D-060 PN 16
D-060-C PN 16
D-062 PN 25
D-065 PN 40

Water Supply

Combination Air Valve for High Flow

Description

The D-060 series Combination Air Valve has the features of both an air release valve and an air & vacuum valve.
The air release component is designed to automatically release small pockets of air to the atmosphere as they accumulate along a pipeline or piping system when it is full and operating under pressure.
The air & vacuum component is designed to automatically discharge or admit large volumes of air during the filling or draining of a pipeline or piping system. This valve will open to relieve negative pressures whenever water column separation occurs.

Applications

- Municipal and industrial water conveyance systems.

D-060-C, D-062, D-065 - additional applications
- Water pipelines vulnerable to vandalism and/or water theft.
- Water systems found in remote areas.
- Water systems with pressure demands of 25 & 40 bar (D-062 & D-065 respectively).

Operation

The air & vacuum component, with the large orifice, discharges air at high flow rates during the filling of the system and admits air into the system at high flow rates during its drainage and at water column separation.
High velocity air should not blow the float shut. Water will lift the float which seals the valve.
At any time during system operation, should internal pressure of the system fall below atmospheric pressure, air will re-enter the system.
The smooth discharge of air reduces pressure surges and other destructive phenomena.
The intake of air in response to negative pressure protects the system from destructive vacuum conditions and prevents damage caused by water column separation. Air re-entry is essential to efficiently drain the system.
The air release component releases entrapped air in pressurized systems.
Without air valves, pockets of accumulated air may cause the following destructive phenomena:
- Obstruction of effective flow and hydraulic conductivity of the system along with a throttling effect as would a partially closed valve. In extreme cases this will cause complete flow stoppage.
- Acceleration of cavitation damages.
- High-pressure surges.
- Acceleration of corrosion to metal parts.
- Danger of a high-energy burst of compressed air.
- Inaccuracies in flow metering.

As the system starts to fill, the valve functions according to the following stages:
1. Entrapped air in the pipeline is discharged by the valve.
2. Liquid enters the valve, lifting the float which pushes the sealing mechanism to its sealing position.
3. Entrapped air, which accumulates at peaks along the system (where combination air valves should be installed), rises to the top of the valve, which in turn displaces the liquid in the valve's body.
4. The float descends, unsealing the rolling seal. The air release orifice opens and the accumulated air is released.
5. Liquid penetrates into the valve and the float rises, pushing the rolling seal back to its sealing position.

When internal pressure falls below atmospheric pressure (negative pressure):
1. The floats will immediately drop down, opening the air & vacuum and air release orifices.
2. Air will reenter the system.

Main Features

- Working pressure range:
  - D-060 0.2 - 16 bar
  - D-060-C 0.2 - 16 bar
  - D-062 0.2 - 25 bar
  - D-065 0.2 - 40 bar
- Testing pressure for the air valve is 1.5 times its working pressure.
- Maximum working temperature: 60° C.
- Maximum intermittent temperature: 90° C.
- All main flow cross-sections are equal or greater than the nominal port area.
- Aerodynamic design enables high flow rates of air both at intake and at discharge.
- Reliable operation reduces water hammer incidents.
- Dynamic design allows for high velocity air discharge while preventing

premature closure.
- Special orifice seat design: bronze and E.P.D.M. rubber, assures long-term maintenance-free operation.
- Screen protected outlet.
- The upper screen is protected with a protective cover.
- FBE coating, both interior & exterior, according to the international standard DIN 30677-2.

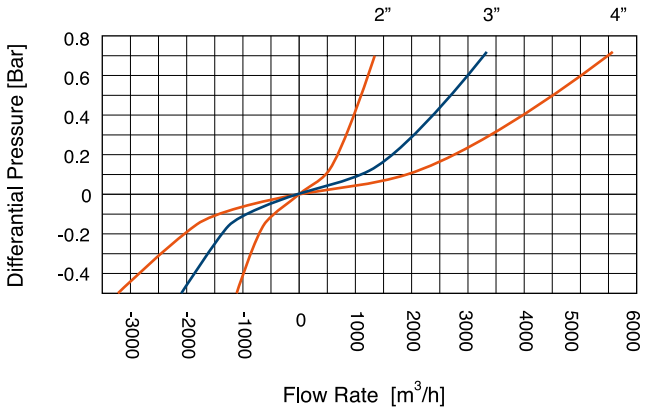
Air Release Component
- Body made of high strength materials.
- All operating parts are made of specially selected corrosion- resistant polymer materials.
- Large size air release orifice:
• Dramatically reduces the possibility of obstruction by debris.
• Discharges high air flow rates.
• One size orifice for a wide pressure range (up to 40 bar), achieved by the A.R.I. patented rolling seal mechanism.

