

CVS Controls Series 8000/8100 Floating Flanged Ball Valves

The CVS Controls Floating Flanged Ball Valves are available in a variety of configurations and materials to meet specific applications.

The CVS Floating Flanged Ball Valves are available in 2 Inch through 4 inch, ASME Class 150/300 and 600, both full and regular port. A 2 inch reduced port ASME Class 900/1500 floating flanged ball valve design is also available.

Standard features include:

- Blowout Proof Stem
- Ball Position Indicator
- Tight Sealing
- Bi-Directional Design and Sealing
- Equalized Cavity Pressure
- Fire Safe Design
- Manufactured to API 6D

Specifications, NACE MRO175 and
ASME B16.34-latest edition standards



Series 8000
Reduced Port



Series 8100
Full Port



2 Inch Class 1500 Reduced Port

ABSA CRN# 0C01943.2

SPECIFICATIONS

CVS Floating Flanged Ball Valve Product Range Full and Reduced Port, Flanged End Connection

| Body Material | Class | Port | Valve Size (inches) | | |
|----------------------------------|----------|---------|---------------------|---|---|
| | | | 2 | 3 | 4 |
| Carbon Steel and Stainless Steel | 150 | Reduced | X | X | X |
| | | Full | X | X | X |
| | 300 | Reduced | X | X | X |
| | | Full | X | X | X |
| | 600 | Reduced | X | X | X |
| | | Full | X | X | X |
| | 900/1500 | Reduced | X | - | - |

How To Order:

Model number identification CVS Floating Flanged Ball Valves

Example: 3" Class 300, 8030, R-30-1-R-2-S-P-V-4

The above model number represents a 3" Reduced Port, ASME Class 300, Floating Ball Valve with RF Flanges, LCC Body Material, Stainless Steel Trim, PTFE Seats, Viton Seals, Flanged End with no operator

| 3" | R | 30 | 1 | R | 2 | S | N | F | 4 | |
|--|--------------|-----------------|---------------|----------------|---------------|----------------------|----------------------|---------------|--------------------|-----------------|
| Valve Size | Port Config. | Pressure Class | Design | End Connection | Body Material | Trim Material | Seat Material | Seal Material | End Connection | Drive Type |
| 2X1.5 2X2 3X2 3X3 4X3 4x4 | R Reduced | 10 150 | 1 Floating | R RF | Blank A105 | C Carbon Steel | P PTFE | F PTFE | 1 Female Thread | Blank Manual |
| | | 30 300 | | | 1 LF2 | | N Nylon | N Nylon | | |
| | | | | | | | V Viton | | 2 Male Thread | |
| | F Full | 60 600 | 7 Trunnion | J RTJ | 2 LCC | S Stainless Steel | | | 4 Flange End | 3 Gear |
| | | 90* 900/1500 | | | 3 SS | | S Stainless Steel | V Viton | 6 BW | |
| | | | | | | | | | | |

*2 Inch Class 1500 only available in reduced port

FLOW COEFFICIENTS

CVS Floating Flanged Ball Valves

The flow coefficients (Cv) factor for CVS Floating Flanged Ball Valves are to be used for reference to correctly size valve for desired applications. Cv is equal to volume of water @ 60°F in gallons per minute that will flow through an opening while producing a 1 psi pressure drop across the valve.

| Flow Coefficients - Cv | | | |
|------------------------|------------|------|------|
| Series* | Valve Size | | |
| | 2 | 3 | 4 |
| Reduced Port | 180 | 350 | 880 |
| Full Port | 480 | 1200 | 2250 |

*Includes all ASME Class Valves in the series.

CVS Repair Kits

When ordering replacement parts for the Floating Flanged Ball Valve, please reference the model and serial number indicated on the nameplate. For more information contact a CVS Controls Sales Representative.



Pressure/Temperature Ratings – Material Selection

CVS Series 8000/8100 Floating Flanged Ball Valves come standard with PTFE seat materials, and Viton seal materials. Additional materials may be available upon request, contact a CVS Controls Ltd. representative for more information.

| Material | Temperature Capabilities | Application |
|--------------------------|--------------------------|---------------------------------------|
| Seat Selection | | |
| PTFE – Virgin TFM | -328°F to 500°F | Wide temperature range |
| PTFE – Carbon Filled TFM | -328°F to 500°F | High Pressure |
| Nylon | -20°F-200°F | High Pressure, Low Temp |
| Viton | -20°F-400°F | High Temp, not suitable for steam |
| Stainless Steel | | Severe Service |
| Seal Selection | | |
| PTFE | -328°F to 500°F | Wide temperature range |
| Nylon | -22°F to 200°F | High Pressure, Low Temp |
| Viton | -15°F to 400°F | Wide range of temperature and process |

*Pressure and temperature limits determined by class and body material selection

Approximate Shipping Weights (lbs)



| Port | | Valve Size (inches) | | |
|----------------|---------|---------------------|----|-----|
| | | 2 | 3 | 4 |
| Class 150 | Reduced | 19 | 35 | 76 |
| | Full | 22 | 48 | 75 |
| Class 300 | Reduced | 26 | 54 | 106 |
| | Full | 29 | 65 | 105 |
| Class 600 | Reduced | 33 | 70 | 140 |
| | Full | 46 | 91 | 177 |
| Class 900/1500 | Reduced | 92 | | |

Maximum Stem Break Torques

**Maximum Stem Break Torque at
Maximum Operating Pressure
(in-lbs)**

*TFM and TFMC Seating

| Class | Port | Valve Size (inches) | | |
|----------|---------|---------------------|------|------|
| | | 2 | 3 | 4 |
| | | 285 psi M.O.P. | | |
| 150 | Reduced | - | - | - |
| | Full | 360 | 900 | 1300 |
| | | 740 psi M.O.P. | | |
| 300 | Reduced | 530 | 785 | 1350 |
| | Full | 695 | 1000 | 2500 |
| | | 1480 psi M.O.P. | | |
| 600 | Reduced | 845 | 1250 | 3575 |
| | Full | 1250 | 2390 | 4090 |
| | | 3750 psi M.O.P. | | |
| 900/1500 | Reduced | 1755 | | |

Note: No additional safety factor has been added

CVS Controls recommends the following:

- For Nylon Seating, add an additional 25% min.
- For powered actuation add 25% min.
- For Dirty Gas Service add additional 50% min.
- For Dry Gas Service add an additional 25% min.

