

S-022 HC VB 25 bar



Industrial High Capacity Air Release Valve and Vacuum Breaker

Description

The S-022 HC VB automatic air release valve orifice discharges 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-022 HC VB automatic

air release component 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.

When pressure develops in the S-022 HC VB valve, the vacuum breaker orifice is completely closed. With a reduction in pressure during drainage, pump shut off or water column separation, the pressure on the vacuum breaker sealing assembly is diminished. It drops down, opening the vacuum breaker orifice and allowing for the intake of air from the atmosphere into the system and protecting it from vacuum conditions.

Applications

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

Operation

The S-022 HC VB is a high capacity automatic air release valve and vacuum breaker 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 throttling effect as would a partially closed valve. In extreme cases this will cause complete flow stoppage.
- Obstruction of efficient hydraulic transmission due to air flow disturbances.
- Accelerate cavitation damages.
- Pressure transients and surges.
- Corrosion in pipes, fittings and accessories.
- Danger of high-energy bursts of compressed air.
- Inaccuracies in flow metering.

The valve functions while the system is under pressure, according to the following stages:

1. Liquid fills the system and enters the valve.
2. The float rises, raising the sealing assembly and rolling the rubber seal to its sealing position.
3. Entrapped air, which accumulates at peaks and along the system, rises to the top of the valve and displaces the liquid in the valve body.
4. The float descends, lowering the float assembly and rolling back the rubber seal away from the orifice. The orifice opens and the accumulated air is released.
5. Liquid enters the valve, the float rises, raising the float assembly and rolling the rubber seal to its sealing position.

The valve operates when the system is under vacuum conditions (negative pressure) according to the following stages:

1. In the event of a pipe break, pump shut down and during water column separation, the independent normally closed vacuum breaker component will open.
2. The sealing mechanism will drop away from the vacuum breaker orifice and air will enter the pipeline via the orifice.

Main Features

- Working pressure range: 0.2 - 25 bar.
- Testing Pressure: 40 bar.
- Working Temperature: 60° C
- Short-term temperature: 90° C.
- Conical body shape maintains a maximum air gap
- Spring-loaded float and seal plug connection combine to ensure no contact between the wastewater and the seal.
- Funnel-shaped lower body automatically drains solids into the system, allowing valve internals to remain clean and unobstructed.
- Resilient rolling seal provides smooth positive opening, closing and leak-free sealing over a wide range of pressure differentials.
- Internal metal parts are made of corrosion-resistant stainless steel.
- Drainage port with ball valve is provided.
- Normally closed vacuum breaker automatically opens during vacuum conditions and protects the pipeline.

Valve Selection

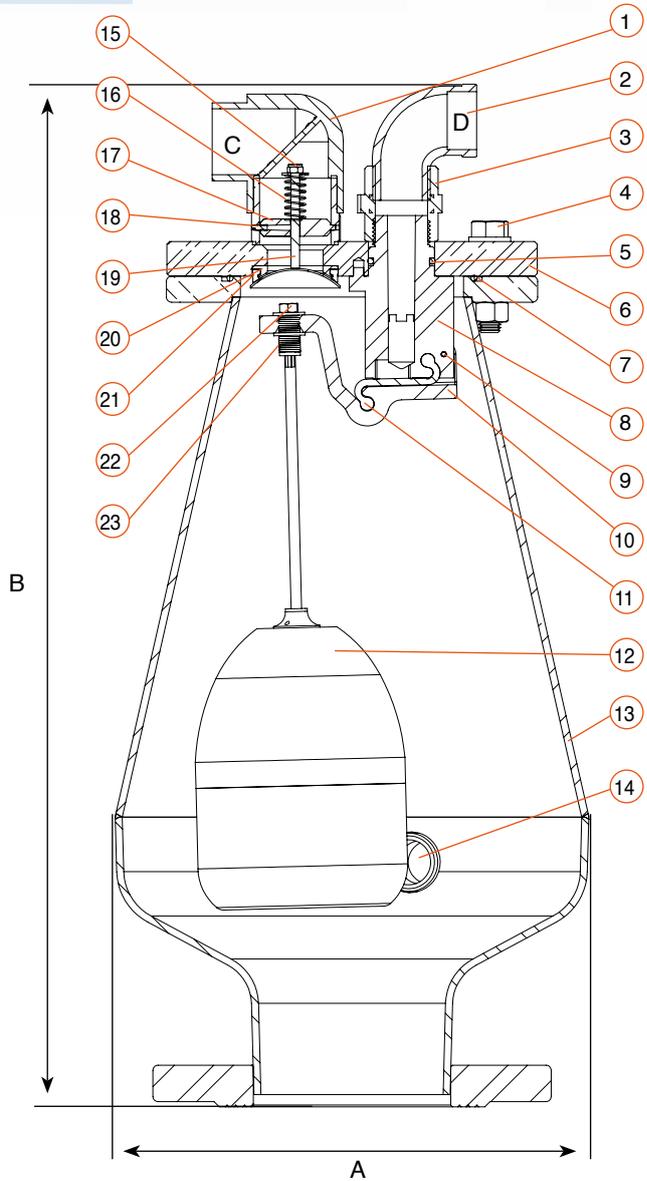
- Available in 2" with BSP/NPT male threads.
- These valves are available with body made of stainless steel or Cast Steel, FBE coated.

