



Doc # B-AV-UL-r2

Crispin Air Valves

THE UL SERIES: Universal Air Release Valve AWWA C512

- Sizes 1"-4" Available (NPT Screwed or ANSI Class Flanges)
- Performs the function of both Air & Vacuum and Pressure Air Valves



CRISPIN VALVE

SINCE 1905



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UL SERIES UNIVERSAL AIR VALVE

UL SERIES ADVANTAGES

- ✓ **AWWA C512 Compliant**
- ✓ **Single Body Unit Performs the Functions of Both Air & Vacuum and Pressure Air Valves**
- ✓ **Unique Compound Lever System Seals Both the Pressure Orifice and the Air & Vacuum Orifice Simultaneously**
- ✓ **Multiple Orifice Sizes Available for Different Maximum Pressure and Flow Rate Needs**
- ✓ **Protectop Prevents Debris From Entering Valve Outlet**
- ✓ **Meets All NSF 61 and NSF 372 Certifications**

UL SERIES OPTIONS

- ✓ **Both NPT Screwed and ANSI Class Flanges Are Available**
- ✓ **Available with Stainless Steel Trim or Bronze and Stainless Steel Trim**
- ✓ **Fusion Bonded Epoxy**
- ✓ **Available with Screwed, 125lb and 250lb Flanged Inlets**
- ✓ **Available in Configurations to Comply with AIS, BA, BAN and BB Certifications**



The Universal Air Valve is designed to permit the automatic escape of large quantities of air from a pipeline when the line is being filled, and to permit air to enter the pipeline when the line is being emptied. It also allows accumulating air to escape while the line is in operation and under pressure. This is accomplished with a compound lever system functioning in conjunction with a large and small orifice in one integral body casting.

As the liquid rises into the valve, air escapes through the large orifice to the atmosphere. Liquid entering the valve raises the float and lever system, carrying with it the pressure plunger and the main valve. When the liquid has raised the float to its limit, the stainless steel main valve rests against the seat. The pressure plunger also rests against its seat, which is the main valve. In this position, the valve is closed and no liquid can escape.

If accumulating air rises into the valve while the line is in operation and under pressure, it will displace the liquid at the top of the valve body and the float will drop as the liquid recedes. As this occurs, the pressure valve will open, permitting the escape of the accumulated air, after which the liquid level will rise and the valve will close.

Should the pipeline be drained through natural processes or should a large break develop, the float will drop all the way down as the liquid level drains from the valve body. The valve will then stay in the full open position permitting the entrance of air and eliminating the danger of pipeline collapse due to vacuum.

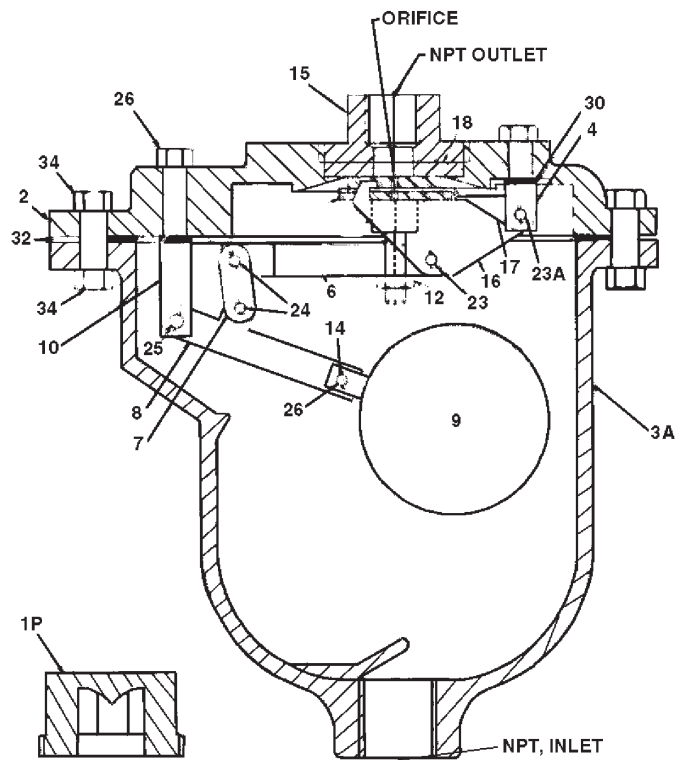
These cycles will repeat automatically as each condition presents itself, and the valve will function satisfactorily with hot or cold water, and in the presence of many chemicals and oil-based liquids.

