

D-060-C HF 285 psi



Combination Air Valve for High Flow

Description

The D-060-C HF series Combination Air Valve has the features of both an air release valve and an air & vacuum valve.

The air release component is designed to automatically release small pockets of air to the atmosphere as they accumulate along a pipeline or piping system when it is full and operating under pressure.

The air & vacuum component is designed to automatically discharge or admit large volumes of air during the filling or draining of a pipeline or piping system. This valve will open to relieve negative pressures whenever water column separation occurs.

Applications

- Municipal and industrial water conveyance systems.
- Water pipelines vulnerable to vandalism and/or water theft.
- Water systems found in remote areas.
- Water systems with pressure demands up to 360 psi.

Operation

The air & vacuum component, with the large orifice, discharges air at high flow rates during the filling of the system and admits 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 seals 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. The air release component releases entrapped air in 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 starts to fill, the combination air valve functions according to the following stages:

1. Air in the pipeline is discharged by the valve.
2. Liquid enters the air & vacuum component, lifting the float to its sealing position.
3. Liquid enters the air release component of the valve, lifting the float and pushing the rolling seal to its sealing position.
4. Entrapped air, accumulating at peaks and along the system, rises to the top of the air release valve, displacing the liquid in the valve's body.
5. The float drops, unsealing the rolling seal. The air release orifice opens and the accumulated air is released.
6. Liquid replaces the air released from the valve, buoying up the float and pushing the rolling seal back to its sealing position.

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

1. The floats will drop down, immediately opening the air & vacuum and air release orifices.
2. Air will enter the system.

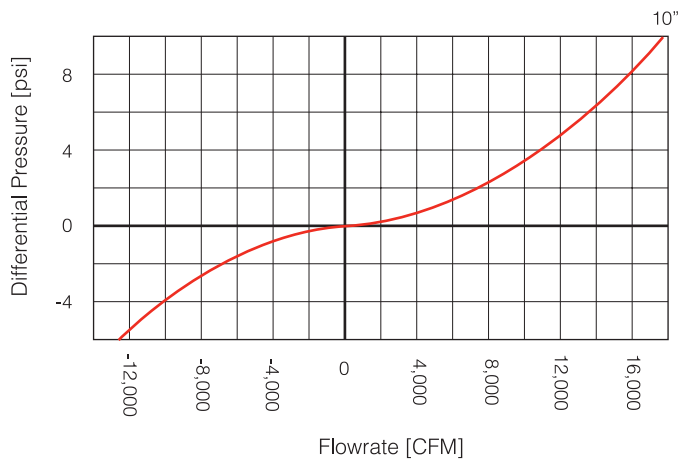
Main Features

- Working pressure range: 3 - 285 psi.
- Testing pressure for the air valve is 1.5 times its working pressure.
- Maximum working temperature: 140° F.
- Maximum intermittent temperature: 194° F.
- All main flow cross-sections are equal or greater than the nominal port area.
- Aerodynamic design enables high flow rates of air both at intake and at discharge.
- Reliable operation reduces water hammer incidents.
- Dynamic design allows for high capacity air discharge while preventing premature closure.
- Special orifice seat design: Stainless Steel and E.P.D.M. rubber, assures long-term maintenance-free operation.
- Screen protected outlet.
- The upper screen is protected with a protective cover.

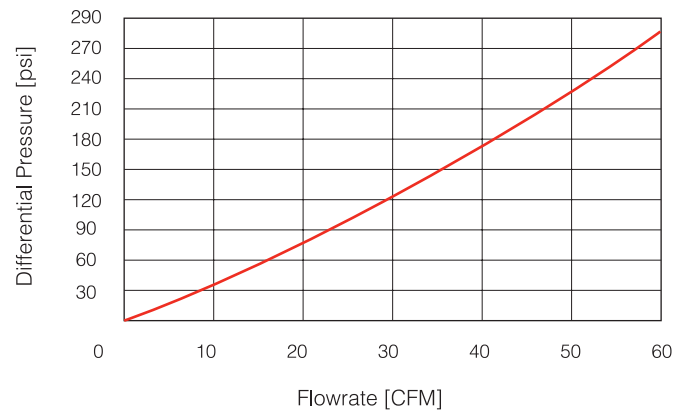
Air Release Component

- Body made of high strength materials.
- All operating parts are made of specially selected corrosion-resistant polymer materials.
- Large size air release orifice:
 - Dramatically reduces the possibility of obstruction by debris.
 - Releases air at high flow rates.
 - One size orifice for a wide pressure range (up to 360 psi), achieved by the rolling seal mechanism.

