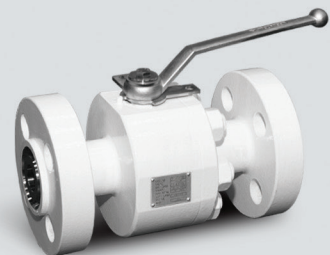
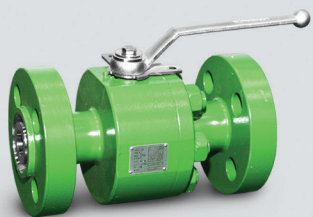




SUPERLOK® **Flanged Ball Valves**

Forged Steel & Cast Steel Floating Ball Valve Series
Trunnion Mounted Ball Valve Series



Floating Ball Valve - Design Features

Mounting and Stem Seal Design

Actuator Mounting (ISO-5211)

Flanged end products shall have an integrally cast actuator mounting pad. This feature provides for direct mount of gear operators or actuators. The additional cost for a separate mounting bracket is eliminated.

Live load stem seal

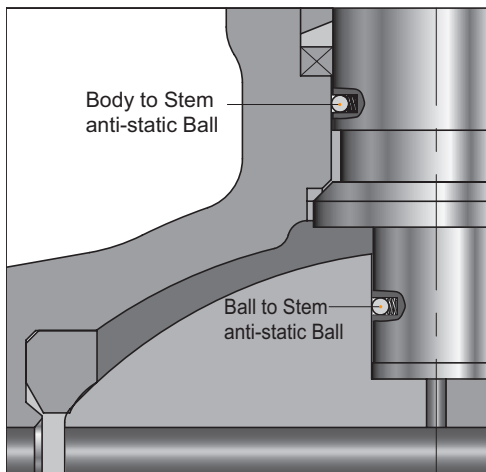
The combination of stem packing and O-rings guarantee zero emissions even at low pressure. The primary seal is made out of flexible graphite , a material with extremely good resistance to fire conditions.

The anti blow out stem is inserted from inside the valve body.

Anti-Static Design

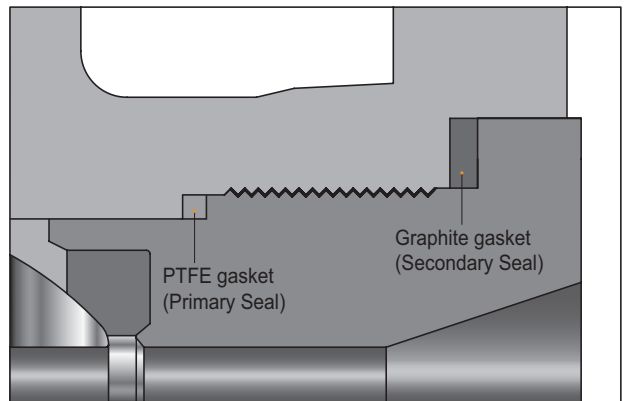
Ball valves present a particular problem with the build up of static electricity around the ball.

Ball valves have anti-static devices which provides contact between stem and ball, and stem and body to eliminate static electricity.



Unibody Ball Valve Design

The PTFE gasket packing acts as a primary seal for the Unibody ball valves. The secondary seal has been made out of flexible graphite, a material with extremely good resistance to fire conditions.

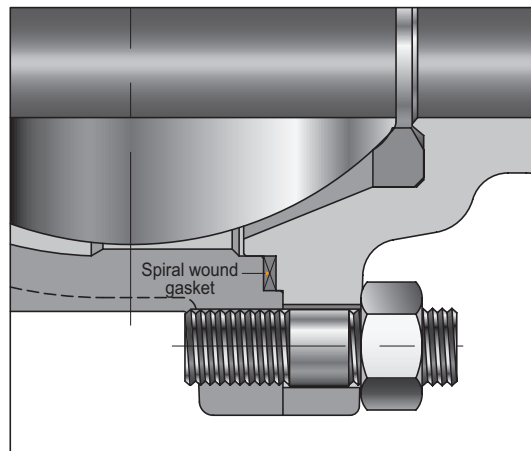
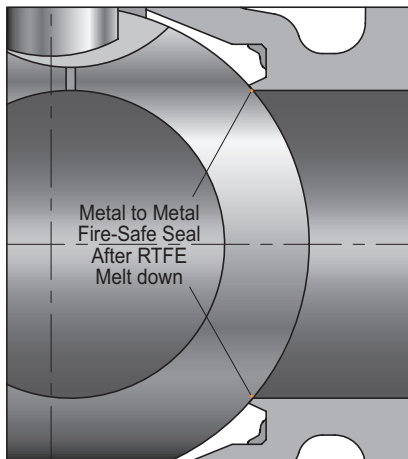


Fire Safe Design

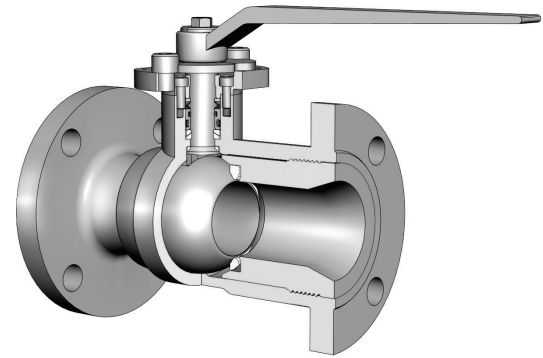
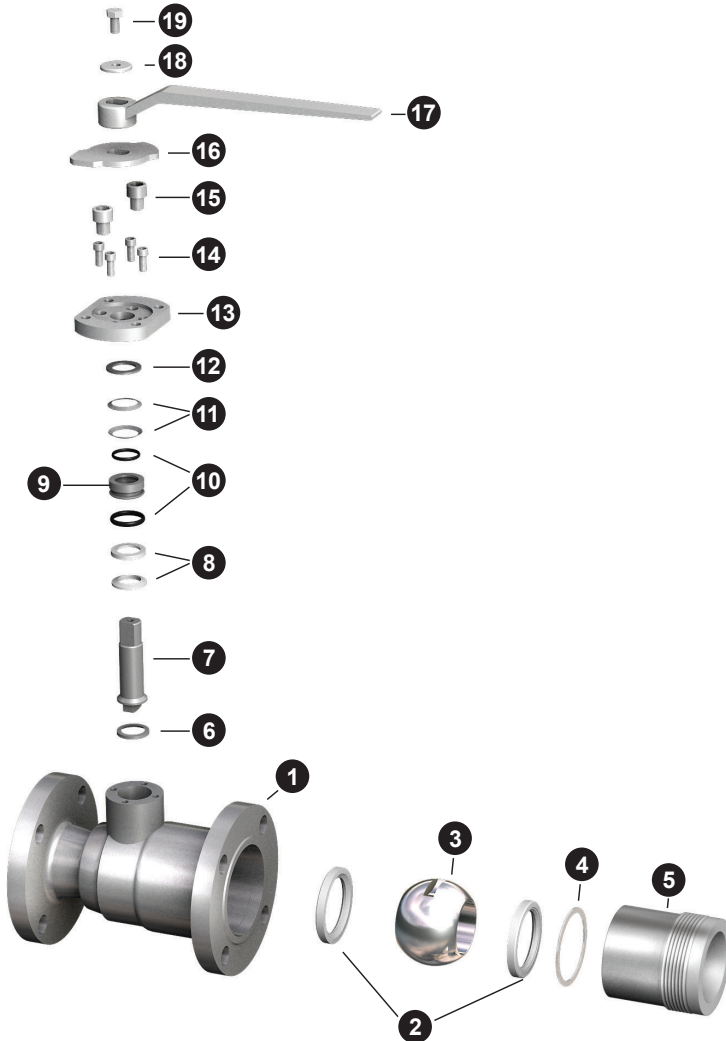
In the event of a fire the valve is required to make a downstream seal.

Even after the disintegration of the RTFE seats, BMT ball valves have an excellent metal to metal seal.

Special attention has been paid to the mechanical strength and sealing efficiency of the central flanged joint in the valve body.



1Piece Body Cast Floating Ball Valve



Features

| |
|-----------------------------|
| Size : 1/2" ~ 6" |
| Class : 150 ~ 300 |
| One Piece Cast Steel Body |
| Floating Ball, Reduced Bore |
| Anti-Static Device |
| Blow-out Proof Stem |
| Fire Safe Design |

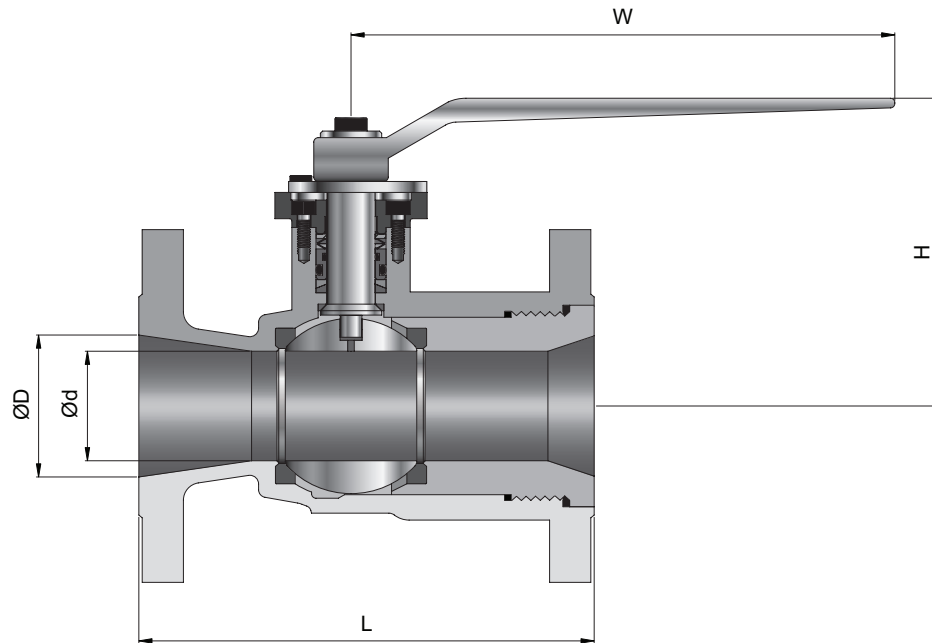
Specifications

| | |
|----------------|-----------------------|
| Design | ASME B16.34 / API 608 |
| Face to Face | ASME B16.10 |
| End Flange | ASME B16.5 |
| Test | API 598 |
| Fire Safe Test | API607 / API 6FA |
| Special | NACE MR - 01 - 75 |

Material of Specifications

| NO. | COMPONENT | MATERIAL | |
|-----|--------------------|-----------------|-----------------|
| | | STAINLESS STEEL | CARBON STEEL |
| 1 | BODY | ASTM A351-CF8M | ASTM A216-WCB |
| 2 | SEAT | PTFE | PTFE |
| 3 | BALL | ASTM A351 CF8M | ASTM A351 CF8M |
| 4 | INSERT SEAL | PTFE/GRAPHITE | PTFE/GRAPHITE |
| 5 | INSERT | ASTM A351-CF8M | ASTM A216-WCB |
| 6 | THRUST WASHER | PEEK | PEEK |
| 7 | STEM | ASTM A479-TP316 | ASTM A276-TP316 |
| 8 | PACKING | PTFE/GRAPHITE | PTFE/GRAPHITE |
| 9 | STEM SEAL RETAINER | ASTM A276-TP316 | ASTM A276-TP316 |
| 10 | O-RING | VITON | VITON |
| 11 | DISC SPRING | STAINLESS STEEL | STAINLESS STEEL |
| 12 | GLAND | ASTM A276-TP316 | ASTM A276-TP316 |
| 13 | GLAND FLANGE | ASTM A351-CF8M | ASTM A216-WCB |
| 14 | FLANGE BOLT | ASTM A193-B8 | ASTM A193-B7 |
| 15 | STOPPER BOLT | ASTM A193-B8 | ASTM A193-B7 |
| 16 | STOPPER | STAINLESS STEEL | CARBON STEEL |
| 17 | HANDLE | STAINLESS STEEL | CARBON STEEL |
| 18 | PLAIN WASHER | ASTM A240-TP304 | ASTM A240-TP304 |
| 19 | HANDLE BOLT | ASTM-A193-B8 | ASTM A307-B |

