COMBINATION AIR VALVE

Model MN-C50 (For Non-Clean Fluids)

BERMAD C50 is a high quality combination air valve for a variety of non-clean mining piping systems 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.

The elongated body and lower float prevent the fluid to be in contact with the upper mechanism.

With its advanced aerodynamic design, double orifice and Surge Protection device (optional), this valve provides excellent protection against air and gas accumulation and vacuum formation with improved sealing under low pressure conditions.

C50-P

Features & Benefits

- Specially designed for non-clean (with suspended solids) fluids used in mining such RAFF, ILS & PLS solutions for copper; cyanide barren and pregnant solutions for gold; seawater for desalination plants; slurry, pulp and concetrate lines.
- Straight flow body with large diameter automatic orifice: Higher than usual air flow.
- Aerodynamic, full-body kinetic shield: Prevents premature closing without disturbing air intake or discharge.
- Dynamic Sealing: Prevents leakage under low pressure conditions (0.8 psi; 0.05 bar).
- Elongated body design: Prevents solids from making contact with valve's operating parts.
- Compact, simple and reliable structure with fully corrosion-resistant internal parts: Lower maintenance and increased life span.
- Two service ports: Enabling back flushing and drainage.
- Threaded Side outlet (2"; DN50) for connection of Surge Protection (SP) or Inflow prevention (IP) devices.
- Factory approval and Quality Control: Performance and specification tested and measured with specialized test bench, including vacuum pressure conditions.

C50-G

C50-N

Additional Features & Accessories

- Surge Protection: Anti-Slam feature for smoother operation, preventing damage to the valve and the system. C50-SP
- Inflow Prevention: Prevents intake of atmospheric air in cases where this could lead to damaged pumps, required re-priming, or disruption of siphon. C50-IP
- Drainage Valve (code Z).

C50-J

C50-C

Typical Applications

- Pumping stations: Air relief, vacuum and surge protection.
- Pipelines: Protection against air accumulation and vacuum formation at peaks and slope change points.
- Water hammer: protection against vacuum formation during down-surge stage in systems affected by water hammer phenomena.

All images in this catalog are for illustration only

Pressure Rating & Available Sizes and Connections

Model	C50-P		C50-C		C50-J		C50-N		C50-G	
Max. Recommended Pressure	150 PSI (PN10)		250 PSI (PN16)		150 PSI (PN10)		250 PSI (PN16)		150 PSI (PN10)	
Available Connection (inlet)	Flanged ANSI#150	Threaded NPT	Flanged ANSI#150	Threaded NPT	Flanged ANSI#150	Threaded NPT	Flanged ANSI#150	Threaded NPT	Flanged ANSI#150	Threaded NPT
Available Sizes (inlet)	2"-4"	2"-3"	2"-3"	2"	2"-3"	2"	2"-3"	2"-3"	2"-3"	2"-3"

Materials

Main Components	C50-P	C50-C	C50-J	C50-N	C50-G
Body	Glass Reinforced Nylon	Ductile Iron	Ductile Iron	Stainless Steel 316	Stainless Steel 316
Neck & Cover	Glass Reinforced Nylon	Ductile Iron	Glass Reinforced Nylon	Stainless Steel 316	Glass Reinforced Nylon
Upper Float Assembly	Polypropylene Glass Reinforced Nylon	Polypropylene Glass Reinforced Nylon	Polypropylene Glass Reinforced Nylon	Polypropylene	Polypropylene Glass Reinforced Nylon
Lower Float Assembly	Polypropylene Stainless Steel 316 (Opt)	Polypropylene Stainless Steel 316 (Opt)	Polypropylene Stainless Steel 316 (Opt)	Polypropylene Stainless Steel 316 (Opt)	Polypropylene Stainless Steel 316 (Opt)
Float Rod	Stainless Steel 316	Stainless Steel 316	Stainless Steel 316	Stainless Steel 316	Stainless Steel 316
Elastomers	EPDM, NBR, Viton (Opt)	EPDM, NBR, Viton (Opt)	EPDM, NBR, Viton (Opt)	Viton	EPDM, NBR, Viton (Opt)
Coating	Uncoated	Fusion Bonded Epoxy	Fusion Bonded Epoxy	Uncoated	Uncoated

