



# K-022 360 PSI



## Air & Vacuum Valve

### Description

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The K-022 Air & Vacuum Valves are specially designed to operate with liquids carrying solid particles such as wastewater and effluents. These air & vacuum valves discharge air (gases) during the filling or charging of the system and admit air into the system while it is being emptied of liquid. The valve's unique design enables the separation of the liquid from the sealing mechanism and assures optimum working conditions.

### Applications

- Pump stations for sewage, wastewater & water treatment plants.
- Wastewater, effluent water and sea water supply lines.

### Operation

The K-022 air & vacuum valves discharge air at high flow rates during the filling of the system and admit air into the system at high flow rates during its drainage and at water column separation.

High velocity air should not blow the float shut. Water will lift the float which seals the valve.

At any time during system operation, should internal pressure of the system fall below atmospheric pressure, air will re-enter the system.

The smooth discharge of air reduces pressure surges and other destructive phenomena.

The intake of air in response to negative pressure protects the system from destructive vacuum conditions and prevents damage caused by water column separation. Air re-entry is essential to efficiently drain the system.

**As the system starts to fill, the valve functions according to the following stages:**

1. Entrapped air/gas is discharged by the valve
2. When the liquid level reaches the valve's lower portion, the float is lifted, pushing the sealing mechanism to its sealing position.

**When internal pressure falls below atmospheric pressure (negative pressure):**

1. The floats will immediately drop down, opening the air & vacuum orifice.
2. Air will reenter the system.

### Main Features

- Working pressure range: 3 - 360 psi
- Testing Pressure: 1.5 times the working pressure of the air valve.
- Maximum working temperature: 140° F.
- Maximum intermittent temperature: 194° F.
- The valve's unique design prevents contact between the wastewater and the sealing mechanism by creating an air gap at the top of the valve. Those features are achieved by:
  - **The conical body shape:** designed to maintain the maximum distance between the liquid and the sealing mechanism; so as to obtain minimum body length.
  - **The valve design and float mechanism:** are less sensitive to pressure differentials than a direct float seal. It has a comparably large orifice for a wide pressure range (up to 360 psi).
  - **Funnel-shaped lower body:** designed to ensure that residue solid matter will sink to the system and be carried away and will not remain in the valve.
  - Flushing is possible while the valve is under pressure by opening the ball valve in the valve's lower part.

### Valve Selection

- Size range 3" - 4"
- These valves are manufactured with flanged ends to meet ASA 150 or any requested standard
- Standard metal body, also available with a stainless steel body.
- Air valve coating: FBE according to international standard DIN 30677-2.
- Other coatings are available upon request.
- For best suitability, it is recommended to send the fluid chemical properties along with the valve request.

**Upon ordering, please specify: model, size, working pressure, threads standard and type of liquid.**

## DIMENSIONS AND WEIGHTS

Nominal Size	Dimensions inch				Weight Lbs.	Orifice Area Sq.in
	A	B	internal C	external		
3"	18.3	28.7	2.5	2.9	92.6	2.89
4"	18.3	28.7	2.5	2.9	96.6	2.89

## PARTS LIST AND SPECIFICATION

No. Part	Material
1. Lifting Ring	
2. Washer	Stainless Steel SAE 316
3. Spring Holder	Stainless Steel SAE 316
4. Plug	Stainless Steel
5. Spring	Stainless Steel SAE 316
6. Cover	Stainless Steel SAE 316/ Ductile Iron ASTM A-536-60-40-18
7. Orifice Seat	Stainless Steel SAE 316
8. Orifice Seal	EPDM
9. O-Ring	BUNA-N
10. Nut	Stainless Steel SAE 316
11. Bolt	Stainless Steel SAE 316
12. Upper Float Assembly	Polycarbonate / Stainless Steel SAE 316
13. Bolt	Stainless Steel SAE 316
14. Air & Vacuum Body	Stainless Steel SAE 316 / Ductile Iron ASTM A 536 60-40-18
15. O-Ring	BUNA-N
16. Float Assembly	Polycarbonate+Stainless Steel / Stainless Steel
17. Ball Valve	Stainless Steel SAE 316
18. Body	Stainless Steel SAE 316 / Steel DIN St. 37

## AIR RELEASE FLOWRATE

