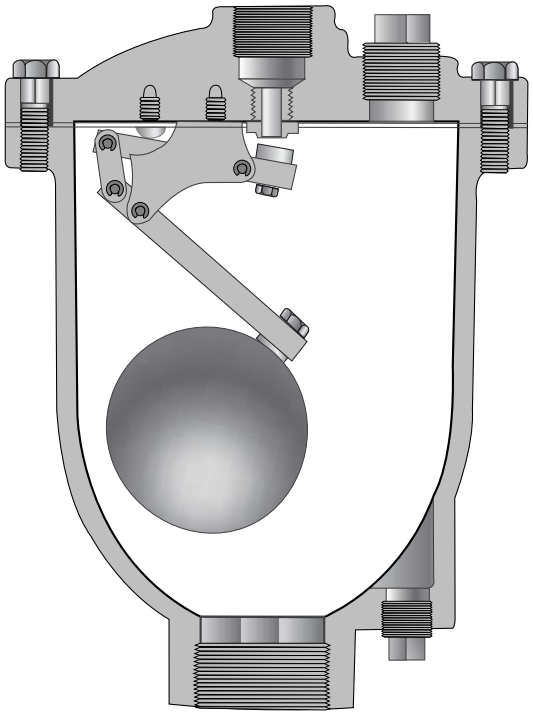
Series 34

Air Release Valves



- **Stainless Steel Trim Standard**
- **Stainless Steel Floats Guaranteed**
- **Easily Serviced Without Removal From Pipeline**
- **Working Pressures to 800 PSI**
- **Engineered For Drip Tight Seal At Low Pressures**

The Cla-Val Series 34 Air Release Valve is designed to protect pipelines from entrained air that collects at high points in a pipeline. This valve continuously eliminates air from a system by releasing small amounts of air before large air pockets can occur. In many installations, continuing accumulations of air in the pipeline (lacking air release valves); flow capacity slowly decreases; power consumption slowly increases; un-noticeable at first, until flowage drops dramatically, even stopping due to air blocks in the piping. Another problem resulting from excessive air accumulation is un-explained pipeline rupture. These ruptures are passed off as the result of ground settling or defective pipe, Where as in reality its large air pockets that greatly increase pressure surges (normally occurring) when flowage stops and starts causing the rupture. During normal pipeline operation, air accumulation at the high point will displace the liquid within the air valve and lower the water level in relation to the float. As level of the liquid lowers where the float is no longer buoyant, the float drops, opens the valve orifice seat and permits the accumulated air to be exhausted to atmosphere. After air is released, the liquid level in the air valve rises and closes the valve orifice seat. This cycle automatically repeats as air accumulates inside the air release valve. Thereby preventing the formation of air pockets

Installation

Series 34 Air Release Valves are typically installed at high-points in pipelines and at regular intervals of approximate 1/2 mile along uniform grade line pipe.

Mount the unit in the vertical position on top of the pipeline with an isolation valve installed below each valve in the event servicing is required. A vault with adequate air venting and drainage is recommended.

Note:

Vacuum check valves can be supplied on the discharge of all size air release valves to prevent air re-entering the system during negative pressure conditions

Purchase Specifications

The air release valve shall be of the float operated, simple lever or compound lever design, and capable of automatically releasing accumulated air from a fluid system while the system is pressurized and operating.

An adjustable designed orifice button shall be used to seal the valve discharge port with drip-tight shut-off. The orifice diameter must be sized for use within a given operating pressure range to insure maximum air venting capacity.

General Specifications

Sizes
1/2", 3/4", 1", 2", 3" NPT

Pressure Ratings (see note)
150 psi
300 psi
800 psi

Temperature Range
Water to 180°F

Note: Specify when operating pressure below 10 PSI

Materials
Body and Cover:
Cast Iron ASTM-A-126, Class B

Float:
Stainless Steel

Internal Parts:
Stainless Steel

Seal:
Viton, Buna-N®

The float shall be of all stainless steel construction and guaranteed to withstand the designed system surge pressure without failure. The body and the cover shall be cast iron or the valve internal parts shall be stainless steel and the Viton Buna-N® for water tight shut-off.

The air release valve shall be Series 34 from Cla-Val in Newport Beach, CA, U.S.A.

AIR RELEASE VALVE DATA

Air Release Valve Sizing

1. Exact air release valve sizing requires determining the volume of air that must be released from pipeline high points during normal operation and the diameter of the pipeline. Series 34 Air Release Valves are primarily used to continuously release pockets of air (as they develope) from high points. Hence it is not critical to determine exact volume of air to be released.
2. If the volume of air to be released has been determined, then use the venting capacity charts on page 3 Series 34 for sizing the air release valves. Use maximum pipeline operating pressure (in psi) and flow (in SCFM) to determine orifice size. Select the largest inlet size for each series to insure adequate venting capacity.

