

ES Series Spring Check Valves



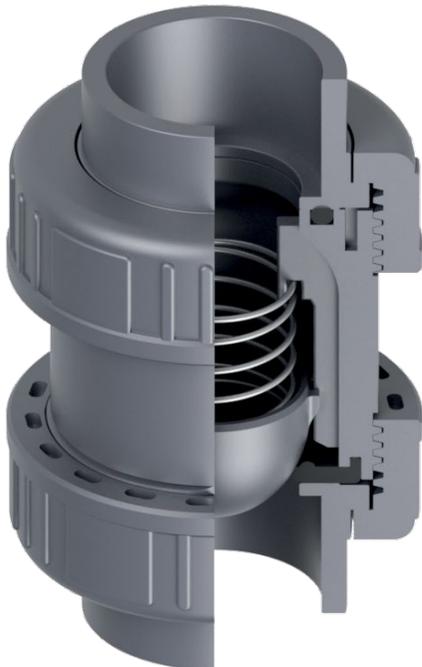
PVC

SERIES: ES

SIZES: 1/2" to 4"¹

ENDS: Socket, Threaded, Flanged or ChemFlare™

SEALS: EPDM or FKM (Viton®)



Chemline **ES Series** PVC True Union Spring Check valves have a PTFE covered stainless steel spring for positive closing. Compared to ball check valves, ES Series require very low liquid head pressure to close. That means more flexibility as to where valves may be placed in a piping system.

Features

True Union Design

- Easy installation and maintenance

PTFE Covered Stainless Steel Spring

- Spring allows disc to self close
- PTFE covering is minimum 0.45 mm (0.018") thick
- Resistant to almost all chemicals

New Disc Design²

- Fully guided for smooth, trouble-free operation
- Hydraulic design to minimize pressure loss

Moulded Elastomer Seat

- For a secure seal even at low pressures

¹ 4" valve is fabricated from a 3" valve
² 1/2" to 2"

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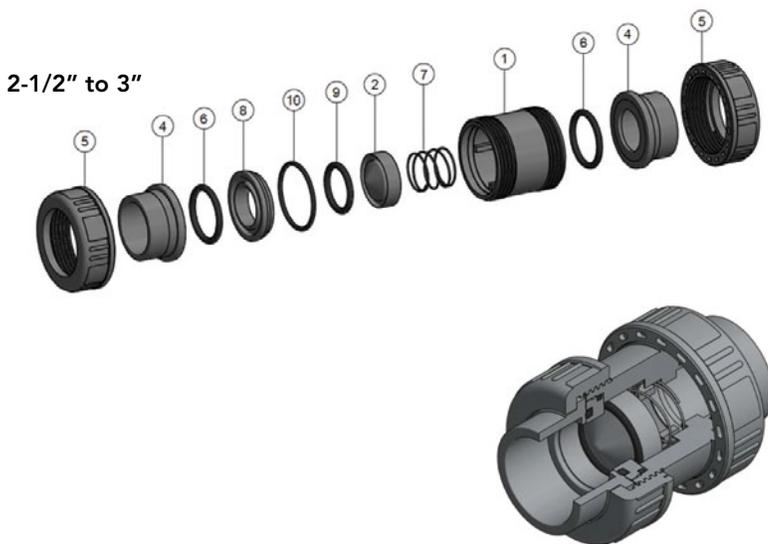
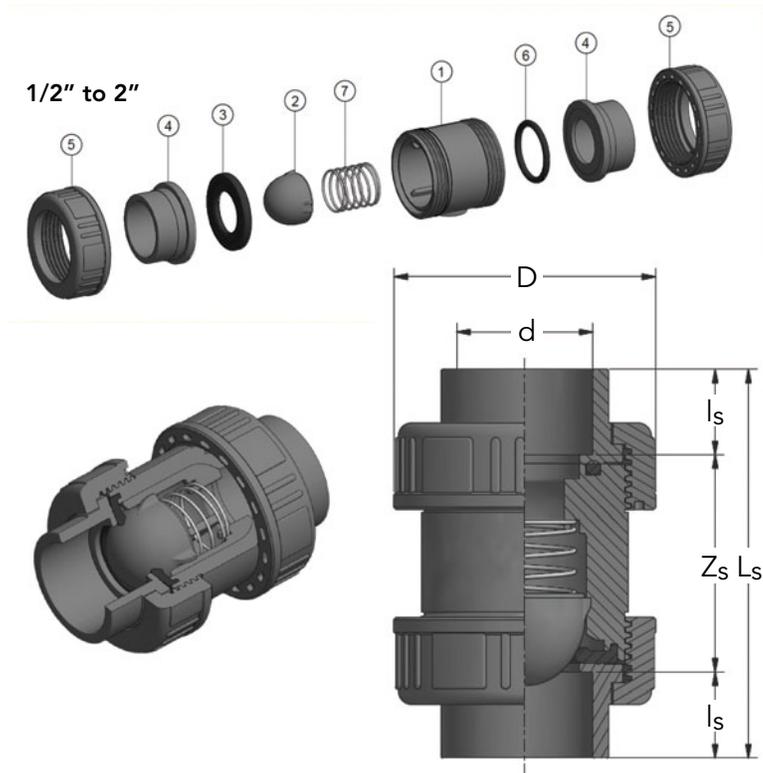


