



Surge Check Valves

THE SC SERIES:

Class 150 and Class 300 ANSI Flanged

- Sizes 3"-24" Available
- Limits the Effects of System Surge on Air Release Valves



CRISPIN VALVE

SINCE 1905



600 FOWLER AVENUE,
BERWICK, PA 18603



(800) 247-8258
TEL. (570) 752-4524
FAX (570) 752-4962



WWW.CRISPINVALVE.COM
INFO@CRISPINVALVE.COM

SC SERIES SURGE CHECK VALVES

Limiting the Effects of System Surge on Air Release Valves

The Crispin SC Series Surge Check Valve is a normally open valve used to limit the effects of system surges on the Air Release Valve by controlling the flow rate of a surging water column, thus protecting valve internals.

During operation, the SC Series Valve will close due to the difference in density between air and water. The air will pass freely through both the Surge Check Valve and the Air Release Valve, since the density of the air contacting the Surge Check disc is not great enough to push the disc closed. However, as the air is pushed out of the system by the rising water at a specific velocity, the greater density of the water contacting the disc is enough to push the disc closed. Therefore, with the kinetic energy of the water expended in the Surge Check Valve, the Air Release Valve is free to function without the threat of being slammed closed by exiting water.

The Surge Check disc is provided with thru holes, the quantity of which is field adjusted by replacing or removing machine screws. This adjustment regulates the rate at which the Air Release Valve will fill with water and close.

Surge pressure dampening effectiveness is a function of the Surge Check Valve's design and its repeatability of closure when exit velocity dictates. Data which reflect the surge in the Air Release Valve, with and without the Surge Check Valve, is only relative to the effect of indicating that the Surge Check Valve is closed. The adjustable Surge Check orifices determine the rate at which the Air Release Valve will fill with water. Subsequently, the same Surge Check Valve can provide different surge readings in the Air Release Valve, depending upon the size and number of holes in the disc through which water is allowed to flow. As the orifice area of the disc increases, the relative time between the closure of the Surge Check to closure of the Air Release valve decreases. This will create a greater pressure surge in the Air Release Valve than if the open surface area and the

SC SERIES ADVANTAGES

- ✓ **Limits the Effects of System Surges on Air Release Valves**
- ✓ **Available in Sizes 3"-24"**
- ✓ **CL 150: 250 PSI Maximum Working Pressure
CL 300: 640 PSI Maximum Working Pressure**
- ✓ **Ductile Iron Construction with
Stainless Steel Trim**

SC SERIES OPTIONS

- ✓ **Cast Iron ANSI Class 125 and Class 250 Flanging Available. Contact the factory.**
- ✓ **Optional 2 Part High Solids Epoxy Coating**
- ✓ **AIS, Buy America Act, Buy American Act Configurations Available**

resulting fill time decreases. The evaluation of a Surge Check Valve should not be restricted to a non-defined pressure reading in the Air Release Valve. Rather, the reliability of the valve to close at and above a specific velocity should be the prime consideration.

Surge Check Valves are normally applied on the inlet of an Air & Vacuum Valve on a system with a flow velocity greater than 10 fps. Air and Vacuum Valves used on the discharge of deep well or vertical turbine pumps should include either a deep well top on the smaller valves, or a Surge Check Valve on those valves larger than 4."

The SC Series should not be used on sewage collection lines or industrial systems with high solids content in the liquid.

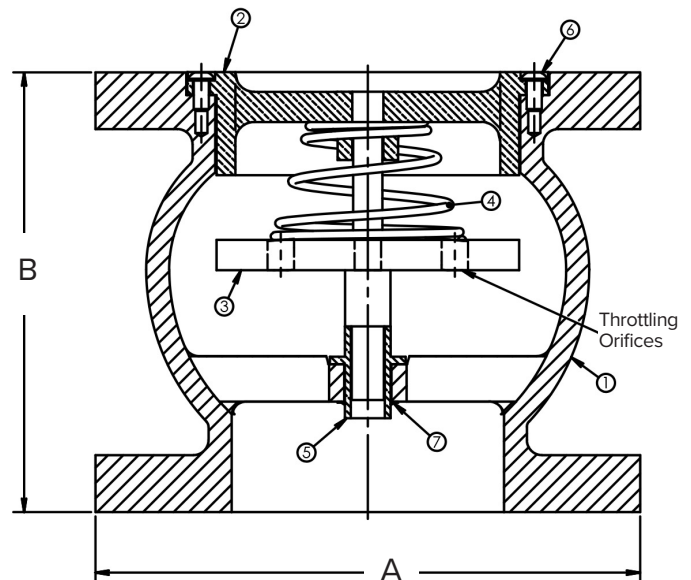
NOTE: Materials and prices are subject to change without notice. Metric and special class flange ratings are available.

