



True Union Ball Valves (Regular Style)



Features – PVC, CPVC

This versatile, quarter-turn shutoff valve is well suited for industrial and chemical processing applications. Available in IPS Sizes 1/2" - 4" with socket, threaded or flanged end connectors. 6" Venturied valve (4" valve with 4 x 6 adapter) available with either socket or flanged end connection. Also available with metric 20mm - 110mm or 1/2" - 4" BSP threaded end connectors.

- Chemical & Corrosion Resistant PVC or CPVC Construction
- Schedule 80 Full-Bore Design
- Strong, Buttress Thread Union Nuts
- Fully Serviceable, Replaceable Components
- Spears® Safe-T-Blocked® Seal Carrier
- Self Adjusting PTFE Floating Seat Design
- EPDM or FKM O-rings
- High Impact Polypropylene Handle
- Spears® Safe-T-Shear® Stem Design
- Sizes 1/2" - 2" Pressure Rated to 235 psi @ 73°F, Sizes 2-1/2" - 6" and all flanged Pressure Rated to 150 psi @ 73°F
- EPDM valves NSF® Certified for Potable Water use
- Suitable for Vacuum Service
- Assembled with Silicone-Free, Water Soluble Lubricants
- Manufactured to ASTM F 1970

Sample Engineering Specification

All thermoplastic ball valves shall be True Union type constructed from PVC Type I, ASTM D 1784 Cell Classification 12454 or CPVC Type IV, ASTM D 1784 Cell Classification 23447. All O-rings shall be EPDM or FKM. All valves shall have Safe-T-Shear® stem and double stop Polypropylene handle. All valve union nuts shall have Buttress threads. All seal carriers shall be Safe-T-Blocked®. All valve components shall be replaceable. All EPDM valves shall be certified by NSF International for use in potable water service. All 1/2" - 2" valves shall be pressure rated at 235 psi and all 2-1/2" - 6" and all flanged valves shall be pressure rated at 150 psi for water at 73°F, as manufactured by Spears® Manufacturing Company.

Quick-View Valve Selection Chart

| Valve Size | O-ring Material | PVC Part Number ¹ | | | Pressure Rating |
|-----------------------------|-----------------|------------------------------|----------|----------|---|
| | | Threaded | Socket | Flanged | |
| 1/2 | EPDM | 2329-005 | included | 2323-005 | 235 psi Non-Shock Water @ 73°F (Flanged 150 psi Non-Shock) Water @ 73°F |
| | FKM | 2339-005 | included | 2333-005 | |
| 3/4 | EPDM | 2329-007 | included | 2323-007 | |
| | FKM | 2339-007 | included | 2333-007 | |
| 1 | EPDM | 2329-010 | included | 2323-010 | |
| | FKM | 2339-010 | included | 2333-010 | |
| 1-1/4 | EPDM | 2329-012 | included | 2323-012 | |
| | FKM | 2339-012 | included | 2333-012 | |
| 1-1/2 | EPDM | 2329-015 | included | 2323-015 | |
| | FKM | 2339-015 | included | 2333-015 | |
| 2 | EPDM | 2329-020 | included | 2323-020 | |
| | FKM | 2339-020 | included | 2333-020 | |
| 2-1/2 | EPDM | 2321-025 | 2322-025 | 2323-025 | 150 psi Non-Shock Water @ 73°F |
| | FKM | 2331-025 | 2332-025 | 2333-025 | |
| 3 | EPDM | 2321-030 | 2322-030 | 2323-030 | |
| | FKM | 2331-030 | 2332-030 | 2333-030 | |
| 4 | EPDM | 2321-040 | 2322-040 | 2323-040 | |
| | FKM | 2331-040 | 2332-040 | 2333-040 | |
| 6 ² venturied | EPDM | --- | 2322-060 | 2323-060 | |
| | FKM | --- | 2332-060 | 2333-060 | |

