PVC & CPVC TRUE UNION BALL VALVES



The unique design features of this quarter-turn shut off valve make it one of the most specified ball valves for industrial and chemical processing applications. Available in IPS sizes 1/2" through 4" with choice of socket, threaded or flanged end connectors, and 6" (venturied 4" valve) with choice of either socket or flanged end connectors. Also available in metric socket sizes 20 mm through 110 mm, and 1/2" through 4" BSP threads.

Heavy Bodied PVC or CPVC Construction
Spears® True Union Ball Valves never rust, scale, or pit, providing exceptional chemical and corrosion resistance.

Buttress Threaded Double Union Nuts
Strong Buttress type threads on union nuts and seal carriers allow higher pressure handling capability and quick in-line installation and servicing.

Safe-T-Blocked® Carrier
Stops flow in either direction, allowing safe removal of the downstream union nut for system service or modification.

PTFE Ball Seats
Spears® PTFE floating seat design reduces seat wear for extended valve life, smooth operation, and bubble-tight shut-off. 100% factory tested.

EPDM or FKM O-ring Options
Choice of high grade, abrasion resistant EPDM or FKM elastomer O-rings allows application specific selection for optimum chemical resistance.

High Impact Polypropylene Handle
Features double stop engagement and exhibits excellent resistance to most chemical environments.

Safe-T-Shear® Stem
Developed to help prevent line fluids from leaking out in the event of ball valve stem damage. Engineered for high strength, the stem incorporates a special shear point to control accidental breakage. Over torquing breaks occur above the stem O-ring leaving the seal intact until repair or replacement can be made.

Full Schedule 80 Bore
In full open position, full bore virtually eliminates pressure drop, providing optimum flow.

Full 235 psi Pressure Rating
Maximum Internal Pressure at 73°F for the most demanding applications of 1/2" - 2" valves, 150 psi for 2-1/2" - 6" and all flanged valves.

Suitable For Vacuum Service
Spears® True Union Ball Valves are tested at 26 in. Hg vacuum for one hour with less than 1 in. Hg loss.

NSF® Listed for Potable Water
All True Union Ball Valves are NSF® Certified for potable water use.

Fully Repairable
Convenient Seat & O-ring Replacement Kits, or Full Cartridge Replacement Kits for easy ordering, servicing and extended valve life.

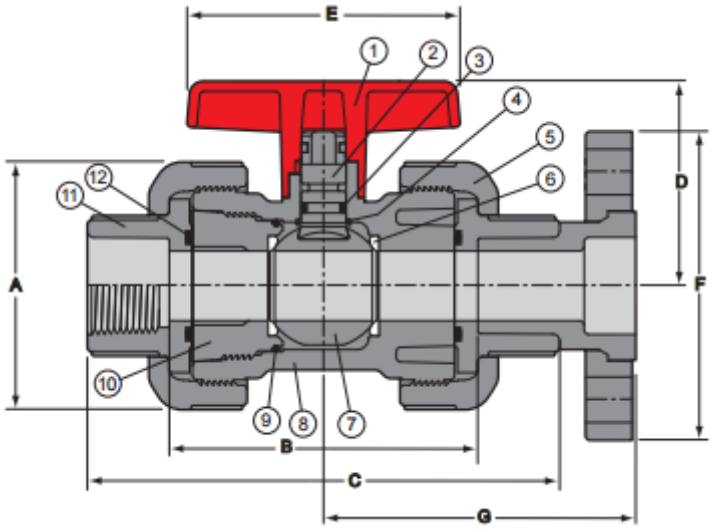
Easy Field Actuation, or Custom Factory Actuation Available
Easily actuated in the field using optional mounting kits listed below. Spears® in-house actuation program can quickly fit mechanical actuation to specific application needs.

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

Quick-View Valve Selection Chart

Valve Size	O-ring Material	PVC Part Number[1] Socket	Threaded	SR Threaded	Flanged	Spigot	Pressure Rating
1/2	EPDM	3629-005	included	3621-005SR	3623-005	3627-005	235 psi Non-Shock Water @ 73° F (Flanged 150 psi Non-Shock) Water @ 73° F
	Viton®	3639-005	included	3631-005SR	3633-005	3637-005	
3/4	EPDM	3629-007	included	3621-007SR	3623-007	3627-007	
	Viton®	3639-007	included	3631-007SR	3633-007	3637-007	
1	EPDM	3629-010	included	3621-010SR	3623-010	3627-010	
	Viton®	3639-010	included	3631-010SR	3633-010	3637-010	
1-1/4	EPDM	3629-012	included	3621-012SR	3623-012	3627-012	
	Viton®	3639-012	included	3631-012SR	3633-012	3637-012	
1-1/2	EPDM	3629-015	included	3621-015SR	3623-015	3627-015	
	Viton®	3639-015	included	3631-015SR	3633-015	3637-015	
2	EPDM	3629-020	included	3621-020SR	3623-020	3627-020	
	Viton®	3639-020	included	3631-020SR	3633-020	3637-020	
2-1/2	EPDM	3622-025	3621-025	3621-025SR	3623-025	3627-025	150 psi Non-Shock Water @ 73° F
	Viton®	3632-025	3631-025	3631-025SR	3633-025	3637-025	
3	EPDM	3622-030	3621-030	3621-030SR	3623-030	3627-030	
	Viton®	3632-030	3631-030	3631-030SR	3633-030	3637-030	
4	EPDM	3622-040	3621-040	3621-040SR	3623-040	3627-040	
	Viton®	3632-040	3631-040	3631-040SR	3633-040	3637-040	

1: For CPVC valve, add the letter "C" to the part number (e.g., 3629-005C, 3621-005CSR)



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.

Nominal Size	Dimension Reference (inches, ± 1/16)							Approx. Wt. (Lbs.)				Oper.[2] Torque (in.-lb.)	C_v[4] Values	
								PVC		CPVC				
	A	B[1]	C	D	E	F	G	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 : 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-)	-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: All flanged valves are rated at 150 psi @73° F

MERRIMAN CONTROLS

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