

K-020 PN 16

K-022 PN 25



Air & Vacuum Valve

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 are designed to automatically discharge or admit large volumes of air (gas) during the filling or draining of a pipeline or piping system. This valve will open to relieve negative pressures valve at pump shut-off and at water column separation.

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 (gas) 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 fills and is pressurized, the air valve functions in the following stages:

1. Air (gas) is discharged by the valve
2. Liquid enters the valve. The float rises, pushing the sealing mechanism to its sealing position.

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

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

Main Features

- Working pressure range: K-020 0.2 - 16 bar.
K-022 0.2 - 25 bar
- Testing Pressure: 1.5 times the working pressure of the air valve.
- Maximum working temperature: 60° C.
- Maximum intermittent temperature: 90° C.
- 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.
- The ball valve can be opened to release trapped pressure and drain the valve body prior to maintenance and for back-flushing during maintenance.

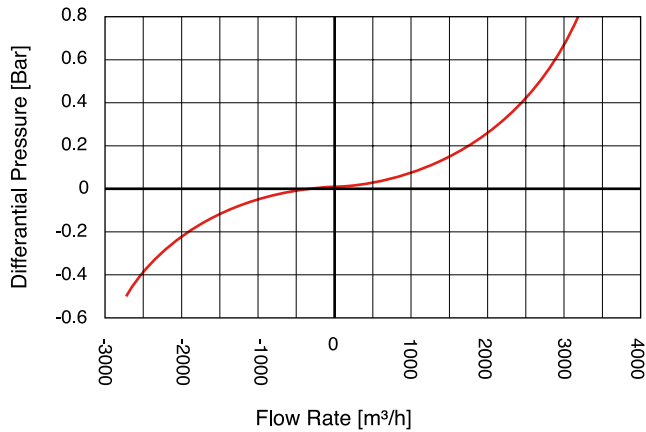
Valve Selection

- Size range: 3" - 4"
- These valves are manufactured with flanged ends to meet any requested standard.
- Standard welded/cast steel body, also available in stainless 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.

AIR & VACUUM FLOW RATE

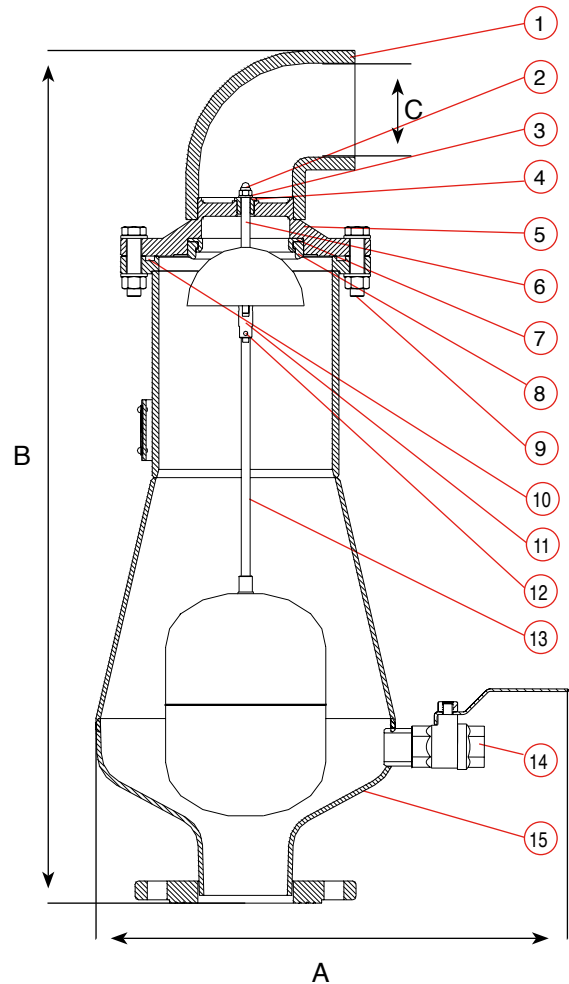


DIMENSIONS AND WEIGHTS

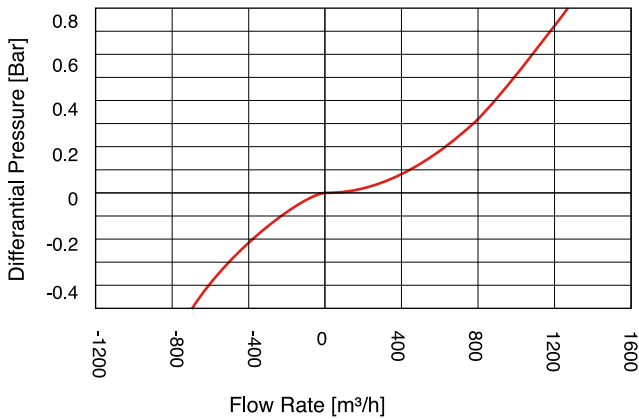
Nominal Size	Dimensions mm		Connection C	Weight Kg.		Orifice Area mm²
	A	B		STEEL	ST ST	
3" (80mm)	465	783	3" BSP Female	24.5	26	5026
4" (100mm)	465	783	3" BSP Female	26	27	5026

PARTS LIST AND SPECIFICATION

No. Part	Material
1. Discharge Outlet	PVC / Stainless Steel
2. Domed Nut	Stainless Steel SAE 316
3. Washer	Stainless Steel SAE 316
4. Bushing	Teflon
5. Cover	Cast Iron ASTM A48 CL35B
6. Stem + Spherical Flap	Stainless Steel SAE 316
7. Orifice Seat	Bronze / Stainless Steel SAE 316
8. Orifice Seal	E.P.D.M. + Bronze
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"	Brass / Stainless Steel
15. Body	Steel Din St.37 / ST ST SAE 316



AIR & VACUUM FLOW RATE



DIMENSIONS AND WEIGHTS

Nominal Size	Dimensions mm				Weight Kg.	Orifice Area mm ²
	A	B	internal C	external		
3" (80mm)	470	730	63.5	74.6	42.0	1809
4" (100mm)	470	730	63.5	74.6	43.8	1809

PARTS LIST AND SPECIFICATION

No. Part	Material
1. Lifting Ring	Stainless Steel 304
2. Washer	Stainless Steel 316
3. Spring Holder	Stainless Steel 316
4. Plug	Brass / Stainless Steel
5. Spring	Stainless Steel 316
6. Cover	Ductile Iron / Stainless Steel 316 / 317
7. Orifice Seat	Bronze / Stainless Steel 316
8. Orifice Seal	EPDM
9. O-Ring	BUNA-N
10. Nut	Stainless Steel 316
11. Bolt	Stainless Steel 316
12. Upper Float Assembly	Stainless Steel 316
13. Bolt	Stainless Steel 316
14. Air & Vacuum Body	Ductile Iron / Stainless Steel SAE 316
15. O-Ring	BUNA-N
16. Float Assembly	Polycarbonate + Stainless Steel 316 Rod
17. Ball Valve 1"	Stainless Steel 316
18. Body	Carbon Steel / Stainless Steel 316