AIR & VACUUM FLOWRATE

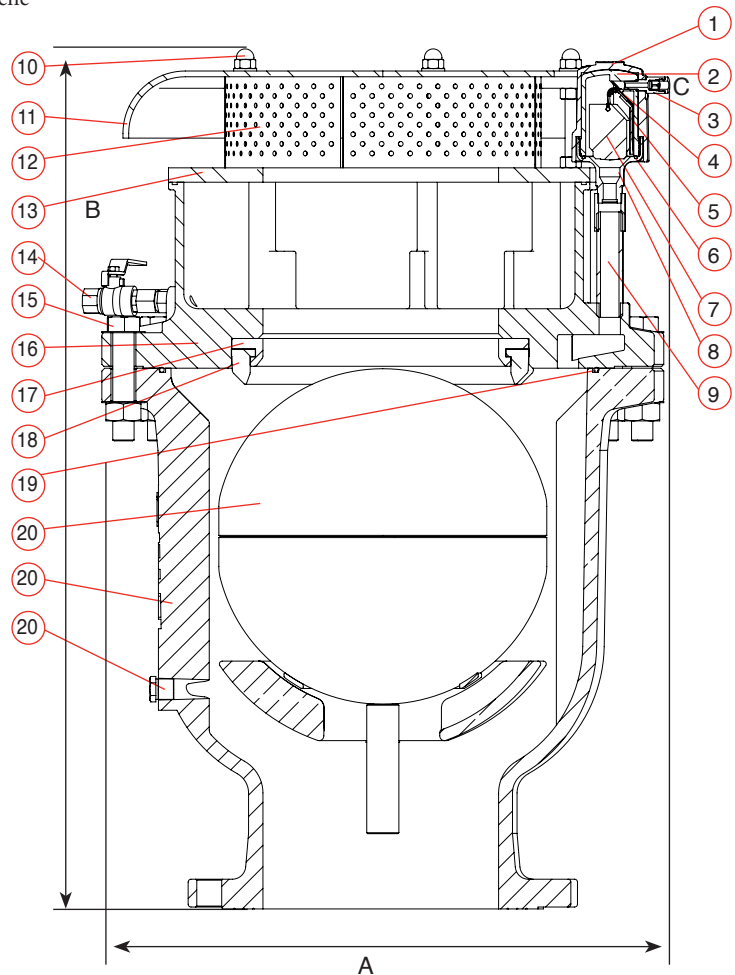


AIR RELEASE FLOWRATE



PARTS LIST AND SPECIFICATION FOR 10"

| No. | Part | Material |
|-----|---------------------|--|
| 1. | Shell S-050-C | Ductile Iron ASTM A-536 60-40-18 / Resicoat RT R4 |
| 2. | Body | NSF 61 Certified Reinforced Nylon |
| 3. | One Way Out | Brass |
| 4. | Rolling Seal | NSF 61 Certified E.P.D.M |
| 6. | O-Ring | NSF 61 Certified NBR 70 |
| 7. | Float | NSF 61 Certified Foamed Polypropylene |
| 8. | Base | Stainless Steel ASTM A744 CF8M |
| 9. | Nipple & Coupling | NSF 61 Certified STST UNS 31600 |
| 10. | Domed Nut & Washer | NSF 61 Certified STST UNS 31600 |
| 11. | Screen Cover | Ductile Iron ASTM A536 60-40-18 / Resicoat RT R4 |
| 12. | Screen | NSF 61 Certified STST UNS 30400 |
| 13. | Ring | Steel Din St.37 |
| 14. | Test Cock + Adaptor | Test Cock + Adaptor |
| 15. | Bolt, Nut & Washer | NSF 61 Certified STST UNS 31600 |
| 16. | Cover | Ductile Iron ASTM A536 60-40-18 / Resicoat RT R4 |
| 17. | Orifice Seat | Stainless Steel SAE 316 / UNS 31600 |
| 18. | Orifice Seal | NSF 61 Certified E.P.D.M |
| 19. | O - Ring | NSF 61 Certified NBR 70 |
| 20. | Float | NSF 61 Certified Polycarbonate |
| 21. | Body | Ductile Iron ASTM A536 60-40-18 / Resicoat RT R4 |
| 22. | Plug | Stainless Steel SAE 316 / UNS 31600 |



DIMENSIONS AND WEIGHT

| Size | Dimensions Inch | | Connection | Weight Lbs. | Orifice Area Sq.In. | | |
|-------------|-----------------|------|------------|----------------|---------------------|-------|---------------------|
| | A | B | | | C | A / V | D-060-C HF Air Rel. |
| 10" Flanged | 23.0 | 31.0 | 1/8" NPT | 332.9 | 76.08 | 0.018 | 0.014 |

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