COMBINATION AIR VALVE

Model C75

BERMAD C75 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.

DVGW KTW W270 NSF

Features & Benefits

- Straight flow body with 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.
- Designed in compliance with functional standards and water service standards.
- Factory approval and Quality Control: Performance and specification tested and measured with specialized test bench, including vacuum pressure conditions.

Additional Features & Accessories

- Built in Surge Protection (anti-slam): Smoother operation, preventing damage to the valve and the system (C75-SP).
- Inflow Prevention: Prevents intake of atmospheric air in cases where this could lead to damaged pumps, required re-priming, or disruption of siphons; prevents intake of flood water or contaminated water into potable water networks (C75-IP).
- Service Port fitted with ¼"; DN6 plug (codes P, U)
- Drainage Valve (code Z)
- Insect Screen (code S)

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.

Inlet and Outlet Connections

- Inlets: Flanged 3-12"; DN80-300
- Outlets:
  - Downwards, complies with additional feature of SP.
  - Sideways
    - For inlet connections 3-4"; DN80-100 the outlets are 2-3"; DN50-80 female threaded
    - For inlet connections 6-12"; DN150-300 the outlets are 4-8"; DN100-200 grooved
    - Sideways outlets comply with additional features of SP and IP.
  - Mushroom (circular surround) 3-12"; DN80-300, complies with additional feature of SP.

Materials

- Body and Cover:
  - Cast Ductile Iron (C75-C), for 3-12"; DN80-300
  - Stainless Steel (C75-N), for 3-8"; DN80-200
  - Cast Steel / WCB (C75-S), for 3-8"; DN80-200
  - Polyethylene Mushroom Cover (C75-J) for 3-10"; DN80-250
- Coating: Fusion Bonded Epoxy, Blue
- Top Plate: Stainless Steel, Ductile Iron
- Float Assembly: Polypropylene, Glass-reinforced Nylon
- Automaic Orifice: Stainless Steel
- Elastomers: EPDM

Operational Data

- Pressure Rating: 230 psi; ISO PN16, 360 psi; ISO PN25, 580 psi; ISO PN40
- Minimum operating pressure: 1.5 psi; 0.1 bar
- Maximum operating pressure: 230 psi; 16 bar, 360 psi; 25 bar, 580 psi; 40 bar
- Media and operating temperature: Water, 33-140°F; 1-60°C

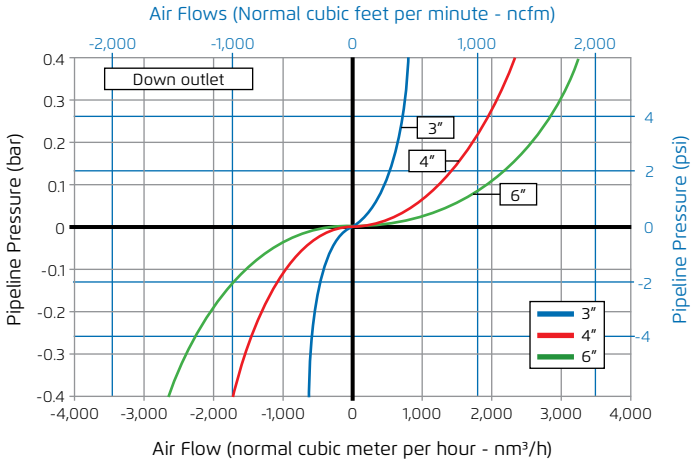
All images in this catalog are for illustration only

