D-065 HF

Water

ISO 9001:2000 IQC

Combination Air Valve for High Flow, 580 psi

Description

The Combination Air Valve has the features of both an Air-release valve and an Air/vacuum valve. The Air-release component of the valve was designed to automatically release to the atmosphere small pockets of air as they accumulate along a pipeline when the pipeline or piping system is full and operating under pressure. The Air/vacuum component was 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.

Operation

The Air & Vacuum component, with the large orifice, exhausts air at high flow rates during the filling of the system and admits air at high flow rates during its drainage and at water colomn seperation. High velocity air, or even air mixed with a mist of water spray, cannot blow the float shut. Water entry will cause the sealing of the valve.

At any time during system operation, should internal pressure of the system fall below atmospheric pressure, air will re-enter the system.

The smooth release of air prevents pressure surges and other destructive phenomena.

Admitting air in response to negative pressure protects the system from destructive vacuum conditions and prevents damage caused by water column separation. Air re-entry is essential to efficiently drain the system.

The automatic Air Release component, releases entrapped air from peaks of pressurized systems where the valve should be installed.

Without air valves pockets of accumulated air may cause the following destructive phenomena:

- Obstruction to effective flow and hydraulic conductivity of the system along with a throttling effect similar to a partially closed valve. In extreme cases this will cause complete flow stoppage.
- Accelerate cavitation damages.
- High-pressure surges.
- Accelerate corrosion.
- Danger of a high-energy burst of compressed air.

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

1. Entrapped air is released by the valve.
2. Liquid enters the valve lifting the floats and sealing
3. Entrapped air, which accumulates at peaks along the system (where Combination Air Valves should be installed), rises to the top of the valve, which in turn displaces the liquid in the valve's body.
4. The float descends, peeling the rolling seal, the orifice opens and the accumulated air is released.
5. Liquid penetrates into the valve, the float rises, rolling the rolling seal to its sealing position.

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

1. The float will immediately drop away from the orifice.
2. Air is admitted to the system.

Main Features

- Working pressure range: 3-580 psi
- Testing pressure: 928 psi.
- Working Temperature: 140^0 f.
- Maximum working temperature for short time period: 194^0 f.
- Aerodynamic design enables high flow rates of air (Inflow and outflow).
- All flow cross-sections are equal or greater than the nominal port area.
- Reliable operation reduces water hammer incidents. Dynamic design allows high velocity air discharge; Preventing premature closing.
- Special orifice seat design: Stainless steel SAE 316 and E.P.D.M. rubber, assures long-term maintenance free operation.
- Screen protected outlet.
- The upper screen is protected with protective "umbrella".
- Inside & out NSF 61 approved FBE coating.

Automatic component

- Large orifice:

Dramatically reduces the possibility of obstruction by debris.
Discharges high air flow rates, as much as 14 times more than any other existing Automatic Air Release valve.
One size orifice for a wide pressure range (up to 580 psi).
Achieved by: A.R.I. patent, Rolling Seal Mechanism.

- Body made of high strength materials.
- All operating parts are made of specially selected corrosion resistant composite materials.

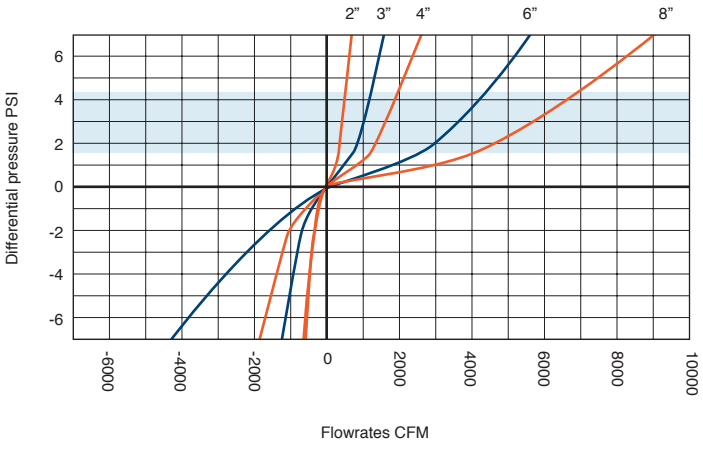
Option

Cover and screen can be removed for attaching ventilation pipe-to-surface. For instructions, please refer to the last page.