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

UL SERIES MATERIALS LIST: 1"-4" AVAILABLE

Universal Air Release Clean Water Parts List

ITEM	DESCRIPTION	MATERIAL
1P*	PROTECTOP	Ductile Iron
1S*	TOP	Ductile Iron
2	FLANGE	Ductile Iron
3*	BODY, SCREWED	Ductile Iron
3F*	BODY, 125 LB FLANGE	Ductile Iron
3FH*	BODY, 250 LB FLANGE	Ductile Iron
4	A&V FULCRUM	Stainless Steel
5 & 16	PRESSURE FULCRUM	Stainless Steel
6	VALVE LEVER	Stainless Steel
7	LINK	Stainless Steel
8	BALL LEVER	Stainless Steel
9	BALL FLOAT	Stainless Steel
10	BALL FULCRUM	Stainless Steel
13	NUT	Stainless Steel
14	PRESSURE VALVE PLUNGER	Rubber/SS
15	PRESSURE SEAT	Stainless Steel
17	SEAT CAGE	Stainless Steel
18	A&V SEAT	Rubber
21	PRESS LIMIT STOP	Stainless Steel
23	BEARING PIN	Stainless Steel
23A	BEARING PIN	Stainless Steel
24	BEARING PIN	Stainless Steel
25	BEARING PIN	Stainless Steel
26	PIN CLIP	Stainless Steel
28	SCREW	Stainless Steel
29	DRAIN PLUG	Steel
30	FULCRUM WASHER	Fiber
31	FULCRUM WASHER	Fiber
32	FLANGE GASKET	Armstrong
33	FLANGE BOLT	Steel
34	FLANGE NUT	Steel
35	A&V FULCRUM NUT	Steel
36	BALL FULCRUM NUT	Steel



* These parts interchangeable at the customer's request.

Orifice Sizing By Maximum Operating Pressure

VALVE SIZE	MAX 150psi	MAX 200psi	MAX 250psi	MAX 300psi
1"	3/16"	3/32"	3/32"	3/32"
2"	1/4"	3/16"	3/16"	1/8"
3"	1/4"	3/16"	3/16"	1/8"
4"	1/4"	3/16"	3/16"	1/8"

Model Information

SIZE OF VALVE	1"	2"	3"	4"
Model No. Screwed Inlet	UL10.1 UL10	UL20.1 UL20	UL30.1 UL30	UL40.1 UL40
125 lb Flanged Inlet		UL21.1 UL21	UL31.1 UL31	UL41.1 UL41
250 lb Flanged Inlet		UL22.1 UL22	UL32.1 UL32	UL42.1 UL42

Discharge in SCFM By Orifice Size

OPERATING PRESSURE (PSI)	3/32"	1/8"	5/32"	3/16"	1/4"
150	13.8	24.4	37.9	54.6	98
200	17.9	31.9	49.5	72	127
250	22.1	39.2	61.1	88	157
300	26.4	46.7	73	105	187

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

UL Series Dimensional Data

MODEL	INLET	TRIM	HEIGHT	WIDTH	LENGTH	WT (LBS)
UL10	1" NPT	SS	10 1/4"	6 7/8"	9 3/4"	27
UL10.1	1" NPT	SS/Brass	10 1/4"	6 7/8"	9 3/4"	27
UL20	2" NPT	SS	13 1/2"	8 3/8"	12 3/8"	72
UL20.1	2" NPT	SS/Brass	13 1/2"	8 3/8"	12 3/8"	72
UL21	2" 125# flg.	SS	17"	8 3/8"	12 3/8"	74
UL21.1	2" 125# flg.	SS/Brass	17"	8 3/8"	12 3/8"	74
UL22	2" 250# flg.	SS	17 1/4"	8 3/8"	12 3/8"	75
UL22.1	2" 250# flg.	SS/Brass	17 1/4"	8 3/8"	12 3/8"	75
UL30	3" NPT	SS	17 1/4"	10 1/4"	14 3/4"	111
UL30.1	3" NPT	SS/Brass	17 1/4"	10 1/4"	14 3/4"	111
UL31	3" 125# flg.	SS	20 5/8"	10 1/4"	14 3/4"	131
UL31.1	3" 125# flg.	SS/Brass	20 5/8"	10 1/4"	14 3/4"	131
UL32	3" 250# flg.	SS	21"	10 1/4"	14 3/4"	133
UL32.1	3" 250# flg.	SS/Brass	21"	10 1/4"	14 3/4"	133
UL40	4" NPT	SS	20"	11 3/4"	16 3/4"	163
UL40.1	4" NPT	SS/Brass	20"	11 3/4"	16 3/4"	163
UL41	4" 125# flg.	SS	23"	11 3/4"	16 3/4"	180
UL41.1	4" 125# flg.	SS/Brass	23"	11 3/4"	16 3/4"	180
UL42	4" 250# flg.	SS	23 5/16"	11 3/4"	16 3/4"	183
UL42.1	4" 250# flg.	SS/Brass	23 5/16"	11 3/4"	16 3/4"	183

