



Combination Air Valves

THE C SERIES:

AWWA C512 AIR VALVES

- **Sizes 1/2"-24" Available • Offers Single Unit Integrity When Both Air & Vacuum and Pressure Valves are Required at One Point on a Pipeline**



CRISPIN VALVE

SINCE 1905



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C SERIES COMBINATION VALVES

The Ideal Choice When Both Air & Vacuum and Pressure Valves Are Needed

C SERIES ADVANTAGES

- ✓ **Single Unit Integrity in the Field**
- ✓ **Meets AWWA C512 Requirements**
- ✓ **Designed for a Cold Water Working Pressure of 300 PSI**
For pressures above 300 PSI, Steel, Stainless Steel, or Ductile Iron may be used.
- ✓ **Standard Operating Pressure Rating of 20-150 PSI**



C SERIES OPTIONS

- ✓ **NPT and ANSI Class 125 and Class 250 Flanging Available**
- ✓ **Cast Iron or Ductile Iron Bodies Available**
- ✓ **Optional 2 Part High Solids Epoxy Coating**
- ✓ **AIS, Buy America Act, Buy American Act, and Build America Buy America Act Configurations Available**
- ✓ **Additional Operating Pressure Ratings of 2-40 PSI (low) and 151-300 PSI (high) Available**
- ✓ **Optional Protectop to Prevent Debris from Entering the Air & Vacuum Outlet**

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. They are generally installed at the high points in a system, or at the point selected by the project engineer. The unit discharges the surge of air from an empty line when filling, and relieves the vacuum when draining, while also releasing accumulations of air when the system is under pressure.

The Air and Vacuum unit operates the same as Crispin's 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 if the liquid suddenly leaves the pipeline. The pressure unit operates independently and releases small accumulations of air that may collect while the line is in operation and under pressure. Thus, each valve of the combination operates as a separate unit, while maintaining the advantages of a single body casting.

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

C SERIES: MODEL INFORMATION AND DIMENSIONS

C Series Dimensions & Weights								
DIMS. ARE IN INCHES. CERTIFIED DIMS. AVAILABLE.	BOLT ON							
Size of Valve	1/2"	1"	2"	3"	4"	6"	8"	10"
Width	5	6.19	9.88	11.50	14	15	17.75	23
Length	8.75	10.22	15.69	20	22.19	23.03	25.625	30
Height (Screwed Connection)	5.64	6.03	9.56	12.94	14.56	n/a	n/a	n/a
Height (Flanged Connection)	n/a	n/a	11.81	16.94	17.50	15.50	18.84	21.78
Height (Flanged Hvy Conn.)	n/a	n/a	12.06	17.31	17.81	15.84	18.84	22.50
Weight (lbs) (Screwed Connection)	13	21	67	108	177	n/a	n/a	n/a
Weight (lbs) (Flanged Connection)	n/a	n/a	73	126	196	196	305	571
Weight (lbs) (Flanged Hvy Conn.)	n/a	n/a	75	131	205	212	327	607
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