Orifice Specifications

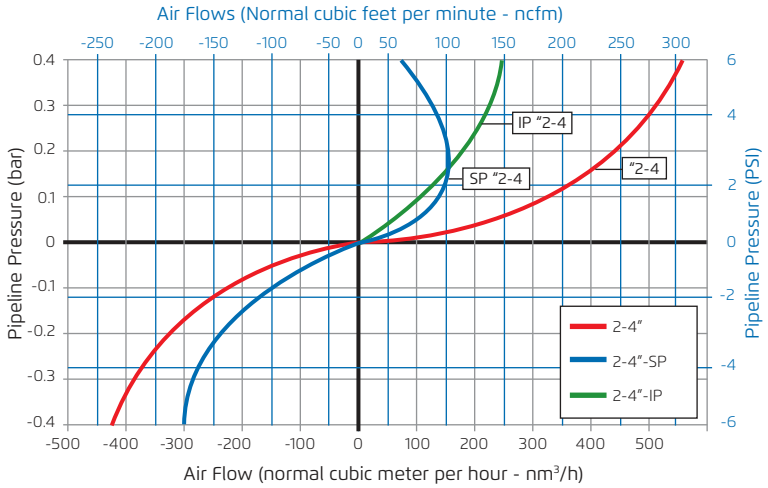
Inlet Sizes		Automatic Orifice		Kinetic Orifice				Surge Protection				
		Area		Diameter		Area		Number of holes	Hole Diameter		Total Area	
Inch	mm	Sq inch	Sq mm	inch	mm	Sq inch	Sq mm	--	inch	mm	Sq inch	Sq mm
2"-4"	DN50-DN100	0.019	12.2	1.772	45.0	2.465	1,590	4	0.157	4	0.078	50

Operational Data

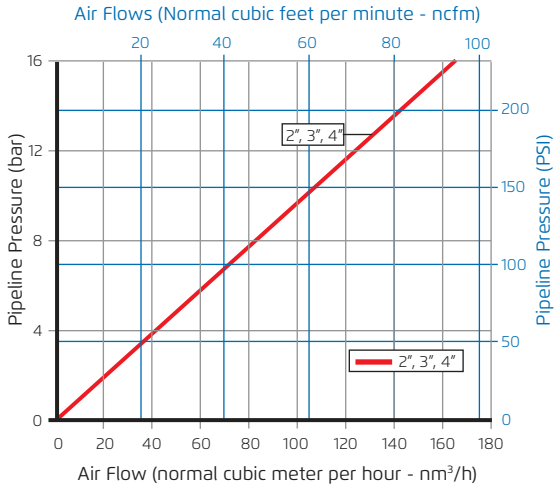
- Minimum operating pressure: 0.8 psi; 0.05 bar
- Media and operating temperature: Water, 33-140°F; 1-60°C
- Available ourlet connection: sideway, female threaded 2"; DN50.

