

# 9700 Series

## Trunnion Ball Valves

**API 6D Certified**  
**NACE MR 0175**  
**API 6FA**  
**Double Block & Bleed**

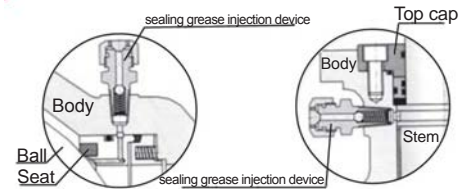
### DESCRIPTION

Split body, full port, trunnion mounted, blow-out proof stem, double seal design, double block and bleed, anti-static design, "fire-safe" designed to API 607, 4th Edition, and locking device. Designed in accordance with API-6D, ASME B16.34, and BS5351 specifications.

### DESIGN FEATURES OF TRUNNION BALL VALVE

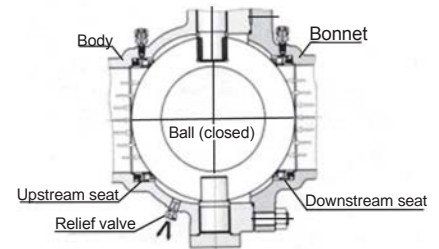
- **Grease Injection Device**

According to customer's requirements, the trunnion ball valves are provided with devices for grease injection, which are both the stem and seat for the trunnion ball valves of smaller than 6", and in the body cavity for the valves of larger than 6".



- **Double-block and bleed functions**

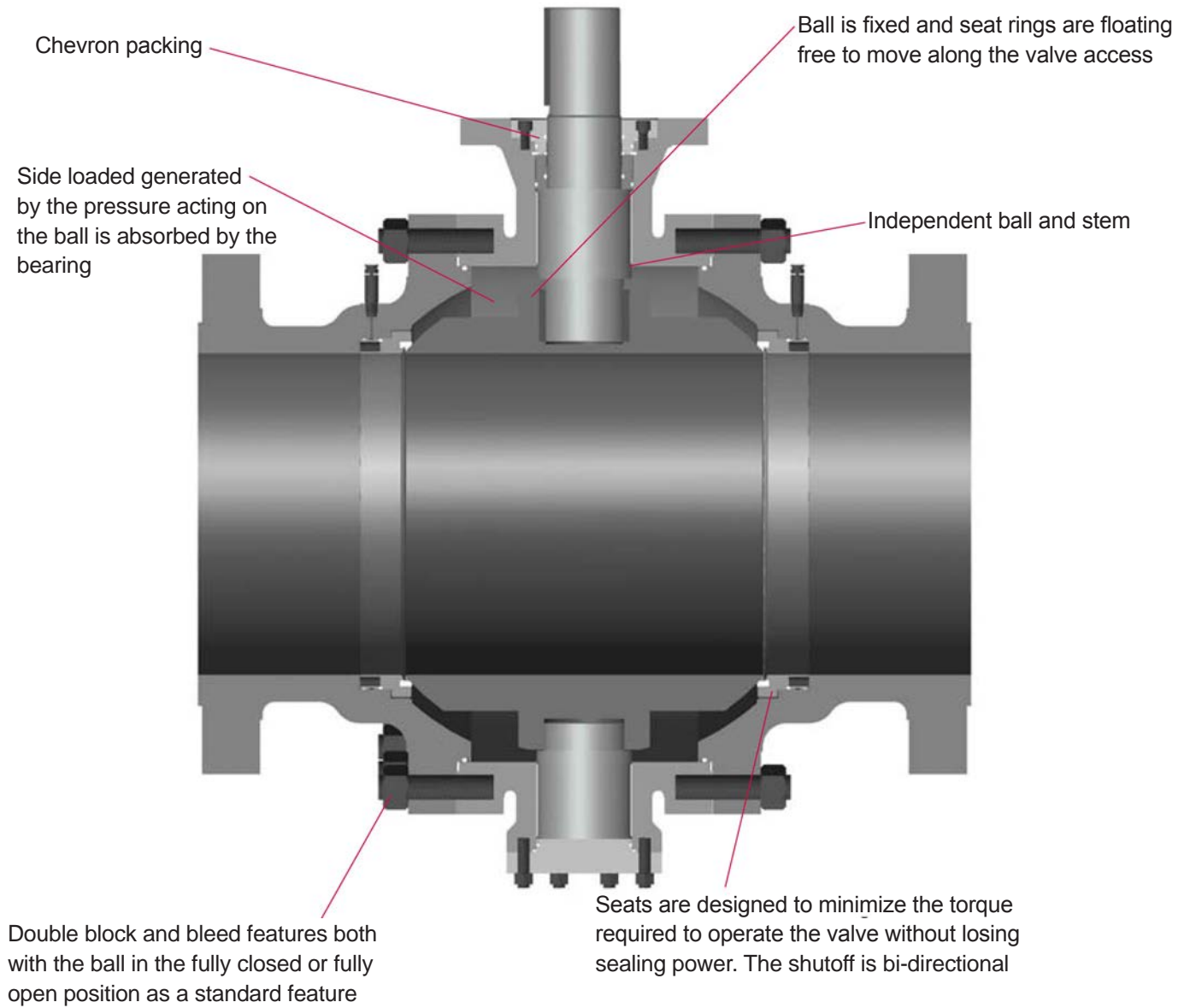
In general, J-Flow's trunnion ball valve features the front ball sealing design structure. Each seat of the ball valve can separately cut off the medium at both inlet and outlet of the valve to realize double-block functions. When the ball valve is closed, body cavity and two of the body ends can be blocked with each other even if both the inlet and outlet are under pressure, when the medium left in the body cavity might be bled through the relief valve.



Right Valve, Right Application, Right Now!

J Flow Controls, LLC  
 14 De Camp • Cincinnati, OH 45216  
 Phone: 513-731-2900 • Fax 513-731-6939  
[www.jflowcontrols.com](http://www.jflowcontrols.com)

