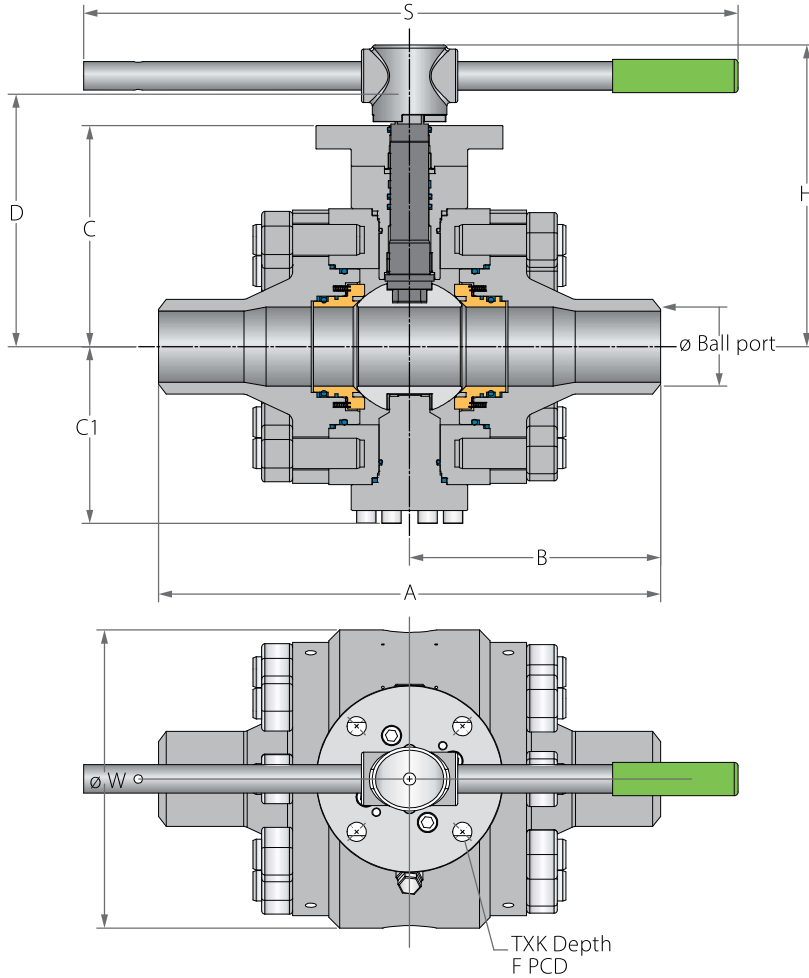
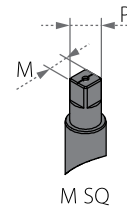


Trunnion Mounted Ball 3 Piece

Valve dimensions



Preparation for actuation

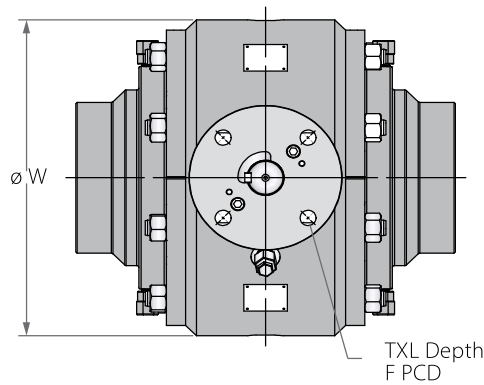
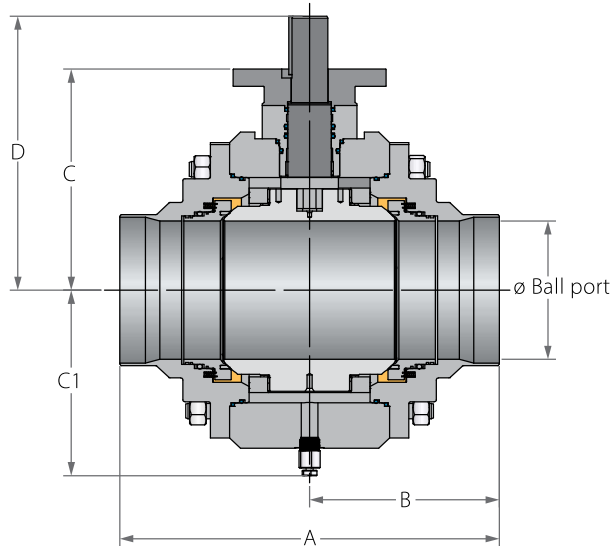


