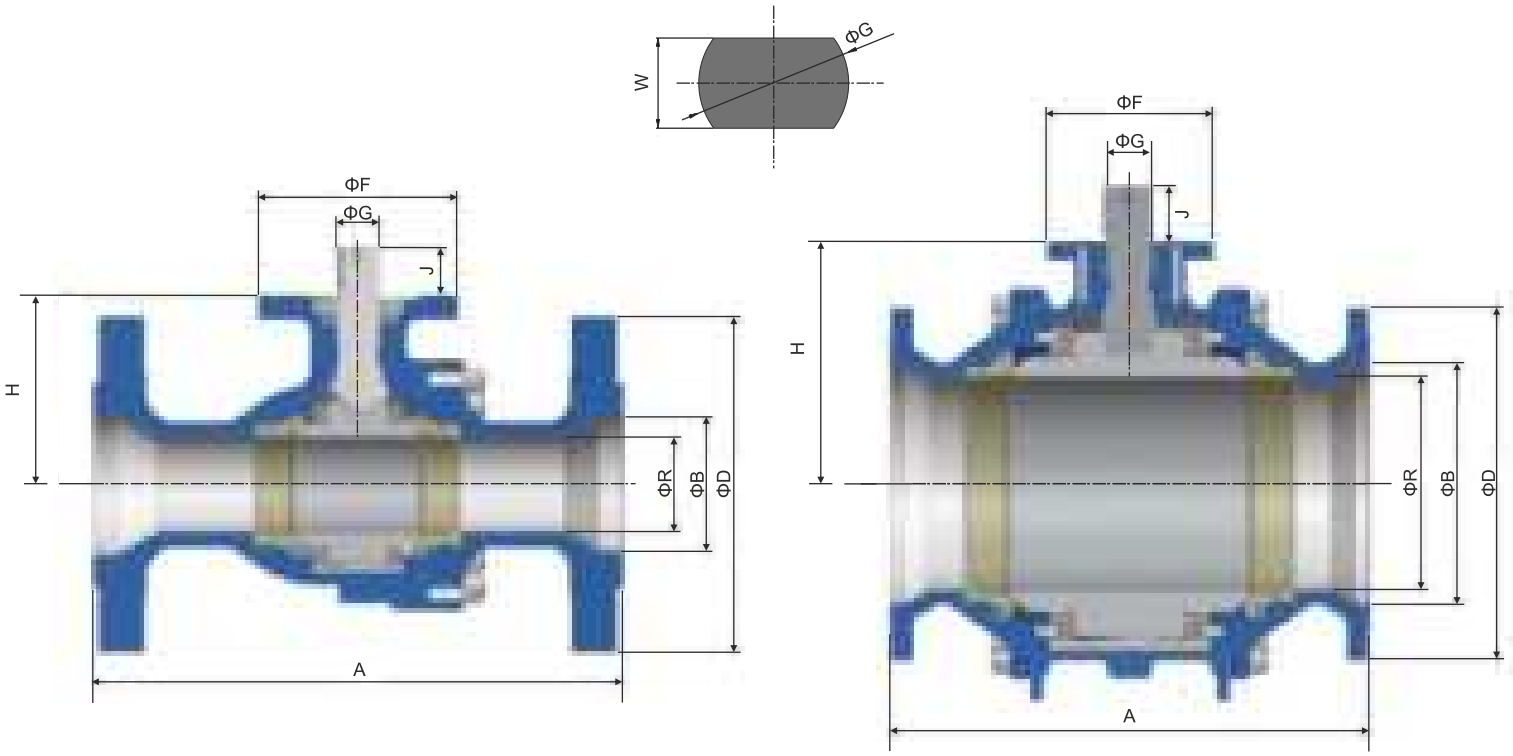
## ASME CLASS900 (INCH)

