

# The PL Series Pressure Air Release Valves

Sizes 1" thru 6" Available • Compound Lever System  
Adjustable Buna-N Rubber Plunger



**Crispin**  
Since 1905

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# PL SERIES

## Pressure Air Release Valves

# Pressure Air Release Valves

Valve Function
<ul style="list-style-type: none"> <li>• Allows air and/or gas to be released from a pressurized liquid system</li> </ul>
Features
<ul style="list-style-type: none"> <li>• Meets AWWA C-512</li> <li>• Compound lever system</li> <li>• Adjustable Buna-N rubber plunger</li> <li>• Available in sizes 1" thru 4"</li> </ul>

### With Stainless Steel Trim and Float or Bronze Trim and Stainless Steel Float

Systems under pressure can be vented of accumulating air with the use of Pressure Air Release Valves. These should be mounted on the system at all high points, and downstream from these points where the velocity of the liquid carries the air or gas slightly beyond the crest. On lines with little gradient, valves should be placed every half mile or so, at the discretion of the engineer. Crispin Type "N" is for normal use in water below 150° F, and features a PVC seat. Crispin Type "P" is for use with all types of fluid, and is supplied with a steel seat. Both are supplied with a Buna-N rubber plunger. For special applications, an optional stainless steel seat with a Buna-N plunger is available.

When a valve is used in a system where a vacuum is desired, such as in a pump prime, an optional vacuum check unit is offered that will prevent air from re-entering the system.



### Orifice Size for Various Pressure Ranges

Valve Size	MAXIMUM OPERATING PRESSURE IN PSI (standard is 150 PSI)					
	Max. 50	Max. 100	Max. 150	Max. 200	Max. 250	Max. 300
1"	5/16"	5/16"	1/4"	3/16"	5/32"	1/8"
2"	3/8"	3/8"	5/16"	1/4"	3/16"	5/32"
2 1/2"	5/8"	1/2"	7/16"	3/8"	9/32"	1/4"
3"	3/4"	5/8"	1/2"	7/16"	5/16"	9/32"
4"	1"	3/4"	5/8"	1/2"	7/16"	3/8"

\* For additional sizes, please consult factory.

\*All Crispin Valves are hydrostatically tested to 150% of their maximum working pressure.

\*For ease of maintenance, some of the parts are provided as kits or assemblies.

### Model Information

Size of Valve	1"	2"	2 1/2"	3"	4"
Model No. Screwed Inlet	PL10	PL20	P250	P30	P40
		PL10A		PL20A	
125# Flanged Inlet		PL21	P251	P31	P41
250# Flanged Inlet		PL22	P252	P32	P42
Trim	S/S	S/S	IBBT	IBBT	IBBT



