

API 6D Trunnion Ball Valves



Welded Body Trunnion Ball Valve



Three Piece Body Trunnion Ball Valve

Company Profile

Headquartered in Houston, Texas, USA, VOLK Flow Controls, Inc. is a leading valve manufacturer for the Power, Oil & Gas, Refining, Petrochemical, Chemical, Mining, Metals, Pulp & Paper, and Marine industries with installations throughout the globe.

Valves such as soft seated ball valves, gate valves, globe valves, check valves, control valves, and instrument valves, together with severe service metal seated zero leakage ball valves and severe service control valves, are available in a wide range of sizes, materials, and pressure classes.

In addition to valves, VOLK Flow Controls also offers the GT (GIANT TORK) complete range of electric and pneumatic actuators suitable for linear and quarter-turn valves.

All VOLK Flow Controls products are designed, engineered and manufactured by experienced industry engineers to provide safe, reliable, dependable and affordable valves, actuators and solutions. Products are tracked in the field using our database to monitor performance and service life.

VOLK Flow Controls operates a full service valve maintenance facility with a complete scope of work that includes valve modifications (trim, end connection, cryogenic extension), testing and remanufacturing. In addition to MRO (maintenance, repair, and overhaul) services and inventory modifications for our customers, our maintenance facility serves as a complete warranty center for all VOLK Flow Controls products.

Together with continual feedback from our customers as well as our experience in manufacturing and quality control, VOLK Flow Controls aims to provide our customers the best quality products with the most competitive pricing, on-time delivery and full warranty service right here in Houston.

VOLK Flow Controls is an ISO 9001:2008 certified corporation, with additional certifications that include API 6D , API 602, API 607, and EC Certificate of Conformity. VOLK also employs NACE Certified Coating Inspectors full-time to ensure that the finished products are compliant with NACE requirements.



ISO 9001:2008 Quality Management System

VOLK Flow Controls is ISO 9001: 2008 certified for the design, production, and sales of valves and valve parts.

CERTIFICATE OF REGISTRATION



This is to certify that the Quality Management System of:

VOLK Flow Controls, Inc.

6820 Easthaven Blvd. Houston, TX 77017 USA

has been assessed and found complying with the requirements of

ISO 9001:2008

Approval is hereby granted for registration providing the Certification rules and conditions are observed at all times

Certification Scope:

Design, production and sales of valves and valve parts

Certificate Number: 1103001

Audit Date: 7-Apr-2015

Issue Date: 17-Apr-2015

Expiration Date: 16-Apr-2018

On Behalf of:

Management Certification NA

Thomas W. Hame



Reference Standards

VOLK trunnion ball valves are designed, manufactured and tested in full compliance with the following standards:

American Petroleum Institute

| API 6D | Specification for Pipeline Valves | |
|---------|----------------------------------------|--|
| API 607 | Fire Test for Soft Seated Ball Valves | |
| API 6FA | Specification for Fire Test for Valves | |
| API 598 | Valve Inspection and Test | |

American Standards

| ASME B1.20.1 | Pipe Threads, General Purpose | | |
|--------------|--------------------------------------------------------------------------|--|--|
| ASME B16.5 | Pipe Flanges and Flanged Fittings | | |
| ASME B16.10 | Face-to-Face and End-to End Dimension of Valves | | |
| ASME B16.25 | Buttwelding Ends | | |
| ASME B16.34 | Valve-Flanged, Threaded, and Welding End | | |
| ASME B16.47 | Large Diameter Steel Flanges: NPS 26 through NPS 60 Metric/Inch Standard | | |
| ASME B31.3 | Process Piping | | |
| | | | |

ASME Boiler and Pressure Vessel Code (BPVC)

| Section II | Materials, Part D: Properties | |
|--------------|--------------------------------------------|--|
| Section V | Nondestructive Examination | |
| Section VIII | Rules for Construction of Pressure Vessels | |
| Section IX | Welding and Brazing Qualifications | |

ISO

| ISO 5208 | Industrial Valves-Pressure Testing of Valves | |
|-----------|----------------------------------------------|--|
| | Testing of Valve-Fire type-testing | |
| 100 10431 | requirements | |
| | Petroleum and Natural Gas Industries- | |
| ISO 15156 | Materials for use in H2S-containing | |
| | environments in oil and gas production | |

MSS SP

| MSS-SP-6 | Standard Finish for Contract Face of Pipe Flanges and Connecting End Flanges of Valves and Fittings |
|-----------|-----------------------------------------------------------------------------------------------------|
| MSS-SP-25 | Standard Marking System for Valves, Fittings, Flanges and Unions |
| MSS-SP-55 | Quality Standards for Steel Castings |
| MSS-SP-61 | Hydrostatic Testing of Steel Valves |
| MSS-SP-72 | Ball Valves with Flanged or Buttwelding Ends for General Service |
| MSS-SP-82 | Valve Pressure Testing Methods |

NACE

| NACE MR0103 | Materials Resistant to Sulfide Stress Cracking in Corrosive Petroleum Refining Environments | |
|---------------|---------------------------------------------------------------------------------------------------|--|
| | Environments | |
| NACE MR0175 | Materials for Use in H2S-containing | |
| TVICE WITCHTO | Environments in Oil and Gas Production | |



Fully-welded Body Ball Valve

VOLK's fully welded ball valve design provides the strength of forged components with durability and uniform structure that substantially reduces the risk of potential leak paths. Engineered for reliable, limited upkeep service in even the most punishing of conditions, the VOLK fully welded ball valve is well-suited to perform in a wide variety of pipeline applications.



| Size | 2" to 60" (DN 50 to DN 1500) |
|-------------------|------------------------------|
| ANSI Class | 150 to 2500 |

Bolted Body Ball Valve

VOLK's three piece, full bore body trunnion mounted ball valves are engineered for a wide scope of diameters, pressure classes, and applications. Manufactured from carbon steel, stainless steel, or exotic alloys, these forged valves provide long lasting, reliable service for even the most severe of conditions.

