



Abresan Toloue Mehr Company
Producer of valves and under pressure joints

Air Valve



ISO 9001:2008



www.atmehr.com

Air Vale

Analysis and investigation of air formation in the piping system and the related problems

Cause of air absorption:

Air enters or is injected into pipelines in places where the internal pressure is near atmospheric pressure, the most important of which are:

- 1- Air entry during start-up phase or beginning of pumps
- 2- Air absorption while liquid surface is below the pump entry nozzle
- 3- Air suction by vortex generated by the vortex
- 4- Incomplete air evacuation during pipe filling and etc.

The disadvantages of air inside system utilities:

- 1- A sharp drop in pump power or strength of which in turn needs a more powerful pump and so higher costs
- 2- Serious decline or even full stoppage of discharge
- 3- Rate of high corrosion inside pipes

Responsibilities of an air valve

- 1- Evacuation of a large volume of air through the main vent
- 2- Entry of a large volume of air through the main vent
- 3- Evacuation of air or release of under-pressure air

Air Evacuation

Air evacuation for each valve depends on the presence of a connection between nozzle cross section and the floating mass, water and under-pressure air inside the valve cause equivalent forces, the direction of which are opposite each other. Except the small section which is in contact with the nozzle DN and is under atmospheric pressure. Therefore the floating object is run upstream with a force equal to $F=A*P$, where A is the nozzle cross section and P equals pressure. If this force is more than the floating object's weight, the object is stuck to the nozzle mouth all the time and no evacuation takes place and that is why the same air valve with a larger-mouthed nozzle and ten times pressure can work better than in 25 times pressure.

Essential tips for installation and maintenance of air valves

- 1- In order to ensure correct operation of air valves they must be installed vertically and completely even on the on/off valve
- 2- Use of a strainer between the sliding valve and the air valve is better for proper operation of air valves.
- 3- Before using the valve, the pipeline must be thoroughly washed so that no hard objects are in the pipeline.
- 4- To ensure lack of dysfunction in the air valves, the sealing must be controlled once every six months.

Single-chamber, double-vented air

Single-chamber, double-vented air valve

Pressure: PN-10PN40

Size: DN-50DN200

In this type of valves, aeration operation occurs automatically in the main and secondary lines of water system networks.

Also the passage of liquid alone causes the operation of air valve.

The large vent is used for aeration and evacuation with high volume during filling and evacuation of the line.

The small vent is used for evacuation of the accumulated air when the line is working under pressure.

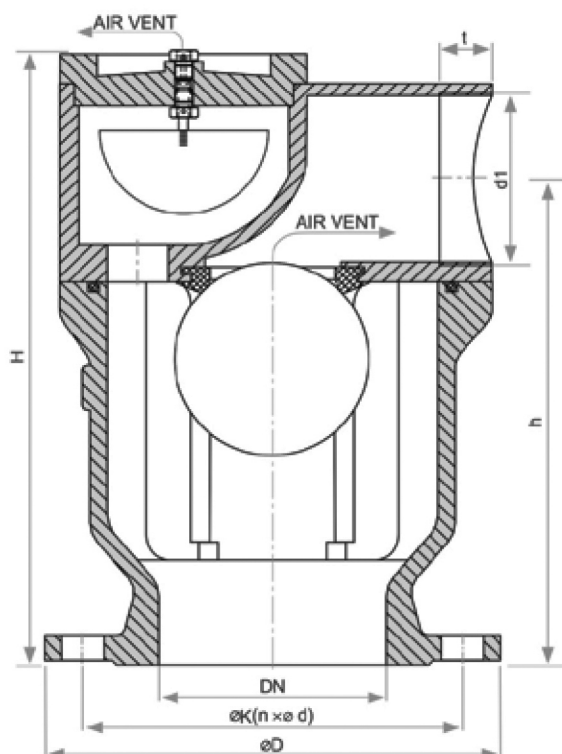
Scope of application: used for liquids with at least 0.3 times work pressure and up to °70C.

DN (mm)	PN (bar)	Permissible Working Pressure(bar)	Permissible Working Temperature	Test pressure according to DIN EN 12266-1 In bar Hydrostatic test
				Body
50-200	10	10	70°C	17
50-200	16	16	70°C	25
50-200	25	25	70°C	37.5

Advantages of the valve:

- 1- Small in size
- 2- Reliable design
- 3- Inside parts made of stainless steel
- 4- Screws made of A2 stainless steel
- 5- Sealing gasket made of NBR or EPDM
- 6- Larger volume compared to double-chambered air valve
- 7- Electrostatic powder paint

Single-chamber, double-vented air



Body: EN 1563/EN-GJS-400-15
 Cap: EN 1563/EN-GJS-400-15
 Large floater: DIN EN 10088-3/1.4301
 Small floater: DIN EN 10088-3/1.4301
 Or composite
 Screw: Galvanized steel/A2
 Color: Electrostatic powder paint

AIR VALVE DIMENSION (PN 10 & 16)

Unit: mm

DN	D	K	n×Φd2	d1	t	h	H
50	165	125	4×Φ19	R1 ^{1/4} "	23	207	266
65	185	145	4×Φ19	R1 ^{1/4} "	23	207	266
80	200	160	8×Φ19	R2 "	27	238	294
100	220	180	8×Φ19	R2 "	30	267	325
150	285	240	8×Φ23	R3 "	30	362	436
200(PN10)	340	295	8×Φ23	R3 "	30	362	436
200(PN16)	340	295	12×Φ23	R3 "	30	362	436

AIR VALVE DIMENSION (PN 25)

