



TRUE UNION 2000 INDUSTRIAL TEE-STYLE BALL VALVES



Tee x Socket

Features – PVC, CPVC

Spears® True Union 2000 Industrial Tee-Style Ball Valve design integrates valve and Tee-fitting for direct branch take-off laterals. The “Tee-Valve” provides a stronger, more compact connection by eliminating the need for a reducer, additional length of pipe, and one of the end connections on the ball valve. Close proximity of valve to mainline emulates a “zero dead-leg” design to minimize any areas of fluid stagnation. Custom produced to specified Tee and Valve connection sizes. Also available in metric sizes.

- Chemical & Corrosion Resistant PVC, CPVC or Low Extractable PVC materials
- Multi-featured Industrial Grade
- Built-in Handle Lockout
- Fully Serviceable, Replaceable Components
- Seal Carrier Adjustment Tool included
- ISO Pattern Actuation Mounting Option
- Spears® Dual O-ring Safe-T-Shear® Stem
- Self Adjusting PTFE Floating Seat
- Sizes 1/2" - 2" Pressure Rated to 235 psi @ 73°F
- EPDM Valves NSF® Certified for Potable Water Use

Sample Engineering Specification

All lateral branch valve connections shall be made using integrated Tee-style ball valve and Tee fitting. Tee-style 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; or Low Extractable PVC, ASTM D 1784 Cell Classification 12343. 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. All valve union nuts shall have Buttress threads. All seal carriers shall be Safe-T-Blocked®. All valve components shall be replaceable. Mainline Tee fittings shall be Schedule 80 manufactured in accordance with ASTM D 2467 for PVC or F 439 for CPVC. All EPDM valves shall be certified by NSF® International for use in potable water service. All 1/2" through 2" valves shall be pressure rated to 235 psi for water at 73°F, as manufactured by Spears® Manufacturing Company.

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Quick-View Valve Selection Chart

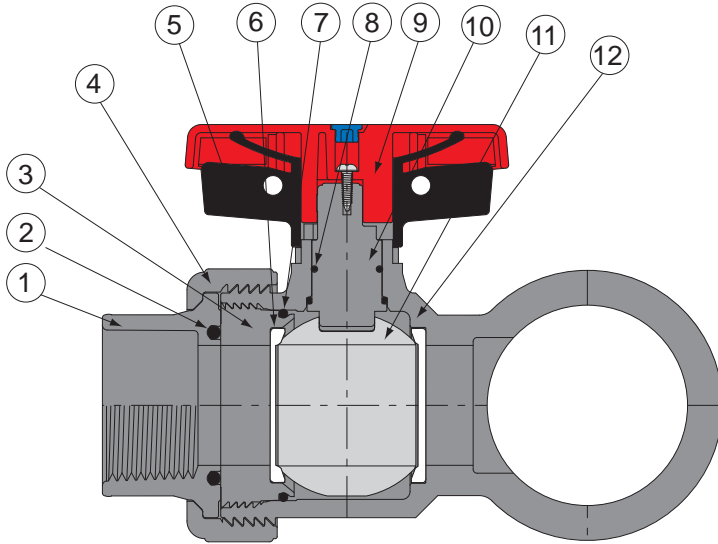
T-Valves can be custom produced in any standard Tee and Valve size combination