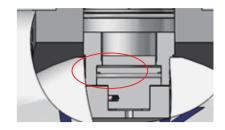


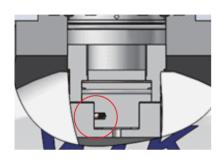
| Size | 2" to 60" (DN 50 to DN 1500) |
|-------------------|------------------------------|
| ANSI Class | 150 to 2500 |

Standard Design Features

■ Positive Blowout Proof Stem

Unlike some designs which use a pin through the stem to achieve blowout prevention, the VOLK design uses oversized split collars around the base of the stem, which creates a diameter larger than the stem and in turn locates within a recess in the valve body. This ensures the stem is held captive at all times within the valve body, unlike pins which have been known to shear and allow the stem to blow out of the body.



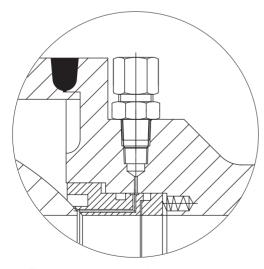


■ Anti-static Design

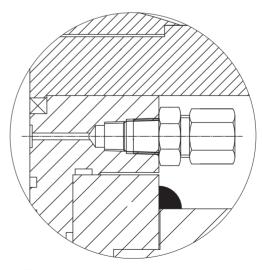
The spring on the stem connects the ball, stem and body, which can transfer the static electricity generated during the open-close of valves or when the fluid flows through the cavity, avoiding the aggregation of electricity.

■ Emergency Sealant Injection

Emergency sealant injection is designed on seat and stem to ensure sealing under emergency and minimize leakage.



Emergency sealant injection on seat

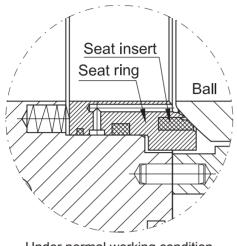


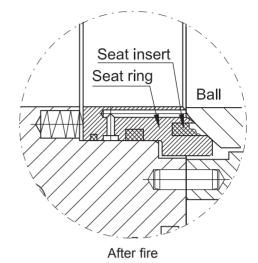
Emergency sealant injection on stem

Standard Design Features

■ Fire Safe Seat

Under fire conditions, the metal back-up seat ring seals between the seat and the ball as the soft seat melts and extrudes downstream. This provides isolation in accordance with API 607.

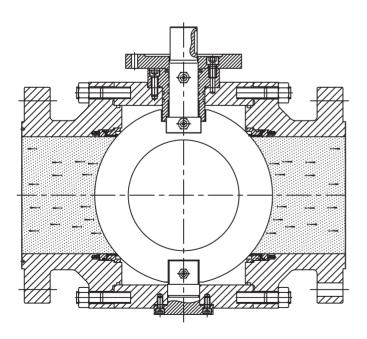


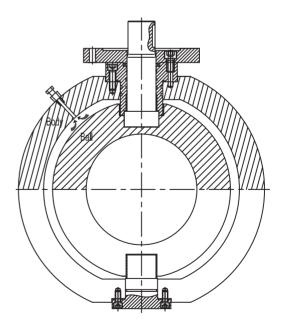


Under normal working condition

■ Double Block & Bleed

VOLK trunnion ball valves are suitable for use in block and bleed applications, where fluid in the body is evacuated through a drain port while both the upstream and downstream pressure are isolated.



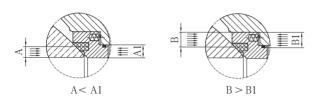


Optional Features

■ Single Piston Seat

Fluid pressure acts on the surface area of the piston in each seat pocket, resulting in the seat being pushed on to the ball. In the event the pressure in the cavity is greater than the spring force and fluid pressure, the seats are no longer loaded on to the ball. Over -pressure in the valve can be relieved in the open or closed position.

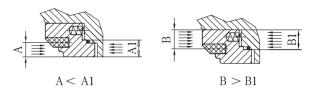
SELF RELIEVING SEATS



Double Piston Seat

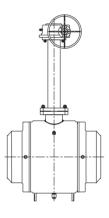
The force generated by the upstream and downstream fluid pressure pushes the seat on to the ball for the seal. Double piston seals cannot self-relieve overpressure in the cavity and a vent valve has to be installed in the cavity for this purpose.

DOUBLE PISTON EFFECT



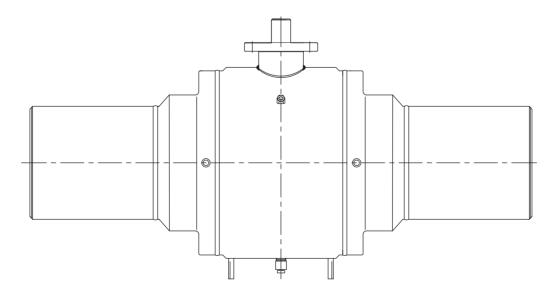
■ Extended Stem

Extended stems may be designed and installed onto fully welded ball valves that will be buried, installed underground, or in areas that are inaccessible. The extension will be manufactured in accordance with the customer's requirement.

