

The C Series Combination Air Valves

Offering Single Unit Integrity When Both Air & Vacuum and Pressure Valves Are Required On An Installation



Crispin

Since 1905

Combination Air Valves

"C" Series Combination Air Valves



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Valve Function

- **Single unit integrity when both Air & Vacuum and Pressure Valves are required at one point on a pipeline**
- **Meets AWWA C-512**

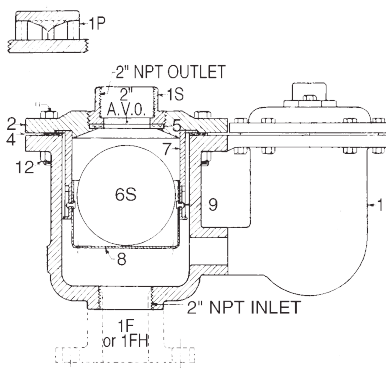
Please Refer to Air & Vacuum and Pressure Air Release Valve for Parts Lists.

The Crispin Combination Air Valve is a combination of an Air and Vacuum Unit and a Pressure Unit, designed with single unit integrity when both types of valves are required at one point. The air and vacuum unit operates the same as the standard air and vacuum valve. It releases a large quantity of air during the filling of the pipeline, and also permits a large quantity of air to re enter the pipeline to break the vacuum and eliminate any danger of collapse should the liquid suddenly leave the pipeline. The pressure unit operates independently and releases small accumulations of air which may collect while the line is in operation and under pressure. For further operating information, refer to Crispin Air and Vacuum Valve, Crispin Pressure Air Valve or Crispin Midget Air Valve literature.

All Crispin Valves are hydrostatically tested to 150% of their maximum working pressure. For pressures above 300 PSIG, steel, stainless steel or ductile iron may be used.

Dimensions and Weights

Size of Valve	1/2"	1"	2"	3"	4"	6"	8"	10"
Width	5"	6 1/4"	9 7/8"	11 1/2"	14"	15"	17 3/4"	21"
Length	8 3/4"	10 1/4"	15 5/8"	20"	22 1/8"	23"	25 5/8"	29"
Height Scwd. Connection	5 5/8"	6"	9 5/8"	13 1/2"	15 1/8"	—	—	—
Height Flgd. Connection	—	—	11 3/4"	17 1/2"	18"	16"	18 1/8"	22 1/8"
Weight Scwd. Connection	13lbs	21lbs	68lbs	120lbs	179lbs	—	—	—
Weight Flgd. Connection	—	—	73lbs	140lbs	195lbs	198lbs	290lbs	525lbs
Pressure Unit Size	Midget	Midget	1"	1"	1"	1"	1"	1"
Pressure Unit Outlet Connection	3/8" NPT	3/8" NPT	1/2" NPT	1/2" NPT	1/2" NPT	1/2" NPT	1/2" NPT	1/2" NPT
Air & Vacuum Unit Size	1/2"	1"	2"	3"	4"	6"	8"	10"
Air & Vacuum Unit Outlet Connection	1/2" NPT	1" NPT	2" NPT	3" NPT	4" NPT	6" NPT	8" NPT	10" NPT