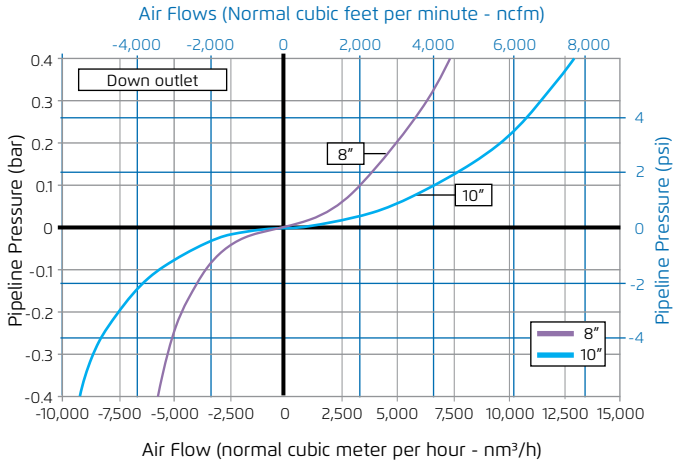
Orifice Specifications

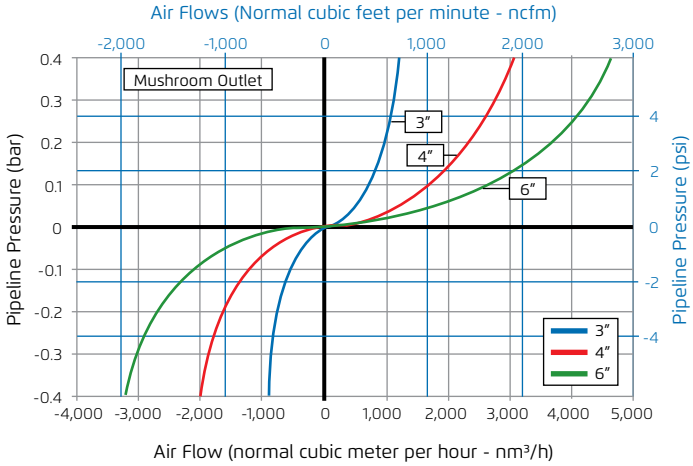
Inlet Size	Automatic Orifice Area			Kinetic Orifice		Surge Protection		
	230 psi PN16	360 psi PN25	580 psi PN40	Diameter	Area	Number of holes	Hole Diameter	Total Area
Inch	Sq inch	Sq inch	Sq inch	inch	Sq inch	---	inch	Sq inch
mm	Sq mm	Sq mm	Sq mm	mm	Sq mm		mm	Sq mm
3"	0.002	0.001	0.001	2.0	3.142	4	0.197	0.122
DN80	1.1	0.6	0.4	50	1,963		5	79
4"	0.004	0.002	0.002	3.0	7.069	4	0.315	0.312
DN100	2.5	1.5	1	80	5,027		8	201
6"	0.005	0.003	0.002	4.0	12.566	4	0.394	0.487
DN150	3.1	2	1.3	100	7,854		10	314
8"	0.014	0.009	0.005	6.0	28.274	4	0.591	1.096
DN200	9.1	5.7	3.5	150	17,671		15	707
10"	0.034	0.022	0.012	8.0	50.265	4	0.787	1.948
DN250	22.1	14.5	8	200	31,416		20	1,257
12"	0.044	0.030	-	10.0	78.540	4	0.866	2.357
DN300	28.2	19.6	-	250	49,087		22	1,521