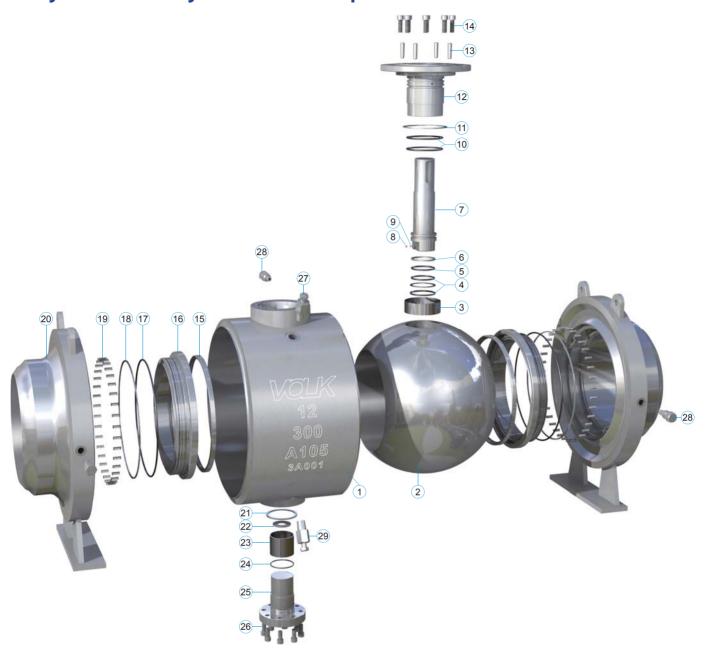


■ Transition Pup

For easier installation onto pipelines, transition pups may be welded onto VOLK trunnion ball valve ends.



Fully-welded Body Ball Valve - Exploded View

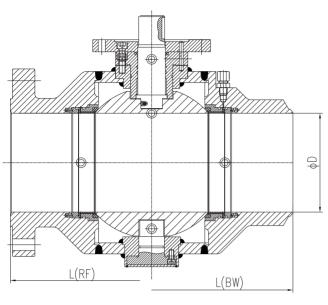


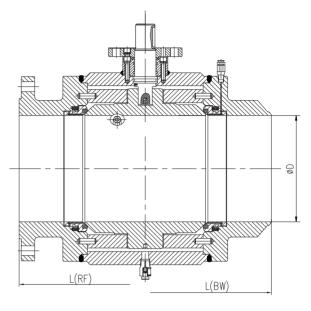
| Item | Part Name | |
|------|--------------------|--|
| 1 | Body | |
| 2 | Ball | |
| 3 | Stem Bushing | |
| 4 | Stem O-ring | |
| 5 | Stem Gasket | |
| 6 | Stem Retainer | |
| 7 | Stem | |
| 8 | Anti-static Ball | |
| 9 | Anti-static Spring | |
| 10 | O-ring | |

| Item | Part Name | |
|------|----------------|--|
| 11 | Spiral Gasket | |
| 12 | Upper Cover | |
| 13 | Pin | |
| 14 | Cap Screw | |
| 15 | Seat Insert | |
| 16 | Seat Ring | |
| 17 | Seat O-ring | |
| 18 | Seat Retainer | |
| 19 | Spring | |
| 20 | End Connection | |

| Part Name | |
|----------------------|--|
| Spiral Gasket | |
| Adjusting Gasket | |
| Trunnion Bushing | |
| O-ring | |
| Trunnion | |
| Cap Screw | |
| Relief Valve | |
| Grease Fitting Valve | |
| Drain Plug | |
| | |

Fully-welded Body Ball Valve





NPS 2 to NPS 12

NPS 14 to NPS 60

Material List for Main Parts

| Part Name | A105 | A350 LF2 | A182 F316 |
|----------------------|------------------|-------------------|------------------------|
| Body | A105 | A350 LF2 | A182 F316 |
| Ball | A105+ENP | A350 LF2+ENP | A182 F316 / 17-4PH+ENP |
| Stem O-ring | VITON/Nylon | | |
| Stem | A182 F316+ENP | 4140+ENP | A182 F316 / 17-4PH+ENP |
| Upper Cover | 1025 | A350 LF2/A182 F6a | A182 F316 |
| Seat Insert | PTFE/RPTFE/Nylon | PTFE/RPTFE/Nylon | PTFE/RPTFE/Nylon |
| Seat Ring | A105+ENP | A350 LF2+ENP | A182 F316+ENP |
| Spring | Inconel X-750 | | |
| End Connection | A105 | A350 LF2 | A182 F316 |
| Trunnion | 4140+ENP | A350 LF2+ENP | A182 F316+ENP |
| Relief Valve | CS+Zn | SS | SS |
| Grease Fitting Valve | CS+Zn | SS | SS |
| Drain Plug | CS+Zn | SS | SS |

Optional trim materials are available upon request.

