A.R.I.

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 will 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 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 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 hydraulic disturbances:
- Restriction of effective flow due to a throttling effect as would a partially closed valve. In extreme cases this will cause complete flow stoppage.
- Obstruction of efficient hydraulic transmission due to air flow disturbances.
- Accelerate cavitation damages.
- Pressure transients and surges.
- Corrosion in pipes, fittings and accessories.
- 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 and along the system, 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 enters 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 enter 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 standard DIN 30677-2.

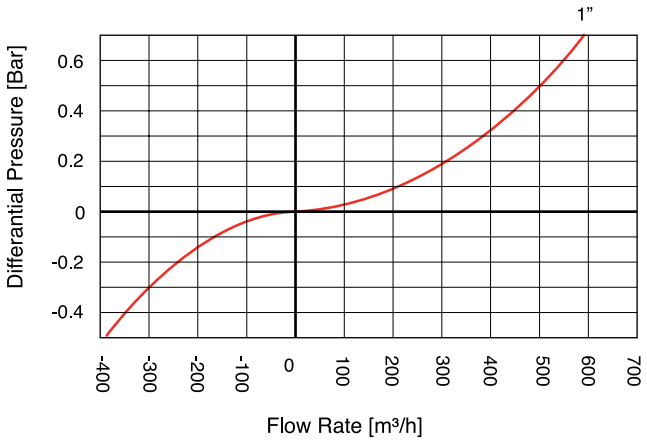
Air Release Component
- Body made of high strength materials.
- All operating parts are made of specially selected corrosion-resistant polymer materials.
- Large size air release orifice:
• Dramatically reduces the possibility of obstruction by debris.
• Discharges high air flow rates.
• One size orifice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

Valve Selection

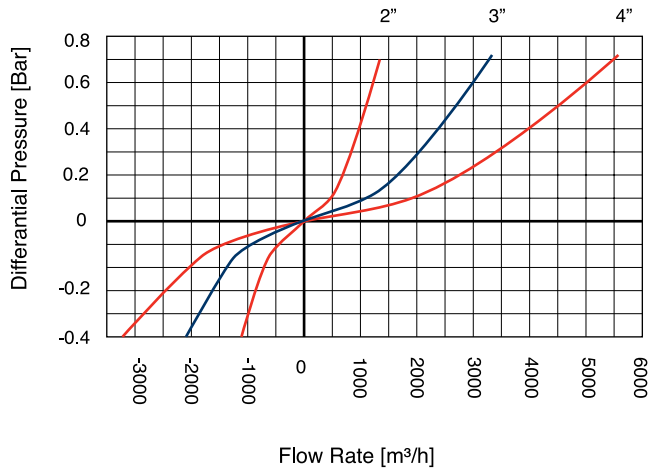
Size Range: 1"- 10"
2" – 8" (**D-065** only)
D-060, made for 16 bar.
D-060-C, vandalism protected by a metal shell covering the air release component, made for 16 bar.
D-062, vandalism protected by a metal shell covering the air release component, made for 25 bar.
D-065, made for 40 bar.
- These valves are manufactured with flanged ends to meet any requested standard.
- The 1", 2" valves are also available with a threaded BSP or NPT connection.
- Valve coating: Fusion bonded epoxy coating according to the 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.

