



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 Closure)
advanced surge protection with side outlet



Optional C70-IP (inflow protection)
air discharge only with side outlet





Valve models and 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 Closure)
 - 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")
 - 316 Stainless steel optional (sizes 2-6")
- Coating - Fusion bonded epoxy (blue) to AS4158
- Top plate - 316SS, Ductile Iron
- Float assembly - Polypropylene, glass reinforced nylon
- Automatic orifice - 316SS
- Elastomers - EPDM

Operational Data

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

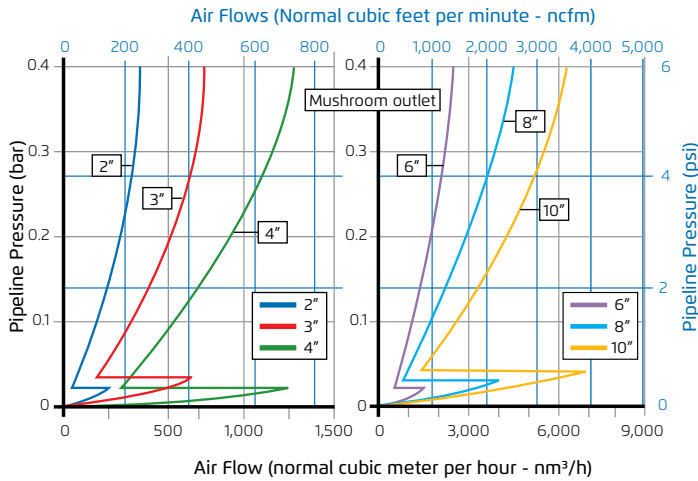
Orifice Specifications for C70-SP (Surge Protection)

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

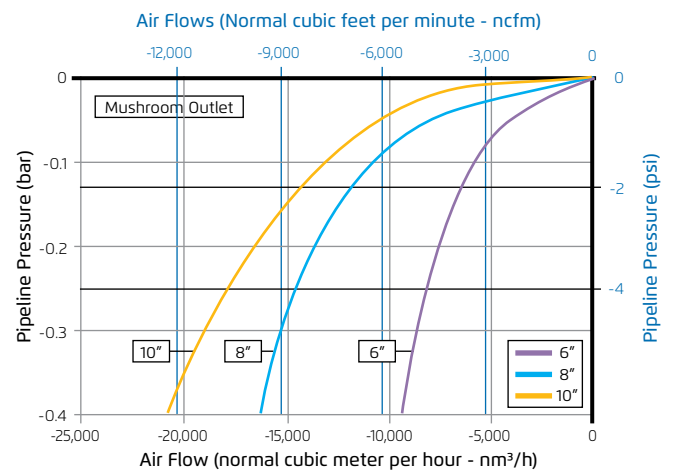
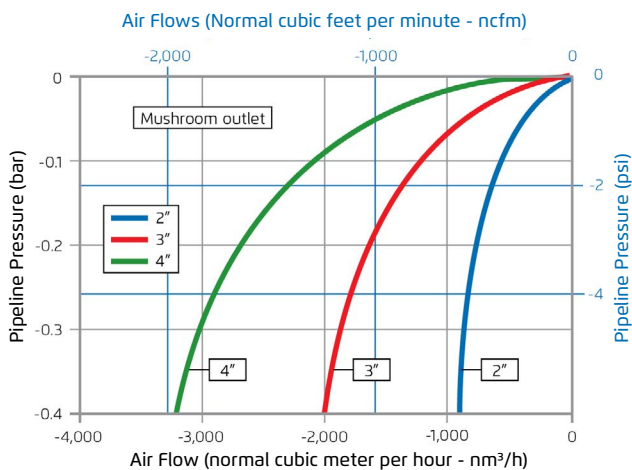


Air Flow Performance Charts

Air Relief with Surge Protection (Pipeline Filling)



Air Intake (Draining and Vacuum Conditions)

