

D-060 M1 PN 16

D-060-C M1 PN 16

D-062 M1 PN 25

D-065 M1 PN 40



Combination Air Valve for High Flow

Description

The D-060 M1 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 M1 D-062 M1 D-065 M1 - 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 HF M1 & D-065 HF M1 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 M1 0.2 - 16 bar

D-060-C M1 0.2 - 16 bar

D-062 M1 0.2 - 25 bar

D-065 M1 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.

Air Release Component

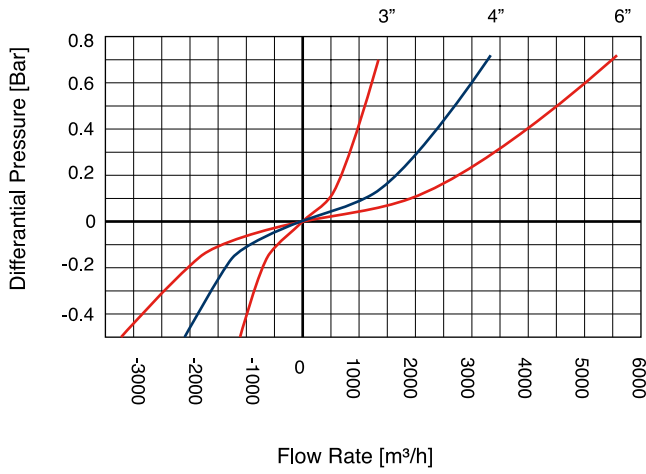
- Body made of high strength materials.
- All operating parts are made of specially selected corrosion-resistant polymer materials.
- Large sized air release orifice:
 - Dramatically reduces the possibility of obstruction by debris.
 - Discharges high air flow rates.
 - One size orifice for a wide pressure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

Valve Selection

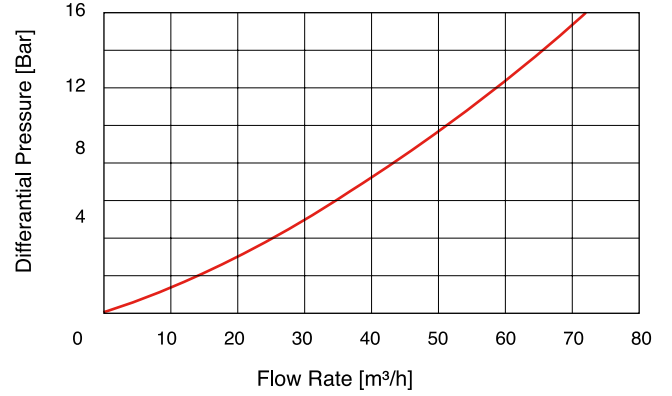
- Sizes: 3", 4", 6", 8", 10", 12".
- **D-060 M1**, made for 16 bar.
- **D-060-C M1** vandalism protected by a metal shell covering the air release component, made for 16 bar.
- **D-062 M1** vandalism protected by a metal shell covering the air release component, made for 25 bar.
- **D-065 M1** made for 40 bar. Sizes: 3"-10".
- These valves are manufactured with flanged ends to meet any requested standard.
- 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.

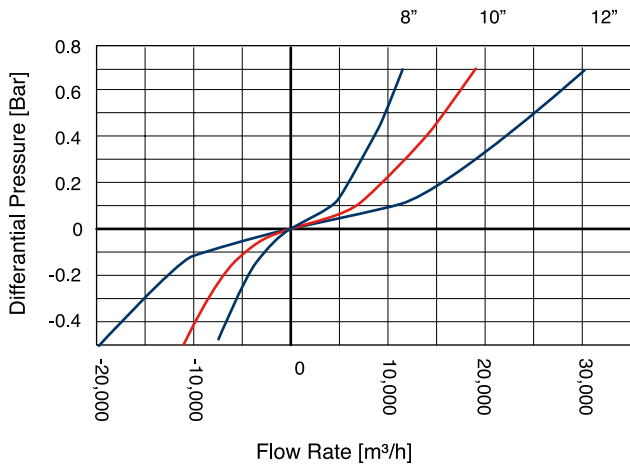
AIR & VACUUM FLOW RATE



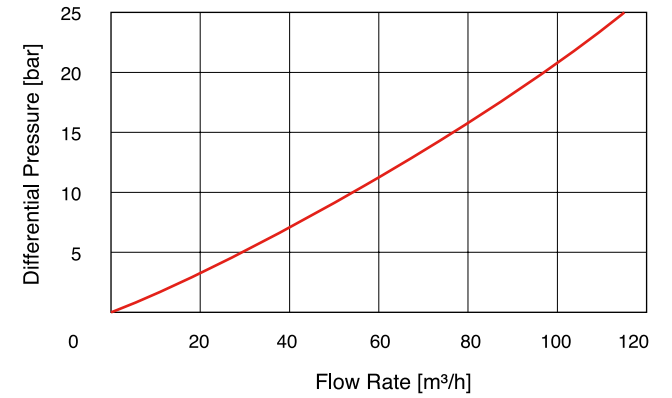
**D-060 M1 / D-060-C M1
AUTOMATIC AIR RELEASE FLOW RATE**