Dimensions and Weights



Class150

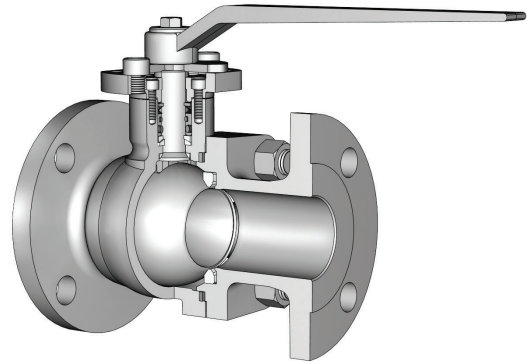
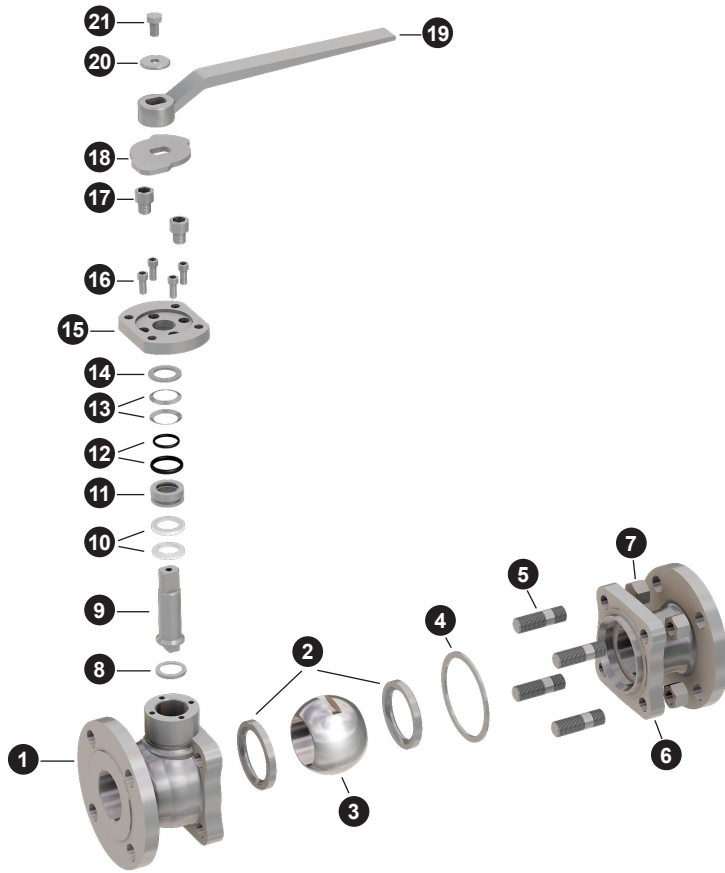
| Size(inch) | Ød | ØD | L | H | W | Weight(Kg) |
|------------|-----|-----|-----|-----|-----|------------|
| 1/2 | 10 | 15 | 108 | 78 | 150 | 1.6 |
| 3/4 | 15 | 20 | 117 | 80 | 150 | 2.5 |
| 1 | 20 | 25 | 127 | 98 | 220 | 3 |
| 1-1/2 | 25 | 38 | 165 | 118 | 250 | 6 |
| 2 | 38 | 50 | 178 | 133 | 250 | 9 |
| 3 | 65 | 76 | 203 | 156 | 250 | 16 |
| 4 | 76 | 100 | 229 | 194 | 350 | 27.5 |
| 6 | 100 | 152 | 394 | 209 | 460 | 50 |

Class300

| Size(inch) | Ød | ØD | L | H | W | Weight(Kg) |
|------------|-----|-----|-----|-----|-----|------------|
| 1/2 | 10 | 15 | 140 | 78 | 150 | 2.5 |
| 3/4 | 15 | 20 | 152 | 80 | 150 | 4.2 |
| 1 | 20 | 25 | 165 | 98 | 220 | 4.8 |
| 1-1/2 | 25 | 38 | 191 | 118 | 250 | 8.6 |
| 2 | 38 | 50 | 216 | 133 | 250 | 11.5 |
| 3 | 65 | 76 | 283 | 156 | 250 | 23.5 |
| 4 | 76 | 100 | 305 | 194 | 350 | 39 |
| 6 | 100 | 152 | 403 | 209 | 460 | 65 |

• All dimensions in millimeters unless specified as "inch". Dimension are for reference only, subject to change.

2Piece Body Cast Floating Ball Valve



Features

| |
|------------------------------------|
| Size : 1/2" ~ 10" |
| Class : 150 ~ 300 |
| Two Pieces Cast Steel Body |
| Floating Ball, Full & Reduced Bore |
| Anti-Static Device |
| Blow-out Proof Stem |
| Fire Safe Design |
| Low Emission |

Specifications

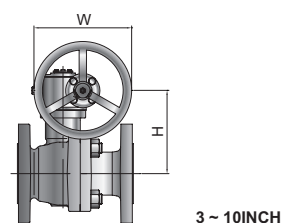
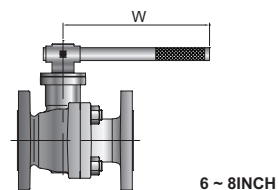
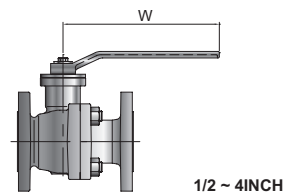
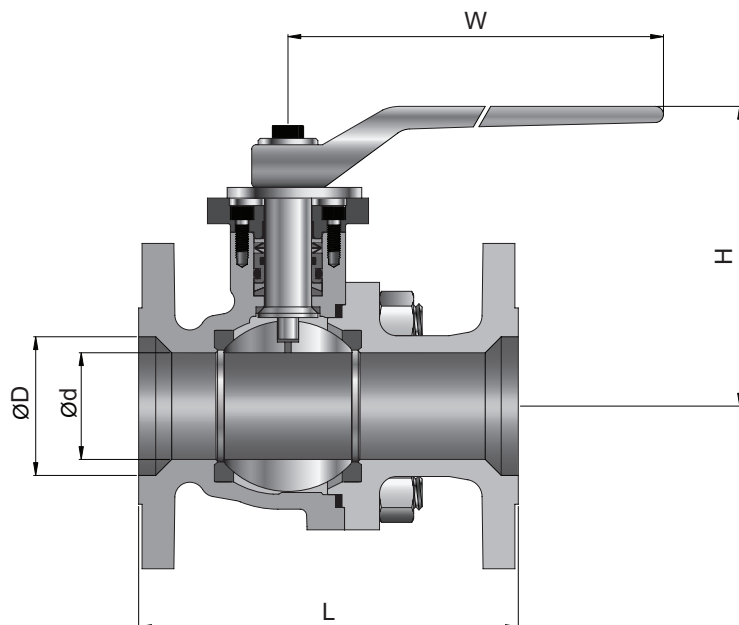
| | |
|----------------|--------------------------------|
| DESIGN | ASME B16.34 / BS 5351 / API 6D |
| Face to Face | ASME B16.10 |
| End Flange | ASME B16.5 |
| BW End | ASME B16.25 |
| Test | API 598 / BS 6755 |
| Fire Safe Test | API607 / API 6FA |
| Special | NACE MR - 01 - 75 |

Material of Specifications

| NO. | COMPONENT | MATERIAL | |
|-----|--------------------|--------------------------|--------------------------|
| | | STAINLESS STEEL | CARBON STEEL |
| 1 | BODY | ASTM A351-CF8M | ASTM A216-WCB |
| 2 | SEAT | PTFE | PTFE |
| 3 | BALL | ASTM A351 CF8M | ASTM A351 CF8M |
| 4 | BODY GASKET | PTFE/SWG(SS316+GRAPHITE) | PTFE/SWG(SS316+GRAPHITE) |
| 5 | STUD BOLT | ASTM A193-B8 | ASTM A193-B7 |
| 6 | BODY CAP | ASTM A351-CF8M | ASTM A216-WCB |
| 7 | BODY NUT | ASTM A194-8 | ASTM A194-2H |
| 8 | THRUST WASHER | PEEK | PEEK |
| 9 | STEM | ASTM A479-316 | ASTM A276-TP316 |
| 10 | PACKING | PTFE/GRAPHITE | PTFE/GRAPHITE |
| 11 | STEM SEAL RETAINER | ASTM A276-TP316 | ASTM A276-TP316 |
| 12 | O-RING | VITON | VITON |
| 13 | DISC SPRING | STAINLESS STEEL | CARBON STEEL |
| 14 | GLAND | ASTM A479-316 | ASTM A276-TP316 |
| 15 | GLAND FLANGE | ASTM A351-CF8M | ASTM A216-WCB |
| 16 | FLANGE BOLT | ASTM A193-B8 | ASTM A193-B7 |
| 17 | STOPPER BOLT | ASTM A193-B8 | ASTM A193-B7 |
| 18 | STOPPER | STAINLESS STEEL | CARBON STEEL |
| 19 | HANDLE | STAINLESS STEEL | CARBON STEEL |
| 20 | PLAIN WASHER | ASTM A240-TP304 | ASTM A240-TP304 |
| 21 | HANDLE BOLT | ASTM A193-B8 | ASTM A307-B |

2Piece Body Cast Floating Ball Valve

Dimensions and Weight



Full Bore

Class150

| Size (inch) | ØD | L | H | W | Weight (Kg) |
|-------------|-----|-----|-----|------|-------------|
| 1/2 | 15 | 108 | 88 | 140 | 2.2 |
| 3/4 | 20 | 117 | 92 | 140 | 2.7 |
| 1 | 25 | 127 | 101 | 170 | 4.5 |
| 1-1/2 | 38 | 165 | 124 | 250 | 7.0 |
| 2 | 50 | 178 | 142 | 250 | 9.5 |
| 2-1/2 | 65 | 191 | 159 | 350 | 15 |
| 3 | 76 | 203 | 194 | 350 | 19 |
| 4 | 100 | 229 | 210 | 460 | 30 |
| 6 | 152 | 394 | 292 | *400 | 75 |
| 8 | 203 | 457 | 318 | *500 | 115 |
| 10 | 254 | 533 | 408 | *500 | 180.0 |

*Gear Operated

Reduced Bore

Class150

| Size (inch) | Ød | ØD | L | H | W | Weight (Kg) |
|-------------|-----|-----|-----|-----|------|-------------|
| 3/4-1/2 | 15 | 20 | 117 | 88 | 140 | 2 |
| 1-3/4 | 20 | 25 | 127 | 92 | 140 | 3.5 |
| 1•1/2-1 | 25 | 38 | 165 | 101 | 170 | 5 |
| 2-1•1/2 | 38 | 50 | 178 | 124 | 250 | 9 |
| 2•1/2-2 | 50 | 65 | 191 | 142 | 250 | 13.0 |
| 3-2 | 50 | 76 | 203 | 159 | 350 | 21 |
| 4-3 | 76 | 100 | 229 | 194 | 460 | 30 |
| 6-4 | 100 | 152 | 394 | 210 | 460 | 50 |
| 8-6 | 152 | 203 | 457 | 292 | *400 | 100 |
| 10-8 | 203 | 254 | 533 | 318 | *500 | 180 |

*Gear Operated

Class300

| Size (inch) | ØD | L | H | W | Weight (Kg) |
|-------------|-----|-----|-----|------|-------------|
| 1/2 | 15 | 140 | 88 | 140 | 2.5 |
| 3/4 | 20 | 152 | 92 | 140 | 3.5 |
| 1 | 25 | 165 | 101 | 170 | 5.5 |
| 1-1/2 | 38 | 191 | 124 | 250 | 9.0 |
| 2 | 50 | 216 | 142 | 250 | 13 |
| 2-1/2 | 65 | 241 | 159 | 350 | 21 |
| 3 | 76 | 283 | 194 | 350 | 27 |
| 4 | 100 | 305 | 210 | 460 | 40 |
| 6 | 152 | 403 | 292 | *400 | 95 |
| 8 | 203 | 502 | 318 | *500 | 150 |
| 10 | 254 | 568 | 408 | *500 | 230.0 |