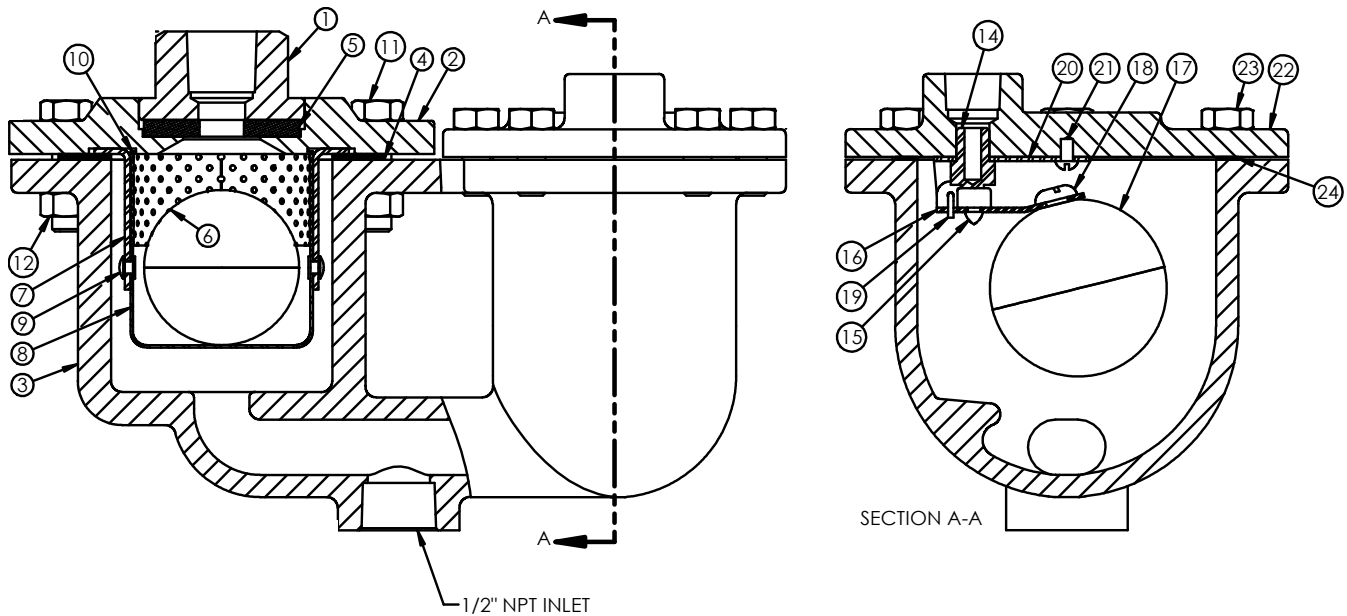
1/2"-1" Orifice Options		
Diameter	Max Working Pressure	Discharge Rate
5/32	40 PSIG	13 SCFM
1/8	50 PSIG	9.6 SCFM
3/32	85 PSIG	8.3 SCFM
1/16	150 PSIG	6.1 SCFM
3/64	200 PSIG	4.5 SCFM
1/32	300 PSIG	3.2 SCFM

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

2"-10" Orifice Options		
Diameter	Max Working 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

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

C Series Combination Air Release Valve, Size 1/2"



C SERIES, 1/2" SIZE MATERIALS LIST

Air & Vacuum Unit		
ITEM	DESC.	MATERIAL
1	TOP	Cast Iron
2	COVER FLANGE	Cast Iron
3	COMBO BODY	Cast Iron
4	COVER GASKET	Armstrong
5	SEAT	Buna-N-Rubber
6	FLOAT	Stainless Steel
7	HANGER	Stainless Steel
8	FLOAT CUP	Stainless Steel
9	RIVET	Stainless Steel
10	DIFFUSER	Stainless Steel
11	COVER BOLT	Steel
12	COVER NUT	Steel

Pressure Air Release Unit		
ITEM	DESC.	MATERIAL
14	PRESSURE SEAT	Stainless Steel
15	VALVE BUTTON	Viton
16	VALVE LEVER	Stainless Steel
17	FLOAT	Stainless Steel
18	FLOAT SCREW	Stainless Steel
19	HINGE PIN	Stainless Steel
20	HINGE BUTT	Stainless Steel
21	DRIVE SCREW	Stainless Steel
22	COVER FLANGE	Cast Iron
23	COVER BOLT	Steel
24	COVER GASKET	Armstrong