## FEATURES & BENEFITS

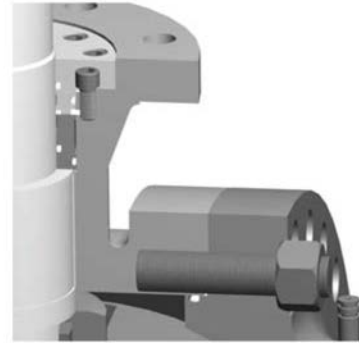


Note: All trunnion valves come standard with grease fittings

## Features

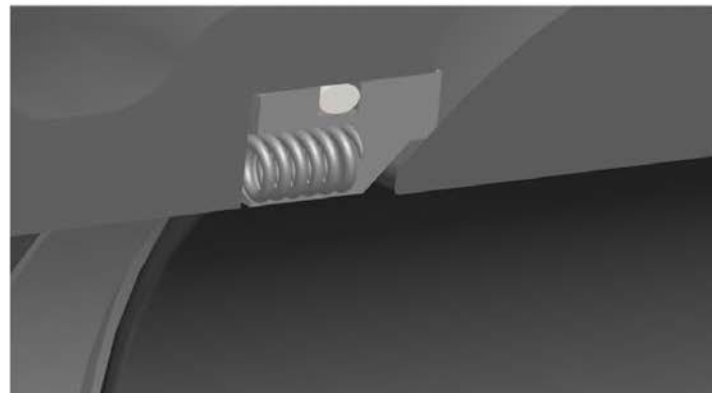
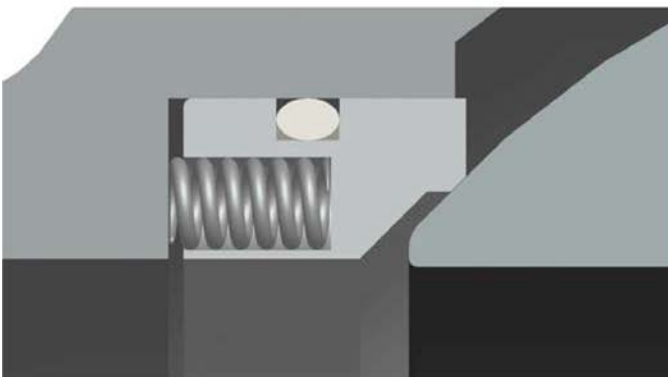
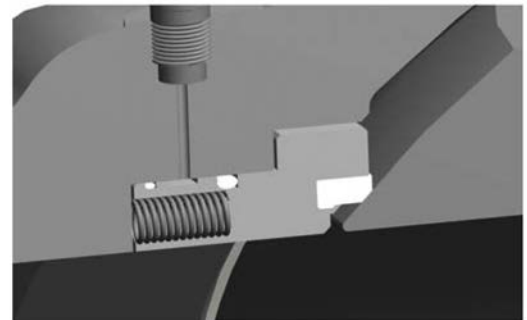
- **Stem Packing Design**

- The stem is guided by graphite bearing preventing wobbling or radial stem thrust on the packing rings
- Two piece gland bushing
- Stem thrust washer prevents galling, reduces torque, and provides a secondary stem seal
- O-rings provide a secondary stem seal as well

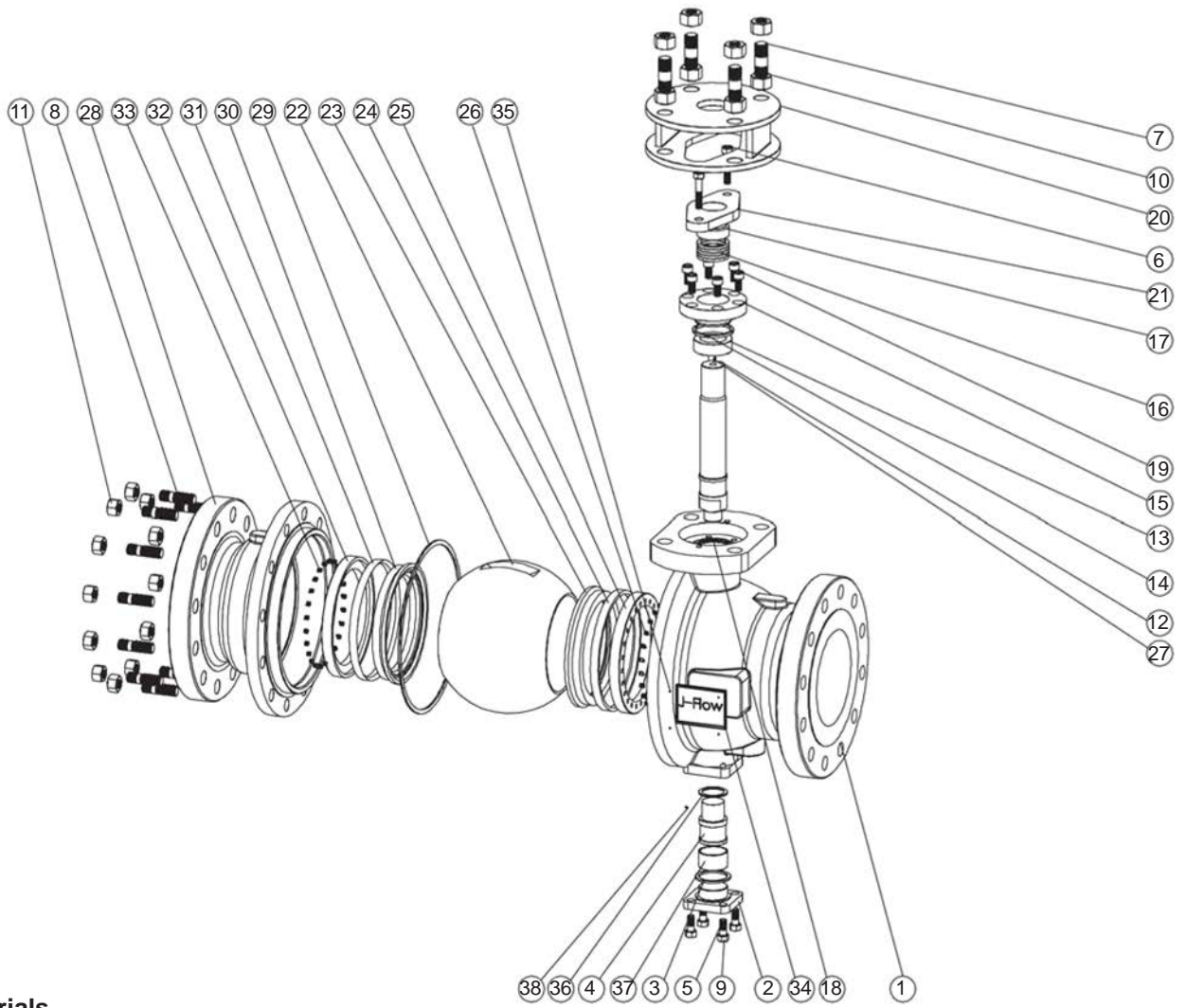


- **Soft Seated Valves**

- The valve is designed for standard service
- Resilient material is inserted into the metal seat holder to provide a soft seated action in addition to the metal-to-metal seating between the ball and seat ring