| SIZE | 2-Piece | | | | | | | | | | | | | 3-Piece | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NPS | ΦB | ΦR | A RF | A RTJ | A BWE | H | ISO TOP | ΦG | W | J | KEY SIZE | ΦD | WT(LBS)# FL | ΦB | ΦR | A RF | A RTJ | A BWE | H | ISO TOP | ΦG | W | J | KEY SIZE | ΦD | WT(LBS)# FL |
| 2x1.5 | 1.94 | 1.5 | 14.5 | 14.63 | 14.5 | 4.33 | F12 | 1.18 | 0.87 | 1.38 | - | 8.5 | 75 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 3x2 | 2.94 | 1.94 | 15 | 15.13 | 15 | 5.43 | F12 | 1.18 | 0.87 | 1.38 | - | 9.5 | 130 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 4x3 | 3.94 | 2.94 | 18 | 18.13 | 18 | 7.09 | F16 | 1.57 | - | 1.97 | 0.47x0.32 | 11.5 | 253 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 6x4 | 5.94 | 3.94 | 24 | 24.13 | 24 | 9.45 | F16 | 1.77 | - | 2.36 | 0.55x0.36 | 15 | 374 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 8x6 | 7.94 | 5.94 | 29 | 29.13 | 29 | 10.82 | F16 | 2.16 | - | 3.15 | 0.63x0.39 | 18.5 | 766 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 10x8 | 9.94 | 7.94 | 33 | 33.13 | 33 | 13.78 | F25 | 2.5 | - | 4.01 | 0.63 x 0.63 | 21.5 | 1723 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 12x10 | 11.94 | 9.94 | 38 | 38.13 | 38 | 14.17 | F30 | 2.76 | - | 4.01 | 0.79 x 0.47 | 24 | 2165 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 14x10 | 12.69 | 9.94 | 40.5 | 40.88 | 40.5 | 14.17 | F30 | 2.76 | - | 4.01 | 0.79 x 0.47 | 25.25 | 2453 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 16x12 | - | - | - | - | - | - | - | - | - | - | - | - | - | 14.69 | 11.94 | 44.5 | 44.88 | 44.5 | 15.75 | F30 | 2.76 | - | 4.01 | 0.79 x 0.47 | 27.75 | 3168 |
| 18x16 | - | - | - | - | - | - | - | - | - | - | - | - | - | 16.69 | 14.69 | 48 | 48.5 | 48 | 19.1 | F35 | 3.5 | - | 5.27 | 0.88 x 0.63 | 31 | 5830 |

# Approximate Value

DelVal® reserves rights to change the content without notice.

# Engineering (Reduced Port)




## ASME CLASS 1500 (mm)

| SIZE | 2-Piece | | | | | | | | | | | | | 2-Piece | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NPS | ΦB | ΦR | A RF | A RTJ | A BWE | H | ISO TOP | ΦG | W | J | KEY SIZE | ΦD | WT(Kg)# FL | ΦB | ΦR | A RF | A RTJ | A BWE | H | ISO TOP | ΦG | W | J | KEY SIZE | ΦD | WT(Kg)# FL |
| 2x1.5 | 49 | 38 | 368 | 371 | 368 | 110 | F12 | 30 | 22 | 35 | - | 215 | 40 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 3x2 | 74 | 49 | 470 | 473 | 470 | 150 | F12 | 30 | 22 | 35 | - | 265 | 75 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 4x3 | 100 | 74 | 546 | 549 | 546 | 180 | F16 | 40 | - | 50 | 12 x 8 | 310 | 130 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 6x4 | 144 | 100 | 705 | 711 | 705 | 240 | F16 | 45 | - | 60 | 14 x 9 | 395 | 270 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 8x6 | 192 | 144 | 832 | 841 | 832 | 325 | F16 | 55 | - | 80 | 16 x 10 | 485 | 600 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 10x8 | 239 | 192 | 991 | 1000 | 991 | 370 | F30 | 63.5 | - | 102 | 15.88 x 15.88 | 585 | 1200 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 12x10 | - | - | - | - | - | - | - | - | - | - | - | - | - | 287 | 239 | 1130 | 1146 | 1130 | 470 | F30 | 70 | - | 102 | 20 x 12 | 675 | 1800 |
| 14x10 | - | - | - | - | - | - | - | - | - | - | - | - | - | 315 | 239 | 1257 | 1276 | 1257 | 480 | F30 | 70 | - | 102 | 20 x 12 | 750 | 2050 |

