# COMBINATION AIR VALVE FOR SEWAGE & WASTEWATER

## Model C80

BERMAD C80 is a high quality combination air valve for a variety of sewage and wastewater networks and operating conditions. It evacuates air during pipeline filling, allows efficient release of air and gas pockets from pressurized pipes, and enables the intake of large volumes of air in the event of network draining.
The elongated - body and lower float - is designed to reduce the contact between the fluid and the upper mechanism.
With its advanced aerodynamic design, double orifice and Surge Protection device (optional), this valve provides excellent protection against air and gas accumulation and vacuum formation with improved sealing under low pressure conditions.
C80 is designed to facilitate longer periods of operation without maintenance and it is easy to maintain.



C80 Down Outlet



C80-SP Side Outlet

### Features & Benefits

- Straight flow body: Higher than usual flow rates.
- Dynamic Sealing: Prevents leakage under low pressure conditions (0.8 psi; 0.05 bar).
- Elongated body design: Prevents solids from making contact with valve's operating parts.
- Two service ports: Upper and lower 1"; DN20 BSPT or NPT, enabling back flushing and drainage.
- Threaded Side outlet (3"; DN80) for connection of Surge Protection (SP) or Inflow prevention (IP) devices.
- Compact, simple and robust structure with fully corrosion resistant internal parts: Lower maintenance and increased life span.
- Certified to functional standards: SAI AS4883 (Australia), WSAA (Australia).
- Factory approval and Quality Control: Performance and specification tested and measured with specialized test bench, including vacuum pressure conditions.

### Typical Applications

- Pumping stations: Air relief and vacuum prevention.
- Non clean water pipelines: Protection against air and gas accumulation and vacuum formation at elevations, slope change points and at road/river crossings.
- Wastewater treatment plants: Air relief, protection against air and gas accumulation and vacuum formation.

### Additional Features & Accessories

- Surge Protection (code SP): the kinetic orifice is partially closed during the second stage of the air relief, preventing damage to the air valve and the system and increasing the operational time without maintenance.
- Assisted Closing (code AC): the kinetic orifice is set to be partially closed during air relief.
- Inflow Prevention (code IP): Prevents intake of atmospheric air in cases where this could lead to damaged pumps, required re-priming, or disruption of siphon.
- Drainage Valve (code Z): 1"; DN25 female threaded NPT or BSPT.
- Extension with downwards outlet, 3"; DN80 female threaded.

All images in this catalog are for illustration only

## Inlet and Outlet Connections

- Inlets: Flanged 3-4"; DN80-100
- Outlets: Sideways or down, female threaded 3"; DN80

## Operational Data

- Pressure Rating: ISO PN16, ISO PN25
- Minimum operating pressure: 0.05 bar
- Maximum operating pressure: 16 bar, 25 bar
- Media and operating temperature: 1-60°C

## Materials

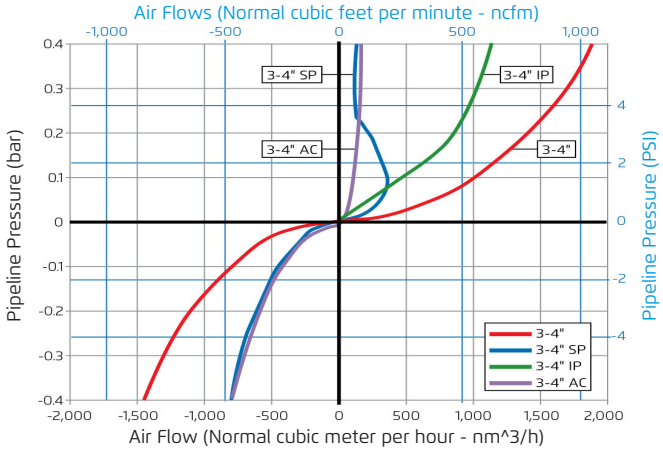
- Body: Ductile Iron
- Cover: Ductile Iron
- Coating: Fusion Bonded Epoxy
- Automatic Orifice: Stainless Steel
- Upper Float Assembly: Polypropylene, Glass-Reinforced Nylon
- Lower Float Assembly: Stainless Steel
- Float Rod: Stainless Steel 316
- Elastomers: NBR, Neoprene
- Plugs for service ports: Stainless Steel 316