PL SERIES

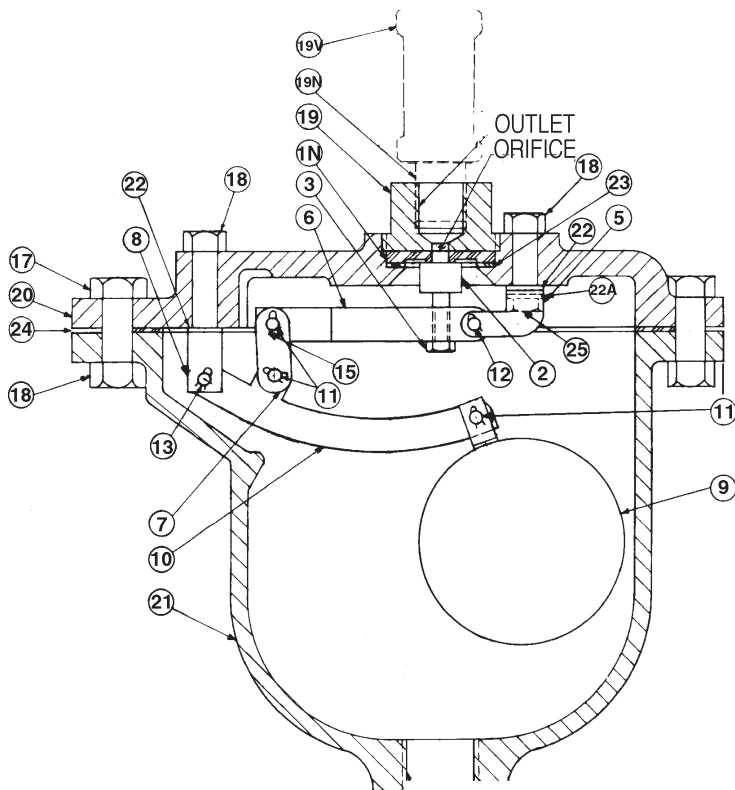
## Pressure Air Release Valves

### Dimensions and Weights

MODEL	INLET NPT	TRIM	HEIGHT	WIDTH	WEIGHT (lbs)
PL10	1" NPT	S/S	9 1/8"	9 3/4"	22
PL10A	2" NPT	S/S	9 1/8"	9 3/4"	22
PL20	2" NPT	S/S	10 1/2"	10 1/8"	45
PL20A	3" NPT	S/S	12 1/4"	10 1/8"	54
PL21	2" 125# Flg.	S/S	14"	10 1/8"	51
PL22	2" 250# Flg.	S/S	14 1/4"	10 1/8"	56
P250	2 1/2" NPT	IBBT	11 1/8"	11 1/2"	58
P251	2 1/2" 125# Flg.	IBBT	14 1/8"	11 1/2"	68
P252	2 1/2" 250# Flg.	IBBT	14 5/16"	11 1/2"	70
P30	3" NPT	IBBT	13 1/2"	12 1/2"	87
P31	3" 125# Flg.	IBBT	16 3/16"	12 1/2"	100
P32	3" 250# Flg.	IBBT	16 9/16"	12 1/2"	103
P40	4" NPT	IBBT	16 5/8"	4 1/4"	132
P41	4" 125# Flg.	IBBT	18 7/8"	14 1/4"	145
P42	4" 250# Flg.	IBBT	19 3/16"	14 1/4"	158

*CRISPIN Pressure Air Release Valves operate by means of a compound lever system. This lever system multiplies the weight of the float so that the force pulling the rubber valve away from the orifice is greater than the force or system pressure holding it closed. The pressure at which it will operate is determined by the orifice size. The orifice size will vary inversely to the pressure, that is, as the operating pressure increases the orifice must be smaller, as the operating pressure decreases the orifice can be larger. A valve with an orifice size small enough to permit operation at 300 psig will still function at pressures less than 300 PSIG.*

*Where pressure air release valves are used on systems other than water, the specific gravity of the liquid must be considered (re. catalog sheet: "Air Release Valves For Liquids Other Than Water"). The specific gravity affects the float buoyancy and, subsequently, valve performance. For example, a valve applied on a petroleum application would require a float of lighter weight in order to provide a buoyancy equivalent to that of the float in water.*





PL SERIES

## Pressure Air Release Valves

# Pressure Air Release Valves

### Pressure Air Release Valve Parts Lists:

#### 1" and 2" Valves

PART NO.	ITEM	MATERIAL
1N*	SEAT	PVC
1P*	SEAT	Stainless Steel
2	VALVE	BUNA-N Rubber
3	PLUNGER NUT	Stainless Steel
5	VALVE FULCRUM	Stainless Steel
6	VALVE LEVER	Stainless Steel
7	LINK	Stainless Steel
8	BALL FULCRUM	Stainless Steel
9	BALL FLOAT	Stainless Steel
10	BALL LEVER	Stainless Steel
11	BEARING PIN	Stainless Steel
12	BEARING PIN	Stainless Steel
13	BEARING PIN	Stainless Steel
15	PIN CLIP	Stainless Steel
17	BOLT	Steel
18	NUT	Steel
19	TOP	Cast Iron
19N**	NIPPLE	Steel
19V**	VACUUM CHECK	Brass
20	FLANGE	Cast Iron
21**	BODY	Cast Iron
21F**	BODY-125* ANSI Flanged	Cast Iron
21FH**	BODY-250* ANSI Flanged	Cast Iron
22	FULCRUM WASHER	Fiber
22A	FULCRUM WASHER	Fibre
23	SEAT GASKET	Fibre
24	FLANGE GASKET	Armstrong
25	BOLT	Stainless Steel
26	NUT	Stainless Steel