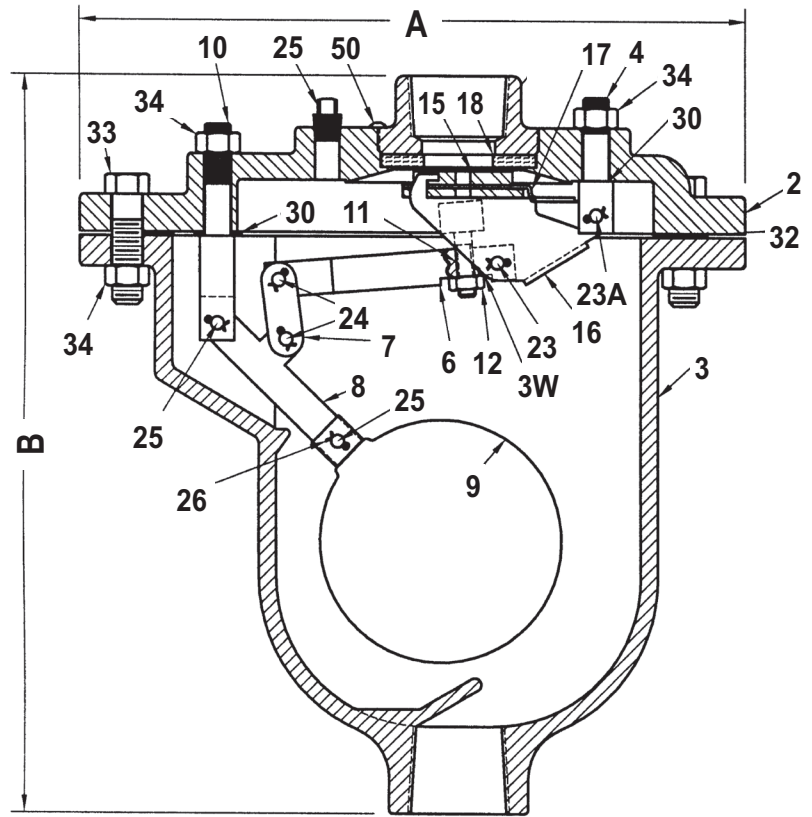
Certified Dimensions Available Upon Request



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

1" Universal Air Release Valve, AWWA C512

Parts List		
ITEM	DESCRIPTION	MATERIAL
1S	TOP	Ductile Iron
2	FLANGE	Ductile Iron
3	BODY	Ductile Iron
3W	LOCK WASHER	Stainless Steel
4	A&V FULCRUM	Stainless Steel
6**	VALVE LEVER	Stainless Steel
7	LINK	Stainless Steel
8	BALL LEVER	Stainless Steel
9	BALL FLOAT	Stainless Steel
10	BALL FULCRUM	Stainless Steel
11	VALVE PLUNGER	Buna-N/SS
12	PLUNGER NUT	Stainless Steel
15	PRESSURE SEAT	Stainless Steel
16	PRESSURE FULCRUM	Stainless Steel
17	SEAT CAGE	Stainless Steel
18	A&V SEAT	Buna-N Rubber
23	BEARING PIN	Stainless Steel
23A	BEARING PIN	Stainless Steel
24	BEARING PIN	Stainless Steel
25	BEARING PIN	Stainless Steel
26	COTTER PIN	Stainless Steel
29	DRAIN PLUG	Brass
30	FULCRUM WASHER	Fiber
32	FLANGE GASKET	Armstrong N-8092
33	FLANGE BOLT	Steel
34	NUT	Steel
50	INTERFERENCE PIN	Stainless Steel