# MATERIALS OF CONSTRUCTION

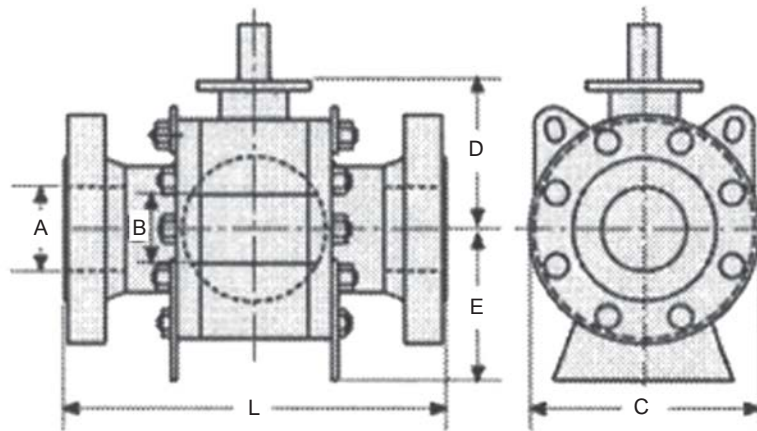


## Bill of Materials

**Bill of Materials**

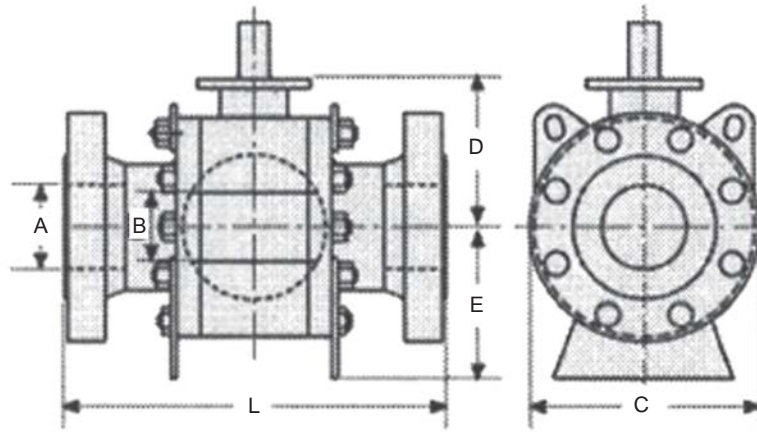
| Part No. | Description        | Qty | A105  | WCB/13Cr    | WCB/304     | WCB/316     | CF8         | CF8M         |
|----------|--------------------|-----|---|-------------|-------------|-------------|-------------|--------------|
| 1        | Body               | 1   | A105  | ASTMA216WCB | ASTMA216WCB | ASTMA216WCB | ASTMA351CF8 | ASTMA351CF8M |
| 2        | Body Cover         | 1   | A105  | ASTMA216WCB | ASTMA216WCB | ASTMA216WCB | ASTMA351CF8 | ASTMA351CF8M |
| 3        | Gasket             | 1   | Metal Graphite  |             |             |             |             |              |
| 4        | Trunnion           | 1   | 316, 410, Chrome Alloy  |             |             |             |             |              |
| 5        | Bolt               | 4   | B8M, B7M, 304   |             |             |             |             |              |
| 6        | Bolt               | 2   |   |             |             |             |             |              |
| 7        | Bolt               | 4   |   |             |             |             |             |              |
| 8        | Bolt               | 12  |   |             |             |             |             |              |
| 9        | Nut                | 6   |   |             |             |             |             |              |
| 10       | Nut                | 8   |   |             |             |             |             |              |
| 11       | Nut                | 12  |   |             |             |             |             |              |
| 12       | Stem               | 1   | Chrome w/ Electroless Nickel, 316 or Hard Chrome Coating on Ball, Alloy 20, Monel, Hastelloy, Chrome Alloy, A105 w/Electroless Nickel, 310 w/Electroless Nickel |             |             |             |             |              |
| 13       | Stem Housing       | 1   | Chrome w/ Electroless Nickel, 316 or Hard Chrome Coating on Ball, Alloy 20, Monel, Hastelloy, Chrome Alloy, A105 w/Electroless Nickel, 310 w/Electroless Nickel |             |             |             |             |              |
| 14       | Anti-blowout Ring  | 4   | 304 or 316  |             |             |             |             |              |
| 15       | Gland              | 1   | 304 or 316  |             |             |             |             |              |
| 16       | Packing            | 5   | Graphite or PTFE  |             |             |             |             |              |
| 17       | Packing Press Ring | 1   | 316   |             |             |             |             |              |
| 18       | Gasket             | 1   | Spiral Wound Grafoil  |             |             |             |             |              |
| 19       | Stud               | 6   | B8M, B7M, 304   |             |             |             |             |              |
| 20       | Bracket            | 1   | A105  | ASTMA216WCB | ASTMA216WCB | ASTMA216WCB | ASTMA351CF8 | ASTMA351CF8M |
| 21       | Packing Gland      | 1   | 304 or 316  |             |             |             |             |              |
| 22       | Ball               | 1   | Chrome w/ Electroless Nickel, 316 or Hard Chrome Coating on Ball, Alloy 20, Monel, Hastelloy, Chrome Alloy, A105 w/Electroless Nickel, 310 w/Electroless Nickel |             |             |             |             |              |
| 23       | Seat               | 1   | PEEK, TFM, PTFE, Reinforced, TC Carbon TFM  |             |             |             |             |              |
| 24       | Sealing Ring       | 1   | 316   |             |             |             |             |              |
| 25       | Sealing Press Ring | 1   | 316   |             |             |             |             |              |
| 26       | Spring             | 24  | A105, 316, 316L   |             |             |             |             |              |
| 27       | Key                | 1   | Chrome w/ Electroless Nickel, 316 or Hard Chrome Coating on Ball, Alloy 20, Monel, Hastelloy, Chrome Alloy, A105 w/Electroless Nickel, 310 w/Electroless Nickel |             |             |             |             |              |
| 28       | Cap                | 1   | A105  | ASTMA216WCB | ASTMA216WCB | ASTMA216WCB | ASTMA351CF8 | ASTMA351CF8M |
| 29       | Gasket             | 1   | Spiral Wound Graphite   |             |             |             |             |              |
| 30       | Seat               | 1   | PEEK, TFM, PTFE, Reinforced, TC Carbon TFM  |             |             |             |             |              |
| 31       | Sealing Ring       | 1   | 316   |             |             |             |             |              |
| 32       | Sealing Press Ring | 1   | 316   |             |             |             |             |              |
| 33       | Spring             | 24  | A105, 316, 316L,  |             |             |             |             |              |
| 34       | Name Plate         | 1   | 304   |             |             |             |             |              |
| 35       | Rivet              | 4   | 304   |             |             |             |             |              |
| 36       | Thrust Bearing     | 1   | Grafoil   |             |             |             |             |              |
| 37       | Slide Bearing      | 1   | Grafoil   |             |             |             |             |              |
| 38       | Anti-static Spring | 2   | 304 or 316  |             |             |             |             |              |

