



Valves Technical 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
- Schedule 80 Full-Port Design on branch
- 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

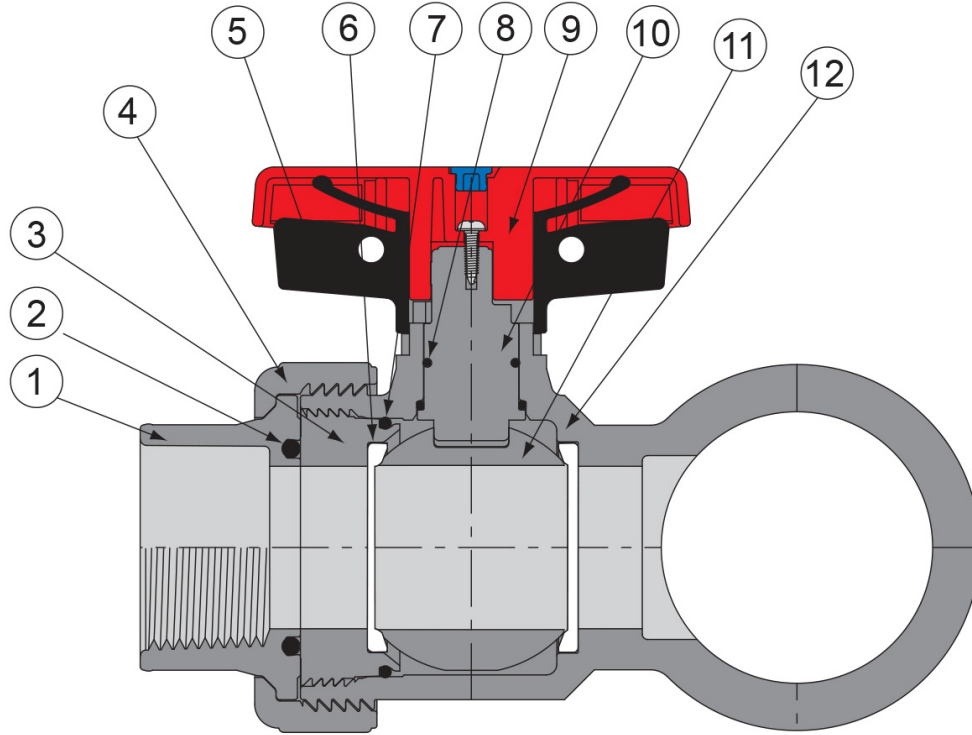
T-Valves can be custom produced in any standard Tee and Valve size combination

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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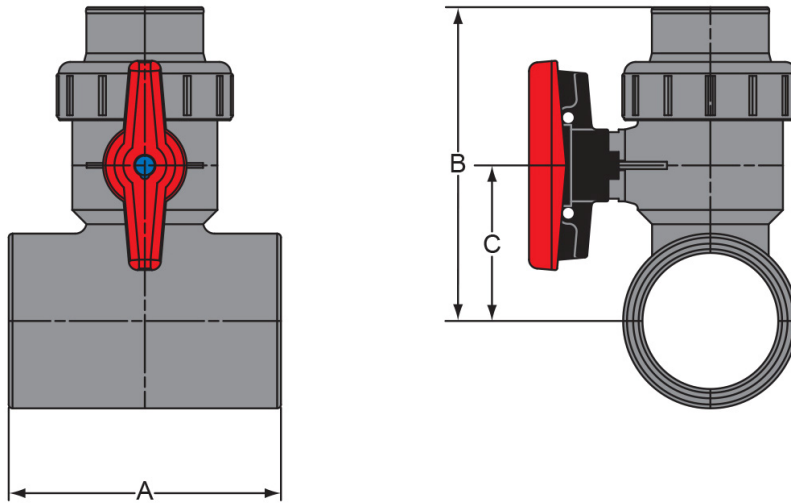
Replacement Parts

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-)	-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-)

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Dimensions, Operating Torque & Cv Values

Nominal Size	Dimensions Reference (inches, ± 1/16)				Approx. Wt. (Lbs.)		Oper. ¹ Torque (in. lbs.)	Cv ² (Valve 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	4	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.