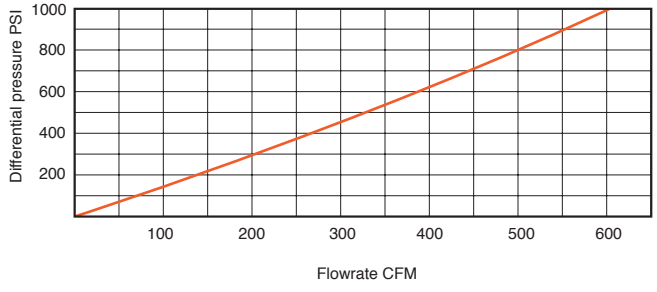
Valve Selection

- These valves are manufactures with flanged ends to meet ASA 300 standard or any requested standard.

AIR & VACUUM FLOWRATE



AUTOMATIC AIR RELEASE

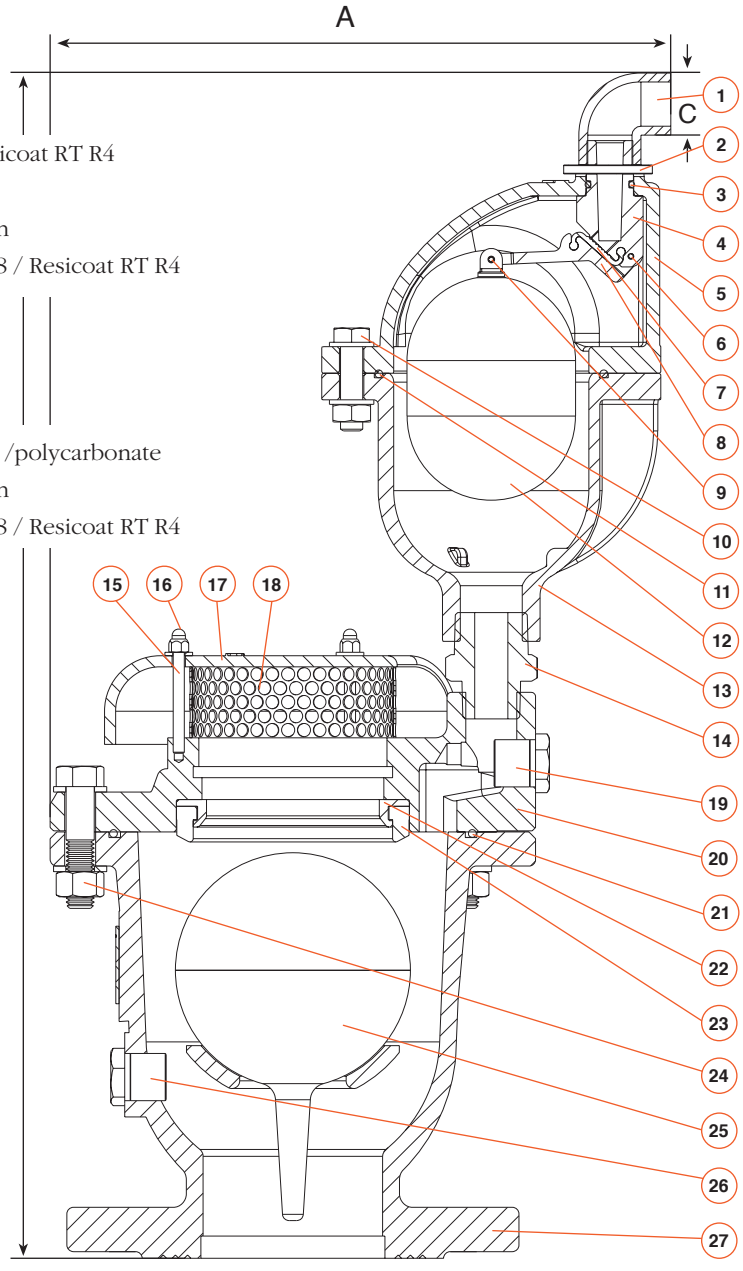


DIMENSIONS AND WEIGHTS

Nominal size	Dimensions A	B	C internal	C external	Weight Lbs.	Orifice Area Sq.in Air & Vac.	Auto.
2"	9.7	19.7	1/4	0.7	34.7	3.038	0.0235
3"	11.0	21.1	1/4	0.7	50.2	7.796	0.0235
4"	12.5	22.8	1/4	0.7	65.2	12.167	0.0235
6"	15.3	30.5	1/4	0.7	72.2	27.376	0.0235
8"	20.3	23.4	1/4	0.7	268.4	48.670	0.0235

PARTS LIST AND SPECIFICATION FOR 2", 3", 4"

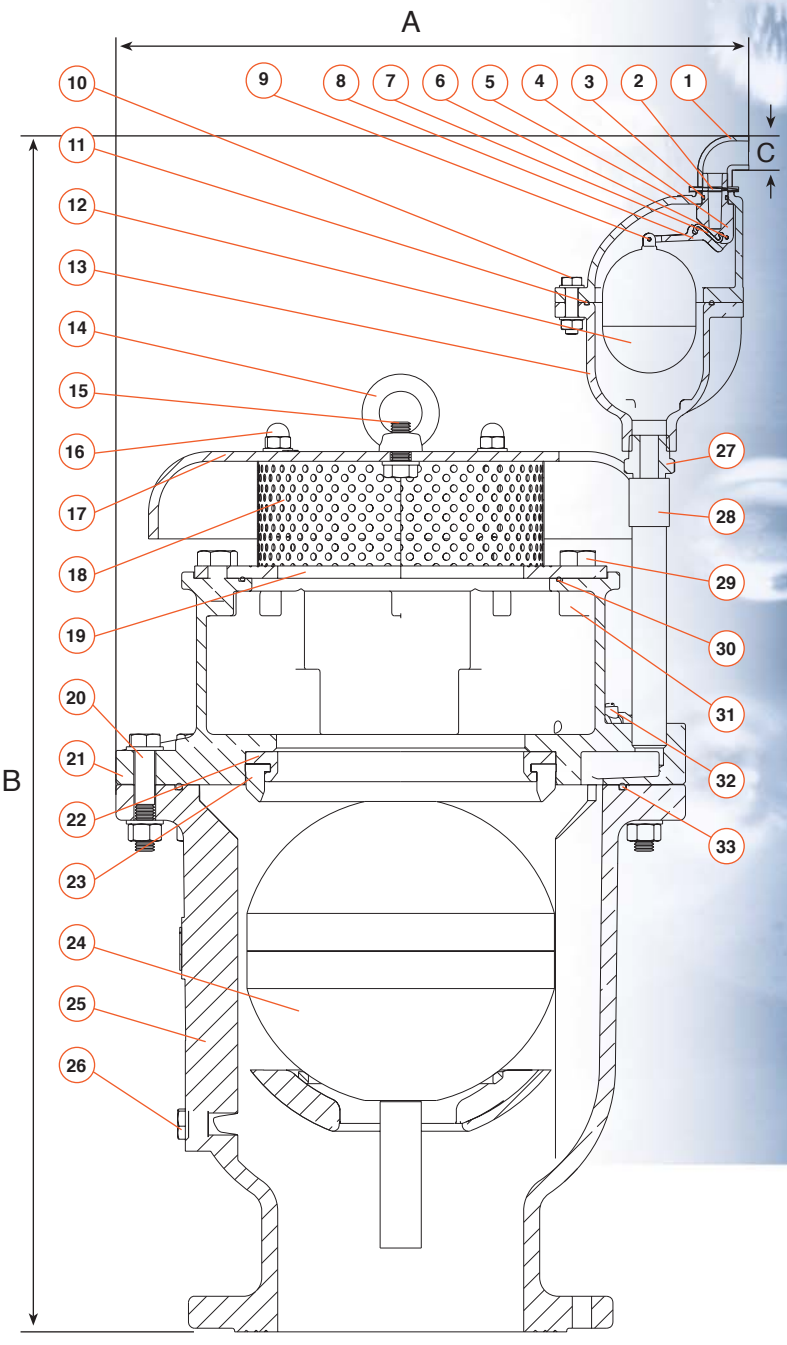
No.	Part	Material
1.	Discharge outlet	PVC
2.	Rollpin	Stainless Steel SAE 304
3.	O-RING	BUNA-N
4.	Nozzle	Reinforced Nylon
5.	Cover	Ductile Iron ASTM A536 60-40-18
6.	Rollpin	Stainless Steel SAE 304
7.	Rolling Seal	E.P.D.M.