*For more information please contact a CVS Controls Sales Representative

FEATURES

Blowout Proof Stems

Anti-Blowout protection is standard on all CVS Floating Flanged Ball Valves.

Ball Position Indicator

Ball position is easily determined and identified in either full open or full close position.

Lockout Protection

All CVS Floating Flanged Ball Valves come standard with lockout protection.

Actuation

Pneumatic, hydraulic, and electric actuators are easily adaptable to CVS 8000/8100 Series Ball Valves. CVS Controls is able to supply and assemble the correct ball valve/actuator solution best suited for any application.

Bi-Directional Sealing

CVS Floating Flanged Ball Valves may be installed in either direction, without compromising the integrity of the seal.

Equal Cavity Pressure

Both line pressure and the ball valve cavity pressure is maintained equally while the valve is in the open position.

Bubble Tight Seal

Downstream process flow is cut off by upstream pressure pushing against the ball in the closed position.

Firesafe ISO Design

All CVS Floating Flanged Ball Valves have been proven to meet Firesafe API607 or API 6FA Design Standards.

Specifications/Certifications

All CVS Controls Ball Valves are manufactured in accordance of applicable standards.

API6A and API6D certifications are maintained and current.

All CVS Floating Flanged Ball Valves conform to NACE MRO 175 design standards.

ABSA, The Pressure Equipment Safety Authority - CRN # 0C01943.2

CVS Controls Ltd. is a certified and registered ISO 9001-2008 manufacturing facility. Our in house quality assurance program is dedicated to continually improve the efficiency and the effectiveness of our quality management system. Our product is confirmed by a rigid quality control program which utilizes the most up to date methods of testing and inspection.

Application and Design

CVS Controls in house engineering and application design can assist in finding the right solution best suited for your application.

Hydraulic or pneumatic actuation and Emergency Shut Down Devices (ESD) can be supplied and assembled to customer specifications. CVS Controls also has a wide variety of pressure pilots, limit switches, positioners as well as solenoid valves to complete the design package.

Contact a CVS Controls sales representative for more information.

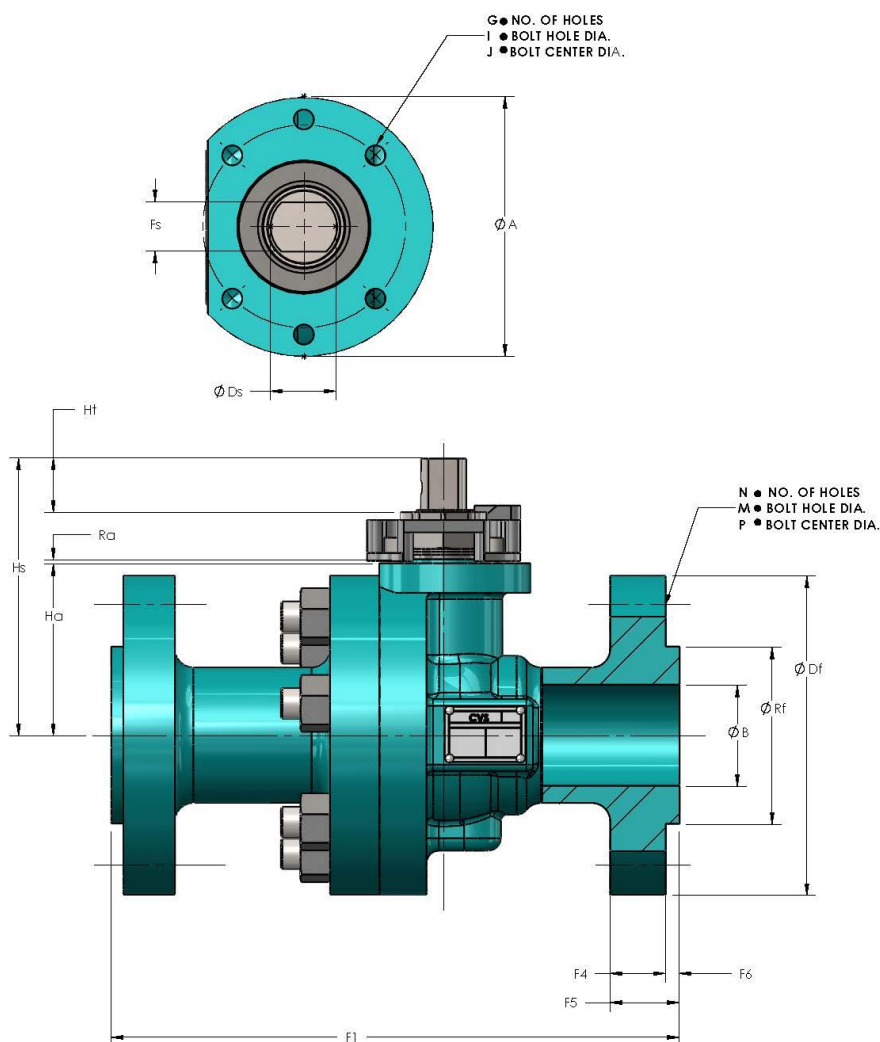


Specifications

Actuator Mounting - Dimensional Information (inches)

