



# COMBINATION AIR VALVE

## Model C75-SP

BERMAD C75-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.
- Factory approval and Quality Control: Performance and specification tested and measured with specialized test bench, including vacuum pressure conditions.



C75-SP (Surge Protection), mushroom outlet



Optional C75-AC (Assisted Closing) advanced surge protection with side outlet



Optional C75-IP (inflow Prevention) air discharge only with side outlet



## Valve models, functions & accessories

- C75-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.
- C75-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.
- C75-IP (Inflow Prevention)
  - 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

- Flanged
  - AS4087-PN16
  - AS4087-PN35
  - AS2129 T/E
  - ANSI-150/300 on request

## Materials

- Body and cover
  - Cast Ductile Iron - standard (sizes 3-12")
  - Stainless Steel 316 optional (sizes 3-8")
- 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

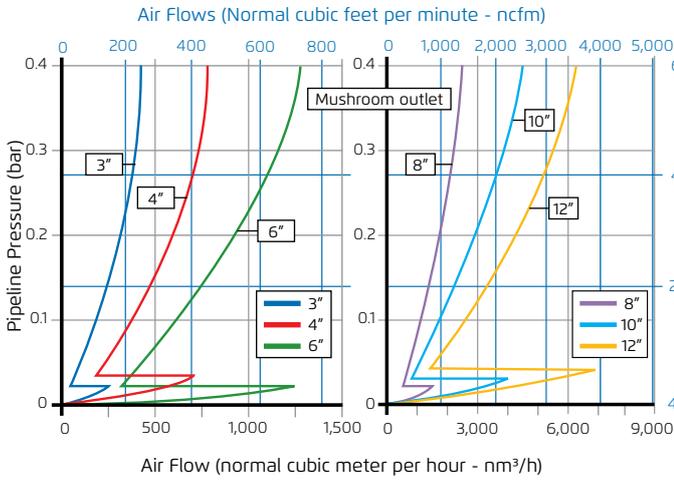
## Orifice Specifications

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
DN80	1.1	0.4	50	1,963	4	5	79
DN100	2.5	1	80	5,027	4	8	201
DN150	3.1	1.3	100	7,854	4	10	314
DN200	9.1	3.5	150	17,671	4	15	707
DN250	22.1	8	200	31,416	4	20	1,257
DN300	28.2	-	250	49,087	4	22	1,521

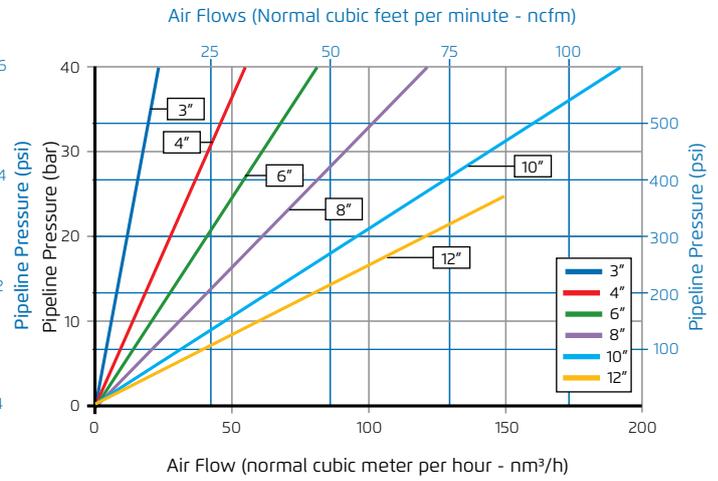


### Air Flow Performance Charts

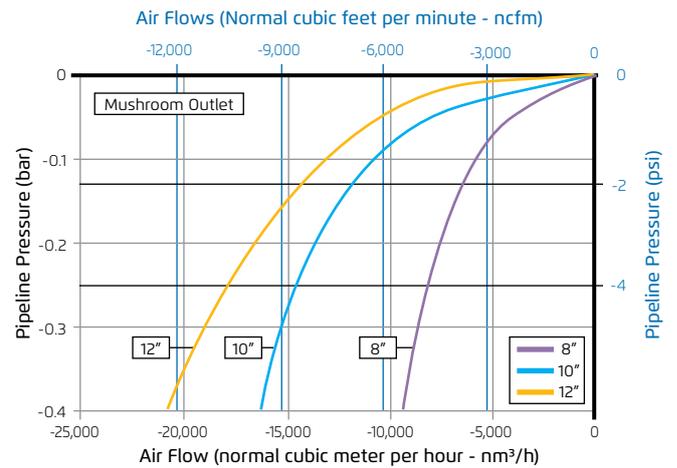
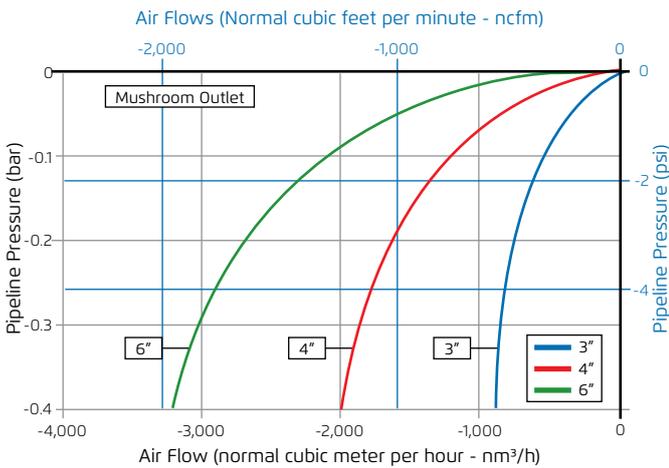
**Air Relief with Surge Protection (Pipeline Filling)**