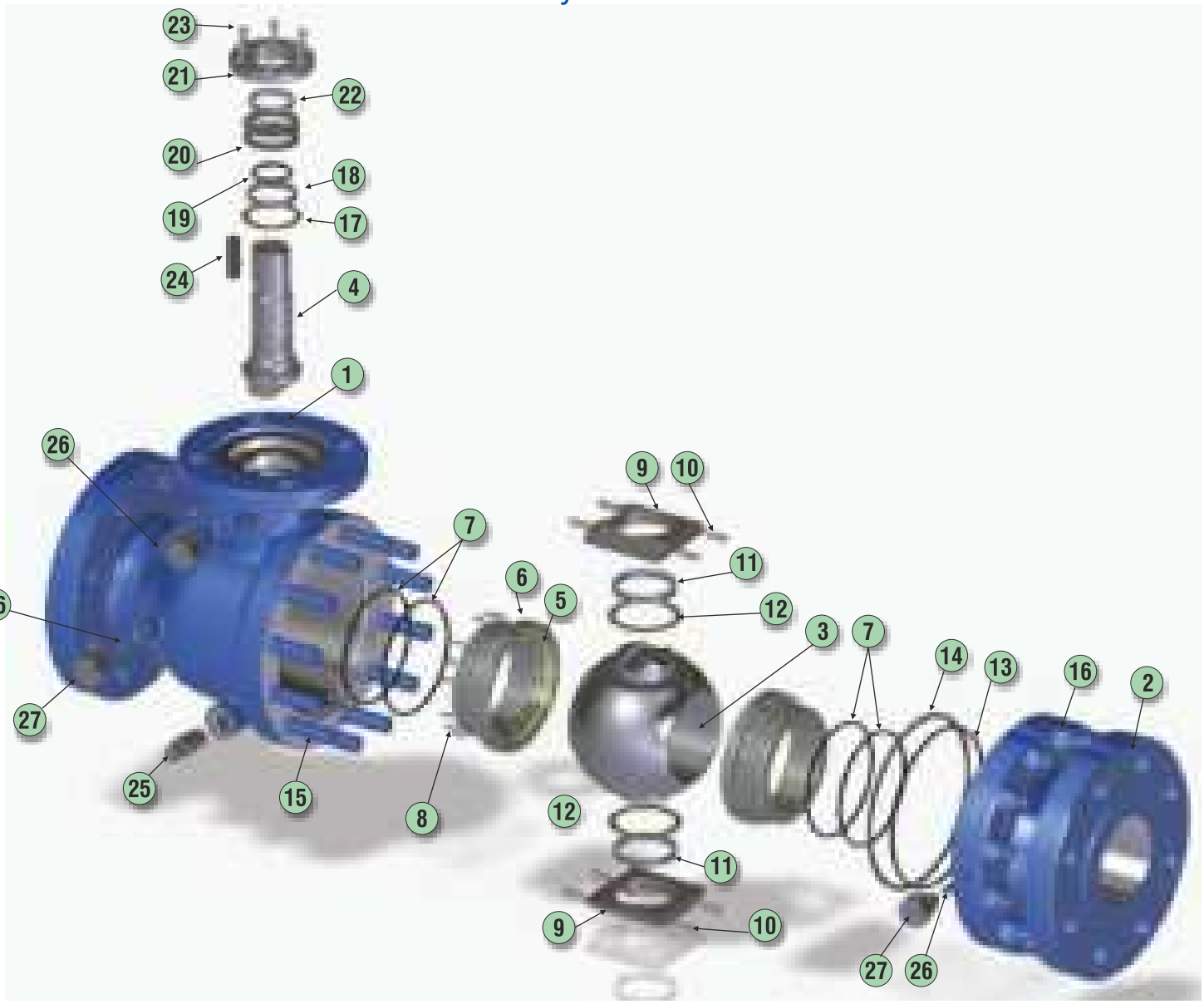
## ASME CLASS 1500 (INCH)

| SIZE | 2-Piece | | | | | | | | | | | | | 2-Piece | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NPS | ΦB | ΦR | A RF | A RTJ | A BWE | H | ISO TOP | ΦG | W | J | KEY SIZE | ΦD | WT(LBS)# FL | ΦB | ΦR | A RF | A RTJ | A BWE | H | ISO TOP | ΦG | W | J | KEY SIZE | ΦD | WT(LBS)# FL |
| 2x1.5 | 1.94 | 1.5 | 14.5 | 14.63 | 14.5 | 4.33 | F12 | 1.18 | 0.87 | 1.38 | - | 8.5 | 88 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 3x2 | 2.94 | 1.94 | 18.5 | 18.63 | 18.5 | 5.91 | F12 | 1.18 | 0.87 | 1.38 | - | 10.5 | 165 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 4x3 | 3.94 | 2.94 | 21.5 | 21.63 | 21.5 | 7.09 | F16 | 1.57 | - | 1.97 | 0.47 x 0.32 | 12.3 | 286 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 6x4 | 5.69 | 3.94 | 27.75 | 28 | 27.75 | 9.45 | F16 | 1.77 | - | 2.36 | 0.55 x 0.36 | 15.5 | 594 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 8x6 | 7.56 | 5.69 | 32.75 | 33.13 | 32.75 | 12.79 | F16 | 2.16 | - | 3.15 | 0.63 x 0.39 | 19 | 1320 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 10x8 | 9.44 | 7.56 | 39 | 39.38 | 39 | 14.57 | F30 | 2.5 | - | 4.01 | 0.63 x 0.63 | 23 | 2640 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 12x10 | - | - | - | - | - | - | - | - | - | - | - | - | - | 11.31 | 9.44 | 44.5 | 45.13 | 44.5 | 18.5 | F30 | 3 | - | 4.01 | 0.79 x 0.47 | 26.5 | 3960 |
| 14x10 | - | - | - | - | - | - | - | - | - | - | - | - | - | 12.44 | 9.44 | 49.5 | 50.25 | 49.5 | 18.5 | F30 | 3 | - | 4.01 | 0.79 x 0.47 | 29.5 | 4510 |