Series 8000 Reduced Port - 2 Inch and 3 Inch, Class 150/300, and Class 600

Series 8100 Full Port – 2 Inch Class 150/300, and Class 600

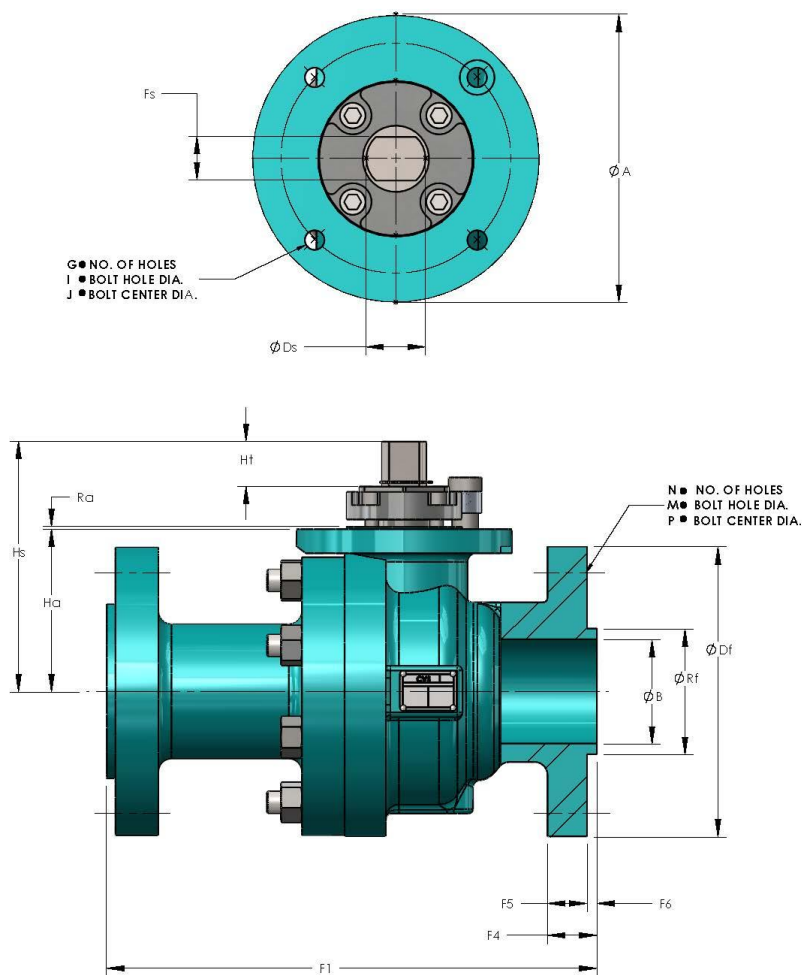


| Valve Size (in.) | A | Ha | Hs | Ht | Ra | Ds +000/-003 | Fs +000/-003 | GxI | J | ISO 5211 |
|--|------|------|------|------|------|--------------|--------------|---------------|------|----------|
| Series 8100 – Full Port – Class 150, 300 | | | | | | | | | | |
| 2 | 3.54 | 3.48 | 5.67 | 1.07 | 0.08 | 0.906 | 0.669 | 4x5/16-18 UNC | 2.75 | F07 |
| Series 8100 – Full Port – Class 600 | | | | | | | | | | |
| 2 | 3.54 | 3.48 | 5.67 | 1.07 | 0.08 | 0.906 | 0.669 | 4x5/16-18 UNC | 2.75 | F07 |
| Series 8000 – Reduced Port – Class 150, 300 | | | | | | | | | | |
| 2 | 3.54 | 2.59 | 4.38 | 0.71 | 0.08 | 0.767 | 0.551 | 4x5/16-18 UNC | 2.75 | F07 |
| 3 | 3.54 | 3.48 | 5.67 | 1.06 | 0.08 | 0.906 | 0.669 | 4x5/16-18 UNC | 2.75 | F07 |
| Series 8000 – Reduced Port – Class 600 | | | | | | | | | | |
| 2 | 3.54 | 2.59 | 4.38 | 0.71 | 0.08 | 0.767 | 0.551 | 4x5/16-18 UNC | 2.75 | F07 |
| 3 | 3.54 | 3.48 | 5.67 | 1.06 | 0.08 | 0.906 | 0.669 | 4x5/16-18 UNC | 2.75 | F07 |

Specifications

Actuator Mounting – Dimensional Information (inches)