Model Information

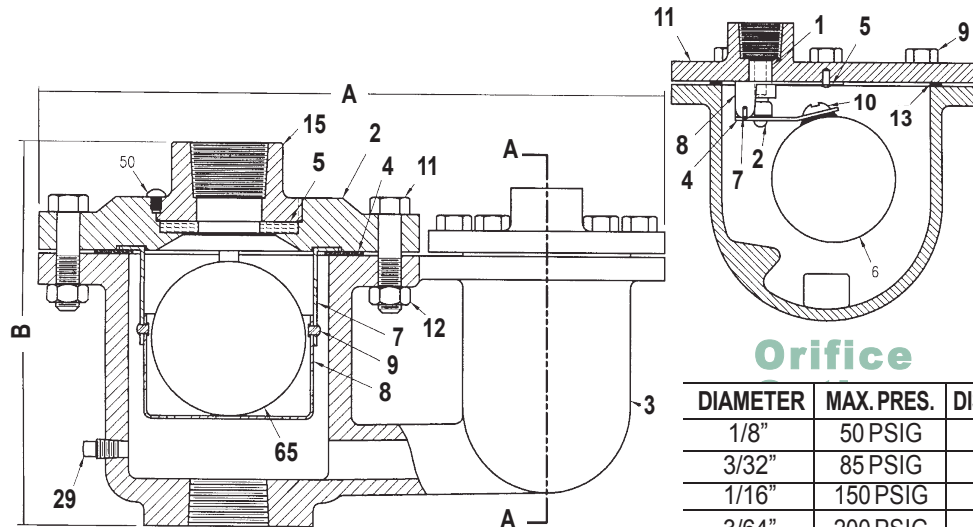
Size of Valve	1/2"	1"	2"	3"	4"	6"	8"	10"
Model No. Screwed Inlet	C5	C10	C20	C30	C40			
125# Flanged Inlet			C21	C31	C41	C61	C81	C101
250# Flanged Inlet			C22	C32	C42	C62	C82	C102



1/2"–1" Combination Air

Manufactured in compliance with ANSI/AWWA C512

Date: October, 2001



Orifice

DIAMETER	MAX. PRES.	DISCHARGE RATE
1/8"	50 PSIG	9.6 SCFM
3/32"	85 PSIG	8.3 SCFM
1/16"	150 PSIG	6.1 SCFM
3/64"	200 PSIG	4.5 SCFM
1/32"	300 PSIG	3.2 SCFM

Specifications

The combination air valve(s) shall be installed at high points in the system or at points selected by the engineer. This will permit discharging the surge of air from an empty line when filling and relieve the vacuum when draining, and also to release an accumulation of air when the system is under pressure.

The body of the valve shall be one integral casting or 2 valve bodies flange bolted together containing an air and vacuum valve and a separate pressure valve mechanism.

The Air and Vacuum Valve shall operate by sealing the BUNA-N rubber outlet seat with a peripherally guided float as the liquid enters the valve chamber to raise the float. All Crispin Valves are hydrostatically tested at 150% of their maximum working pressure.

The pressure air release valve shall operate through simple or compound levers to permit air to be released under operating conditions. The valve shall have a _____" orifice with valve sealing faces of an adjustable BUNA-N valve and (stainless steel or PVC) and shall operate at _____ PSIG and be capable of passing _____ SCFM of air.

The valve(s) shall be CRISPIN Model _____ Combination Air Valve, Type N, (PVC seat and BUNA-N rubber valve) or Type P (stainless steel seat and BUNA-N rubber valve) pressure valve as manufactured by Crispin-Multiplex Manufacturing Co., Berwick, Pa.

The valve(s) shall be _____" NPT screwed or ANSI Class (125,250) flanged inlet connection and shall be cast iron body, top, and inlet flange (where required), stainless steel floats with bronze and brass or stainless steel trim. Refer to Air & Vacuum and Pressure Air Release specifications for Valve description.

Option: A protectop shall be supplied to prevent debris from entering the outlet of the Air and Vacuum Valve.

Option: (Where pressures are greater than 300 psig), the valve(s) shall be ANSI Class flanged inlet connection and shall have a (steel, stainless steel, or ductile iron) body, top and inlet flange.