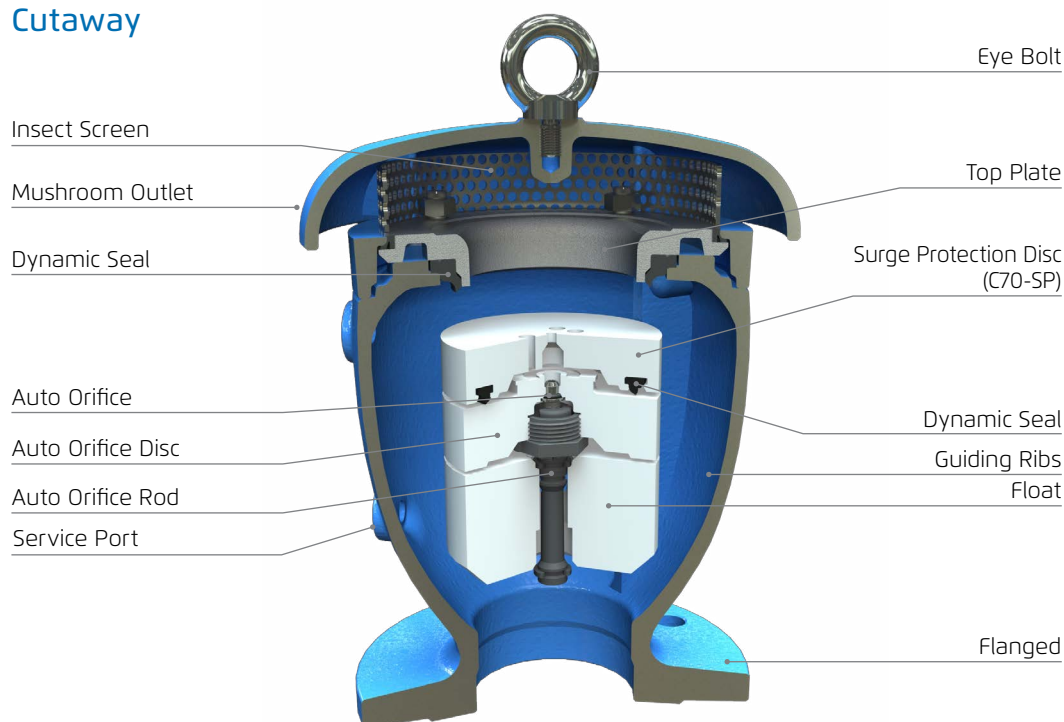


Data for C70 with Surge Protection Feature

Inlet Size	C70-SP Switching Value			C70-SP Air relief at 6 psi; 0.4 bar		
	Mushroom	Side	Down	Mushroom	Side	Down
mm	bar	bar	bar	nm³/h	nm³/h	nm³/h
DN50	0.02	0.04	0.05	420	350	350
DN80	0.03	0.05	0.06	790	700	700
DN100	0.02	0.05	0.06	1,280	1,100	1,100
DN150	0.02	0.04	0.06	2,460	1,680	1,680
DN200	0.03	0.05	0.05	4,500	2,580	2,580
DN250	0.03	-	-	6,278	-	-



Cutaway

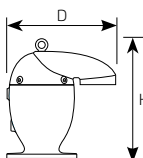


Optional Assisted Closing (C70-AC)



Optional Inflow Prevention (C70-IP)

C70 - 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	17.6
DN50		175	278	8.0
2"	Flanged	6.890	11.535	22.0
DN50		175	293	10.0
3"	Flanged	8.661	13.228	35.3
DN80		220	336	16.0
4"	Flanged	10.236	14.961	48.5
DN100		260	380	22.0
6"	Flanged	14.173	20.551	112.4
DN150		360	522	51.0
8"	Flanged	18.583	28.189	264.5
DN200		472	716	120.0
10"	Flanged	22.441	32.480	407.7
DN250		570	825	185.0

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