#### 2 1/2", 3" and 4" Valves

PART NO.	ITEM	MATERIAL
1N*	SEAT	PVC
1P*	SEAT	Stainless Steel
2	VALVE	BUNA-N Rubber
3	PLUNGER NUT	Brass
4	PLUNGER	Brass
5	VALVE FULCRUM	Stainless Steel
6	VALVE LEVER	Stainless Steel
7	LINK	Stainless Steel
8	BALL FULCRUM	Stainless Steel
9	BALL FLOAT	Stainless Steel
10	BALL LEVER	Stainless Steel
11	BEARING PIN	Brass
12	BEARING PIN	Brass
13	SCREW	Stainless Steel
14	NUT	Steel
15	PIN CLIP	Stainless Steel
16	SCREW	Stainless Steel
17	BOLT	Steel
18	NUT	Steel
19	TOP	Cast Iron
19N**	NIPPLE	Steel
19V**	VACUUM CHECK	Brass
20	FLANGE	Cast Iron
21**	BODY	Cast Iron
21F**	BODY-125* ANSI FLANGED	Cast Iron
21FH**	BODY-250* ANSI FLANGED	Cast Iron
22	FULCRUM WASHER	Fibre
23	SEAT GASKET	BUNA-N
24	FLANGE GASKET	Armstrong

\* Part No. 1P is interchangeable with Part No. 1N and is optional at customer's request

\*\* Part No.'s 19N, 19V, 21, 21F & 21FH are at customer's option

# Submittal Sheet for Crispin PL Series



SUBMITTAL SHEET FOR PL SERIES

## 1"–2" Pressure Air Release Valve

Manufactured in compliance with ANSI/AWWA C512

Date: October, 2001

### Specifications

The Pressure Air Release Valve(s) shall be installed at high points selected by the engineer to vent the accumulation of air and other gases with the line under pressure.

The valve(s) shall operate through a compound lever system and shall have a \_\_\_\_\_" orifice with valve sealing faces of an adjustable Buna-N rubber valve and stainless steel or PVC. It 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 have a cast iron body, top and inlet flange (where required), a stainless steel float and trim. Valves which use a needle to seal the orifice will not be acceptable.

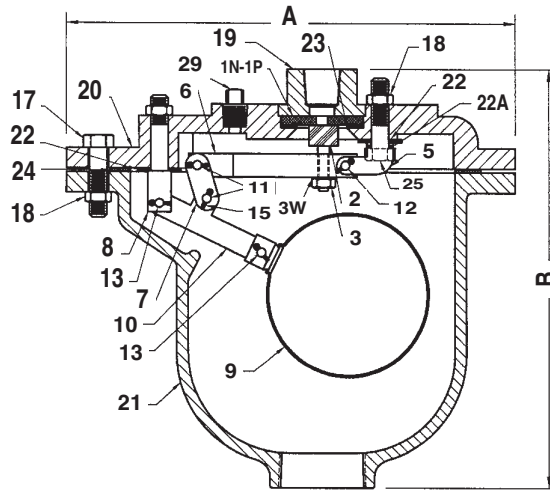
The valve(s) shall be Crispin Model \_\_\_\_\_ Pressure Air Valve(s), Type N (PVC seat and Buna-N rubber valve) or or Type P (stainless steel seat and Buna-N rubber valve) as manufactured by Crispin-Multiplex Manufacturing Co., Berwick, PA.