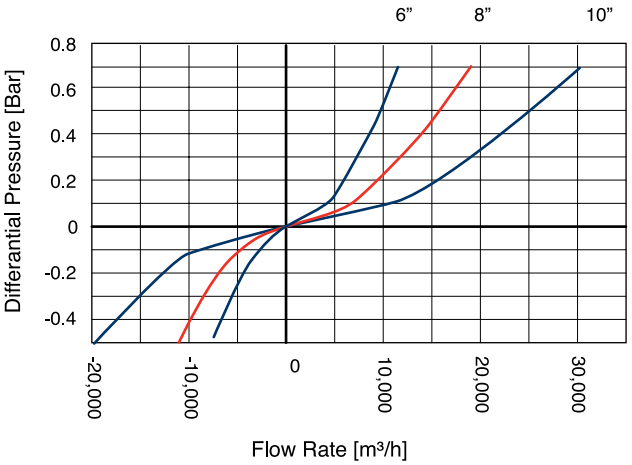
AIR & VACUUM FLOW RATE



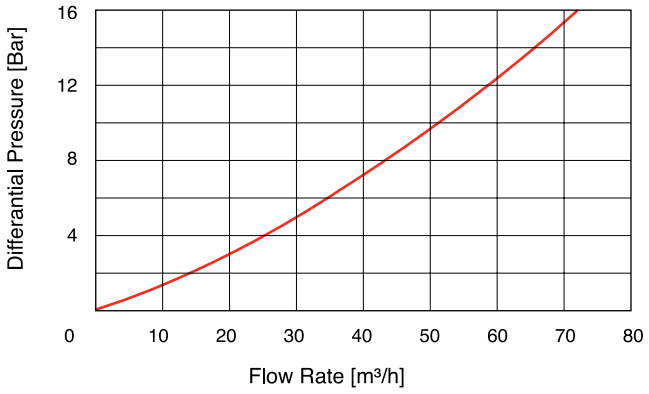
AIR & VACUUM FLOW RATE



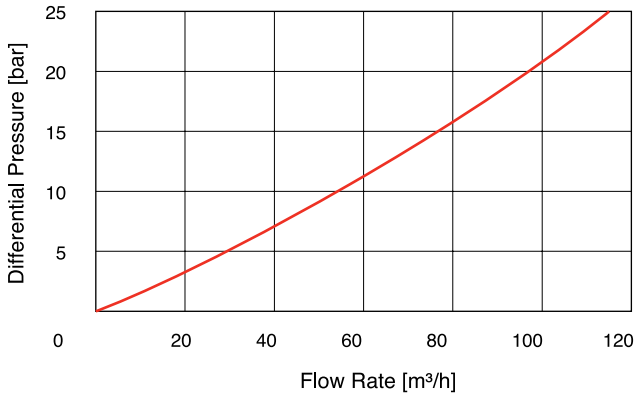
AIR & VACUUM FLOW RATE



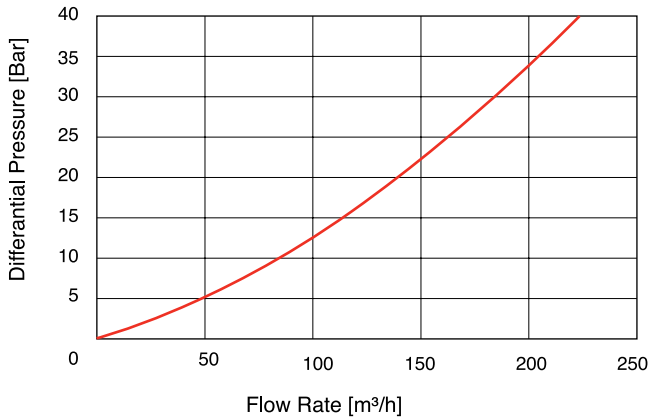
D-060 / D-060-C AUTOMATIC AIR RELEASE FLOW RATE

