COMBINATION AIR VALVE FOR SEAWATER AND CORROSIVE FLUIDS

Super Duplex

Model FP-VAC-312-SP-D

BERMAD VAC-312 is a quality combination air valve for a variety of seawater and corrosive fluids applications and operating conditions. It evacuates air during pipeline filling, allows efficient release of air pockets from pressurized pipes, and enables large volume air intake in the event of network draining.
With its advanced aerodynamic design, double orifice and Surge Protection (Anti-slam / slow closing) device, this valve provides excellent protection against air accumulation, vacuum formation and pressure surges.

VAC-312-SP-D Stud bolts (code 400, 501)

VAC-312-SP-D Flanged (code 401, 505)

Features & Benefits

- Straight flow body with nominal (equal) inlet and outlet size.
- Surge Protection: the kinetic orifice is partially closed during the second stage of the air relief, preventing damage to the air valve and the system.
- Compact and simple structure with fully corrosion resistant internal parts: Lower maintenance and increased life span.
- Factory approval and Quality Control: Performance and specification tested and measured with specialized test bench, including vacuum pressure conditions.

Typical Applications

- Vertical turbine pumps - Air relief, surge protection and vacuum prevention.
- Pipelines: Protection against air accumulation and vacuum formation at elevations and high points.

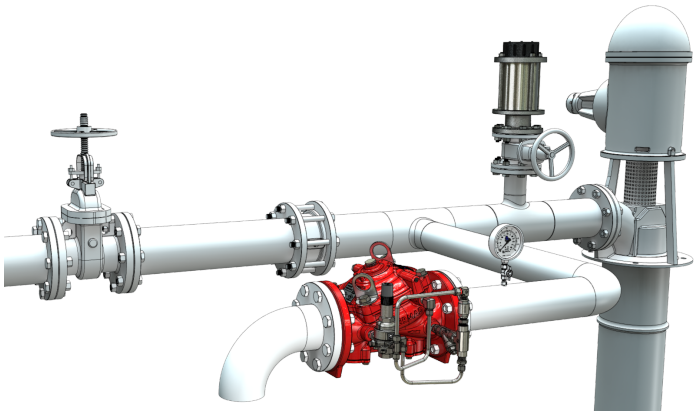
Additional Features & Accessories

- Drainage Valve.

System Installation

Air Management After Vertical Pump

- Air release
- Air relief and intake



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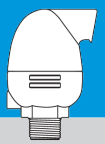


Inlet and Outlet Connections

- Inlets: Stud bolts 2-4"; DN50-100, Flanged 2-8"; DN50-200
- Outlets: Mushroom

Operational Data

- Pressure Rating: ISO PN16, ISO PN25
- Minimum operating pressure: 0.3 bar
- Maximum operating pressure: 16 bar, 25 bar
- Media and operating temperature: 1-60°C

Materials

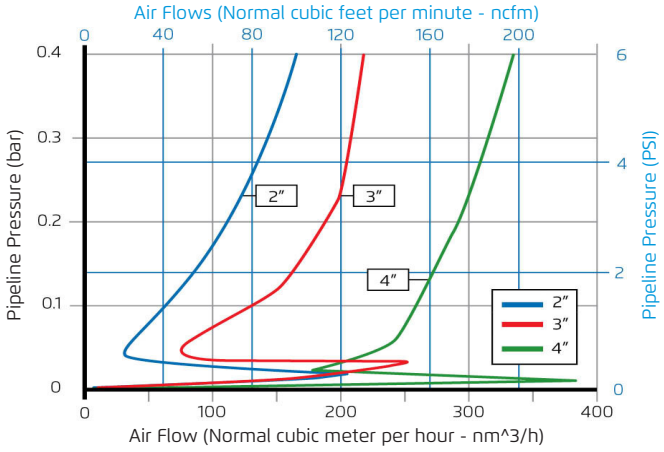
- Body (Barrel): Super Duplex
- Lower and Top Flanges: Super Duplex
- Cover: Polypropylene
- Screen: Polypropylene
- Automatic Orifice: Super Duplex
- Float: Polypropylene
- Elastomers: Viton
- Bolts & Nuts: Stainless Steel 316 or Super Duplex