SC SERIES: MODEL INFORMATION AND DIMENSIONS

Installations Where a Surge Check Valve Is Strongly Recommended:

- ✓ If system line velocities are near or exceed 10fps
- ✓ If the installation has a control and/or check valve down stream of the air release valve
- ✓ If the potential for surge exists because of piping configurations (valve at the high point in a system with very steep or vertical slopes on either side and moderate flow velocity.)
- ✓ If conditions exist for an increase in flow velocity due to addition of an alternate source.

Crispin Surge Check Valves are installed on the inlet of Crispin Air & Vacuum, Dual, Deep Well, Combination and Universal Valves to permit the float or valve to seat without the influence of surge.



SC Series, 3"-24"* Size Specifications

DIMENSIONS ARE IN INCHES. CERTIFIED DIMENSIONS AVAILABLE.

Model	Inlet Size	Outlet Size	Width (A)	Height (B)	Weight (lbs)
SC31	3 CL 150	3 CL 150	7.50	6.00	23
SC33	3 CL 300	3 CL 300	8.25	6.01	32
SC41	4 CL 150	4 CL 150	9	7.25	38
SC43	4 CL 300	4 CL 300	10	7.26	49
SC61	6 CL 150	6 CL 150	11	9.75	72
SC63	6 CL 300	6 CL 300	12.50	9.76	101
SC81	8 CL 150	8 CL 150	13.62	12.51	126
SC83	8 CL 300	8 CL 300	15	12.51	174
SC101	10 CL 150	10 CL 150	16.87	15.51	185
SC103	10 CL 300	10 CL 300	17.50	15.51	275
SC121	12 CL 150	12 CL 150	20.63	14.26	308
SC123	12 CL 300	12 CL 300	20.50	14.26	389
SC141	14 CL 150	14 CL 150	22.50	15.75	380
SC 143	14 CL 300	14 CL 300	23	15.75	441
SC161	16 CL 150	16 CL 150	23.50	17.63	525
SC163	16 CL 300	16 CL 300	26.41	17.63	658
SC201	20 CL 150	20 CL 150	31.25	20.63	815
SC203	20 CL 300	20 CL 300	31.25	20.63	1061

* For 24" size specifications, please contact the factory.

SC Series Materials List

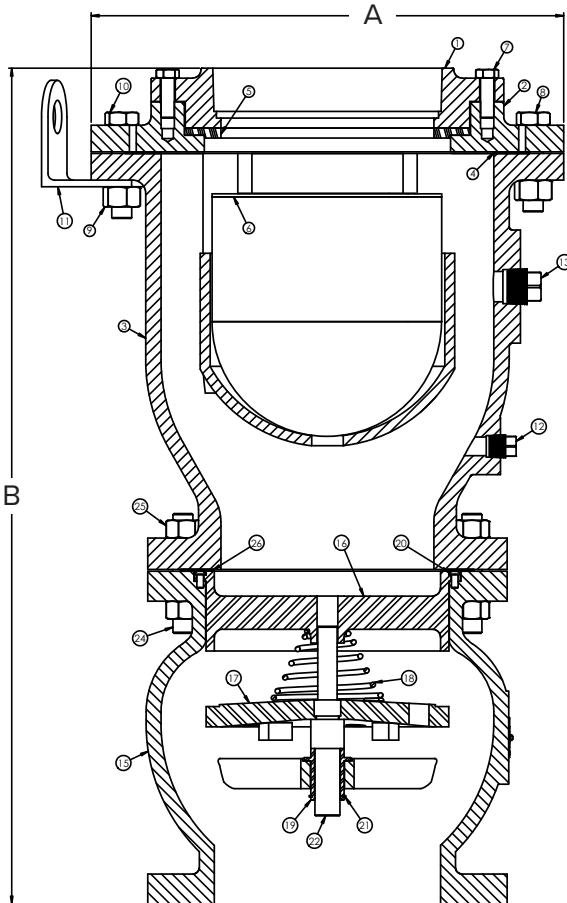
ITEM	DESC.	MATERIAL
1	BODY	Ductile Iron (ASTM A536)
2	SEAT RING	316 Stainless Steel
3	DISC	316 Stainless Steel
4	SPRING	Stainless Steel (ASTM A313)
5	BUSHING	316 Stainless Steel
6	SCREW	Stainless Steel (ASTM A193-B8M)
7	RETAINING RING	Stainless Steel (PH15-7 MO)