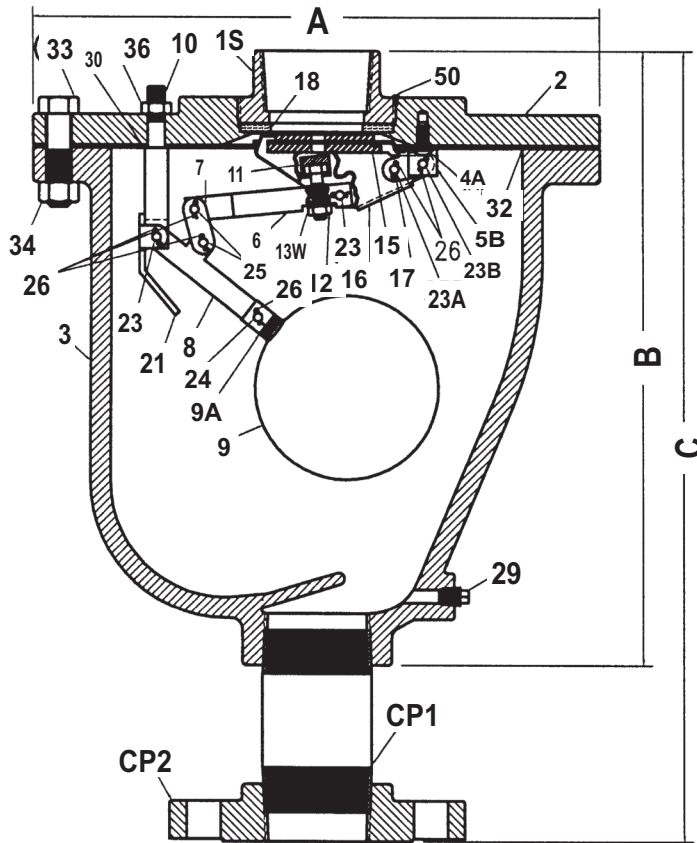
Orifice Options		
DIAMETER	MAX PRESSURE	FLOW RATE
3/16"	150 psig	54.6 SCFM
3/32"	300 psig	26.4 SCFM

Dimensions					
MODEL	INLET SIZE	OUTLET SIZE	A	B	WT (LBS)
UL10	1" NPT	1" NPT	9.75	10.75	27
UL10.1	1" NPT	1" NPT	9.75	10.75	27

** Material for UL10.1 will be brass

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

2" Universal Air Release Valve, AWWA C512



** Material for UL20.1 will be brass

Orifice Options		
DIAMETER	MAX PRESSURE	FLOW RATE
1/4"	150 psig	98 SCFM
3/16"	250 psig	88 SCFM
1/8"	300 psig	46.7 SCFM

Flange Connection Parts		
ITEM	PART	MATERIAL
CP1	NIPPLE	Steel (A53)
CP2	COMPANION FLANGE	Cast Iron (A126 CL B)

* Includes ANSI Class 125 or 250 Companion Flange and Nipple

Parts List

ITEM	DESCRIPTION	MATERIAL
1S	TOP	Ductile Iron
2	FLANGE	Ductile Iron
3	BODY	Ductile Iron
4A	CAP SCREW	Stainless Steel
5B	A&V FULCRUM	Stainless Steel
6**	VALVE LEVER	Stainless Steel
7	LINK	Stainless Steel
8	BALL LEVER	Stainless Steel
9	BALL FLOAT	Stainless Steel
9A	FLOAT ROD	Stainless Steel
10	BALL FULCRUM	Stainless Steel
11	VALVE PLUNGER	Buna-N/SS
12	PLUNGER NUT	Stainless Steel
13W	LOCK WASHER	Stainless Steel
15	PRESSURE SEAT	Stainless Steel
16	PRESSURE FULCRUM	Stainless Steel
17	SEAT CAGE	Stainless Steel
18	A&V SEAT	Buna-N Rubber
21	PRESSURE LIMIT STOP	Stainless Steel
23	BEARING PIN	Stainless Steel
23A	BEARING PIN	Stainless Steel
23B	BEARING PIN	Stainless Steel
24	BEARING PIN	Stainless Steel
25	BEARING PIN	Stainless Steel
26	COTTER PIN	Stainless Steel
29	DRAIN PLUG	Brass
30	FULCRUM WASHER	Fiber
32	FLANGE GASKET	Armstrong N-8092
33	FLANGE BOLT	Steel
34	NUT	Steel
36	BALL FULCRUM NUT	Steel
50	INTERFERENCE PIN	Stainless Steel