Standard operating pressure for Crispin Air Valves is 20 to 150 PSIG. Please check one of the following if your operating needs differ:
 _____ 2 to 40 PSIG _____ 151 to 300 PSIG

Size Specifications

MODEL	INLET SIZE	OUTLET SIZE	A	B	WHT.
C5	1/2" NPT	1/2" NPT	8.75	5.75	13
C10	1" NPT	1" NPT	10.25	6.00	21

Air & Vacuum Valve Parts

ITEM	DESCRIPTION	MATERIAL	ASTM
1S	TOP	CAST IRON	A126CL.B
2	FLANGE	CAST IRON	A126CL.B
3	BODY	CAST IRON	A126CL.B
4	GASKET	ARMSTRONG N-8092	N/A
5	SEAT	BUNA-N RUBBER	D2000
6S	FLOAT	STAINLESS STEEL	A240
7	HANGER	STAINLESS STEEL	A240
8	CUP	STAINLESS STEEL	A312
9	RIVET	STAINLESS STEEL	A582
9A	FLOAT ROD	STAINLESS STEEL	A582
11	BOLT	STEEL	A307
12	NUT	STEEL	A563
29	PLUG	BRASS	B505
50	INTERFERENCE PIN	STAINLESS STEEL	A582

Pressure Air Release Parts

ITEM	DESCRIPTION	MATERIAL	ASTM
1	VALVE SEAT	STAINLESS STEEL	A240
2	PLUNGER BUTTON	VITON	D2000
4	VALVE LEVER	STAINLESS STEEL	A240
5	SCREW (DRIVE)	STAINLESS STEEL	A193
6	BALL FLOAT	STAINLESS STEEL	A240
7	HINGE PIN	STAINLESS STEEL	A580
8	HINGE BUTT	STAINLESS STEEL	A240
9	BOLT	STEEL	A307
10	SCREW	STAINLESS STEEL	A193
11	FLANGE	CAST IRON	A126CL.B
13	FLANGE GASKET	ARMSTRONG N-8092	N/A

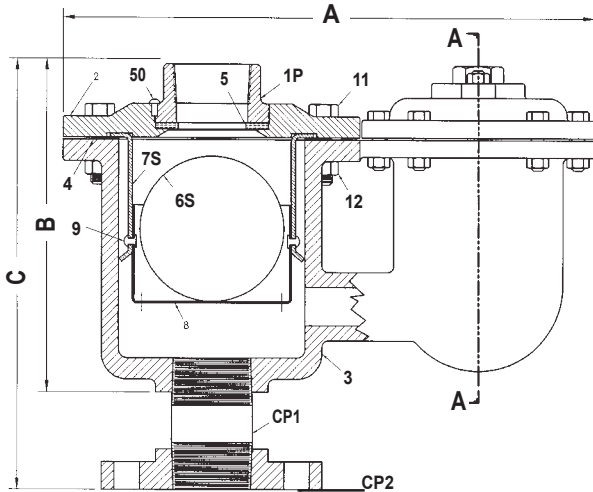
2" Combination Air Release

Manufactured in compliance with ANSI/AWWA C512

Date: October, 2001



SUBMITTAL SHEET FOR C SERIES



PARTS LIST FOR AIR & VACUUM

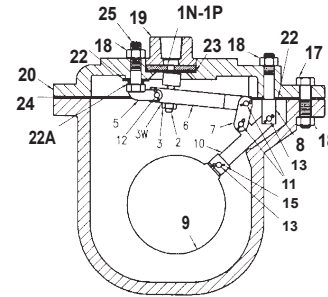
ITEM	DESCRIPTION	MATERIAL	ASTM
1S	TOP	CAST IRON	A126CL.B
2	FLANGE	CAST IRON	A126CL.B
3	BODY	CAST IRON	A126CL.B
4	GASKET	ARMSTRONG N-8092	N/A
5	SEAT	BUNA-N RUBBER	D2000
6S	FLOAT	STAINLESS STEEL	A240
7	HANGER	STAINLESS STEEL	A240
8	CUP	STAINLESS STEEL	A240
9	RIVET	STAINLESS STEEL	A582
11	BOLT	STEEL	A307
12	NUT	STEEL	A563
29	PLUG	BRASS	B505
50	INTERFERENCE PIN	STAINLESS STEEL	A582