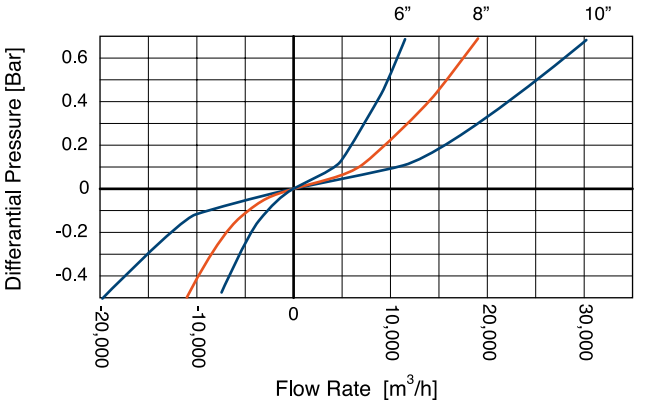
Valve Selection

Size Range: 1"- 10"
2" – 8" (**D-065** only)
D-060, made for 16 bar.
D-060-C, vandalism protected by a metal shell covering the air release component, made for 16 bar.
D-062, vandalism protected by a metal shell covering the air release component, made for 25 bar.
D-065, made for 40 bar.
- These valves are manufactured with flanged ends to meet any requested standard.
- The 2" valve is also available with a threaded BSP or NPT connection.
- Valve coating: baked epoxy coating according to the international standard DIN 30677-2.
- Other coatings are available upon request.
- The air release component and the air & vacuum component are available as separate units.
- For best suitability, it is recommended to send the fluid chemical properties along with the valve request.

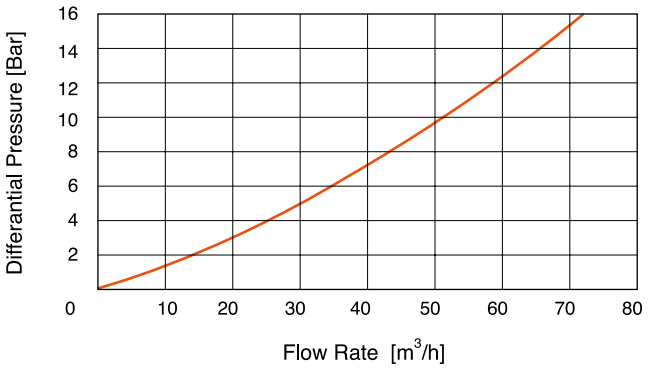
Upon ordering, please specify: model, size, working pressure, threads standard and type of liquid.