# Approximate Value

DelVal® reserves rights to change the content without notice.

# Materials of Construction: Two-Piece Body

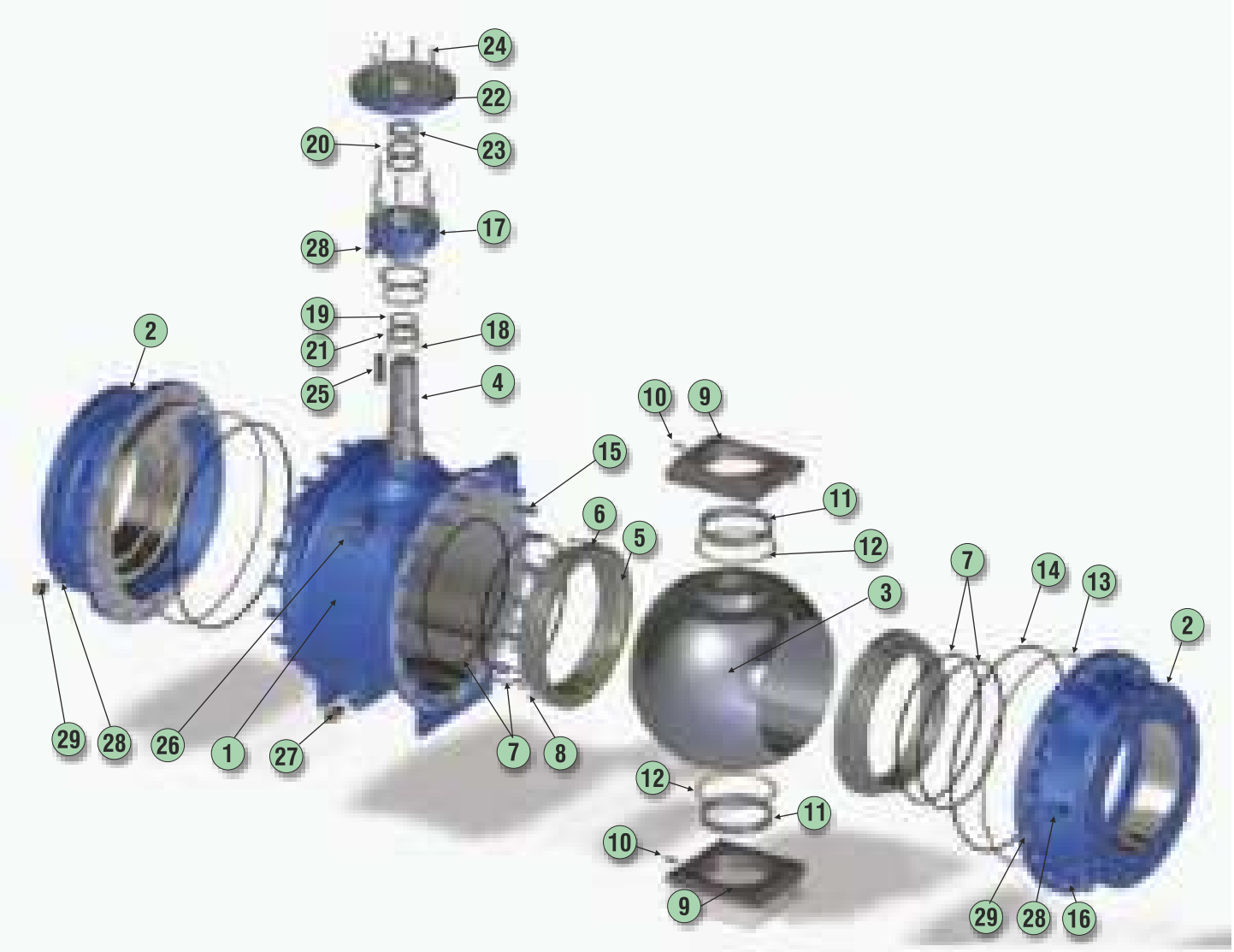



## MATERIALS OF CONSTRUCTION

| NO. | COMPONENTS | MATERIALS | NO. | COMPONENTS | MATERIALS |
|---|---|---|---|---|---|
| 1 | **Body** | A 216 WCB,WCC / A 352 LCB,LCC /A 351 CF8M ,CF8,CF3M /DUPLEX SS /SUPER DUPLEX | 17 | Stem Thrust Bearing | SS-backed PTFE |
| 2 | **Connector** | | 18 | Stem Bearing | SS-backed PTFE |
| 3 | **Ball** | A105+ENP/A216 WCC+ENP/A 352 LCB+ENP/A 351 CF8M/ A 351 CF3M/A 217 CA 15/DUPLEX SS / SUPER DUPLEX | 19 | Stem Seal | FKM (Viton®)/ HNBR |
| 4 | **Stem** | AISI 4140 + ENP/ A 479 SS 410,SS 316,SS304,XM19 / A564 TYPE 630 | 20 | Stem Packing | Graphite |
| 5 | **Seat Insert** | RPTFE/Devlon®/ PEEK / Viton | 21 | Gland | SS 316 |
| 6 | **Seat Ring** | A 105+ENP/A182 LF2+ENP/A182 F316/F316L/F6A/F51/F55 | 22 | Gland Bearing | SS-backed PTFE |
| 7 | **Seat Seal** | FKM (Viton®)/ HNBR | 23 | Soc Hd Cap Screw | A2-70(SS304) |
| 8 | **Seat Spring** | Inconel B 637 X-750,A 313 SS 302 | 24 | Key | EN8 |
| 9 | **Trunnion** | A320 CS/A 240 SS316 /DUPLEX SS /SUPER DUPLEX | 25 | Bleed Fitting/Vent Fitting | SS316 |
| 10 | **Pin** | SS 316 | 26 | Check Valve | SS316 |
| 11 | **Trunnion Bearing** | SS-backed PTFE | 27 | Sealent fitting | SS316 |
| 12 | **Thrust Bearing** | SS-backed PTFE | | | |
| 13 | **Connector Seal** | FKM (Viton®)/ HNBR | | | |
| 14 | **Body Gaket** | Spirally-wound SS316 with Graphite Filler | | | |
| 15 | **Stud** | ASTM A193 B7, B7M,B8M,B8MA/A320 L7,L7M | | | |
| 16 | **Hex Nut** | ASTM A194 Gr. 2H, 2HM, 8M, 8MA, 7, 7M | | | |

Note :- High Grade 3mil (75 Micron) ENP Carbon steel stems and balls are standard.