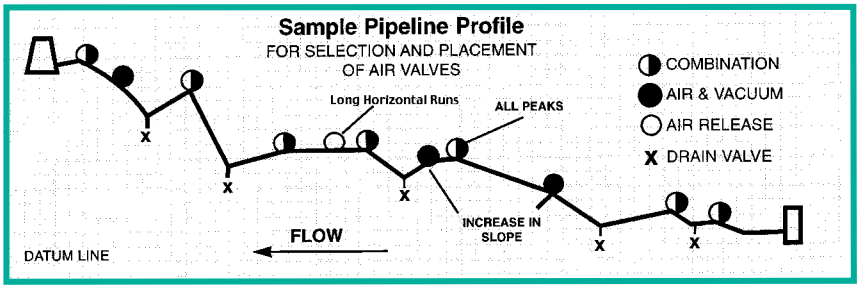
AIR RELEASE VALVE SIZING CHART

PIPE LINE DIAMETER (INCHES)	PUMPING CAPACITY (GPM)	PIPELINE OPERATING PRESSURE					
		1 TO 150 PSI			1 TO 300 PSI		
		MODEL No.	INLET SIZE	ORIFICE SIZE	MODEL No.	INLET SIZE	ORIFICE SIZE
2”-3”-4” Diameter	200/800 GPM	34AR-116 34AR-116 34AR-116	1/2” 3/4” 1"	1/16"	N/A		
6”-8”-10” Diameter	800/2,200 GPM	34AR-332 34AR-332 34AR-332	1/2” 3/4” 1"	3/32"	34AR-116.3 34AR-116.3 34AR-116.3	1/2” 3/4" 1"	1/16"
12”-14”-16” Diameter	2,200/5,000 GPM	34AR-18 34AR-18	3/4” 1”	1/8"	34AR-116.3 34AR-116.3	3/4" 1"	5/64"
18”-20” Diameter	5,000/15,000 GPM	34AR-316C 34AR-316C	1” 2”	3/16"	34AR-332.3C 34AR-332.3C	1" 2"	3/32”
24” and Larger Diameter	15,000/50000 GPM	34AR-38C 34AR-38C	2” 3”	3/8" 3/8"	34AR-732.3C 34AR-732.3C	2" 3"	7/32” 7/32”

INSTALLATION TIPS

1. The effectiveness of Series 34 Air Release Valve is dependent upon it being located at appropriate high points in a pipeline and at uniform intervals of approximately 2500 feet on horizontal pipelines.
2. There are four variables that can cause an air pocket to form slightly downstream of the true high point in a piping system:
    1. Severity of the slope adjacent to the high point or change of gradient
    2. Velocity of the liquid
    3. Texture of the inside surface of the pipe being used
    4. Viscosity of the fluid

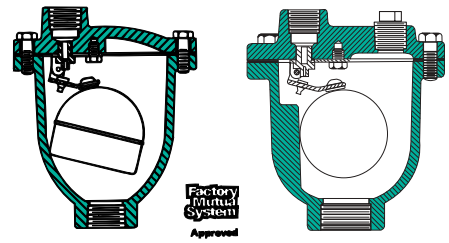
    If it is thought that there is the possibility for an air pocket forming slightly downstream of the high point, it is suggested that an additional Series 34 Air Release Valve be installed at this point.
3. Cla-Val has available, upon request, a Slide Rule Air Valve Calculator. It will greatly reduce the amount of time to size valves for pipeline service.

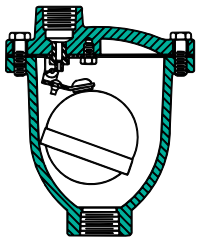


Series 34

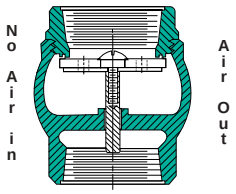
DATA AND SIZING GUIDE

Simple Lever Type





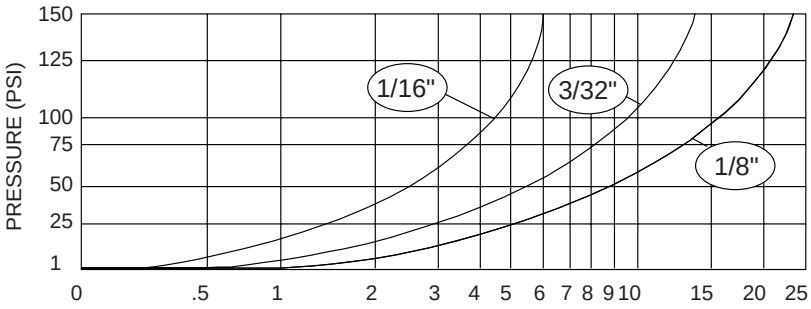
For service up to 175 psi



Optional: Vacuum Check Valve prevents air entry into system.