**Option:** A Vacuum Check Valve shall be supplied on the outlet to eliminate the possibility of air entering the system where the pressure decreases, or if a vacuum is drawn.

**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



### Pressure Air Valve Parts List

ITEM	DESCRIPTION	MATERIAL	ASTM
*1N	SEAT	PVC	1784
*1P	SEAT	STAINLESS STEEL	A240
2	VALVE PLUNGER	BUNA—N RUBBER & S/S	D2000
3	PLUNGER NUT	STAINLESS STEEL	A194
3W	LOCK WASHER	STAINLESS STEEL	A240
5	VALVE FULCRUM	STAINLESS STEEL	A240
6	VALVE LEVER	STAINLESS STEEL	A240
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	A313
17	BOLT	STEEL	A307
18	NUT	STEEL	A563
19	TOP	CAST IRON	A126 CL.B
20	FLANGE	CAST IRON	A126 CL.B
21	BODY	CAST IRON	A126 CL.B
22	FULCRUM WASHER	FIBER	N/A
22A	FULCRUM WASHER	FIBER	N/A
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 are interchangeable and optional at customer's request

### Size Specifications

MODEL	INLET SIZE	OUTLET SIZE	A	B	WT.
PL10	1" NPT	1/2" NPT	9.75	9.00	22
PL10A	2" NPT	1/2" NPT	9.75	9.00	23
PL20	2" NPT	1/2" NPT	10.25	10.50	45
PL20A	3" NPT	1/2" NPT	10.13	12.25	54
**PL21	2" 125# FLG	1/2" NPT	10.25	14.00	51
**PL22	2" 250# FLG	1/2" NPT	10.25	14.25	53

† Indicates 3" valve with 3" inlet

\*\* Includes ANSI CL. 125 or 250 companion FLG & NPL

### PL10 & PL10A 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

### PL20 & PL20A Orifice Options

DIAMETER	MAX. PRESSURE	DISCHARGE RATE
3/8	100 PSIG	152 SCFM
5/16	150 PSIG	152 SCFM
1/4	200 PSIG	127 SCFM
3/16	250 PSIG	88 SCFM
5/32	300 PSIG	73 SCFM



# Submittal Sheet for Crispin P Series

## 2 1/2"–4" Pressure Air Release Valve

Manufactured in compliance with ANSI/AWWA C512

Date: October, 2001

### Specifications

The Pressure Air Release Valve(s) shall be installed at high points selected by the engineer to vent the accumulation of air and other gases with the line under pressure.

The valve(s) shall operate through a compound lever system and shall have a \_\_\_\_\_" orifice with valve sealing faces of an adjustable Buna-N rubber valve and stainless steel or PVC. It 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 have a cast iron body, top and inlet flange (where required), a stainless steel float and trim. Valves which use a needle to seal the orifice will not be acceptable.

The valve(s) shall be Crispin Model \_\_\_\_\_ Pressure Air Valve(s), Type N (PVC seat and Buna-N rubber valve) or or Type P (stainless steel seat and Buna-N rubber valve) as manufactured by Crispin-Multiplex Manufacturing Co., Berwick, PA.

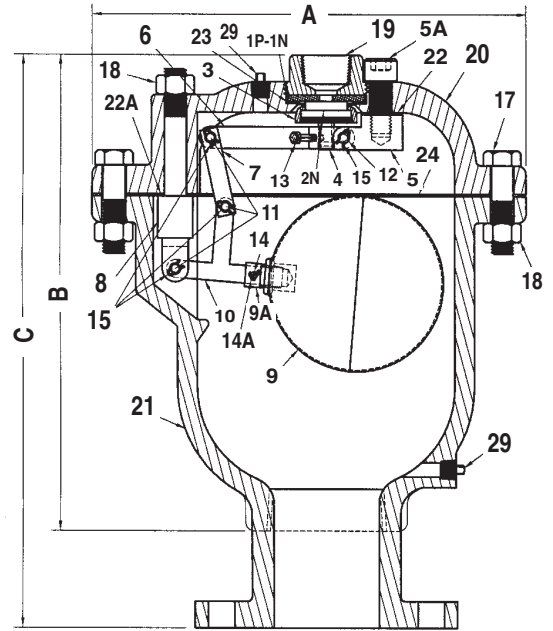
**Option:** A Vacuum Check Valve shall be supplied on the outlet to eliminate the possibility of air entering the system where the pressure decreases, or if a vacuum is drawn.