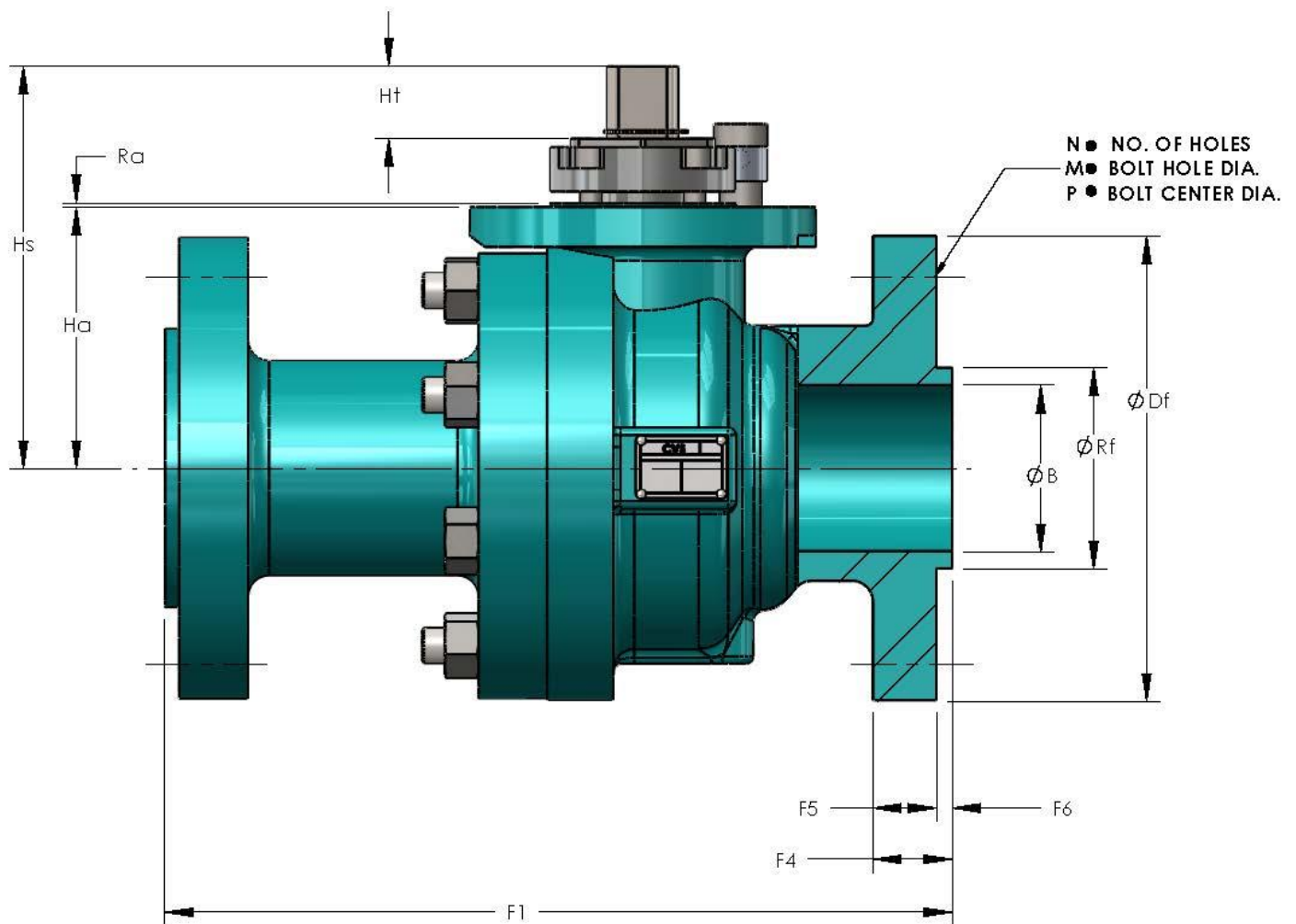
Series 8000/8100 – 3 Inch and 4 Inch, Class 150, Class 300, and Class 600



| Valve Size (in.) | A | Ha | Hs | Ht | Ra | Ds +000/-003 | Fs +000/-003 | GxI | J | ISO 5211 |
|--|------|------|------|------|------|-----------------|-----------------|--------------|------|----------|
| Series 8100 – Full Port – Class 150, 300 | | | | | | | | | | |
| 3 | 4.92 | 4.30 | 6.51 | 1.03 | 0.08 | 0.906 | 0.669 | 4x3/8-16 UNC | 4.00 | F10 |
| 4 | 5.90 | 5.31 | 7.83 | 1.10 | 0.08 | 1.279 | 0.905 | 4x1/2-13 UNC | 4.95 | F12 |
| Series 8100 – Full Port – Class 600 | | | | | | | | | | |
| 3 | 5.90 | 4.65 | 7.19 | 1.11 | 0.08 | 1.279 | 0.906 | 4x1/2-13 UNC | 4.95 | F12 |
| 4 | 5.90 | 5.83 | 9.26 | 1.73 | 0.08 | 1.633 | 1.062 | 4x1/2-13 UNC | 4.95 | F12 |
| Series 8000 – Reduced Port – Class 150, 300 | | | | | | | | | | |
| 4 | 4.92 | 4.30 | 6.51 | 1.03 | 0.08 | 0.906 | 0.669 | 4x3/8-16 UNC | 4.00 | F10 |
| Series 8000 – Reduced Port – Class 600 | | | | | | | | | | |
| 4 | 5.90 | 4.65 | 7.19 | 1.11 | 0.08 | 1.279 | 0.906 | 4x1/2-13 UNC | 4.95 | F12 |

Dimensions (in)

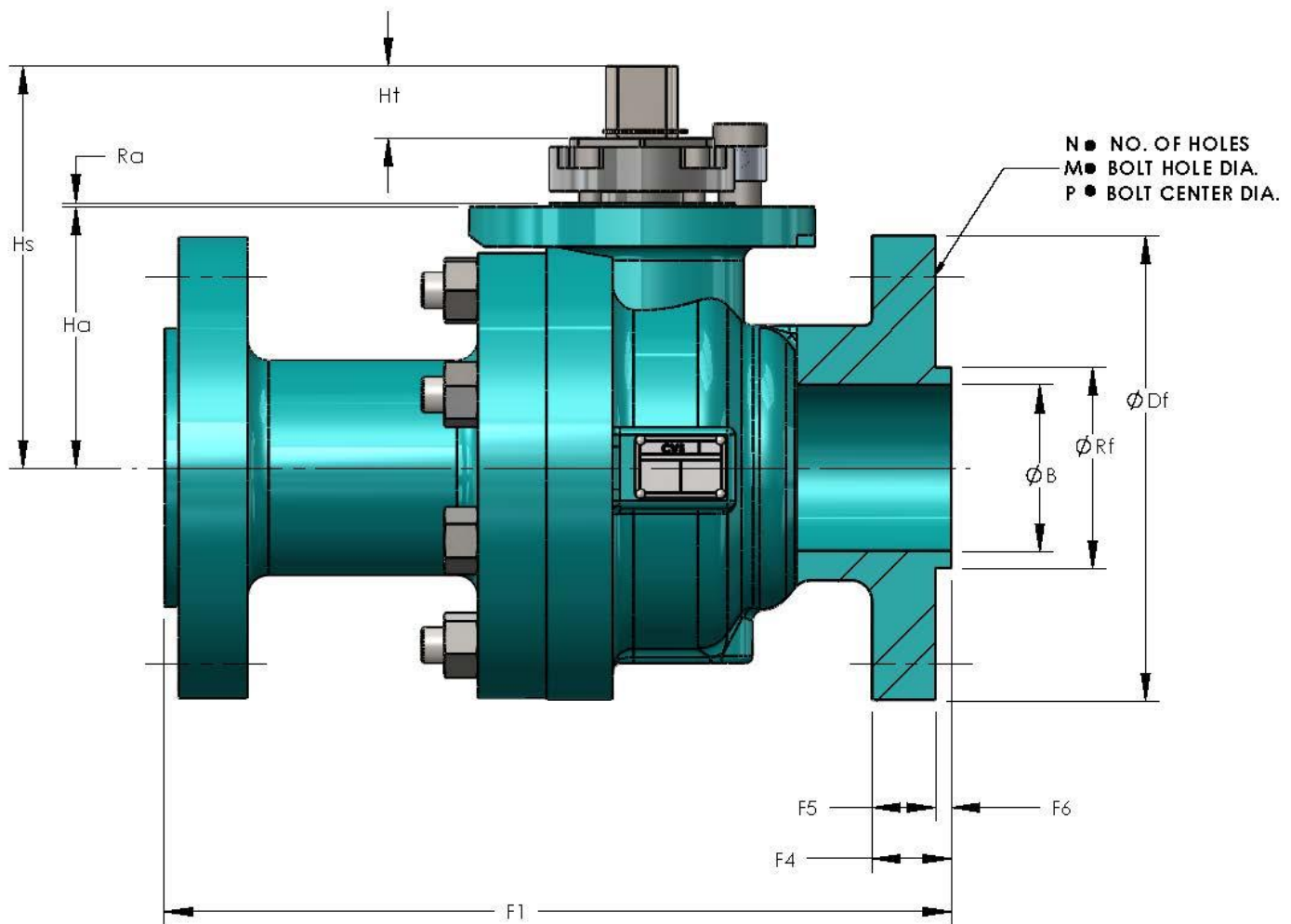
CVS Series 8100 Full Port – 2 Inch through 4 Inch, Class 150, Class 300, and Class 600



