



True Union 2000 Industrial Ball Valves



Features — PVC, CPVC

This multi-featured, space saving quarter-turn shutoff valve is designed to meet the demands of today's industrial and chemical processing applications. PVC and CPVC valves are available in IPS sizes 1/2" through 6" with socket/regular thread, SR (Special Reinforced) thread, flanged or spigot end connectors and 8" Venturied valve with socket or flanged ends. Also available in metric socket and BSP thread sizes 1/2" through 2".

Sample Engineering Specification

All thermoplastic ball valves shall be True Union 2000 Industrial type manufactured to ASTM F 1970 and 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 with double O-ring stem seals. All valve handles shall be polypropylene with built-in lockout mechanism. 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" through 4" valves shall be pressure rated to 235 psi, all 6" and 8" Venturied and all flanged valves shall be pressure rated to 150 psi for water at 73°F.

- Chemical & Corrosion Resistant PVC or CPVC Construction
- Also available in Spears® High Purity, Low Extractable PVC Material
- Interchangeable with all True Union 2000 Valves Mates with Union 2000 Pipe Unions
- High Impact Polypropylene Handle
- Built-in Handle Lockout
- Schedule 80 Full-Port Design
- Strong, Buttress Thread Union Nuts
- Spears® Double O-ring Safe-T-Shear® Stem Design
- EPDM or FKM O-rings
- Spears® Safe-T-Blocked® Seal Carrier
- Self Adjusting PTFE Floating Seat Design
- Fully Serviceable, Replaceable Components
- Sizes 1/2"-4" pressure rated to 235 psi @ 73°F. Sizes 6" and 8" Venturied and all Flanged 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

Quick-View Valve Selection Chart

| Valve Size | O-ring Material | PVC Part Number ^{1,2} | | | | | Pressure Rating | |
|----------------|-----------------|--------------------------------|----------|-------------|----------|----------|---|--|
| | | Socket | Threaded | SR Threaded | Flanged | Spigot | | |
| 1/2 | EPDM | 1829-005 | included | 1821-005SR | 1823-005 | 1827-005 | 235 psi Non-Shock Water @ 73°F | |
| | FKM | 1839-005 | included | 1831-005SR | 1833-005 | 1837-005 | | |
| 3/4 | EPDM | 1829-007 | included | 1821-007SR | 1823-007 | 1827-007 | | |
| | FKM | 1839-007 | included | 1831-007SR | 1833-007 | 1837-007 | | |
| 1 | EPDM | 1829-010 | included | 1821-010SR | 1823-010 | 1827-010 | | |
| | FKM | 1839-010 | included | 1831-010SR | 1833-010 | 1837-010 | | |
| 1-1/4 | EPDM | 1829-012 | included | 1821-012SR | 1823-012 | 1827-012 | | |
| | FKM | 1839-012 | included | 1831-012SR | 1833-012 | 1837-012 | | |
| 1-1/2 | EPDM | 1829-015 | included | 1821-015SR | 1823-015 | 1827-015 | | (Flanged 150 psi Non-Shock) Water @ 73°F |
| | FKM | 1839-015 | included | 1831-015SR | 1833-015 | 1837-015 | | |
| 2 | EPDM | 1829-020 | included | 1821-020SR | 1823-020 | 1827-020 | | |
| | FKM | 1839-020 | included | 1831-020SR | 1833-020 | 1837-020 | | |
| 2-1/2 | EPDM | 1822-025 | 1821-025 | 1821-025SR | 1823-025 | 1827-025 | | |
| | FKM | 1832-025 | 1831-025 | 1831-025SR | 1833-025 | 1837-025 | | |
| 3 | EPDM | 1822-030 | 1821-030 | 1821-030SR | 1823-030 | 1827-030 | | |
| | FKM | 1832-030 | 1831-030 | 1831-030SR | 1833-030 | 1837-030 | | |
| 4 | EPDM | 1822-040 | 1821-040 | 1821-040SR | 1823-040 | 1827-040 | | |
| | FKM | 1832-040 | 1831-040 | 1831-040SR | 1833-040 | 1837-040 | | |
| 6 | EPDM | 1822-060 | 1821-060 | 1821-060SR | 1823-060 | 1827-060 | | |
| | FKM | 1832-060 | 1831-060 | 1831-060SR | 1833-060 | 1837-060 | | |
| 8 ³ | EPDM | 1822-080 | — | — | 1823-080 | — | 150 psi Non-Shock Water @ 73°F | |
| | FKM | 1832-080 | — | — | 1833-080 | — | | |