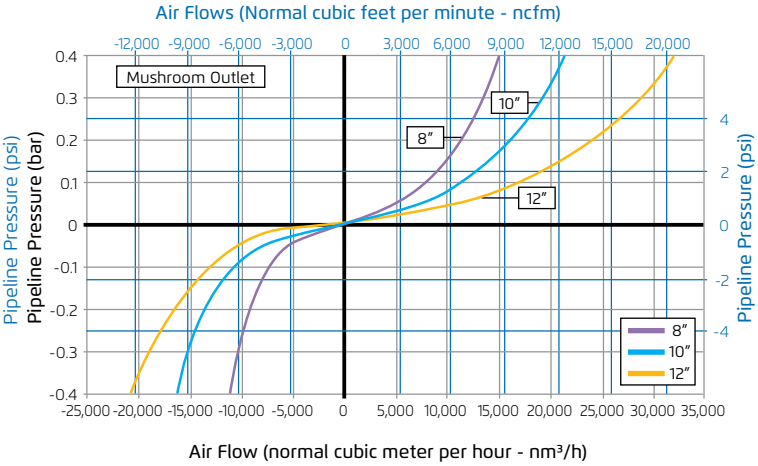
Air Flow Performance Charts

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

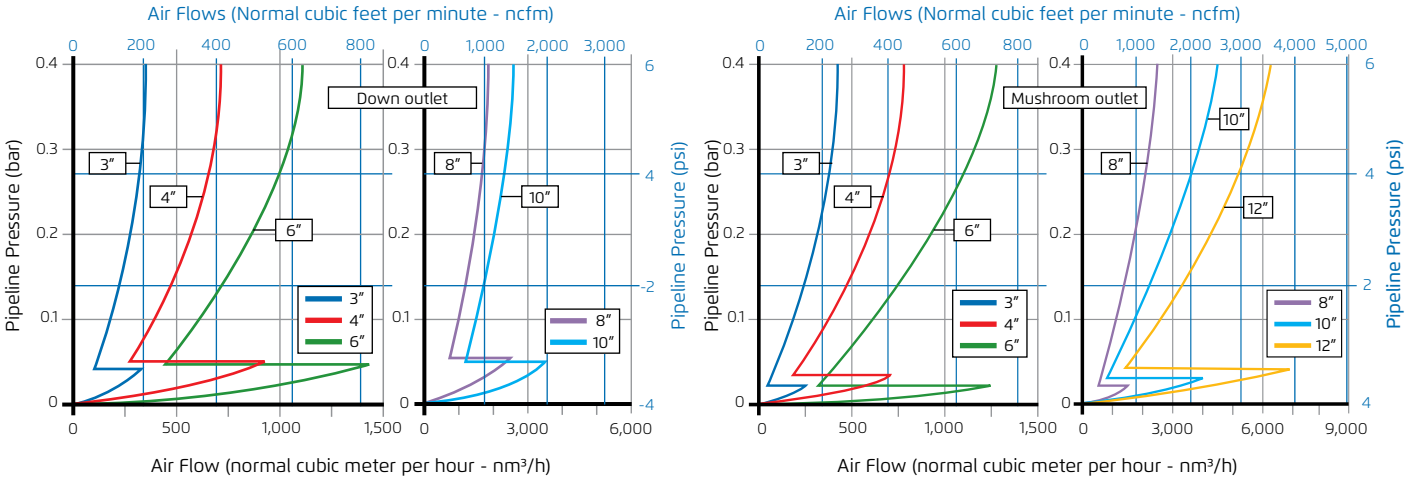




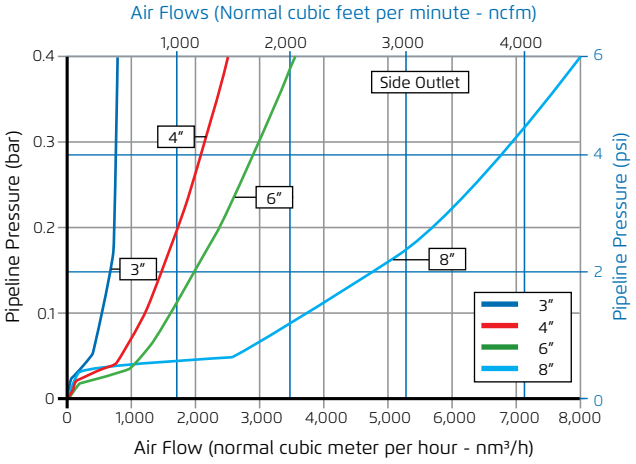




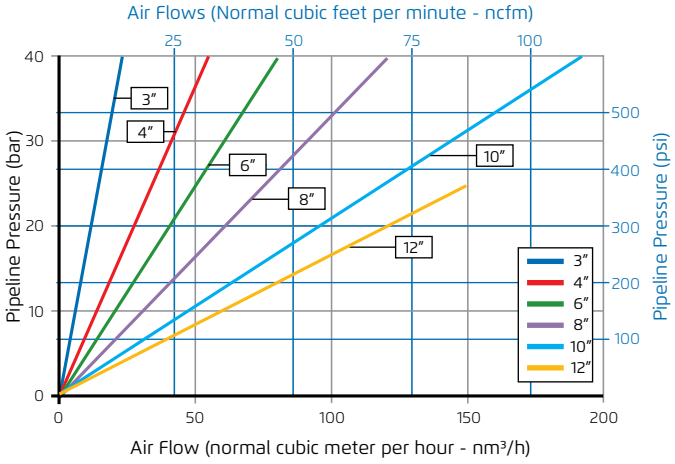
Air Relief with Surge Protection (Pipeline Filling)



Air Relief with Inflow Prevention (Pipeline Filling)



Air Release (Pressurized Operation)



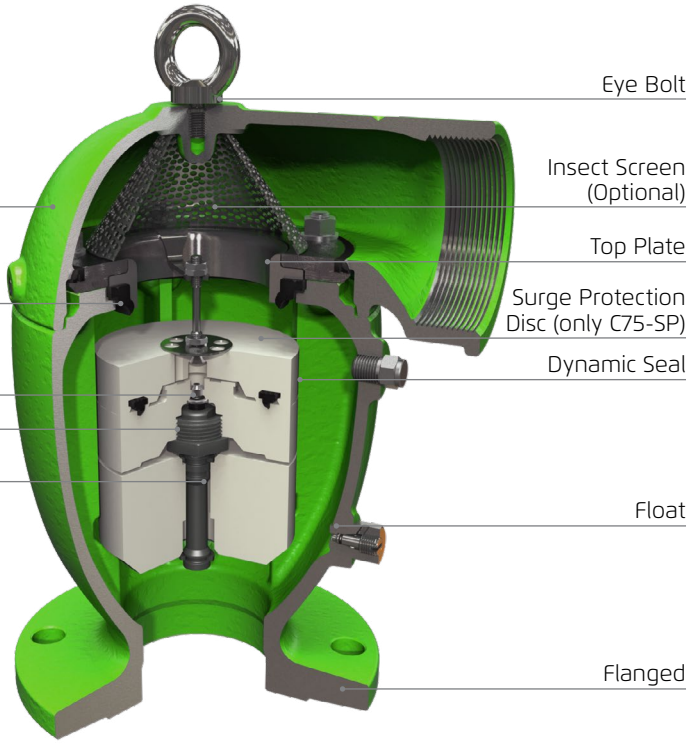
For higher automatic air release capacity, Please consult with BERMAD.