## DIMENSIONS - ASME Class 150 Full Bore (inches)



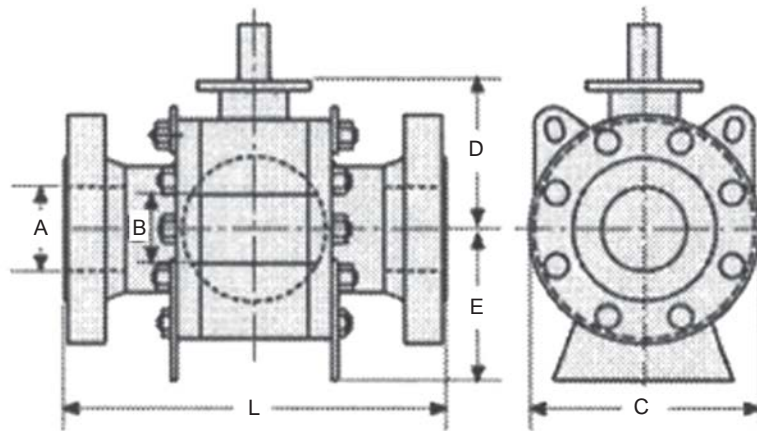
| Size | A     | B     | L-RF  | L-WE  | C     | D     | E     | Weight |
|------|-------|-------|-------|-------|-------|-------|-------|--------|
| 2"   | 1.93  | 1.93  | 7     | 8.50  | 6.02  | 4.17  | 4.02  | 59     |
| 3"   | 2.91  | 2.91  | 8     | 11.13 | 7.52  | 6.18  | 4.96  | 119    |
| 4"   | 3.94  | 3.94  | 9     | 12    | 9.13  | 7.80  | 6.42  | 196    |
| 6"   | 5.91  | 5.91  | 15.5  | 18    | 12.09 | 9.72  | 7.36  | 352    |
| 8"   | 7.91  | 7.91  | 18    | 20.5  | 15.43 | 11.02 | 8.82  | 557    |
| 10"  | 9.92  | 9.92  | 21    | 22    | 18.31 | 12.60 | 10.94 | 857    |
| 12"  | 11.93 | 11.93 | 24    | 25    | 21.38 | 13.27 | 12.05 | 1230   |
| 14"  | 13.15 | 13.15 | 27    | 30    | 23.94 | 14.72 | 13.15 | 1672   |
| 16"  | 15.16 | 15.16 | 30    | 33    | 26.57 | 16.06 | 14.09 | 2244   |
| 18"  | 17.17 | 17.17 | 34    | 36    | 25.00 | 17.28 | 15.35 | 2673   |
| 20"  | 19.17 | 19.17 | 36    | 39    | 33.43 | 19.37 | 17.09 | 3945   |
| 22"  | 21.18 | 21.18 | 40    | 43    | 36.81 | 20.79 | 18.78 | 5190   |
| 24"  | 23.19 | 23.19 | 42    | 45    | 39.57 | 23.15 | 20.59 | 6818   |
| 26"  | 24.92 | 24.92 | 45    | 49    | 41.97 | 24.69 | 22.20 | 8107   |
| 28"  | 26.93 | 26.93 | 49    | 53    | 44.72 | 25.35 | 25.91 | 9878   |
| 30"  | 28.94 | 28.94 | 51    | 55    | 38.78 | 27.20 | 27.72 | 11473  |
| 32"  | 30.67 | 30.67 | 54    | 60    | 51.18 | 29.21 | 29.37 | 14960  |
| 34"  | 32.68 | 32.68 | 58    | 64    | 53.94 | 29.88 | 30.43 | 17160  |
| 36"  | 34.41 | 34.41 | 60    | 68    | 56.3  | 31.97 | 31.77 | 19360  |
| 40"  | 38.43 | 38.43 | 69    | 77    | 62.80 | 35.43 | 35.35 | 27632  |
| 42"  | 40.16 | 40.16 | 70.47 | 82    | 64.96 | 37.13 | 36.89 | 31416  |
| 48"  | 45.91 | 45.91 | 78.54 | 94    | 75.59 | 43.19 | 41.97 | 48180  |
| 56"  | 55.56 | 55.56 | 98    | 98    | 89.98 | 51.26 | 49.33 | 70520  |

## DIMENSIONS - ASME Class 150 Reduced Bore (inches)



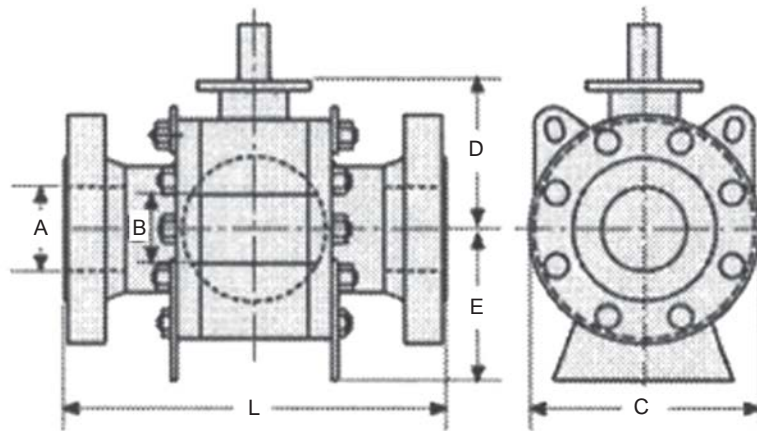
| Size           | A     | B     | L-RF  | L-WE | C     | D     | E     | Weight |
|----------------|-------|-------|-------|------|-------|-------|-------|--------|
| <b>2x1-1/2</b> | 1.93  | 1.50  | 7     | 8.5  | 5.98  | 3.70  | 3.86  | 55     |
| <b>3 x 2</b>   | 2.91  | 1.93  | 11.13 | 11.1 | 7.52  | 4.17  | 3.94  | 66     |
| <b>4 x 3</b>   | 3.94  | 2.91  | 12    | 12   | 9.02  | 6.06  | 5.00  | 132    |
| <b>6 x 4</b>   | 5.91  | 3.94  | 15.5  | 18   | 10.98 | 7.80  | 6.42  | 220    |
| <b>8 x 6</b>   | 7.91  | 5.91  | 18    | 20.5 | 13.50 | 9.92  | 7.36  | 407    |
| <b>10 x 8</b>  | 9.92  | 7.91  | 21    | 22   | 15.98 | 11.02 | 8.74  | 640    |
| <b>12 x 10</b> | 11.93 | 9.92  | 24    | 25   | 19.02 | 12.72 | 11.02 | 1016   |
| <b>14 x 10</b> | 13.15 | 9.92  | 27    | 30   | 21.06 | 12.76 | 10.83 | 1140   |
| <b>14 x 12</b> | 13.15 | 11.93 | 27    | 30   | 21.06 | 13.46 | 11.81 | 1342   |
| <b>16 x 12</b> | 15.16 | 11.93 | 30    | 33   | 23.43 | 13.62 | 11.93 | 1536   |
| <b>16 x 14</b> | 15.16 | 13.15 | 30    | 33   | 23.43 | 14.57 | 13.19 | 1804   |
| <b>18 x 16</b> | 17.17 | 15.16 | 34    | 36   | 25.00 | 16.34 | 13.70 | 2332   |
| <b>20 x 16</b> | 19.17 | 15.16 | 36    | 39   | 27.56 | 16.34 | 13.78 | 2420   |
| <b>20 x 18</b> | 19.17 | 17.17 | 36    | 39   | 27.56 | 17.28 | 15.35 | 2618   |
| <b>24 x 20</b> | 23.19 | 19.17 | 42    | 45   | 32.09 | 19.29 | 17.13 | 4334   |
| <b>30 x 24</b> | 28.94 | 23.19 | 51    | 55   | 38.78 | 23.15 | 20.28 | 7150   |
| <b>36 x 30</b> | 34.41 | 28.94 | 60    | 68   | 46.06 | 27.17 | 27.56 | 13891  |