1) For CPVC, add the letter "C" following the size code of part number listed (e.g., 1829-005C, 1821-005CSR)
 2) For Special Ball Vent Design, add the letter "V" before the dash separator (e.g., 1829V-005, 1821V-005CSR)
 3) 8" Venturied Valves are 6" ball valves fitted with 6x8 end connector adapters.

Optional Vented Ball Valves

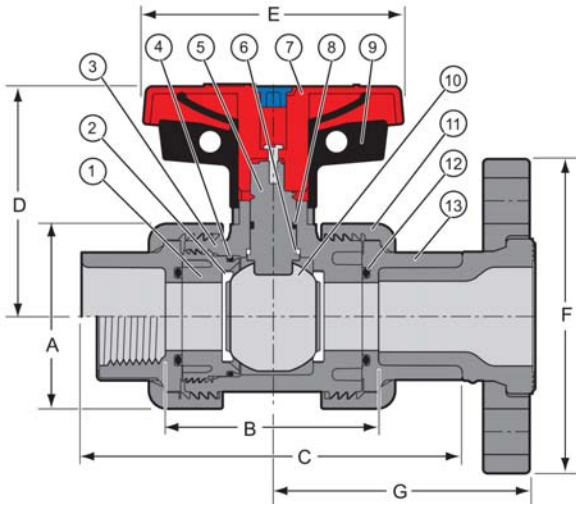
Same valve with special ball vent design for sodium hypochlorite (bleach) and other chemical applications where entrapped fluids may form caustic crystalline residues and pressure build up from gases developed. Valve has a 1/8" vent hole in ball to equalize internal fluid pressures. Install valve with ball vent on the pressure (upstream) side when in closed position.

Optional Accessories*

- Retro-Fit End Connector Sets for Valve Replacement
- Split-Nut Repair Kits for Union Nut Replacement
- Supplemental End Connectors
- Round Safety Handles
- Handle Lockout Ring
- Stem Extension Kits
- Square Operator Nuts
- Multi Mount Valve/Actuation Mounting Kits
- Mini-Mount Actuation Mounting Kits

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

Valves Technical
True Union 2000 Industrial Ball Valves



Replacement Parts

| No. | Component | Qty. | Material |
|-----|----------------------|------|----------|
| 1 | Seal Carrier | 1 | PVC/CPVC |
| 2 | Seat | 2 | PTFE |
| 3 | Body | 1 | PVC/CPVC |
| 4 | Carrier O-ring | 1 | EPDM/FKM |
| 5 | Stem | 1 | PVC/CPVC |
| 6 | Stem Bearing | 1 | PP |
| 7 | Handle | 1 | PP |
| 8 | Stem O-ring | 2 | EPDM/FKM |
| 9 | Handle Lock | 1 | PP |
| 10 | Ball | 1 | PVC/CPVC |
| 11 | Union Nut | 2 | PVC/CPVC |
| 12 | End Connector O-ring | 2 | EPDM/FKM |
| 13 | End Connector | 2 | PVC/CPVC |

1: An additional O-ring is used behind each seat on 2-1/2" or larger.