Dimensions (Imperial Units) ANSI CLASS 150 - 600

| | | | L (i | in) | | | | D (in) | | | | Weig | ht (lb) | | |
|------|-------|-------|-------------|-------|-------|-------|-------|--------|-------|---------|---------|---------|---------|----------|---------|
| SIZE | 15 | 50 | 30 | 00 | 60 | 00 | 150 | 300 | 600 | 15 | 50 | 30 | 00 | 60 | 00 |
| | RF | BW | RF | BW | RF | BW | RF/BW | RF/BW | RF/BW | RF | BW | RF | BW | RF | BW |
| 2 | 7.00 | 8.50 | 8.50 | 8.50 | 11.50 | 11.50 | 1.94 | 1.94 | 1.94 | 53.00 | 42.00 | 53.00 | 42.00 | 57.00 | 42.00 |
| 3 | 8.00 | 11.13 | 11.13 | 11.13 | 14.00 | 14.00 | 2.94 | 2.94 | 2.94 | 95.00 | 64.00 | 106.00 | 64.00 | 112.00 | 59.50 |
| 4 | 9.00 | 12.00 | 12.00 | 12.00 | 17.00 | 17.00 | 3.94 | 3.94 | 3.94 | 141.00 | 97.00 | 176.00 | 132.00 | 216.00 | 157.00 |
| 6 | 15.50 | 18.00 | 15.88 | 18.00 | 22.00 | 22.00 | 5.94 | 5.94 | 5.94 | 307.00 | 251.00 | 337.00 | 265.00 | 441.00 | 318.00 |
| 8 | 18.00 | 20.50 | 19.75 | 20.50 | 26.00 | 26.00 | 7.94 | 7.94 | 7.94 | 478.00 | 423.00 | 533.00 | 428.00 | 861.00 | 679.00 |
| 10 | 21.00 | 22.00 | 22.38 | 22.00 | 31.00 | 31.00 | 9.94 | 9.94 | 9.94 | 716.00 | 642.00 | 884.00 | 725.00 | 1279.00 | 970.00 |
| 12 | 24.00 | 25.00 | 25.50 | 25.00 | 33.00 | 33.00 | 11.94 | 11.94 | 11.94 | 972.00 | 862.00 | 1281.00 | 1061.00 | 1773.00 | 1420.00 |
| 14 | 27.00 | 30.00 | 30.00 | 30.00 | 35.00 | 35.00 | 13.19 | 13.19 | 13.19 | 1711.00 | 1568.00 | 1909.00 | 1623.00 | 2584.00 | 2238.00 |
| 16 | 30.00 | 33.00 | 33.00 | 33.00 | 39.00 | 39.00 | 15.19 | 15.19 | 15.19 | 2613.00 | 2238.00 | 3093.00 | 2542.00 | 3968.00 | 3351.00 |
| 18 | 34.00 | 36.00 | 36.00 | 36.00 | 43.00 | 43.00 | 17.19 | 17.19 | 17.19 | 3556.00 | 3071.00 | 4555.00 | 3849.00 | 5276.00 | 4636.00 |
| 20 | 36.00 | 39.00 | 39.00 | 39.00 | 47.00 | 47.00 | 19.19 | 19.19 | 19.19 | 4299.00 | 4136.00 | 4787.00 | 4412.00 | 7500.00 | 6587.00 |
| 22 | 39.00 | 43.00 | 43.00 | 43.00 | 51.00 | 51.00 | 21.19 | 21.19 | 21.19 | 5258.00 | 4817.00 | 5556.00 | 4982.00 | 8100.00 | 7020.00 |
| 24 | 42.00 | 45.00 | 45.00 | 45.00 | 55.00 | 55.00 | 23.19 | 23.19 | 23.19 | 6945.00 | 6702.00 | 7745.00 | 7304.00 | 10946.00 | 9751.00 |

ANSI CLASS 900 - 2500

| | | | L (| inl | | | | D (in) | | | | Moigh | + (lb) | | |
|------|-------|-------|-------|-------|-------|-------|-------|---------|-------|----------|----------|----------|---------|---------|---------|
| | | | L (| ''') | | | | D (III) | | | | Weigh | it (ib) | | |
| SIZE | 900 | | 15 | 1500 | | 2500 | | 1500 | 2500 | 900 | | 15 | 00 | 2500 | |
| | RF | BW | RF | BW | RF | BW | RF/BW | RF/BW | RF/BW | RF | BW | RF | BW | RF | BW |
| 2 | 14.50 | 14.50 | 14.50 | 14.50 | 17.75 | 17.75 | 1.94 | 1.94 | 1.69 | 123.00 | 90.00 | 159.00 | 115.00 | 212.00 | 145.00 |
| 3 | 15.00 | 15.00 | 18.50 | 18.50 | 22.75 | 22.75 | 2.94 | 2.94 | 2.44 | 159.00 | 126.00 | 212.00 | 167.00 | 353.00 | 242.00 |
| 4 | 18.00 | 18.00 | 21.50 | 21.50 | 26.50 | 26.50 | 3.94 | 3.94 | 3.44 | 243.00 | 198.00 | 287.00 | 243.00 | 688.00 | 512.00 |
| 6 | 24.00 | 24.00 | - | - | 36.00 | 36.00 | 5.94 | 5.69 | 5.19 | 560.00 | 439.00 | - | - | 1687.00 | 1466.00 |
| 8 | 29.00 | 29.00 | 32.75 | 32.75 | 40.25 | 40.25 | 7.94 | 7.56 | 7.06 | 1158.00 | 948.00 | 1541.00 | 1272.00 | 3523.00 | 3236.00 |
| 10 | 33.00 | 33.00 | 39.00 | 39.00 | 50.00 | 50.00 | 9.94 | 9.44 | 8.81 | 1819.00 | 1466.00 | 3142.00 | 2700.00 | 6217.00 | 5423.00 |
| 12 | 38.00 | 38.00 | 44.50 | 44.50 | 56.00 | 56.00 | 11.94 | 11.31 | 10.44 | 2895.00 | 2410.00 | 3774.00 | 3219.00 | 8417.00 | 7183.00 |
| 14 | 40.50 | 40.50 | 49.50 | 49.50 | - | - | 12.69 | 12.44 | - | 3803.00 | 3208.00 | 6512.00 | 5544.00 | - | - |
| 16 | 44.50 | 44.50 | 54.50 | 54.50 | - | - | 14.69 | 14.19 | - | 5787.00 | 4773.00 | 8984.00 | 7588.00 | - | - |
| 18 | 48.00 | 48.00 | 60.50 | - | - | - | 16.69 | 16.00 | - | 7815.00 | 6801.00 | 10005.00 | - | - | - |
| 20 | 52.00 | 52.00 | 65.50 | - | - | - | 18.56 | 17.88 | - | 9165.00 | 7798.00 | 17361.00 | - | - | - |
| 24 | 61.00 | 61.00 | - | - | - | - | 22.44 | 21.50 | - | 16113.00 | 14085.00 | - | - | - | - |