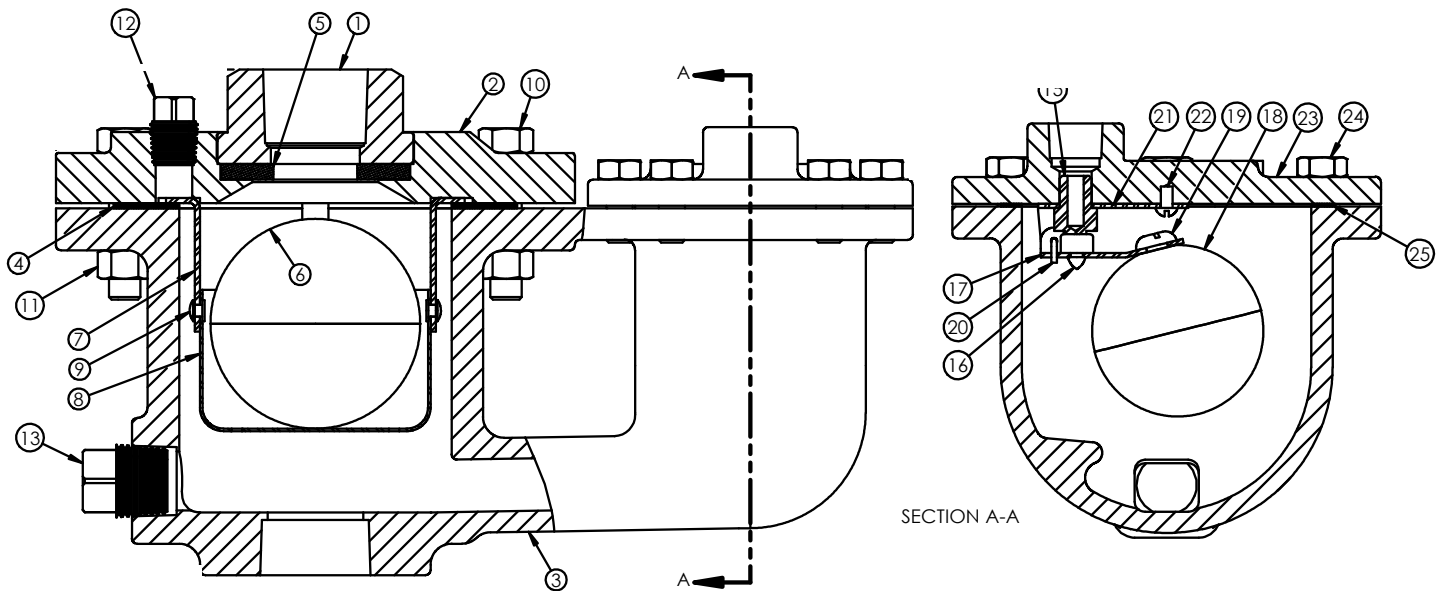
C Series, 1/2" Size Specifications

ALL DIMENSIONS ARE IN INCHES. CERTIFIED DIMENSIONS ALSO AVAILABLE.

Model	Inlet Size	Outlet Size	Overall Width	Overall Height	Weight (lbs)
C5	1/2 NPT	1/2 NPT	8.75	5.64	13

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

C Series Combination Air Release Valve, Size 1"



C SERIES, 1" SIZE MATERIALS LIST

Air & Vacuum Unit		
ITEM	DESC.	MATERIAL
1	TOP	Cast Iron
2	COVER FLANGE	Cast Iron
3	COMBO BODY	Cast Iron
4	COVER GASKET	Armstrong
5	AIR/VAC SEAT	Buna-N-Rubber
6	FLOAT	Stainless Steel
7	HANGER	Stainless Steel
8	CUP	Stainless Steel
9	RIVET	Stainless Steel
10	COVER BOLT	Stainless Steel
11	COVER NUT	Stainless Steel
12	FLANGE PLUG	Stainless Steel
13	BODY PLUG	Stainless Steel

Pressure Air Release Unit		
ITEM	DESC.	MATERIAL
15	PRESSURE SEAT	Stainless Steel
16	VALVE BUTTON	Viton
17	VALVE LEVER	Stainless Steel
18	FLOAT	Stainless Steel
19	FLOAT SCREW	Stainless Steel
20	HINGE PIN	Stainless Steel
21	HINGE BUTT	Stainless Steel
22	DRIVE SCREW	Stainless Steel
23	COVER FLANGE	Cast Iron
24	COVER BOLT	Steel
26	COVER GASKET	Armstrong