AIR AND VACUUM FLOW RATE

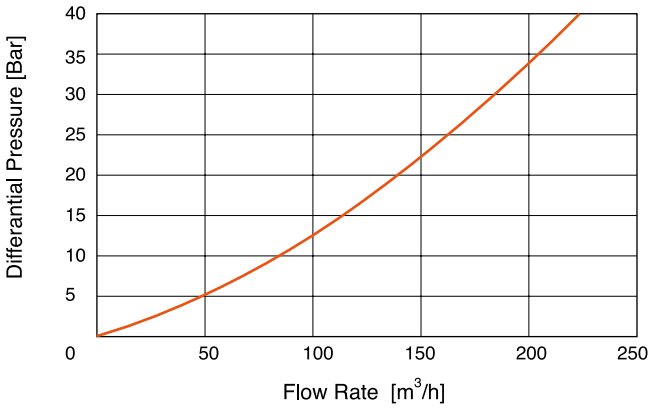




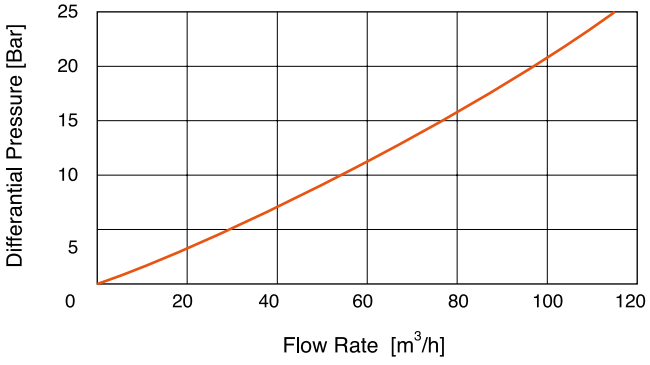
D-060 / D-060-C
AUTOMATIC AIR DISCHARGE



D-065
AUTOMATIC AIR DISCHARGE



D-062
AUTOMATIC AIR DISCHARGE

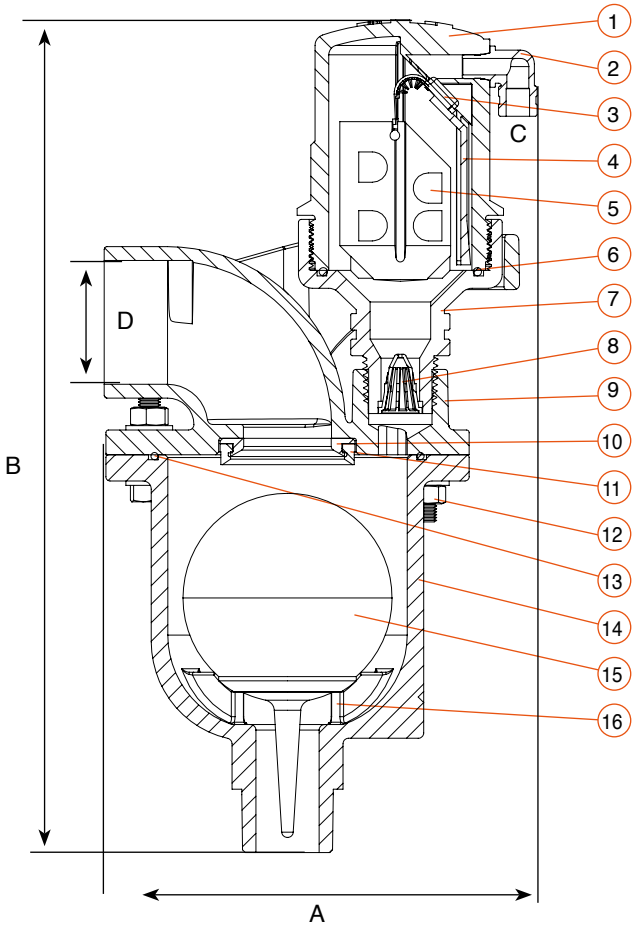


DIMENSIONS AND WEIGHTS

Nominal Size	Dimensions mm A	B	C internal	C external	D	Weight Kg.	Orifice Area mm² A / V	Auto.
1" (25mm) Threaded	158	323	1/8"	15	1½"	4.65	506.7	12
1" (25mm) Flanged	158	303	1/8"	15	1½"	5.65	506.7	12
2" (50mm) Threaded	158	294	1/8"	15		10.00	1960	12
2" (50mm) Flanged	215	336	1/8"	15		11.15	1960	12
3" (80mm)	249	387	1/8"	15		18.60	5030	12
4" (100mm)	286	431	1/8"	15		28.65	7850	12
6" (150mm)	375	628	1/8"	15		78.00	17662	12
8" (200mm)	463	697	1/8"	15		122.65	31400	12
10" (250mm)	586	841	1/8"	15		247.65	49087	12