## DIMENSIONS - ASME Class 300 Full Bore (inches)



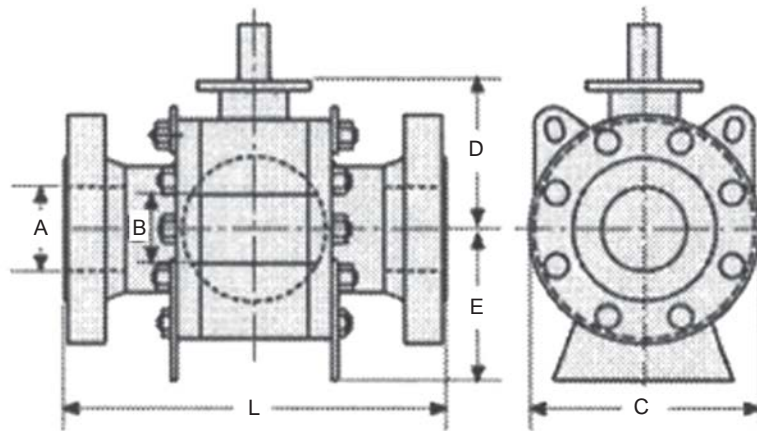
| Size | A     | B     | L-RF | L-WE | C    | D    | E    | Weight |
|------|-------|-------|------|------|------|------|------|--------|
| 2"   | 1.93  | 1.93  | 8.5  | 8.5  | 6.5  | 3.9  | 3.7  | 59     |
| 3"   | 2.91  | 2.91  | 11.1 | 11.1 | 8.3  | 5.9  | 4.7  | 121    |
| 4"   | 3.94  | 3.94  | 12.0 | 12   | 10   | 7.9  | 6.3  | 202    |
| 6"   | 5.91  | 5.91  | 15.9 | 15.9 | 12.5 | 9.6  | 7.9  | 400    |
| 8"   | 7.91  | 7.91  | 19.8 | 19.8 | 15.2 | 10.8 | 9.1  | 612    |
| 10"  | 9.92  | 9.92  | 22.4 | 22.4 | 18.5 | 13.0 | 11.6 | 1100   |
| 12"  | 11.93 | 11.93 | 25.5 | 25.5 | 21.3 | 14.0 | 13.0 | 1613   |
| 14"  | 13.15 | 13.15 | 30.0 | 30   | 24.8 | 15.4 | 13.6 | 2264   |
| 16"  | 15.16 | 15.16 | 33.0 | 33   | 27.3 | 16.9 | 15.4 | 3120   |
| 18"  | 17.17 | 17.17 | 36.0 | 36   | 30.3 | 17.9 | 16.1 | 3502   |
| 20"  | 19.17 | 19.17 | 39.0 | 39   | 33.5 | 19.7 | 18.3 | 4829   |
| 22"  | 21.18 | 21.18 | 43.0 | 43   | 37   | 20.7 | 18.9 | 6134   |
| 24"  | 23.19 | 23.19 | 45.0 | 45   | 40.2 | 23.2 | 21.5 | 7612   |
| 26"  | 24.92 | 24.92 | 49.0 | 49   | 42.5 | 24.8 | 22.8 | 10252  |
| 28"  | 26.93 | 26.93 | 53.0 | 53   | 45.3 | 25.2 | 26.2 | 12694  |
| 30"  | 28.94 | 28.94 | 55.0 | 55   | 48.6 | 27.6 | 28.7 | 14498  |
| 32"  | 30.67 | 30.67 | 60.0 | 60   | 52   | 29.3 | 30.1 | 17450  |
| 34"  | 32.68 | 32.68 | 64.0 | 64   | 54.7 | 29.9 | 31.5 | 19888  |
| 36"  | 34.41 | 34.41 | 68.0 | 68   | 56.9 | 31.7 | 32.5 | 22205  |
| 40"  | 38.43 | 38.43 | 77.0 | 77   | 63.8 | 35.4 | 36.2 | 30305  |
| 42"  | 40.16 | 40.16 | 82.0 | 82   | 66.3 | 38.1 | 37.4 | 35431  |
| 48"  | 45.91 | 45.91 | 85.4 | 85.4 | 57.5 | 43.3 | 43.3 | 52932  |
| 56"  | 53.54 | 53.54 | 108  | 108  | 89.6 | 50.6 | 50.0 | 83941  |

