A.R.I.

K-020 250 PSI

K-022 360 PSI

Air & Vacuum Valve

Wastewater

Description

The K-020 & K-022 Air & Vacuum Valves are specifically 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 during drainage. 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 and effluent water transmission lines.

Operation

The K-020 & 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 will not blow the float shut. Water will lift the float which activates the sealing of the valve.
At any time during system operation, should internal pressure of the system fall below atmospheric pressure, air will 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 entry is essential to efficiently drain the system.

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

1. 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 enter into the system.

Main Features

- Working pressure range: K-020: 3 - 250 psi.
  K-022: 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 and still obtain minimum body length.
• Funnel-shaped lower body: designed to ensure that residue wastewater matter will fall back into the system and be carried away by the main pipe.
-Flushing is possible while the valve is under pressure by opening the ball valve in the valve's lower body.

Valve Selection

- Size range: 3" - 4".
- These valves are manufactured with flanged ends to meet any requested standard.
- Standard stainless steel body, also available in welded/cast steel.
- Air valve coating: fusion bonded epoxy according to standard DIN 30677-2.
- Other coatings are available upon request.
- Optional Accessories
• With a One-Way, Out-only attachment, allows for air discharge only, prevents air intake.
• With a Vacuum Breaker, In-only attachment, allows for air intake only, prevents air discharge.
• With a Non-Slam discharge-throttling attachment, allows for free air intake, throttles air discharge.

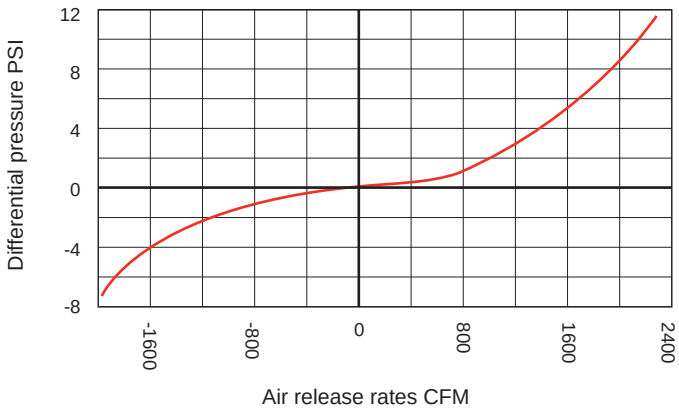
Note

- The K-020 air valve is intended for use with raw wastewater. For use with aggressive liquids, please consult with our application engineers or with the marketing dept.
- 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, thread and flange standard and type of liquid.

K-020

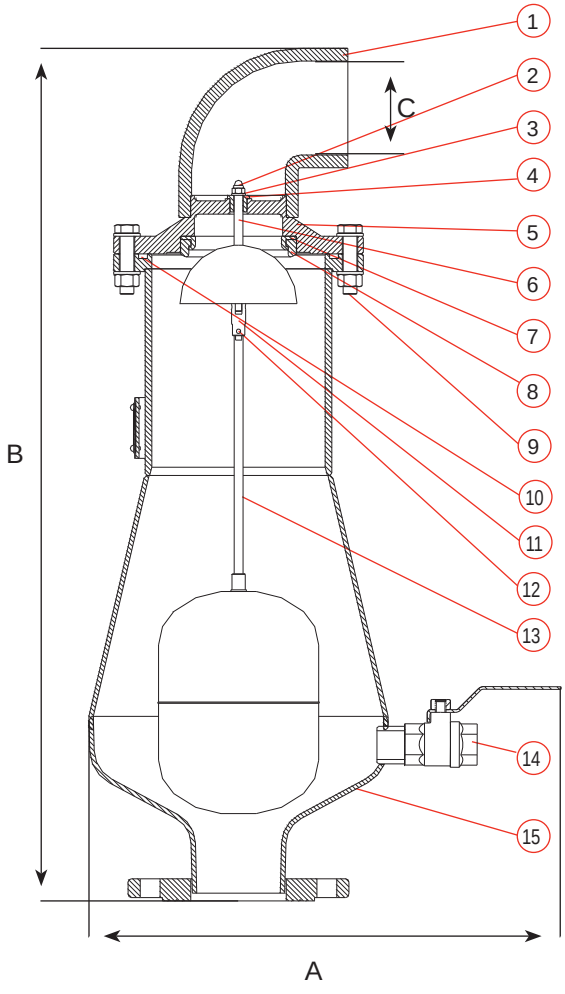
A.R.I.