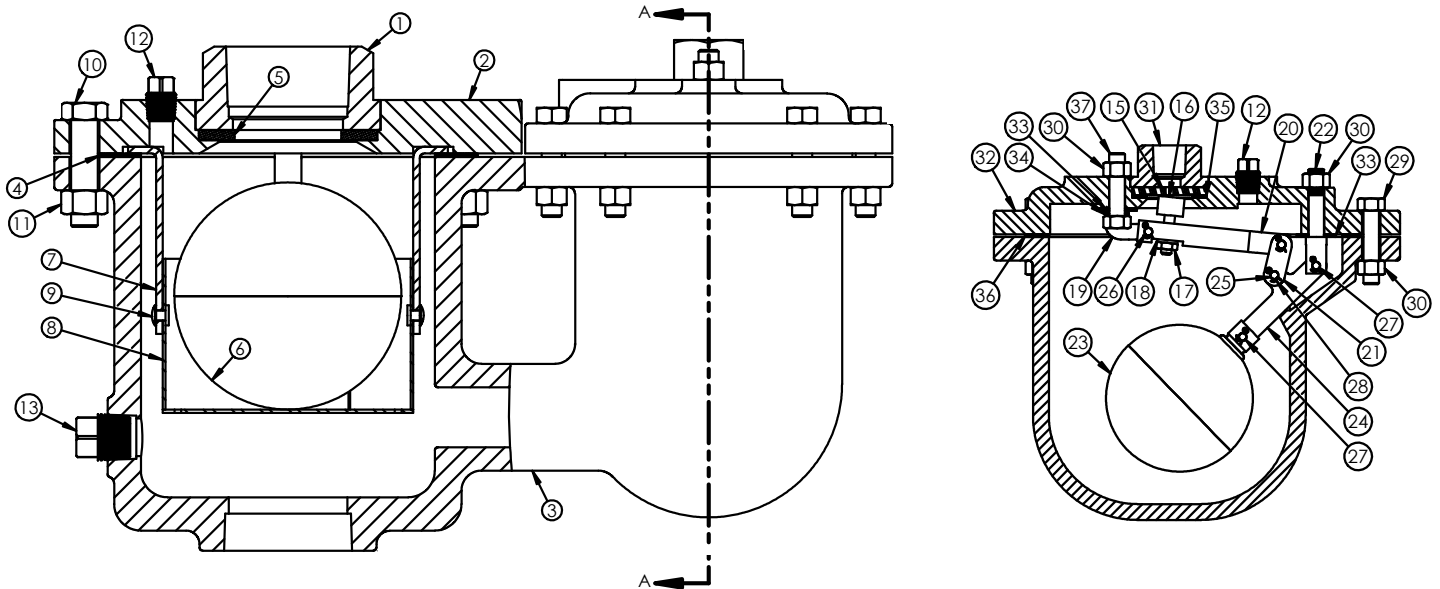
C Series, 1" Size Specifications

ALL DIMENSIONS ARE IN INCHES. CERTIFIED DIMENSIONS ALSO AVAILABLE.

Model	Inlet Size	Outlet Size	Overall Width	Overall Height	Weight (lbs)
C10	1 NPT	1 NPT	10.22	6.03	21

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

C Series Combination Air Release Valve, Size 2"



C SERIES, 2" SIZE MATERIALS LIST

Air & Vacuum Unit		
ITEM	DESC.	MATERIAL
1	TOP	Cast Iron
2	COVER FLANGE	Cast Iron
3	COMBO BODY	Cast Iron
4	COVER GASKET	Armstrong
5	AIR/VAC SEAT	Buna-N-Rubber
6	FLOAT	Stainless Steel
7	HANGER	Stainless Steel
8	CUP	Stainless Steel
9	RIVET	Stainless Steel
10	COVER BOLT	Steel
11	COVER NUT	Steel
12	FLANGE PLUG	Brass
13	BODY PLUG	Brass