PARTS LIST FOR PRESSURE UNIT

*1N	VALVE SEAT	PVC	1784
*1P	VALVE SEAT	STAINLESS STEEL	A582
2	VALVE PLUNGER	BUNA-N RUBBER	D2000
3	PLUNGER NUT	STAINLESS STEEL	A563
3W	LOCK WASHER	STAINLESS STEEL	A240
5	VALVE FULCRUM	STAINLESS STEEL	A240
6	VALVE LEVER	STAINLESS STEEL	A582
7	LINK	STAINLESS STEEL	A240
8	BALL FULCRUM	STAINLESS STEEL	A582
9	BALL FLOAT	STAINLESS STEEL	A240
10	BALL LEVER	STAINLESS STEEL	A240
11	BEARING PIN	STAINLESS STEEL	A582
12	BEARING PIN	STAINLESS STEEL	A582
13	BEARING PIN	STAINLESS STEEL	A582
15	COTTER PIN	STAINLESS STEEL	A493
17	BOLT	STEEL	A307
18	NUT	STEEL	A563
19	TOP	CAST IRON	A126CL.B
20	FLANGE	CAST IRON	A126CL.B
22	FULCRUM WASHER	FIBER	D710
22A	FULCRUM WASHER	FIBER	D710
23	SEAT GASKET	BUNA-N RUBBER	D2000
24	FLANGE GASKET	ARMSTRONG N-8092	N/A
25	BOLT	STAINLESS STEEL	A193
29	PLUG	BRASS	B505

PARTS LIST FOR FLANGE

CP1	NIPPLE	STEEL	A53
CP2	COMPANION FLANGE	CAST IRON	A126CL.B



Orifice Options

DIAMETER	MAX. PRESSURE	DISCHARGE RATE
5/16	100 PSIG	105 SCFM
1/4	150 PSIG	98 SCFM
3/16	200 PSIG	72 SCFM
5/32	250 PSIG	61.1 SCFM
1/8	300 PSIG	46.7 SCFM

Size Specifications

MODEL	INLET SIZE	OUTLET SIZE	A	B	C	WHT.
C20	2" NPT	2" NPT	15.75	9.50		64
**C21	2" 125# FLG	2" NPT	15.75		13.25	70
**C22	2" 250# FLG	2" NPT	15.75		14.00	72

**Includes ANSI CL. 125 or 250 Companion FLG. & NPL.

Specifications

The combination air valve(s) shall be installed at high points in the system or at points selected by the engineer. This will permit discharging the surge of air from an empty line when filling and relieve the vacuum when draining, and also to release accumulated air when the system is under pressure. The valve body shall be one integral casting or 2 valve bodies flange bolted together containing an air and vacuum valve and a separate pressure valve mechanism.

The Air and Vacuum Valve shall operate by sealing the BUNA-N rubber outlet seat with a peripherally guided float as the liquid enters the valve chamber to raise the float. All Crispin Valves are hydrostatically tested to 150% of their maximum working pressure.

The pressure air release valve shall operate through simple or compound levers to permit air to be released under operating conditions. The valve shall have a " orifice with valve sealing faces of an adjustable BUNA-N valve and (stainless steel or PVC) and shall operate at _____ PSIG and be capable of passing _____ SCFM of air.

The valve(s) shall be Crispin Model _____ Combination Air Valve, Type N, (PVC seat and BUNA-N rubber valve) or Type P (stainless steel seat and BUNA-N rubber valve) pressure valve as manufactured by Crispin-Multiplex Manufacturing Co., Berwick, Pa.

The valve(s) shall be _____" NPT screwed or ANSI Class (125,250) flanged inlet connection and shall be cast iron body, top, and inlet flange (where required), stainless steel floats with bronze and brass or stainless steel trim. Refer to Air & Vacuum and Pressure Air Release specifications for Valve description.

Option: A protectop shall be supplied to prevent debris from entering the outlet of the Air and Vacuum Valve.

Option: (Where pressures are greater than 300 psig), the valve(s) shall be ANSI Class flanged inlet connection and shall have a (steel, stainless steel, or ductile iron) body, top and inlet flange.