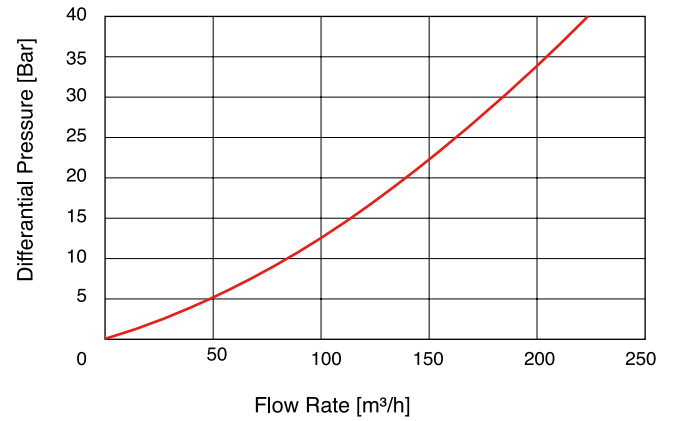
AIR & VACUUM FLOW RATE



**D-062 M1
AUTOMATIC AIR RELEASE FLOW RATE**



**D-065 M1
AUTOMATIC AIR RELEASE FLOW RATE**



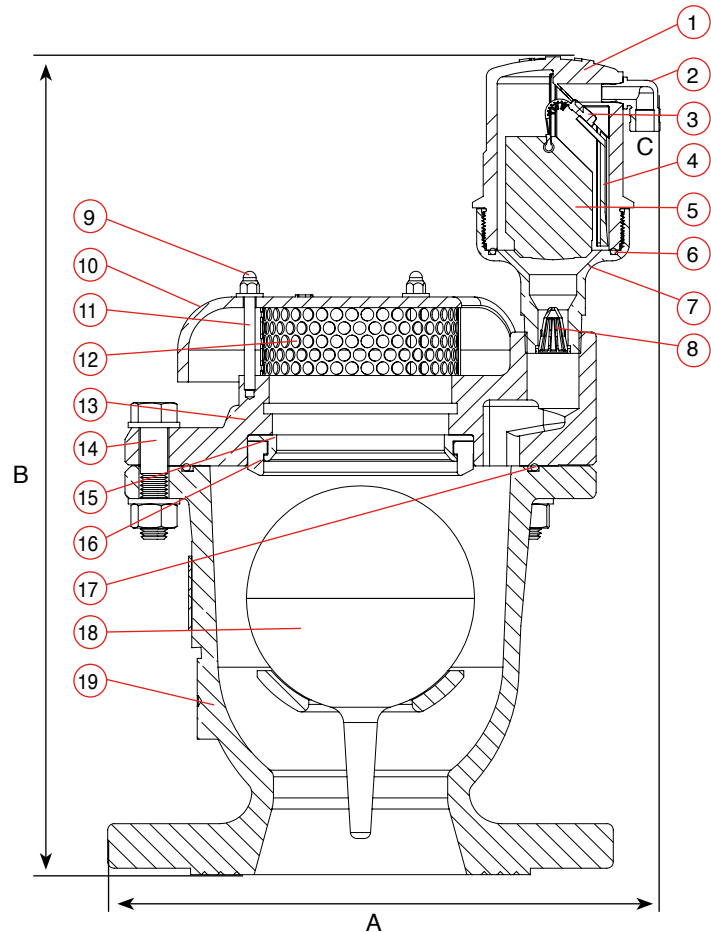
DIMENSIONS AND WEIGHTS

| Nominal Size | Dimensions mm | | Connection C | Weight Kg. | Orifice Area mm ² | |
|--------------|---------------|-----|-----------------|------------|------------------------------|-------|
| | A | B | | | A / V | Auto. |
| 3" (80mm) | 225 | 334 | 1/8" BSP Female | 11 | 1960 | 12 |
| 4" (100mm) | 257 | 385 | 1/8" BSP Female | 18 | 5030 | 12 |
| 6" (150mm) | 307 | 428 | 1/8" BSP Female | 25 | 7850 | 12 |
| 8" (200mm) | 375 | 588 | 1/8" BSP Female | 78 | 17662 | 12 |
| 10" (250mm) | 463 | 718 | 1/8" BSP Female | 150 | 31400 | 12 |
| 12" (300mm) | 586 | 846 | 1/8" BSP Female | 162 | 49087 | 12 |



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 | 3"-6" Ductile Iron / Cast Iron |
| | 8"-12" | Ductile Iron / Cast Iron / 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 |
| 15. | Orifice Seat | Bronze |
| 16. | Orifice Seal | E.P.D.M. |
| 17. | O-Ring | BUNA-N |
| 18. | Float | 3"-8", 12" Polycarbonate / Stainless Steel |
| | 10" | Stainless Steel |
| 19. | Body | Ductile Iron ASTM A-536 60-40-18 |