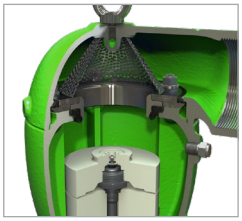
Data for C75 with Surge Protection Feautres

Inlet Size	C75-SP Switching Value			C75-SP Air relief at 6 psi; 0.4 bar		
	Mushroom	Side	Down	Mushroom	Side	Down
inch	psi	psi	psi	ncfm	ncfm	ncfm
mm	bar	bar	bar	nm³/h	nm³/h	nm³/h
3"	0.29	0.57	0.68	239	200	200
DN80	0.02	0.04	0.05	420	350	350
4"	0.44	0.78	0.88	450	399	399
DN100	0.03	0.05	0.06	790	700	700
6"	0.29	0.71	0.80	730	627	627
DN150	0.02	0.05	0.06	1,280	1,100	1,100
8"	0.29	0.64	0.83	1,402	958	958
DN200	0.02	0.04	0.06	2,460	1,680	1,680
10"	0.36	0.73	0.73	2,565	1,471	1,471
DN250	0.03	0.05	0.05	4,500	2,580	2,580
12"	0.41	-	-	3,578	-	-
DN300	0.03	-	-	6,278	-	-

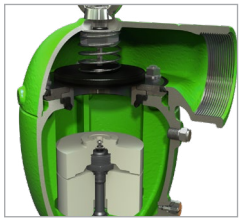
Air relief and intake charts are based on actual measurements, measured during 2014-2015 in Bermad Air Flow test bench, according to EN-1074/4 standard and recongnized by AS-4598 (2008) standard. For Side outlet air flow performance, please consult with BERMAD. Use Bermad Air software for optimized Sizing & Positioning of Air Valves

Cutaway



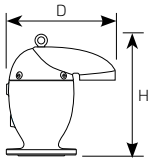


Without Surge Protection (C75)



With Inflow Prevention (C75-IP)

C75 - Dimensions & Weights



Side Ductile Outlet

Down Ductile Outlet

Mushroom Ductile Outlet

Mushroom PE Outlet

Inlet Size	Connection	Side Ductile Outlet Width (D)	Side Ductile Outlet Height (H)	Side Ductile Outlet Weight	Down Ductile Outlet Width (D)	Down Ductile Outlet Height (H)	Down Ductile Outlet Weight	Mushroom Ductile Outlet Width (D)	Mushroom Ductile Outlet Height (H)	Mushroom Ductile Outlet Weight	Mushroom PE Outlet Width (D)	Mushroom PE Outlet Height (H)	Mushroom PE Outlet Weight
inch	---	inch	inch	lbs	inch	inch	lbs	inch	inch	lbs	inch	inch	lbs
mm		mm	mm	Kg	mm	mm	Kg	mm	mm	Kg	mm	mm	Kg
3"	Flanged	7.874	12.598	26.4	9.764	12.598	27.6	7.874	11.969	26.9	7.874	10.433	23.6
DN80		200	320	12.0	248	320	12.5	200	304	12.2	200	265	10.7
4"	Flanged	10.335	14.567	41.0	12.933	14.567	41.9	9.252	13.780	40.8	9.252	12.402	33.8
DN100		263	370	18.6	329	370	19.0	235	350	18.5	235	315	15.4
6"	Flanged	12.402	17.047	59.5	15.945	17.047	61.7	11.811	15.827	58.4	11.811	14.764	51.7
DN150		315	433	27.0	405	433	28.0	300	402	26.5	300	375	23.5
8"	Flanged	15.945	23.346	141.1	20.866	23.228	145.5	14.961	21.457	136.6	14.961	19.291	123.2
DN200		405	593	64.0	530	590	66.0	380	545	62.0	380	490	55.9
10"	Flanged	20.138	30.945	284.3	26.063	31.102	293.1	19.882	28.976	279.9	20.000	26.378	230.7
DN250		512	786	129.0	662	790	133.0	505	736	127.0	508	670	104.7
12"	Flanged	---	---	---	---	---	---	21.600	33.460	452.0	---	---	---
DN300		---	---	---	---	---	---	566	830	205.0	---	---	---