8.	Lever Rolling Seal	Reinforced Nylon
9.	Rollpin	Stainless Steel SAE 304
10.	Bolt, Nut & Washer	Steel, Zinc Cobalt Coated
11.	O-Ring	BUNA-N
12.	Float	Polycarbonate
13.	Body	Ductile Iron ASTM A536 60-40-18
14.	Adaptor	NSF 61 Certified STST UNS 30400
15.	Nut	NSF 61 Certified STST UNS 30400
16.	Bolt	NSF 61 Certified STST UNS 30400
17.	Screen Cover	Cast Iron ASTM A48 CL.35B / Resicoat RT R4
18.	Screen	NSF 61 Certified STST UNS 30400
19.	Plug	NSF 61 Certified Reinforced Nylon
20.	Cover	Ductile Iron ASTM A-536 60-40-18 / Resicoat RT R4
21.	O - Ring	NSF 61 Certified NBR 70
22.	Nozzle Seat	NSF 61 Certified STST UNS 30400
23.	Nozzle Seal	NSF 61 Certified E.P.D.M
24.	Bolt & Nut	NSF 61 Certified STST UNS 30400
25.	Float	NSF 61 Certified STST UNS 31600 /polycarbonate
26.	Plug	NSF 61 Certified Reinforced Nylon
27.	Body	Ductile Iron ASTM A-536 60-40-18 / Resicoat RT R4