**Air Release (Pressurized Operation)**



**Air Intake (Draining and Vacuum Conditions)**



### Data for C75 with Surge Protection Feature

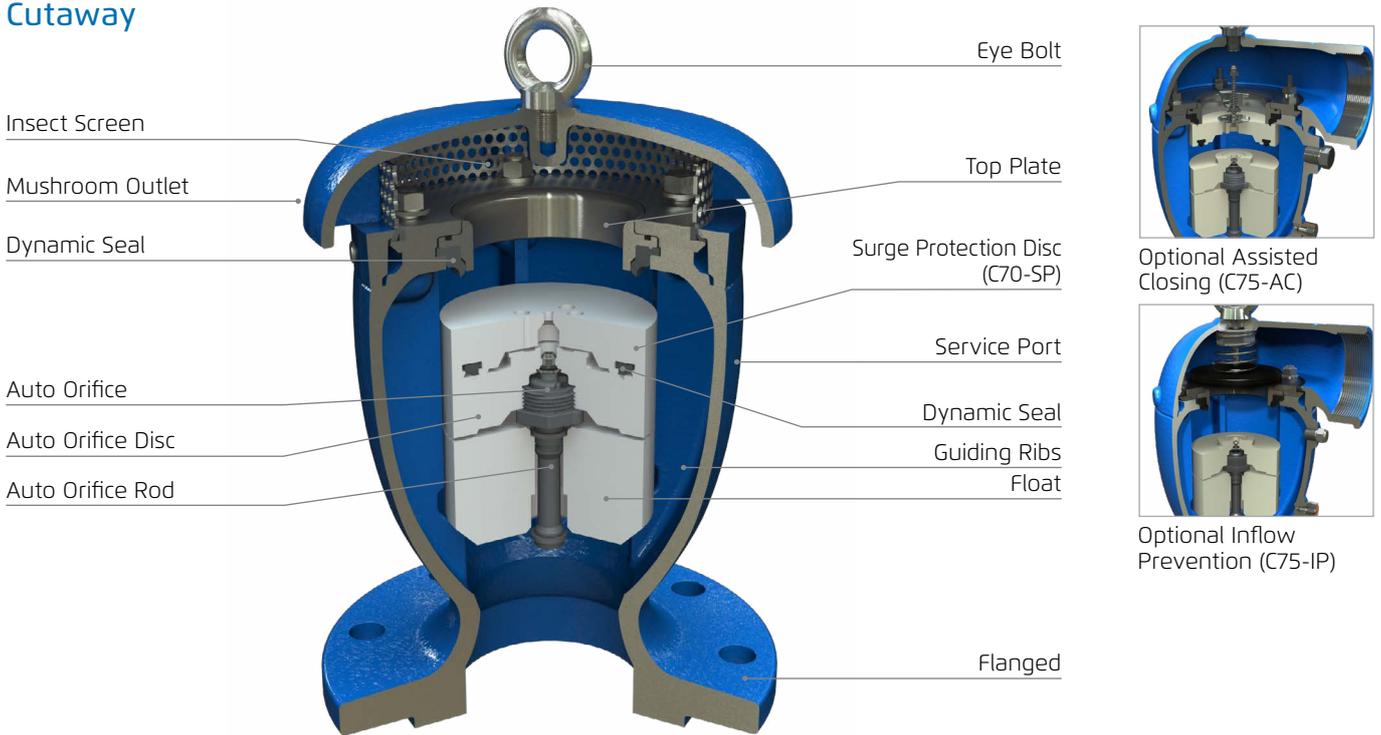
Inlet Size	C70-SP Switching Value	C70-SP Air relief at 6 psi; 0.4 bar
	Mushroom	Mushroom
mm	bar	nm³/h
DN80	0.02	420
DN100	0.03	790
DN150	0.02	1,280
DN200	0.02	2,460
DN250	0.03	4,500
DN300	0.03	6,278

Air relief and intake charts for inlet sizes 3-12"; DN80 are based on actual measurements, measured during 2014-2015 in Bermad Air Flow test bench, according to AS-4598 (2008) standard and recognized 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



Model C75-SP

### Cutaway

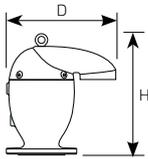


Optional Assisted Closing (C75-AC)



Optional Inflow Prevention (C75-IP)

### Dimensions & Weights \*\*



Mushroom Ductile Outlet

Inlet Size	Connection	Width (D)	Height (H)	Weight
inch	---	inch	inch	lbs
mm		mm	mm	Kg
3"	Flanged	7.874	11.969	30.8
DN80		200	304	14.0
4"	Flanged	9.252	13.780	54.6
DN100		235	350	24.8
6"	Flanged	11.811	15.827	83.2
DN150		300	402	37.7
8"	Flanged	14.961	21.457	147.0
DN200		380	545	66.7
10"	Flanged	19.882	28.976	301.5
DN250		505	736	136.7
12"	Flanged	21.600	33.460	495.4
DN300		566	830	224.7

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

