



D-016 PN 64

D-100 PN 100



High Pressure Combination Air Valve

Description

The D-016, D-100 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 high pressure water conveyance systems.

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 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 a high-energy burst of compressed air.
- Inaccuracies in flow metering.

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

1. Entrapped air in the pipeline is discharged by the valve.
2. Liquid enters the valve, lifting the float which pushes the sealing mechanism to its sealing position.
3. Entrapped air, which accumulates at peaks and along the system, rises to the top of the valve, which in turn displaces the liquid in the valve's body.
4. The float descends, unsealing the rolling seal. The air release orifice opens and the accumulated air is released.
5. Liquid enters the valve and the float rises, pushing the rolling seal back to its sealing position.

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

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

Main Features

- Working pressure range:
 - D-016: 0.2 - 64 bar
 - D-100: 0.2 - 100 bar
 - Testing pressure: 1.5 times the working pressure of the air valve.
 - Maximum working temperature: 60° C.
 - Maximum intermittent temperature: 90° C.
 - Reliable operation reduces water hammer incidents.
 - Dynamic design allows for high capacity air discharge while preventing premature closure.
 - Lightweight, small dimensions, simple and reliable structure.
 - Special orifice seat/seal design: combination of metal and rubber assures long-term maintenance-free operation.
 - The discharge outlet enables removal of excess fluids.
- Air Release Component**
- Body made of high strength materials.
 - All operating parts are made of specially selected corrosion-resistant polymer materials.
 - Large orifice:
 - Dramatically reduces the possibility of obstruction by debris.
 - Releases high air flow rates.
 - One size orifice for a wide pressure range (up to 100 bar), achieved the rolling seal mechanism

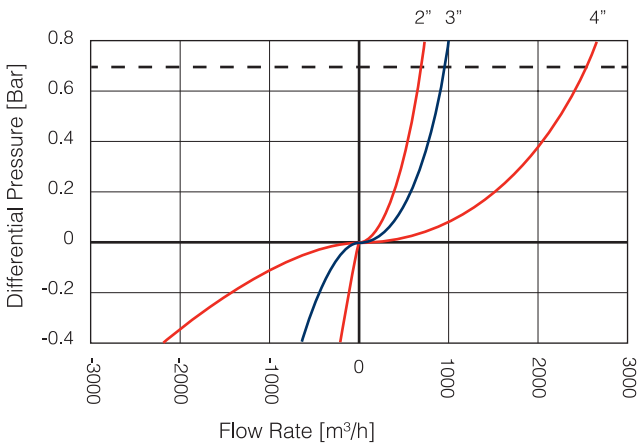
Valve Selection

- The D-016, D-100 combination air valves are available in sizes 2", 3", 4", 6" 8"
 - These valves are manufactured with flanged ends to meet any requested standard.
 - Valve coating: fusion bonded epoxy coating in compliance with the standard DIN 30677-2.
 - Other coatings are available upon request.
 - The automatic air release component and the air & vacuum component are available as separate units.
- Upon ordering, please specify: model, size, working pressure, threads standard and type of liquid.

Note

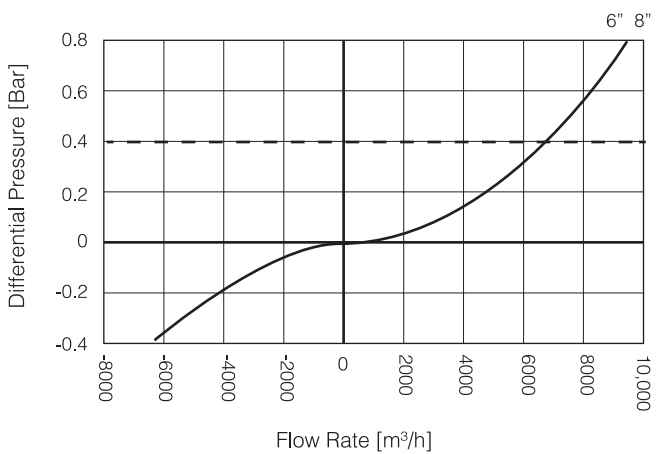
- For best suitability, it is recommended to send the fluid chemical properties along with the valve request.
- Upon ordering, please specify: model, size, working pressure, thread and flange standard and type of liquid.

