

S-020 HC PN 16

S-022 HC PN 25

S-024 HC PN 40



High Capacity Automatic Air Release Valve

Description

The S-020/S-022 HC automatic air release valve releases accumulated air/gas from the system while it is under pressure. The presence of air/gas in the system can reduce the effective cross sectional flow area, resulting in increased pressure loss and decreased flow. Unwanted air/gas may also cause water hammer and metering inaccuracies, while hastening corrosion.

The S-020/022/024 HC automatic air release valve builds an air/gas pocket inside the valve body, separating the liquid with its solid particles from the sealing mechanism, ensuring a leak-free seal.

Applications

- CBM water
- Reclaimed water
- Raw water
- Effluent water
- Water with suspended solids
- Potable water

Operation

The S-020/022/024 HC is a high capacity automatic air release valve for systems with suspended solids. The valve releases entrapped air from pressurized systems.

Without air valves, pockets of accumulated air may cause the following hydraulic disturbances:

- Restriction of effective flow due to a reduction of the flow area. In extreme cases this will cause complete flow stoppage.
- Obstruction of efficient hydraulic transmission due to air flow disturbances.
- Acceleration of cavitation damages.
- Increase in pressure transients and surges.
- Internal corrosion of pipes, fittings and accessories.
- Dangerous high-energy bursts of compressed air.
- Inaccuracies in flow metering.

As the system fills and is pressurized, the wastewater air valve functions in the following stages:

1. Liquid enters the air valve and lifts the float, pushing the sealing mechanism to its sealing position.
2. The entrapped air is confined in a pocket between the liquid and the sealing mechanism. The air pressure is equal to the system pressure.
3. Increases in system pressure compress the entrapped air in the upper section of the conical chamber. The conical shape assures the

height of the air gap.

This enables separation of the liquid from the sealing mechanism.

4. Air/gas, accumulating at peaks and along the system, rises to the top of the air valve and displaces the liquid in the valve's body.

5. When the liquid level lowers to a point where the float is no longer buoyant, the float drops, unsealing the rolling seal. The air release orifice opens and allows part of the air that accumulated in the upper portion of the valve to be released to the atmosphere.

6. Liquid enters the valve. The float rises, pushing the rolling seal to its sealing position. The remaining air gap prevents the liquid from fouling the mechanism.

Note: Automatic air release valves are designed to release air as it accumulates at peaks in pressurized systems. Because of their inherently small orifices, they are not recommended for vacuum protection or for releasing large volumes of air. For this purpose, use our air & vacuum valves.

Automatic air release valves will however, permit air to enter the system under vacuum conditions. If this is not desirable, specify the one-way out check

Main Features

- Working pressure range: S-020 HC 0.2 – 16 bar.
S-022 HC 0.2 – 25 bar.
- Testing Pressure: 1.5 times the maximum working pressure of the air valve.
- Maximum working temperature: 60° C.
- Maximum intermittent temperature: 90° C.
- The unique design of the valve prevents contact between the wastewater and the sealing mechanism by creating an air gap at the top of the valve.
- These 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.

Spring-guided linkage between the float/rod assembly and the sealing mechanism: allows free movement of the float and rod. Vibrations and movement of the float due to turbulence will not unseat the sealing mechanism.

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.

Rolling seal: provides smooth positive opening, closing, and leak-free sealing over a wide range of pressure differentials.

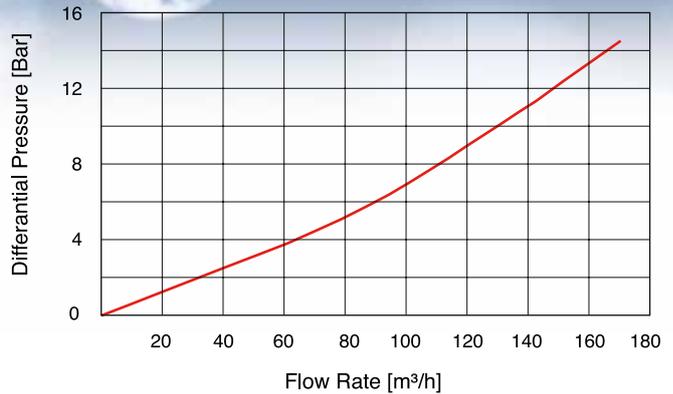
- Internal metal parts: made of corrosion-resistant stainless steel.
- Threaded discharge outlet enables connection of a vent pipe.
- The ball valve can be opened to release trapped pressure and drain the valve body prior to maintenance.
- The 2" and 3" valve is also available with BSP /NPT male threads.

Valve Selection

- The valve is manufactured in sizes 2"- 4".
- These valves are manufactured with flanged ends to meet any requested standard.
- The 2", 3" valves are also available with a BSP, NPT male threaded connection.
- Standard steel body, also available in stainless steel
- Steel valve body: Fusion bonded epoxy coating according to the standard DIN 30677-2.
- Other coatings available on request

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

AUTOMATIC AIR RELEASE FLOW RATE



DIMENSIONS AND WEIGHTS

Nominal Size	Dimensions mm			Weight Kg. Approx	Orifice Area mm ²
	A	B	C		
2" Threaded	320	603	1"	16	40
2" Flanged	320	603	1"	16.5	40
3" Threaded	320	603	1"	16.2	40
3" Flanged	320	603	1"	16.7	40
4" Flanged	320	603	1"	17.2	40

PARTS LIST AND SPECIFICATION

No.	Part	Material
1.	Air Release Outlet	Polypropylene
2.	Bolt, Nut & Washer	Stainless Steel SAE 316
3.	O-Ring	BUNA-N/EPDM/Viton
4.	Cover	Reinforced Nylon
	16 bar	Steel DIN ST.37/ STST SAE 316
	16,25, 40 bar	
5.	O-Ring	BUNA-N /EPDM/Viton
6.	Pin	Stainless Steel SAE 304
7.	Nut & Washer	Stainless Steel SAE 316
8.	Lever	Reinforced Nylon
9.	Spring	Stainless Steel SAE 316
10.	Orifice	Reinforced Nylon
11.	Lever Seal	Viton /EPDM
12.	Float Assembly	Stainless Steel SAE 316 or Polycarbonate + Rod made of Stainless Steel SAE 316
13.	Ball Valve	16 bar: Bronze - Nickel Coated 16,25,40 bar: Stainless Steel SAE 316
14.	Body	Steel DIN St.37 / ST ST SAE 316 / Steel ASTM A216 WCB / ST ST ASTM A744 CF8M Depends on pressure and size.