Standard operating pressure for Crispin Air Valves is 20 to 150 PSIG. Please check one of the following if your operating needs differ:

_____ 2 to 40 PSIG 151 to 300 PSIG

* Parts are interchangeable and optional at customer's request

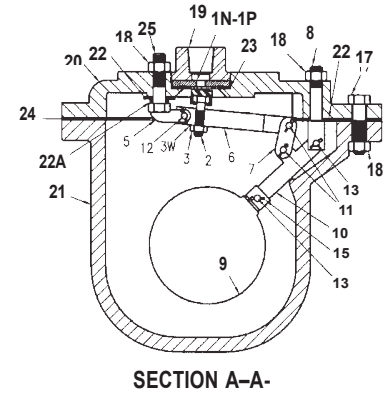
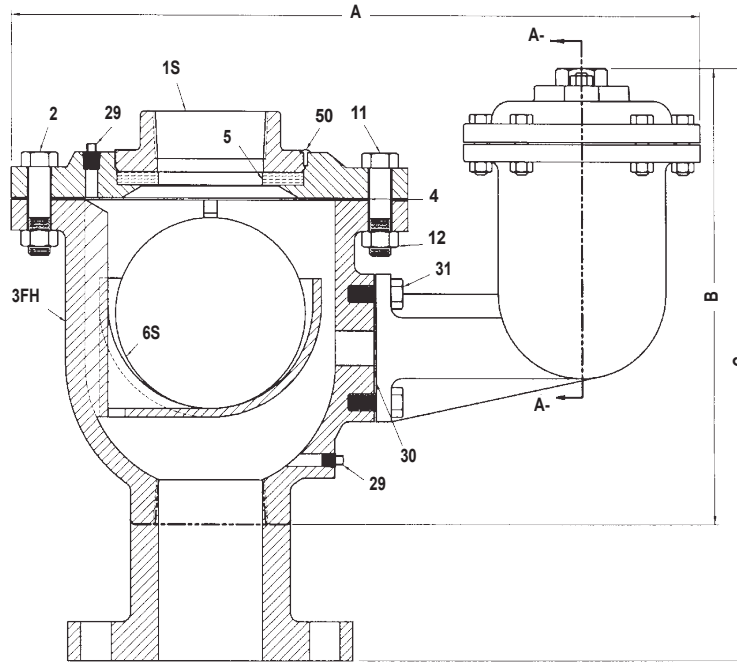


Submittal Sheet for Crispin C

3"-4" Combo. Air Release (1

Manufactured in compliance with ANSI/AWWA C512

Date: October, 2001



Orifice Options

DIAMETER	MAX. PRES.	DISCHARGE RATE
5/16	100 PSIG	105 SCFM
1/4	150 PSIG	98 SCFM
3/16	200 PSIG	72 SCFM
5/32	250 PSIG	61.1 SCFM
1/8	300 PSIG	46.7 SCFM

Specifications

The combination air valve(s) shall be installed at high points in the system or at points selected by the engineer. This will permit discharging the surge of air from an empty line when filling and relieve the vacuum when draining, and also to release an accumulation of air when the system is under pressure.

The body of the valve shall be one integral casting or 2 valve bodies flange bolted together containing an air and vacuum valve and a separate pressure valve mechanism.

The Air and Vacuum Valve shall operate by sealing the BUNA-N rubber outlet seat with a peripherally guided float as the liquid enters the valve chamber to raise the float. All Crispin Valves are hydrostatically tested at 150% of their maximum working pressure.

The pressure air release valve shall operate through simple or compound levers to permit air to be released under operating conditions. The valve shall have a _____" orifice with valve sealing faces of an adjustable BUNA-N valve and (stainless steel or PVC) and shall operate at _____ PSIG and be capable of passing _____ SCFM of air.

The valve(s) shall be CRISPIN Model _____ Combination Air Valve, Type N, (PVC seat and BUNA-N rubber valve) or Type P (stainless steel seat and BUNA-N rubber valve) pressure valve as manufactured by Crispin-Multiplex Manufacturing Co., Berwick, Pa.