| Valve Size (in.) | F1 | Df | Rf | F5 | F6 | NxØM | P |
|------------------|-------|-------|------|------|------|---------|------|
| Class 150 | | | | | | | |
| 2X2 | 7.00 | 6.00 | 3.62 | 0.62 | 0.06 | 4xØ.75 | 4.75 |
| 3X3 | 8.00 | 7.50 | 5.00 | 0.75 | 0.06 | 4xØ.75 | 6.00 |
| 4X4 | 9.00 | 9.00 | 6.19 | 0.94 | 0.06 | 8xØ.75 | 7.50 |
| Class 300 | | | | | | | |
| 2X2 | 8.50 | 6.50 | 3.62 | 0.88 | 0.06 | 4xØ.75 | 5.00 |
| 3X3 | 11.12 | 8.25 | 5.00 | 1.12 | 0.06 | 8xØ.88 | 6.62 |
| 4X4 | 12.00 | 10.00 | 6.19 | 1.25 | 0.06 | 8xØ.88 | 7.88 |
| Class 600 | | | | | | | |
| 2X2 | 11.50 | 6.50 | 3.62 | 1.28 | 0.25 | 4xØ.75 | 5.00 |
| 3X3 | 14.00 | 8.25 | 5.00 | 1.50 | 0.25 | 8xØ.88 | 6.62 |
| 4X4 | 17.00 | 10.75 | 6.19 | 1.75 | 0.25 | 8xØ1.00 | 8.50 |

Dimensions (in)

CVS Series 8000 Reduced Port – 2 Inch through 4 Inch, Class 150, Class 300, and Class 600