Dimensions

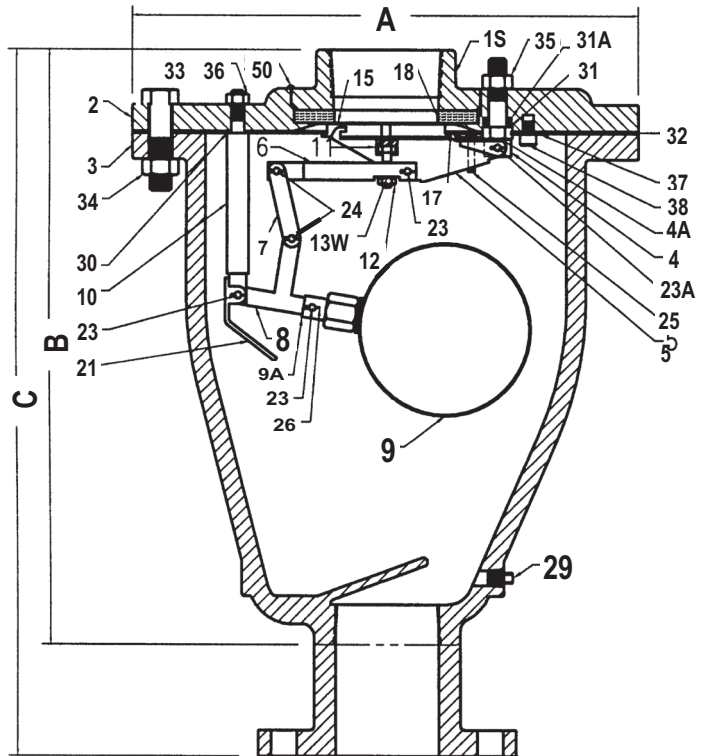
MODEL	INLET SIZE	OUTLET SIZE	A	B	C	WT (lbs)
UL20	2" NPT	2" NPT	12.50	13.50		72
UL20.1	2" NPT	2" NPT	12.50	13.50		72
UL21*	2" 125# F	2" NPT	12.50		17.00	78
UL21.1	2" 125# F	2" NPT	12.50		17.00	78
UL22	2" 250# F	2" NPT	12.50		17.25	89
UL22.1	2" 250# F	2" NPT	12.50		17.25	89

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

3"-4" Universal Air Release Valve, AWWA C512

Parts List

ITEM	DESCRIPTION	MATERIAL
1S	TOP	Ductile Iron
2	FLANGE	Ductile Iron
3	BODY	Ductile Iron
4	A&V FULCRUM	Stainless Steel
4A	FULCRUM BOLT	Stainless Steel
5	PRESSURE FULCRUM	Stainless Steel
6**	VALVE LEVER	Stainless Steel
7	LINK	Stainless Steel
8	BALL LEVER	Stainless Steel
9	BALL FLOAT	Stainless Steel
9A	FLOAT ROD	Stainless Steel
10	BALL FULCRUM	Stainless Steel
11	VALVE PLUNGER	Buna-N/SS
12	PLUNGER NUT	Stainless Steel
13W	LOCK WASHER	Stainless Steel
15	PRESSURE SEAT	Stainless Steel
17	SEAT CAGE	Stainless Steel
18	A&V SEAT	Buna-N Rubber
21	PRESSURE LIMIT STOP	Stainless Steel
23	BEARING PIN	Stainless Steel
23A	BEARING PIN	Stainless Steel
24	BEARING PIN	Stainless Steel
25	BEARING PIN	Stainless Steel
26	COTTER PIN	Stainless Steel
29	DRAIN PLUG	Brass
30	FULCRUM WASHER	Fiber
31	FULCRUM WASHER	Fiber
31A	FULCRUM WASHER	Fiber
32	FLANGE GASKET	Armstrong N-8092
33	FLANGE BOLT	Steel
34	NUT	Steel
35	A&V FULCRUM NUT	Steel
36	BALL FULCRUM NUT	Steel
37	ADJUSTING PLATE	Stainless Steel
38	BOLT	Stainless Steel
50	INTERFERENCE PIN	Stainless Steel