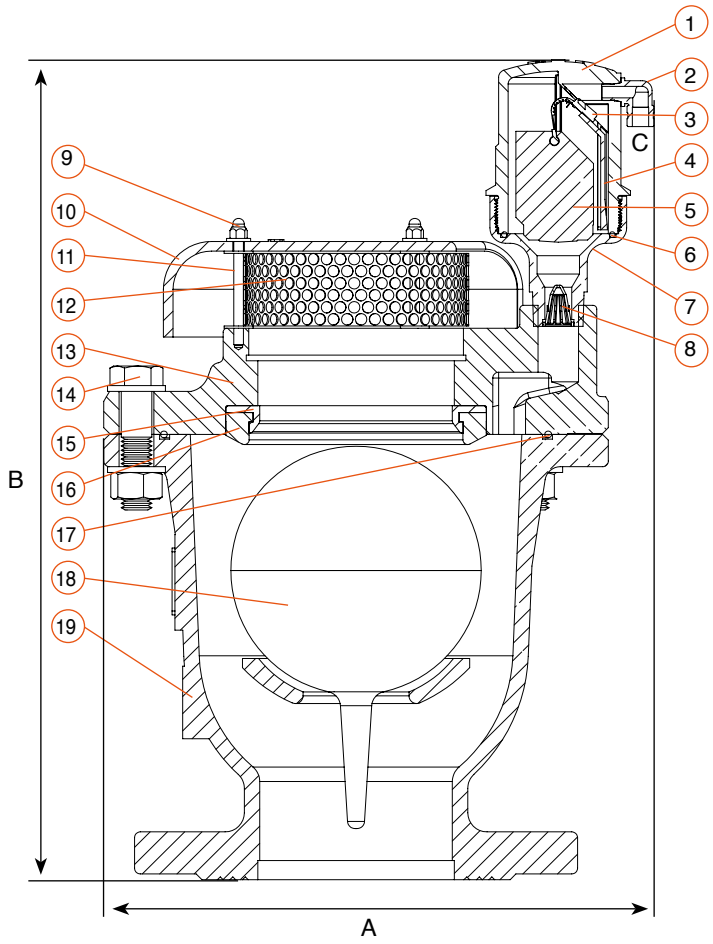
1" PARTS LIST AND SPECIFICATION

No.	Part	Material
1.	Body	Reinforced Nylon
2.	Discharge Outlet	Polypropylene
3.	Rolling Seal	E.P.D.M.
4.	Clamping Stem	Reinforced Nylon
5.	Float	Foamed Polypropylene
6.	O-Ring	BUNA-N
7.	Base	Reinforced Nylon
8.	Strainer	Nylon
9.	Cover	Ductile Iron ASTM A-536 60-40-18
10.	Orifice Seat	Bronze
11.	Orifice Seal	E.P.D.M.
12.	Bolt, Nut & Washer	Steel, Zinc Cobalt Coated / St.St.
13.	O-Ring	BUNA-N
14.	Body	Ductile Iron ASTM A-536 60-40-18
15.	Float	Polycarbonate



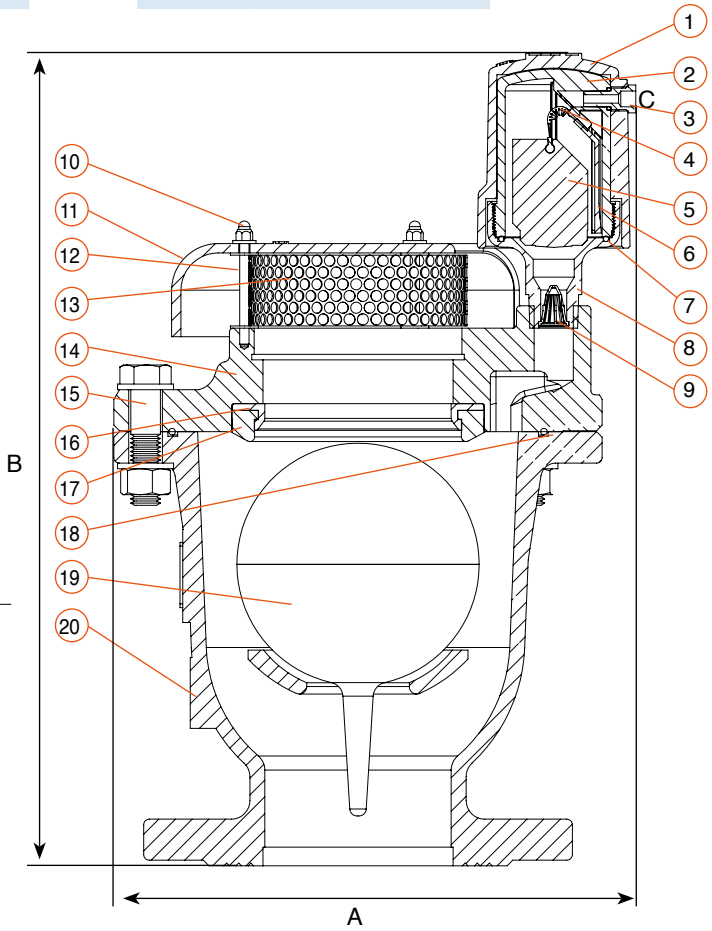
2"-10" PARTS LIST AND SPECIFICATION

No.	Part		Material
1.	Body		Reinforced Nylon
2.	Discharge Outlet		Polypropylene
3.	Rolling Seal		E.P.D.M.
4.	Clamping Stem		Reinforced Nylon
5.	Float		Foamed Polypropylene
6.	O-Ring		BUNA-N
7.	Base		Brass ASTM B-124
8.	Strainer		Nylon
9.	Domed Nut & Washer		Stainless Steel SAE 304
10.	Screen Cover	2"-4"	Ductile Iron
		6"-10"	Polyethylene
11.	Threaded Rod		Stainless Steel SAE 304
12.	Screen		Stainless Steel SAE 304
13.	Cover		Ductile Iron ASTM A-536 60-40-18
14.	Bolt, Nut & Washer		Steel, Zinc Cobalt Coated / Stainless Steel
15.	Orifice Seat		Bronze
16.	Orifice Seal		E.P.D.M.
17.	O-Ring		BUNA-N
18.	Float		Polycarbonate
19.	Body		Ductile Iron ASTM A-536 60-40-18