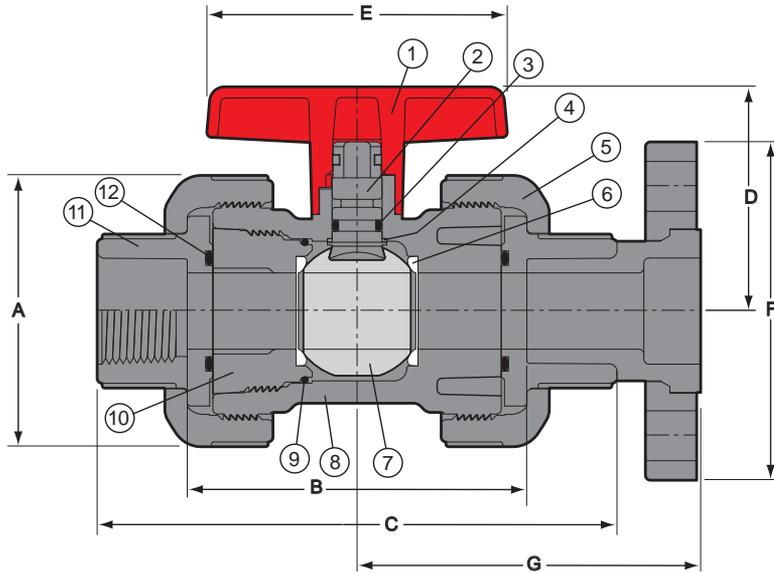
1: For CPVC valves, add the letter "C" to part numbers listed (e.g., 2339-005C).
2: Consists of 4" True Union Ball Valve with two 4" x 6" Adapters.

Optional Accessories*

- Round Safety Handle
- Stem Extension Kit
- 2" Square / T-Style Operator Nut

* See "BALL VALVE ACCESSORIES" section for details of individual products.

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Replacement Parts

| No. | Component | Qty. | Material |
|-----|----------------------|------|----------|
| 1 | Handle | 1 | PP |
| 2 | Stem | 1 | PVC/CPVC |
| 3 | Stem O-ring | 1 | EPDM/FKM |
| 4 | Stem Bearing* | 1 | PP |
| 5 | Union Nut | 2 | PVC/CPVC |
| 6 | Seat** | 2 | PTFE |
| 7 | Ball | 1 | PVC/CPVC |
| 8 | Body | 1 | PVC/CPVC |
| 9 | Carrier O-ring | 1 | EPDM/FKM |
| 10 | Seal Carrier | 1 | PVC/CPVC |
| 11 | End Connector | 2 | PVC/CPVC |
| 12 | End Connector O-ring | 2 | EPDM/FKM |

* Sizes 1-1/4" and larger.