Pressure Air Release Unit		
ITEM	DESC.	MATERIAL
15	PRESSURE SEAT	PVC
16	VALVE PLUNGER	Buna-N & Stainless Steel
17	PLUNGER NUT	Stainless Steel
18	LOCK WASHER	Stainless Steel
19	VALVE FULCRUM	Stainless Steel
20	VALVE LEVER	Stainless Steel
21	LINK	Stainless Steel
22	FLOAT FULCRUM	Stainless Steel
23	FLOAT	Stainless Steel
24	FLOAT LEVER	Stainless Steel
25	BEARING PIN	Stainless Steel
26	BEARING PIN	Stainless Steel
27	BEARING PIN	Stainless Steel
28	COTTER PIN	Stainless Steel
29	COVER BOLT	Steel
30	NUT	Steel
31	TOP	Cast Iron
32	COVER FLANGE	Cast Iron
33	FULCRUM WASHER	Fiber
34	FULCRUM WASHER	Fiber
35	SEAT GASKET	Buna-N-Rubber
36	COVER GASKET	Armstrong
37	FULCRUM BOLT	Stainless Steel

C Series, 2" Size Specifications

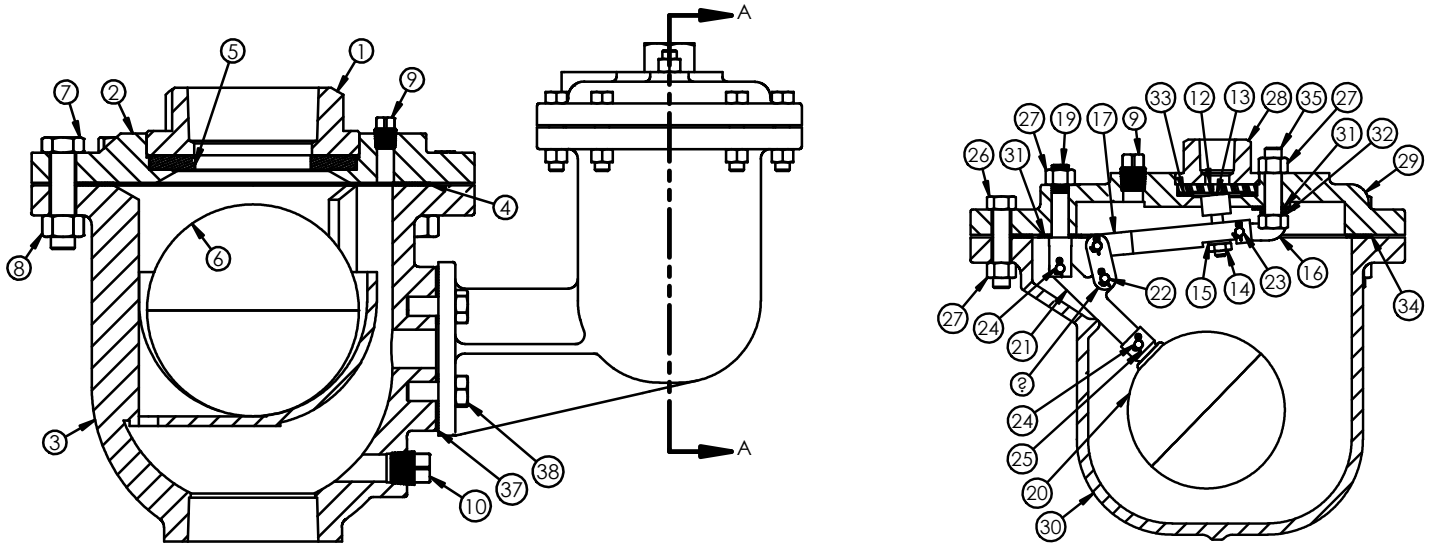
DIMENSIONS ARE IN INCHES. CERTIFIED DIMENSIONS AVAILABLE.