| Std. port | Unit | Ball port | A | | B | | C | C1 | D | W | | Msq | Psq | H | S | F | TxL | Weight kg/lb | | Kv / Cv | |
|-----------|------|-----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|--------|--------|-------------|---------------------|--------------|-----|---------|------|
| | | | 150 | 300 | 150 | 300 | | | | 150 | 300 | | | | | | | 150 | 300 | 150 | 300 |
| DN50 | mm | 49.00 | 216.00 | 216.00 | 108.00 | 108.00 | 127.00 | 91.50 | 144.50 | 169.00 | 169.00 | 17.00 | 22.00 | 196.00 | 401.00 | (F10)102.00 | 11 X15 (4 holes) | 20 | 22 | 400 | 363 |
| 2" | inch | 1.93 | 8.50 | 8.50 | 4.25 | 4.25 | 5.00 | 3.60 | 5.69 | 6.65 | 6.65 | 0.67 | 0.87 | 7.72 | 15.79 | 4.02 | | 44 | 49 | 463 | 420 |
| DN80 | mm | 74.00 | 283.00 | 283.00 | 141.50 | 141.50 | 148.00 | 117.00 | 172.00 | 209.00 | 219.00 | 22.00 | 32.00 | 223.00 | 610.00 | (F12)125.00 | 13x15 (4 holes) | 43 | 46 | 1125 | 952 |
| 3" | inch | 2.91 | 11.14 | 11.14 | 5.57 | 5.57 | 5.83 | 4.61 | 6.77 | 8.23 | 8.62 | 0.87 | 1.26 | 8.78 | 24.02 | 4.92 | | 95 | 101 | 1300 | 1100 |
| DN100 | mm | 100.00 | 305.00 | 305.00 | 152.50 | 152.50 | 171.00 | 139.00 | 198.50 | 259.00 | 268.00 | 27.00 | 35.00 | 247.50 | 610.00 | (F14)140.00 | 18x15 (4 holes) | 56 | 69 | 2154 | 1860 |
| 4" | inch | 3.94 | 12.01 | 12.01 | 6.00 | 6.00 | 6.73 | 5.47 | 7.81 | 10.20 | 10.55 | 1.06 | 1.38 | 9.74 | 24.02 | 5.51 | | 123 | 152 | 2490 | 2150 |
| DN150 | mm | 150.00 | 457.00 | 457.00 | 228.50 | 228.50 | 254.00 | 191.00 | 290.50 | 355.00 | 359.00 | 36.00 | 46.20 | 356.50 | 916.00 | (F16)165.00 | 22x25 (4 holes) | 168 | 181 | 4723 | 4628 |
| 6" | inch | 5.91 | 17.99 | 17.99 | 9.00 | 9.00 | 10.00 | 7.52 | 11.44 | 13.98 | 14.13 | 1.42 | 1.82 | 14.04 | 36.06 | 6.50 | | 370 | 399 | 5460 | 5350 |