NOTE: Materials and prices are subject to change without notice. Metric and special class flange ratings are available.

AL/SC Series: Air & Vacuum Valve with Surge Check, 3"-24"

AL/SC SERIES, 3"-24" SIZES MATERIALS LIST

Drawing is for representational purposes only. AL Series configurations will change depending on valve size.



AL/SC Series, 3"-24"* Size Specifications

DIMENSIONS ARE IN INCHES. CERTIFIED DIMENSIONS AVAILABLE.					
Model	Inlet Size	Outlet Size	W (A)	H (B)	WT (lbs)
AL31/SC	3 CL 150	3 NPT	11.50	22.00	118
AL33/SC	3 CL 300	3 NPT	11.50	22.25	132
AL41/SC	4 CL 150	4 NPT	14	24.69	222
AL43/SC	4 CL 300	4 NPT	14	25.01	222
AL61/SC	6 CL150	6 NPT	15	25.28	259
AL63/SC	6 CL 300	6 NPT	15	25.65	308
AL81/SC	8 CL 150	8 NPT	17.75	31.25	400
AL83/SC	8 CL 300	8 NPT	17.75	31.75	480
AL101/SC	10 CL 150	10 NPT	23	37.35	685
AL103/SC	10 CL 300	10 NPT	23	38.04	887
AL121/SC	12 CL 150	12 NPT	34.56	48	1120
AL123/SC	12 CL 300	12 NPT	34.56	48	1120
AL141/SC	14 CL 150	14 NPT	30	54.52	1375
AL143/SC	14 CL 300	14 NPT	30	55.27	1349
AL161/SC	16 CL 150	16 NPT	31.80	58.02	1659
AL163/SC	16 CL 300	16 NPT	31.88	58.95	2028
AL201/SC	20 CL 150	20 NPT	43	64.69	3957
AL203/SC	20 CL 300	20 NPT	43	65.50	4380

* For 24" size specifications, please contact the factory.

AL Series Materials List

ITEM	DESC.	MATERIAL
1	TOP	Cast Iron (A126 CL B)
2	COVER FLANGE	Cast Iron (A126 CL B)
3	BODY	Cast Iron (A126 CL B)
4	COVER GASKET	Armstrong N-8092
5	SEAT	Buna-N Rubber (D2000)
6	FLOAT	Stainless Steel (A240)
7	TOP BOLT	Steel (A307)
8	COVER BOLT	Steel (A307)
9	COVER NUT	Steel (A563)
10	LUG BOLT	Steel (A307)
11	LIFTING LUG	Steel (A36)
12	BOTTOM PLUG	Brass (B505)
13	TOP PLUG	Cast Iron (A126 CL B)

SC Series Materials List

ITEM	DESC.	MATERIAL
15	BODY	Ductile Iron (ASTM A536
16	SEAT RING	316 Stainless Steel
17	DISC	316 Stainless Steel
18	SPRING	Stainless Steel (ASTM A313)
19	BUSHING	316 Stainless Steel
20	SCREW	SS (ASTM A193-B8M)
21	RETAINING RING	SS (PH15-7 MO)
22	SHAFT	316 Stainless Steel