Dimensions, Weights, Operating Torque & C_v Values

| Nominal Size | Dimensions Reference (inches, ± 1/16) | | | | | | | | | | Approx. Wt. (Lbs.) | | Oper. ² Torque (in. lbs.) | C _v ³ Values | | |
|----------------|---------------------------------------|----------------|---------|----------|---------|---------|--------|---------|--------|----------|--------------------|-------|--------------------------------------|------------------------------------|---------|--------|
| | A | B ¹ | | C | | | D | E | F | G | PVC | CPVC | | Soc/Thd | Flanged | Spigot |
| | | Soc/Thd | Spigot | Socket | Thread | Spigot | | | | | | | | | | |
| 1/2 | 1-7/8 | 2-3/8 | 2-7/8 | 4-3/16 | 3-3/16 | 4-5/8 | 2-9/16 | 2-13/16 | 3-1/2 | 2-31/32 | .36 | .38 | 16 | 29 | 18 | 27 |
| 3/4 | 2-1/4 | 2-3/4 | 3-1/4 | 4-3/4 | 4-1/4 | 5-1/4 | 2-7/8 | 3-3/8 | 3-7/8 | 3-5/16 | .56 | .58 | 17 | 63 | 39 | 57 |
| 1 | 2-1/2 | 2-7/8 | 3-1/2 | 5-1/8 | 4-11/16 | 5-3/4 | 3-1/8 | 3-7/16 | 4-1/2 | 3-5/8 | .74 | .77 | 22 | 120 | 73 | 108 |
| 1-1/4 | 3-1/16 | 3-1/4 | 3-13/16 | 5-3/4 | 5-3/16 | 6-5/16 | 3-5/8 | 3-7/8 | 4-5/8 | 3-31/32 | 1.13 | 1.19 | 28 | 243 | 151 | 223 |
| 1-1/2 | 3-1/2 | 3-1/2 | 4 | 6-1/4 | 5-7/16 | 6-3/4 | 4 | 4-3/16 | 5 | 4-3/8 | 1.54 | 1.60 | 61 | 357 | 223 | 333 |
| 2 | 4-5/16 | 4-25/32 | 5-3/16 | 7-3/4 | 7-13/16 | 8-1/4 | 4-1/2 | 5-3/32 | 6 | 5-1/4 | 2.72 | 2.85 | 77 | 599 | 395 | 571 |
| 2-1/2 | 5-3/8 | 6-31/32 | 7-13/16 | 10-7/16 | 9-11/16 | 11-3/8 | 5-1/8 | 6-1/4 | 7-1/2 | 6 | 7.42 | 7.70 | 132 | 856 | 579 | 734 |
| 3 | 6-3/16 | 7 | 7-13/16 | 10-11/16 | 9-7/8 | 11-9/16 | 5-7/8 | 7-5/8 | 7-1/2 | 6-13/16 | 7.46 | 7.81 | 132 | 1416 | 974 | 1322 |
| 4 | 7-3/4 | 7-5/16 | 8-1/4 | 11-7/8 | 10-1/4 | 12-3/4 | 6-3/4 | 9 | 9 | 7-1/2 | 12.35 | 12.48 | 396 | 2865 | 1952 | 2672 |
| 6 | 11-5/8 | 11-1/16 | 13 | 17-1/16 | 15-3/4 | 18-1/2 | 8-1/8 | 14-5/16 | 11-1/4 | 10-3/16 | 37.53 | 40.55 | 732 | 6638 | 4824 | 6149 |
| 8 ⁴ | 11-5/8 | 23-3/16 | --- | 31-7/8 | --- | --- | 8-1/8 | 14-5/16 | 13-1/2 | 17-13/16 | 50.84 | 55.92 | 732 | N/A | N/A | N/A |

1: Valve Lay Length

2: Torque required at valve maximum internal pressure rating, 5ft/sec. Flow velocity; due to adjustment differences during installation, actual values may vary.

3: Gallons per minute at 1 psi pressure drop. Valves calculated from laying length, based on derivative of Hazen-Williams equation with surface roughness factor of C=150.

4: 8" Venturied Valves are 6" ball valves fitted with 6x8 end connector adapters.