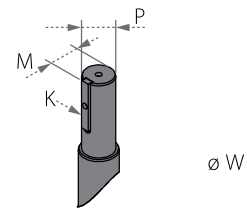


Trunnion Mounted Ball 3 Piece

Valve dimensions



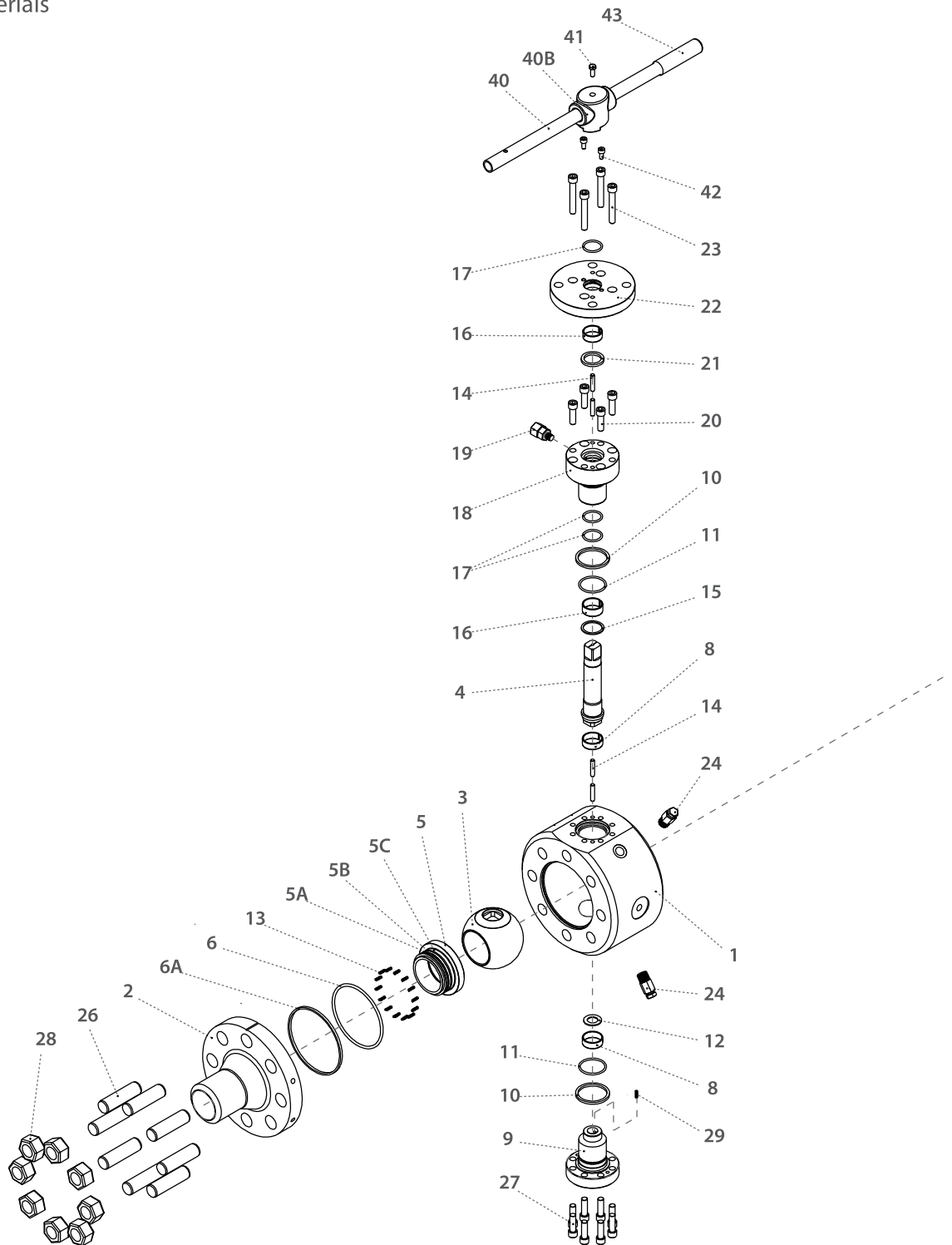
Preparation for actuation



| Std. port | Unit | Ball port | A | | B | | C | | C1 | | D | | W | | P | | M | | K | | F | TxL | Weight kg/lb | | Kv / Cv | | |
|-----------|------|-----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|-------|-------|-------|-------|-------|--------|--------------------|------|---------|-------|-------|
| | | | 150 | 300 | 150 | 300 | 150 | 300 | 150 | 300 | 150 | 300 | 150 | 300 | 150 | 300 | 150 | 300 | 150 | 300 | | | 150 | 300 | 150 | 300 | |
| DN200 | mm | 201.00 | 521.00 | 521.00 | 260.50 | 260.50 | 325.00 | 305.00 | 247.00 | 232.00 | 405.50 | 379.50 | 459.00 | 459.00 | 50.00 | 50.00 | 54.00 | 61.00 | 14.00 | 14.00 | (F16) | 165.00 | 22x25 (4 holes) | 305 | 335 | 9273 | 8737 |
| 8" | inch | 7.91 | 20.51 | 20.51 | 10.26 | 10.26 | 12.80 | 12.01 | 9.72 | 9.13 | 15.96 | 14.94 | 18.07 | 18.07 | 1.97 | 1.97 | 2.13 | 2.40 | 0.55 | 0.55 | | 6.50 | | 672 | 739 | 10720 | 10100 |
| DN250 | mm | 252.00 | 559.00 | 559.00 | 279.50 | 279.50 | 353.00 | 359.00 | 297.00 | 299.00 | 430.00 | 454.00 | 550.00 | 550.00 | 50.00 | 60.00 | 54.00 | 65.50 | 14.00 | 18.00 | (F25) | 254.00 | 18x25 (8 holes) | 517 | 542 | 15224 | 14792 |
| 10" | inch | 9.92 | 22.01 | 22.01 | 11.00 | 11.00 | 13.90 | 14.13 | 11.69 | 11.77 | 16.93 | 17.87 | 21.65 | 21.65 | 1.97 | 2.36 | 2.13 | 2.58 | 0.55 | 0.71 | | 10.00 | | 1140 | 1195 | 17600 | 17100 |