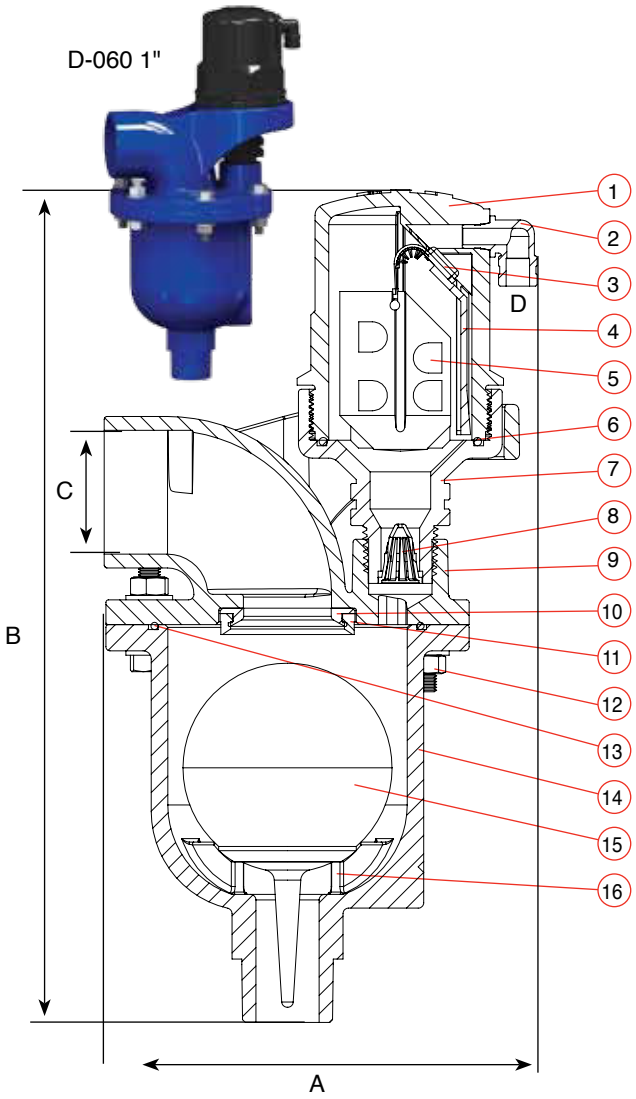


D-062 AUTOMATIC AIR RELEASE FLOW RATE



D-065 AUTOMATIC AIR RELEASE FLOW RATE





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
13.	O-Ring	BUNA-N
14.	Body	Ductile Iron ASTM A-536 60-40-18
15.	Float	Polycarbonate / Stainless Steel

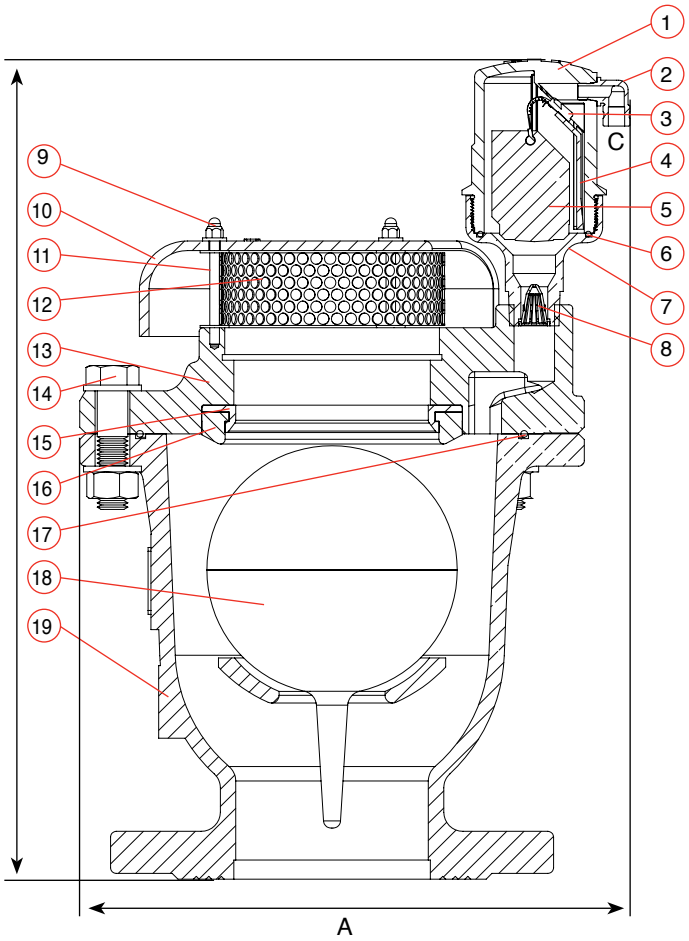
DIMENSIONS AND WEIGHTS

Nominal Size	Dimensions mm A	B	Connections C	D	Weight Kg.	Orifice Area mm² A / V	Auto.
1" (25mm) Threaded	158	303	1½" Female	1/8" Female	4.4	506.7	12
1" (25mm) Flanged	158	303	1½" Female	1/8" Female	5.4	506.7	12