AIR & VACUUM FLOWRATE



DIMENSIONS AND WEIGHTS

Inlet Size	Dimensions Inch A	B	Connection C	Weight Lbs.	Orifice Area Sq.In.
3”	18.3	30.8	3” NPSM Female	57.3	7.79
4”	18.3	30.8	3” NPSM Female	59.5	7.79



PARTS LIST AND SPECIFICATION

No.	Part	Material
1.	Discharge Outlet	Stainless Steel / PVC
2.	Domed Nut	Stainless Steel SAE 316
3.	Washer	Stainless Steel SAE 316
4.	Bushing	Teflon
5.	Cover	Stainless Steel SAE 316 / Steel DIN ST.37
6.	Stem + Spherical Flap	Stainless Steel SAE 316
7.	Orifice Seat	Stainless Steel SAE 316
8.	Orifice Seal	E.P.D.M.
9.	Bolt & Nut	Stainless Steel SAE 316
10.	O-Ring	BUNA-N
11.	Joint	Stainless Steel SAE 316
12.	Pin	Stainless Steel SAE 316
13.	Stem + Float	Stainless Steel SAE 316
14.	Ball Valve 1”	Stainless Steel SAE 316
15.	Body	Stainless Steel SAE 316 / Steel DIN ST.37

K-022

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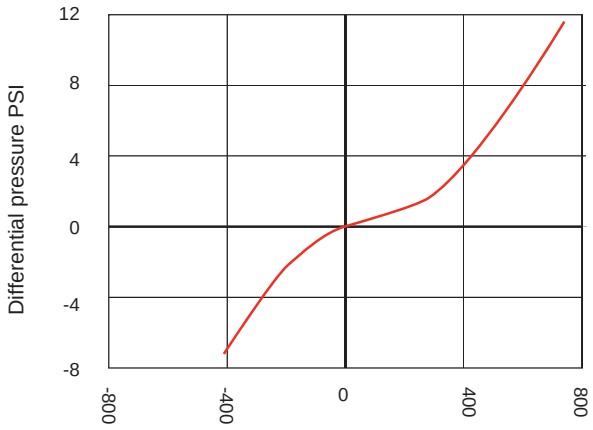
AIR & VACUUM FLOWRATE

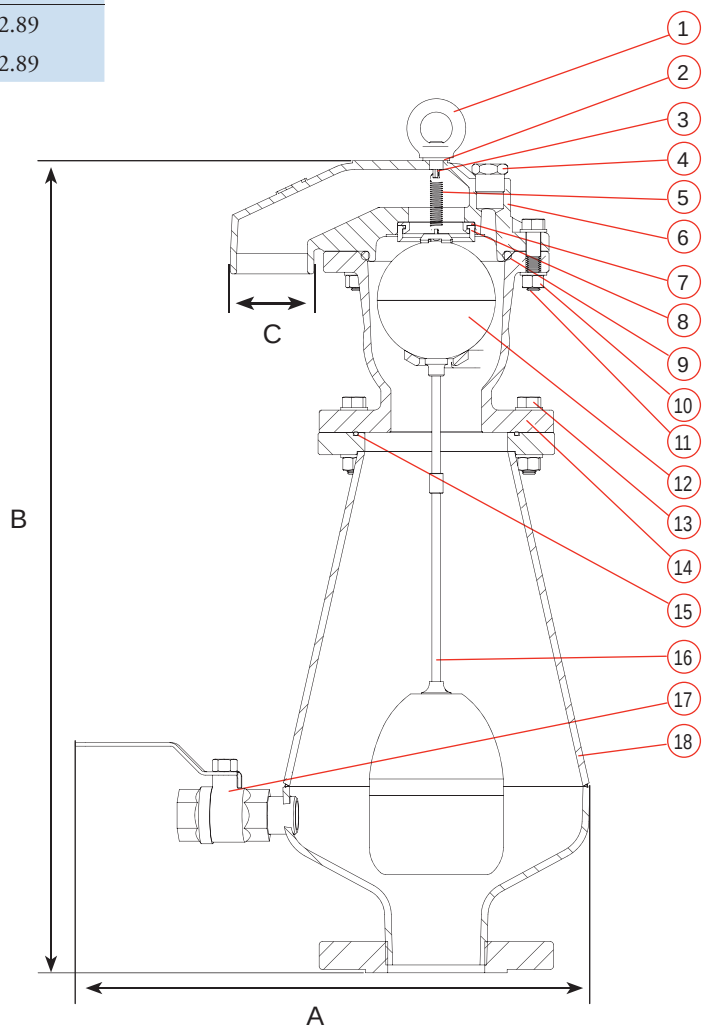


DIMENSIONS AND WEIGHTS

Inlet Size	Dimensions Inch A	B	C internal	C external	Weight Lbs.	Orifice Area Sq.In.
3”	18.5	28.7	2.5	2.9	1.6	2.89
4”	18.5	28.7	2.5	2.9	1.7	2.89

PARTS LIST AND SPECIFICATION

No.	Part	Material
1.	Lifting Ring	Stainless Steel SAE 304
2.	Washer	Stainless Steel SAE 316
3.	Spring Holder	Stainless Steel SAE 316
4.	Plug	Stainless Steel SAE 316
5.	Spring	Stainless Steel SAE 316
6.	Cover	Stainless Steel SAE 316 / 317
		Ductile Iron ASTM A-536-60-40-18
7.	Orifice Seat	Stainless Steel SAE 316
8.	Orifice Seal	E.P.D.M.
9.	O-Ring	BUNA-N
10.	Nut	Stainless Steel SAE 316
11.	Bolt	Stainless Steel SAE 316
12.	Upper Float Assembly	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 SAE 316 Rod / Stainless Steel SAE 316
17.	Ball Valve 1”	Stainless Steel SAE 316
18.	Body	Stainless Steel SAE 316 / Steel DIN ST. 37



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