Model	Inlet Size	Outlet Size	Overall Width	Overall Height	Weight (lbs)
C20	2 NPT	2 NPT	15.69	9.56	67
**C21	2 125# FLG.	2 NPT	15.69	11.81	73
**C22	2 250# FLG.	2 NPT	15.69	12.06	75

**Includes ANSI CL. 125 or 250 Companion Flange & Nipple

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

C Series Combination Air Release Valve, Size 3"



C SERIES, 3" SIZE MATERIALS LIST

Air & Vacuum Unit		
ITEM	DESC.	MATERIAL
1	TOP	Cast Iron
2	COVER FLANGE	Cast Iron
3	COMBO BODY	Cast Iron
4	COVER GASKET	Armstrong
5	AIR/VAC SEAT	Buna-N-Rubber
6	FLOAT	Stainless Steel
7	COVER BOLT	Steel
8	COVER NUT	Steel
9	FLANGE PLUG	Brass
10	BODY PLUG	Brass

Connecting Parts		
ITEM	DESC.	MATERIAL
37	MATING GASKET	Armstrong
38	MATING BOLT	Steel

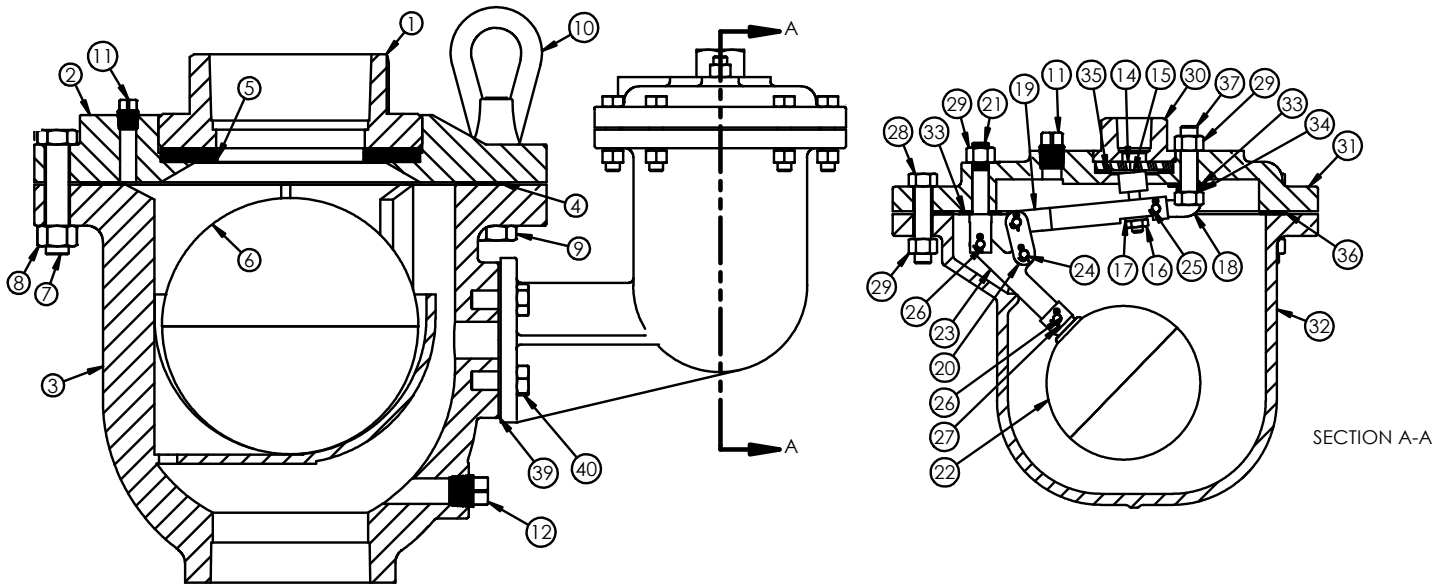
C Series, 3" Size Specifications					
DIMENSIONS ARE IN INCHES. CERTIFIED DIMENSIONS AVAILABLE.					
Model	Inlet Size	Outlet Size	Overall Width	Overall Height	Weight (lbs)
C30	3 NPT	3 NPT	20	12.94	108
**C31	3 125# FLG.	3 NPT	20	16.94	126
**C32	3 250# FLG.	3 NPT	20	17.31	131