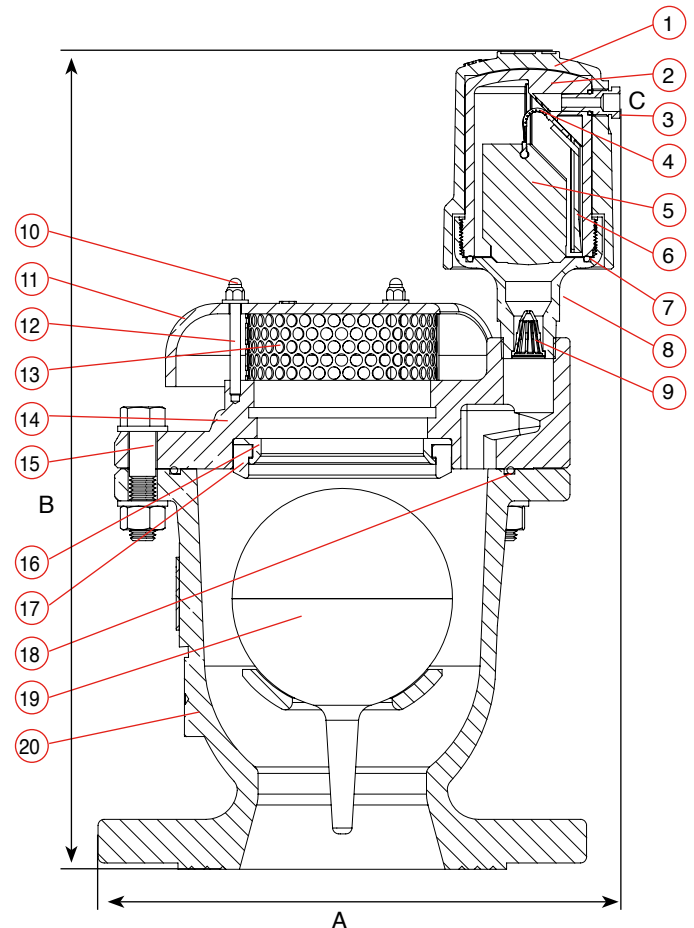
DIMENSIONS AND WEIGHTS

| Nominal Size | Dimensions mm | | Connection C | Weight Kg. | Orifice Area mm ² | | |
|--------------|---------------|-----|-----------------|------------|------------------------------|---------------|-------|
| | A | B | | | A / V | D-060-C Auto. | D-062 |
| 3" (80mm) | 219 | 344 | 1/8" BSP Female | 13.6 | 1960 | 12 | 9 |
| 4" (100mm) | 251 | 394 | 1/8" BSP Female | 21.6 | 5330 | 12 | 9 |
| 6" (150mm) | 302 | 436 | 1/8" BSP Female | 37 | 7850 | 12 | 9 |
| 8" (200mm) | 375 | 596 | 1/8" BSP Female | 79 | 17662 | 12 | 9 |
| 10" (250mm) | 463 | 724 | 1/8" BSP Female | 151.0 | 31400 | 12 | 9 |
| 12" (300mm) | 586 | 853 | 1/8" BSP Female | 163.0 | 49087 | 12 | 9 |



PARTS LIST AND SPECIFICATION

| No. Part | | Material |
|------------------------|----------------------|---|
| 1. Shell | | |
| | D-060-C M1 | Cast Iron ASTM A-48 CL35B |
| | D-060-C M1, D-062 M1 | 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 | 3"-6" | Ductile Iron / Cast Iron |
| | 8"-12" | Ductile Iron / Cast Iron / 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 |
| 16. Orifice Seat | | Bronze |
| 17. Orifice Seal | | E.P.D.M. |
| 18. O-Ring | | BUNA-N |
| 19. Float | 3"-8", 12" | Polycarbonate / Stainless Steel |
| | 10" | Stainless Steel |
| 20. Body | | Ductile Iron ASTM A-536 60-40-18 |





DIMENSIONS AND WEIGHTS

| Nominal Size | Dimensions mm | | Connection C | Weight Kg. | Orifice Area mm ² | |
|--------------|---------------|-----|-----------------|------------|------------------------------|-------|
| | A | B | | | A / V | Auto. |
| 3" (80mm) | 256 | 487 | 1/2" BSP Female | 12.6 | 1960 | 15 |
| 4" (100mm) | 288 | 535 | 1/2" BSP Female | 20.6 | 5030 | 15 |
| 6" (150mm) | 339 | 579 | 1/2" BSP Female | 36 | 7850 | 15 |
| 8" (200mm) | 382 | 775 | 1/2" BSP Female | 42.7 | 17662 | 15 |
| 10" (300mm) | 463 | 724 | 1/2" BSP Female | 151 | 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 | 3"-6" Ductile Iron / Cast Iron |
| | 8", 10" Ductile Iron / Cast Iron / Polyethylene |
| 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 | 3"-6" Polycarbonate / Stainless Steel |
| | 8", 10" Stainless Steel |
| 25. Body | Ductile Iron ASTM A-536 60-40-18 |