**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 with stainless steel float and bronze and brass trim. 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

### Pressure Air Valve Parts List

ITEM	DESCRIPTION	MATERIAL	ASTM
*1 N	SEAT	PVC	1784
*1 P	SEAT	STAINLESS STEEL	A240
2 N	VALVE	BUNA-N RUBBER	D2000
3	PLUNGER NUT	BRASS	B584/C83600
4	PLUNGER	BRASS	B505
5	VALVE FULCRUM	STAINLESS STEEL	A240
5A	FULCRUM BOLT	STAINLESS STEEL	A193
6	VALVE LEVER	STAINLESS STEEL	A240
7	LINK	STAINLESS STEEL	A240
8	BALL FULCRUM	STAINLESS STEEL	A582
9	BALL FLOAT	STAINLESS STEEL	A240
9 A	FLOAT ROD	STAINLESS STEEL	A240
10	BALL LEVER	STAINLESS STEEL	A240
11	BEARING PIN	BRASS	B505
12	BEARING PIN	BRASS	B505
13	SCREW	STAINLESS STEEL	A193
14	BEARING PIN	STAINLESS STEEL	A582
14A	COTTER PIN	STAINLESS STEEL	A313
15	BEARING PIN CLIP	STAINLESS STEEL	A582
17	BOLT	STEEL	A307
18	NUT	STEEL	A307
19	TOP	CAST IRON	A126 CL.B
20	FLANGE	CAST IRON	A126 CL.B
21	BODY	CAST IRON	A126 CL.B
22	FULCRUM WASHER	FIBER	N/A
22A	FULCRUM WASHER	FIBER	N/A
23	SEAT GASKET	BUNA-N RUBBER	D2000
24	FLANGE GASKET	ARMSTRONG N-8092	N/A
29	PLUG	BRASS	B505



Size Specifications

MODEL	INLET SIZE	OUTLET SIZE	A	B	C	WHT.
P250	2.50" NPT	1" NPT	11.50	11.25		58
P251	2.5" 125# FLG	1" NPT	11.50		14.25	68
P252	2.5" 250# FLG	1" NPT	11.50		14.50	70
P30	3" NPT	1" NPT	12.50	13.50		87
P31	3" 125# FLG	1" NPT	12.50		16.25	100
P32	3" 250# FLG	1" NPT	12.50		16.75	103
P40	4" NPT	1" NPT	14.25	16.75		132
P41	4" 125# FLG	1" NPT	14.25		19.00	147
P42	4" 250# FLG	1" NPT	14.25		19.25	158

\* Parts are interchangeable and optional at customer's request

### 2 1/2" ORIFICE OPTIONS

DIAMETER	MAX. PRESSURE	DISCHARGE RATE
5/8	50 PSIG	237 SCFM
1/2	100 PSIG	270 SCFM
7/16	150 PSIG	298 SCFM
3/8	200 PSIG	287 SCFM
5/16	250 PSIG	244 SCFM
1/4	300 PSIG	187 SCFM

### 3" ORIFICE OPTIONS

3/4	50 PSIG	343 SCFM
5/8	100 PSIG	422 SCFM
1/2	150 PSIG	390 SCFM
7/16	200 PSIG	390 SCFM
5/16	250 PSIG	244 SCFM
1/4	300 PSIG	187 SCFM