** Seat O-ring (not shown) on sizes 2-1/2" and larger.

Dimensions, Weights, Operating Torque & Cv Values

| Nominal Size | Dimension Reference (inches, ± 1/16) | | | | | | | Approx. Wt. (Lbs.) | | | | Oper. ² Torque (in.-lb.) | C _v ⁴ Values | |
|------------------------|--------------------------------------|----------------|----------|---------|----------|--------|----------|--------------------|---------|---------|---------|-------------------------------------|------------------------------------|---------|
| | A | B ¹ | C | D | E | F | G | PVC | | CPVC | | | Soc/Thd | Flanged |
| | | | | | | | | Soc/Thd | Flanged | Soc/Thd | Flanged | | | |
| 1/2 | 2-9/16 | 3-7/16 | 5-3/16 | 2-13/32 | 2-23/32 | 3-1/2 | 3-15/32 | 1.05 | 1.23 | .95 | 1.14 | 20 | 25 | 18 |
| 3/4 | 3-1/32 | 4-1/16 | 6-3/16 | 2-5/8 | 3-3/16 | 3-7/8 | 4 | 1.44 | 1.64 | 1.50 | 1.73 | 30 | 51 | 36 |
| 1 | 3-13/32 | 4-5/16 | 6-9/16 | 2-13/16 | 3-23/32 | 4-1/4 | 4-5/16 | 1.91 | 2.22 | 2.08 | 2.43 | 40 | 97 | 67 |
| 1-1/4 | 3-11/16 | 4-1/2 | 7-1/16 | 2-31/32 | 4-1/8 | 4-5/8 | 4-19/32 | 2.38 | 2.78 | 2.52 | 2.91 | 60 | 204 | 142 |
| 1-1/2 | 4-3/8 | 5-5/16 | 8-1/32 | 3-9/32 | 4-15/32 | 5 | 5-9/32 | 3.63 | 4.00 | 3.82 | 4.26 | 80 | 285 | 201 |
| 2 | 5-3/16 | 5-13/16 | 8-13/16 | 4-13/32 | 5-1/4 | 6 | 5-23/32 | 5.40 | 6.14 | 5.70 | 6.54 | 90 | 540 | 381 |
| 2-1/2 | 7-7/16 | 8-3/8 | 11-7/8 | 4-29/32 | 9-7/8 | 7 | 7-3/16 | 12.87 | 14.26 | 13.44 | 15.85 | 300 | 712 | 512 |
| 3 | 7-7/16 | 8-3/16 | 11-15/16 | 4-29/32 | 9-7/8 | 7-1/2 | 7-11/32 | 13.24 | 15.67 | 13.85 | 16.96 | 300 | 1294 | 925 |
| 4 | 8-15/16 | 8-11/16 | 13-3/16 | 5-19/32 | 10-13/16 | 9-1/16 | 8-5/32 | 19.58 | 24.32 | 20.49 | 25.83 | 400 | 2629 | 1868 |
| 6 Socket ³ | 8-15/16 | 19-5/8 | 26-1/16 | 6-3/4 | 10-13/16 | 11-1/4 | 14-11/16 | 22.66 | 30.98 | 26.11 | 34.78 | 400 | N/A | N/A |
| 6 Flanged ³ | 11-3/16 | 29-3/8 | N/A | 6-3/4 | 10-13/16 | 11-1/4 | 14-11/16 | N/A | N/A | N/A | N/A | 400 | N/A | N/A |

1: Valve Lay Lengths.

2: Torque required at valve maximum internal pressure rating, 5 ft./sec. flow velocity.

3: Consists of 4" True Union Ball Valve with two 4" x 6" Adapters.

4: Gallons per minute at 1 psi pressure drop. Values calculated from valve laying length, based on derivative of Hazen-Williams equation with surface roughness factor of C=150. C_v Values for 6" venturied flange and socket valves are not available.

Temperature Pressure Rating

| System Operating Temperature °F (°C) | | 100 (38) | 110 (43) | 120 (49) | 130 (54) | 140 (60) | 150 (66) | 160 (71) | 170 (77) | 180 (82) | 190 (88) | 200 (93) | 210 (99) |
|--------------------------------------|-------------|----------|------------|------------|------------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Valve Pressure Rating psi (MPa) | 1/2" - 2" | PVC | 235 (1.62) | 211 (1.45) | 150 (1.03) | 75 (.52) | 50 (.34) | -0- (-0-) | -0- (-0-) | -0- (-0-) | -0- (-0-) | -0- (-0-) | -0- (-0-) |
| | | CPVC | 235 (1.62) | 219 (1.51) | 170 (1.17) | 145 (1.00) | 130 (.90) | 110 (.76) | 90 (.62) | 80 (.55) | 70 (.48) | 60 (.41) | 50 (.34) |
| | 2-1/2" - 6" | PVC | 150 (1.03) | 135 (.93) | 110 (.76) | 75 (.52) | 50 (.34) | -0- (-0-) | -0- (-0-) | -0- (-0-) | -0- (-0-) | -0- (-0-) | -0- (-0-) |
| | | CPVC | 150 (1.03) | 140 (.97) | 130 (.90) | 120 (.83) | 110 (.76) | 100 (.70) | 90 (.62) | 80 (.55) | 70 (.48) | 60 (.41) | 50 (.34) |

NOTE: Flanged Valves have a base pressure rating of 150 psi.