## DIMENSIONS - ASME Class 300 Reduced Bore (inches)



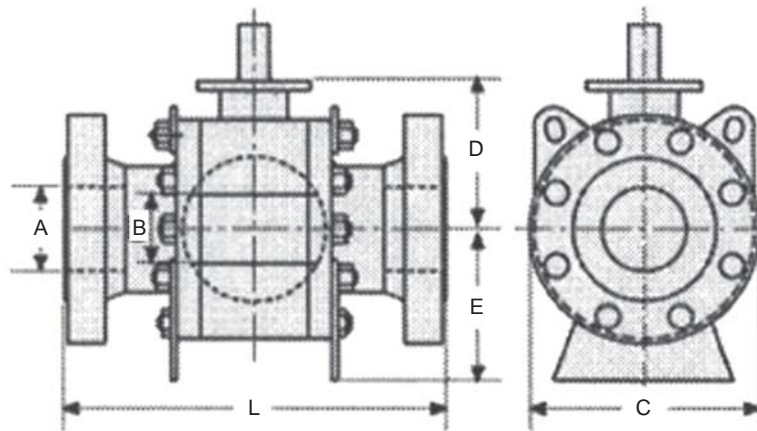
| Size           | A     | B     | L-RF | L-WE | C    | D    | E    | Weight |
|----------------|-------|-------|------|------|------|------|------|--------|
| <b>2x1-1/2</b> | 1.93  | 1.50  | 8.5  | 8.5  | 6.5  | 3.7  | 3.9  | 55     |
| <b>3 x 2</b>   | 2.91  | 1.93  | 11.1 | 11.1 | 8.3  | 3.9  | 3.7  | 70.4   |
| <b>4 x 3</b>   | 3.94  | 2.91  | 12.0 | 12.0 | 10.0 | 5.9  | 4.7  | 136    |
| <b>6 x 4</b>   | 5.91  | 3.94  | 15.9 | 15.9 | 12.5 | 7.9  | 6.3  | 253    |
| <b>8 x 6</b>   | 7.91  | 5.91  | 19.8 | 19.8 | 15.0 | 9.6  | 7.9  | 482    |
| <b>10 x 8</b>  | 9.92  | 7.91  | 22.4 | 22.4 | 17.5 | 10.8 | 9.1  | 642    |
| <b>12 x 10</b> | 11.93 | 9.92  | 25.5 | 25.5 | 20.5 | 13   | 11.6 | 1307   |
| <b>14 x 10</b> | 13.15 | 9.92  | 30   | 30   | 23   | 13   | 11.6 | 1415   |
| <b>14 x 12</b> | 13.15 | 11.93 | 30   | 30   | 23   | 14   | 13   | 1795   |
| <b>16 x 12</b> | 15.16 | 11.93 | 33   | 33   | 25.6 | 14   | 13   | 2123   |
| <b>16 x 14</b> | 15.16 | 13.15 | 33   | 33   | 25.6 | 15.4 | 13.6 | 2475   |
| <b>18 x 16</b> | 17.17 | 15.16 | 36   | 36   | 28   | 16.9 | 15.4 | 3505   |
| <b>20 x 16</b> | 19.17 | 15.16 | 39   | 39   | 30.5 | 16.9 | 15.4 | 3659   |
| <b>20 x 18</b> | 19.17 | 17.17 | 39   | 39   | 30.5 | 17.9 | 16.1 | 3942   |
| <b>24 x 20</b> | 23.19 | 19.17 | 45   | 45   | 36   | 19.7 | 18.3 | 5854   |
| <b>30 x 24</b> | 28.94 | 23.19 | 55   | 55   | 42.9 | 23.2 | 21.5 | 9565   |
| <b>36 x 30</b> | 34.41 | 28.94 | 68   | 68   | 50   | 27.6 | 28.7 | 18003  |

## DIMENSIONS - ASME Class 600 Full Bore (inches)



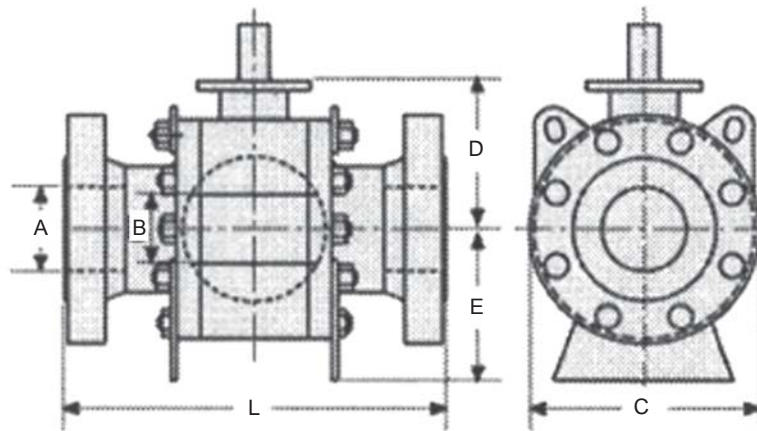
| Size | A     | B    | L-RF | L-RTJ | L-WE | C    | D    | E    | Weight |
|------|-------|------|------|-------|------|------|------|------|--------|
| 2"   | 1.93  | 11.5 | 11.5 | 11.63 | 11.5 | 6.5  | 4.0  | 3.9  | 68     |
| 3"   | 2.91  | 14   | 14   | 14.13 | 14.0 | 8.3  | 6.5  | 5.0  | 136    |
| 4"   | 3.94  | 17   | 17   | 17.13 | 17.0 | 10   | 8.3  | 6.3  | 249    |
| 6"   | 5.91  | 22   | 22   | 22.13 | 22.0 | 14.0 | 9.8  | 7.9  | 557    |
| 8"   | 7.91  | 26   | 26   | 26.13 | 26.0 | 16.5 | 11.3 | 10.0 | 1037   |
| 10"  | 9.92  | 31   | 31   | 31.13 | 31.0 | 20.1 | 13.0 | 12.1 | 1668   |
| 12"  | 11.93 | 33   | 33   | 33.13 | 33.0 | 22.6 | 14.9 | 13.7 | 2347   |
| 14"  | 13.15 | 35   | 35   | 35.13 | 35.0 | 24.7 | 15.5 | 14.2 | 2383   |
| 16"  | 15.16 | 39   | 39   | 39.13 | 39.0 | 27.6 | 16.9 | 16.1 | 3355   |
| 18"  | 17.17 | 43   | 43   | 43.13 | 43.0 | 30.5 | 18.4 | 16.9 | 4609   |
| 20"  | 19.17 | 47   | 47   | 47.3  | 47.0 | 34.1 | 19.7 | 19.4 | 5804   |
| 22"  | 21.18 | 51   | 51   | 51.4  | 51.0 | 37.4 | 37.4 | 19.9 | 8331   |
| 24"  | 23.19 | 55   | 55   | 55.4  | 55.0 | 40.5 | 23.4 | 22.4 | 10419  |
| 26"  | 24.92 | 57   | 57   | 57.5  | 57.0 | 40.0 | 24.8 | 24.3 | 12423  |
| 28"  | 26.93 | 61   | 61   | 61.5  | 61.0 | 46.1 | 26.2 | 27.2 | 14868  |
| 30"  | 28.94 | 66.3 | 66.3 | 65.5  | 66.3 | 50.8 | 29.2 | 31.5 | 18429  |
| 32"  | 30.67 | 70   | 70   | 70.7  | 70.0 | 52.4 | 29.8 | 31.7 | 21424  |
| 34"  | 32.68 | 76   | 76   | 76.5  | 76.2 | 55.1 | 30.8 | 32.2 | 24939  |
| 36"  | 34.41 | 82   | 82   | 80.6  | 82.0 | 60.9 | 34.2 | 37.2 | 29256  |
| 40"  | 38.43 | 82   | 82   | 85.6  | 85.4 | 64.8 | 36.1 | 38.6 | 40337  |
| 42"  | 40.16 | 85.6 | 85.6 | 85.6  | 85.6 | 70.7 | 39.2 | 43.7 | 46983  |
| 48"  | 45.91 | 95.9 | 95.9 | 98.6  | 95.9 | 81.5 | 44.6 | 49.8 | 68629  |
| 56"  | 53.54 | 107  | 107  | 107   | 107  | 94.1 | 50.8 | 57.1 | 104463 |