Unit: mm

DN	D	K	n×Φd2	d1	t	h	H
50	165	125	4×Φ19	R1 ^{1/4} "	23	207	266
65	185	145	8×Φ19	R1 ^{1/4} "	23	207	266
80	200	160	8×Φ19	R2 "	27	238	294
100	235	190	8×Φ23	R2 "	30	267	325
150	300	250	8×Φ28	R3 "	30	362	436
200	360	310	12×Φ28	R3 "	30	362	436

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Single-chamber, double-vented air

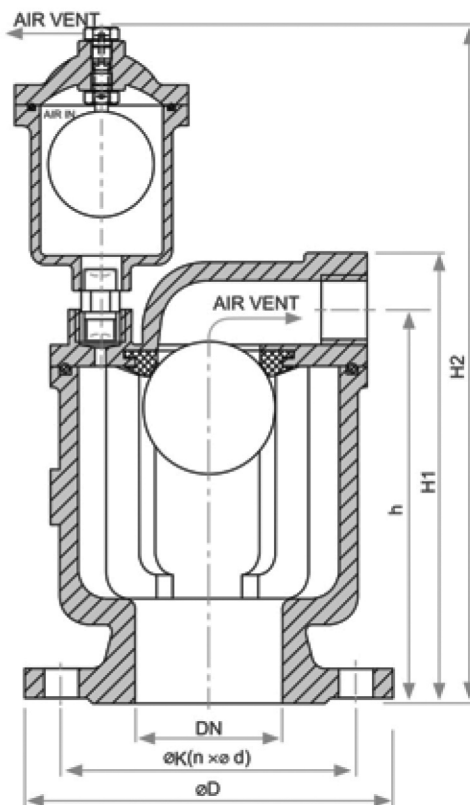
Double-vented air valve is a set of two single-vented air valves of large and small orifice such that it works both valves together. The combination of these valves in unity is cost effective.

Necessary locations to install the double-vented air valve:

- 1- Pumping station
- 2- After safety valve
- 3- In the bypass circuit
- 4- At the ridge of water transmission lines

Characteristics of the air valve in the double-vented space

- | | |
|-----------------------------|----------------------------|
| 1- Body: | EN. 1563/EN-GJS - 400-15 |
| 2- Cap: | EN. 1563/EN-GJS - 400-15 |
| 3- Small and large floater: | DIN EN 10088 - 3/1 1.4301 |
| 4- Sealing gasket: | EPDN or NBR |
| 5- Screw: | Galvanized steel/A2 |
| 5- Color: | Electrostatic powder paint |



AIR VALVE DIMENSION (PN 10 & 16)

until: mm

DN	D	K	n×Φd2	h	H1	H2
50	165	125	4×Φ19	180	209	335
80	200	160	8×Φ19	214	245	363
100	220	180	8×Φ19	243	283	390
150	285	240	8×Φ23	315	352	476
200 (PN10)	340	295	8×Φ23	365	420	535
200 (PN16)	340	295	12×Φ23	365	420	535

AIR VALVE DIMENSION (PN 25)

until: mm

DN	D	K	n×Φd	h	H1	H2
50	165	125	4×Φ19	180	209	335
80	200	160	8×Φ19	214	245	363
100	235	190	8×Φ23	243	283	390
150	300	250	8×Φ28	315	352	476
200	360	310	12×Φ28	365	420	535

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Single-vented large orifice air valve

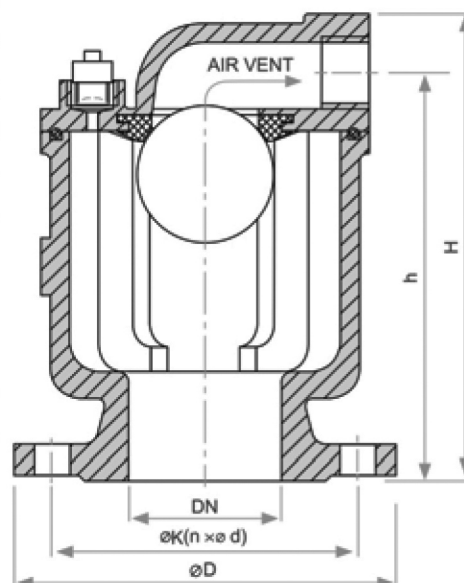
At the time of set up and utilization of pipeline it is necessary to evacuate the pipe from air in accordance to the filling of the pipe by water in a suitable manner or part of the transmission lines which lead to evacuation of water in the lines at the time of repair or inspection is necessary so that air can replace evacuated water and formation of vacuum and possibility of buckling due to pressure difference is prevented.

Necessary locations

In direct water transmission lines, one single-vented large orifice air valve at every kilometer according to the pipe diameter and at the end of the water transmission line.

Characteristics

- | | |
|-------------------|----------------------------|
| 1- Body: | EN. 1563/EN-GJS - 400-15 |
| 2- Cap: | EN. 1563/EN-GJS - 400-15 |
| 3- Floater: | DIN EN 10088 - 3/104301 |
| 4- Sealing gasket | EPDN or NBR |
| 5- Screw: | Galvanized steel/A2 |
| 6- Color: | Electrostatic powder paint |



AIR VALVE DIMENSION (PN10 & 16)

unit: mm

DN	D	K	n×Φd	h	H
50	165	125	4 n×Φd19	180	209
80	200	160	8 n×Φd19	214	245
100	220	180	8 n×Φd19	243	283
150	285	240	8 n×Φd23	315	352
200 (PN10)	340	295	8 n×Φd23	365	420
200 (PN10)	340	295	12 n×Φd23	365	420

AIR VALVE DIMENSION (PN25)

unit: mm

DN	D	K	n×Φd	h	H
50	165	125	4 n×Φd 19	180	209
80	200	160	8 n×Φd 9	214	245
100	235	190	8 n×Φd 19	243	283
150	300	250	8 n×Φd 28	315	352
700	360	310	12 n×Φd 28	365	420

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