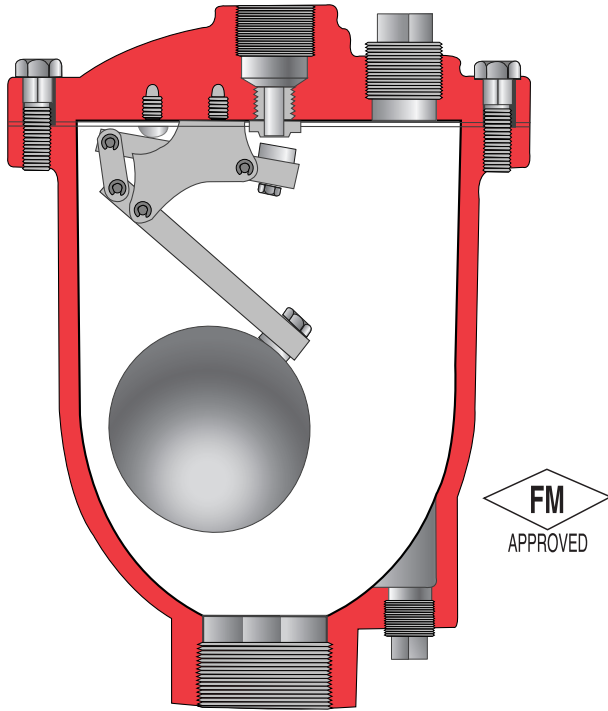




# Series 34

## Air Release Valves



- Stainless Steel T316 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

Cla-Val Series 34 Air Release Valves are designed to vent entrained air that collects at high points in a pipeline. This valve continuously eliminates air from a system by releasing small quantities of air before large air pockets can occur. In many installations, continuing accumulations of air in the pipeline (lacking air release valves); cause flow capacity to slowly decrease; power consumption slowly increases; unnoticeable at first, until flow 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 flow 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 and opens the valve orifice seat and permitting 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

### 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 T316

#### Internal Parts:

Stainless Steel T316

#### Seal:

Viton™, Buna-N®

### 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.

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 and valve internal parts shall be stainless steel and the Viton™ Buna-N® for water tight shut-off. All T316 Stainless Steel shall be Austenitic.

The air release valve shall be manufactured per ANSI/AWWA C512-04 Series 34 from Cla-Val in Newport Beach, CA, U.S.A.





# AIR RELEASE VALVE DATA FOR WATER AND

## Air Release Valve Sizing for Water and Wastewater Pipelines

1. 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 develop) 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 chart to assist in sizing the air release valve. Use maximum pipeline operating pressure (in psi) and flow (in SCFM) to determine orifice size. Select the largest inlet size for each valve to insure adequate venting capacity.

### 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

It is recommended where an air pocket can form slightly downstream of the high point, to install additional Series 34 Air Release Valve 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.

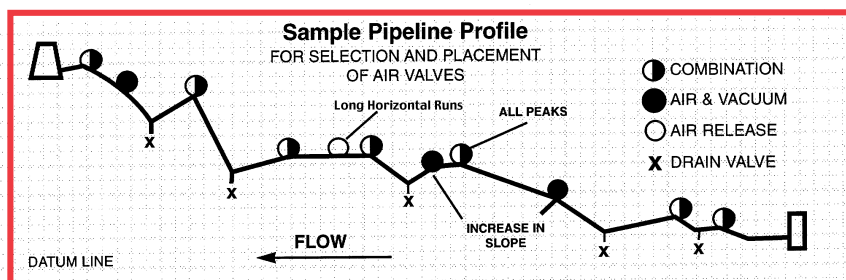
### AIR RELEASE VALVE SIZING CHART FOR WATER PIPELINES

Pipeline Diameter (Inches)	Pumping Capacity (gpm)	PIPELINE OPERATING PRESSURE					
		1 to 175 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	1/2"	1/16"	N/A		
		34AR-116	3/4"				
		34AR-116	1"				
6" - 8" - 10" Diameter	800/2,200 gpm	34AR-332	1/2"	3/32"	34AR-116.3	1/2"	1/16"
		34AR-332	3/4"		34AR-116.3	3/4"	
		34AR-332	1"		34AR-116.3	1"	
12" - 14" - 16" Diameter	2,000/5,000 gpm	34AR-018	3/4"	1/8"	34AR-116.3	3/4"	5/64"
		34AR-018	1"		34AR-116.3	1"	
18" - 20" Diameter	5,000/15,000 gpm	34AR-316C	1"	3/16"	34AR-332.3C	1"	3/32"
		34AR-316C	2"		34AR-332.3C	2"	
24" & Larger Diameter	15,000/50,000 gpm	34AR-38C	2"	3/8"	34AR-732.3C	2"	7/32"
		34AR-38C	3"		34AR-732.3C	3"	