## DIMENSIONS - ASME Class 600 Reduced Bore (inches)



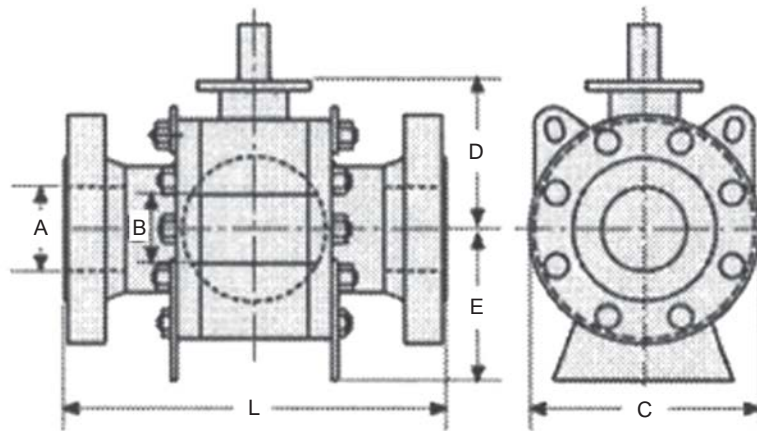
| Size    | A     | B     | L-RF | L-RTJ | L-WE | C    | D    | E    | Weight |
|---------|-------|-------|------|-------|------|------|------|------|--------|
| 2x1-1/2 | 1.93  | 1.50  | 11.5 | 11.63 | 11.5 | 6.5  | 3.7  | 4.0  | 68     |
| 3 x 2   | 2.91  | 1.93  | 14   | 14.13 | 14   | 8.3  | 4.0  | 3.9  | 86     |
| 4 x 3   | 3.94  | 2.91  | 17   | 17.13 | 17   | 14.7 | 6.5  | 5.0  | 172    |
| 6 x 4   | 5.91  | 3.94  | 22   | 22.13 | 22   | 14   | 8.3  | 6.3  | 330    |
| 8 x 6   | 7.91  | 5.91  | 26   | 26.13 | 26   | 16.5 | 9.8  | 7.9  | 642    |
| 10 x 8  | 9.92  | 7.91  | 31   | 31.13 | 31   | 20.1 | 11.3 | 10.0 | 1210   |
| 12 x 10 | 11.93 | 9.92  | 33   | 33.13 | 33   | 22   | 13   | 12.1 | 1784   |
| 14 x 10 | 13.15 | 9.92  | 35   | 35.13 | 35   | 23.8 | 13   | 12.1 | 2006   |
| 14 x 12 | 13.15 | 11.93 | 35   | 35.13 | 35   | 23.8 | 14.9 | 13.7 | 2519   |
| 16 x 12 | 15.16 | 11.93 | 39   | 39.13 | 39   | 27   | 14.9 | 13.7 | 2966   |
| 16 x 14 | 15.16 | 13.15 | 40   | 39.13 | 35   | 24.7 | 15.5 | 14.2 | 2383   |
| 18 x 16 | 17.17 | 15.16 | 43   | 43.13 | 43   | 29.3 | 16.9 | 16.1 | 3696   |
| 20 x 16 | 19.17 | 15.16 | 47   | 47.25 | 47   | 32.1 | 16.9 | 16.1 | 4587   |
| 20 x 18 | 19.17 | 17.17 | 47   | 47.25 | 47   | 32.1 | 18.4 | 16.9 | 5225   |
| 24 x 20 | 23.19 | 19.17 | 55   | 55.38 | 55   | 37   | 19.7 | 19.4 | 7146   |
| 30 x 24 | 28.94 | 23.19 | 66.3 | 65.50 | 66.3 | 44.5 | 23.4 | 22.4 | 12690  |
| 36 x 30 | 34.41 | 28.94 | 82   | 82.63 | 82   | 51.8 | 27.9 | 29.6 | 22827  |

## DIMENSIONS - ASME Class 900 Full Bore (inches)



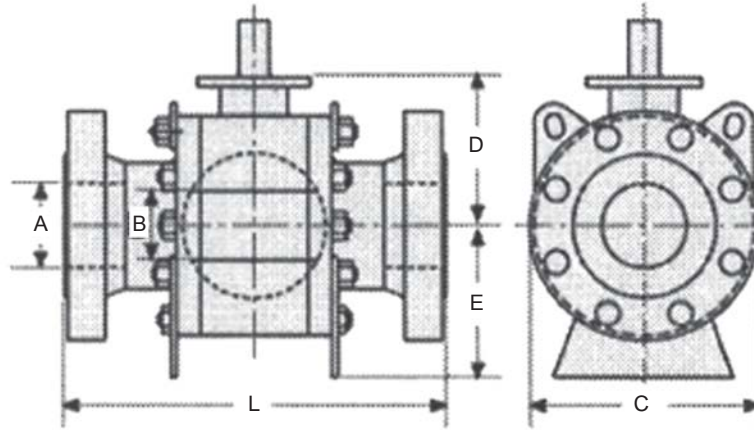
| Size | A     | B     | L-RF | L-RTJ | L-WE | C     | D     | E     | Weight |
|------|-------|-------|------|-------|------|-------|-------|-------|--------|
| 2"   | 1.93  | 1.93  | 14.5 | 14.61 | 14.5 | 8.50  | 4.09  | 4.06  | 106    |
| 3"   | 2.91  | 2.91  | 15   | 15.12 | 15   | 9.49  | 6.42  | 5.20  | 121    |
| 4"   | 3.94  | 3.94  | 18   | 18.11 | 18   | 11.5  | 8.31  | 6.65  | 319    |
| 6"   | 5.91  | 5.91  | 24   | 24.13 | 24   | 15    | 10.20 | 8.39  | 792    |
| 8"   | 7.91  | 7.91  | 29   | 29.13 | 29   | 18.5  | 11.69 | 10.39 | 1276   |
| 10"  | 9.92  | 9.92  | 33.0 | 33.11 | 33   | 21.5  | 13.46 | 13.11 | 2222   |
| 12"  | 11.93 | 11.93 | 38.0 | 38.11 | 38   | 24    | 15.12 | 14.92 | 3322   |
| 14"  | 12.68 | 12.68 | 40.5 | 40.87 | 40.5 | 25.2  | 15.67 | 14.49 | 3190   |
| 16"  | 14.69 | 14.69 | 44.5 | 44.88 | 44.5 | 27.95 | 17.17 | 17.20 | 4730   |
| 18"  | 16.65 | 16.65 | 48.0 | 48.50 | 48   | 31.5  | 19.06 | 19.57 | 6204   |
| 20"  | 18.54 | 18.54 | 52   | 52.84 | 52   | 35.0  | 20.94 | 19.80 | 9240   |
| 24"  | 22.44 | 22.44 | 61   | 61.73 | 61   | 41.7  | 24.29 | 24.92 | 14960  |
| 28"  | 26.18 | 26.18 | 69   | 69.88 | 69   | 48.58 | 26.54 | 27.80 | 21780  |
| 30"  | 28.03 | 28.03 | 74   | 74.88 | 74   | 51.18 | 28.46 | 30.59 | 26796  |
| 32"  | 29.92 | 29.92 | 80   | 80.87 | 80   | 53.43 | 30.87 | 31.85 | 26004  |
| 34"  | 31.81 | 31.81 | 85   | 86.14 | 85   | 57.8  | 31.77 | 33.54 | 37840  |
| 36"  | 33.66 | 33.66 | 90   | 91.14 | 90   | 60.3  | 33.39 | 35.35 | 41580  |

