



# PVC & CPVC TRUE UNION BALL VALVES

TU-2-0900

## Multi-Featured Industrial Valve



### 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-Block Seal 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 Viton® O-ring Options

Choice of high grade, abrasion resistant EPDM or Viton® 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.

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 20mm through 110mm, and 1/2" through 4" BSP threads.

### 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" 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
- Multi-Mount Valve Mounting Bracket
- Complete Multi-Mount Actuation Mounting Kit
- Mini-Mount Actuation Mounting Kit
- 2" Square/T-Style Operator Nut

For additional information, please refer to Spears' THERMOPLASTIC VALVES & ACCESSORIES PRODUCT GUIDE & ENGINEERING SPECIFICATIONS V-4 and THERMOPLASTIC VALVES & ACCESSORIES Price Schedule V-1.



**Sample Engineering Specification**

All thermoplastic ball valves shall be True Union type constructed from PVC Type I Cell Classification 12454 or CPVC Type IV Cell Classification 23447 conforming to ASTM D 1784. All O-rings shall be EPDM or Viton®. All valves shall have Safe-T-Shear® stem and double stop Polypropylene handle. All valve union nuts shall have Buttress threads. All valve seal carriers shall be Safe-T-Blocked. All valve components shall be replaceable. All valves shall be Certified for potable water use by NSF International. All 1/2" through 2" valves shall be pressure rated at 235 psi and all 2-1/2" through 6" valves shall be pressure rated at 150 psi for water at 73°F, as manufactured by Spears Manufacturing Company.

Viton® is a Registered Trademark of DuPont Dow Elastomers.

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## Quick-View Valve Selection Chart

Valve Size	O-ring Material	PVC Part Number <sup>1</sup>			Pressure Rating	Accessory Available										
		Threaded	Socket	Flanged												
1/2"	EPDM	2329-005	included	2323-005	235 psi Non-Shock Water @ 73°F	Round Safety Handle Stem Extension Kit Multi-Mount Valve Mounting Bracket										
	Viton®	2339-005	included	2333-005												
3/4"	EPDM	2339-007	included	2323-007			150 psi Non-Shock Water @ 73°F	Multi-Mount Actuator Mounting Platform Complete Multi-Mount Actuation Mounting Kit Mini-Mount Actuation Mounting Kit 2" Square/T-Style Operator Nut Handle Lock-Out Bracket								
	Viton®	2329-007	included	2333-007												
1"	EPDM	2329-010	included	2323-010					150 psi Non-Shock Water @ 73°F	Multi-Mount Actuator Mounting Platform Complete Multi-Mount Actuation Mounting Kit Mini-Mount Actuation Mounting Kit 2" Square/T-Style Operator Nut Handle Lock-Out Bracket						
	Viton®	2339-010	included	2333-010												
1-1/4"	EPDM	2329-012	included	2323-012	150 psi Non-Shock Water @ 73°F	Multi-Mount Actuator Mounting Platform Complete Multi-Mount Actuation Mounting Kit Mini-Mount Actuation Mounting Kit 2" Square/T-Style Operator Nut Handle Lock-Out Bracket										
	Viton®	2339-012	included	2333-012												
1-1/2"	EPDM	2329-015	included	2323-015							150 psi Non-Shock Water @ 73°F	Multi-Mount Actuator Mounting Platform Complete Multi-Mount Actuation Mounting Kit Mini-Mount Actuation Mounting Kit 2" Square/T-Style Operator Nut Handle Lock-Out Bracket				
	Viton®	2739-015	included	2333-015												
2"	EPDM	2329-020	included	2323-020									150 psi Non-Shock Water @ 73°F	Multi-Mount Actuator Mounting Platform Complete Multi-Mount Actuation Mounting Kit Mini-Mount Actuation Mounting Kit 2" Square/T-Style Operator Nut Handle Lock-Out Bracket		
	Viton®	2339-020	included	2333-020												
2-1/2"	EPDM	2321-025	2322-025	2323-025											150 psi Non-Shock Water @ 73°F	Multi-Mount Actuator Mounting Platform Complete Multi-Mount Actuation Mounting Kit Mini-Mount Actuation Mounting Kit 2" Square/T-Style Operator Nut Handle Lock-Out Bracket
	Viton®	2331-025	2332-025	2333-025												
3"	EPDM	2321-030	2322-030	2323-030			150 psi Non-Shock Water @ 73°F	Multi-Mount Actuator Mounting Platform Complete Multi-Mount Actuation Mounting Kit Mini-Mount Actuation Mounting Kit 2" Square/T-Style Operator Nut Handle Lock-Out Bracket								
	Viton®	2331-030	2332-030	2333-030												
4"	EPDM	2321-040	2322-040	2323-040					150 psi Non-Shock Water @ 73°F	Multi-Mount Actuator Mounting Platform Complete Multi-Mount Actuation Mounting Kit Mini-Mount Actuation Mounting Kit 2" Square/T-Style Operator Nut Handle Lock-Out Bracket						
	Viton®	2331-040	2332-040	2323-040												
6" Venturied	EPDM	N/A	2322-060	2323-060	150 psi Non-Shock Water @ 73°F	Multi-Mount Actuator Mounting Platform Complete Multi-Mount Actuation Mounting Kit Mini-Mount Actuation Mounting Kit 2" Square/T-Style Operator Nut Handle Lock-Out Bracket										
	Viton®	N/A	2332-060	2333-060												

1: For CPVC valves, add the letter "C" to part numbers listed (e.g., 2729-005C). Viton®

□□□ O-rings are standard on CPVC valves. Custom end connections are available upon request.

## C<sub>v</sub> Values

Valve Size	C <sub>v</sub>	
	Threaded & Socket	Flanged
1/2"	25	18
3/4"	51	36
1"	97	67
1-1/4"	204	142
1-1/2"	285	201
2"	540	381
2-1/2"	712	512
3"	1294	925
4"	2629	1868

Values calculated from valve laying length based on derivative of Hazen-Williams equation with surface roughness factor of C=150. C<sub>v</sub> 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" - 4"	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 (.75)	100 (.70)	90 (.62)	80 (.55)	70 (.48)	60 (.41)	50 (.34)	-0- (-0-)

\*Flanged valves are rated at 150 psi @ 73°F

## NOT FOR USE WITH COMPRESSED AIR OR GASES

Spears Manufacturing Company DOES NOT RECOMMEND the use of thermoplastic piping products for systems to transport or store compressed air or gases, or the testing of thermoplastic piping systems with compressed air or gases in above and below ground locations. The use of our product in compressed air or gas systems automatically voids any warranty for such products, and its use against our recommendation is entirely the responsibility and liability of the installer.

WARNING: DO NOT USE COMPRESSED AIR OR GAS TO TEST ANY PVC OR CPVC THERMOPLASTIC PIPING PRODUCT OR SYSTEM, AND DO NOT USE DEVICES PROPELLED BY COMPRESSED AIR OR GAS TO CLEAR SYSTEMS. THESE PRACTICES MAY RESULT IN EXPLOSIVE FRAGMENTATION OF SYSTEM PIPING COMPONENTS CAUSING SERIOUS OR FATAL BODILY INJURY.



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