## Orifice Specifications

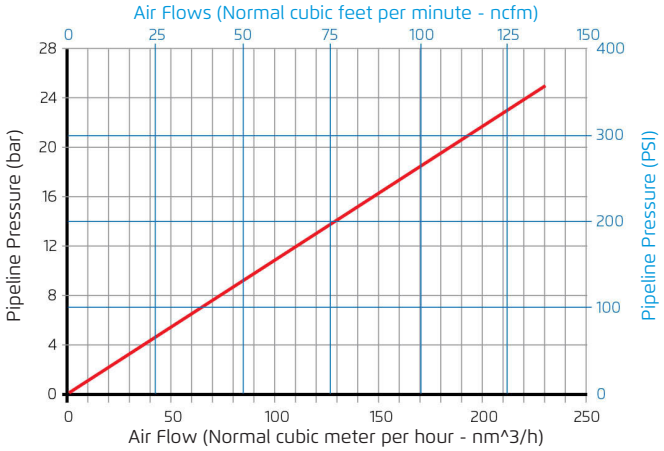
| Inlet Sizes | Automatic Orifice | Kinetic Orifice | | Surge Protection | | |
|---|---|---|---|---|---|---|
| | Area | Diameter | Area | Number of holes | Hole Diameter | Total Area |
| Inch; mm | Sq mm | mm | Sq mm | -- | mm | Sq mm |
| 3"-4"; DN80-100 | 18.5 | 80 | 5,027 | 5 | 6 | 141 |

## Air Flow Performance Charts

**Air Relief and Intake** (Pipeline Filling, Draining and Vacuum Conditions)




**Air Release** (Pressurized Operation)



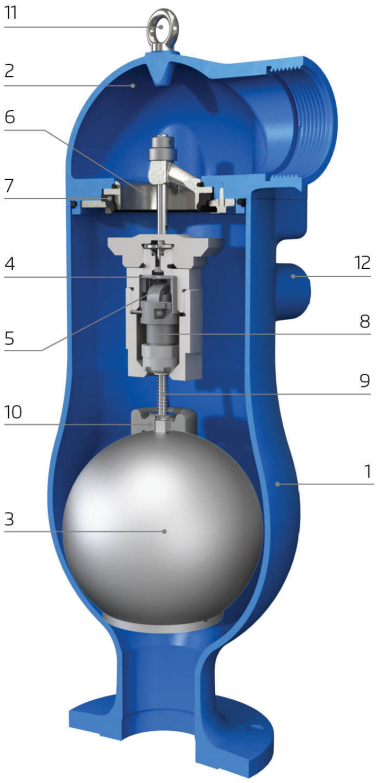

- For higher automatic air release capacity, Please consult with BERMAD.
- Air relief and intake charts are based on actual measurements, measured in Bermad Air Flow test bench, according to EN-1074/4 and AS4883 standard and refer to side outlet. Use Bermad Air software for optimized Sizing & Positioning of Air Valves.

## Data for C80 with Surge Protection Feature

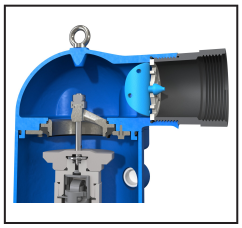
| Inlet Sizes | C80-SP Switching Value | C80-SP Air relief at 0.4 bar | C80-AC Air relief at 0.4 bar |
|---|---|---|---|
| | Side Outlet | Side Outlet | Side Outlet |
| Inch; mm | bar | $nm^3/h$ | $nm^3/h$ |
| 3"-4"; DN80-100 | 0.09 | 127 | 120 |

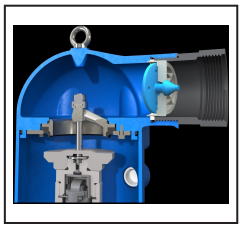
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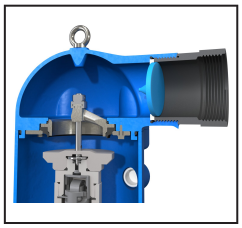
## Cutway



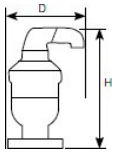

**[1]** Body
**[2]** Cover
**[3]** Float
**[4]** Auto Orifice
**[5]** Auto Orifice Seal
**[6]** Kinetic Orifice
**[7]** Kinetic Orifice Seal
**[8]** Upper Float Assembly
**[9]** Float Rod and Spring
**[10]** Shock Absorber
**[11]** Eye Bolt
**[12]** Upper Service Port


Surge Protection
(code SP)


Assited Closing
(code AC)


Inflow Prevention
(code IP)

## Dimensions & Weights








| Inlet Sizes | Connection | With 90 degree elbow (down outlet) | | | With SP / AC / IP device (side outlet) | | |
|---|---|---|---|---|---|---|---|
| | | Width (D) | Height (H) | Weight | Width (D) | Height (H) | Weight |
| in; mm | | mm | mm | Kg | mm | mm | Kg |
| 3"; DN80 | Flanged | 444 | 615 | 28.1 | 335 | 615 | 27.4 |
| 4"; DN100 | Flanged | 444 | 618 | 29.6 | 335 | 618 | 28.9 |

For a height including lifting eye add 37 mm


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