DIMENSIONS AND WEIGHTS

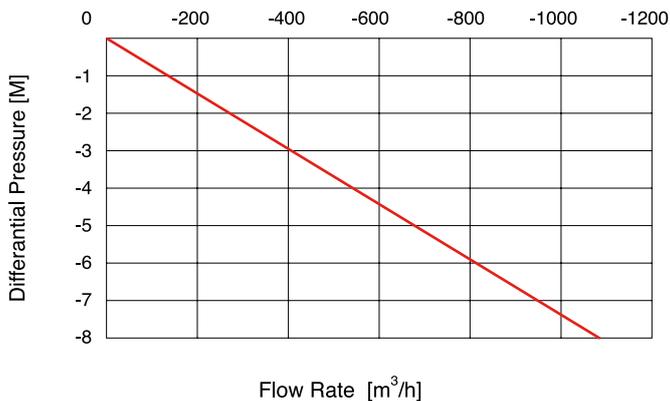
| Nominal Size | Dimensions mm | | | | Weight Kg. | Orifice Area mm ² | |
|--------------|---------------|-------|--------|----|------------|------------------------------|------|
| | A | B | C | D | | Auto. | VB |
| 2" Threaded | 271.8 | 584.2 | 1 1/2" | 1" | 17.3 | 40 | 1161 |

PARTS LIST AND SPECIFICATION

| No. | Part | Material |
|-----|--------------------|---------------------------|
| 1. | VB Outlet Elbow | Polypropylene |
| 2. | ARV Outlet Elbow | Polypropylene |
| 3. | Coupling | Polypropylene |
| 4. | Bolt, Nut & Washer | Steel, Zinc Cobalt Coated |
| 5. | O-Ring | BUNA-N |
| 6. | Cover | Steel DIN ST.37 |
| 7. | O-Ring | BUNA-N |
| 8. | Orifice | Reinforced Nylon |
| 9. | Spring Pin | Stainless Steel SAE 304 |
| 10. | Lever | Reinforced Nylon |
| 11. | Rolling Seal | Viton |
| 12. | Float Assembly | Polycarbonate |
| 13. | Body | Cast Steel ASTM A216 WCB |
| 14. | Ball Valve | Stainless Steel SAE 316 |
| 15. | Nut & Washer | Stainless Steel SAE 304 |
| 16. | Spring | Stainless Steel SAE 302 |
| 17. | Guide | Stainless Steel SAE 316 |
| 18. | Safety Bolt | Stainless Steel SAE 304 |
| 19. | Disc | Stainless Steel SAE 316 |
| 20. | Orifice Seat | Stainless Steel SAE 316 |
| 21. | Orifice Seal | Viton |
| 22. | Nut & Washer | Stainless Steel SAE 304 |
| 23. | Spring | Stainless Steel SAE 304 |



AIR INTAKE FLOW RATES



AUTOMATIC AIR RELEASE FLOW RATE