### AIR RELEASE VALVE SIZING GUIDE FOR WASTEWATER PIPELINES

Pipeline Diameter (Inches)	Pumping Capacity (gpm)	PIPELINE OPERATING PRESSURE					
		1 to 175 psi			1 to 300 psi		
		Model No.	Inlet Size	Orifice Size	Model No.	Inlet Size	Orifice Size
4" - 12"	0 - 4,000 gpm	34WW25-316	2"	3/16"	34WW25-332	2"	3/16"
		34WW35-316	3"		34WW35-332	3"	
		34WW45-316	4"		34WW45-332	4"	
14" & Larger	4,100 & Up gpm	34WW21-716	2"	7/16"	34WW21-732	2"	7/32"
		34WW31-716	3"		34WW31-732	3"	
		34WW41-716	4"		34WW41-732	4"	

Note: Use large as possible inlet size to allow best wastewater exchange to lesson clogged inlets.  
Optional: Back Wash Kit recommended for maintenance.



### When Ordering, Please Specify:

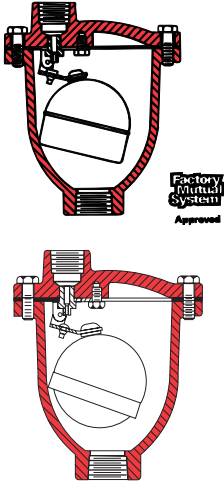
1. Model Number
2. Inlet Size (NPT)
3. Inlet Pressure Rating
4. Orifice Size



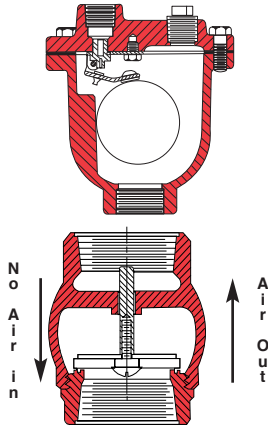
# AND SIZING GUIDE WASTEWATER

# Series 34 Series 34-WW

## Simple Lever Type (For Water)

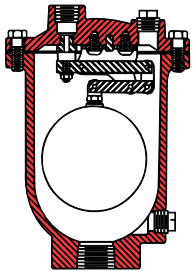


For service up to 300 psi

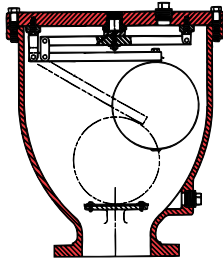


Optional: Vacuum Check Valve prevents air re-entering system.  
1/2" Model 50 VC  
1" Model 1 VC

