

COMBINATION AIR VALVE FOR SEWAGE & WASTEWATER WITH SURGE PROTECTION

Ductile Iron (code 475)

Model VEC-313-SP-C

BERMAD VEC-313-C is a quality combination air valve for a variety of sewage and wastewater networks and operating conditions. It evacuates air during pipeline filling, allows efficient release of air and gas pockets from pressurized pipes, and enables the intake of large volumes of air 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.



Features & Benefits

- Straight flow body with nominal (equal) inlet and outlet size.
- Elongated body design: Prevents solids from making contact with valve's operating parts.
- 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 and increasing the operational time without maintenance.
- Drainage Valve: 1"; DN25 female threaded BSP.
- Simple, robust structure with fully corrosion-resistant parts: Lower maintenance and increased life span.

Typical Applications

- Pumping stations and deep well pumps: Air relief, surge protection and vacuum prevention.
- Non clean water pipelines: Protection against air and gas accumulation and vacuum formation at elevations, slope change points and at road/river crossings.
- Wastewater treatment plants: Air relief, protection against air and gas accumulation and vacuum formation.

Inlet and Outlet Connections

- Inlets: Flanged 2-8"; DN50-200
- Outlets: Mushroom

Operational Data

- Pressure Rating: 230 psi (all inlet sizes), 360 psi (up to 4"; DN100)
- Minimum operating pressure: 3 psi
- Maximum operating pressure: 230 psi or 360 psi
- Media and operating temperature: 33-140°F

Materials

- Lower and Top Flanges: Ductile Iron
- Body (Barrel): Stainless Steel 316
- Cover: Carbon Steel
- Screen: Stainless Steel 304
- Coating: Fusion Bonded Epoxy
- Automatic Orifice: Stainless Steel 316
- Float: High density Polyethylene (HDPE)
- Elastomers: NR, PU
- Bolts & Nuts: Stainless Steel 316
- Drainage ball valve: Stainless Steel 316

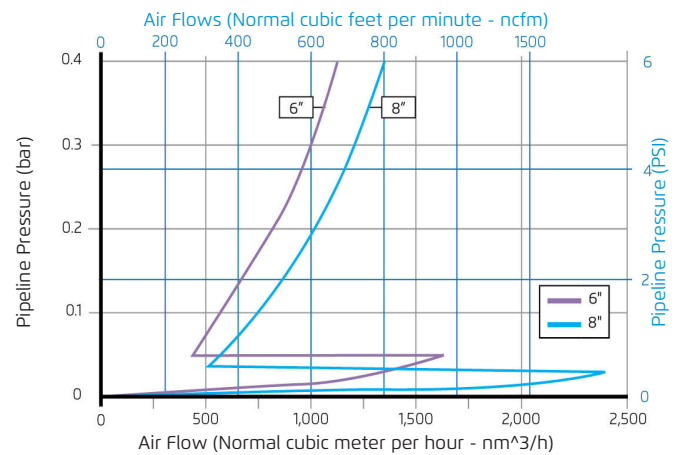
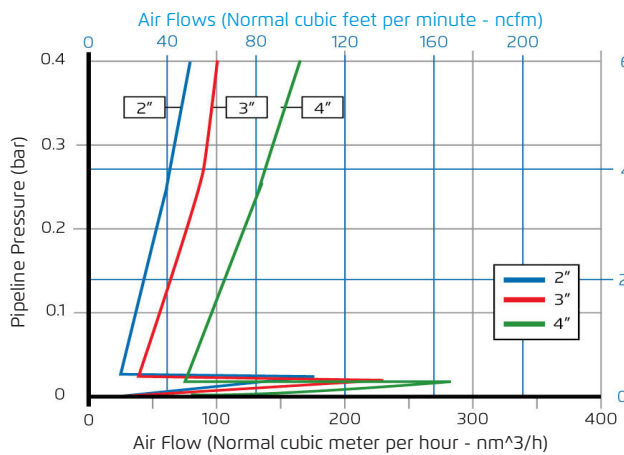