The valve(s) shall be _____" NPT screwed or ANSI Class (125,250) flanged inlet connection and shall be cast iron body, top, and inlet flange (where required), stainless steel floats with bronze and brass or stainless steel trim. Refer to Air & Vacuum and Pressure Air Release specifications for Valve description.

Option: A protectop shall be supplied to prevent debris from entering the outlet of the Air and Vacuum Valve.

Option: (Where pressures are greater than 300 psig), the valve(s) shall be ANSI Class flanged inlet connection and shall have a (steel, stainless steel, or ductile iron) body, top and inlet flange.

Standard operating pressure for Crispin Air Valves is 20 to 150 PSIG. Please check one of the following if your operating needs differ:
 _____ 2 to 40 PSIG _____ 151 to 300 PSIG

Submittal Sheet for Crispin C



SUBMITTAL SHEET FOR C SERIES

3"-4" Combo. Air Release (2

Manufactured in compliance with ANSI/AWWA C512

Date: October, 2001

PARTS LIST FOR AIR & VACUUM

ITEM	DESCRIPTION	MATERIAL	ASTM
1S	TOP	CAST IRON	A126CL.B
2	FLANGE	CAST IRON	A126CL.B
3FH	BODY	CAST IRON	A126CL.B
4	GASKET	ARMSTRONG N-8092	N/A
5	SEAT	BUNA—N RUBBER	D2000
6S	FLOAT	STAINLESS STEEL	A240
11	BOLT	STEEL	A307
12	NUT	STEEL	A563
29	PLUG	BRASS	B505
50	INTERFERENCE PIN	STAINLESS STEEL	A582

PARTS LIST FOR AIR RELEASE UNIT

*1N	VALVE SEAT	PVC	1784
*1P	VALVE SEAT	STAINLESS STEEL	A582
2	VALVE PLUNGER	BUNA—N RUBBER	D2000
3	PLUNGER NUT	STAINLESS STEEL	A563
3W	LOCK WASHER	STAINLESS STEEL	A240
5	VALVE FULCRUM	STAINLESS STEEL	A240
6	VALVE LEVER	STAINLESS STEEL	A582
7	LINK	STAINLESS STEEL	A240
8	BALL FULCRUM	STAINLESS STEEL	A582
9	BALL FLOAT	STAINLESS STEEL	A240
10	BALL LEVER	STAINLESS STEEL	A240
11	BEARING PIN	STAINLESS STEEL	A582
12	BEARING PIN	STAINLESS STEEL	A582
13	BEARING PIN	STAINLESS STEEL	A582
15	COTTER PIN	STAINLESS STEEL	A493
17	BOLT	STEEL	A307
18	NUT	STEEL	A563
19	TOP	CAST IRON	A126CL.B
20	FLANGE	CAST IRON	A126CL.B
21	BODY	CAST IRON	A126CL.B
22	FULCRUM WASHER	FIBER	D710
22A	FULCRUM WASHER	FIBER	D710
23	SEAT GASKET	BUNA—N RUBBER	D2000
24	FLANGE GASKET	ARMSTRONG N-8092	N/A
25	BOLT	STAINLESS STEEL	A193
29	PLUG (NOT SHOWN)	BRASS	B505
30	GASKET	ARMSTRONG N-8092	N/A
31	BOLT	STEEL	A307

SIZE SPECIFICATIONS

* Parts are interchangeable and optional at customer's request

MODEL	INLET SIZE	OUTLET SIZE	A	B	C	WEIGHT
C30	3" NPT	3" NPT	20.00	13.50		120
C31	3" 125# FLG	3" NPT	20.00		17.50	140
C32	3" 250# FLG	3" NPT	20.00		17.50	148
C40	4" NPT	4" NPT	22.25	15.25		182
C41	4" 125# FLG	4" NPT	22.25		18.00	198
C42	4" 250# FLG	4" NPT	22.25		18.25	209