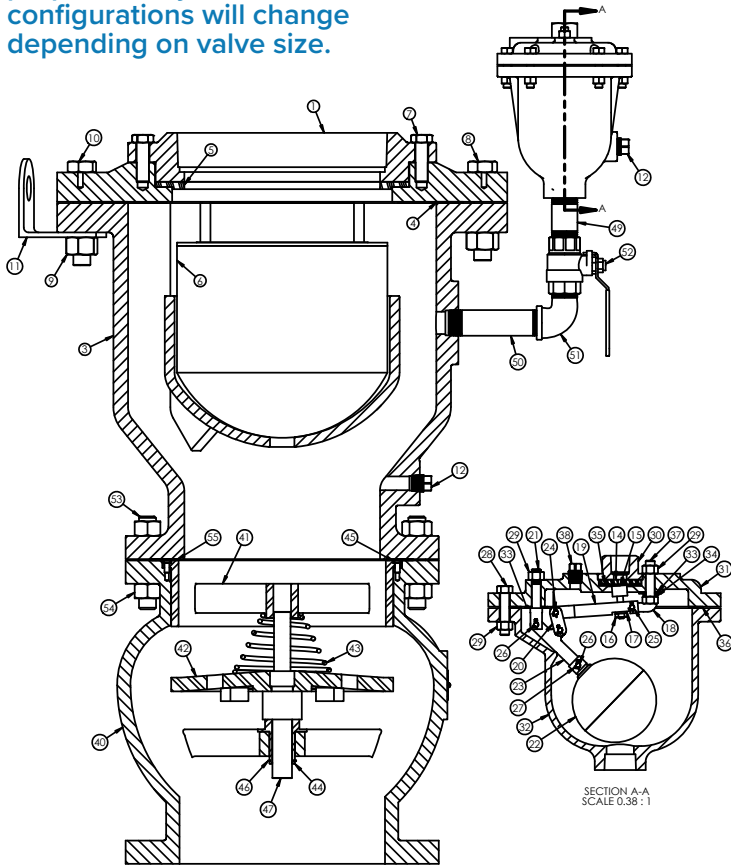
Connecting Parts Materials List		
ITEM	DESC.	MATERIAL
24	FLANGE STUD	Steel
25	FLANGE NUT	Steel
26	FLANGE GASKET	Armstrong N-8092

NOTE: Materials and prices are subject to change without notice. Metric and special class flange ratings are available.

AL/SC/PL Series: A&V/SC/Pressure Air Release Valve, 3"-20"

AL/SC/PL SERIES, 3"-20" SIZES MATERIALS LIST

Drawing is for representational purposes only. Materials & configurations will change depending on valve size.



AL Series Materials List		
ITEM	DESC.	MATERIAL
1	TOP	Cast Iron (A126 CL B)
2	COVER FLANGE	Cast Iron (A126 CL B)
3	BODY	Cast Iron (A126 CL B)
4	COVER GASKET	Armstrong N-8092
5	SEAT	Buna-N Rubber (D2000)
6	FLOAT	Stainless Steel (A240)
7	TOP BOLT	Steel (A307)
8	COVER BOLT	Steel (A307)
9	COVER NUT	Steel (A563)
10	LUG BOLT	Steel (A307)
11	LIFTING LUG	Steel (A36)
12	BODY PLUG	Brass (B505)

PL Series Materials List		
ITEM	DESC.	MATERIAL
14	PRESSURE SEAT	PVC
15	VALVE PLUNGER	Buna-N & Stainless Steel
16	PLUNGER NUT	Stainless Steel
17	LOCK WASHER	Stainless Steel
18	VALVE FULCRUM	Stainless Steel
19	VALVE LEVER	Stainless Steel
20	LINK	Stainless Steel
21	FLOAT FULCRUM	Stainless Steel
22	FLOAT	Stainless Steel
23	FLOAT LEVER	Stainless Steel
24	BEARING PIN	Stainless Steel
25	BEARING PIN	Stainless Steel
26	BEARING PIN	Stainless Steel
27	COTTER PIN	Stainless Steel
28	COVER BOLT	Steel
29	COVER NUT	Steel
30	TOP	Cast Iron
31	COVER FLANGE	Cast Iron
32	BODY	Cast Iron
33	FULCRUM WHSR	Fiber
34	FULCRUM WHSR	Fiber
35	PRES SEAT GSKT	Buna-N Rubber
36	COVER GASKET	Armstrong
37	FULCRUM BOLT	Steel
38	FLANGE PLUG	Brass