### 4" ORIFICE OPTIONS

1"	50 PSIG	610 SCFM
3/4"	100 PSIG	607 SCFM
5/8	150 PSIG	592 SCFM
1/2	200 PSIG	510 SCFM
7/16	250 PSIG	480 SCFM
3/8	300 PSIG	420 SCFM

# Submittal Sheet for Crispin AR Series

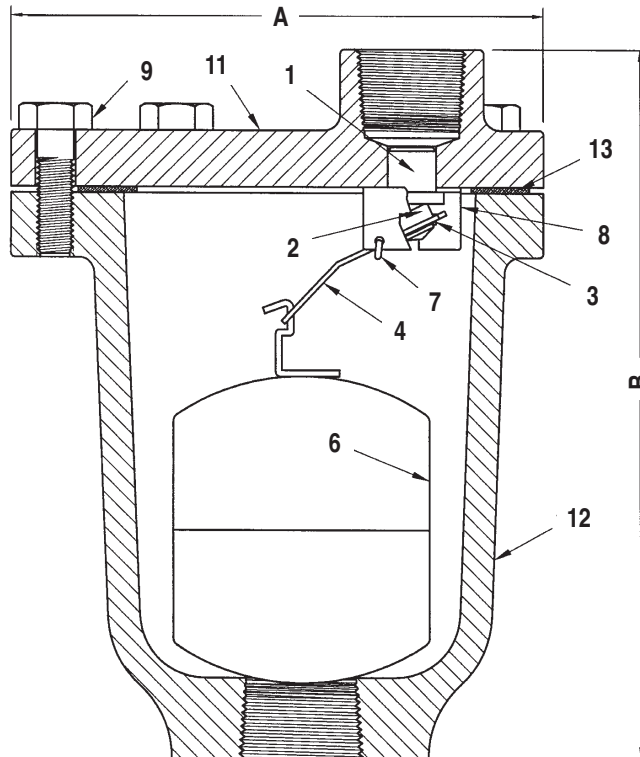


SUBMITTAL SHEET FOR AR SERIES

## 1/2"–1" Pressure Air Release (AR)

Manufactured in compliance with ANSI/AWWA C512

Date: October, 2001



### Parts List

ITEM	DESCRIPTION	MATERIAL	ASTM
1	SEAT	STAINLESS STEEL	A240
2	VALVE BUTTON	BUNA-N RUBBER	D2000
3	BUTTON CLIP	STAINLESS STEEL	A240
4	VALVE LEVER	STAINLESS STEEL	A240
6	FLOAT	STAINLESS STEEL	A240
7	PIN	STAINLESS STEEL	A193
8	HINGE BUTT	STAINLESS STEEL	A240
9	BOLT	STEEL	A307
11	FLANGE	CAST IRON	A126 CL.B
12	BODY	CAST IRON	A126 CL.B
13	GASKET	ARMSTRONG N-8092	N/A

### Specifications

The valve(s) shall be installed at high points in the line to vent the accumulation of air and other gases with the line under pressure.

The valve(s) shall have a 5/64" orifice with valve sealing faces of stainless steel and Buna-N rubber. Valves which use a needle valve to seal the orifice shall not be acceptable.

The valve(s) shall be Crispin-Multiplex Model \_\_\_\_\_ Pressure Air Release Valve(s) as manufactured by Crispin-Multiplex Manufacturing Co., Berwick, PA.

Valve construction shall be \_\_\_\_\_" NPT screwed, cast iron body and top flange with stainless steel float and trim.

### Size Specifications

MODEL	INLET SIZE	OUTLET SIZE	A	B	WEIGHT
AR5	1/2" NPT	1/2" NPT	4.25	5.50	5
AR8	3/4" NPT	1/2" NPT	4.25	5.50	5
AR10	1" NPT	1/2" NPT	4.25	5.50	5

### Orifice

DIAMETER	MAX. PRESSURE	DISCHARGE RATE
5/64	150 PSIG	9.6 SCFM
5/64	300 PSIG	18.4 SCFM