** Material for UL30.1, UL31.1, UL40.1, UL41.1, UL21.1 will be brass

Dimensions

MODEL	INLET SIZE	OUTLET SIZE	A	B	C	WT (lbs)
UL30	3" NPT	3" NPT	14.75	18.00		114
UL31	3" 125# F	3" NPT	14.75		20.50	125
UL32	3" 250# F	3" NPT	14.75		21.00	131
UL30.1	3" NPT	3" NPT	14.75	18.00		114
UL31.1	3" 125# F	3" NPT	14.75		20.50	125
UL32.1	3" 250# F	3" NPT	14.75		21.00	131
UL40	4" NPT	4" NPT	16.75	20.00		162
UL41	4" 125# F	4" NPT	16.75		23.00	177
UL42	4" 250# F	4" NPT	16.75		23.25	188
UL40.1	4" NPT	4" NPT	16.75	20.00		162
UL41.1	4" 125# F	4" NPT	16.75		23.00	177
UL42.1	4" 250# F	4" NPT	16.75		23.25	188

Orifice Options

DIAMETER	MAX PRESSURE	FLOW RATE
1/4"	150 psig	98 SCFM
3/16"	250 psig	88 SCFM
1/8"	300 psig	46.7 SCFM

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

CRISPIN UL SERIES SPECIFICATIONS BY SIZE

1" UL SERIES SPECIFICATION

The valve(s) shall be installed at the 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 the system. The valve(s) shall also release an accumulation of air when the system is under pressure. This shall be accomplished in a single valve body.

The valve(s) shall operate through a compound lever system which will seal both the pressure orifice and the air and vacuum orifice simultaneously. This lever system shall permit a _____" orifice to release an accumulation of air from the valve body at a capacity of _____ SCFM of air and pressure of _____ PSIG.

The function of the lever system shall also permit a positive disengagement of the main valve from the large orifice, as the float drops and pressure decreases. The disengagement shall be immediate and not limited to the initial draw of a vacuum.

The valve(s) shall be Crispin Model _____ Universal Air 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 have a ductile iron body, top and inlet flange (where required), stainless steel float and trim with Buna-N seat. Valves which operate the pressure plunger via a single lever and fulcrum will not be acceptable.

Option: A protectop will be supplied to prevent debris from entering the outlet of the 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

2" UL SERIES SPECIFICATION

The valve(s) shall be installed at the 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 the system. The valve(s) shall also release an accumulation of air when the system is under pressure. This shall be accomplished in a single valve body.

The valve(s) shall operate through a compound lever system which will seal both the pressure orifice and the air and vacuum orifice simultaneously. This lever system shall permit a _____" orifice to release an accumulation of air from the valve body at a capacity of _____ SCFM of air and pressure of _____ PSIG.

The function of the lever system shall also permit a positive disengagement of the main valve from the large orifice, as the float drops and pressure decreases. The disengagement shall be immediate and not limited to the initial draw of a vacuum.

The valve(s) shall be Crispin Model _____ Universal Air 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 have a ductile iron body, top and inlet flange (where required), stainless steel float and trim with Buna-N seat. Valves which operate the pressure plunger via a single lever and fulcrum will not be acceptable.

Option: A protectop will be supplied to prevent debris from entering the outlet of the 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. All Crispin valves are hydrostatically tested at 150% of their maximum working pressure. 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

3"-4" UL SERIES SPECIFICATION

The valve(s) shall be installed at the 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 the system. The valve(s) shall also release an accumulation of air when the system is under pressure. This shall be accomplished in a single valve body.

The valve(s) shall operate through a compound lever system which will seal both the pressure orifice and the air and vacuum orifice simultaneously. This lever system shall permit a _____" orifice to release an accumulation of air from the valve body at a capacity of _____ SCFM of air and pressure of _____ PSIG.

The function of the lever system shall also permit a positive disengagement of the main valve from the large orifice, as the float drops and pressure decreases. The disengagement shall be immediate and not limited to the initial draw of a vacuum.

The valve(s) shall be Crispin Model _____ Universal Air 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 have a ductile iron body, top and inlet flange (where required), stainless steel float and trim with Buna-N seat. Valves which operate the pressure plunger via a single lever and fulcrum will not be acceptable.

Option: A protectop will be supplied to prevent debris from entering the outlet of the 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

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