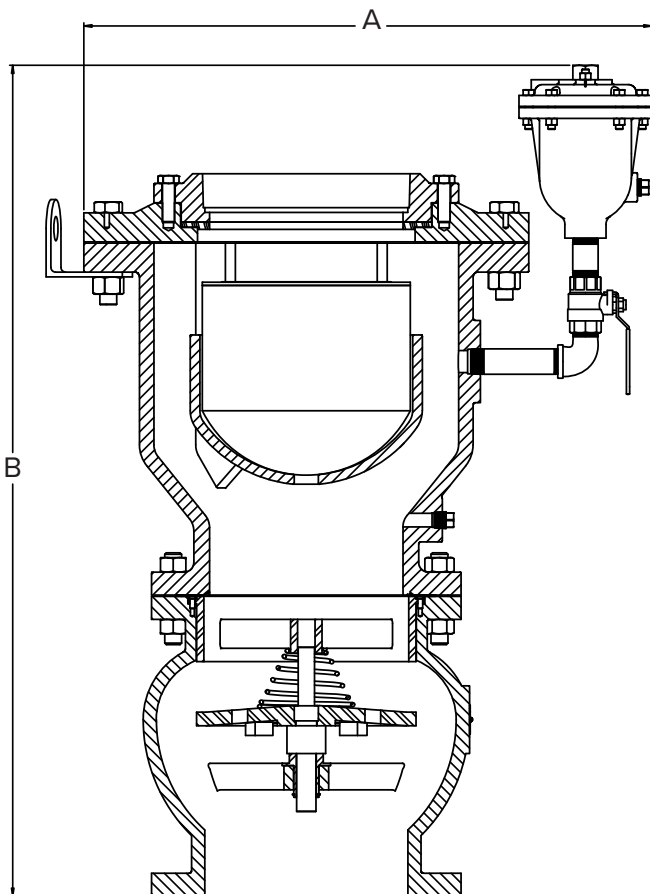
SC Series Materials List		
ITEM	DESC.	MATERIAL
40	BODY	Ductile Iron (ASTM A536)
41	SEAT RING	Stainless Steel
42	DISC	Stainless Steel
43	SPRING	Stainless Steel
44	BUSHING	Stainless Steel
45	SCREW	Stainless Steel
46	RETAINING RING	Stainless Steel
47	SHAFT	Stainless Steel

Connecting Parts Materials List		
ITEM	DESC.	MATERIAL
49	NIPPLE	Steel
50	NIPPLE	Steel
51	STREET ELBOW	Malleable Iron
52	BALL VALVE	Brass
53	FLANGE STUD	Steel
54	FLANGE NUT	Steel
55	FLANGE GASKET	Armstrong

NOTE: Materials and prices are subject to change without notice. Metric and special class flange ratings are available.

AL/SC/PL Series: A&V/SC/Pressure Air Release Valve, 3"-20"

AL/SC/PL SERIES, 3"-20" SIZES DIMENSIONS



Flange Ratings represent Ductile Iron Bodies only. For Cast Iron Bodies and Flanging, please contact the factory.

Drawing is for representational purposes only. Materials & configurations will change depending on valve size.

*HD: Hooded

AL/SC Series, 3"-20"* Size Specifications

DIMENSIONS ARE IN INCHES. CERTIFIED DIMENSIONS AVAILABLE.