| DN300 | mm | 303.00 | 635.00 | 635.00 | 317.50 | 317.50 | 388.00 | 368.00 | 324.00 | 305.00 | 468.50 | 464.00 | 610.00 | 610.00 | 60.00 | 60.00 | 63.50 | 65.50 | 18.00 | 18.00 | (F25) | 254.00 | 18x25 (8 holes) | 792 | 833 | 23096 | 22404 |
| 12" | inch | 11.93 | 25.00 | 25.00 | 12.50 | 12.50 | 15.28 | 14.49 | 12.76 | 12.01 | 18.44 | 18.27 | 24.02 | 24.02 | 2.36 | 2.36 | 2.50 | 2.58 | 0.71 | 0.71 | | 10.00 | | 1746 | 1836 | 26700 | 25900 |
| DN350 | mm | 334.00 | 762.00 | 762.00 | 381.00 | 381.00 | 399.00 | 425.00 | 422.00 | 425.00 | 496.00 | 522.00 | 645.00 | 645.00 | 72.00 | 72.00 | 78.00 | 76.50 | 20.00 | 20.00 | (F30) | 254.00 | 22x30 (8 holes) | 897 | 985 | 27940 | 26729 |
| 14" | inch | 13.15 | 30.00 | 30.00 | 15.00 | 15.00 | 15.71 | 16.73 | 16.61 | 16.73 | 19.53 | 20.55 | 25.39 | 25.39 | 2.83 | 2.83 | 3.07 | 3.01 | 0.79 | 0.79 | | 10.00 | | 1978 | 2172 | 32300 | 30900 |
| DN400 | mm | 385.00 | 838.00 | 838.00 | 419.00 | 419.00 | 460.50 | 435.00 | 415.50 | 363.00 | 557.50 | 555.00 | 710.00 | 710.00 | 72.00 | 72.00 | 78.00 | 76.50 | 20.00 | 20.00 | (F30) | 254.00 | 22x30 (8 holes) | 1121 | 1242 | 38536 | 36763 |
| 16" | inch | 15.16 | 32.99 | 32.99 | 16.50 | 16.50 | 18.13 | 17.13 | 16.36 | 14.29 | 21.95 | 21.85 | 27.95 | 27.95 | 2.83 | 2.83 | 3.07 | 3.01 | 0.79 | 0.79 | | 10.00 | | 2471 | 2738 | 44550 | 42500 |