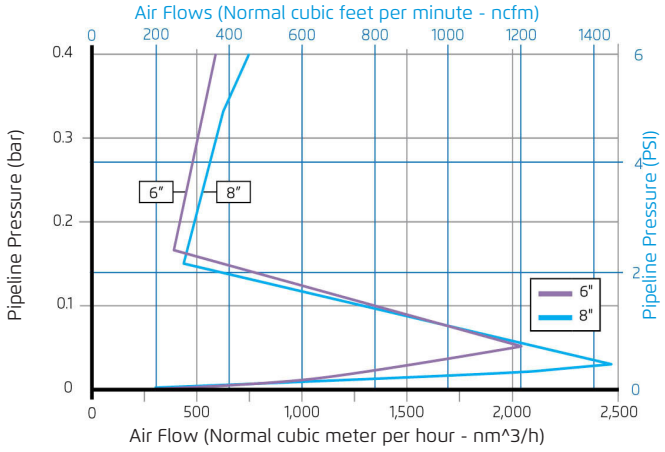
Orifice Specifications

Inlet Sizes	Automatic Orifice Area		Kinetic Orifice		Surge Protection	
	PN16	PN25	Diameter	Area	Diameter	Area
Inch; mm	Sq mm	Sq mm	mm	Sq mm	mm	Sq mm
2"; DN50	1.1	1.1	50	1,963	9.0	254
3"; DN80	1.1	1.1	80	5,027	12.0	201
4"; DN100	1.8	1.8	100	7,854	17.0	314
6"; DN150	7.1	7.1	150	17,671	25.0	707
8"; DN200	7.1	7.1	200	31,416	34.0	1,257

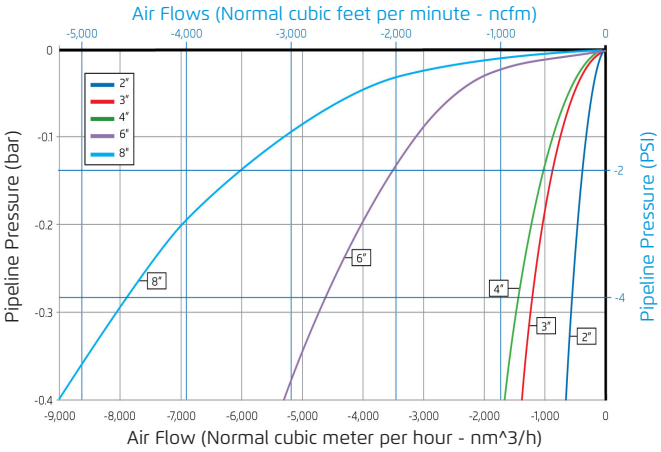
Air Flow Performance Charts

Air Relief with Surge Protection (Pipeline Filling)

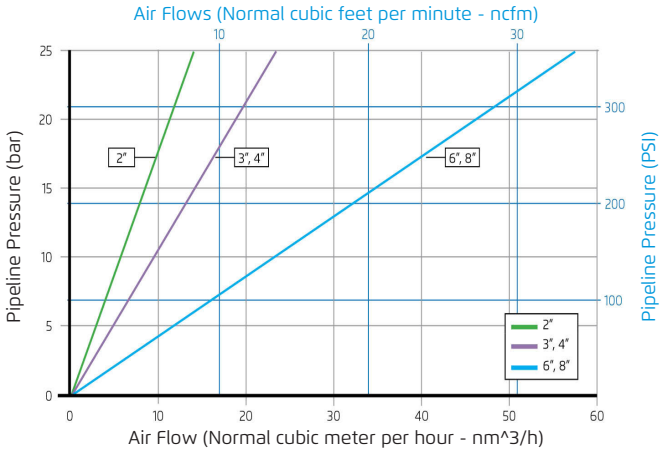




Air Relief and Intake (Pipeline Filling, Draining and Vacuum Conditions)



Air Release (Pressurized Operation)