| Size (Tee x Valve Outlet) | PVC | | CPVC | |
|------------------------------|------------|------------|-------------|-------------|
| | EPDM | FKM | EPDM | FKM |
| 1/2 | 182901-005 | 183901-005 | 182901-005C | 183901-005C |
| 3/4 | 182901-007 | 183901-007 | 182901-007C | 183901-007C |
| 1 | 182901-010 | 183901-010 | 182901-010C | 183901-010C |
| 1-1/4 | 182901-012 | 183901-012 | 182901-012C | 182901-012C |
| 1-1/2 | 182901-015 | 183901-015 | 182901-015C | 183901-015C |
| 2 | 182901-020 | 183901-020 | 182901-020C | 183901-020C |
| 3/4x1/2 | 182901-101 | 183901-101 | 182901-101C | 183901-101C |
| 1x1/2 | 182901-130 | 183901-130 | 182901-130C | 183901-130C |
| 1x3/4 | 182901-131 | 183901-131 | 182901-131C | 183901-131C |
| 1-1/4x1/2 | 182901-166 | 183901-166 | 182901-166C | 182901-166C |
| 1-1/4x3/4 | 182901-167 | 183901-167 | 182901-167C | 183901-167C |
| 1-1/4x1 | 182901-168 | 183901-168 | 182901-168C | 183901-168C |
| 1-1/2x1/2 | 182901-209 | 183901-209 | 182901-209C | 183901-209C |
| 1-1/2x3/4 | 182901-210 | 183901-210 | 182901-210C | 183901-210C |
| 1-1/2x1 | 182901-211 | 183901-211 | 182901-211C | 183901-211C |
| 2x1/2 | 182901-247 | 183901-247 | 182901-247C | 183901-247C |
| 2x3/4 | 182901-248 | 183901-248 | 182901-248C | 183901-248C |
| 2x1 | 182901-249 | 183901-249 | 182901-249C | 183901-249C |
| 2x1-1/2 | 182901-251 | 183901-251 | 182901-251C | 183901-251C |
| 3x1/2 | 182901-333 | 183901-333 | 182901-333C | 183901-333C |
| 3x1 | 182901-335 | 183901-335 | 182901-335C | 183901-335C |
| 3x1-1/2 | 182901-337 | 183901-337 | 182901-337C | 183901-337C |
| 3x2 | 182901-338 | 183901-338 | 182901-338C | 183901-338C |
| 4x1 | 182901-417 | 183901-417 | 182901-417C | 183901-417C |
| 4x1-1/2 | 182901-419 | 183901-419 | 182901-419C | 183901-419C |
| 4x2 | 182901-420 | 183901-420 | 182901-420C | 183901-420C |
| 6x2 | 182901-528 | 183901-528 | 182901-528C | 183901-528C |
| 8x2 | 182901-578 | 183901-578 | 182901-578C | 183901-578C |

Additional Notes: For Low Extractable PVC valves, add the letters BL to the part number (e.g. 182901-005BL)
 Valve assembly includes debris plug in valve socket end (to be removed on installation) and cable-tie affixed spare end connector.



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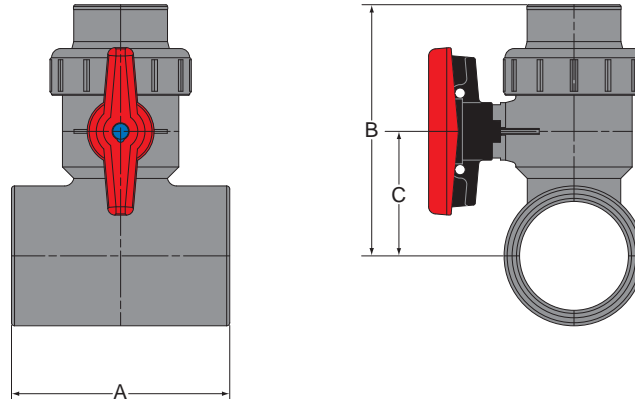
Replacement Parts

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

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) |

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Dimensions, Operating Torque & Cv Values