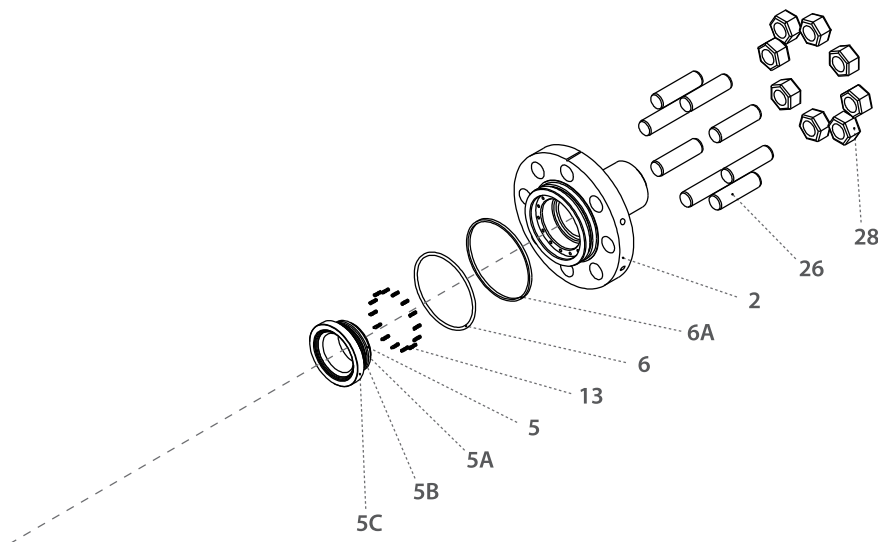
Trunnion Mounted Ball 3 Piece

Components & materials





Trunnion Mounted Ball 3 Piece

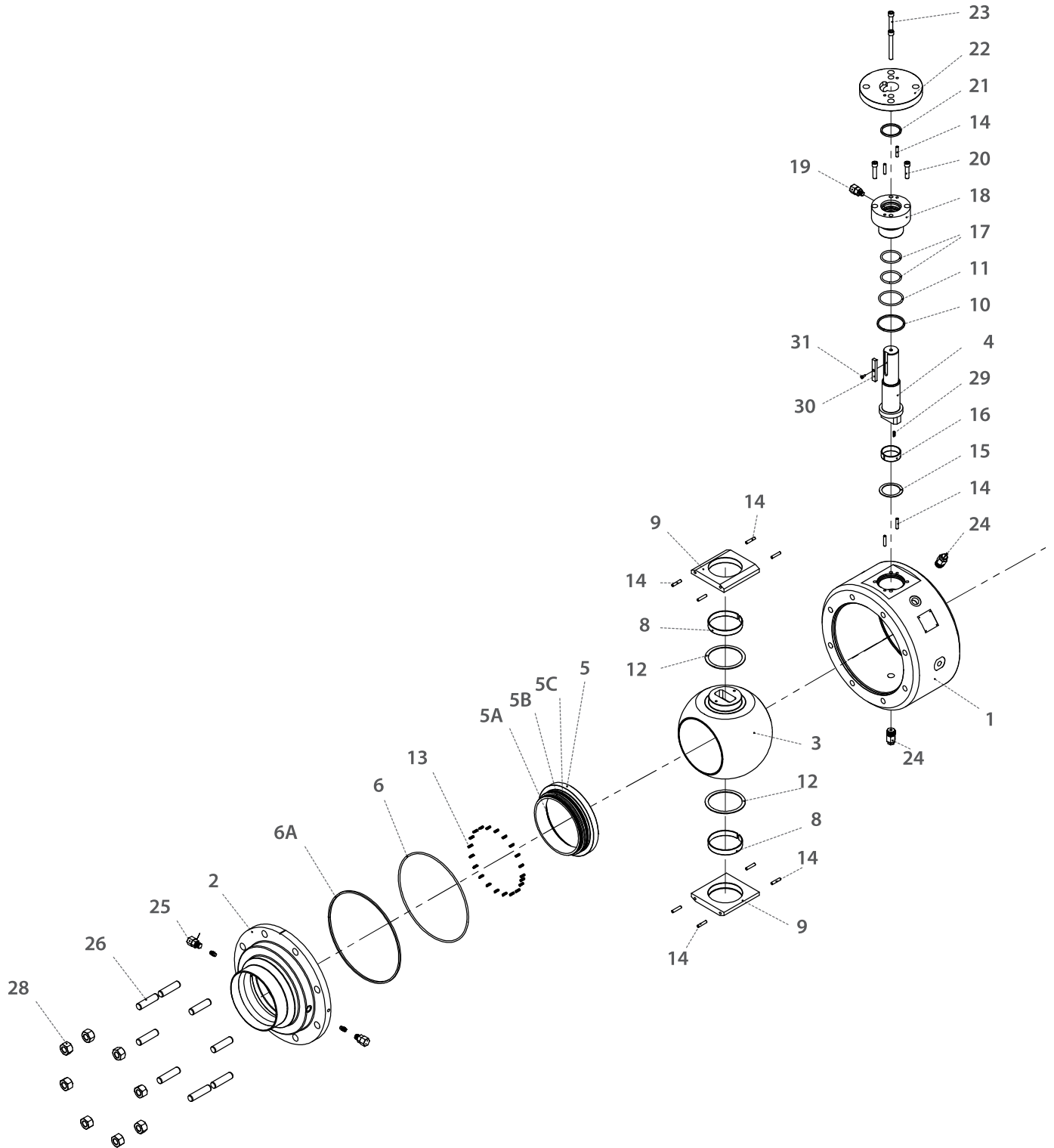


| Item | Description | Material specification | Qty. |
|------|----------------------------|------------------------|-------|
| 1 | Body | Acc. Ordering Code | 1 |
| 2 | End | Acc. Ordering Code | 2 |
| 3 | Ball | Acc. Ordering Code | 1 |
| 4 | Stem | Acc. Ordering Code | 1 |
| 5 | Seat | Acc. Ordering Code | 2 |
| 5A | Seat Insert | Acc. Ordering Code | 2 |
| 5B | Seat Seal | HNBR, VITON | 2-4 |
| 5C | Seat Fire Safe Seal | Graphite | 2 |
| 6 | Body Inner Seal | HNBR, VITON | 2 |
| 6A | Body Outer Seal | Graphite | 2 |
| 8 | Ball Bearing | S.Steel 316+PTFE | 2 |
| 9 | Trunnion Plate | S.Steel / C.Steel | 2 |
| 10 | Gland Plate Fire Safe Seal | Graphite | 1 |
| 11 | Gland Plate Seal | HNBR, VITON | 1 |
| 12 | Ball Thrust Washer | S.Steel 316+PTFE | 2 |
| 13 | Seat Spring | INCONEL X750 | 10-24 |
| 14 | Gland Pin (not shown) | S.Steel / C.Steel | 12 |