## Compound Lever Type (For Water)

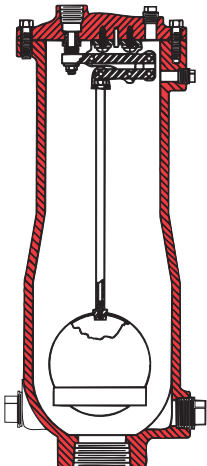


For service up to 800 psi

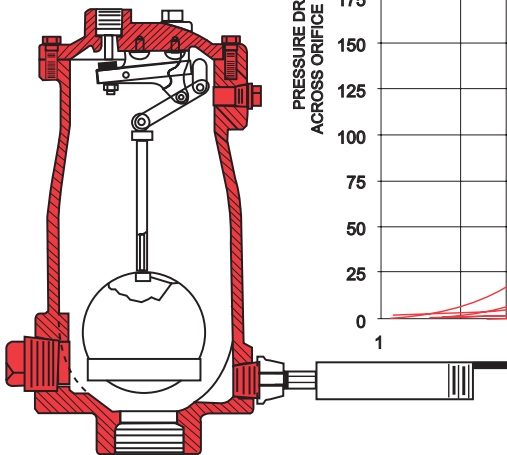


6" Air Release Valve

For Wastewater



## Air Release Valve (Pump Protector)



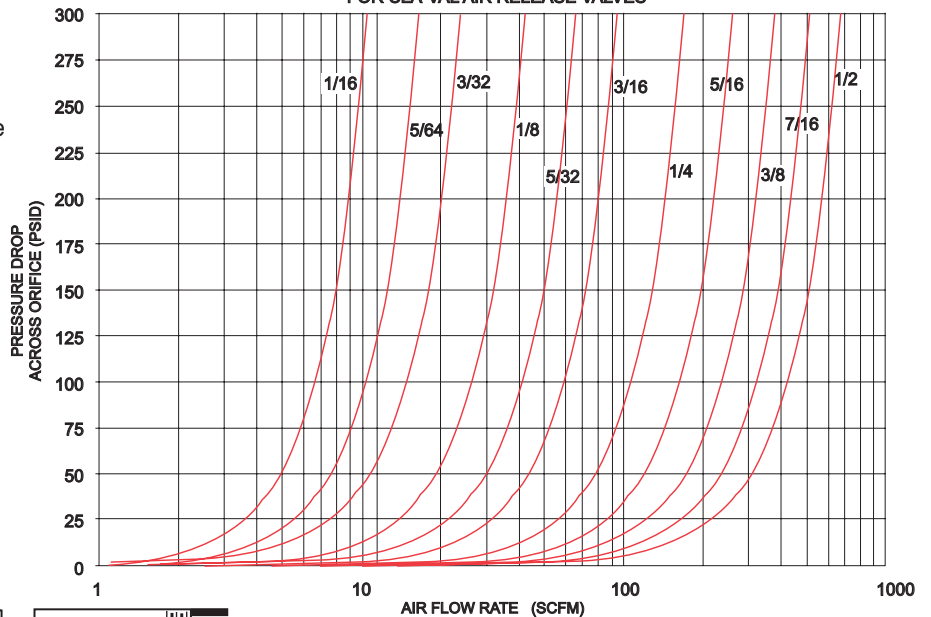
## Air Release Valve for Water

Model No.	Orifice Size	Inlet Size NPT	Outlet Size NPT	Max/ W.P.
34AR-116C	1/16"	1/2" - 3/4" - 1"	3/8"	175 psi
34AR-332	3/32"	1/2" - 3/4" - 1"	1/2"	175 psi
34AR-018	1/8"	3/4" - 1"	1/2"	175 psi
34AR-316C	3/16"	1"	1/2"	175 psi
34AR-332.3C	3/32"	1"	1/2"	300 psi
34AR-316C	3/16"	2"	1/2"	175 psi
34AR-332-3C	3/32"	2"	1/2"	300 psi
34AR-038C	3/8"	2"	1"	175 psi
34AR-732.3C	7/32"	2"	1"	300 psi
34AR-038C	3/8"	2"	1"	175 psi
34AR-732.3C	7/32"	2"	1"	300 psi
34AR-732.2C	7/32"	2"	1"	500 psi
34AR-018C	1/8"	2"	1"	800 psi
34AR-1.6C	1"	6" Flanged	1"	150 psi

## Air Release Valve for Wastewater

34WW25-316	3/16"	2" - 3" - 4"	1/2"	175 psi
34WW25-332	3/32"	2" - 3" - 4"	1/2"	300 psi
34WW21-716	7/16"	2" - 3" - 4"	1"	175 psi
34WW21-732	7/32"	2" - 3" - 4"	1"	300 psi