*Gear Operated

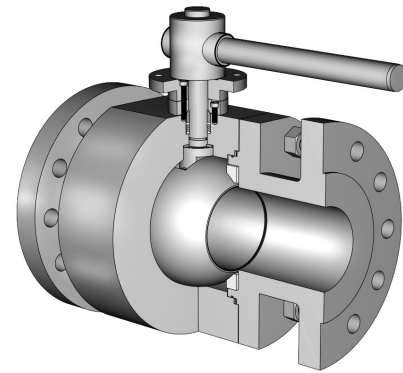
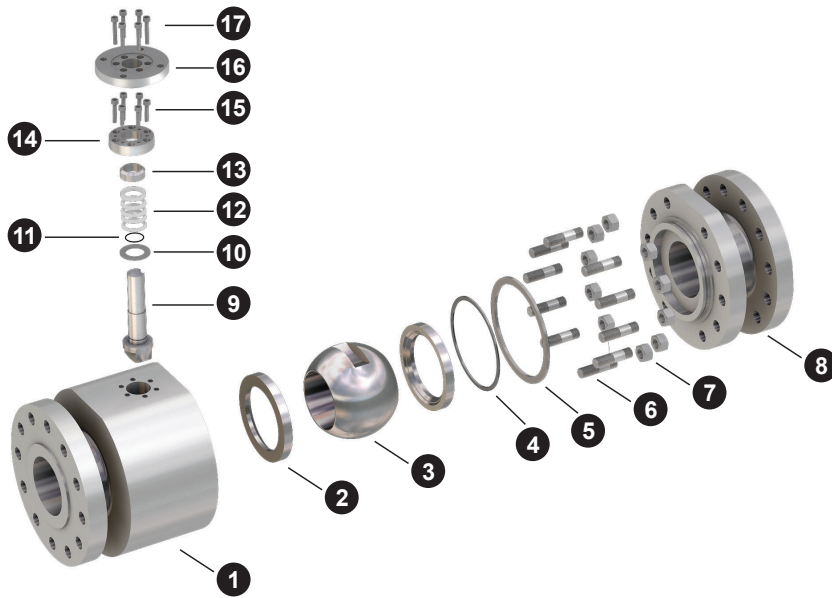
Class300

| Size (inch) | Ød (mm) | ØD (mm) | L (mm) | H (mm) | W (mm) | Weight (Kg) |
|-------------|---------|---------|--------|--------|--------|-------------|
| 3/4-1/2 | 15 | 20 | 152 | 88 | 140 | 3 |
| 1-3/4 | 20 | 25 | 165 | 92 | 140 | 4.6 |
| 1•1/2-1 | 25 | 38 | 191 | 101 | 170 | 7 |
| 2-1•1/2 | 38 | 50 | 216 | 124 | 250 | 12.5 |
| 2•1/2-2 | 50 | 65 | 241 | 142 | 250 | 17 |
| 3-2 | 50 | 76 | 283 | 159 | 350 | 33 |
| 4-3 | 76 | 100 | 305 | 194 | 460 | 40 |
| 6-4 | 100 | 152 | 403 | 210 | 460 | 70 |
| 8-6 | 152 | 203 | 502 | 292 | *400 | 130.0 |
| 10-8 | 203 | 254 | 568 | 318 | *500 | 220 |

*Gear Operated

• All dimensions in millimeters unless specified as "inch". Dimension are for reference only, subject to change.

2Piece Body Forged Floating Ball Valve



Features

| |
|------------------------------------|
| Size : 1/2" ~ 10" |
| Class : 150 ~ 2500 |
| Two Pieces Forged Steel Body |
| Floating Ball, Full & Reduced Bore |
| Anti-Static Device |
| Blow-out Proof Stem |
| Fire Safe Design |
| Low Emission |

Specifications

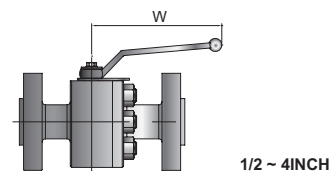
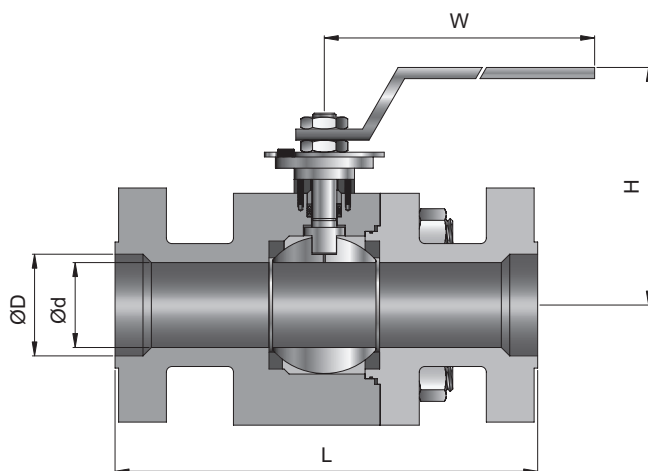
| | |
|----------------|-------------------------------|
| Design | ASME B16.34 / BS 5351 / API6D |
| Face to Face | ASME B16.10 |
| End Flange | ASME B16.5 |
| Test | API 598 / BS 6755 |
| Fire Safe Test | API607 / API 6FA |
| Special | NACE MR - 01 - 75 |

Material of Specifications

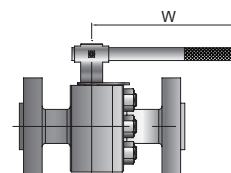
| NO. | COMPONENT | MATERIAL | |
|-----|---------------|--------------------------|--------------------------|
| | | STAINLESS STEEL | CARBON STEEL |
| 1 | BODY | ASTM A182-F316 | ASTM A105 |
| 2 | SEAT | R.PTFE/PEEK | R.PTFE/PEEK |
| 3 | BALL | ASTM A479-TP316 | ASTM A479-TP316 |
| 4 | FLANGE O-RING | VITON | VITON |
| 5 | BODY GASKET | PTFE/SWG(SS316+GRAPHITE) | PTFE/SWG(SS316+GRAPHITE) |
| 6 | STUD BOLT | ASTM A193-B8M | ASTM A193-B7 |
| 7 | BODY NUT | ASTM A194-8M | ASTM A194-2H |
| 8 | BODY CAP | ASTM A182-F316 | ASTM A105 |
| 9 | STEM | ASTM A276-TP316 | ASTM A276-TP316 |
| 10 | THRUST WASHER | PEEK | PEEK |
| 11 | STEM O-RING | VITON | VITON |
| 12 | PACKING | PTFE/GRAPHITE | PTFE/GRAPHITE |
| 13 | GLAND | ASTM A276-TP316 | ASTM A276-TP316 |
| 14 | GLAND FLANGE | ASTM A276-TP316 | ASTM A105 |
| 15 | BOLT | ASTM A193-B8M | ASTM A193-B7 |
| 16 | TOP FLANGE | ASTM A182-F316 | ASTM A105 |
| 17 | BOLT | ASTM A193-B8M | ASTM A193-B7 |

Flanged Ball Valves

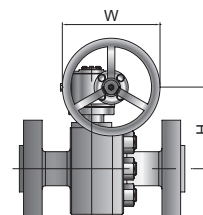
Dimensions and Weight



1/2 ~ 4INCH



6 ~ 8INCH



3 ~ 10INCH

Full Bore

Class150

| Size (inch) | ØD | L | H | W | Weight (Kg) |
|-------------|-----|-----|-----|------|-------------|
| 1/2 | 15 | 108 | 81 | 150 | 2.8 |
| 3/4 | 20 | 117 | 85 | 150 | 3.7 |
| 1 | 25 | 127 | 98 | 180 | 5.3 |
| 1-1/2 | 38 | 165 | 133 | 280 | 8.3 |
| 2 | 50 | 178 | 141 | 280 | 11.2 |
| 2-1/2 | 65 | 191 | 139 | 400 | 18.4 |
| 3 | 76 | 203 | 150 | 400 | 23.0 |
| 4 | 100 | 229 | 223 | 650 | 39.3 |
| 6 | 152 | 394 | 297 | *300 | 90.0 |
| 8 | 203 | 457 | 378 | *300 | 140.0 |
| 10 | 254 | 533 | 408 | *400 | 230.0 |

*Gear Operated

Reduced Bore

Class150

| Size (inch) | Ød | ØD | L | H | W | Weight (Kg) |
|-------------|-----|-----|-----|-----|------|-------------|
| 3/4-1/2 | 15 | 20 | 117 | 81 | 150 | 3.5 |
| 1-3/4 | 20 | 25 | 127 | 85 | 150 | 5.0 |
| 1•1/2-1 | 25 | 38 | 165 | 98 | 180 | 7.5 |
| 2-1•1/2 | 38 | 50 | 178 | 133 | 280 | 10.0 |
| 2•1/2-2 | 50 | 65 | 191 | 141 | 280 | 16.0 |
| 3-2 | 50 | 76 | 203 | 141 | 280 | 21.0 |
| 4-3 | 76 | 100 | 229 | 150 | 400 | 35.0 |
| 6-4 | 100 | 152 | 394 | 223 | 650 | 73.0 |
| 8-6 | 152 | 203 | 457 | 297 | *300 | 120.0 |
| 10-8 | 203 | 254 | 533 | 378 | *300 | 200.0 |

*Gear Operated

Class300

| Size (inch) | ØD | L | H | W | Weight (Kg) |
|-------------|-----|-----|-----|------|-------------|
| 1/2 | 15 | 140 | 81 | 150 | 3.0 |
| 3/4 | 20 | 152 | 85 | 150 | 4.0 |
| 1 | 25 | 165 | 98 | 180 | 6.6 |
| 1-1/2 | 38 | 191 | 133 | 280 | 12.9 |
| 2 | 50 | 216 | 141 | 280 | 18.9 |
| 2-1/2 | 65 | 241 | 139 | 400 | 28.0 |
| 3 | 76 | 283 | 150 | 400 | 39.0 |
| 4 | 100 | 305 | 223 | 650 | 60.0 |
| 6 | 152 | 403 | 297 | *300 | 130.0 |
| 8 | 203 | 502 | 378 | *400 | 195.0 |
| 10 | 254 | 568 | 408 | *400 | 290.0 |

*Gear Operated

Class300

| Size (inch) | Ød | ØD | L | H | W | Weight (Kg) |
|-------------|-----|-----|-----|-----|------|-------------|
| 3/4-1/2 | 15 | 20 | 152 | 81 | 150 | 3.7 |
| 1-3/4 | 20 | 25 | 165 | 85 | 150 | 5.8 |
| 1•1/2-1 | 25 | 38 | 191 | 98 | 180 | 10.5 |
| 2-1•1/2 | 38 | 50 | 216 | 133 | 280 | 16.1 |
| 2•1/2-2 | 50 | 65 | 241 | 141 | 280 | 24.5 |
| 3-2 | 50 | 76 | 283 | 141 | 280 | 34.7 |
| 4-3 | 76 | 100 | 305 | 150 | 400 | 53.0 |
| 6-4 | 100 | 152 | 403 | 223 | 650 | 100.0 |
| 8-6 | 152 | 203 | 502 | 297 | *300 | 170.0 |
| 10-8 | 203 | 254 | 568 | 378 | *400 | 250.0 |

*Gear Operated

Class600

| Size (inch) | ØD | L | H | W | Weight (Kg) |
|-------------|-----|-----|-----|------|-------------|
| 1/2 | 15 | 165 | 66 | 150 | 3.5 |
| 3/4 | 20 | 191 | 88 | 170 | 5.0 |
| 1 | 25 | 216 | 90 | 250 | 7.5 |
| 1-1/2 | 38 | 241 | 120 | 400 | 15.0 |
| 2 | 50 | 292 | 135 | 400 | 23.0 |
| 3 | 76 | 356 | 164 | 400 | 48.0 |
| 4 | 100 | 432 | 224 | 995 | 80.0 |
| 6 | 152 | 559 | 260 | *400 | 156.0 |