# Materials of Construction: Three-Piece Body




## MATERIALS OF CONSTRUCTION

| NO. | COMPONENTS | MATERIALS | NO. | COMPONENTS | MATERIALS |
|---|---|---|---|---|---|
| 1 | Body | A 216 WCB,WCC/A 352 LCB,LCC/A 351 CF8M ,CF8,CF3M /A995 4A,6A/A 105/A 182 LF2+ENP/ A 182 F316 / F316L/ F6A /F51/F55 | 17 | Stem Housing | A 216 WCB,WCC/A 352 LCB,LCC/A 351 CF8M, CF8,CF3M /A995 4A,6A/A105/A182 LF2+ENP/ A 182 F316 / F316L/ F6A /F51/F55 |
| 2 | Connector | | | | |
| 3 | Ball | A105 + ENP/A216 WCC + ENP/A 352 LCB+ENP/A 351 CF8M/A 351 CF3M/A 217 CA 15/DUPLEX SS /ASTM A182 | 18 | Stem Thrust Bearing | SS-backed PTFE |
| 4 | Stem | AISI 4140 + ENP/ A 479 SS 410,SS 316,SS304,XM19 / A 564 TYPE 630 | 19 | Stem Seal | FKM (Viton®)/ HNBR |
| 5 | Seat Insert | RPTFE/Devlon®/ PEEK / Viton | 20 | Stem Packing | Graphite |
| 6 | Seat Ring | A105+ENP/A 182 LF2+ENP/A 182 F316/F316L/F6A/F51/F55 | 21 | Stem Bearing | SS-backed PTFE |
| 7 | Seat Seal | FKM (Viton®)/ HNBR | 22 | ISO plate | A320 CS/A 240 SS316 /DUPLEX SS /SUPER DUPLEX |
| 8 | Seat Spring | Inconel B 637 X-750,A 313 SS 302 | 23 | Gland Bearing | SS-backed PTFE |
| 9 | Trunnion | A320 CS/A 240 SS316 /DUPLEX SS /SUPER DUPLEX | 24 | Soc Hd Cap Screw | A2-70(SS304) |
| 10 | Pin | SS316 | 25 | Key | EN8 |
| 11 | Trunnion Bearing | SS-backed PTFE | 26 | Vent Fitting | SS316 |
| 12 | Thrust Bearing | SS-backed PTFE | 27 | Bleed Fitting | SS316 |
| 13 | Connector Seal | FKM (Viton®)/ HNBR | 28 | Check Valve | SS316 |
| 14 | Body Gaket | Spirally-wound SS316 with Graphite Filler | 29 | Sealent fitting | SS316 |
| 15 | Stud | ASTM A193 B7, B7M,B8M,B8MA/A320 L7,L7M | | | |
| 16 | Hex Nut | ASTM A194 Gr. 2H, 2HM, 8M, 8MA, 7,7M | | | |

Note :- High Grade 3mil (75 Micron) ENP Carbon steel stems and balls are standard.

## TORQUE VALUES ( Nm/ In-lbs )

| SIZE | | TORQUE TYPE | ASME PRESSURE CLASS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 150 | | 300 | | 600 | | 900 | | 1500 | |
| INCH | DN | | Nm | In-lbs | Nm | In-lbs | Nm | In-lbs | Nm | In-lbs | Nm | In-lbs |