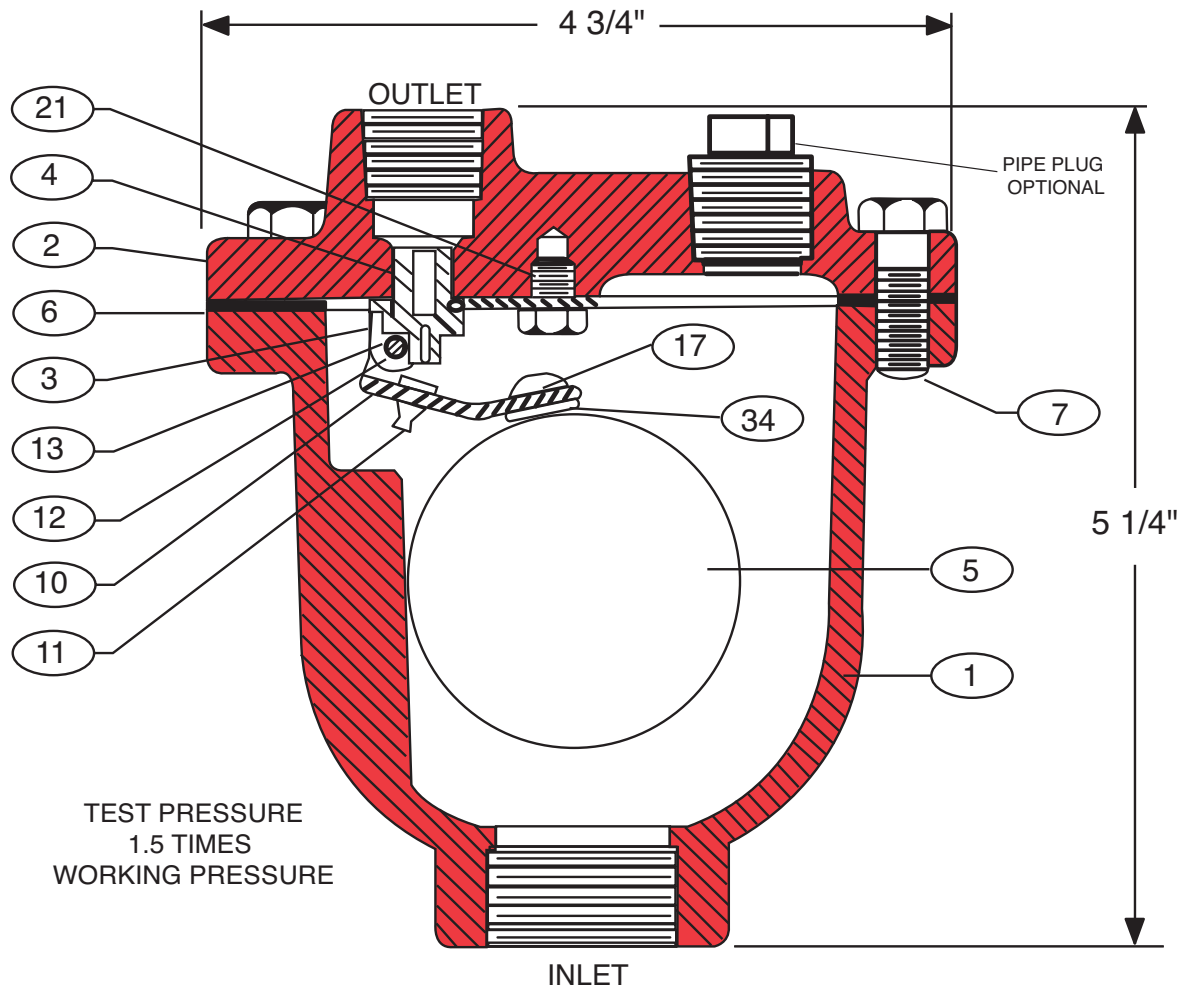
ORIFICE SIZES WITH VENTING CAPACITY FOR CLA-VAL AIR RELEASE VALVES





# Series 34

## Air Release Valve – Simple Lever Type



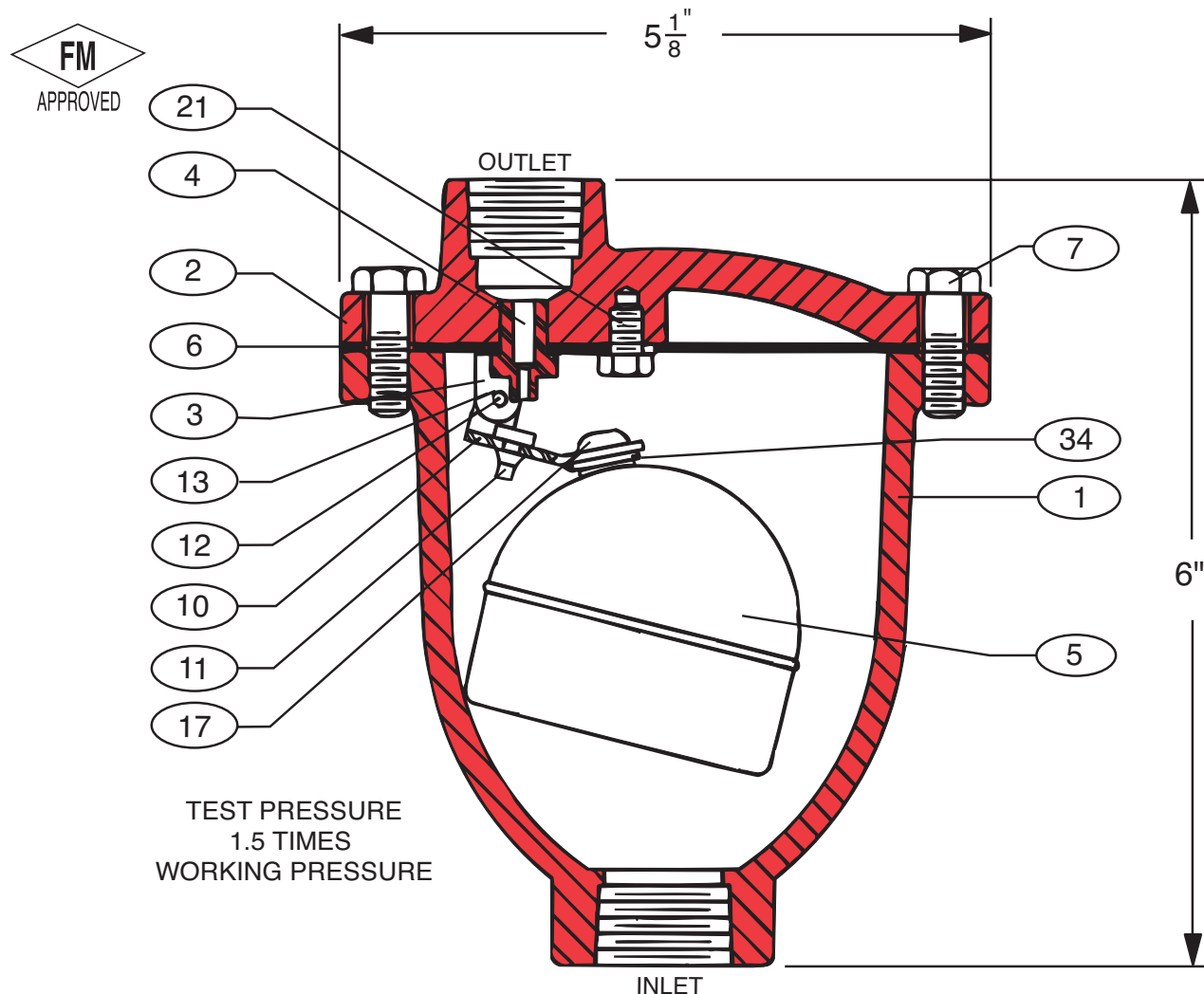
Detail No.	Part Name	Material	Detail No.	Part Name	Material
1	Body	Cast Iron ASTM A126, Class B	10	Float Arm	Stainless Steel T316, ASTM A276
2	Cover	Cast Iron ASTM A126, Class B	11	Orifice Button	Viton™
3	Lever Frame	Stainless Steel T316, ASTM A276	12	Pivot Pin	Stainless Steel T316, ASTM A276
4	Seat	Stainless Steel T316, ASTM A276	13	Pin Retainer	Stainless Steel PH 15-7 Mo
5	Float	Stainless Steel T316, ASTM A276	17	Float Retainer	Stainless Steel T316, ASTM A276
6	Gasket	Garlock #3000 (Non-Asbestos)	21	Locator	Stainless Steel T316, ASTM A276
7	Cover Bolt	Alloy Steel SAE Grade 5	34	Lock Washer	Stainless Steel T316, ASTM A276

Valve Size	Model No.		Inlet Size	Outlet Size	Wt. Lbs.
	175 psi Max. W.P.	175 psi Orifice			
1/2"	3450AR-116	1/16"	1/2"	1/2" NPT	6
3/4"	3475AR-116	1/16"	3/4"	1/2" NPT	6