*Gear Operated

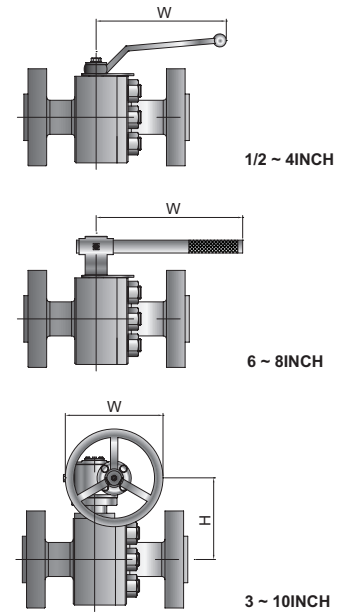
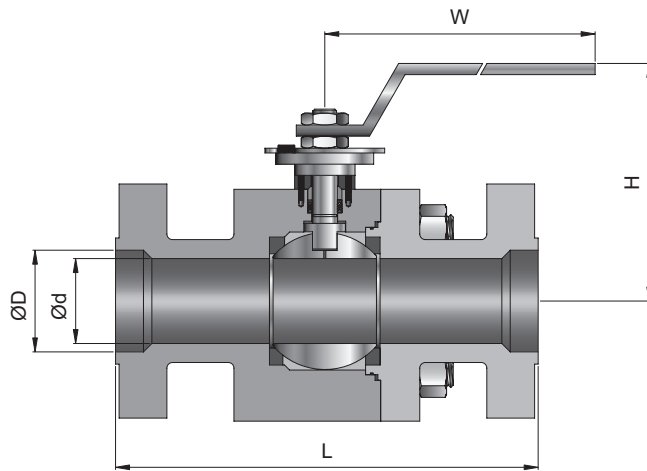
Class600

| Size (inch) | Ød | ØD | L | H | W | Weight (Kg) |
|-------------|-----|-----|-----|-----|------|-------------|
| 3/4-1/2 | 15 | 20 | 191 | 66 | 150 | 4.0 |
| 1-3/4 | 20 | 25 | 216 | 88 | 170 | 5.5 |
| 1•1/2-1 | 25 | 38 | 241 | 90 | 250 | 10.5 |
| 2-1•1/2 | 38 | 50 | 292 | 120 | 400 | 20.0 |
| 3-2 | 50 | 76 | 356 | 135 | 400 | 29.0 |
| 4-3 | 76 | 100 | 432 | 164 | 400 | 59.0 |
| 6-4 | 100 | 152 | 559 | 224 | 995 | 95.0 |
| 8-6 | 152 | 203 | 660 | 260 | *400 | 190.0 |

*Gear Operated

• All dimensions in millimeters unless specified as "inch". Dimension are for reference only, subject to change.

Dimensions and Weight



Full Bore

Class900

| Size (inch) | ØD | L | H | W | Weight (Kg) |
|-------------|----|-----|-----|-----|-------------|
| 1/2 | 15 | 216 | 75 | 140 | 5.0 |
| 3/4 | 20 | 229 | 91 | 180 | 8.0 |
| 1 | 25 | 254 | 108 | 250 | 10.0 |
| 1-1/2 | 38 | 305 | 133 | 400 | 20.0 |
| 2 | 50 | 368 | 150 | 500 | 30.0 |
| 3 | 76 | 381 | 160 | 500 | 55.0 |

Reduced Bore

Class900

| Size (inch) | Ød | ØD | L | H | W | Weight (Kg) |
|-------------|----|-----|-----|-----|-----|-------------|
| 3/4-1/2 | 15 | 20 | 229 | 75 | 140 | 7.0 |
| 1-3/4 | 20 | 25 | 254 | 91 | 180 | 9.5 |
| 1-1/2-1 | 25 | 38 | 305 | 108 | 250 | 16.5 |
| 2-1-1/2 | 38 | 50 | 368 | 133 | 400 | 23.0 |
| 3-2 | 50 | 76 | 381 | 150 | 500 | 42.0 |
| 4-3 | 76 | 100 | 457 | 160 | 500 | 65.0 |

Class1500

| Size (inch) | ØD | L | H | W | Weight (Kg) |
|-------------|----|-----|-----|-----|-------------|
| 1/2 | 15 | 216 | 75 | 140 | 5.0 |
| 3/4 | 20 | 229 | 91 | 180 | 8.0 |
| 1 | 25 | 254 | 108 | 250 | 10.0 |
| 1-1/2 | 38 | 305 | 133 | 400 | 20.0 |
| 2 | 50 | 368 | 150 | 500 | 30.0 |
| 3 | 76 | 470 | 160 | 500 | 65.0 |

Class1500

| Size (inch) | Ød | ØD | L | H | W | Weight (Kg) |
|-------------|----|-----|-----|-----|-----|-------------|
| 3/4-1/2 | 15 | 20 | 229 | 75 | 140 | 7.0 |
| 1-3/4 | 20 | 25 | 254 | 91 | 180 | 9.5 |
| 1-1/2-1 | 25 | 38 | 305 | 108 | 250 | 16.5 |
| 2-1-1/2 | 38 | 50 | 368 | 133 | 400 | 23.0 |
| 3-2 | 50 | 76 | 470 | 150 | 500 | 60.0 |
| 4-3 | 76 | 100 | 546 | 160 | 500 | 78.0 |

Class2500

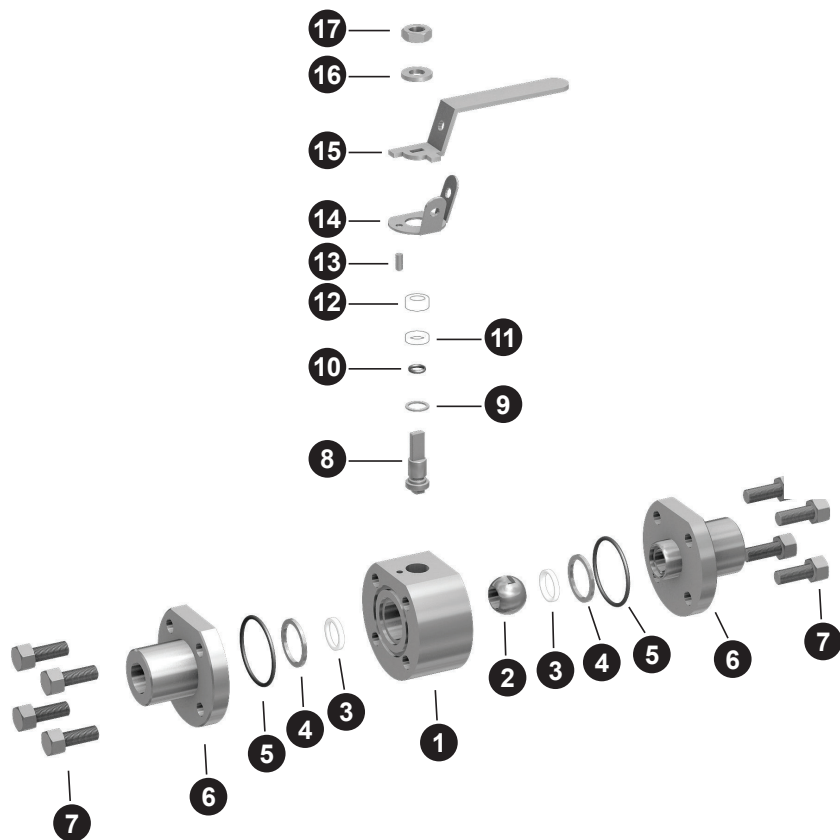
| Size (inch) | ØD | L | H | W | Weight (Kg) |
|-------------|----|-----|-----|-----|-------------|
| 1/2 | 15 | 264 | 88 | 230 | 7.5 |
| 3/4 | 20 | 273 | 117 | 230 | 12.0 |
| 1 | 25 | 308 | 128 | 300 | 15.0 |
| 1-1/2 | 38 | 387 | 148 | 400 | 30.0 |
| 2 | 42 | 451 | 183 | 500 | 37.5 |

Class2500

| Size (inch) | Ød | ØD | L | H | W | Weight (Kg) |
|-------------|----|----|-----|-----|-----|-------------|
| 3/4-1/2 | 15 | 20 | 273 | 88 | 230 | 11.0 |
| 1-3/4 | 20 | 25 | 308 | 117 | 230 | 14.0 |
| 1-1/2-1 | 25 | 38 | 387 | 128 | 300 | 25.0 |
| 2-1-1/2 | 38 | 50 | 451 | 148 | 400 | 35.0 |
| 3-2 | 42 | 76 | 578 | 183 | 500 | 60.0 |

• All dimensions in millimeters unless specified as "inch". Dimension are for reference only, subject to change.

Small Sizes Forged Floating Ball Valve



Features

| |
|--------------------------------|
| Size : 1/2" ~ 2" |
| Class : 800 ~ 1500 |
| Three Pieces Forged Steel Body |
| Floating Ball |
| Anti-Static Device |
| Blow-out Proof Stem |

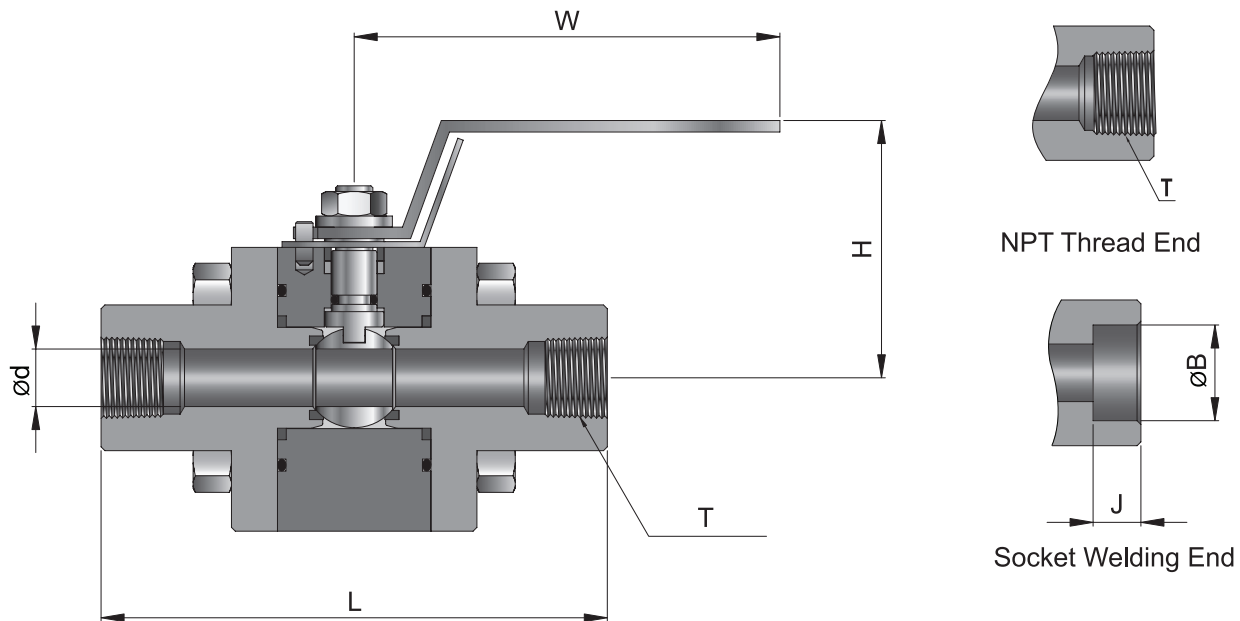
Specifications

| | |
|--------------------|-----------------------|
| Design | ASME B16.34 / BS 5351 |
| Face to Face | Manufacturer Standard |
| Thread End | ASME B1.20.1 |
| Socket Welding End | ASME B16.11 |
| Test | API 598 / BS 6755 |
| Special | NACE MR - 01 - 75 |

Material of Specifications

| NO. | COMPONENT | MATERIAL | |
|-----|---------------|-----------------|-----------------|
| | | STAINLESS STEEL | CARBON STEEL |
| 1 | BODY | ASTM A182-F316 | ASTM A105 |
| 2 | BALL | ASTM A479-TP316 | ASTM A479-TP316 |
| 3 | SEAT | R.PTFE/PEEK | R.PTFE/PEEK |
| 4 | BODY GASKET | PTFE/GRAPHITE | PTFE/GRAPHITE |
| 5 | FLANGE O-RING | VITON | VITON |
| 6 | BODY CAP | ASTM A182-F316 | ASTM A105 |
| 7 | FLANGE BOLT | ASTM A193-B8M | ASTM A193-B7 |
| 8 | STEM | ASTM A276-TP316 | ASTM A276-TP316 |
| 9 | THRUST WASHER | PEEK | PEEK |
| 10 | STEM O-RING | VITON | VITON |
| 11 | STEM PACKING | PTFE/GRAPHITE | PTFE/GRAPHITE |
| 12 | GLAND | ASTM A276-TP316 | ASTM A276-TP316 |
| 13 | PIN | STAINLESS STEEL | CARBON STEEL |
| 14 | LOCK PLATE | STAINLESS STEEL | CARBON STEEL |
| 15 | HANDLE | STAINLESS STEEL | CARBON STEEL |
| 16 | PLAIN WASHER | STAINLESS STEEL | CARBON STEEL |
| 17 | NUT | ASTM A194-8M | ASTM A194-2H |

