

# TRUE UNION 2000 INDUSTRIAL BALL CHECK VALVES



## Features – PVC, CPVC

Flow tested design provides quick response with positive seal for prevention of system back flow in industrial and chemical processing applications. Valves are available in IPS sizes 1/2" through 6" with socket/regular thread, SR threaded (Special Reinforced), flanged or spigot end connectors and 8" venturied valve with socket or flanged ends.. Also available in metric socket and BSP thread sizes 1/2" through 2".

## Sample Engineering Specification

All thermoplastic check valves shall be True Union 2000 Industrial Ball Check 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. All O-rings shall be EPDM or Viton®. All valve union nuts shall have Buttress threads. All valve seats shall be a standard O-ring type. All seal carriers shall be Safe-T-Blocked®. All valve components shall be replaceable. All valves shall be listed by NSF for use in potable water service. All valves shall be certified by NSF International for use in potable water service. All PVC and CPVC 1/2" through 4" valves shall be pressure rated to 235 psi, all 6" and 8" Venturied and all flanged valves shall be pressure rated to 150 psi for water at 73°F as manufactured by Spears® Manufacturing Company.

- Chemical & Corrosion Resistant PVC or CPVC Construction
- Also Available in Spears® LXT™ High Purity, Low Extractable PVC Material
- Strong, Buttress Thread Union Nuts
- Spears® Safe-T-Blocked® Seal Carrier
- Uses Standard O-ring Seat
- EPDM or Viton® O-rings
- Fully Serviceable, Replaceable Components
- Sizes 1/2" - 4" Pressure Rated to 235 psi @ 73°F, Sizes 6" and 8" Venturied and all Flanged Pressure Rated to 150 psi @ 73°F
- Suitable for Either Horizontal or Vertical Installations
- NSF Certified for Potable Water use
- Suitable for Vacuum Service
- Assembled with Silicone-Free, Water Soluble Lubricants
- Manufactured to ASTM F 1970

## Quick-View Valve Selection Chart

Valve Size	O-ring Material	PVC Part Number <sup>1</sup>					Pressure Rating	
		Socket	Threaded	SR Threaded	Flanged	Spigot		
1/2	EPDM	4529-005	included	4521-005SR	4523-005	4527-005	235 psi Non-Shock Water @ 73°F	
	Viton®	4539-005	included	4531-005SR	4533-005	4537-005		
3/4	EPDM	4529-007	included	4521-007SR	4523-007	4527-007		
	Viton®	4539-007	included	4531-007SR	4533-007	4537-007		
1	EPDM	4529-010	included	4521-010SR	4523-010	4527-010		
	Viton®	4539-010	included	4531-010SR	4533-010	4537-010		
1-1/4	EPDM	4529-012	included	4521-012SR	4523-012	4527-012		
	Viton®	4539-012	included	4531-012SR	4533-012	4537-012		
1-1/2	EPDM	4529-015	included	4521-015SR	4523-015	4527-015		(Flanged 150 psi Non-Shock) Water @ 73°F
	Viton®	4539-015	included	4531-015SR	4533-015	4537-015		
2	EPDM	4529-020	included	4521-020SR	4523-020	4527-020		
	Viton®	4539-020	included	4531-020SR	4533-020	4537-020		
2-1/2	EPDM	4522-025	4521-025	4521-025SR	4523-025	4527-025		
	Viton®	4532-025	4531-025	4531-025SR	4533-025	4537-025		
3	EPDM	4522-030	4521-030	4521-030SR	4523-030	4527-030		
	Viton®	4532-030	4531-030	4531-030SR	4533-030	4537-030		
4	EPDM	4522-040	4521-040	4521-040SR	4523-040	4527-040		
	Viton®	4532-040	4531-040	4531-040SR	4533-040	4537-040		
6	EPDM	4522-060	4521-060	4521-060SR	4523-060	4527-060		
	Viton®	4532-060	4531-060	4531-060SR	4533-060	4537-060		
8 <sup>2</sup>	EPDM	4522-080	—	—	4523-080	—	150 psi Non-Shock Water @ 73°F	
	Viton®	4532-080	—	—	4533-080	—		

1: For CPVC valve, add the letter "C" to the part number (e.g., 4529-005C, 4521-005CSR)  
2: 8" Venturied Valves are 6" ball valves fitted with 6x8 end connector adapters

## Optional Accessories\*

- Retro-Fit End Connector Sets for Valve Replacement
- Split-Nut Repair Kits for Union Nut Replacement
- Supplemental End Connectors