1"	3410AR-116	1/16"	1"	1/2" NPT	6



# Series 34

## Air Release Valve – Simple Lever Type



Detail No.	Part Name	Material	Detail No.	Part Name	Material
1	Body	Cast Iron ASTM A126, Class B	10	Float Arm	Stainless Steel T316, ASTM A276
2	Cover	Cast Iron ASTM A126, Class B	11	Orifice Button	Viton™
3	Lever Frame	Stainless Steel T316, ASTM A276	12	Pivot Pin	Stainless Steel T316, ASTM A276
4	Seat	Stainless Steel T316, ASTM A276	13	Pin Retainer	Stainless Steel PH 15-7 Mo
5	Float	Stainless Steel T316, ASTM A276	17	Float Retainer	Stainless Steel T316, ASTM A276
6	Gasket	Garlock #3000 (Non-Asbestos)	21	Locator	Stainless Steel T316, ASTM A276
7	Cover Bolt	Alloy Steel SAE Grade 5	34	Lock Washer	Stainless Steel T316, ASTM A276

Valve Size	Model No.		Model No.		Inlet Size	Outlet Size	Wt. Lbs
	175 psi Max. W.P.	175 psi Orifice	300 psi Max. W.P.	300 psi Orifice			
1/2"	3450AR-332	3/32"	3450AR-116.3	1/16"	1/2"	1/2" NPT	8
3/4"	3475AR-332	3/32"	3475AR-116.3	1/16"	3/4"	1/2" NPT	8
1"	3410AR-332	3/32"	3410AR-116.3	1/16"	1"	1/2" NPT	8