Dimensions and Weight



Class800

| Port | Size | Ød | H | L | | W | ØB | J | T |
|--------------|-------|------|-------|-------|-------|-------|------|------|-------|
| | | | | FNPT | SW | | | | |
| Reduced Bore | 1/2 | 10.0 | 60.0 | 75.0 | 140.0 | 150.0 | 21.8 | 9.6 | 1/2 |
| | 3/4 | 15.0 | 62.0 | 80.0 | 155.0 | 150.0 | 27.1 | 12.7 | 3/4 |
| | 1 | 20.0 | 74.0 | 100.0 | 165.0 | 200.0 | 33.8 | 12.7 | 1 |
| | 1-1/4 | 25.0 | 88.0 | 120.0 | 180.0 | 200.0 | 42.6 | 12.7 | 1-1/4 |
| | 1-1/2 | 32.0 | 88.0 | 120.0 | 190.0 | 200.0 | 48.7 | 12.7 | 1/1/2 |
| | 2 | 38.0 | 93.0 | 140.0 | 230.0 | 250.0 | 61.2 | 15.7 | 2 |
| Full Bore | 1/2 | 15.0 | 62.0 | 80.0 | 140.0 | 150.0 | 21.8 | 9.6 | 1/2 |
| | 3/4 | 20.0 | 74.0 | 100.0 | 155.0 | 150.0 | 27.1 | 12.7 | 3/4 |
| | 1 | 25.0 | 88.0 | 120.0 | 165.0 | 200.0 | 33.8 | 12.7 | 1 |
| | 1-1/4 | 32.0 | 93.0 | 120.0 | 180.0 | 200.0 | 42.6 | 12.7 | 1-1/4 |
| | 1-1/2 | 38.0 | 93.0 | 140.0 | 190.0 | 250.0 | 48.7 | 12.7 | 1/1/2 |
| | 2 | 50.0 | 107.0 | 175.0 | 230.0 | 250.0 | 61.2 | 15.7 | 2 |

Class1500

| Port | Size | Ød | H | L | | W | ØB | J | T |
|--------------|-------|------|-------|-------|-------|-------|------|------|-------|
| | | | | FNPT | SW | | | | |
| Reduced Bore | 1/2 | 10.0 | 65.0 | 75.0 | 140.0 | 150.0 | 21.8 | 9.6 | 1/2 |
| | 3/4 | 15.0 | 67.0 | 80.0 | 155.0 | 150.0 | 27.1 | 12.7 | 3/4 |
| | 1 | 20.0 | 72.0 | 100.0 | 165.0 | 200.0 | 33.8 | 12.7 | 1 |
| | 1-1/4 | 25.0 | 93.0 | 120.0 | 180.0 | 200.0 | 42.6 | 12.7 | 1-1/4 |
| | 1-1/2 | 32.0 | 93.0 | 120.0 | 190.0 | 200.0 | 48.7 | 12.7 | 1/1/2 |
| | 2 | 38.0 | 105.0 | 140.0 | 230.0 | 250.0 | 61.2 | 15.7 | 2 |
| Full Bore | 1/2 | 15.0 | 67.0 | 80.0 | 140.0 | 150.0 | 21.8 | 9.6 | 1/2 |
| | 3/4 | 20.0 | 72.0 | 100.0 | 155.0 | 150.0 | 27.1 | 12.7 | 3/4 |
| | 1 | 25.0 | 93.0 | 120.0 | 165.0 | 200.0 | 33.8 | 12.7 | 1 |
| | 1-1/4 | 32.0 | 105.0 | 120.0 | 180.0 | 200.0 | 42.6 | 12.7 | 1-1/4 |
| | 1-1/2 | 38.0 | 105.0 | 140.0 | 190.0 | 250.0 | 48.7 | 12.7 | 1/1/2 |

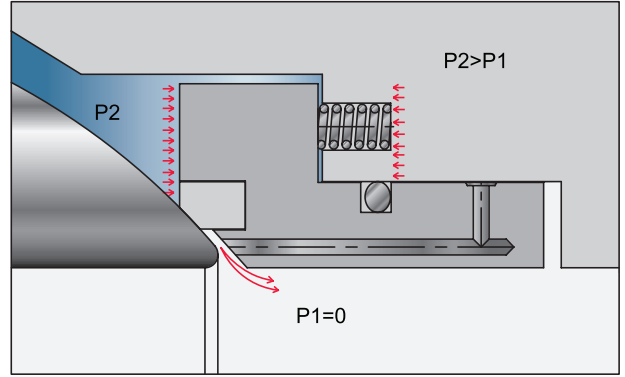
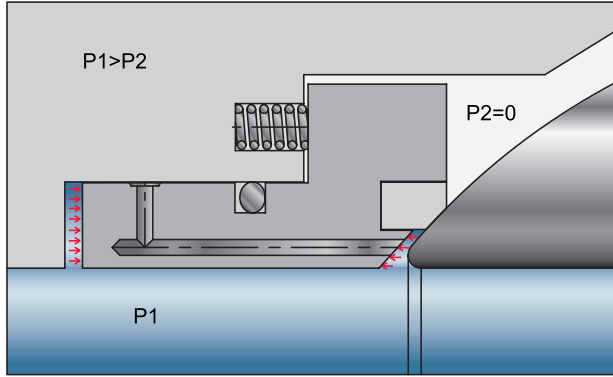
• All dimensions in millimeters unless specified as "inch". Dimension are for reference only, subject to change.

Trunnion Mounted Ball Valves-Design Features

Single Piston Effect.

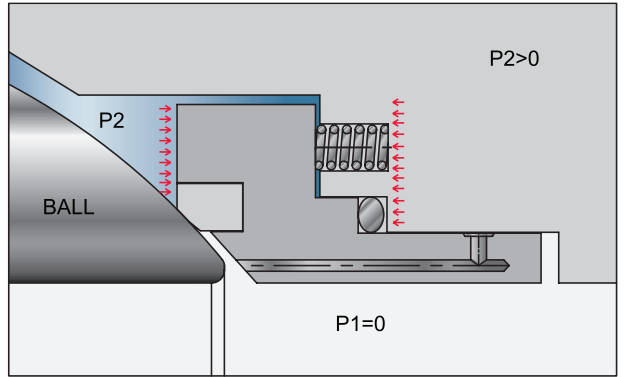
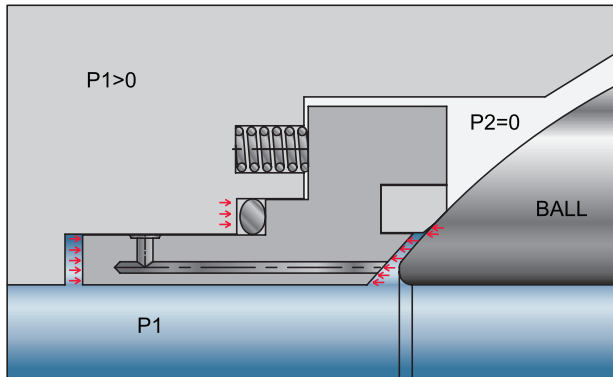
In the standard design of Trunnion Mounted Ball Valves, each seat ring performs the "Single piston" action.

In this case the pressure acting on the external side of the seat ring results in a force pushing equally against the ball while the pressure acting on the internal side of the seat rings results in a force pushing equally away from the ball. Therefore while both seat rings grant the required tightness when the pressure is applied on their external side, they are "Self Relieving" allowing any excess pressure acting in the body cavity to be discharged in the line as soon as the force caused by the pressure overcomes the one provided by the springs.



Double Piston Effect

By request, the seat rings design may be modified to perform "Double Piston Effect" action. In this case the pressure acting on both the external and internal side of the seat rings results in a force pushing equally against the ball. Therefore each seat ring allows for the required tightness even if the pressure is applied in the body cavity. This feature adds an extra sealing feature to the valve, but to release the possible excess pressure developed in the body cavity it is necessary to use an external safety relief valve.

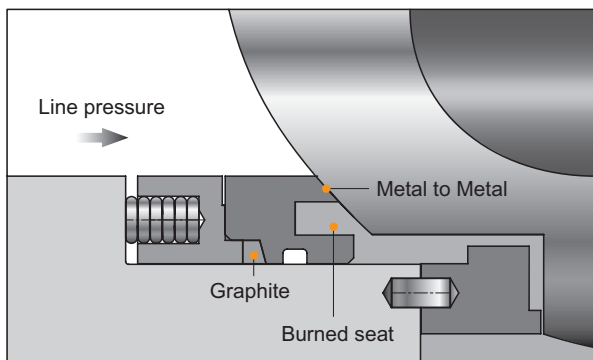


Fire Safe Design.

A secondary metal seat is provided to maintain contact between the seat and ball in the event the primary non-metallic seat is destroyed by fire. Valves are fire safe by design.

The double body and bonnet seals give maximum security.

BMT valves are fitted with special graphite seals so as to effectively stop all leakage in the event of a fire. All trunnion Mounted ball valves have been tested to API-607/API-6FA

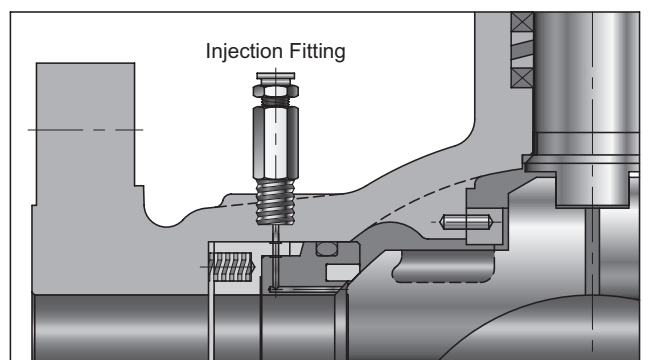


Secondary Seat and Stem Sealing Option.

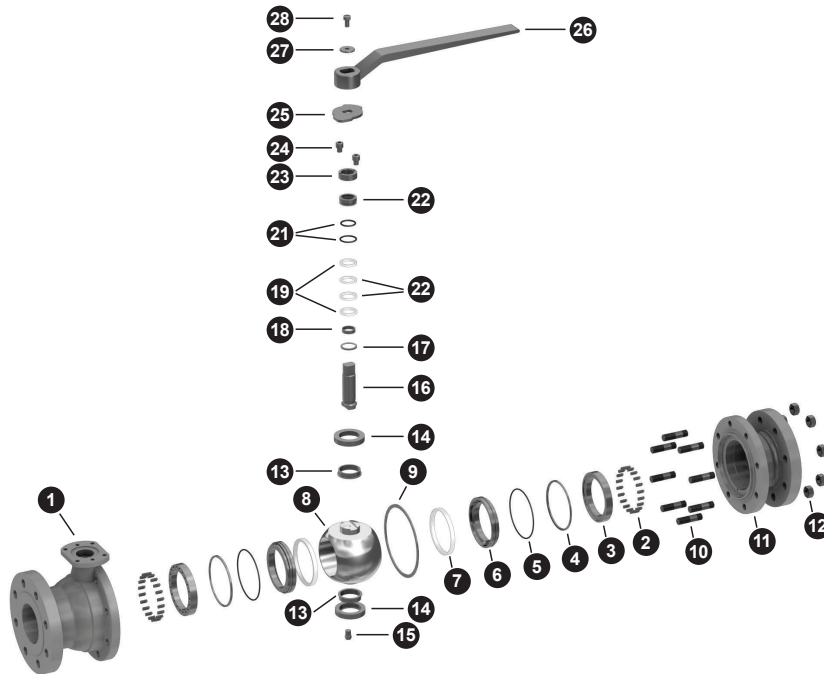
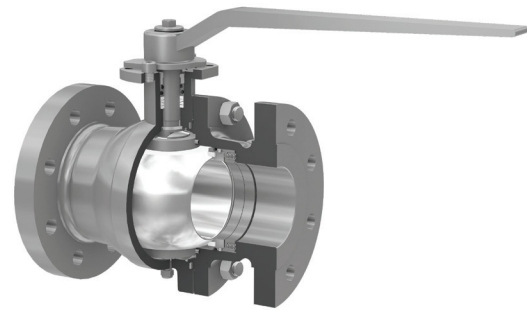
Ball valves are designed to provide high integrity shut-off.