## DIMENSIONS - ASME Class 900 Reduced Bore (inches)



| Size           | A     | B     | L-RF  | L-RTJ | L-WE  | C     | D     | E     | Weight |
|----------------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| <b>2x1-1/2</b> | 1.93  | 1.50  | 14.49 | 14.61 | 14.49 | 8.50  | 4.06  | 4.02  | 90     |
| <b>3 x 2</b>   | 2.91  | 1.93  | 15.00 | 15.12 | 15.00 | 9.49  | 4.06  | 4.02  | 114    |
| <b>4 x 3</b>   | 3.94  | 2.91  | 17.99 | 18.11 | 17.99 | 11.50 | 6.54  | 5.00  | 209    |
| <b>6 x 4</b>   | 5.91  | 3.94  | 24.02 | 24.13 | 24.02 | 15.00 | 8.19  | 6.42  | 451    |
| <b>8 x 6</b>   | 7.91  | 5.91  | 29.02 | 29.13 | 29.02 | 18.50 | 10.35 | 8.39  | 968    |
| <b>10 x 8</b>  | 9.92  | 7.91  | 32.99 | 33.11 | 32.99 | 21.46 | 11.57 | 10.59 | 1518   |
| <b>12 x 10</b> | 11.93 | 9.92  | 37.99 | 38.11 | 37.99 | 24.02 | 13.70 | 12.91 | 2541   |
| <b>14 x 10</b> | 12.68 | 9.92  | 40.51 | 40.87 | 40.51 | 25.20 | 13.70 | 12.91 | 2728   |
| <b>14 x 12</b> | 12.68 | 11.93 | 40.51 | 40.87 | 40.51 | 25.20 | 15.75 | 15.04 | 3597   |
| <b>16 x 12</b> | 14.69 | 11.93 | 44.49 | 44.88 | 44.49 | 27.76 | 15.75 | 15.04 | 3806   |
| <b>16 x 14</b> | 14.69 | 12.68 | 44.49 | 44.88 | 44.49 | 27.56 | 15.83 | 17.32 | 3740   |
| <b>18 x 16</b> | 16.65 | 14.69 | 47.99 | 48.50 | 47.99 | 31.10 | 17.28 | 17.40 | 5368   |
| <b>20 x 16</b> | 18.54 | 14.69 | 52.01 | 52.48 | 52.01 | 31.10 | 17.28 | 17.40 | 6325   |
| <b>20 x 18</b> | 18.54 | 16.65 | 52.01 | 52.48 | 52.01 | 33.66 | 18.90 | 19.09 | 7150   |
| <b>24 x 20</b> | 22.44 | 18.54 | 60.98 | 61.73 | 60.98 | 40.94 | 21.02 | 19.69 | 11880  |
| <b>30 x 24</b> | 28.03 | 22.44 | 74.02 | 74.88 | 74.02 | 48.43 | 23.94 | 24.88 | 19140  |
| <b>36 x 30</b> | 33.66 | 28.03 | 90.00 | 91.14 | 90.00 | 57.48 | 28.70 | 30.87 | 33770  |

## DIMENSIONS - ASME Class 2500 Full Bore (inches)



| Size | A     | B     | L-RF  | L-RTJ | L-WE  | C     | D     | E     | Weight |
|------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| 2"   | 1.65  | 1.65  | 17.76 | 17.87 | 17.76 | 9.25  | 4.72  | 5.00  | 194    |
| 3"   | 2.44  | 2.44  | 22.76 | 22.99 | 22.76 | 12.01 | 6.97  | 7.80  | 411    |
| 4"   | 3.43  | 3.43  | 26.50 | 26.89 | 26.50 | 14.02 | 8.94  | 9.17  | 836    |
| 6"   | 5.16  | 5.16  | 35.98 | 36.50 | 35.98 | 19.02 | 10.39 | 9.92  | 1694   |
| 8"   | 7.05  | 7.05  | 40.24 | 40.87 | 40.24 | 24.41 | 15.08 | 13.35 | 2985   |
| 10"  | 8.78  | 8.78  | 50.0  | 50.87 | 50.0  | 29.33 | 17.83 | 16.61 | 4620   |
| 12"  | 10.43 | 10.43 | 56.0  | 56.89 | 56.0  | 34.25 | 20.47 | 18.98 | 7062   |

## ORDERING SCHEMATIC

| Series    | Body               | Ball & Stem                                | Spring | Port      | Chevron Packing | Seat                | End Connection         |
|-----------|--------------------|--|--------|-----------|-----------------|---------------------|------------------------|
| 97 Series | 0 A350LF2/<br>LCB  | 2 Chrome w/<br>electroless<br>nickel       | 2 A105 | F Full    | G Graphoil      | P PEEK              | B Butt Weld            |
|           | 2 WCB/<br>A105     | 3 316 or Hard<br>Chrome Coating<br>on Ball | 3 316  | R Reduced | T TFE           | T PTFE<br>(Teflon)  | S Socket<br>Weld       |
|           | 3 316              | 4 Alloy 20                                 | L 316L |           |                 | TM Super-<br>Teflon | F Flanged              |
|           | 4 Alloy 20         | 5 Monel                                    |        |           |                 | R Reinforced        | FF Flat Face           |
|           | 5 Monel            | 7 Hastelloy                                |        |           |                 | TC Carbon<br>TFM    | F1 ANSI 150            |
|           | 7 Hastelloy        | 10 Chrome Alloy                            |        |           |                 | N Nylon             | F3 ANSI 300            |
|           | 9 Duplex           | A 304                                      |        |           |                 | V Viton             | F6 ANSI 600            |
|           | 10 Chrome<br>Alloy | B AISI 410                                 |        |           |                 |                     | F9 ANSI 900            |
|           |                    | E A105 w/electro-<br>less nickel           |        |           |                 |                     | F15 ANSI 1500          |
|           |                    |  |        |           |                 |                     | F25 ANSI 2500          |
|           |                    |  |        |           |                 |                     | RTJ Ring Type<br>Joint |



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J Flow Controls, LLC  
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