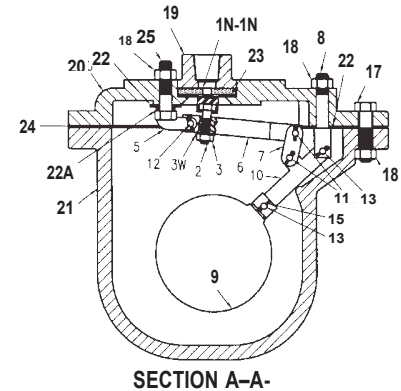
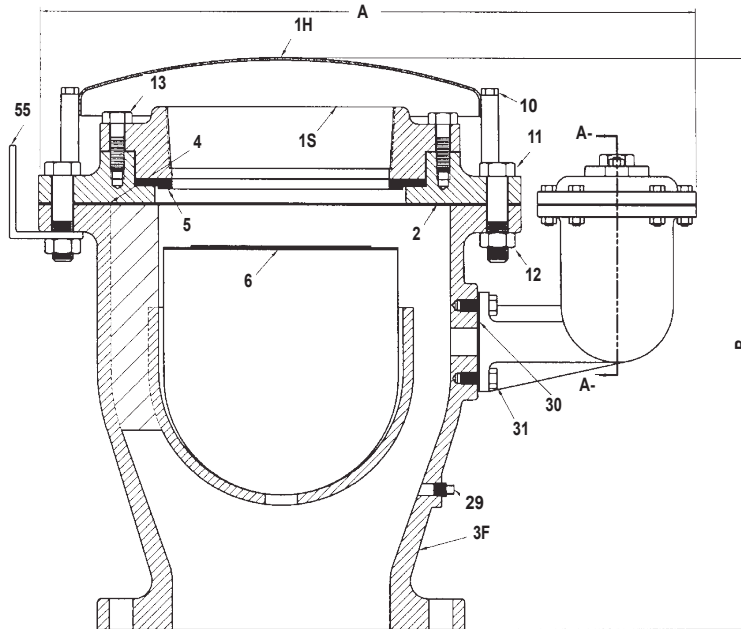


Submittal Sheet for Crispin C

6"-10" Combo. Air Release (1

Manufactured in compliance with ANSI/AWWA C512

Date: October, 2001



SECTION A-A-

Orifice Options

DIAMETER	MAX. PRES.	DISCHARGE RATE
5/16	100 PSIG	105 SCFM
1/4	150 PSIG	98 SCFM
3/16	200 PSIG	72 SCFM
5/32	250 PSIG	61.1 SCFM
1/8	300 PSIG	46.7 SCFM

Specifications

The combination air valve(s) shall be installed at high points in the system or at points selected by the engineer. This will permit discharging the surge of air from an empty line when filling and relieve the vacuum when draining, and also to release an accumulation of air when the system is under pressure.

The body of the valve shall be one integral casting or 2 valve bodies flange bolted together containing an air and vacuum valve and a separate pressure valve mechanism.

The Air and Vacuum Valve shall operate by sealing the BUNA-N rubber outlet seat with a peripherally guided float as the liquid enters the valve chamber to raise the float. All Crispin valves are hydrostatically tested to 150% of their maximum working pressure.

The pressure air release valve shall operate through simple or compound levers to permit air to be released under operating conditions. The valve shall have a _____" orifice with valve sealing faces of an adjustable BUNA-N valve and (stainless steel or PVC) and shall operate at _____ PSIG and be capable of passing _____ SCFM of air.

The valve(s) shall be CRISPIN Model _____ Combination Air Valve, Type N, (PVC seat and BUNA-N rubber valve) or Type P (stainless steel seat and BUNA-N rubber valve) pressure valve as manufactured by Multiplex Manufacturing Co., Berwick, Pa.