| 15 | Stem Thrust Washer | S.Steel 316+PTFE | 1 |
| 16 | Stem Bearing | S.Steel 316+PTFE | 1 |
| 16A | ISO Plate Bearing | S.Steel 316+PTFE | 1 |

| Item | Description | Material specification | Qty. |
|------|-----------------------------------|------------------------|------|
| 17 | Stem Seal | HNBR, VITON | 2 |
| 18 | Gland Plate | S.Steel / C.Steel | 1 |
| 19 | Stem Grease Fitting | S.Steel | 1 |
| 20 | Lower Gland Bolts | A193-B8M / A320 L7 | 2-6 |
| 21 | Stem Fire Safe Seal | Graphite | 1 |
| 22 | Iso Plate | S.Steel / C.Steel | 1 |
| 23 | Upper Gland Bolts | A193-B8M / A320 L7 | 2 |
| 24 | Plug Valve | S.Steel | 2 |
| 25 | Seat Grease Fitting + Check Valve | S.Steel | 4 |
| 26 | Body Studs | A193-B8M / A320 L7 | 8-40 |
| 27 | External Trunnion Bolts | A320 L7, A193 B8M | 4-12 |
| 28 | Body Nut | A194-8M / A194 L7 | 8-40 |
| 29 | Anti-Static Spring | INCONEL X750 | 1 |
| 40 | Pipe Handle | S.Steel | 1 |
| 40B | Wrench Head | S.Steel | 1 |
| 41 | Wrench Head Bolts | S.Steel | 1 |
| 42 | Stop Bolt | S.Steel | 2 |
| 43 | Sleeve | PCV | 1 |

