



TRUE UNION BALL CHECK VALVES (REGULAR STYLE)



Sample Engineering Specification

All thermoplastic check valves shall be True Union Ball 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 valve union nuts shall have Buttress threads. 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 | 2229-005 | included | 2223-005 | 235 psi Non-Shock Water @ 73°F (Flanged 150 psi Non-Shock) Water @ 73°F |
| | FKM | 2239-005 | included | 2233-005 | |
| 3/4 | EPDM | 2229-007 | included | 2223-007 | |
| | FKM | 2239-007 | included | 2233-007 | |
| 1 | EPDM | 2229-010 | included | 2223-010 | |
| | FKM | 2239-010 | included | 2233-010 | |
| 1-1/4 | EPDM | 2229-012 | included | 2223-012 | |
| | FKM | 2239-012 | included | 2233-012 | |
| 1-1/2 | EPDM | 2229-015 | included | 2223-015 | |
| | FKM | 2239-015 | included | 2233-015 | |
| 2 | EPDM | 2229-020 | included | 2223-020 | |
| | FKM | 2239-020 | included | 2233-020 | |
| 2-1/2 | EPDM | 2221-025 | 2222-025 | 2223-025 | 150 psi Non-Shock Water @ 73°F |
| | FKM | 2231-025 | 2232-025 | 2233-025 | |
| 3 | EPDM | 2221-030 | 2222-030 | 2223-030 | |
| | FKM | 2231-030 | 2232-030 | 2233-030 | |
| 4 | EPDM | 2221-040 | 2222-040 | 2223-040 | |
| | FKM | 2231-040 | 2232-040 | 2233-040 | |
| 6 ² venturied | EPDM | --- | 2222-060 | 2223-060 | |
| | FKM | --- | 2232-060 | 2233-060 | |

1: For CPVC valves, add the letter "C" to part numbers listed (e.g., 2239-005C).
2: Consists of 4" True Union Ball Valve with two 4" x 6" Adapters.

Features – PVC, CPVC

Flow tested design provides quick response with positive seal for prevention of system back flow in 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 adapters) available with either socket or flanged end connection. Also available with metric 20mm - 110mm or 1/2" - 4" BSP thread end connectors. **Note:** Seal carrier is **NOT** blocked (for Safe-T-Blocked® seal carrier design, see True Union 2000 Industrial Ball Check Valve).

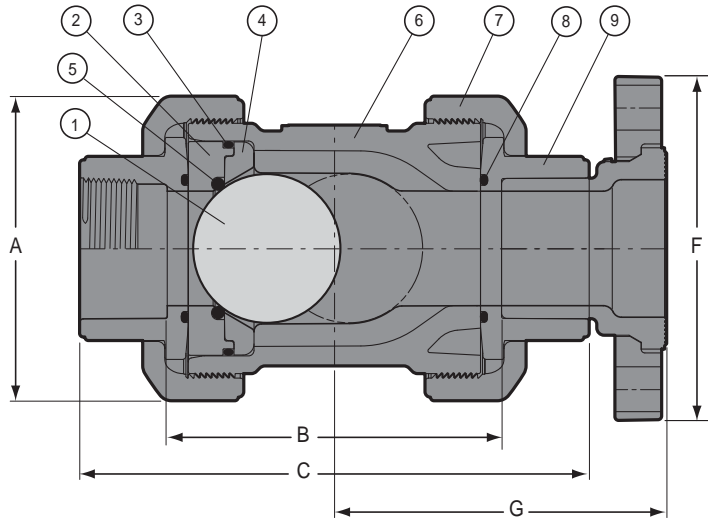
- Chemical & Corrosion Resistant PVC or CPVC Construction
- Strong, Buttress Thread Union Nuts
- Fully Serviceable, Replaceable Components
- Uses Standard O-ring Seat
- EPDM or FKM O-rings
- Sizes 1/2" - 2" Pressure Rated to 235 psi @ 73°F, Sizes 2-1/2" - 6" and all Flanged Pressure Rated to 150 psi @ 73°F
- Suitable for Either Horizontal or Vertical Installations
- EPDM valves NSF® Certified for Potable Water use
- Suitable for Vacuum Service
- Assembled with Silicone-Free, Water Soluble Lubricants
- Manufactured to ASTM F 1970

Ball Check Foot Valves

Spears® Ball Check Valves easily convert to foot valves utilizing optional Foot Valve Screen adapters found in Ball Valve Accessories section.