Upon request, sealant injection fittings are installed.

In case of seat insert or stem seal damage, external or internal leakages can occur. An emergency sealant injection can save the integrity of the valve by incorporating a sealant seal around the stem or between the seat and the ball.



2Piece Body Cast Trunnion Mounted Ball Valve



Features

| |
|--|
| Size : 2" ~ 24" |
| Class : 150 ~ 600 |
| Two Pieces Cast Steel Body |
| Trunnion Mounted Ball, Full & Reduced Bore |
| Anti-Static Device |
| Blow-out Proof Stem |
| Fire Safe Design |
| Emergency Sealant injector (6" & Larger) |

Specifications

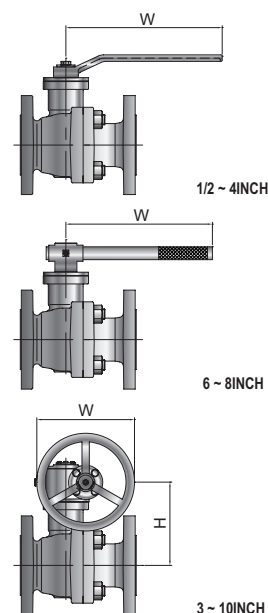
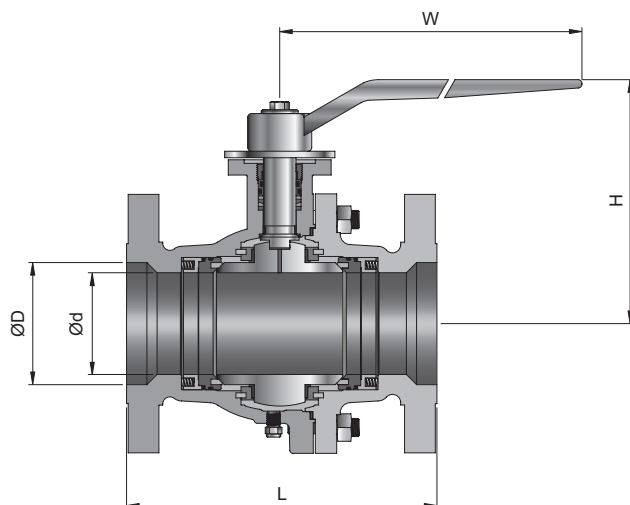
| | |
|----------------|---------------------|
| Design | ASME B16.34 / API6D |
| Face to Face | ASME B16.10 / API6D |
| End Flange | ASME B16.5 |
| BW End | ASME B16.25 |
| Test | API6D |
| Fire Safe Test | API 607 / API 6FA |
| Special | NACE MR - 01 - 75 |

Material of Specifications

| NO. | COMPONENT | MATERIAL | |
|-----|--------------------|--------------------------|--------------------------|
| | | STAINLESS STEEL | CARBON STEEL |
| 1 | BODY | ASTM A351-CF8M | ASTM A216-WCB |
| 2 | SPRING | Inconel X-750 | Inconel X-750 |
| 3 | GASKER RETAINER | ASTM A276-TP316 | ASTM A276-TP316 |
| 4 | RETAINER SEAL | PTFE/GRAPHITE | PTFE/GRAPHITE |
| 5 | RETAINER O-RING | VITON | VITON |
| 6 | SEAT RETAINER | ASTM A276-TP316 | ASTM A276-TP316 |
| 7 | SEAT | R.PTFE/NYLON | R.PTFE/NYLON |
| 8 | BALL | ASTM A351-CF8M | ASTM A351-CF8M |
| 9 | BODY GASKET | PTFE/SWG(SS316+GRAPHITE) | PTFE/SWG(SS316+GRAPHITE) |
| 10 | STUD BOLT | ASTM A193-B8M | ASTM A193-B7 |
| 11 | BODY CAP | ASTM A351-CF8M | ASTM A216-WCB |
| 12 | NUT | ASTM A194-8M | ASTM A194-2H |
| 13 | TRUNNION BEARING | R.PTFE | R.PTFE |
| 14 | TRUNNION PLATE | ASTM A276-TP316 | ASTM A276-TP316 |
| 15 | DRAIN PLUG | ASTM A276-TP316 | Carbon Steel |
| 16 | STEM | ASTM A276-TP316 | ASTM A276-TP316 |
| 17 | THRUST WASHER | PEEK | PEEK |
| 18 | THRUST BEARING | R.PTFE | R.PTFE |
| 19 | PACKING GLAND | ASTM A276-TP316 | ASTM A276-TP316 |
| 20 | PACKING | PTFE/GRAPHITE | PTFE/GRAPHITE |
| 21 | O-RING | VITON | VITON |
| 22 | STEM SEAL RETAINER | ASTM A276-TP316 | ASTM A105 |
| 23 | GLAND | ASTM A276-TP316 | ASTM A105 |
| 24 | STOP BOLT | ASTM A193-B8 | ASTM A193-B7 |
| 25 | STOPPER | STAINLESS STEEL | Carbon Steel |
| 26 | HANDLE | STAINLESS STEEL | Carbon Steel |
| 27 | PLAIN WASHER | STAINLESS STEEL | Carbon Steel |
| 28 | HANDLE BOLT | ASTM A193-B8 | ASTM A193-B7 |

Flanged Ball Valves

Dimensions and Weight



Full Bore

Class150

| Size (inch) | ØD | L | H | W | Weight (Kg) |
|-------------|-----|------|-----|------|-------------|
| 2 | 50 | 178 | 144 | 250 | 18 |
| 3 | 76 | 203 | 194 | 460 | 32 |
| 4 | 100 | 229 | 210 | 460 | 56 |
| 6 | 152 | 394 | 286 | *400 | 125 |
| 8 | 203 | 457 | 338 | *500 | 195 |
| 10 | 254 | 533 | 387 | *500 | 270 |
| 12 | 305 | 610 | 450 | *600 | 470 |
| 14 | 337 | 686 | 498 | *700 | 570 |
| 16 | 387 | 762 | 550 | *700 | 875 |
| 18 | 438 | 864 | 615 | *800 | 935 |
| 20 | 489 | 914 | 647 | *800 | 1520 |
| 24 | 591 | 1067 | 751 | *900 | 2150 |

*Gear Operated

Class300

| Size (inch) | ØD | L | H | W | Weight (Kg) |
|-------------|-----|------|-----|------|-------------|
| 2 | 50 | 216 | 144 | 250 | 26 |
| 3 | 76 | 283 | 194 | 460 | 45 |
| 4 | 100 | 305 | 210 | 460 | 75 |
| 6 | 152 | 403 | 286 | *400 | 152 |
| 8 | 203 | 502 | 338 | *500 | 234 |
| 10 | 254 | 568 | 387 | *500 | 303 |
| 12 | 305 | 648 | 450 | *600 | 502 |
| 14 | 337 | 762 | 498 | *700 | 602 |
| 16 | 387 | 838 | 550 | *700 | 1001 |
| 18 | 438 | 914 | 615 | *700 | 1155 |
| 20 | 489 | 991 | 647 | *800 | 1815 |
| 24 | 591 | 1143 | 751 | *900 | 2550 |

*Gear Operated

Class600

| Size (inch) | ØD | L | H | W | Weight (Kg) |
|-------------|-----|------|------|------|-------------|
| 2 | 50 | 292 | 144 | 250 | 27 |
| 3 | 76 | 356 | 194 | 460 | 53 |
| 4 | 100 | 432 | 235 | 800 | 93 |
| 6 | 152 | 559 | 300 | *500 | 200 |
| 8 | 203 | 660 | 360 | *600 | 340 |
| 10 | 254 | 787 | 430 | *700 | 550 |
| 12 | 305 | 838 | 468 | *700 | 785 |
| 14 | 337 | 889 | 550 | *800 | 850 |
| 16 | 387 | 991 | 615 | *900 | 1580 |
| 18 | 438 | 1092 | 724 | *900 | 2170 |
| 20 | 489 | 1194 | 810 | *900 | 2630 |
| 24 | 591 | 1397 | 1010 | *900 | 3950 |

*Gear Operated

Reduced Bore

Class150

| Size (inch) | Ød | ØD | L | H | W | Weight (Kg) |
|-------------|-----|-----|------|-----|------|-------------|
| 3-2 | 50 | 76 | 203 | 144 | 250 | 26 |
| 4-3 | 76 | 100 | 229 | 194 | 460 | 50 |
| 6-4 | 100 | 152 | 394 | 210 | 460 | 118 |
| 8-6 | 152 | 203 | 457 | 286 | *400 | 150 |
| 10-8 | 203 | 254 | 533 | 338 | *500 | 230 |
| 12-10 | 254 | 305 | 610 | 387 | *500 | 278 |
| 14-12 | 305 | 337 | 686 | 450 | *600 | 460 |
| 16-14 | 337 | 387 | 762 | 498 | *700 | 585 |
| 18-16 | 387 | 438 | 864 | 550 | *700 | 890 |
| 20-18 | 438 | 489 | 914 | 615 | *800 | 955 |
| 24-20 | 489 | 591 | 1067 | 647 | *800 | 1650 |

*Gear Operated

Class300

| Size (inch) | Ød | ØD | L | H | W | Weight (Kg) |
|-------------|-----|-----|------|-----|------|-------------|
| 3-2 | 50 | 76 | 283 | 144 | 250 | 35 |
| 4-3 | 76 | 100 | 305 | 194 | 460 | 65 |
| 6-4 | 100 | 152 | 403 | 210 | 460 | 135 |
| 8-6 | 152 | 203 | 502 | 286 | *400 | 200 |
| 10-8 | 203 | 254 | 568 | 338 | *500 | 290 |
| 12-10 | 254 | 305 | 648 | 387 | *500 | 310 |
| 14-12 | 305 | 337 | 762 | 450 | *600 | 520 |
| 16-14 | 337 | 387 | 838 | 498 | *700 | 820 |
| 18-16 | 387 | 438 | 914 | 550 | *700 | 1025 |
| 20-18 | 438 | 489 | 991 | 615 | *800 | 1180 |
| 24-20 | 489 | 591 | 1143 | 647 | *800 | 1950 |

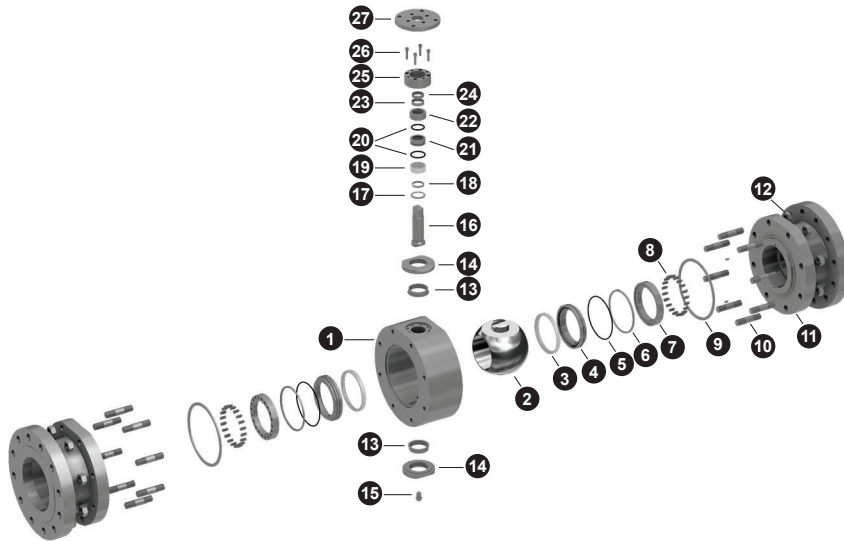
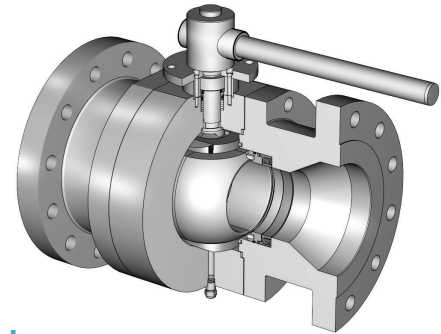
*Gear Operated