Nominal Size	Dimensions mm A	B	Connection D	Weight Kg.	Orifice Area mm² A / V	Auto.
2" (50mm) Threaded	215	347	1/8" Female	10	1960	12
2" (50mm) Flanged	215	336	1/8" Female	11	1960	12
3" (80mm)	249	387	1/8" Female	18	5030	12
4" (100mm)	286	431	1/8" Female	25	7850	12
6" (150mm)	375	588	1/8" Female	78	17662	12
8" (200mm)	463	630	1/8" Female	117	31400	12
10" (250mm)	586	788	1/8" Female	150	49087	12

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 / Cast Iron
		6"-10"	Polyethylene / Cast Iron / Ductile Iron
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
15.	Orifice Seat		Bronze
16.	Orifice Seat		E.P.D.M.
17.	O-Ring		BUNA-N
18.	Float		Polycarbonate / Stainless Steel
19.	Body		Ductile Iron ASTM A-536 60-40-18



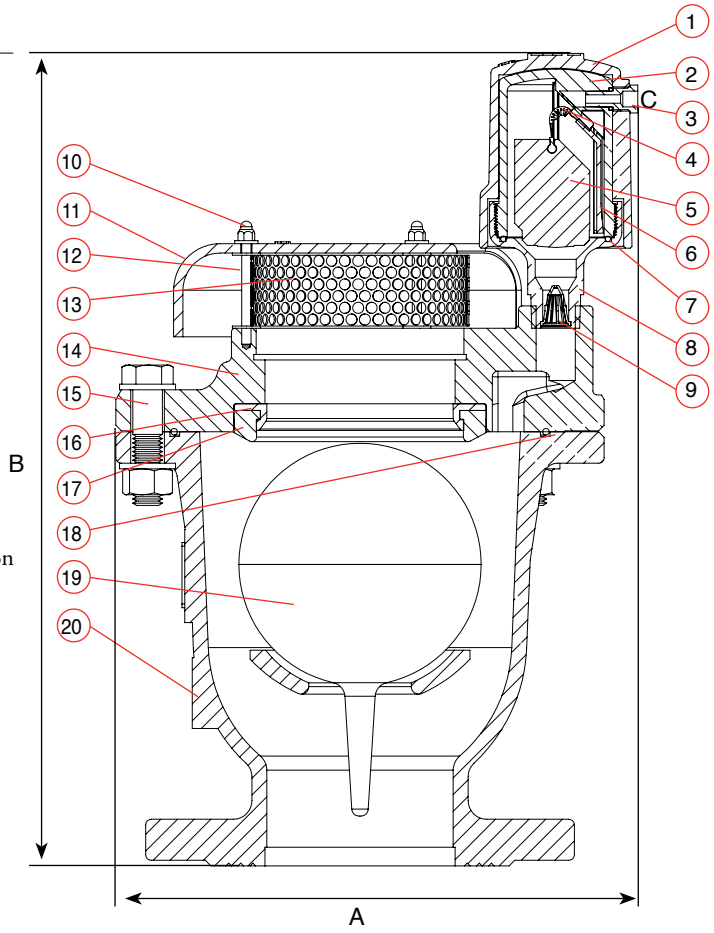
DIMENSIONS AND WEIGHTS

Nominal Size	Dimensions mm A	B	Connections C	D	Weight Kg.	Orifice Area mm² A / V	D-060-C Auto.	D-062
1" (25mm) Threaded	152	291	1½" Female	1/8" Female	5.3	506.7	12	9
1" (25mm) Flanged	152	311	1½" Female	1/8" Female	6.3	506.7	12	9

Nominal Size	Dimensions mm A	B	Connection D	Weight Kg.	Orifice Area mm² A / V	D-060-C Auto.	D-062
2" (50mm) Threaded	210	357	1/8" Female	10	1960	12	9
2" (50mm) Flanged	210	325	1/8" Female	12	1960	12	9
3" (80mm)	243	393	1/8" Female	19	5030	12	9
4" (100mm)	280	438	1/8" Female	26	7850	12	9
6" (150mm)	375	596	1/8" Female	79	17662	12	9
8" (200mm)	463	638	1/8" Female	118	31400	12	9
10" (250mm)	586	788	1/8" Female	151	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		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 / Cast Iron
		6"-10"	Polyethylene / Cast Iron / Ductile Iron
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
16.	Orifice Seat		Bronze
17.	Orifice Seal		E.P.D.M.
18.	O-Ring		BUNA-N
19.	Float		Polycarbonate / Stainless Steel
20.	Body		Ductile Iron ASTM A-536 60-40-18