The valve(s) shall be _____" NPT screwed or ANSI Class (125,250) flanged inlet connection and shall be cast iron body, top, and inlet flange (where required), stainless steel floats with bronze and brass or stainless steel trim. Refer to Air & Vacuum and Pressure Air Release specifications for Valve description.

Option: A protectop shall be supplied to prevent debris from entering the outlet of the Air and Vacuum Valve.

Option: (Where pressures are greater than 300 psig), the valve(s) shall be ANSI Class flanged inlet connection and shall have a (steel, stainless steel, or ductile iron) body, top and inlet flange.

Standard operating pressure for Crispin Air Valves is 20 to 150 PSIG. Please check one of the following if your operating needs differ:
 _____ 2 to 40 PSIG _____ 151 to 300 PSIG

SIZE SPECIFICATIONS

MODEL	INLET SIZE	OUTLET SIZE	A	B	WEIGHT
C61	6" 125# FLG	6" NPT	23.00	16.00	202
C62	6" 250# FLG	6" NPT	23.00	16.25	225
C81	8" 125# FLG	8" NPT	25.75	18.25	293
C82	8" 250# FLG	8" NPT	25.75	18.75	323
C101	10" 125# FLG	10" NPT	29.00	22.25	528
C102	10" 250# FLG	10" NPT	29.00	23.00	578

SUBMITTAL SHEET FOR C SERIES

Submittal Sheet for Crispin C

6"-10" Combo. Air Release (2

Manufactured in compliance with ANSI/AWWA C512

Date: October, 2001



PARTS LIST FOR AIR & VACUUM

ITEM	DESCRIPTION	MATERIAL	ASTM
**1H	HOOD	HRCQ STEEL	N/A
1S	TOP	CAST IRON	A126CL.B
2	FLANGE	CAST IRON	A126CL.B
3F	BODY	CAST IRON	A126CL.B
4	GASKET	ARMSTRONG N-8092	N/A
5	SEAT	BUNA-N RUBBER	D2000
6	FLOAT	STAINLESS STEEL	A240
**10	BOLT	STEEL	A307
11	BOLT	STEEL	A307
12	NUT	STEEL	A563
13	BOLT	STEEL	A307
29	PLUG	BRASS	B505
55	LIFTING LUG	STEEL	A36

PARTS LIST FOR AIR RELEASE UNIT

*1N	VALVE SEAT	PVC	1784
*1P	VALVE SEAT	STAINLESS STEEL	A582
2	VALVE PLUNGER	BUNA-N RUBBER & S/S	D2000
3	PLUNGER NUT	STAINLESS STEEL	A563
3W	LOCK WASHER	STAINLESS STEEL	A240
5	VALVE FULCRUM	STAINLESS STEEL	A240
6	VALVE LEVER	STAINLESS STEEL	A582
7	LINK	STAINLESS STEEL	A240
8	BALL FULCRUM	STAINLESS STEEL	A582
9	BALL FLOAT	STAINLESS STEEL	A240
10	BALL LEVER	STAINLESS STEEL	A240
11	BEARING PIN	STAINLESS STEEL	A582
12	BEARING PIN	STAINLESS STEEL	A582
13	BEARING PIN	STAINLESS STEEL	A582
15	COTTER PIN	STAINLESS STEEL	A493
17	BOLT	STEEL	A307
18	NUT	STEEL	A563
19	TOP	CAST IRON	A126CL.B
20	FLANGE	CAST IRON	A126CL.B
21	BODY	CAST IRON	A126CL.B
22	FULCRUM WASHER	FIBER	D710
22A	FULCRUM WASHER	FIBER	D710
23	SEAT GASKET	BUNA-N RUBBER	D2000
24	FLANGE GASKET	ARMSTRONG N-8092	N/A
25	BOLT	STAINLESS STEEL	A193
29	PLUG (NOT SHOWN)	BRASS	B505
30	GASKET	ARMSTRONG N-8092	N/A
31	BOLT	STEEL	A307

* Parts are interchangeable and optional at customer's request

** Optional at customer's request

SUBMITTAL SHEET FOR C SERIES