| * 1½" | 40 | BTO | - | - | 99 | 717 | 99 | 876 | 111 | 982 | 162 | 1434 |
| | | ETC | - | - | 65 | 575 | 79 | 699 | 89 | 788 | 130 | 1151 |
| 2" | 50 | BTO | 68 | 602 | 84 | 743 | 108 | 956 | 133 | 1177 | 281 | 2487 |
| | | ETC | 54 | 478 | 67 | 593 | 87 | 770 | 106 | 938 | 225 | 1991 |
| 3" | 80 | BTO | 168 | 1487 | 234 | 2071 | 316 | 2797 | 427 | 3779 | 593 | 5248 |
| | | ETC | 135 | 1195 | 187 | 1655 | 253 | 2239 | 342 | 3027 | 474 | 4195 |
| 4" | 100 | BTO | 272 | 2407 | 359 | 3177 | 460 | 4071 | 599 | 5302 | 922 | 8160 |
| | | ETC | 218 | 1929 | 287 | 2540 | 368 | 3257 | 479 | 4239 | 737 | 6523 |
| 6" | 150 | BTO | 468 | 4142 | 745 | 6594 | 1193 | 10559 | 1639 | 14506 | 2541 | 22490 |
| | | ETC | 374 | 3310 | 596 | 5275 | 953 | 8435 | 1311 | 11603 | 2033 | 17994 |
| 8" | 200 | BTO | 871 | 7709 | 1382 | 12232 | 2392 | 21170 | 3289 | 29110 | 5293 | 46847 |
| | | ETC | 698 | 6178 | 1105 | 9780 | 1914 | 16940 | 2632 | 23295 | 4216 | 37315 |
| 10" | 250 | BTO | 1177 | 10417 | 1823 | 16135 | 3105 | 27482 | 4234 | 37474 | 6766 | 59884 |
| | | ETC | 942 | 8337 | 1445 | 12789 | 2459 | 21764 | 3387 | 29977 | 5413 | 47909 |
| 12" | 300 | BTO | 1467 | 12984 | 2208 | 19542 | 3687 | 32633 | 5442 | 48166 | 12300 | 108864 |
| | | ETC | 1174 | 10391 | 1766 | 15630 | 2949 | 26101 | 4354 | 38536 | 9840 | 87091 |
| 14" | 350 | BTO | 2614 | 23136 | 3852 | 34093 | 6923 | 61274 | 12982 | 114900 | | |
| | | ETC | 2091 | 18507 | 3083 | 27287 | 5538 | 49015 | 10446 | 92455 | | |
| 16" | 400 | BTO | 3545 | 31376 | 5305 | 46953 | 8850 | 78329 | 18867 | 166987 | | |
| | | ETC | 2835 | 25092 | 4245 | 37571 | 7081 | 62672 | 15122 | 133841 | | |
| 18" | 450 | BTO | 4905 | 43413 | 7757 | 68655 | 13599 | 120361 | | | | |
| | | ETC | 3944 | 34907 | 6205 | 54919 | 10879 | 96287 | | | | |
| 20" | 500 | BTO | 5968 | 52821 | 10268 | 90880 | 19696 | 174324 | | | | |
| | | ETC | 4774 | 42253 | 8215 | 72709 | 15756 | 139452 | | | | |
| 24" | 600 | BTO | 11571 | 102412 | 18253 | 161553 | 31622 | 279878 | | | | |
| | | ETC | 9256 | 81923 | 14601 | 129230 | 25297 | 223897 | | | | |