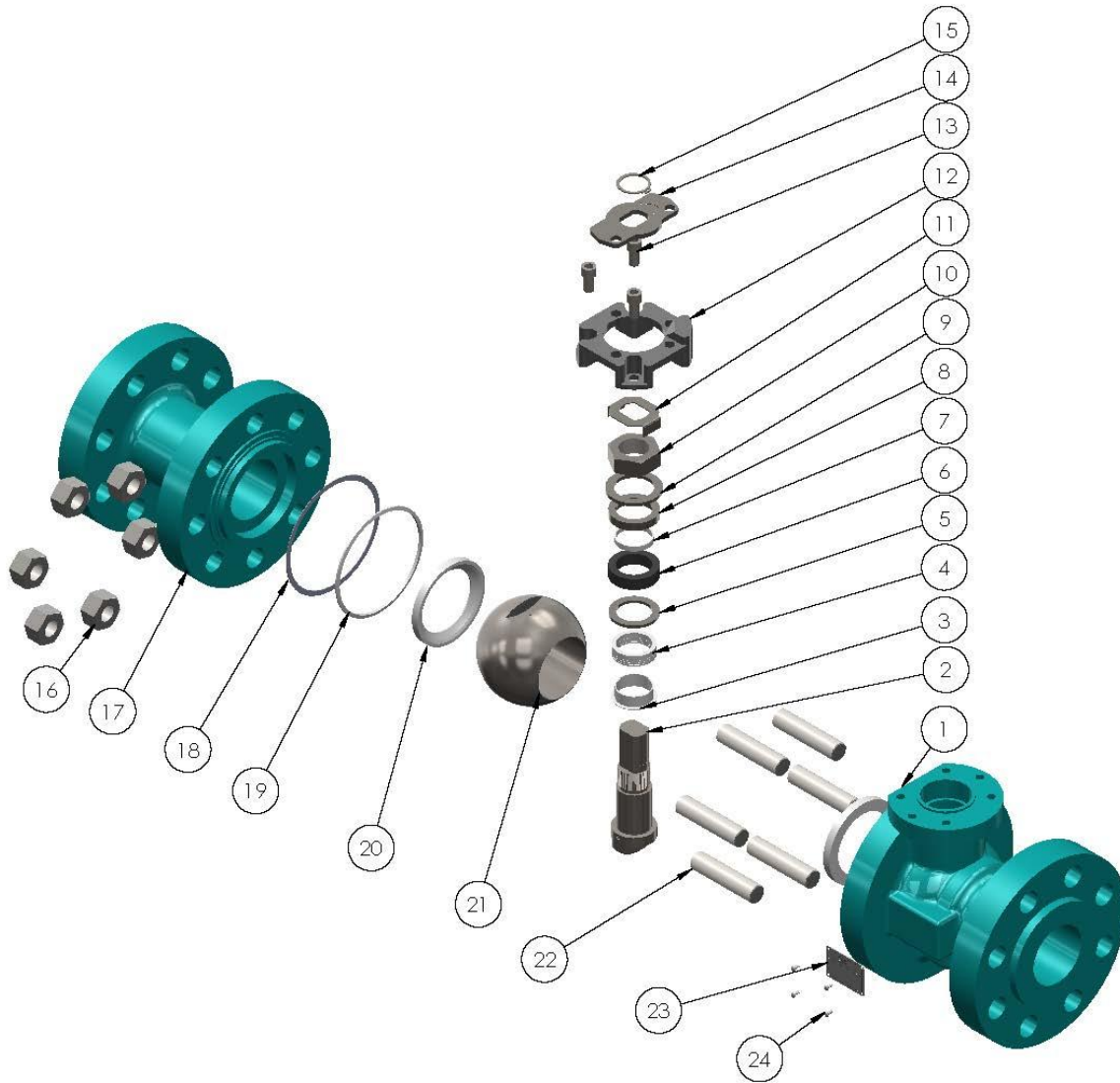


| Valve Size (in.) | Rf | Df | F6 | F5 | F1 | NxØM | P |
|------------------|------|-------|------|------|-------|---------|------|
| Class 150 | | | | | | | |
| 2X1.50 | 3.62 | 4.00 | 0.06 | 0.62 | 7.00 | 4xØ.75 | 4.75 |
| 3X2 | 5.00 | 7.50 | 0.06 | 0.75 | 8.00 | 4xØ.75 | 6.00 |
| 4X3 | 6.19 | 9.00 | 0.06 | 0.94 | 9.00 | 8xØ.75 | 7.50 |
| Class 300 | | | | | | | |
| 2X1.50 | 3.62 | 6.50 | 0.06 | 0.88 | 8.50 | 8xØ.75 | 5.00 |
| 3X2 | 5.00 | 8.25 | 0.06 | 1.12 | 11.12 | 8xØ.88 | 6.62 |
| 4X3 | 6.19 | 10.00 | 0.06 | 1.25 | 12.00 | 8xØ.88 | 7.88 |
| Class 600 | | | | | | | |
| 2X1.50 | 3.62 | 6.50 | 0.25 | 1.25 | 11.50 | 8xØ.75 | 5.00 |
| 3X2 | 5.00 | 8.25 | 0.25 | 1.50 | 14.00 | 8xØ.88 | 6.62 |
| 4X3 | 6.19 | 10.75 | 0.25 | 1.75 | 17.00 | 8xØ1.00 | 8.50 |