D-065 HF

PARTS LIST AND SPECIFICATION FOR 6", 8"

No.	Part	Material
1.	Discharge outlet	PVC
2.	Rollpin	Stainless Steel SAE 304
3.	O-RING	BUNA-N
4.	Nozzle	Reinforced Nylon
5.	Cover	Ductile Iron ASTM A536 60-40-18
6.	Rollpin	Stainless Steel SAE 304
7.	Rolling Seal	E.P.D.M.
8.	Lever Rolling Seal	Reinforced Nylon
9.	Rollpin	Stainless Steel SAE 304
10.	Bolt, Nut & Washer	Steel, Zinc Cobalt Coated
11.	O-RING	BUNA-N
12.	Float	Polycarbonate
13.	Body	Ductile Iron ASTM A536 60-40-18
14.	Lifting Ring	Carbon Steel
15.	Bolt & Washer	NSF 61 Certified STST UNS 30400
16.	Nut	NSF 61 Certified STST UNS 30400
17.	Screen Cover	Cast Iron ASTM A48 CL.35B / Resicoat RT R4
18.	Screen	NSF 61 Certified STST UNS 30400
19.	Ring	Steel Din St.37
20.	Bolt	NSF 61 Certified STST UNS 30400
21.	Cover	Ductile Iron ASTM A-536 60-40-18 / Resicoat RT R4
22.	Nozzle Seat	NSF 61 Certified STST UNS 30400
23.	Nozzle Seal	NSF 61 Certified E.P.D.M
24.	Float	NSF 61 Certified STST UNS 31600 /polycarbonate
25.	Body	Ductile Iron ASTM A-536 60-40-18 / Resicoat RT R4
26.	Plug	NSF 61 Certified Reinforced Nylon
27.	Adaptor	NSF 61 Certified STST UNS 30400
28.	Nipple & Coupeling	NSF 61 Certified STST UNS 30400
29.	Bolt & Washer	NSF 61 Certified STST UNS 30400
30.	O - Ring	NSF 61 Certified NBR 70
31.	Bolt & Washer	NSF 61 Certified STST UNS 30400
32.	Test Cock + Adaptor	Bronze & Chrome
33.	O - Ring	NSF 61 Certified NBR 70



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