* Applies to 2" reduced port

BTO : Break To Open Torque ETC : End To Close Torque

Note:

1) Torque Values are Primary Soft Seated valves with seat Insert material as Devlon / RTFE / Nylon 12 .
2) Torque Values with PEEK seat insert are 100% higher than the above corresponding values.
3) Torque Values are at ambient temperature, media being clear water without any factor of safety.
4) Above Torque Values are indicative and for reference only. Actuator sizing torque will depend on service media.
5) For reduced port valves, consider torque values corresponding to the lower size e.g. For 12" x 10" reduced port value consider torque value corresponding to 10".

## Operator



### Lever Operated

For sizes 2" to 4" Class 150
For sizes 2" to 4" Class 300
For sizes 2" to 3" Class 600
For size 2" Class 900/1500
Standard scope of supply



### Gear Operated

For sizes 2" to 24"
Standard scope of supply with Gear



### Actuator Operated

DelVal® Trunnion Ball Valves sizes 2"-24" are designed to mount directly with DelTorq® Actuators. On sizes where direct mounting is not feasible, pre-engineered brackets and coupling are available.

# Special Applications

## SOUR SERVICE

Trunnion Mounted Ball Valves to be used in "sour gas" service, where there is the risk of stress corrosion due to the presence of wet $H_2S$, comply with the requirements of ANSI / NACE MR0175 / ISO 15156-2
Hardness tests can be performed as a standard procedure on all parts in contact with the fluid, such as body, connector, ball, stem, seat ring, springs, bolts etc. ,

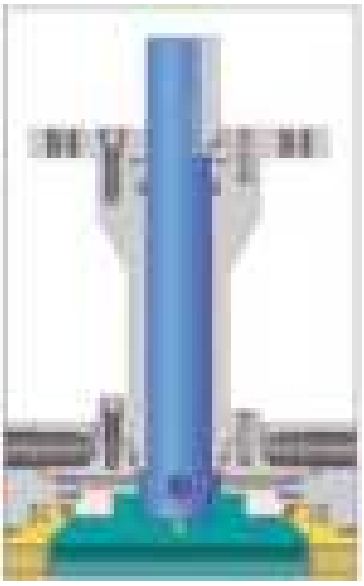
## EXTENDED STEM FOR LOW AND HIGH TEMPERATURE SERVICE

For valves to be used on insulated lines or for valves required for low or high temperature service, designs can include an extended bonnet.

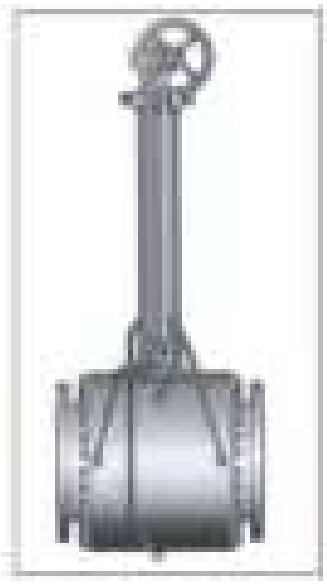
The extended bonnet increases the distance from the body and the stem sealing area, thus avoiding damage to the seals because of temperature.

Extended bonnet is recommended for use at temperatures below -50°C or above 200°C (-58°F or above 392°F).

Low-Temp Extended Bonnet



Extended Stem



## STEM FOR BURIED SERVICE

For valves to be installed on underground lines, trunnion mounted ball valves are supplied complete with suitable stem extensions.