Orifice Specifications

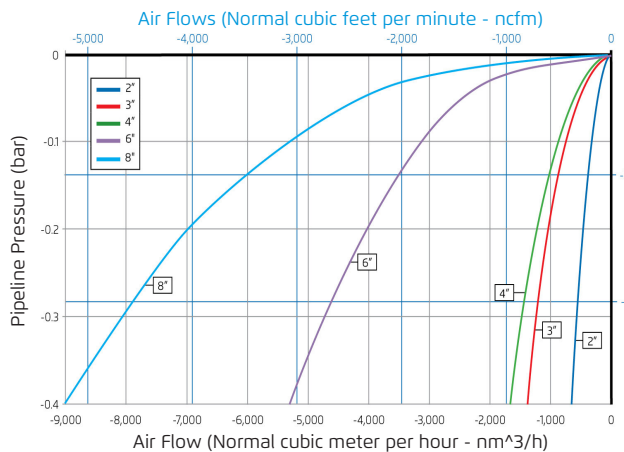
Inlet Sizes	Automatic Orifice Area		Kinetic Orifice		Automatic Orifice	
	230 psi	360 psi	Diameter	Area	Diameter	Area
Inch; mm	Sq inch	Sq inch	inch	Sq inch	inch	Sq inch
2"; DN50	0.005	0.005	2.0	3.142	0.354	0.394
3"; DN80	0.005	0.005	3.0	7.069	0.472	0.701
4"; DN100	0.005	0.005	4.0	12.566	0.669	1.407
6"; DN150	0.044	---	6.0	28.274	0.984	3.043
8"; DN200	0.044	---	8.0	50.265	1.339	5.629

Air Flow Performance Charts

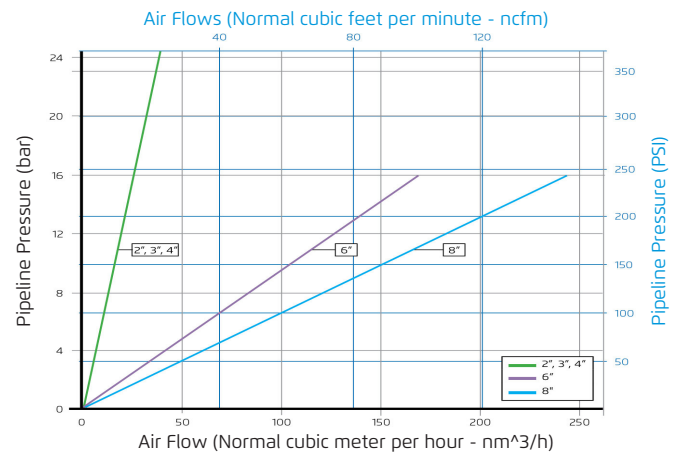
Air Relief with Surge Protection (Pipeline Filling)



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



Air Release (Pressurized Operation)



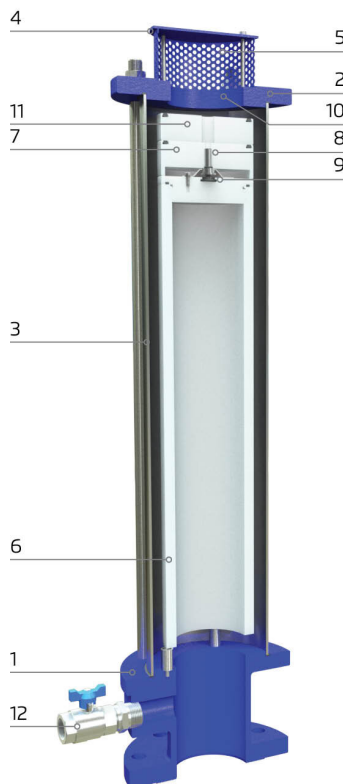
- For higher automatic air release capacity, Please consult with BERMAD.
- Air relief and intake charts for inlet connections 2-4", DN50-100 are based on actual measurements, measured in Bermad Air Flow test bench, according to EN-1074-4 standard. Use Bermad Air software for optimized Sizing & Positioning of Air Valves.



Data for VEC-313-SP-C with Surge Protection Feature

Inlet Sizes	VEC-313-SP Switching Value	VEC-313-SP Air relief at 6 psi; 0.4 bar
	Mushroom Outlet	Mushroom Outlet
Inch; mm	psi	ncfm
2"; DN50	0.43	47
3"; DN80	0.29	59
4"; DN100	0.29	102
6"; DN150	0.72	342
8"; DN200	0.36	456

Cutaway



- [1] Lower Flange
- [2] Upper Flange
- [3] Body (Barrel)
- [4] Cover
- [5] Screen
- [6] Float
- [7] Auto Orifice Disc
- [8] Auto Orifice
- [9] Auto Orifice Seal
- [10] Kinetic Orifice
- [11] Surge Protection Disc
- [12] Drainage Valve (Optional)



Dimensions & Weights

		Ductile Iron		
Inlet Sizes	Connection	Width (D)	Height (H)	Weight
in; mm		in	in	lbs
2"; DN50	Flanged	6.496	33.071	44.1
3"; DN80	Flanged	7.874	35.433	57.3
4"; DN100	Flanged	9.252	36.220	74.9
6"; DN150	Flanged	13.976	45.276	174.1
8"; DN200	Flanged	16.339	48.819	324.0

Dimension does not include the drainage ball valve, see assembly drawing.