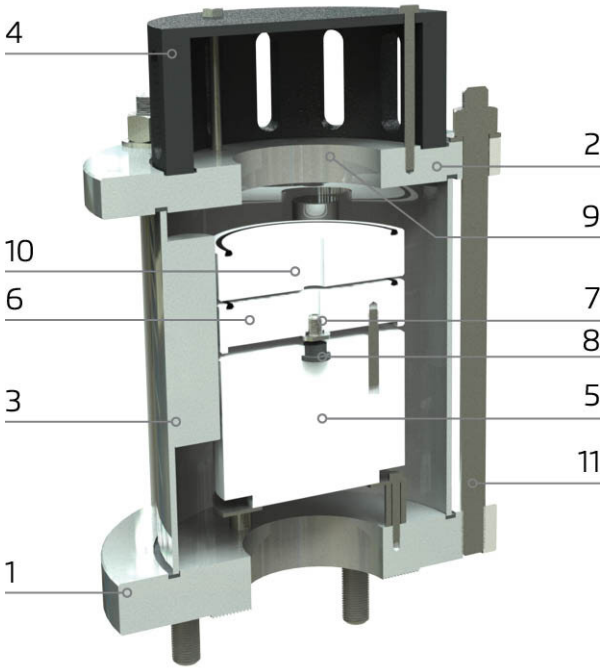


- For higher automatic air release capacity, Please consult with BERMAD.
- Air relief and intake charts for inlet connections 2-8", DN50-200 are based on actual measurements, measured in Bermad Air Flow test bench, according to EN-1074-4 standard. Use Bermad Air software for optimized Sizing & Positioning of Air Valves.

Data for FP-VAC-312-SP-D with Surge Protection Feature

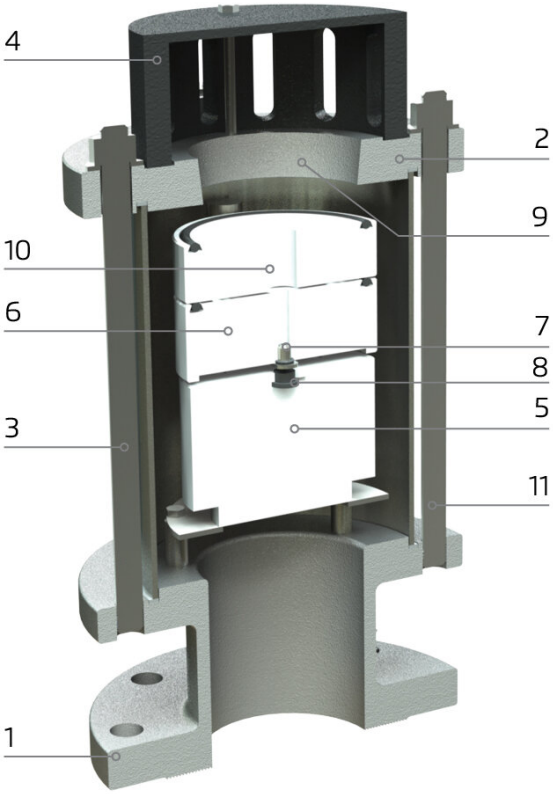
Inlet Sizes	VAC-312-SP Switching Value	VAC-312-SP Air relief at 6 psi; 0.4 bar
	Mushroom Outlet	Mushroom Outlet
Inch; mm	bar	nm^3/h
2"; DN50	0.03	62
3"; DN80	0.02	260
4"; DN100	0.02	700
6"; DN150	0.04	750
8"; DN200	0.05	800

Cutaway - stud bolts connection



[1] Lower Flange
[2] Upper Flange
[3] Body (Barrel)
[4] Cover
[5] Float
[6] Auto Orifice Disc
[7] Auto Orifice
[8] Auto Orifice Seal
[9] Kinetic Orifice
[10] Surge Protection Disc
[11] Tie Rod

Cutaway - flanged connection



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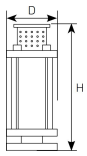
Dimensions & Weights



Inlet Sizes	Connection	Stud bolts (code 400, 501)			Flanged (code 401, 505)		
		Width (D)	Height (H)	Weight	Width (D)	Height (H)	Weight
in; mm		mm	mm	Kg	mm	mm	Kg
2"; DN50	Stud bolts	175	288	11.1	---	---	---
3"; DN80	Stud bolts	210	315	16.5	---	---	---
4"; DN100	Stud bolts	230	343	23.6	---	---	---
2"; DN50	Flanged	---	---	---	175	360	12.0
3"; DN80	Flanged	---	---	---	215	415	20.0
4"; DN100	Flanged	---	---	---	245	430	25.0
6"; DN150	Flanged	---	---	---	355	630	75.0
8"; DN200	Flanged	---	---	---	415	690	120.0