Model	Inlet Size	Outlet Size	Pipe CN	WD (A)	HT (B)	WT (lbs)
AL31/SC/M5	3 CL 150	3 NPT	1/2	16.21	25.35	129
AL31/SC/PL10	3 CL 150	3 NPT	1	17.44	29.05	148
AL41/SC/M5	4 CL 150	4 NPT	1/2	18.44	27.16	217
AL41/SC/PL10	4 CL 150	4 NPT	1	19.63	30.87	245
AL61/SC/PL10	6 CL 150	6 NPT	1	20.56	32.48	282
AL61/SC/PL20	6 CL 150	6 NPT	2	22.12	35.56	305
AL81/SC/PL10	8 CL 150	8 NPT	1	22.94	38.67	424
AL81/SC/PL20	8 CL 150	8 HD*	2	24.62	41.50	447
AL101/SC/PL10	10 CL 150	10 NPT	1	29.44	43.12	798
AL101/SC/PL20	10 CL 150	10 HD	2	30.25	46.45	838
AL121/SC/PL10	12 CL 150	12 HD	1	33.19	44.21	923
AL121/SC/PL20	12 CL 150	12 HD	2	35	46.19	954
AL141/SC/PL10	14 CL 150	14 HD	1	36.06	54.52	1152
AL141/SC/PL20	14 CL 150	14 HD	2	36.87	54.52	1474
AL161/SC/PL10	16 CL 150	16 HD	1	37.31	58.02	1785
AL161/SC/PL20	16 CL 150	16 HD	2	39.12	58.02	1815
AL201/SC/PL10	20 CL 150	20 HD	1	49.28	64.69	3985
AL201/SC/PL20	20 CL 150	20 HD	2	51.08	64.69	4015
Model	Inlet Size	Outlet Size	Pipe CN	WD (A)	HT (B)	WT (lbs)
AL33/SC/M5	3 CL 300	3 NPT	1/2	15.62	24.98	165
AL33/SC/PL10	3 CL 300	3 NPT	1	17.44	29.43	166
AL43/SC/PL10	4 CL 300	4 NPT	1	19.63	31.18	262
AL43/SC/PL20	4 CL 300	4 NPT	2	21.43	36.00	297
AL63/SC/PL10	6 CL 300	6 NPT	1	20.56	32.92	321
AL63/SC/PL20	6 CL 300	6 NPT	2	22.12	36.00	351
AL83/SC/PL10	8 CL 300	8 NPT	1	22.94	38.67	514
AL83/SC/PL20	8 CL 300	8 HD	2	24.62	41.50	544
AL103/SC/PL10	10 CL 300	10 NPT	1	29.44	43.81	912
AL103/SC/PL20	10 CL 300	10 HD	2	30.25	47.14	952
AL123/SC/PL10	12 CL 300	12 HD	1	33.19	44.21	1076
AL123/SC/PL20	12 CL 300	12 HD	2	35	46.19	1105
AL143/SC/PL10	14 CL 300	14 HD	1	36.06	55.27	1655
AL143/SC/PL20	14 CL 300	14 HD	2	36.87	55.27	1685
AL163/SC/PL10	16 CL 300	16 HD	1	37.31	58.95	2054
AL163/SC/PL20	16 CL 300	16 HD	2	39.12	58.95	2085
AL203/SC/PL10	20 CL 300	20 HD	1	49.28	65.50	4405

NOTE: Materials and prices are subject to change without notice. Metric and special class flange ratings are available.

SC SERIES SURGE CHECK VALVES SPECIFICATION

SC Series, Sizes 3"-24", AWWA C512

GENERAL

SC Series Surge Check Valves shall be installed on the inlet of the (Air and Vacuum, Dual, Combination, Deep Well or Universal) valve to eliminate a surge of water from prematurely closing of damaging the Air Release Valve. when draining.

BODIES

The valve(s) shall be _____" ANSI Class (150, 300) flanged, ductile iron construction with bronze valve disc and seat ring and stainless steel spring.

The valve disc shall have drilled holes. These holes allow water to pass after the disc has been seated. The water slowly fills the Air & Vacuum to buoy its float and seal the valve. As the pressure equalizes, a stainless steel spring pushes the disc away from the seat to its original position.

Refer to Air & Vacuum and Pressure Air Release Valve specifications for valve detail.

OPTION

Where pressures are greater than 300 PSIG, the valve shall be ANSI Class _____flanged inlet connection, and shall have a (steel, stainless steel, or ductile iron) body, top and inlet flange with stainless steel spring and bronze and brass trim.

ACCEPTABLE MANUFACTURERS

The valve(s) shall be Crispin Model _____ as manufactured by Crispin-Multiplex Manufacturing Co., Berwick, PA.



NOTE: Materials and prices are subject to change without notice. Metric and special class flange ratings are available.