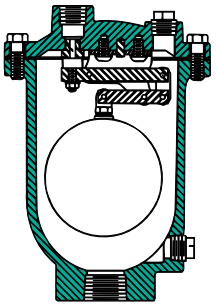
Model No.	Orifice Size	Inlet Size	Outlet Size	Max W.P.	Height	Width	Wt. lbs
34AR-116	1/16"	1/2",3/4",1"	3/8" NPT	175 psi	5 1/4"	4 3/4"	6
34AR-332.3	3/32"	1/2",3/4",1"	1/2" NPT	175 psi	6 1/4"	5 1/8"	8
34AR-018	1/8"	3/4",1"	1/2" NPT	175 psi	7"	6 1/8"	11

VENTING CAPACITY IN CUBIC FEET OF FREE AIR/MINUTE

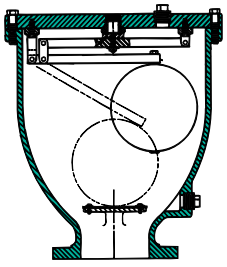


DISCHARGE OF AIR THROUGH AN ORIFICE IN S.C.F.M.
(STANDARD CUBIC FEET OF FREE AIR PER MINUTE)

Compound Lever Type

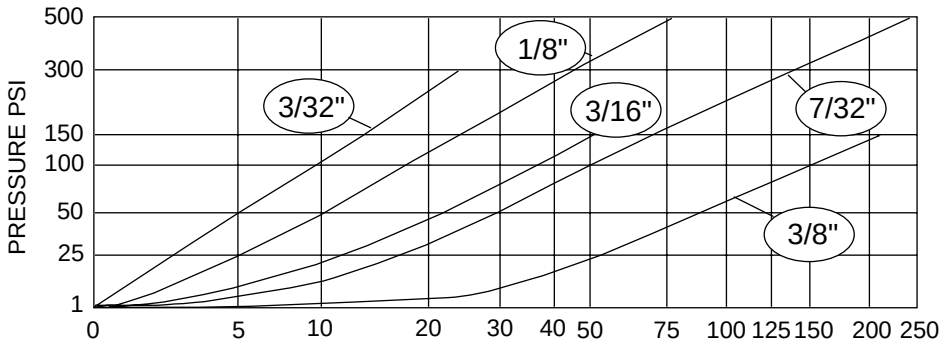


For service up to 800 psi



6" Air Release Valve

Model No.	Orifice Size	Inlet Size	Outlet Size	Max W.P.	Height	Width	Wt. lbs
34AR-316C	3/16"	1" NPT	1/2" NPT	175 psi	10"	7"	23
34AR-332.3C	3/32"	1" NPT	1/2" NPT	300 psi	6 1/4"	5 1/8"	23
34AR-316C	3/16"	2" NPT	1/2" NPT	175 psi	10"	7"	23
34AR-332.3C	3/32	2" NPT	1/2" NPT	300 psi	10"	7"	23
34AR-038C	3/8"	2" NPT	1" NPT	175 psi	12-1/4"	9 1/2"	44
34AR-732.3C	7/32"	2" NPT	1" NPT	300 psi	12-1/4"	9 1/2"	44
34AR-038C	3/8"	3" NPT	1" NPT	175 psi	12-1/4"	9 1/2"	44
34AR-732.3C	7/32"	3" NPT	1" NPT	300 psi	12-1/4"	9 1/2"	44
34AR-732.2C	7/32"	2" NPT	1" NPT	500 psi	13"	10 7/8"	72
34AR-018.2C	1/8"	2" NPT	1" NPT	800 psi	13"	10 7/8"	77
34AR-1.6C	1"	6" FLG	1" NPT	150 psi	22"	18 3/4"	200



DISCHARGE OF AIR THROUGH AN ORIFICE IN S.C.F.M.
(STANDARD CUBIC FEET OF FREE AIR PER MINUTE)

When Ordering, Please Specify:

1. Model Number
2. Inlet Size (NPT)
3. Inlet Pressure Rating
4. Orifice Size

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