All the drain, vent and emergency sealant lines are extended and all relevant pipes are firmly attached to the stem extension.

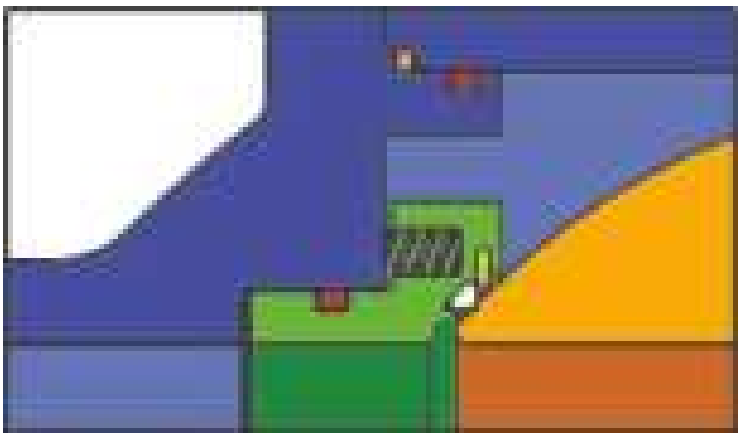


## FIRE TEST

Ball valves have been designed to meet the requirements of API 607.

## FIRE SAFE, PRIMARY METAL SECONDARY SOFT SEAT

Primary metal secondary soft seat has a soft Viton (secondary seal) seat which gets compressed fully due to line pressure and the metal seat does the primary sealing. The secondary soft seat give a bubble tight seat sealing, which is not possible in metal seating. These valves are mostly for gas applications.



# How to Order DelVal Series 7 & 8 Ball Valves

TRIM / OTHER VARIABLES / SPECIAL

| X X | X X | X X | X | X | X | X | X | X | X | X |
|---|---|---|---|---|---|---|---|---|---|---|
| **Series** | **Size** | **Body/Adaptor** | **Ball / Stem** | **Seat Ring** | **Seat** | **Seal** | **End Connections** | **Actuations** | **Options** |
| 7A=2 pc, 150#, FP<br>7B=2 pc, 300#, FP<br>7C=2 pc, 600#, FP<br>7E=2 pc, 900#, FP<br>7F=2 pc, 1500#,FP<br>7T=2 pc, 150#, RP<br>7U=2 pc, 300#, RP<br>7V=2 pc, 600#, RP<br>7W=2 pc, 900#, RP<br>7Y=2 pc, 1500#,RP<br><br>8A=3 pc, 150#, FP<br>8B=3 pc, 300#, FP<br>8C=3 pc, 600#, FP<br>8E=3 pc, 900#, FP<br>8F=3 pc, 1500#,FP<br>8T=3 pc, 150#, RP<br>8U=3 pc, 300#, RP<br>8V=3 pc, 600#, RP<br>8W=3 pc, 900#, RP<br>8Y=3 pc, 1500#,RP | 02 = 50/2”<br>03 = 80/3”<br>04 = 100/4”<br>06 = 150/6”<br>08= 200/8”<br>10 = 250/10”<br>12 = 300/12”<br>14 = 350/14”<br>16 = 400/16”<br>18= 450/18”<br>20 = 500/20”<br>24 = 600/24” | 01 = WCB<br>02 = CF8M<br>03 = LCB | 1 = A105+ENP (WCB +ENP) / SS316<br>2 = F51(4A) / F51<br>3 = F316 (CF8M) / SS316 | 1 = A105 + ENP<br>2 = F51<br>3 = F316 | 1 = RTFE<br>2 = Devlon<br>3 = Nylon PA12<br>5 = PEEK<br>6 = Viton | 2 = Viton (FKM)<br>8 = Elasto-O-LION® 101<br>9 = HNBR | 6= Flanged RF<br>7= Flanged RTJ<br>8= Butt Weld | A = Actuator<br>B = Bare Stem<br>E = Electric<br>G = Gear Opertator<br>H = Handle | 0 = None<br>S = Special requirement as specified by customer |

For Example : To order 150 / 6" Full Port 2-PC, Class 150, Body - WCB, Ball / Stem - F316 (CF8M) / SS316, Seat Ring - F316, Seat Devlon, HNBR Seal, Flanged Race Face, Gear Operated with no special requirements.

| 7 | A | 0 | 6 | 0 | 1 | 3 | 3 | 2 | 9 | 6 | G | 0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|

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