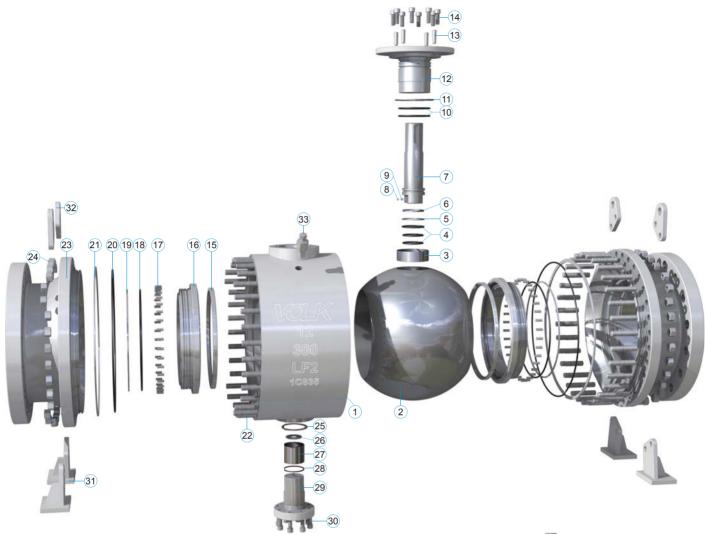
Dimensions (SI Units) ANSI CLASS 150 - 600

| | L (mm) | | | | | | D (mm) | | Weight (kg) | | | | | | |
|------|---------|---------|---------|---------|---------|---------|--------|--------|-------------|---------|---------|---------|---------|---------|---------|
| SIZE | 15 | 50 | 300 | | 600 | | 150 | 300 | 600 | 150 | | 30 | 00 | 60 | 00 |
| | RF | BW | RF | BW | RF | BW | RF/BW | RF/BW | RF/BW | RF | BW | RF | BW | RF | BW |
| 50 | 178.00 | 216.00 | 216.00 | 216.00 | 292.00 | 292.00 | 49.00 | 49.00 | 49.00 | 24.00 | 19.00 | 24.00 | 19.00 | 25.86 | 19.00 |
| 80 | 203.00 | 283.00 | 283.00 | 283.00 | 356.00 | 356.00 | 74.00 | 74.00 | 74.00 | 43.09 | 29.03 | 48.00 | 29.00 | 50.80 | 27.00 |
| 100 | 229.00 | 305.00 | 305.00 | 305.00 | 432.00 | 432.00 | 100.00 | 100.00 | 100.00 | 64.00 | 44.00 | 79.83 | 59.87 | 98.00 | 71.20 |
| 150 | 394.00 | 457.00 | 403.00 | 457.00 | 559.00 | 559.00 | 150.00 | 150.00 | 150.00 | 139.25 | 113.85 | 152.86 | 120.20 | 200.00 | 144.24 |
| 200 | 457.00 | 521.00 | 502.00 | 521.00 | 660.00 | 660.00 | 201.00 | 201.00 | 201.00 | 216.82 | 191.87 | 241.77 | 194.14 | 390.55 | 308.00 |
| 250 | 533.00 | 559.00 | 568.00 | 559.00 | 787.00 | 787.00 | 252.00 | 252.00 | 252.00 | 324.78 | 291.21 | 401.00 | 328.86 | 580.15 | 440.00 |
| 300 | 610.00 | 635.00 | 648.00 | 635.00 | 838.00 | 838.00 | 303.00 | 303.00 | 303.00 | 440.90 | 391.00 | 581.00 | 481.27 | 804.23 | 644.11 |
| 350 | 686.00 | 762.00 | 762.00 | 762.00 | 889.00 | 889.00 | 334.00 | 334.00 | 334.00 | 776.10 | 711.24 | 866.00 | 736.20 | 1172.00 | 1015.15 |
| 400 | 762.00 | 838.00 | 838.00 | 838.00 | 991.00 | 991.00 | 385.00 | 385.00 | 385.00 | 1185.25 | 1015.15 | 1403.00 | 1153.00 | 1800.00 | 1520.00 |
| 450 | 864.00 | 914.00 | 914.00 | 914.00 | 1092.00 | 1092.00 | 436.00 | 436.00 | 436.00 | 1613.00 | 1393.00 | 2066.13 | 1745.89 | 2393.18 | 2102.88 |
| 500 | 914.00 | 991.00 | 991.00 | 991.00 | 1194.00 | 1194.00 | 487.00 | 487.00 | 487.00 | 1950.00 | 1876.00 | 2171.37 | 2001.27 | 3402.00 | 2987.84 |
| 550 | 991.00 | 1092.00 | 1092.00 | 1092.00 | 1295.00 | 1295.00 | 538.00 | 538.00 | 538.00 | 2385.00 | 2185.00 | 2520.20 | 2259.82 | 3674.14 | 3184.25 |
| 600 | 1067.00 | 1143.00 | 1143.00 | 1143.00 | 1397.00 | 1397.00 | 589.00 | 589.00 | 589.00 | 3150.23 | 3040.00 | 3513.11 | 3313.00 | 4965.00 | 4423.00 |

