



D-040 PVDF



Desalination

Combination Air Valve "Barak" - PVDF

Description

The D-040 PVDF Combination Air Valve has the features of both an air release valve and an air & vacuum valve.

The air release component of the D-040 PVDF is 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 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.

The D-040 PVDF Combination Air Valve, manufactured from PVDF, is specially designed for industrial applications and is highly resistant to aggressive fluids.

Applications

For industrial applications:

The D-040 PVDF Combination Air Valve can be used with Ozone, Chemicals, Acid and Alkali Solutions, Sea Water, Brine, Oil, Fuel and Hydrocarbons:

- Pump stations: after the pump and after the check valve.
- Downstream (after) and upstream (before) of shut-off valves.
- After deep-well pumps.
- On long constant-sloped pipeline segments.
- At peaks along the pipeline and at peaks relative to hydraulic gradient.
- At end lines.
- Before water meters.
- On strainers and filters.

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 should 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 destructive phenomena:

- Obstruction of effective flow and hydraulic conductivity of the system along with a throttling effect as would a partially closed valve. In extreme cases this will cause complete flow stoppage.
- Acceleration of cavitation damages
- High-pressure surges.
- 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 body.
4. The float descends, unsealing the rolling seal. The air release orifice opens and the accumulated air is released.
5. Liquid penetrates into 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 float will immediately drop down, opening the air & vacuum and air release orifices.
2. Air will enter the system.

Main Features

- Working pressure range: 0.2 - 10 bar
- Testing pressure: 16 bar.
- Maximum working temperature: 60° C.
- Maximum intermittent temperature: 90° C.
- Reliable operation reduces water hammer incidents.
- Dynamic design allows for high velocity air discharge while preventing premature closure.
- Lightweight, small dimensions, simple and reliable structure.
- The discharge outlet enables removal of excess fluids.
- The large size of the automatic air release orifice relative to the air valve body:
 - Discharges air at high flow rates.
 - Lessens the danger of its obstruction by debris.
 - Enables the usage of the patented rolling seal mechanism, making it less sensitive to pressure differentials than a direct float seal.
- Corrosion resistant; body and internal parts made of high-strength PVDF, float made of foamed ASA, rolling seal made of viton.

Valve Selection

The air valve is available with:

- Wide size range: 1/2", 3/4", 1", 2" threaded male connections, NPT or BSPT.