PARTS

▲ Recommended Spare Parts

No.	Part	Pcs.	Materials
1	Body	1	PVC
2	Cone	1	PVC
3▲	Seat	1	EPDM, FKM (Viton®)
4	End Connector	2	PVC
5	Union Nut	2	PVC
6▲	Face O-Ring	1/2 ¹	EPDM, FKM (Viton®)
7▲	Spring	1	PTFE covered SS
8	Seat Carrier	1	PVC
9▲	Seat O-Ring	1	EPDM, FKM (Viton®)
10▲	Seat Carrier O-Ring	1	EPDM, FKM (Viton®)

¹ 1/2" to 2" valves: 1 piece; 2-1/2" and 3" to 4" valves: 2 pieces



DIMENSIONS INCHES

Size	D	d	Socket			Threaded			Flanged ²	ChemFlare™
			L _S	Z _S	l _S	L _T	Z _T	l _T	L _F	L _{CF}
1/2"	1.9	0.50	3.7	1.9	0.9	3.0	2.0	0.5	5.8	5.31
3/4"	2.4	0.75	4.2	2.1	1.0	3.4	2.3	0.6	6.5	5.55
1"	2.7	1.00	4.7	2.4	1.1	4.0	2.6	0.7	7.3	6.20
1-1/4"	3.1	1.25	5.2	2.7	1.3	4.4	3.1	0.7	8.0	7.08
1-1/2"	3.8	1.50	6.1	3.2	1.4	4.8	3.4	0.7	9.4	-
2"	4.6	2.00	6.3	3.3	1.5	5.3	3.9	0.7	9.7	-
2-1/2"	6.6	2.50	9.1	5.6	1.8	8.5	6.6	0.9	13.6	-
3" ³	6.6	3.00	9.3	5.5	1.9	7.8	5.8	1.0	13.9	-

² Flanged valves have cemented-on flanges. Dimension L_F is approximate. Before ordering, please specify a specific L_F if required.

³ 4" valve is fabricated from a 3" valve.

ES Series Spring Check Valves



NET WEIGHTS LBS. Cv VALUES WORKING PRESSURES PSI

Size	Lbs.	USGPM flow @ 1 psi ΔP	20°C	30°C	40°C	50°C	60°C
			68°F	94°F	105°F	120°F	140°F
1/2"	0.2	4.0	230	190	150	100	45
3/4"	0.4	6.0	230	190	150	100	45
1"	0.6	12.0	230	190	150	100	45
1-1/4"	0.9	15.0	230	190	150	100	45
1-1/2"	1.4	30.5	230	190	150	100	45
2"	2.4	48.0	230	190	150	100	45
2-1/2"	6.2	146.0	230	190	150	100	45
3"	6.6	194.0	150	115	90	50	15

Maximum Temperature: 60°C (140°F)

PRESSURE TO OPEN/CLOSE PSI

Size	Minimum ΔP to Open		Minimum ΔP to Close	
	Horizontal	Vertical	Horizontal	Vertical
1/2"	0.7	0.1	1.2	1.2
3/4"	0.7	0.1	1.2	1.2
1"	0.7	0.1	1.2	1.2
1-1/4"	1.4	0.3	1.2	1.2
1-1/2"	1.4	0.3	1.2	1.2
2"	1.4	0.3	1.2	1.2
2-1/2"	1.4	0.3	1.2	1.2
3"	1.4	0.3	1.2	1.2

SAMPLE SPECIFICATION

- All PVC Spring Check valves 1/2" to 4" will be Chemline ES Series Spring Check type, slip-out true union design.
 - PVC valves will have an EPDM or FKM (Viton®) uniseat/seal for tight shut-off.
 - Valves will be 230 psi rated up to 2-1/2" and 150 psi rated for 3" and 4" suitable for temperatures up to 60°C/140°F.¹
 - Springs will be stainless steel, with minimum 0.45 mm thick PTFE covering for chemical resistance. "Teflon" spray coated springs are not acceptable.
 - Socket ends shall be Schedule 80 and conform to ASTM D-2467.
 - Threaded ends shall be Schedule 80 and conform to ASTM D-2464.
 - Flanged ends shall be ANSI Class 150.
- ¹ At maximum temperatures, pressure ratings are lower than the maximum stated. Refer to Chemline data sheet.

INSTALLATION RECOMMENDATIONS

- Install at least 5 pipe diameters from fittings or valves
- Install at least 10 pipe diameters from pump outlet
- Maximum recommended fluid velocity 5 m/s (16 ft/sec.)

VACUUM RATING

- 29.9 inches mercury

ORDERING EXAMPLE

Chemline ES Series True Union Spring Check	ES	A	015	E	S
Material A – PVC					
Size 005 – 1/2" 007 – 3/4" 010 – 1" 012 – 1-1/4" 015 – 1-1/2" 020 – 2" 025 – 2-1/2" 030 – 3" 040 – 4" ²					
Seals E – EPDM V – FKM (Viton®)					
Ends S – Socket T – Threaded F – Flanged ChemFlare™ – Use Item Numbers below					

Example: Chemline ES Series Spring Check, 1-1/2", with EPDM seals, socket ends.

² 4" valve is fabricated from a 3" valve.

CHEMFLARE™ ITEM NUMBERS

Valve Size	Tube O.D.	End Connector	Nut	Item Number
1/2"	1/4"	PVC	PVDF	A4N-1
1/2"	3/8"	PVC	PVDF	A6N-1
1/2"	1/2"	PVC	PVC	A8N-1
3/4"	3/4"	PVC	PVDF	A12N-1
1"	1"	PVC	PVDF	A16N-1

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