

Air & Vacuum Release Valves



SERIES: AA
 SIZES: 1-1/4" & 3"
 ENDS²: Threaded or Flanged
 SEALS: EPDM



The Chemline **AA Series** Air and Vacuum Release Valve provides a controlled venting solution for larger diameter piping systems. This valve reduces the potential for water hammer incidents that occur when pressure builds up due to entrapped air. A unique two-stage ball stop prevents liquids from escaping while allowing high volume air release while the pipeline is under pressure, also at low pressure when it is being filled.

The vacuum release function allows air to re-enter the pipeline to prevent vacuum collapse.

PDCPD (Polydicyclopentadiene) is a polyolefin thermoset plastic. Valve parts are manufactured by a process called reaction injection moulding (RIM). PDCPD has excellent corrosion resistance and temperature ratings, very similar to those of polypropylene. It is durable material offering very high impact strength and a fraction of the weight of cast iron.

Features

High Impact Strength

Superior Exhaust Performance

- High discharge capacities
- Two-stage (high/low) exhaust function

Works at Low Pressures

- Half the minimum pressure compared to cast iron

Excellent Corrosion Resistance

- PDCPD (polydicyclopentadiene) material has chemical resistance similar to polypropylene

Top Entry

- Easy access to internal parts while valve is in line

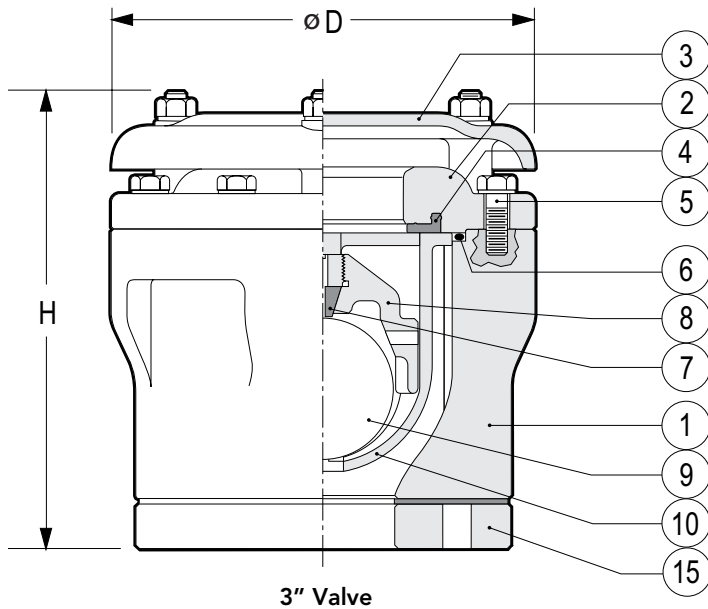
Recommended Installation

- 1-1/4" valve on 3" to 14" pipe
- 3" valve on 14" to 32" pipe

¹ PDCPD = Polydicyclopentadiene

² 1-1/4" valves are threaded, 3" valves are flanged

Air & Vacuum Release Valves



PARTS

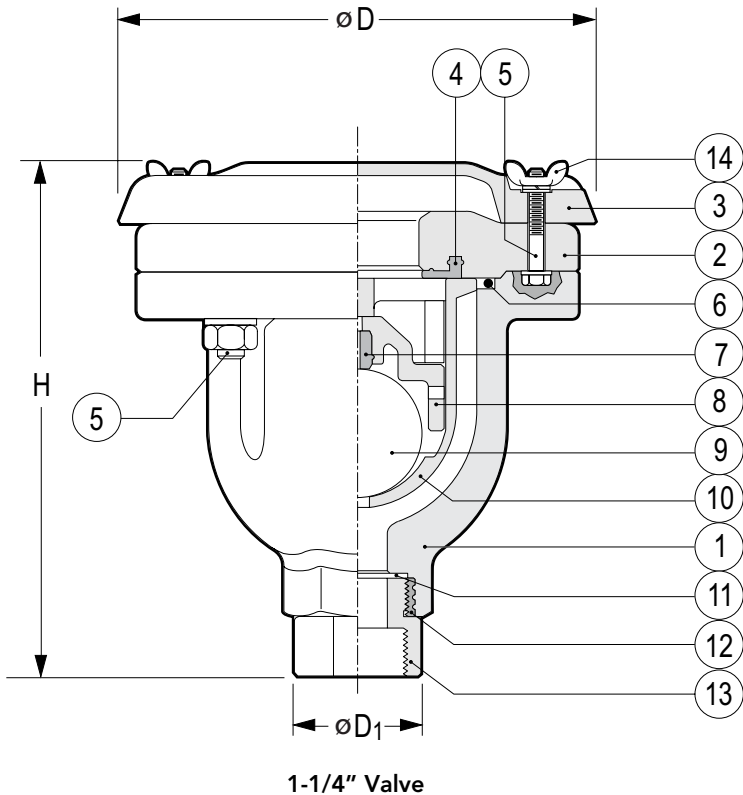
▲ Recommended Spare Parts

No.	Part	Pcs.	Materials
1	Body	1	PDCPD ¹
2	Bonnet	1	PDCPD ¹
3	Cover	1	PDCPD ¹
4▲	Bonnet Seal	1	EPDM
5	Bolt & Nut Set	4	304 SS
6▲	Body O-Ring	1	EPDM
7▲	Float Seat	1	EPDM
8	Disc	1	PP
9	Float	1	PP
10	Guide	1	HI-PVC ²
11	Packing ³	1	EPDM
12	Body Insert ³	1	Copper Alloy