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" - 4" | 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-) | -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) | -0- (-0-) |
| | 6" and 8" | PVC | 150 (1.03) | 135 (.93) | 110 (.76) | 75 (.52) | 50 (.34) | 0- (-0-) | -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) | -0- (-0-) |

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



True Union Industrial 3-Way Full Port Ball Valves



Quick-View Valve Selection Chart
3-Way Vertical Full Port Ball Valve

| Valve Size | O-ring Material | PVC Part Number ^{1, 2, 3, 4} | | | | Pressure Rating |
|------------|-----------------|---------------------------------------|--------------|------------|------------|---|
| | | Socket | SR Threaded | Flanged | Spigot | |
| 1/2 | EPDM | 7122L1-005 | 7121L1-005SR | 7123L1-005 | 7127L1-005 | 235 psi Non-Shock Water @ 73°F (Flanged 150 psi Non-Shock) Water @ 73°F |
| | FKM | 7132L1-005 | 7131L1-005SR | 7133L1-005 | 7137L1-005 | |
| 3/4 | EPDM | 7122L1-007 | 7121L1-007SR | 7123L1-007 | 7127L1-007 | |
| | FKM | 7132L1-007 | 7131L1-007SR | 7133L1-007 | 7137L1-007 | |
| 1 | EPDM | 7122L1-010 | 7121L1-010SR | 7123L1-010 | 7127L1-010 | |
| | FKM | 7132L1-010 | 7131L1-010SR | 7133L1-010 | 7137L1-010 | |
| 1-1/4 | EPDM | 7122L1-012 | 7121L1-012SR | 7123L1-012 | 7127L1-012 | |
| | FKM | 7132L1-012 | 7131L1-012SR | 7133L1-012 | 7137L1-012 | |
| 1-1/2 | EPDM | 7122L1-015 | 7121L1-015SR | 7123L1-015 | 7127L1-015 | |
| | FKM | 7132L1-015 | 7131L1-015SR | 7133L1-015 | 7137L1-015 | |
| 2 | EPDM | 7122L1-020 | 7121L1-020SR | 7123L1-020 | 7127L1-020 | |
| | FKM | 7132L1-020 | 7131L1-020SR | 7133L1-020 | 7137L1-020 | |

1: For CPVC valve, add the letter "C" to the part number (e.g. 7122L1-005C)
 2: For Double L-Port, add the number "2" to the part number (e.g. 7122L2-005)
 3: For Triple L-Port, add the number "3" to the part number (e.g. 7122L3-005)
 4: For T-Port, add the letter "T" to the part number (e.g. 7122T1-005)

Quick-View Valve Selection Chart
3-Way Horizontal Full Port Ball Valve

| Valve Size | O-ring Material | PVC Part Number ^{1, 2} | | | | Pressure Rating |
|------------|-----------------|---------------------------------|--------------|------------|------------|--|
| | | Socket | SR Threaded | Flanged | Spigot | |
| 1/2 | EPDM | 7022L1-005 | 7021L1-005SR | 7023L1-005 | 7027L1-005 | 235 psi Non-Shock Water @ 73°F (Flanged 150 psi Non-Shock) Water @ 73°F |
| | FKM | 7032L1-005 | 7031L1-005SR | 7033L1-005 | 7037L1-005 | |
| 3/4 | EPDM | 7022L1-007 | 7021L1-007SR | 7023L1-007 | 7027L1-007 | |
| | FKM | 7032L1-007 | 7031L1-007SR | 7033L1-007 | 7037L1-007 | |
| 1 | EPDM | 7022L1-010 | 7021L1-010SR | 7023L1-010 | 7027L1-010 | |
| | FKM | 7032L1-010 | 7031L1-010SR | 7033L1-010 | 7037L1-010 | |
| 1-1/4 | EPDM | 7022L1-012 | 7021L1-012SR | 7023L1-012 | 7027L1-012 | |
| | FKM | 7032L1-012 | 7031L1-012SR | 7033L1-012 | 7037L1-012 | |
| 1-1/2 | EPDM | 7022L1-015 | 7021L1-015SR | 7023L1-015 | 7027L1-015 | |
| | FKM | 7032L1-015 | 7031L1-015SR | 7033L1-015 | 7037L1-015 | |
| 2 | EPDM | 7022L1-020 | 7021L1-020SR | 7023L1-020 | 7027L1-020 | |
| | FKM | 7032L1-020 | 7031L1-020SR | 7033L1-020 | 7037L1-020 | |

1: For CPVC valve, add the letter "C" to the part number (e.g. 7022L1-005C)
 2: For T-Port, add the letter "T" to the part number (e.g. 7022T1-005)