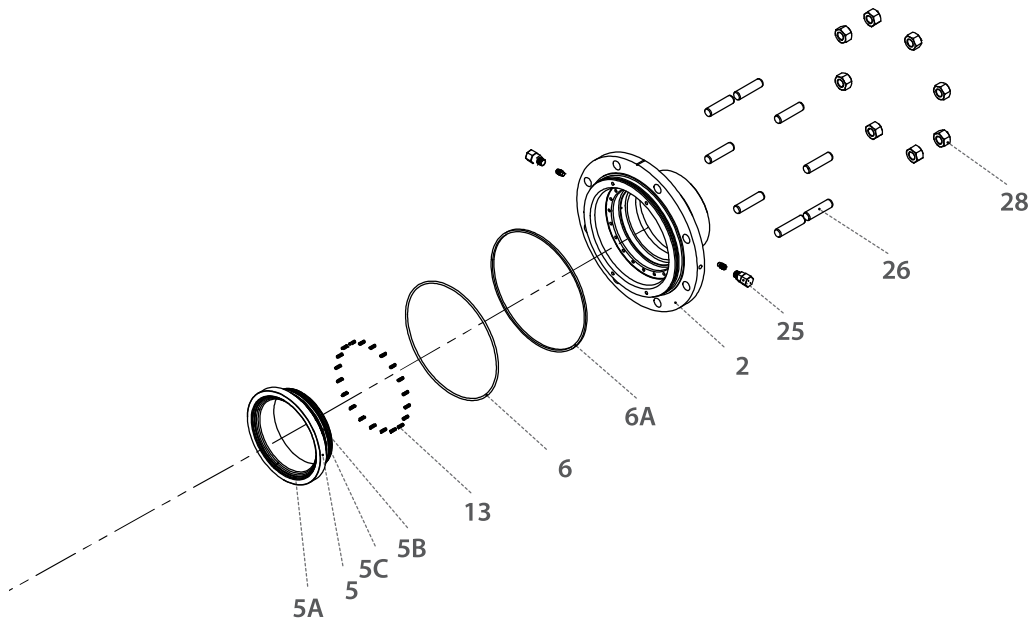
Trunnion Mounted Ball 3 Piece

Components & materials





Trunnion Mounted Ball 3 Piece



| Item | Description | Material specification | Qty. |
|------|----------------------------|------------------------|-------|
| 1 | Body | Acc. Ordering Code | 1 |
| 2 | End | Acc. Ordering Code | 2 |
| 3 | Ball | Acc. Ordering Code 1 | 1 |
| 4 | Stem | Acc. Ordering Code | 1 |
| 5 | Seat | Acc. Ordering Code | 2 |
| 5A | Seat Insert | Acc. Ordering Code | 2 |
| 5B | Seat Seal | HNBR, VITON | 2-4 |
| 5C | Seat Fire Safe Seal | Graphite | 2 |
| 6 | Body Inner Seal | HNBR, VITON | 2 |
| 6A | Body Outer Seal | Graphite | 2 |
| 8 | Ball Bearing | S.Steel 316L+PTFE | 2 |
| 9 | Trunnion Plate | S.Steel / C.Steel | 2 |
| 10 | Gland Plate Fire Safe Seal | Graphite | 1 |
| 11 | Gland Plate Seal | HNBR, VITON | 1 |
| 12 | Ball Thrust Washer | S.Steel 316L+PTFE | 2 |
| 13 | Seat Spring | Inconel X750 | 10-24 |
| 14 | Gland Pin (not shown) | S.Steel / C.Steel | 12 |

| Item | Description | Material specification | Qty. |
|------|-----------------------------------|------------------------|------|
| 15 | Stem Thrust Washer | S.Steel 316L+PTFE | 1 |
| 16 | Stem Bearing | S.Steel 316L+PTFE | 1 |
| 17 | Stem Seal | HNBR, VITON | 2 |
| 18 | Gland Plate | S.Steel / C.Steel | 1 |
| 19 | Stem Grease Fitting | S.Steel | 1 |
| 20 | Lower Gland Bolts | A193-B8M / A320 L7 | 2-6 |
| 21 | Stem Fire Safe Seal | Graphite | 1 |
| 22 | Iso Plate | S.Steel / C.Steel | 1 |
| 23 | Upper Gland Bolts | A193-B8M / A320 L7 | 2-6 |
| 24 | Plug Valve | S.Steel | 2 |
| 25 | Seat Grease Fitting + Check Valve | S.Steel | 4 |
| 26 | Body Studs | A193-B8M / A320 L7 | 8-40 |
| 28 | Body Nuts | A194-8M / A194 L7 | 8-40 |
| 29 | Anti-Static Spring | Inconel X750 | 1 |
| 30 | Stem Key | S.Steel / C.Steel | 1 |
| 31 | Stem Key Bolt | S.Steel / C.Steel | 1 |