ANSI CLASS 900 - 2500

| | L (mm) | | | | | | | D (mm) | | | | Weigh | t (kg) | | |
|------|---------|---------|---------|---------|---------|---------|--------|--------|--------|---------|---------|---------|---------|---------|---------|
| SIZE | 90 | 00 | 15 | 00 | 25 | 00 | 900 | 1500 | 2500 | 90 | 00 | 15 | 00 | 25 | 00 |
| | RF | BW | RF | BW | RF | BW | RF/BW | RF/BW | RF/BW | RF | BW | RF | BW | RF | BW |
| 50 | 368.00 | 368.00 | 368.00 | 368.00 | 451.00 | 451.00 | 49.00 | 49.00 | 42.00 | 55.80 | 40.82 | 72.12 | 52.16 | 96.16 | 65.77 |
| 80 | 381.00 | 381.00 | 470.00 | 470.00 | 578.00 | 578.00 | 74.00 | 74.00 | 62.00 | 72.12 | 57.15 | 96.16 | 75.75 | 160.12 | 109.77 |
| 100 | 457.00 | 457.00 | 546.00 | 546.00 | 673.00 | 673.00 | 100.00 | 100.00 | 87.00 | 110.22 | 89.81 | 130.18 | 110.22 | 312.00 | 232.25 |
| 150 | 610.00 | 610.00 | - | - | 914.00 | 914.00 | 150.00 | 144.00 | 131.00 | 254.00 | 199.13 | - | - | 765.22 | 665.00 |
| 200 | 737.00 | 737.00 | 832.00 | 832.00 | 1022.00 | 1022.00 | 201.00 | 192.00 | 179.00 | 525.27 | 430.00 | 699.00 | 577.00 | 1598.00 | 1467.84 |
| 250 | 838.00 | 838.00 | 991.00 | 991.00 | 1270.00 | 1270.00 | 252.00 | 239.00 | 223.00 | 825.00 | 665.00 | 1425.20 | 1224.70 | 2820.00 | 2459.86 |
| 300 | 965.00 | 965.00 | 1130.00 | 1130.00 | 1422.00 | 1422.00 | 303.00 | 287.00 | 265.00 | 1313.16 | 1093.17 | 1711.88 | 1460.13 | 3818.00 | 3258.20 |
| 350 | 1029.00 | 1029.00 | 1257.00 | 1257.00 | - | - | 322.00 | 315.00 | - | 1725.00 | 1455.14 | 2953.82 | 2514.74 | - | - |
| 400 | 1130.00 | 1130.00 | 1384.00 | 1384.00 | - | - | 373.00 | 360.00 | - | 2625.00 | 2165.00 | 4075.12 | 3441.89 | - | - |
| 450 | 1219.00 | 1219.00 | 1537.00 | - | - | - | 423.00 | 406.00 | - | 3544.86 | 3084.91 | 4538.24 | - | - | - |
| 500 | 1321.00 | 1321.00 | 1664.00 | - | - | - | 471.00 | 454.00 | - | 4157.22 | 3537.15 | 7874.90 | - | - | - |
| 600 | 1549.00 | 1549.00 | - | - | - | - | 570.00 | 546.00 | - | 7308.80 | 6389.00 | - | - | - | - |

Bolted Body Ball Valve - Exploded View



| Item | Part Name |
|------|--------------------|
| 1 | Body |
| 2 | Ball |
| 3 | Stem Bushing |
| 4 | Stem O-ring |
| 5 | Stem Gasket |
| 6 | Stem Retainer |
| 7 | Stem |
| 8 | Anti-static Ball |
| 9 | Anti-static Spring |
| 10 | O-ring |
| 11 | Spiral Gasket |
| 12 | Upper Cover |
| 13 | Pin |
| 14 | Cap Screw |
| 15 | Seat Insert |
| | |

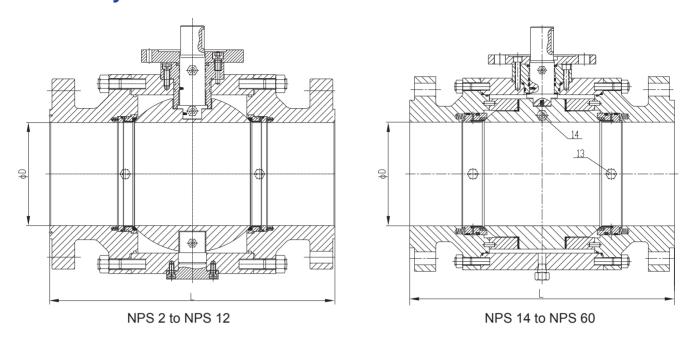
| Item | Part Name |
|------|-----------------------|
| 16 | Seat Ring |
| 17 | Spring |
| 18 | Seat O-ring |
| 19 | Seat Retainer |
| 20 | End Connection O-ring |
| 21 | End Connection Gasket |
| 22 | Bolt |
| 23 | End Connection |
| 24 | Nut |
| 25 | Spiral Gasket |
| 26 | Adjusting Gasket |
| 27 | Trunnion Bushing |
| 28 | O-ring |
| 29 | Trunnion |
| 30 | Cap Screw |



Rear View

| Item | Part Name |
|------|----------------------|
| 31 | Leg |
| 32 | Lug |
| 33 | Relief Valve |
| 34 | Grease Fitting Valve |
| 35 | Drain Plug |
| | |

Bolted Body Ball Valve



Material List for Main Parts

| Part Name | A105 | A350 LF2 | A182 F316 | | | | |
|----------------------|-----------------------|-----------------------|------------------------|--|--|--|--|
| Body | A105 | A350 LF2 | A182 F316 | | | | |
| Ball | A105+ENP | A350 LF2+ENP | A182 F316 / 17-4PH+ENP | | | | |
| Stem O-ring | VITON / Nylon | | | | | | |
| Stem | A182 F316+ENP | 4140+ENP | A182 F316 / 17-4PH+ENP | | | | |
| Upper Cover | 1025 | A350 LF2/A182 F6a | A182 F316 | | | | |
| Seat Insert | PTFE/RPTFE/PEEK/Nylon | PTFE/RPTFE/PEEK/Nylon | PTFE/RPTFE/PEEK/Nylon | | | | |
| Seat Ring | A105+ENP | A350 LF2+ENP | A182 F316+ENP | | | | |
| Spring | | Inconel X-750 | | | | | |
| End Connection | A105 | A350 LF2 | A182 F316 | | | | |
| Bolt | A193 B7 | A193 B7 | A193 B8 | | | | |
| Nut | A194 2H | A194 7 | A194 8 | | | | |
| Trunnion | 4140+ENP | A350 LF2+ENP | A182 F316+ENP | | | | |
| Relief Valve | CS+Zn | SS | SS | | | | |
| Grease Fitting Valve | CS+Zn | SS | SS | | | | |
| Drain Plug | CS+Zn | SS | SS | | | | |

Optional trim materials are available upon request.