Air Flow Performance Charts

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

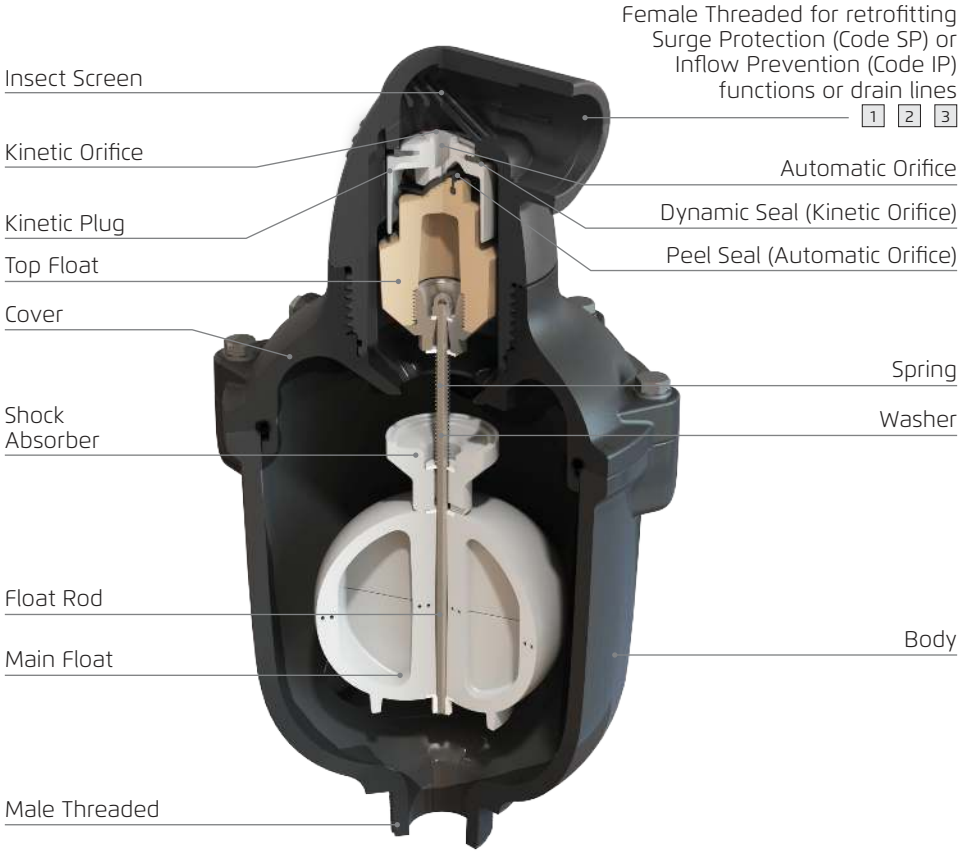


Air Release (Pressurized Operation)