**Includes ANSI CL. 125 or 250 Companion Flange & Nipple

Pressure Air Release Unit		
ITEM	DESC.	MATERIAL
12	PRESSURE SEAT	PVC
13	VALVE PLUNGER	Buna-N & Stainless Steel
14	PLUNGER NUT	Stainless Steel
15	LOCK WASHER	Stainless Steel
16	VALVE FULCRUM	Stainless Steel
17	VALVE LEVER	Stainless Steel
18	LINK	Stainless Steel
19	FLOAT FULCRUM	Stainless Steel
20	FLOAT	Stainless Steel
21	FLOAT LEVER	Stainless Steel
22	BEARING PIN	Stainless Steel
23	BEARING PIN	Stainless Steel
24	BEARING PIN	Stainless Steel
25	COTTER PIN	Stainless Steel
26	COVER BOLT	Steel
27	NUT	Steel
28	TOP	Cast Iron
29	COVER FLANGE	Cast Iron
30	BODY	Cast Iron
31	FULCRUM WASHER	Fiber
32	FULCRUM WASHER	Fiber
33	SEAT GASKET	Buna-N-Rubber
34	COVER GASKET	Armstrong
35	FULCRUM BOLT	Stainless Steel

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

C Series Combination Air Release Valve, Size 4"



C SERIES, 4" SIZE MATERIALS LIST

Air & Vacuum Unit		
ITEM	DESC.	MATERIAL
1	TOP	Cast Iron
2	COVER FLANGE	Cast Iron
3	COMBO BODY	Cast Iron
4	COVER GASKET	Armstrong
5	AIR/VAC SEAT	Buna-N-Rubber
6	FLOAT	Stainless Steel
7	COVER BOLT	Steel
8	COVER NUT	Steel
9	FLANGE PLUG	Brass
10	BODY PLUG	Brass

Connecting Parts		
ITEM	DESC.	MATERIAL
39	MATING GASKET	Armstrong
40	MATING BOLT	Steel

C Series, 4" Size Specifications					
DIMENSIONS ARE IN INCHES. CERTIFIED DIMENSIONS AVAILABLE.					
Model	Inlet Size	Outlet Size	Overall Width	Overall Height	Weight (lbs)
C40	4 NPT	4 NPT	22.19	14.56	177
**C41	4 125# FLG.	4 NPT	22.19	17.50	196
**C42	4 250# FLG.	4 NPT	22.19	17.81	205

**Includes ANSI CL. 125 or 250 Companion Flange & Nipple

Pressure Air Release Unit		
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	NUT	Steel
30	TOP	Cast Iron
31	COVER FLANGE	Cast Iron
32	BODY	Cast Iron
33	FULCRUM WASHER	Fiber
34	FULCRUM WASHER	Fiber
35	SEAT GASKET	Buna-N-Rubber
36	COVER GASKET	Armstrong
37	FULCRUM BOLT	Stainless Steel