Dimensions (Imperial Units) ANSI CLASS 150 - 600

| CIZE | | L (in) | | | D (in) | | | Weight (lb) | |
|------|-------|--------|-------|-------|--------|-------|---------|-------------|----------|
| SIZE | 150 | 300 | 600 | 150 | 300 | 600 | 150 | 300 | 600 |
| 2 | 7.00 | 8.50 | 11.50 | 1.94 | 1.94 | 1.94 | 66.00 | 66.00 | 70.40 |
| 3 | 8.00 | 11.13 | 14.00 | 2.94 | 2.94 | 2.94 | 121.00 | 132.00 | 143.00 |
| 4 | 9.00 | 12.00 | 17.00 | 3.94 | 3.94 | 3.94 | 176.00 | 220.00 | 275.00 |
| 6 | 15.50 | 15.88 | 22.00 | 5.94 | 5.94 | 5.94 | 440.00 | 462.00 | 583.00 |
| 8 | 18.00 | 19.75 | 26.00 | 7.94 | 7.94 | 7.94 | 638.00 | 704.00 | 1144.00 |
| 10 | 21.00 | 22.38 | 31.00 | 9.94 | 9.94 | 9.94 | 990.00 | 990.00 | 1716.00 |
| 12 | 24.00 | 25.50 | 33.00 | 11.94 | 11.94 | 11.94 | 1298.00 | 1298.00 | 2464.00 |
| 14 | 27.00 | 30.00 | 35.00 | 13.19 | 13.19 | 13.19 | 1804.00 | 1804.00 | 3432.00 |
| 16 | 30.00 | 33.00 | 39.00 | 15.19 | 15.19 | 15.19 | 3476.00 | 4114.00 | 5280.00 |
| 18 | 34.00 | 36.00 | 43.00 | 17.19 | 17.19 | 17.19 | 5368.00 | 6050.00 | 7480.00 |
| 20 | 36.00 | 39.00 | 47.00 | 19.19 | 19.19 | 19.19 | 5720.00 | 6534.00 | 8646.00 |
| 24 | 42.00 | 45.00 | 55.00 | 23.19 | 23.19 | 23.19 | 9240.00 | 10318.00 | 14564.00 |

ANSI CLASS 900 - 2500

| ANSI CLAS | 200 | L (in) | | | D (in) | | | Weight (lb) | |
|-----------|-------|--------|-------|-------|--------|-------|----------|-------------|---------|
| SIZE | 900 | 1500 | 2500 | 900 | 1500 | 2500 | 900 | 1500 | 2500 |
| 2 | 14.50 | 14.50 | 17.75 | 1.94 | 1.94 | 1.69 | 110.00 | 121.00 | 132.00 |
| 3 | 15.00 | 18.50 | 22.75 | 2.94 | 2.94 | 2.44 | 176.00 | 220.00 | 273.00 |
| 4 | 18.00 | 21.50 | 26.50 | 3.94 | 3.94 | 3.44 | 308.00 | 363.00 | 430.00 |
| 6 | 24.00 | 27.75 | 36.00 | 5.94 | 5.69 | 5.19 | 858.00 | 1298.00 | 1663.00 |
| 8 | 29.00 | 32.75 | 40.25 | 7.94 | 7.56 | 7.06 | 1540.00 | 2046.00 | 2435.00 |
| 10 | 33.00 | 39.00 | 50.00 | 9.94 | 9.44 | 8.81 | 2420.00 | 4180.00 | 5627.00 |
| 12 | 38.00 | 44.50 | 56.00 | 11.94 | 11.31 | 10.44 | 3850.00 | 5016.00 | 6320.00 |
| 14 | 40.50 | 49.50 | - | 12.69 | 12.44 | - | 5060.00 | 8668.00 | - |
| 16 | 44.50 | 54.50 | - | 14.69 | 14.19 | - | 7700.00 | 11946.00 | - |
| 18 | 48.00 | - | - | 16.69 | - | - | 10406.00 | - | - |
| 20 | 52.00 | - | - | 18.56 | - | - | 12188.00 | - | - |
| 24 | 61.00 | - | - | 22.44 | - | - | 21450.00 | - | - |

Dimensions (SI Units) ANSI CLASS 150 - 600

| SIZE | | L (mm) | | | D (mm) | | | Weight (kg) | |
|------|---------|---------|---------|--------|--------|--------|---------|-------------|---------|
| SIZE | 150 | 300 | 600 | 150 | 300 | 600 | 150 | 300 | 600 |
| 50 | 178.00 | 216.00 | 292.00 | 49.00 | 49.00 | 49.00 | 30.00 | 30.00 | 32.00 |
| 80 | 203.00 | 283.00 | 356.00 | 74.00 | 74.00 | 74.00 | 54.90 | 59.87 | 64.86 |
| 100 | 229.00 | 305.00 | 432.00 | 100.00 | 100.00 | 100.00 | 79.83 | 99.80 | 124.74 |
| 150 | 394.00 | 403.00 | 559.00 | 150.00 | 150.00 | 150.00 | 199.58 | 209.56 | 264.45 |
| 200 | 457.00 | 502.00 | 660.00 | 201.00 | 201.00 | 201.00 | 289.39 | 319.33 | 518.91 |
| 250 | 533.00 | 568.00 | 787.00 | 252.00 | 252.00 | 252.00 | 449.00 | 449.00 | 778.37 |
| 300 | 610.00 | 648.00 | 838.00 | 303.00 | 303.00 | 303.00 | 588.77 | 588.77 | 1117.66 |
| 350 | 686.00 | 762.00 | 889.00 | 334.00 | 334.00 | 334.00 | 818.30 | 818.30 | 1556.74 |
| 400 | 762.00 | 838.00 | 991.00 | 385.00 | 385.00 | 385.00 | 1576.70 | 1866.10 | 2395.00 |
| 450 | 864.00 | 914.00 | 1092.00 | 436.00 | 436.00 | 436.00 | 2434.91 | 2744.26 | 3392.91 |
| 500 | 914.00 | 991.00 | 1194.00 | 487.00 | 487.00 | 487.00 | 2594.57 | 2963.80 | 3921.80 |
| 600 | 1067.00 | 1143.00 | 1397.00 | 589.00 | 589.00 | 589.00 | 4191.24 | 4680.21 | 6606.20 |