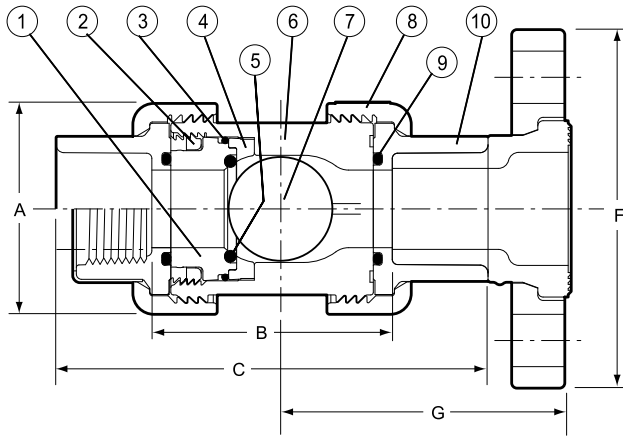
\* See "BALL VALVE ACCESSORIES" section for details of individual products.

## Ball Check Foot Valves



Spears® Ball Check Valves easily convert to foot valves utilizing optional Foot Valve Screen adapters found in Ball Valve Accessories section.

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## Replacement Parts

No.	Component	Qty.	Material
1	Seal Carrier	1	PVC/CPVC
2	Seal Carrier Nut	1	PVC/CPVC
3	Carrier O-ring	1	EPDM/Viton®
4	Seat Plate	1	PVC/CPVC
5	Seat O-ring	1	EPDM/Viton®
6	Body	1	PVC/CPVC
7	Ball	1	PVC/CPVC
8	Union Nut	2	PVC/CPVC
9	End Connector O-ring	2	EPDM/Viton®
10	End Connector	2	PVC/CPVC

## Dimensions, Weights, & Cv Values

Nominal Size	Dimensions Reference (inches, ± 1/16)								Approx. Wt. (Lbs.)		Cv <sup>2</sup> Values			Horizontal Closing	
	A	B <sup>1</sup>		C			F	G	PVC	CPVC	Soc/Thd	Flange	Spigot	Feet of Head (water)	GPM (minimum)
		Soc/Thd	Spigot	Socket	Thread	Spigot									
1/2	1-7/8	2-7/16	2-7/8	4-3/16	3-13/16	4-5/8	3-1/2	2-31/32	.30	.33	6.3	6	6.3	1.6	.10
3/4	2-1/4	2-3/4	3-1/4	4-3/4	4-1/4	5-1/4	3-7/8	3-5/16	.46	.50	17	16	17	1.6	.10
1	2-1/2	2-7/8	3-1/2	5-1/8	4-11/16	5-3/4	4-1/4	3-5/8	.70	.74	25	24	25	1.6	.25
1-1/4	3-1/16	3-1/4	3-3/16	5-3/4	5-3/16	6-5/16	4-5/8	3-31/32	1.04	1.09	65	61	65	1.6	.40
1-1/2	3-1/2	3-1/2	4	6-1/4	5-7/16	6-3/4	5	4-3/8	1.37	1.45	86	82	86	1.6	.75
2	4-1/4	4-3/4	5-3/16	7-3/4	6-3/4	8-1/4	6	5-1/4	2.47	2.62	130	125	130	1.6	.75
2-1/2	6-3/16	5-7/8	7-13/16	9-5/16	8-1/2	11-3/8	7-1/2	6	6.80	7.25	200	193	200	1.0	1.50
3	6-3/16	6-7/8	7-13/16	10-11/16	9-3/4	11-9/16	7-1/2	6-13/16	6.98	7.35	275	268	275	1.0	4.00
4	7-1/2	7-1/4	8-1/4	11-13/16	10-1/4	12-3/4	9	7-1/2	12.13	12.96	500	489	500	1.0	5.50
6	11-5/8	11-1/6	13	17-1/16	15-3/4	18-1/2	11-1/4	10-3/16	37.07	39.98	800	794	800	N/A	N/A
8 <sup>3</sup>	11-5/8	23-3/16	---	31-7/8	---	---	13-1/2	17-13/16	50.84	55.92	N/A	N/A	N/A	N/A	N/A

1: Valve Lay Length  
 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.  
 3: 8" Venturied Valves are 6" ball valves fitted with 6x8 end connector adapters

## 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" - 4"	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-)
	6" and 8"	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: Flanged valves have a base pressure rating of 150 psi

**General Installation Information:** Ball check valves may be installed in either horizontal or vertical position. A minimum of ten (10) pipe diameters distance maintained from any pump or other source of turbulence. Check valves **MUST** be installed with the valves **FLOW** arrow pointing in the direction of flow.

**NOT FOR USE WITH COMPRESSED AIR OR GASES**