Assembly

Series 8000 – 2 Inch and 3 Inch, Class 150, Class 300, and Class 600

Series 8100 – 2 Inch Class 150, Class 300, and Class 600

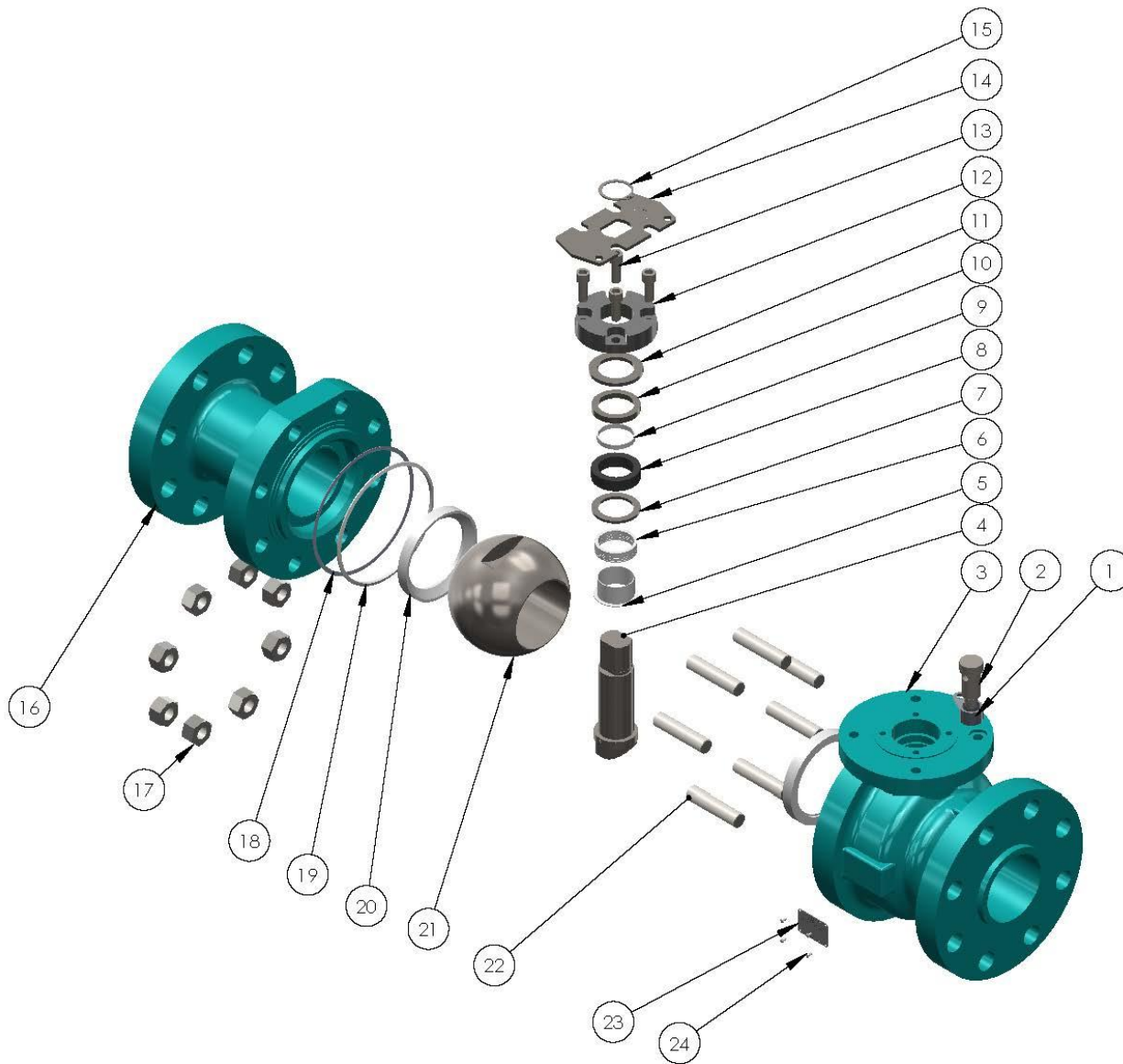


| Item | Description | Material | Item | Description | Material |
|------|--------------------------|---------------|------|--------------------------|-------------|
| 1 | Body | LCC | 13 | 5/16-18, RH Socket Screw | 17-4 SST |
| 2 | Stem | 316 SST | 14 | Stop Plate | 304 SST |
| 3 | Stem Bearing | PTFE | 15 | Snap Ring | SST |
| 4 | Primary Packing | PTFE | 16 | 5/8-11 Hex Nut | B7M |
| 5 | Secondary Packing Washer | 304 SST | 17 | Adapter | LCC |
| 6 | Secondary Packing | Flex Graphite | 18 | Body Gasket | Graphite |
| 7 | Gland Bearing | PTFE | 19 | Body Seal Ring | Virgin PTFE |
| 8 | Gland | 304 SST | 20 | Body Seal | TFM/TFMC |
| 9 | Washer | 304 SST | 21 | Ball | 316 SST |
| 10 | Jam Nut | SST | 22 | Stud, 5/8-11 X 2.6 | 1018 Steel |
| 11 | Lock Nut Plate | SST | 23 | Name Plate | 304 SST |
| 12 | Gland Plate | 304 SST | 24 | Drive Screw | 17-4 SST |

Assembly

Series 8000 – 4 Inch, Class 150, Class 300, and Class 600

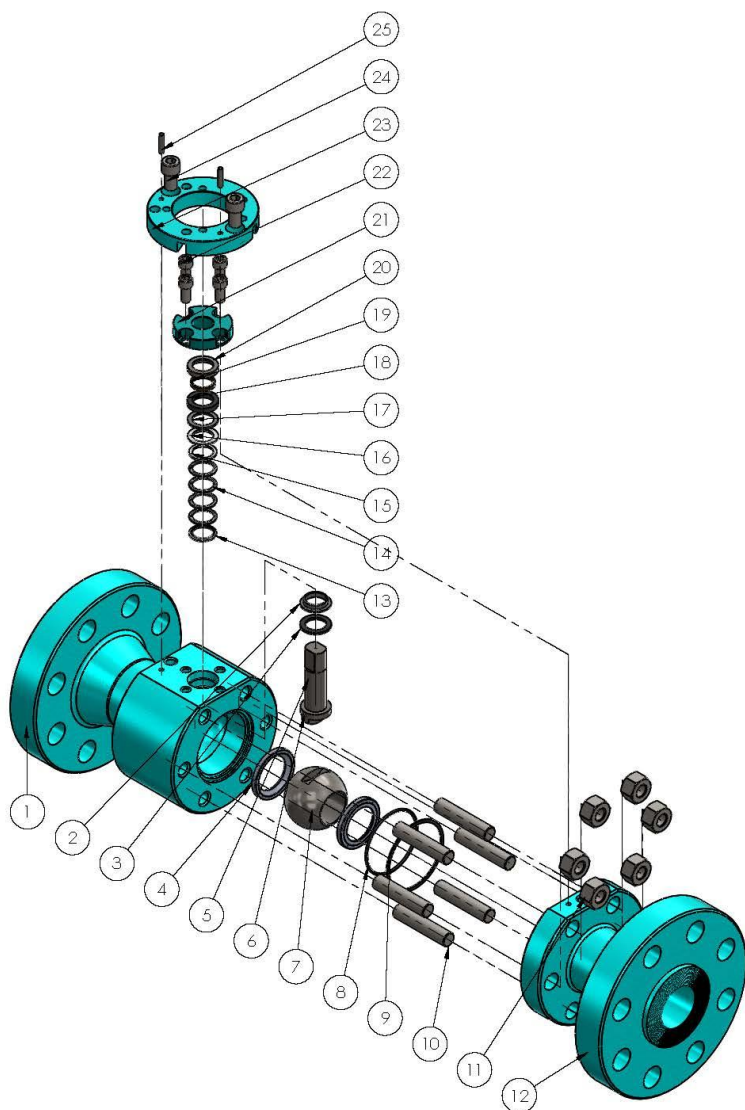
Series 8100 – 3 Inch and 4 Inch, Class 150, Class 300, and Class 600



| Item | Description | Material | Item | Description | Material |
|------|--------------------------|---------------|------|-------------------------|-------------|
| 1 | Stop Connector | 6061 T4 | 13 | 3/8-16 RH Socket Screw | 17-4 SST |
| 2 | Stop | 17-4 SST | 14 | Stop Plate | 304 SST |
| 3 | Body | LCC | 15 | Snap Ring | SST |
| 4 | Stem | 316 SST | 16 | Adapter | LCC |
| 5 | Stem Bearing | PTFE | 17 | 5/8-11 Hex Nut | B7M |
| 6 | Primary Packing | PTFE | 18 | Body Gasket | Graphite |
| 7 | Secondary Packing Washer | 3014 SST | 19 | Body Seal Ring | Virgin PTFE |
| 8 | Secondary Packing | Flex Graphite | 20 | Body Seal | TFM/TFMC |
| 9 | Gland Bearing | PTFE | 21 | Ball | 316 SST |
| 10 | Gland | 304 SST | 22 | 5/8-11 Stud, 2.75" Long | 1018 Steel |
| 11 | Washer | 304 SST | 23 | Name Plate | 304 SST |
| 12 | Gland Plate | 304 SST | 24 | Drive Screw | 17-4 SST |