AIR & VACUUM FLOW RATE

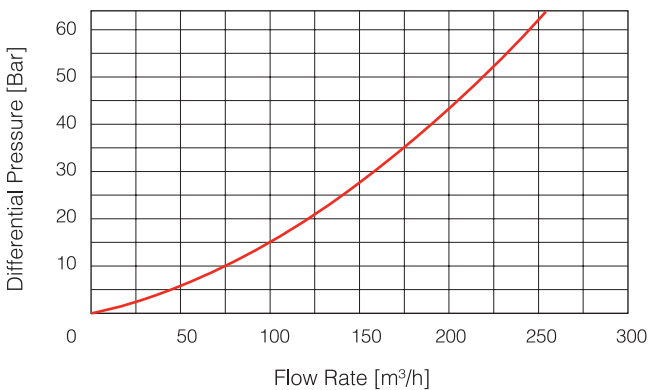


--- Max. recommended design air discharge

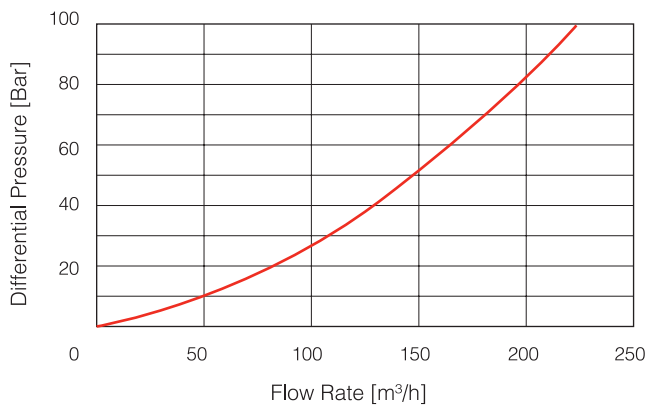
AIR & VACUUM FLOW RATE



AUTOMATIC AIR RELEASE FLOW RATE



AUTOMATIC AIR RELEASE FLOW RATE



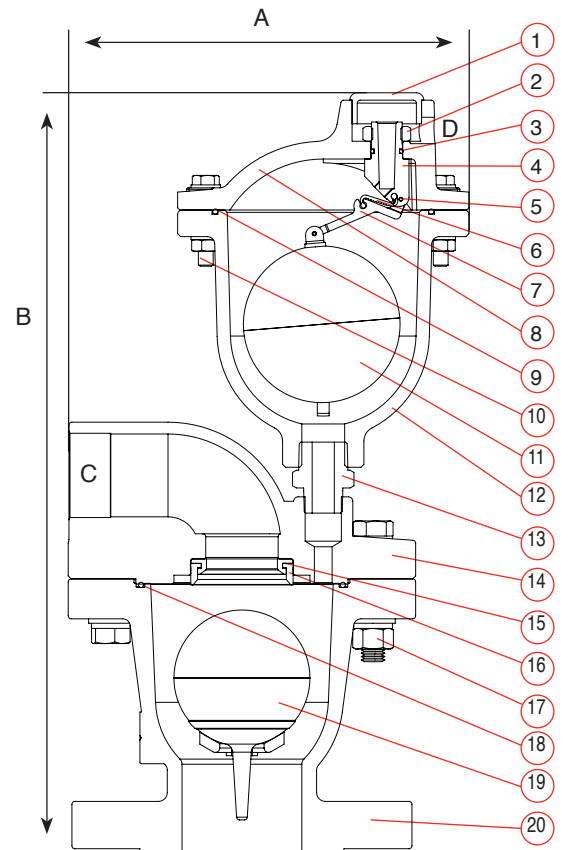
DIMENSIONS AND WEIGHT

Nominal Size	Dimensions mm		Connection		Weight Kg.	Orifice Area mm ²	
	A	B	C	D		A / V	Auto.
2" (50mm)	260	510	1½" BSP Female	1/2" BSP Female	37	794	15
3" (80mm)	275	510	2" BSP Female	1/2" BSP Female	45	1809	15
4" (100mm)	315	560	3" BSP Female	1/2" BSP Female	65	2463	15

Nominal Size	Dimensions mm			Connection D	Weight Kg.	Orifice Area mm ²	
	A	B	C			A / V	Auto.
6" (150mm)	583	719	108	1/2" BSP Female	90.0	17662	15
8" (200mm)	577	704	108	1/2" BSP Female	129.0	17662	15

PARTS LIST AND SPECIFICATION 2"-4"

No.	Part	
1.	Orifice Cover	Polypropylene
2.	Nut	Polypropylene
3.	O-Ring	BUNA-N / EPDM
4.	Orifice	PN 64 Reinforced Nylon PN 100 PVDF
5.	Pin	Stainless Steel 316
6.	Rolling Seal	EPDM
7.	Lever	Reinforced Nylon
8.	Cover	Cast Steel
9.	O-Ring	BUNA-N / EPDM / Viton
10.	Bolt, Nut & Washer	Steel Cobalt Zinc Coated
11.	Float	Polycarbonate / Stainless Steel SAE 316L
12.	Body	Cast Steel
13.	Adapter	Brass
14.	Cover	Cast Steel
15.	Orifice Seat	Bronze
16.	Orifice Seal	EPDM
17.	Bolt, Nut & Washer	Steel, Zinc Cobalt Coated
18.	O-Ring	BUNA-N / EPDM
19.	Float	Polycarbonate / Stainless Steel SAE 316L
20.	Body	Cast Steel



PARTS LIST AND SPECIFICATION 6", 8"

No.	Part	Material	
1.	Adapter	Brass	
2.	Float	Polycarbonate / Stainless Steel SAE 316L	
3.	Body	Cast Steel	
4.	O-Ring	BUNA-N / EPDM	
5.	Pin	Stainless Steel 316	
6.	Orifice	PN 64 PN 100	Reinforced Nylon PVDF
7.	O-Ring	BUNA-N / EPDM	
8.	Nut	Polypropylene	
9.	Orifice Cover	Polypropylene	
10.	Rolling Seal	EPDM	
11.	Lever	Reinforced Nylon	
12.	Cover	Cast Steel	
13.	Bolt, Nut & Washer	Steel Cobalt Zinc Coated	
14.	Protective Cover	Ductile Iron	
15.	Cover	Cast Steel	
16.	O-Ring	BUNA-N / EPDM	
17.	O-Ring	BUNA-N / EPDM	
18.	Orifice Seat	Bronze	
19.	Orifice Seal	EPDM	
20.	Body	Cast Steel	
21.	Float	Stainless Steel SAE 316L / Duplex	
22.	Bolt, Nut & Washer	Steel Cobalt Zinc Coated	