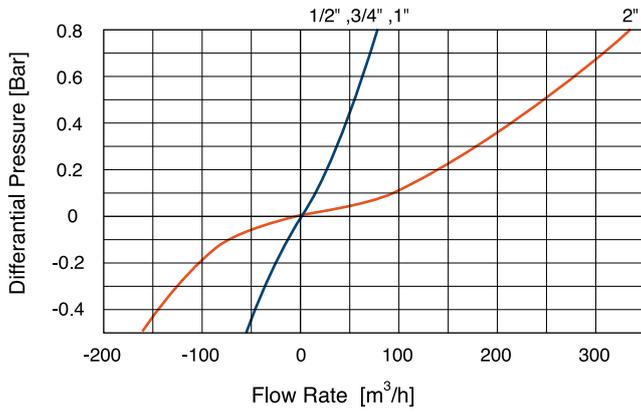
ACCESSORIES

Thermal protection Jacket

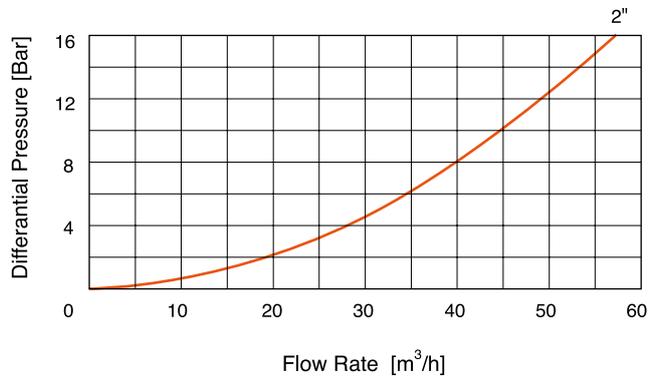
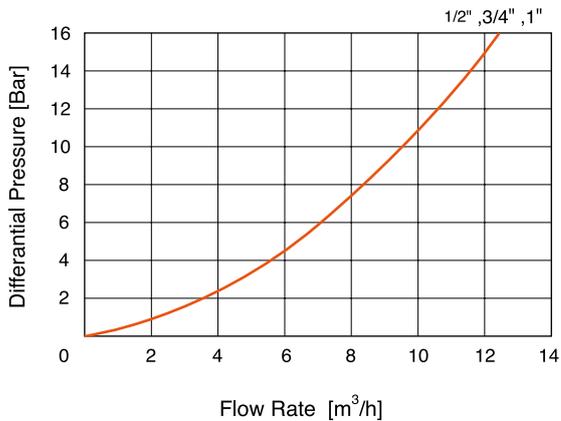
Made of polyurethane



AIR AND VACUUM FLOW RATE

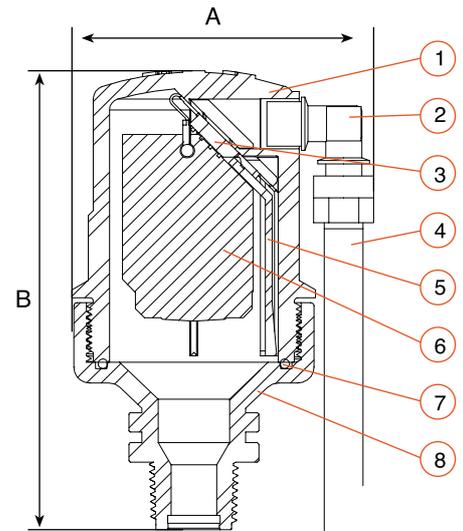


AUTOMATIC AIR DISCHARGE



1/2", 3/4", 1" PARTS LIST AND SPECIFICATION

No. Part	Material
1. Body	PVDF
2. Male Connector	Polypropylene
3. Rolling Seal	Viton
4. Tube	Polyethylene
5. Clamping Stem	PVDF
6. Float	Foamed ASA
7. O - Ring	Viton
8. Base	PVDF

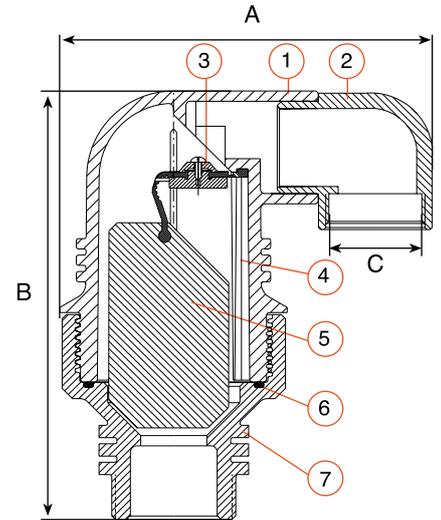


DIMENSIONS AND WEIGHTS

Model	Dimensions mm		Connection C	Weight Kg.	Orifice Area mm ²	
	A	B			Auto.	A / V
1/2", 3/4", 1"	100	143	3/8" BSP Female	0.33	7.8	100
2"	180	209	1 1/2" BSP Female	1.10	12	804

2" PARTS LIST AND SPECIFICATION

No. Part	Material
1. Body	PVDF
2. Discharge outlet	PVDF
3. Seal Plug Assembly	PVDF+Viton+ St.St.
4. Clamping Stem	PVDF
5. Float	Foamed ASA
6. O - Ring	Viton
7. Base	PVDF



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 **A.R.I.** FLOW CONTROL ACCESSORIES Ltd.

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