| Nominal Size | Dimensions Reference (inches, $\pm 1/16$) | | | Approx. Wt. (Lbs.) | | Oper. ¹ Torque (in. lbs.) | Cv ² (Value only) | |
|--------------|--|---------|----------|--------------------|-------|--------------------------------------|------------------------------|------|
| | A | B | | C | PVC | | | CPVC |
| | | Socket | Threaded | | | | | |
| 1/2 | 2-5/16 | 3-3/4 | 3-9/16 | 1-5/8 | .48 | .52 | 16 | 29 |
| 3/4 | 3-7/16 | 4-1/4 | 4 | 1-7/8 | .70 | .77 | 17 | 63 |
| 1 | 4 | 4-11/16 | 4-7/16 | 2-1/16 | 1.10 | 1.15 | 22 | 120 |
| 1-1/4 | 4-1/4 | 5-5/16 | 5 | 2-7/16 | 1.64 | 1.73 | 28 | 243 |
| 1-1/2 | 5-1/8 | 6-1/8 | 5-11/16 | 3 | 2.26 | 2.37 | 61 | 357 |
| 2 | 5-7/8 | 7-5/16 | 6-13/16 | 3-7/16 | 3.72 | 3.82 | 77 | 599 |
| 3/4x1/2 | 3-3/16 | 3-7/8 | 3-11/16 | 1-3/4 | .51 | .54 | 16 | 29 |
| 1x1/2 | 3-7/16 | 4 | 3-13/16 | 1-7/8 | .58 | .61 | 16 | 29 |
| 1x3/4 | 3-11/16 | 4-3/8 | 4-1/2 | 2 | .78 | .80 | 17 | 63 |
| 1-1/4x1/2 | 4-1/4 | 4 | 3-13/16 | 1-7/8 | .77 | .80 | 16 | 29 |
| 1-1/4x3/4 | 4-1/4 | 4-1/4 | 4 | 1-7/8 | .90 | .94 | 17 | 63 |
| 1-1/4x1 | 4-1/4 | 4-13/16 | 4-5/8 | 2-3/16 | 1.78 | 1.96 | 22 | 120 |
| 1-1/2x1/2 | 4-3/8 | 4-1/4 | 4-1/16 | 2-1/8 | .86 | .89 | 16 | 29 |
| 1-1/2x3/4 | 4-1/8 | 4-5/8 | 4-3/8 | 2-3/16 | .91 | .94 | 16 | 63 |
| 1-1/2x1 | 4-1/2 | 5 | 4-13/16 | 2-3/8 | 1.37 | 1.51 | 16 | 120 |
| 2x1/2 | 4-3/16 | 4-9/16 | 4-3/8 | 2-7/16 | 1.06 | 1.17 | 16 | 29 |
| 2x3/4 | 4-3/8 | 4-15/16 | 4-11/16 | 2-9/16 | 1.23 | 1.28 | 17 | 63 |
| 2x1 | 4-3/4 | 5-1/4 | 5-1/16 | 2-5/8 | 1.38 | 1.45 | 22 | 120 |
| 2x1-1/2 | 5-7/8 | 6-1/16 | 5-7/8 | 2-15/16 | 2.33 | 2.63 | 61 | 29 |
| 3x1/2 | 5-1/2 | 5-1/8 | 4-15/16 | 3 | 1.60 | 1.66 | 16 | 29 |
| 3x1 | 5-1/2 | 5-7/8 | 5-11/16 | 3-1/4 | 2.19 | 2.25 | 22 | 120 |
| 3x1-1/2 | 7-1/4 | 6-9/16 | 6-3/8 | 3-7/16 | 3.66 | 3.87 | 61 | 357 |
| 3x2 | 6-11/16 | 7-11/16 | 7-3/16 | 3-13/16 | 4.61 | 4.86 | 77 | 599 |
| 4x1 | 7-7/16 | 6-5/16 | 6-1/8 | 3-11/16 | 3.25 | 3.52 | 22 | 120 |
| 4x1-1/2 | 7-3/8 | 7-5/16 | 7-1/8 | 4-3/16 | 4.01 | 4.37 | 61 | 357 |
| 4x2 | 7-3/4 | 8-5/16 | 7-3/4 | 4-7/16 | 5.20 | 5.68 | 77 | 599 |
| 6x2 | 10-3/16 | 9-5/8 | 9-1/8 | 5-3/4 | 9.26 | 11.68 | 77 | 599 |
| 8x2 | 15-5/8 | 12-5/8 | 12-1/8 | 8-3/4 | 17.42 | 18.70 | 77 | 599 |

1: Torque required at valve maximum internal pressure rating, 5ft/sec. Flow velocity; due to adjustment differences during installation, actual valves may vary.
 2: 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.
 Cv values are for basic Ball Valve only, excluding Tee end connection.