



COMBINATION AIR VALVE

Model C70-SP

BERMAD C70-SP is a high quality combination air valve for a variety of water networks 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, with improved sealing in low pressure conditions. The valve minimizes water spraying during air release.

Typical Applications

- Pumping stations and deep well pumps: Air relief, surge protection and vacuum prevention.
- Pipelines: Protection against air accumulation and vacuum formation at elevations, slope change points and at road/river crossings.
- Water networks: Protection against vacuum formation, surge and water hammers at points likely to experience water column separation.

Features & Benefits

- Straight flow body with nominal (equal) inlet and outlet size: Higher than usual flow rates.
- Aerodynamic full-body kinetic shield: Prevents premature closing without disturbing air intake or discharge.
- Dynamic sealing: Prevents leakage under low pressure conditions (1.5 psi; 0.1 bar).
- Minimizes water spraying during air release: Innovative 2-step function, automatic orifice (Patent Pending).
- Three optional outlets (sideways, downwards, circular-surround mushroom configuration) that can swivel 360°: Easy to install in a variety of site conditions.
- Compact, simple, robust and reliable structure with fully corrosion-resistant parts: Lower maintenance and increased life span.
- Approved to AS4945-2017 / AS4020 & appraised with WSAA.
- Factory approval and Quality Control: Performance and specification tested and measured with specialized test bench, including vacuum pressure conditions.



C70-SP (Surge Protection),
mushroom outlet



Optional C70-AC (Assisted Closing)
advanced surge protection with side outlet



Optional C70-IP (Inflow Prevention)
air discharge only with side outlet



Valve models, functions & accessories

- C70-SP (Surge protection)
 - Combination air release valve with surge protection to ensure safe controlled pipe filling and also surge mitigation in the event of column separation.
 - Valve has two stage air discharge to allow for controlled pipeline filling, unrestricted air inflow and automatic air release.
- C70-AC (Assisted Closing)
 - Combination air release valve with assisted closure to ensure maximum surge mitigation in the event of column separation.
 - Valve has slow controlled air discharge, unrestricted air inflow and automatic air release.
- C70-IP (Inflow Protection)
 - Air release function only with check feature to avoid any air entry.
 - Valve has kinetic air discharge function with automatic air release.
 - No air entry due to check valve.
- Note :
 - All valves are fitted with the lower body threaded connection and drainage valve (code Z)
 - Model C70-SP fitted with internal insect screen (code S).

Valve Inlet connections

- Threaded valves - (2") BSPT female
- Flanged
 - AS4087-PN16
 - AS4087-PN35
 - AS2129 T/E
 - ANSI-150/300 on request

Materials

- Body and cover
 - Cast Ductile Iron - standard (sizes 2-10")
 - Stainless Steel 316 optional (sizes 2-6")
- Coating - Fusion bonded epoxy (blue) to AS4158
- Top plate - Stainless Steel 316, Ductile Iron
- Float assembly - Polypropylene, glass reinforced nylon
- Automatic orifice - Stainless Steel 316
- Elastomers - EPDM

Operational Data

- Pressure rating PN16 or PN35 standard (PN40 on request)
- Minimum sealing pressure: 0.1 bar
- Maximum operating pressure: 16 bar or 35 bar
- Media and operating temperature: Water 1-60 degrees C

