



PVC & CPVC TRUE UNION BALL CHECK VALVES

CK-2-0399

Engineered and Flow Tested for Superior Performance



Designed for quick, positive seal off with minimum turbulence, low restriction and maximum fluid transfer, this industrial grade ball check valve is used in a wide variety of industrial and chemical processing applications. Suitable for horizontal or vertical installation. Available in IPS sizes 1/2" through 4" with choice of either 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.

Engineered Flow Design

Spears computer engineered design provides superior fluid flow with minimum turbulence. Eliminates "chatter" often encountered in ball check valves.

Heavy Bodied PVC or CPVC Construction

Spears computer engineered True Union Ball Check Valves never rust, scale or pit, providing exceptional chemical and corrosion resistance.

Buttress Threaded Double Union Nuts

Strong buttress type threads on union nuts allow higher pressure handling capability and quick in-line installation and servicing.

NSF Certified for Potable Water

All True Union Ball Check Valves are NSF Certified for potable water use.

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.

Fully Repairable

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

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.

Ball Check Foot Valves

Spears True Union Ball Check Valves easily convert to Foot Valves utilizing optional Foot Valve Screen Adapters.

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



Quality Systems Certificate No. 293
Corporate Facilities, Sylmar, CA
Assessed to ISO 9001

Sample Engineering Specification

All thermoplastic check valves shall be True Union Ball type constructed from PVC Type I Cell Classification 12454 or CPVC Type IV Cell Classification 23447. All o-rings shall be EPDM or Viton®. All valve union nuts shall have Buttress threads. All valve components shall be replaceable. All valves shall be certified for potable water use by the National Sanitation Foundation (NSF). All 1/2" through 2" valves shall be pressure rated at 235 psi and all 2-1/2" through 4" 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.

PROGRESSIVE PRODUCTS FROM SPEARS INNOVATION & TECHNOLOGY

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C_v Values

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	
	Viton®	2239-005	included	2233-005		
3/4	EPDM	2229-007	included	2223-007		
	Viton®	2239-007	included	2233-007		
1	EPDM	2229-010	included	2223-010		
	Viton®	2239-010	included	2233-010		
1-1/4	EPDM	2229-012	included	2223-012		(Flanged 150 psi Non-Shock Water @ 73°F)
	Viton®	2239-012	included	2233-012		
1-1/2	EPDM	2229-015	included	2223-015		Non-Shock Water @ 73°F)
	Viton®	2239-015	included	2233-015		
2	EPDM	2229-020	included	2223-020	Non-Shock Water @ 73°F)	
	Viton®	2239-020	included	2233-020		
2-1/2	EPDM	2221-025	2222-025	2223-025	150 psi Non-Shock Water @ 73°F	
	Viton®	2231-025	2232-025	2233-025		
3	EPDM	2221-030	2222-030	2223-030		
	Viton®	2231-030	2232-030	2233-030		
4	EPDM	2221-040	2222-040	2223-040		
	Viton®	2231-040	2232-040	2233-040		
6 venturied	EPDM	N/A	2222-060	2223-060		
	Viton®	N/A	2232-060	2233-060		

Nominal Size	C _v		Horizontal Closing	
	Threaded & Socket	Flanged	Feet of Head (water)	GPM (minimum)
1/2	11	10	1.6	.10
3/4	18	17	1.6	.10
1	32	30	1.6	.25
1-1/4	58	55	1.6	.40
1-1/2	94	89	1.6	.75
2	153	146	1.6	.75
2-1/2	159	155	1.0	1.50
3	378	361	1.0	4.00
4	551	537	1.0	5.50

Values based on independent testing by California State Polytechnic University. Flanged values calculated for additional laying length of flanged valve. C_v Values for 6" venturied flange and socket valves are not available.

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.

1: For CPVC valves, add the letter "C" to part numbers listed (e.g., 2239-005C). Viton® o-rings are standard on CPVC Valves. **Flanged and custom end connections available upon request.**

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.

CAUTION: CHECK VALVES SHOULD BE INSTALLED A MINIMUM OF 10 PIPE DIAMETERS FROM A PUMP OR OTHER SOURCES OF TURBULENCE.

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 (.76)	100 (.70)	90 (.62)	80 (.55)	70 (.48)	60 (.41)	50 (.34)	-0- (-0-)



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