TRUE UNION BALL CHECK VALVES (REGULAR STYLE)



Replacement Parts

| No. | Component | Qty. | Material |
|-----|----------------------|------|----------|
| 1 | Ball | 1 | PVC/CPVC |
| 2 | Seal Carrier | 1 | PVC/CPVC |
| 3 | Carrier O-ring | 1 | EPDM/FKM |
| 4 | Seat Plate | 1 | PVC/CPVC |
| 5 | Seat O-ring | 1 | EPDM/FKM |
| 6 | Body | 1 | PVC/CPVC |
| 7 | Union Nut | 2 | PVC/CPVC |
| 8 | End Connector O-ring | 2 | EPDM/FKM |
| 9 | End Connector | 2 | PVC/CPVC |

Dimensions, Weights, C_v Values & Horizontal Closing Requirements

| Nominal Size | Dimension Reference (inches, ± 1/16) | | | | | Approx. Wt. (Lbs.) | | C _v ³ Values | | Horizontal Closing | |
|------------------------|--------------------------------------|----------------|----------|--------|---------|--------------------|-------|------------------------------------|---------|----------------------|---------------|
| | A | B ¹ | C | F | G | PVC | CPVC | Threaded/Socket | Flanged | Feet of Head (water) | GPM (minimum) |
| 1/2 | 2-9/16 | 3-5/16 | 5-1/8 | 3-1/2 | 3-7/16 | .56 | .61 | 11 | 10 | 1.6 | .10 |
| 3/4 | 3 | 4 | 6-1/8 | 3-7/8 | 3-15/16 | .91 | .99 | 18 | 17 | 1.6 | .10 |
| 1 | 3-7/16 | 4-1/4 | 6-1/2 | 4-1/4 | 4-3/8 | 1.20 | 1.30 | 32 | 30 | 1.6 | .25 |
| 1-1/4 | 3-11/16 | 4-1/2 | 7 | 4-5/8 | 4-9/16 | 1.50 | 1.60 | 58 | 55 | 1.6 | .40 |
| 1-1/2 | 4-3/8 | 5-5/16 | 8-1/16 | 5 | 5-1/4 | 2.50 | 2.70 | 94 | 89 | 1.6 | .75 |
| 2 | 5-1/8 | 5-3/4 | 8-3/4 | 6 | 5-5/8 | 3.70 | 4.00 | 153 | 146 | 1.6 | .75 |
| 2-1/2 | 7-3/8 | 8-5/16 | 11-7/8 | 7 | 7-1/4 | 11.10 | 12.21 | 159 | 155 | 1.0 | 1.50 |
| 3 | 7-3/8 | 8-1/8 | 11-7/8 | 7-1/2 | 7-1/2 | 10.84 | 11.91 | 378 | 361 | 1.0 | 4.00 |
| 4 | 8-15/16 | 8-1/4 | 12-15/16 | 9-1/16 | 8-1/8 | 17.60 | 19.36 | 551 | 537 | 1.0 | 5.50 |
| 6 Socket ² | 8-15/16 | 19-5/8 | 26-1/16 | N/A | N/A | 22.45 | 27.61 | N/A | N/A | N/A | N/A |
| 6 Flanged ² | 11-3/16 | 29-3/8 | N/A | 11-1/4 | 14-3/4 | 31.21 | 37.07 | N/A | N/A | N/A | N/A |

- 1: Valve Lay Length
 2: Consists of 4" True Union Ball Check Valve with two 4" x 6" Adapters.
 3: Gallons per minute at 1 psi pressure drop.
 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) | -0- (-0-) |
| | 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-) | -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.

General Installation Information: Ball check valves may be installed in either horizontal or vertical position. A minimum of ten (10) pipe diameters distance maintained from any pump or other source of turbulence. Ball Check valves **MUST** be installed with the valves **FLOW** arrow pointing in the direction of flow.

NOT FOR DISTRIBUTION OF COMPRESSED AIR OR GASES