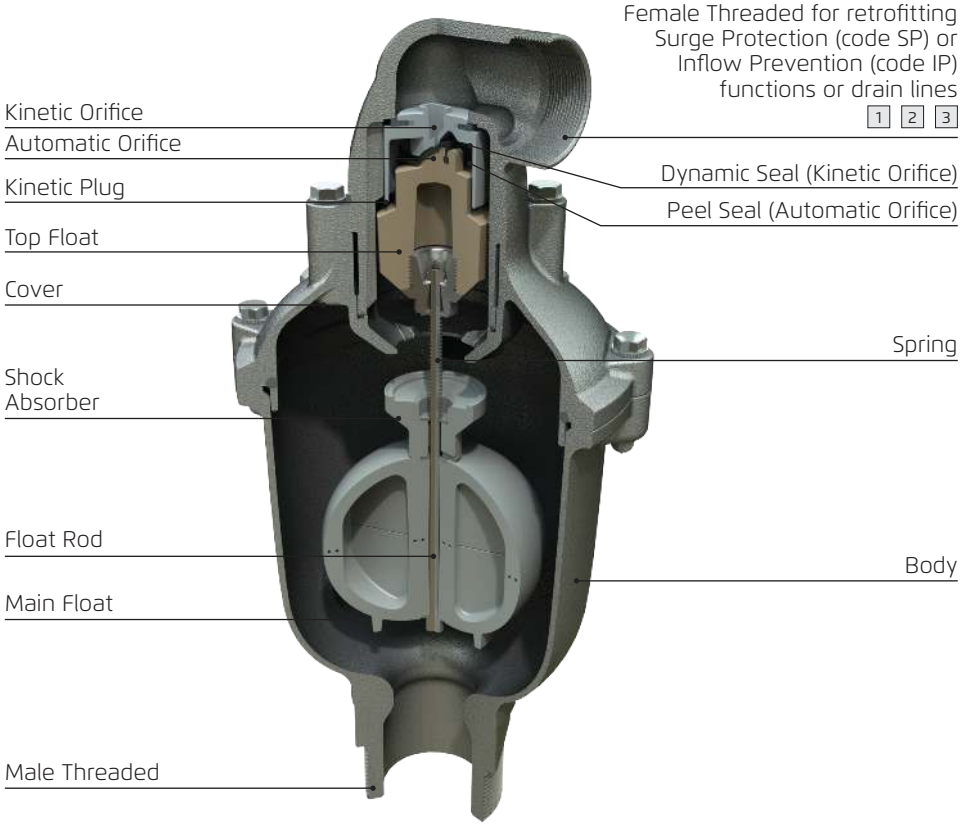


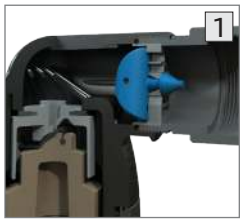
Air relief and intake charts are based on actual measurements, measured in Bermad Air Flow test bench, according to EN-1074/4 standard and refer to Side outlet. Use Bermad Air software for optimized Sizing & Positioning of Air Valves.

Cutaway - Glass-reinforced Nylon Body (C50-P)

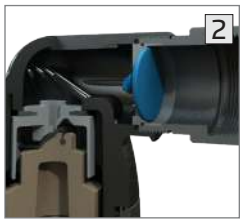


Cutaway - Stainless Steel Body (C50-N)





Surge Protection (code C50-SP)



Inflow Prevention (code C50-IP)

Extension with downwards outlet

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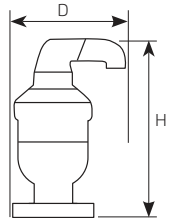
Dimensions & Weights



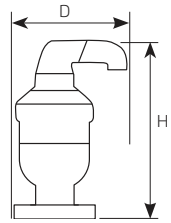
Glass Reinforced Nylon (C50-P)

Ductile Iron (C50-C)

Ductile Iron& Glass Reinforced Nylon (C50-J)

Inlet Size	Connection	Width (D)	Height (H)	Weight	Width (D)	Height (H)	Weight	Width (D)	Height (H)	Weight
inch		inch	inch	lbs	inch	inch	lbs	inch	inch	lbs
mm		mm	mm	Kg	mm	mm	Kg	mm	mm	Kg
2"	Threaded	13.622	18.031	12.8	14.488	19.291	45.2	13.740	19.252	26.4
DN50		346	458	5.8	368	490	20.5	349	489	12.0
2"	Flanged	13.622	18.504	14.1	14.488	19.724	49.1	13.740	19.724	30.2
DN50		346	470	6.4	368	501	22.3	349	501	13.7
3"	Threaded	13.622	18.031	13.0	---	---	---	---	---	---
DN80		346	458	5.9	---	---	---	---	---	---
3"	Flanged	13.622	18.504	14.8	14.488	19.291	52.5	13.740	19.252	33.5
DN80		346	470	6.7	368	490	23.8	349	489	15.2
4"	Flanged	13.622	18.504	15.3	---	---	---	---	---	---
DN100		346	470	7.0	---	---	---	---	---	---

* including assembled extension + 90 degrees elbow. For an addition of SP/IP device, add to the Width (D) 2.087"; 53mm



Stainless Steel & Glass Reinforced Nylon (C50-G)

Stainless Steel (C50-N)

Inlet Size	Connection	Width (D)	Height (H)	Weight	Width (D)	Height (H)	Weight
inch		inch	inch	lbs	inch	inch	lbs
mm		mm	mm	Kg	mm	mm	Kg
2"	Threaded	13.622	19.213	23.4	13.661	19.252	37.0
DN50		346	488	10.6	347	489	16.8
2"	Flanged	13.622	19.134	29.1	13.661	19.370	41.7
DN50		346	486	13.2	347	492	18.9
3"	Threaded	13.622	20.197	28.7	13.661	20.197	41.9
DN80		346	513	13.0	347	513	19.0
3"	Flanged	13.622	19.409	35.7	13.661	19.843	48.3
DN80		346	493	16.2	347	504	21.9
4"	Flanged	13.622	19.409	41.2	13.661	19.843	49.4
DN100		346	493	18.7	347	504	22.4

* including assembled extension + 90 degrees elbow. For an addition of SP/IP device, add to the Width (D) 2.087"; 53mm