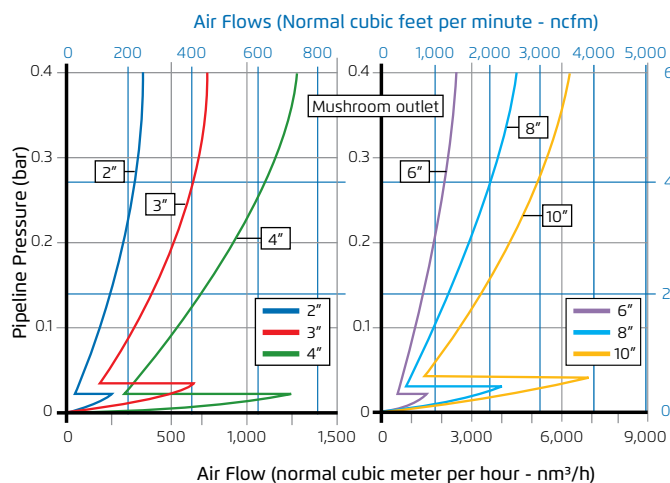
Orifice Specifications

Inlet Size	Automatic Orifice Area		Kinetic Orifice		Surge Protection		
	PN16	PN35	Diameter	Area	Number of holes	Hole Diameter	Total Area
mm	Sq mm	Sq mm	mm	Sq mm	---	mm	Sq mm
DN50	1.1	0.4	50	1,963	4	5	79
DN80	2.5	1	80	5,027	4	8	201
DN100	3.1	1.3	100	7,854	4	10	314
DN150	9.1	3.5	150	17,671	4	15	707
DN200	22.1	8	200	31,416	4	20	1,257
DN250	28.2	-	250	49,087	4	22	1,521

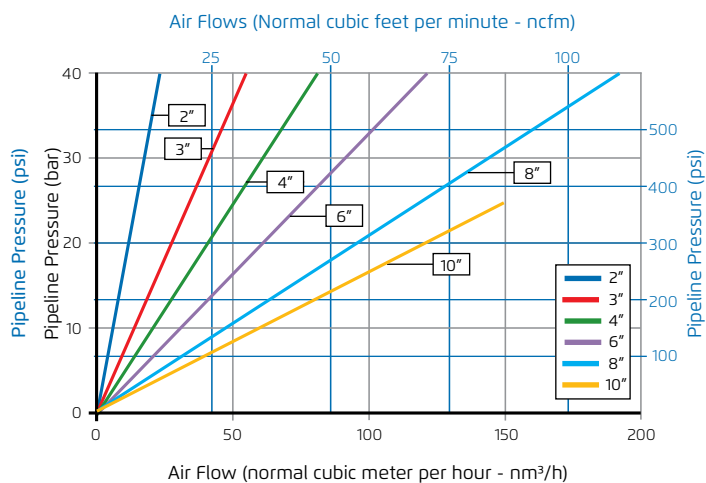


Air Flow Performance Charts

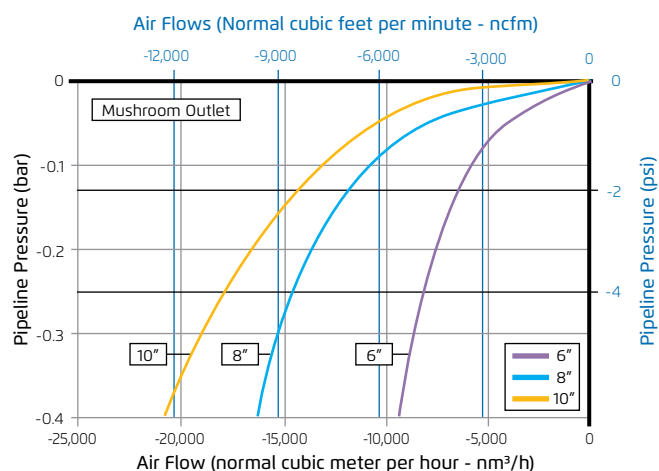
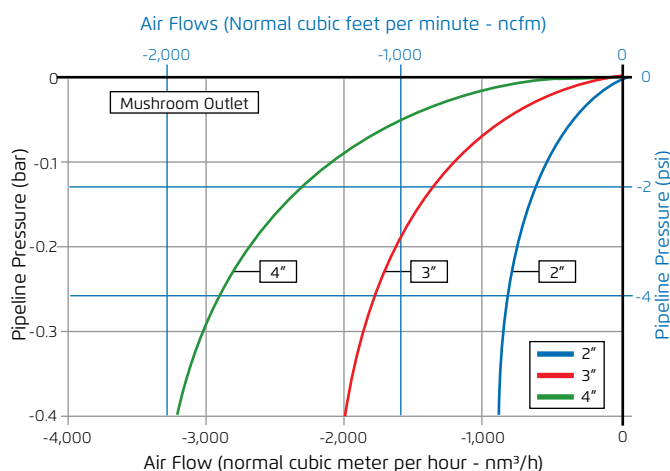
Air Relief with Surge Protection (Pipeline Filling)



Air Release (Pressurized Operation)



Air Intake (Draining and Vacuum Conditions)