Class600

| Size (inch) | Ød | ØD | L | H | W | Weight (Kg) |
|-------------|-----|-----|------|-----|------|-------------|
| 3-2 | 50 | 76 | 356 | 144 | 250 | 43 |
| 4-3 | 76 | 100 | 432 | 194 | 460 | 67 |
| 6-4 | 100 | 152 | 559 | 235 | 800 | 98 |
| 8-6 | 152 | 203 | 660 | 300 | *400 | 205 |
| 10-8 | 203 | 254 | 787 | 360 | *500 | 350 |
| 12-10 | 254 | 305 | 838 | 430 | *700 | 605 |
| 14-12 | 305 | 337 | 889 | 468 | *700 | 820 |
| 16-14 | 337 | 387 | 991 | 550 | *800 | 980 |
| 18-16 | 387 | 438 | 1092 | 615 | *900 | 1805 |
| 20-18 | 438 | 489 | 1194 | 724 | *900 | 2480 |
| 24-20 | 489 | 591 | 1397 | 810 | *900 | 3800 |

*Gear Operated

3Piece Body Forged Trunnion Mounted Ball Valve



Features

| |
|--|
| Size : 2" ~ 40" |
| Class : 150 ~ 2500 |
| Three Pieces Forged Steel Body |
| Trunnion Mounted Ball, Full & Reduced Bore |
| Anti-Static Device |
| Blow-out Proof Stem |
| Double Block Bleed |
| Fire Safe Design |
| Emergency Sealant injector (6" & Larger) |
| Vent Valve(6" & Larger) |
| Lifting Lugs & Supporting Feet (8" & Larger) |

Specifications

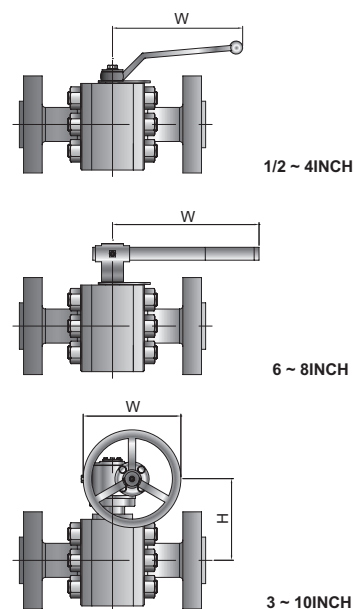
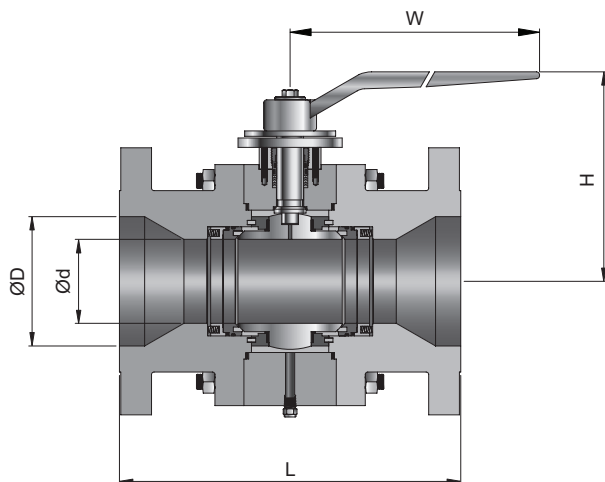
| | |
|----------------|---------------------|
| Design | ASME B16.34 / API6D |
| Face to Face | ASME B16.10 / API6D |
| End Flange | ASME B16.5 |
| Test | API6D |
| Fire Safe Test | API 607 / API 6FA |
| Special | NACE MR - 01 - 75 |

Material of Specifications

| NO. | COMPONENT | MATERIAL | |
|-----|------------------|---------------------------|------------------------------|
| | | STAINLESS STEEL | CARBON STEEL |
| 1 | BODY | ASTM A182-F316 | ASTM A105 |
| 2 | BALL | ASTM A182-F316/A276-TP316 | ASTM A182-F316/A105+ENP |
| 3 | SEAT | PTFE/DEVLON/NYLON | PTFE/DEVLON/NYLON |
| 4 | SEAT RETAINER | ASTM A276-TP316 | ASTM A276-TP316 |
| 5 | RETAINER O-RING | VITON | VITON |
| 6 | RETAINER SEAL | PTFE/GRAPHITE | PTFE/GRAPHITE |
| 7 | GASKER RETAINER | ASTM A276-TP316 | ASTM A276-TP316 |
| 8 | SPRING | INCONEL X-750 | INCONEL X-750 |
| 9 | BODY GASKET | PTFE/SWG(SS316+GRAPHITE) | PTFE/SWG(SS316+GRAPHITE) |
| 10 | STUD BOLT | ASTM A193-B8M | ASTM A193-B7 |
| 11 | BODY CAP | ASTM A182-F316 | ASTM A105 |
| 12 | NUT | ASTM A194-8M | ASTM A194-2H |
| 13 | TRUNNION BEARING | R.PTFE | R.PTFE |
| 14 | TRUNNION PLATE | ASTM A276-TP316 | ASTM A276-TP316 |
| 15 | DRAIN PLUG | ASTM A276-TP316 | CARBON STEEL |
| 16 | STEM | ASTM A564-TP630 | ASTM A564-TP630/AISI4140+ENP |
| 17 | THRUST WASHER | PEEK | PEEK |
| 18 | THRUST BEARING | R.PTFE | R.PTFE |
| 19 | BUSHING | PEEK | PEEK |
| 20 | PACKING GLAND | ASTM A276-TP316 | ASTM A276-TP316 |
| 21 | STEM PACKING | PTFE/GRAPHITE | PTFE/GRAPHITE |
| 22 | O-RING RETAINER | ASTM A276-TP316 | ASTM A105 |
| 23 | O-RING | VITON | VITON |
| 24 | O-RING | VITON | VITON |
| 25 | BONNET | ASTM A276-TP316 | ASTM A105 |
| 26 | BOLT | ASTM A193-B8M | ASTM A193-B7 |
| 27 | GEARBOX BASE | ASTM A276-TP316 | ASTM A105 |

Flanged Ball Valves

Dimensions and Weight



Full Bore

Class150

| Size (inch) | ØD | L | H | W | Weight (Kg) |
|-------------|-----|------|-----|------|-------------|
| 2 | 50 | 178 | 180 | 265 | 30 |
| 3 | 76 | 203 | 190 | 285 | 60 |
| 4 | 100 | 229 | 212 | 285 | 92 |
| 6 | 152 | 394 | 277 | *400 | 190 |
| 8 | 203 | 457 | 301 | *400 | 345 |
| 10 | 254 | 533 | 359 | *500 | 495 |
| 12 | 305 | 610 | 419 | *600 | 705 |
| 14 | 337 | 686 | 460 | *600 | 859 |
| 16 | 387 | 762 | 494 | *600 | 1020 |
| 18 | 438 | 864 | 521 | *600 | 1440 |
| 20 | 489 | 914 | 656 | *600 | 1918 |
| 24 | 591 | 1067 | 795 | *700 | 2803 |

*Gear Operated

Reduced Bore

Class150

| Size (inch) | Ød | ØD | L | H | W | Weight (Kg) |
|-------------|-----|-----|------|-----|------|-------------|
| 2-1•1/2 | 38 | 50 | 178 | 140 | 250 | 26 |
| 3-2 | 50 | 76 | 203 | 180 | 265 | 34 |
| 4-3 | 76 | 100 | 229 | 190 | 285 | 62 |
| 6-4 | 100 | 152 | 394 | 212 | 285 | 102 |
| 8-6 | 152 | 203 | 457 | 277 | *400 | 225 |
| 10-8 | 203 | 254 | 533 | 301 | *400 | 373 |
| 12-10 | 254 | 305 | 610 | 359 | *500 | 533 |
| 14-12 | 305 | 337 | 686 | 419 | *600 | 730 |
| 16-14 | 337 | 387 | 762 | 460 | *600 | 790 |
| 18-16 | 387 | 438 | 864 | 494 | *600 | 1095 |
| 20-18 | 438 | 489 | 914 | 521 | *600 | 1152 |
| 24-20 | 489 | 591 | 1067 | 656 | *600 | 2060 |

*Gear Operated

Class300

| Size (inch) | ØD | L | H | W | Weight (Kg) |
|-------------|-----|------|-----|------|-------------|
| 2 | 50 | 216 | 180 | 265 | 31 |
| 3 | 76 | 283 | 190 | 285 | 69 |
| 4 | 100 | 305 | 212 | 400 | 11 |
| 6 | 152 | 403 | 277 | *400 | 211 |
| 8 | 203 | 502 | 308 | *500 | 376 |
| 10 | 254 | 568 | 381 | *600 | 540 |
| 12 | 305 | 648 | 429 | *600 | 763 |
| 14 | 337 | 762 | 460 | *600 | 900 |
| 16 | 387 | 838 | 581 | *600 | 1300 |
| 18 | 438 | 914 | 674 | *700 | 1715 |
| 20 | 489 | 991 | 713 | *700 | 2090 |
| 24 | 591 | 1143 | 850 | *760 | 2890 |

*Gear Operated

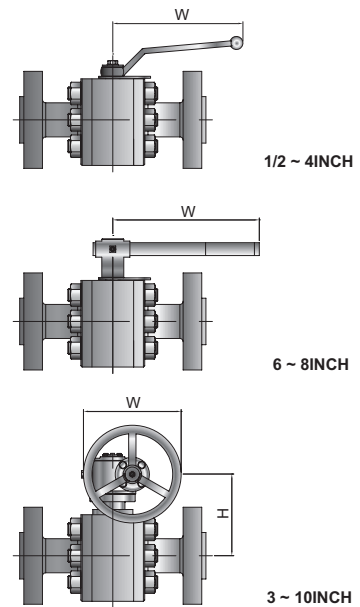
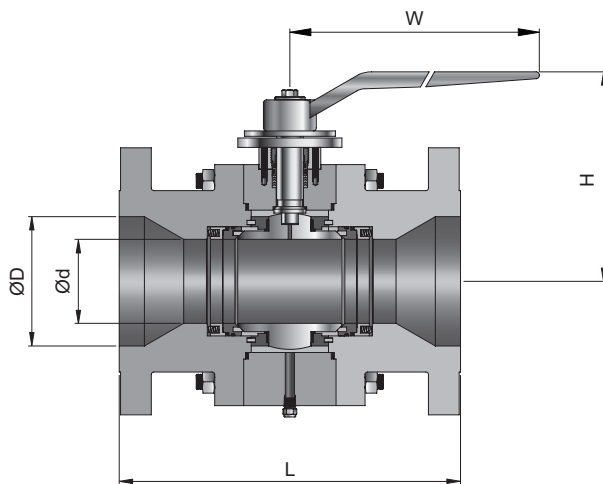
Class300

| Size (inch) | Ød | ØD | L | H | W | Weight (Kg) |
|-------------|-----|-----|------|-----|------|-------------|
| 2-1•1/2 | 38 | 50 | 216 | 140 | 250 | 30 |
| 3-2 | 50 | 76 | 283 | 180 | 265 | 37 |
| 4-3 | 76 | 100 | 305 | 190 | 285 | 74 |
| 6-4 | 100 | 152 | 403 | 212 | 400 | 142 |
| 8-6 | 152 | 203 | 502 | 277 | *400 | 253 |
| 10-8 | 203 | 254 | 598 | 308 | *500 | 410 |
| 12-10 | 254 | 305 | 648 | 381 | *600 | 580 |
| 14-12 | 305 | 337 | 762 | 429 | *600 | 830 |
| 16-14 | 337 | 387 | 838 | 460 | *600 | 970 |
| 18-16 | 387 | 438 | 914 | 581 | *600 | 1530 |
| 20-18 | 438 | 489 | 991 | 674 | *700 | 1830 |
| 24-20 | 489 | 591 | 1143 | 713 | *700 | 2220 |

*Gear Operated

• All dimensions in millimeters unless specified as "inch". Dimension are for reference only, subject to change.