ANSI CLASS 900 - 2500

| SIZE | | L (mm) | | | D (mm) | | | Weight (kg) | |
|------|---------|---------|---------|--------|--------|--------|---------|-------------|---------|
| SIZE | 900 | 1500 | 2500 | 900 | 1500 | 2500 | 900 | 1500 | 2500 |
| 50 | 368.00 | 368.00 | 451.00 | 49.00 | 49.00 | 42.00 | 49.90 | 54.90 | 59.87 |
| 80 | 381.00 | 470.00 | 578.00 | 74.00 | 74.00 | 62.00 | 79.83 | 99.80 | 123.83 |
| 100 | 457.00 | 546.00 | 673.00 | 100.00 | 100.00 | 87.00 | 139.71 | 164.66 | 195.00 |
| 150 | 610.00 | 705.00 | 914.00 | 150.00 | 144.00 | 131.00 | 389.20 | 588.77 | 754.33 |
| 200 | 737.00 | 832.00 | 1022.00 | 201.00 | 192.00 | 179.00 | 698.54 | 928.00 | 1104.51 |
| 250 | 838.00 | 991.00 | 1270.00 | 252.00 | 239.00 | 223.00 | 1097.70 | 1896.00 | 2552.40 |
| 300 | 965.00 | 1130.00 | 1422.00 | 303.00 | 287.00 | 265.00 | 1746.35 | 2275.24 | 2866.73 |
| 350 | 1029.00 | 1257.00 | - | 322.00 | 315.00 | - | 2295.20 | 3931.78 | - |
| 400 | 1130.00 | 1384.00 | - | 373.00 | 360.00 | - | 3492.70 | 5418.67 | - |
| 450 | 1219.00 | - | - | 423.00 | - | - | 4720.13 | - | - |
| 500 | 1321.00 | - | - | 471.00 | - | - | 5528.44 | - | - |
| 600 | 1549.00 | - | - | 570.00 | - | - | 9729.66 | - | - |

How to Order

| Α | В | С | D | Ε | F | G | Н | |
|---|---|---|---|---|---|---|-------|--|

A. VALVE TYPE

| VW | Fully welded body ball valve |
|----|------------------------------|
| V3 | Three piece body ball valve |

B. OPERATOR MODE

| L | LEVER | Е | ELECTRIC |
|----|----------------------|----|-----------|
| W | WORM GEARING | Р | PNEUMATIC |
| Су | CYLINDER GEAR-DRIVEN | Н | HYDRAULIC |
| С | CONIC GEAR-DRIVEN | BS | BARE STEM |

C. ANSI CLASS CODE

| 1 | Class 150 | 7 | Class 900 | |
|---|-----------|---|------------|--|
| 3 | Class 300 | 9 | Class 1500 | |
| 6 | Class 600 | 0 | Class 2500 | |

D. PORT CODE

| FP | Full Port | |
|----|--------------|--|
| RP | Reduced Port | |
| XX | Others | |

E. BODY MATERIAL CODE

| 01 | A105 | 08 | A182 F316L |
|----|------------|----|------------|
| 02 | A182 F11 | 09 | A350 LF2 |
| 03 | A182 F22 | 10 | A350 LF5 |
| 04 | A182 F91 | 11 | A350 LF9 |
| 05 | A182 F304 | 12 | A350 LF3 |
| 06 | A182 F316 | 13 | A182 F51 |
| 07 | A182 F304L | | |
| | | | |

F. SEAT MATERIAL CODE

For Soft Seats

| Т | PTFE |
|---|-------|
| Р | PEEK |
| R | RPTFE |
| L | Nylon |

For Metal Seats

| Н | Chrome Carbide Coated | | | |
|---|------------------------------------|--|--|--|
| W | Tungsten Carbide Coated | | | |
| S | Overlay Stellite | | | |
| M | Overlay Martensite Stainless Steel | | | |
| U | Overlay Austenite Stainless Steel | | | |
| С | Hard Chrome Plating | | | |
| Х | Oxidizing | | | |

G. END CONNECTION CODE

| BW | BUTT WELD |
|----|-------------|
| SW | SOCKET WELD |
| RF | RAISED FACE |
| RJ | RING JOINT |
| TH | THREAD |

H. SIZE CODE

| Size | 2" | 4" | 6" | 60" |
|------|----|----|----|---------|
| Code | 2 | 4 | 6 | 60 |

Torque Information

Please contact VOLK Sales Representative for detailed torque information for power actuator sizing.

VOLK Service Center (Houston, Texas)

All VOLK Flow Controls products are serviced by our full service valve maintenance facility right here in Houston, Texas with a complete scope of work that includes valve modifications (trim, end connection, cryogenic extension), testing and remanufacturing. In addition to MRO (maintenance, repair, and overhaul) services and inventory modifications for our customers, our maintenance facility serves as a complete warranty and modification center for all VOLK Flow Controls products.















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