DIMENSIONS AND WEIGHTS

Nominal Size	Dimensions mm A	B	C internal	C external	D	Weight Kg.	Orifice Area mm² A / V	D-060-C Auto.	D-062
1" (25mm) Threaded	152	311	1/8"	18	1½"	5.65	506.7	12	9
1" (25mm) Flanged	152	311	1/8"	18	1½"	6.65	506.7	12	9
2" (50mm) Threaded	210	357	1/8"	18		10.45	1960	12	9
2" (50mm) Flanged	210	325	1/8"	18		12.15	1960	12	9
3" (80mm)	249	387	1/8"	18		19.60	5030	12	9
4" (100mm)	280	438	1/8"	18		29.65	7850	12	9
6" (150mm)	375	608	1/8"	18		79.00	17662	12	9
8" (200mm)	463	705	1/8"	18		123.65	31400	12	9
10" (250mm)	586	849	1/8"	18		248.65	49087	12	9



PARTS LIST AND SPECIFICATION

No.	Part	Material
1.	Shell	
	D-060-C	Cast Iron ASTM A-48 CL35B
	D-060-C, D-062	Ductile Iron ASTM A-536-60-40-18
2.	Body	Reinforced Nylon
3.	Discharge Outlet	Brass ASTM B-124
4.	Rolling Seal	Rubber E.P.D.M.
5.	Float	Foamed Polypropylene
6.	Clamping Stem	Reinforced Nylon
7.	O-Ring	BUNA-N
8.	Base	Brass ASTM B124
9.	Strainer	Nylon
10.	Domed Nut & Washer	Stainless Steel SAE 304
11.	Screen Cover 2"-4"	Ductile Iron
	6"-10"	Polyethylene
12.	Threaded Rod	Stainless Steel SAE 304
13.	Screen	Stainless Steel SAE 304
14.	Cover	Ductile Iron ASTM A-536 60-40-18
15.	Bolt, Nut & Washer	Steel, Zinc Cobalt Coated / Stainless Steel
16.	Orifice Seat	Bronze
17.	Orifice Seal	E.P.D.M.
18.	O-Ring	BUNA-N
19.	Float	Polycarbonate
20.	Body	Ductile Iron ASTM A-536 60-40-18

DIMENSIONS AND WEIGHTS

Nominal Size	Dimensions mm A	B	C internal	C external	Weight Kg.	Orifice Area mm² A / V	Auto.
2" (50mm) Threaded	246	500	1/2" BSP	-	13.7	1960	15
2" (50mm) Flanged	246	487	1/2" BSP	-	15.7	1960	15
3" (80mm)	280	536	1/2" BSP	-	22.8	5030	15
4" (100mm)	317	580	63.5	74.6	29.6	7850	15
6" (150mm)	382	775	124.0	140.0	32.7	17662	15
8" (200mm)	476	973	124.0	140.0	121.7	31400	15

PARTS LIST AND SPECIFICATION

No.	Part		Material
1.	Discharge Outlet		PVC
2.	Orifice		Reinforced Nylon
3.	Rollpin		Stainless Steel SAE 304
4.	O-Ring		BUNA-N
5.	Rolling Seal		E.P.D.M.
6.	Rollpin		Stainless Steel SAE 304
7.	Lever		Reinforced Nylon
8.	Rollpin		Stainless Steel SAE 304
9.	Cover		Ductile Iron ASTM A536 60-40-18
10.	O-Ring		BUNA-N
11.	Bolt Nut & Washer		Steel, Zinc Cobalt Coated / St.St.
12.	Float		Polycarbonate / Stainless Steel
13.	Body		Ductile Iron ASTM A536 60-40-18
14.	Adaptor		Brass
15.	Domed Nut & Washer		Stainless Steel SAE 304
16.	Screen Cover	2"-4"	Ductile Iron ASTM A-536 60-40-18
		6"-10"	Polyethylene / Cast Iron / Ductile Iron
17.	Threaded Rod		Stainless Steel SAE 304
18.	Screen		Stainless Steel SAE 304
19.	Cover		Ductile Iron ASTM A-536 60-40-18
20.	Bolt, Nut & Washer		Steel, Zinc Cobalt Coated / St.St.
21.	Orifice Seat		Bronze
22.	Orifice Seal		E.P.D.M.
23.	O-Ring		BUNA-N
24.	Float	2"-4"	Polycarbonate
		6"-10"	Stainless Steel
25.	Body		Ductile Iron ASTM A-536 60-40-18