Dimensions and Weight



Full Bore

Class600

| Size (inch) | ØD | L | H | W | Weight (Kg) |
|-------------|-----|------|-----|------|-------------|
| 2 | 51 | 292 | 172 | 285 | 45 |
| 3 | 76 | 356 | 205 | 400 | 80 |
| 4 | 102 | 432 | 308 | 755 | 150 |
| 6 | 152 | 559 | 274 | *500 | 248 |
| 8 | 203 | 660 | 342 | *600 | 438 |
| 10 | 254 | 787 | 393 | *600 | 701 |
| 12 | 305 | 838 | 522 | *600 | 925 |
| 14 | 337 | 889 | 551 | *600 | 1230 |
| 16 | 387 | 991 | 637 | *700 | 1535 |
| 18 | 438 | 1092 | 683 | *800 | 2135 |
| 20 | 489 | 1194 | 719 | *800 | 2640 |
| 24 | 591 | 1397 | 823 | *800 | 3960 |

*Gear Operated

Reduced Bore

Class600

| Size (inch) | Ød | ØD | L | H | W | Weight (Kg) |
|-------------|-----|-----|------|-----|------|-------------|
| 2-1•1/2 | 38 | 51 | 292 | 164 | 265 | 40 |
| 3-2 | 51 | 76 | 356 | 172 | 285 | 54 |
| 4-3 | 76 | 102 | 432 | 205 | 400 | 99 |
| 6-4 | 102 | 152 | 559 | 308 | 755 | 212 |
| 8-6 | 152 | 203 | 660 | 274 | *500 | 304 |
| 10-8 | 203 | 254 | 787 | 342 | *600 | 510 |
| 12-10 | 254 | 305 | 838 | 393 | *600 | 902 |
| 14-12 | 305 | 337 | 889 | 522 | *600 | 1090 |
| 16-14 | 337 | 387 | 991 | 551 | *600 | 1310 |
| 18-16 | 387 | 438 | 1092 | 637 | *700 | 1640 |
| 20-18 | 438 | 489 | 1194 | 683 | *800 | 2270 |
| 24-20 | 489 | 591 | 1397 | 719 | *800 | 3440 |

*Gear Operated

Class900

| Size (inch) | ØD | L | H | W | Weight (Kg) |
|-------------|-----|------|-----|------|-------------|
| 2 | 51 | 368 | 193 | 400 | 52 |
| 3 | 76 | 381 | 302 | 755 | 87 |
| 4 | 102 | 457 | 332 | *400 | 160 |
| 6 | 152 | 610 | 320 | *600 | 385 |
| 8 | 203 | 737 | 365 | *600 | 560 |
| 10 | 254 | 838 | 495 | *600 | 820 |
| 12 | 305 | 965 | 600 | *700 | 1125 |
| 14 | 324 | 1029 | 625 | *760 | 1610 |

*Gear Operated

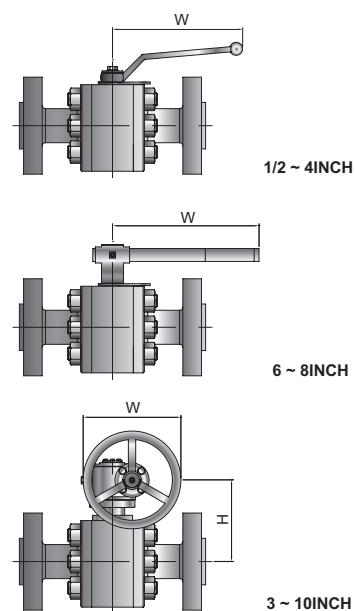
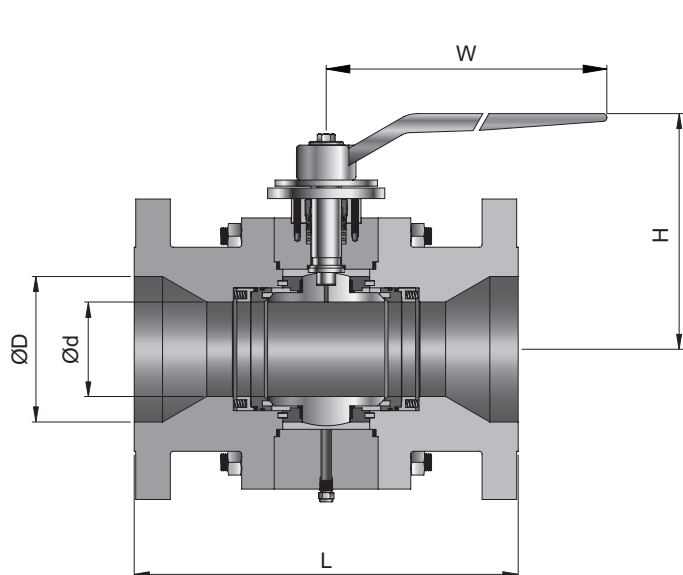
Class900

| Size (inch) | Ød | ØD | L | H | W | Weight (Kg) |
|-------------|-----|-----|------|-----|------|-------------|
| 2-1•1/2 | 38 | 51 | 368 | 175 | 285 | 45 |
| 3-2 | 51 | 76 | 381 | 193 | 400 | 56 |
| 4-3 | 76 | 102 | 457 | 302 | 755 | 94 |
| 6-4 | 102 | 152 | 610 | 332 | *400 | 226 |
| 8-6 | 152 | 203 | 737 | 320 | *600 | 480 |
| 10-8 | 203 | 254 | 838 | 365 | *600 | 650 |
| 12-10 | 254 | 305 | 965 | 495 | *600 | 868 |
| 14-12 | 305 | 324 | 1029 | 600 | *700 | 1310 |

*Gear Operated

• All dimensions in millimeters unless specified as "inch". Dimension are for reference only, subject to change.

Dimensions and Weight



Full Bore

Class1500

| Size (inch) | ØD | L | H | W | Weight (Kg) |
|-------------|-----|------|-----|------|-------------|
| 2 | 50 | 368 | 193 | 400 | 60 |
| 3 | 76 | 470 | 270 | 1135 | 115 |
| 4 | 100 | 546 | 275 | *500 | 194 |
| 6 | 146 | 705 | 325 | *600 | 580 |
| 8 | 194 | 832 | 501 | *700 | 758 |
| 10 | 241 | 991 | 536 | *700 | 1195 |
| 12 | 289 | 1130 | 614 | *800 | 1970 |
| 14 | 318 | 1257 | 662 | *800 | 2250 |

*Gear Operated

Reduced Bore

Class1500

| Size (inch) | Ød | ØD | L | H | W | Weight (Kg) |
|-------------|-----|-----|------|-----|------|-------------|
| 2-1•1/2 | 38 | 50 | 368 | 183 | 285 | 56 |
| 3-2 | 50 | 76 | 470 | 193 | 400 | 82 |
| 4-3 | 76 | 100 | 546 | 270 | 1135 | 150 |
| 6-4 | 100 | 146 | 705 | 275 | *500 | 295 |
| 8-6 | 146 | 194 | 832 | 325 | *600 | 690 |
| 10-8 | 194 | 241 | 991 | 501 | *700 | 930 |
| 12-10 | 241 | 289 | 1130 | 536 | *700 | 1340 |
| 14-12 | 289 | 318 | 1257 | 614 | *800 | 2070 |

*Gear Operated

Ordering Information

Example :

FB2F 2 2 - R 12 C - A031 - AB

1 2 3 4 5 6 7 8

1. Valve Series

| SERIES | I.D | TYPE |
|---------------|-----|--------------------|
| FLOATING BALL | FB | 1C 1-PIECE CASTING |
| | | 2C 2-PIECE CASTING |
| | | 3C 3-PIECE CASTING |
| | | 1F 1-PIECE FORGED |
| | | 2F 2-PIECE FORGED |
| | | 3F 3-PIECE FORGED |
| TRUNNION BALL | FBT | 2C 2-PIECE CASTING |
| | | 3C 3-PIECE CASTING |
| | | 2F 2-PIECE FORGED |
| | | 3F 3-PIECE FORGED |

2. Valve Type

1 : FLANGE x FNPT
 2 : FLANGE x FLANGE
 3 : MNPT x FNPT
 4 : FNPT x FNPT
 5 : MSW x FNPT
 6 : SW x FNPT
 7 : BW x FNPT
 8 : MSW x FLANGE
 9 : MNPT x FLANGE
 0 : SW x SW
 B : BW x BW

3. Bore

BLANK : 10mm
 1 : 15mm
 2 : 20mm
 3 : 25mm
 4 : 32mm
 5 : 38mm
 6 : 50mm
 7 : 65mm
 8 : 80mm
 9 : 100mm
 10 : 125mm
 11 : 150mm
 12 : 200mm

4. Connection Size

R : RAISED FACE(BLANK)
 AF : API 6B TYPE
 JF : JIS FLANGE
 J : RING TYPE JOINT
 SA : SAE J518 FLANGE
 F : FLAT FACE
 IS : ISO 6164 FLANGE
 JO : JIS OIL FLANGE

5. SIZE

| ANSI FLANGE | | | | | | API 6B FLANGE | | JIS FLANGE | |
|-------------|----|-----|------|-----|-----|---------------|-----|------------|-----|
| SIZE | DN | I.D | SIZE | DN | I.D | SIZE | I.D | SIZE | I.D |
| 1/2 | 15 | 8 | 3 | 80 | 48 | 1-13/16 | 1 | 15 | 8 |
| 3/4 | 20 | 12 | 4 | 100 | 64 | 2-1/16 | 2 | 20 | 12 |
| 1 | 25 | 16 | 5 | 125 | 80 | 2-9/16 | 3 | 25 | 16 |
| 1-1/4 | 32 | 20 | 6 | 150 | 96 | 3-1/16 | 4 | 32 | 20 |
| 1-1/2 | 40 | 24 | 8 | 200 | 128 | 4-1/16 | 5 | 40 | 24 |
| 2 | 50 | 32 | 10 | 250 | 160 | 5-1/16 | 6 | 50 | 32 |
| 2-1/2 | 65 | 40 | 12 | 300 | 192 | 7-1/16 | 7 | - | - |

6. Pressure Class

A : CLASS 150
 B : CLASS 300
 C : CLASS 600
 D : CLASS 900
 E : CLASS 1500 (3000PSI)
 F : CLASS 2500 (6000PSI)
 G : 2000 PSI
 H : 3000 PSI
 I : 5000 PSI
 J : 10000 PS
 K : 15000 PSI
 L : 20000 PSI
 M : JIS 5K
 N : JIS 10K
 P : JIS 16K
 Q : JIS 20K
 R : JIS 30K
 S : CLASS 800
 T : JIS 210K
 U : JIS 280K
 V : JIS 350K

7. Option+ Trim + Seat + O-Ring

| OPTION | | TRIM | | SEAT | | O-RING | |
|--------|--------------------|-----------|-------------|-----------|-----------|-----------|------------|
| I.D | Type | I.D | Type | I.D | Type | I.D | Type |
| A | STANDARD | BLANK (0) | BODY = TRIM | BLANK (0) | PTFE | BLANK (0) | NBR |
| D | LOCKING DEVICE | 1 | SS316 | 1 | R.PTFE(G) | 1 | VITON |
| G | GEAR ACTUATOR | 2 | CF8M | 2 | R.PTFE(C) | 2 | EPDM |
| H | METAL SEAT | 3 | SS316L | 3 | PEEK | 3 | KALREZ |
| M | WELDED OVERLAY | 4 | SS304 | 4 | PCTFE | 4 | CR |
| O | LIFTING LUG | 5 | A105 + ENP | 5 | POM | 5 | SILICON |
| P | PNE MATIC ACTUATOR | 6 | A105 + CR | 6 | DEVLON | 6 | AED(NBR) |
| | | 7 | MONEL 400 | 7 | DELIN | 7 | AED(VITON) |
| | | 8 | SS316 + HF | 8 | METAL | 8 | HNBR |
| | | 9 | DUPLEX | 9 | NYLON 6 | | |

8. Material

| I.D | MATERIAL | I.D | MATERIAL |
|-------|------------------------|-----|---------------|
| BLANK | SS316 | AB | AL-BRONZE |
| 304 | SS304 | M40 | MONEL 400 |
| 36L | SS316L | 625 | INCONEL 625 |
| 34L | SS304L | 825 | INCONEL 825 |
| F51 | A182 F51(Duplex) | 276 | HASTELLOY 276 |
| F53 | A182 F53(Super Duplex) | 15 | A105 |
| B | BRASS | 15N | A105N |
| BZ | BRONZE | LF2 | A350 LF2 |



Flanged Ball Valves