D-065

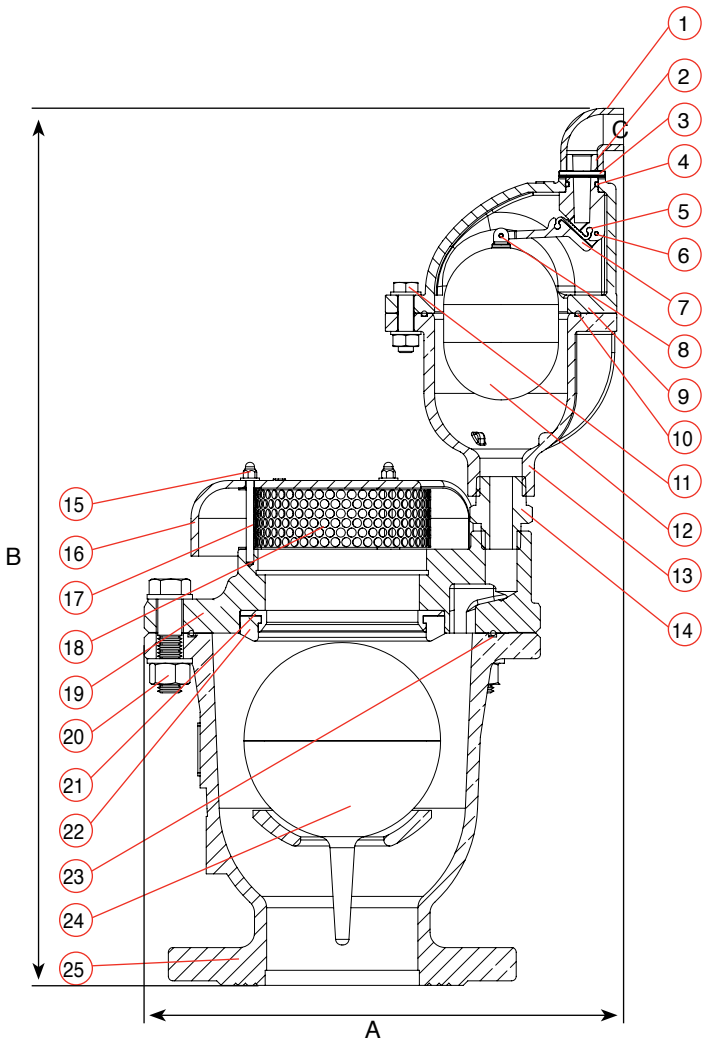
A.R.I.

DIMENSIONS AND WEIGHTS

Nominal Size	Dimensions mm A	B	Connection C	Weight Kg.	Orifice Area mm² A / V	Auto.
2" (50mm) Threaded	246	500	1/2" BSP Female	13.7	1960	15
2" (50mm) Flanged	246	487	1/2" BSP Female	15.7	1960	15
3" (80mm)	280	536	1/2" BSP Female	22.8	5030	15
4" (100mm)	317	580	1/2" BSP Female	29.6	7850	15
6" (150mm)	382	775	1/2" BSP Female	32.7	17662	15
8" (200mm)	472	813	1/2" BSP Female	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
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 / Cast Iron
		6"-8"	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
21.	Orifice Seat		Bronze
22.	Orifice Seal		E.P.D.M.
23.	O-Ring		BUNA-N
24.	Float	2"-4"	Polycarbonate / Stainless Steel SAE 304
		6"-8"	Stainless Steel
25.	Body		Ductile Iron ASTM A-536 60-40-18



A.R.I. FLOW CONTROL ACCESSORIES Ltd. www.arivalves.com ari@ari.co.il Tel: 972-4-6761988