13	1-1/4" NPT End Connector ³	1	304 SS, PVC, PP
14	Wing-nut ³	4	304 SS
15	3" Flanged End Connector	1	304 SS

¹PDCPD = Polydicyclopentadiene

²High Impact PVC

³For 1-1/4" valve only



DIMENSIONS INCHES

WORKING PRESSURES PSI TEMPERATURE RANGE °C (°F)

MAXIMUM AIR DISCHARGE CAPACITY CFM

WEIGHTS

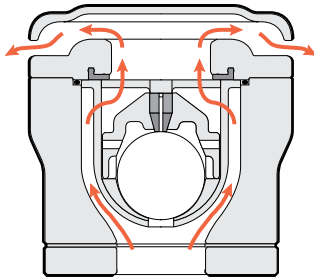
Size	Connection	D	H	Range	Range	CFM@1.42 psi $\Delta P/m^3/h$	LB.	KG
1-1/4"	Female Threaded	8.0	7.5	0.7 to 110	0°C (32°F) to 50°C (122°F)	185	6.5	2.95
3"	Flanged	9.5	9.0	0.7 to 185	0°C (32°F) to 50°C (122°F)	1,250	28.3	12.80



OPERATION

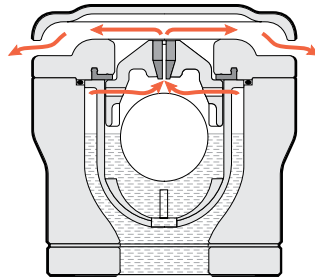
The valve features 2 air exhaust paths:

- high flow exhaust, sealed by rising Disc #8 seating on the Bonnet Seal #4
- low flow exhaust, sealed by the Float #9 seating on the float Seat #7



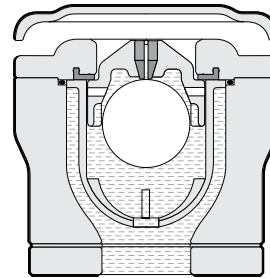
**High flow
air exhaust**

- the pipe is empty and starts filling with liquid
- high flow exhaust path is open, disc #8 is floating on the rising liquid but not sealing on the bonnet seal #4 in this stage



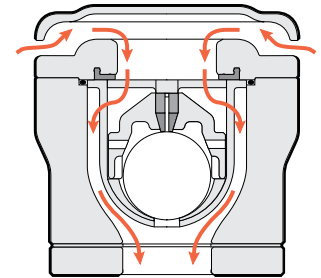
**Low flow air exhaust
prior to shut off**

- the pipe is full
- the Disc #8 is sealing on the Bonnet Seal #4 closing the high flow exhaust
- the air trapped in the pressurized pipe will escape through the low flow exhaust path, Float #9 not sealing the Float Seat #7



Shut-off

- all the air in the pipe was removed
- both high and low exhaust seals are sealing, the valve is fully closed



Air intake

- level of the liquid in the pipe drops
- Disc #8 is not sealing on Bonnet Seal #4, opening the high flow path and allowing atmospheric air to flow into the pipe

ORDERING EXAMPLE

Chemline Air Release Valves	AA	D	012	E	TS
Body Material	D – PDCPD				
Size	012 – 1-1/4" 030 – 3"				
Seals	E – EPDM				
Ends	1-1/4" TS – Threaded SS TA – Threaded PVC TB – Threaded PP 3" FS – Flanged SS				

Example: Chemline Type AA Air Release Valve, PDCPD, 1-1/4", with EPDM seals, threaded stainless steel end.