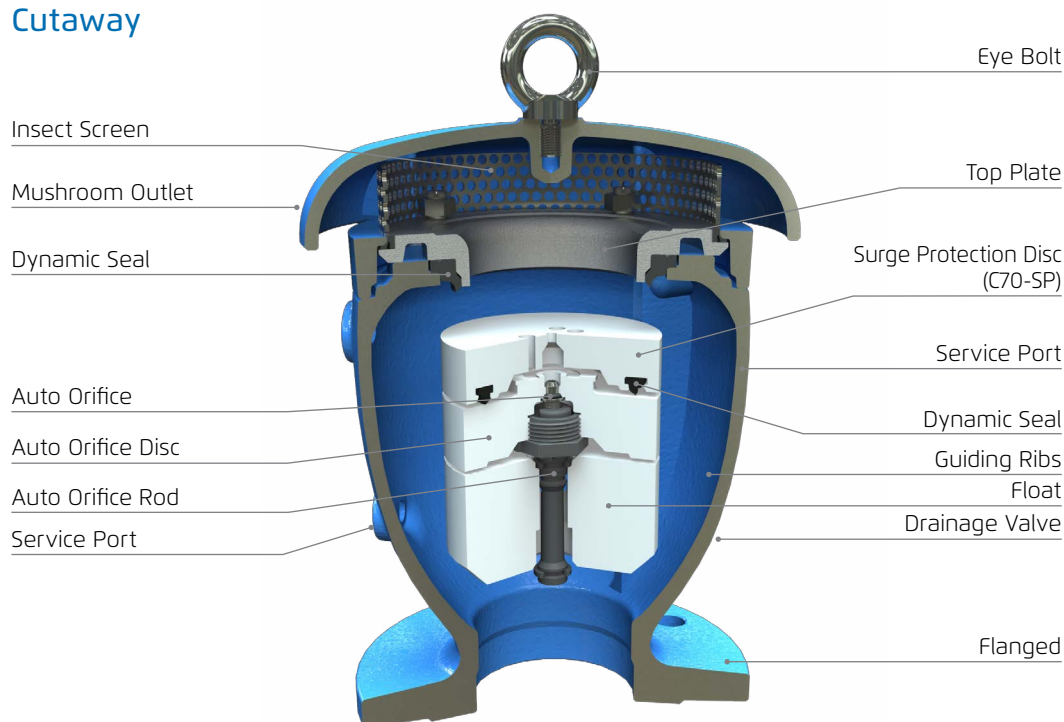
Data for C70 with Surge Protection Feautre

Inlet Size	C70-SP Switching Value	C70-SP Air relief at 6 psi; 0.4 bar
	Mushroom	Mushroom
mm	bar	nm³/h
DN50	0.02	420
DN80	0.03	790
DN100	0.02	1,280
DN150	0.02	2,460
DN200	0.03	4,500
DN250	0.03	6,278

Air relief and intake charts for inlet sizes 2-8"; D50-200 are based on actual measurements, measured during 2014-2015 in Bermad Air Flow test bench, according to AS-4598 (2008) standard and recongnized by AS-4598 (2008) standard. For Side outlet air flow performance, please consult with BERMAD. Use Bermad Air software for optimized Sizing & Positioning of Air Valves



Cutaway

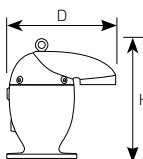



Optional Assisted Closing (C70-AC)



Optional Inflow Prevention (C70-IP)

Dimensions & Weights **

				
		Mushroom Ductile Outlet		
Inlet Size	Connection	Width (D)	Height (H)	Weight
Inch	---	inch	inch	lbs
mm		mm	mm	Kg
2"	Threaded	6.890	10.945	17.8
DN50		175	278	8.1
2"	Flanged	6.890	11.535	24.6
DN50		175	293	11.2
3"	Flanged	8.661	13.228	45.1
DN80		220	336	20.5
4"	Flanged	10.236	14.961	65.5
DN100		260	380	29.7
6"	Flanged	14.173	20.551	139.8
DN150		360	522	63.4
8"	Flanged	18.583	28.189	289.6
DN200		472	716	131.4
10"	Flanged	22.441	32.480	469.2
DN250		570	825	212.8

** Dimension and weight may vary based on the final configuration. Please contact Bermad.