Assembly

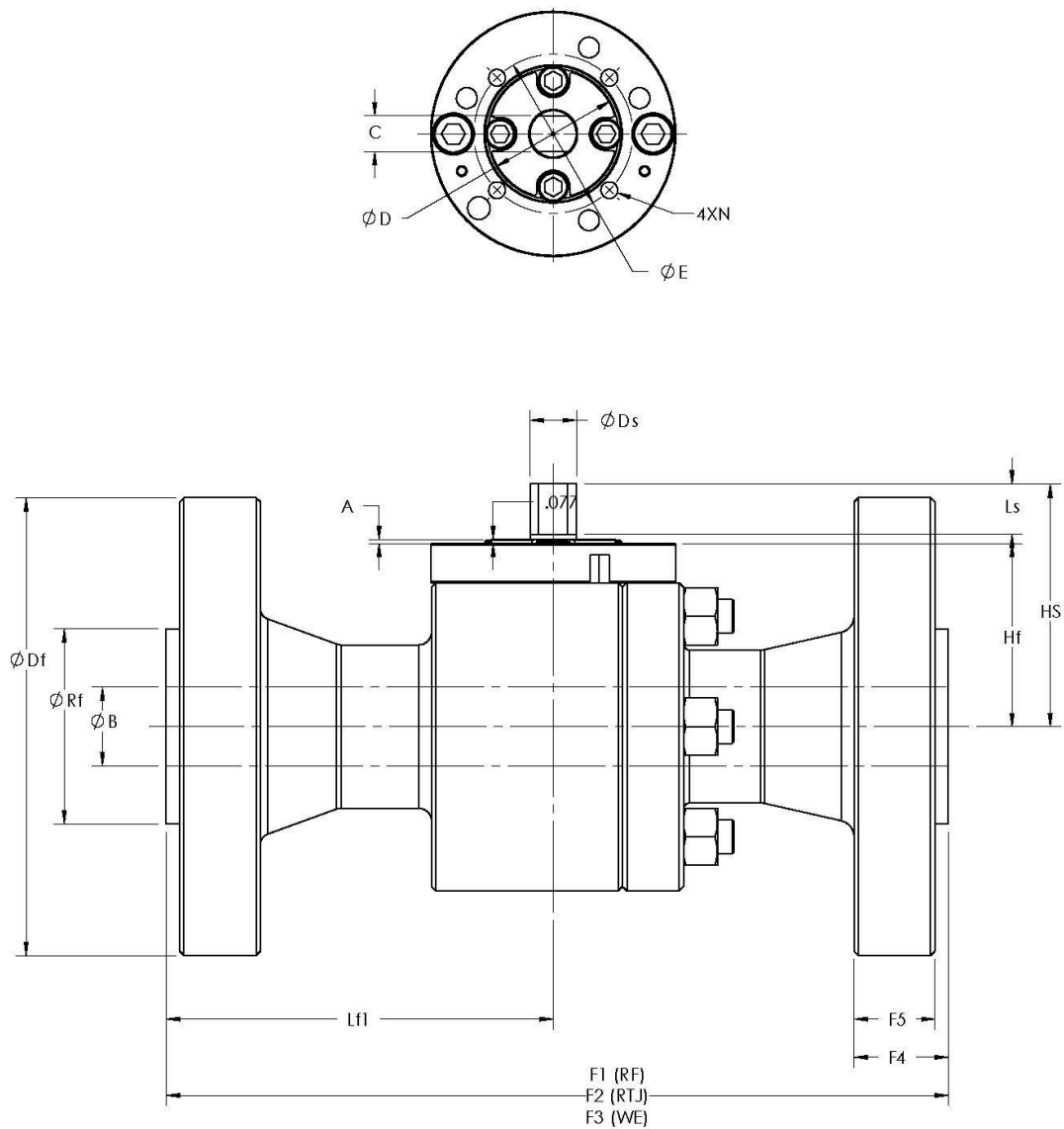
Series 8000 – 2 Inch, Class 1500



| Item | Description | Material | Item | Description | Material |
|------|---------------------|----------|------|------------------|----------|
| 1 | Body | | 14 | V-Packing Ring | |
| 2 | Stem Thrust Bearing | | 15 | Packing Top Ring | |
| 3 | Anti Static Device | | 16 | Packing Spacer | |
| 4 | Seat Ring | | 17 | Packing Washer | |
| 5 | Stem | | 18 | Anti-Static | |
| 6 | Stem Ball | | 19 | Stem Bearing | |
| 7 | Ball | | 20 | Bearing Retainer | |
| 8 | Flange End O-Ring | | 21 | Gland Flange | |
| 9 | Flange End Gasket | | 22 | Socket Screw | |
| 10 | Stud | | 23 | Actuating Flange | |
| 11 | Nut | | 24 | Socket Screw | |
| 12 | Closure/Flange End | | 25 | Pin | |
| 13 | Packing Base | | | | |

Dimensions (in)

Series 8000 – 2 Inch, Class 1500 – Reduced Port



| Valve Size (in.) | A | B | Rf | Df | F1-RF | F2-RTJ | F3-WE | F4 | F5 | Ds | Hf | Hs | Ls |
|-------------------|------|------|------|------|-------|--------|-------|------|------|-------|-------|------|------|
| Class 1500 | | | | | | | | | | | | | |
| 2X1.50 | .075 | 1.46 | 3.62 | 8.50 | 14.50 | 14.62 | 14.50 | 1.75 | 1.50 | 0.862 | 3.395 | 4.50 | 0.94 |

Mounting Dimensions – 2 inch Class 1500

| Valve Size (in.) | N | E | D | C |
|-------------------|---------|------|------|-------|
| Class 1500 | | | | |
| 2X1.50 | 5/16-18 | 2.95 | 2.43 | 0.667 |



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May 2025