Trunnion Mounted Ball 3 Piece - Ordering Code System

"Mandatory option" options are marked with **green background** | "Standard offer" options are marked with **light green background**

| | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------|---|----------|---|---|---|--------|---|--------|----|----------------------|----|---------------|---------------|--------------|----------------------|---------------------|---------------------|----------------|----|----|----|------------------|----|-----|----|--|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | ... | 30 | |
| 6 | 0 | | | F | B | 9 | 1 | | - | 4 | 6 | 4 | D | V | V | G | / | 1 | 5 | 0 | | - | | | | |
| Size | | Features | | | | Series | | Design | | Body & ends material | | Stem material | Ball material | Seat feature | Seat insert material | Inner Seal material | Outer Seal material | End connection | | | | Special features | | | | |

| Size (1-2) | | |
|------------|------|-----|
| Code | inch | mm |
| 20 * | 2" | 50 |
| 30 | 3" | 80 |
| 40 | 4" | 100 |
| 60 | 6" | 150 |
| 80 | 8" | 200 |
| A0 | 10" | 250 |
| A2 | 12" | 300 |
| A4 ** | 14" | 350 |
| A6 ** | 16" | 400 |

* Full port only

** not available at class 900

| Features (3-6) | |
|----------------|------------------|
| F | Fire safe |
| B | Full port |
| H | Hydrogen Service |

| Series - 3 Piece (7-8) | |
|------------------------|-------------------------|
| 91 | ASME B16.5 #150 (PN20) |
| 92 | ASME B16.5 #300 (PN50) |
| 93 | ASME B16.5 #600 (PN100) |
| 94 | ASME B16.5 #900 (PN150) |

| Design (9) | |
|------------|-----------------------------|
| Blank | (Stands for future designs) |

| Body & ends material (11) | |
|---------------------------|-------------------|
| 4 | C. Steel A105 |
| 6 | S. Steel 316 |
| F | C. Steel A350 LF2 |
| D | Duplex |
| K | Super Duplex |

| Stem material (12) | |
|--------------------|-------------------------|
| 6 * | S. Steel A479 316/316L |
| Q ** | S. Steel A182 F6A |
| M *** | High Strength S. Steel |
| Z | Inconel 718 B637 N07718 |
| W | Hastelloy C-22 |
| D | Duplex |
| K | Super Duplex |

* for 91,92 not for 93, 94

** for 93, not for 94

*** for 94

| Ball material (13) | |
|--------------------|-----------------------|
| 6* | S. Steel A182 F316 |
| 4** | C. Steel A105+ENP |
| F | C. Steel A350 LF2+ENP |

* S. Steel up to 4"

** S. Steel 6" and up

| Seat feature (14) | |
|-------------------|---|
| D | Double Piston Effect (DPE) (API 6D DIB-1) |
| S | Single Piston Effect (SPE) (API 6D DBB) |
| C | DPE & SPE combination (API 6D DIB-2) |

| Seat insert material (15) | |
|---------------------------|---------|
| V | Devlon |
| P | CF PTFE |
| K | CF PEEK |

| Inner Seal material (16) | |
|--------------------------|-------|
| V | Viton |
| H | HNBR |

| Outer Seal material (17) | |
|--------------------------|----------|
| G | Graphite |

| End Connection (19-22) | |
|------------------------|----------------------------|
| Welded ends | |
| XBW | Extended butt weld sch 40 |
| XBW80 | Extended butt weld sch 80 |
| XBW160 | Extended butt weld sch 160 |

| Flanged | |
|---------|---------------------|
| 150 | ASME B16.5 #150 |
| 300 | ASME B16.5 #300 |
| 600 | ASME B16.5 #600 |
| 900 | ASME B16.5 #900 |
| PN16 | DIN EN 1092-1 PN16 |
| PN40 | DIN EN 1092-1 PN40 |
| PN63 | DIN EN 1092-1 PN63 |
| PN100 | DIN EN 1092-1 PN100 |
| PN160 | DIN EN 1092-1 PN160 |

| Flanged RTJ | |
|-------------|----------------------------|
| 600RTJ | ASME B16.5 #600 RTJ |
| 900RTJ | ASME B16.5 #900 RTJ |
| Welded | |
| XBW | Extended butt weld sch 40 |
| XBW80 | Extended butt weld sch 80 |
| XBW160 | Extended butt weld sch 160 |

| Special Features (24-30) | |
|--------------------------|---|
| L * | Seat greasing point |
| D | Drain & Vent |
| Blank | Greasing point, Drain & vent is capped |
| PT ** | Basic paint system |
| PT1 | Offshore, Temp Ambient up to 93°C (200°F) |
| PT2 | Offshore, up to 537°C (1000°F) |

* for 6" Full Bore and up

** colors RAL 1018 or 7036 (other colors upon request)

In some applications the available options above are limited to specific sizes please consult with Habonim for details