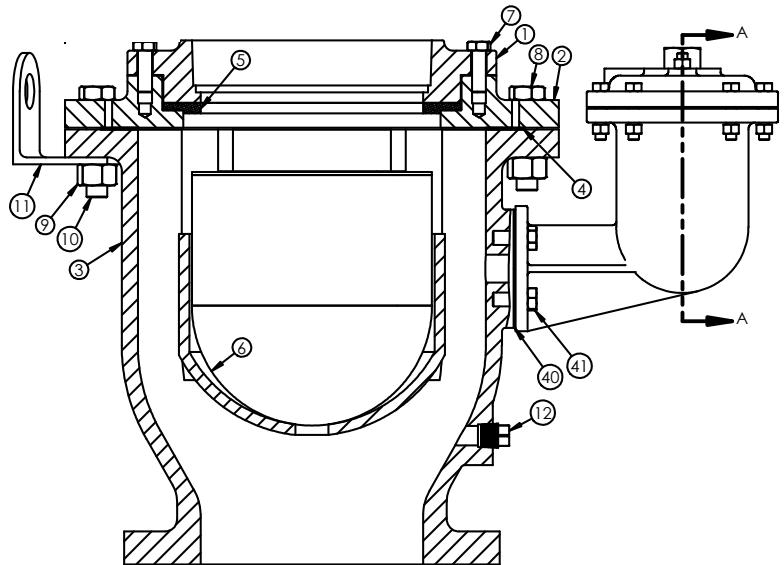
NOTE: Materials and prices are subject to change without notice. Metric and special class flange ratings are available.

C Series Combination Air Release Valve, Size 6"-10"*

C SERIES, 6"-10" SIZE MATERIALS LIST

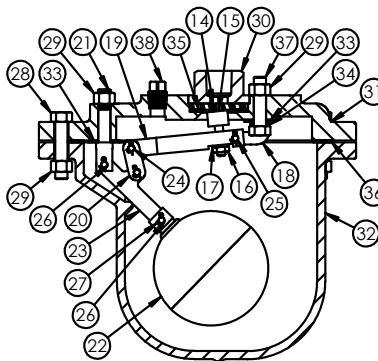
Air & Vacuum Unit

ITEM	DESC.	MATERIAL
1	TOP	Cast Iron
2	COVER FLANGE	Cast Iron
3	COMBO BODY	Cast Iron
4	COVER GASKET	Armstrong
5	AIR/VAC SEAT	Buna-N-Rubber
6	FLOAT	Stainless Steel
7	TOP BOLT	Steel
8	COVER BOLT	Steel
9	COVER NUT	Steel
10	LUG BOLT	Steel
11	LIFTING LUG	Steel
12	BODY PLUG	Brass



Pressure Air Release Unit

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	NUT	Steel
30	TOP	Cast Iron
31	COVER FLANGE	Cast Iron
32	BODY	Cast Iron
33	FULCRUM WASHER	Fiber
34	FULCRUM WASHER	Fiber
35	SEAT GASKET	Buna-N-Rubber
36	COVER GASKET	Armstrong
37	FULCRUM BOLT	Stainless Steel
38	FLANGE PLUG	Brass



Connecting Parts

ITEM	DESC.	MATERIAL
40	MATING GASKET	Armstrong
41	MATING BOLT	Steel

C Series, 6"-10" Size Specifications

DIMENSIONS ARE IN INCHES. CERTIFIED DIMENSIONS AVAILABLE.

Model	Inlet Size	Outlet Size	Overall Width	Overall Height	Weight (lbs)
**C61	6 125# FLG.	6 NPT	23.03	15.50	196
**C62	6 250# FLG.	6 NPT	23.03	15.84	212
**C81	8 125# FLG.	8 NPT	25.625	18.84	305
**C82	8 250# FLG.	8 NPT	25.625	18.84	327
**C101	10 125# FLG.	10 NPT	30	21.78	571
**C102	10 250# FLG.	10 NPT	30	22.50	607

**Includes ANSI CL. 125 or 250 Companion Flange & Nipple

* FOR SIZES ABOVE 10",
PLEASE CONTACT THE FACTORY.

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

C SERIES COMBINATION AIR RELEASE VALVES SPECIFICATION

C Series Sizes 1/2"-10", AWWA C512

GENERAL

C Series Combination Air Release Valves shall be designed, manufactured and tested in accordance with American Water Works Association Standards AWWA C-512. 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 release accumulations of air when the system is under pressure.

BODIES

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 hydro-statically 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.

FLANGING

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 _____" 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 1

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

OPTION 2

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

ACCEPTABLE MANUFACTURERS

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.

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