# CORVALVE

## AIR VALVES

#### **Double Chamber/Triple Function**

**Description:** Engineered for superior performance, our Double Chamber Triple Function Air Valives employ a unique 'Aerokinetic' design for rapid air discharge or intake during system operations. They seamlessly handle accumulated air, ensuring the float closes only after all air has exited the system and water fills the chamber. This innovation offers optimal system efficiency, safety, and extended longevity.



### **Application:**

Double Chamber Air Valves are designed to perform three functions:

- 1. Venting of air on the start-up of the system, while pipelines are filled.
- 2. Intake of air on shut-off of the system, while pipelines are drained.
- 3. Discharge of pressurized air pockets during the operation of the system.

#### **Features:**

- Efficiency-Driven Aerodynamic Float Design: The employment of an aerodynamic float design ensures the elimination of premature closure, enhancing overall efficiency.
- Full Bore & Reduced Bore: We cater to both full bore and reduced bore preferences, with availability contingent upon customer requests, thereby providing customization to align with unique industry requirements.
- Enhanced Safety with Optional Isolation Valves: Upon demand, we can equip our products with isolation valves, thereby enabling system separation for enhanced safety and maintenance convenience.
- Scalable Operation with Available Manifolds: In response to customer requirements, we provide manifolds to facilitate parallel installations, enhancing system flexibility and operational scalability.
- Empowering Inspection and Control with Testing Cocks: To ensure optimal inspection and control, we offer testing cocks as per customer's demand, thereby reinforcing our commitment to delivering high-quality and reliable products.
- Flexible Configuration: Threaded Versions for <DN65: For sizes less than DN65, threaded versions of our products are available upon request, thereby broadening our scope to cater to diverse industrial needs and specifications.

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### **AIR VALVES Double Chamber/Triple Function**

## Construction



PART NO.	PART									
1	Body									
2	Cover									
3	Large Orifice Float									
4	Cage									
5	Large Orifice									
6	Large Orifice Float O-Ring									
7	Cover O-Ring									
8	Washer									
9	Screw									
10	Small Orifice Float									
11	Small Orifice Gasket									
12	Small Orifice									
13	Pin									
14	Small Orifice Cover									
15	O-Ring									
16	Small Chamber Box									
17	Imbus Screw									
18	Washer									
19	Small Chamber Box O-Ring									





PART NO.	PART								
1	Body								
2	Cover								
3	Large Float								
4	Middle Float								
5	Top Float								
6	Int. Orifice								
7	Orifice Gasket								
8	Small Orifice								
9	Filter								
10	Filter Cover								
11	Washer								
12	Screw								
13	O-Ring								
14	Stem								
15	Nut								
16	Washer								
17	O-Ring								
18	O-Ring								
19	Bolt								
20	Orifice Cover								
21	Orifice Bracket								
22	Gasket								
23	Grooved Pin								
24	Orifice Small								
25	Side Chamber								



## **Material Specification**

Parts	Main Materials	Optional Materials					
Body		Carbon Steel Stainless Steel					
Cover	Ductile Iron						
Upper Cover		Nickle Aluminum Bronze					
Floats	Foamed Polypropylene (DN40-150)	SS 304					
	Polyethylene (DN200-500)	SS 316					
	(Full Material, Not Hollow Inside)	NAB					
Float Guide	PVC	Nylon (Polyamide)SS 304, SS 316					
Disc	Bronze	Brass, SS 304, SS 316, NAB					
Orifice	SS 304	Bronze, SS 316					
Seals	EPDM	NBR					
Fasteners	8:8 (Galv.)	SS 304, SS 316					









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Double Chamber/Triple Function

## **Benefits of Double Chamber Air Valves**

- Enhanced Flow Efficiency: Double chamber/triple function Air valves boost operational performance by ensuring optimum flow efficiency.
- **Superior Pressure Management:** These advanced valves excel in managing and stabilizing system pressure, contributing to a safer, more reliable operation.
- **Mitigation of Water Hammer Effect:** Their unique design efficiently mitigates the water hammer effect, substantially reducing potential damage and maintenance needs.
- Versatility in Application: Thanks to their triple function, these valves deliver versatility, fulfilling diverse air control requirements in varied industrial applications.
- **Improved System Longevity:** By efficiently managing air discharge, intake, and air release, these valves contribute to enhanced system longevity.
- **Reduced Energy Expenditure:** The efficiency of double chamber/triple function Air valves can lead to significant energy savings, fostering sustainable operations.

### Installation:

- 1. **Positioning the Valve:** Install the T-connected pipeline flange horizontally and the Air Valve vertically to the ground.
- 2. **Managing Load Forces:** Make sure load forces to the Valve from the pipeline don't exceed the EN 1074-2 standard.
- 3. Securing the Connection: Attach the Valve flange to the pipeline flange using bolts, nuts, and washers, ensuring equal fastening on opposing bolts.
- 4. Using Steel Reinforced Gaskets: Place these gaskets correctly between flanges and adhere to EN 1591 Standard for flange bolting.
- 5. Location of Air Valves: Install them close to the main pipeline and keep the T-connection length minimal.
- 6. Protecting the Valve: Shield the Valve from external factors such as construction work or coating.
- 7. Cleaning the Pipeline: Flush and clean the pipeline from all foreign particles before Valve installation.

### **Operating Principles:**

1. Keeping the Medium Clean: Ensure cleanliness as small air discharge orifices can clog.

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- 2. **Maintaining Cathodic Protection:** For steel pipeline applications, cathodic protection is vital to prevent Galvanic Corrosion.
- 3. **Inspecting the Valve:** Check for foreign particles and the condition of the sealing surfaces before installation.
- 4. **Re-coating On-site:** If needed, protect the sealing surfaces (gaskets, o-rings, stainless steel surfaces, etc.) during the process.

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AIR VALVES Double Chamber/Triple Function

#### **Durable and Lightweight Float Design:**

The floats within our Air Valves are designed with robustness to withstand substantial forces when water arrives, yet retain enough lightness to float on water. These full material floats, not hollow inside, guarantee resistance to cracking or deformation, even after years of operation. Their lightweight nature ensures superior sealing.

#### **Advanced Sealing Performance:**

Our Air Valves demonstrate superior float design and advanced sealing capabilities. Rigorously tested under both high and low-pressure scenarios, these valves provide a drip-tight seal even at 2mwc pressure, ensuring reliable performance in low-pressure networks.

#### **Double Chamber Air Valves for Burst Prevention:**

Designed to safeguard against pipeline bursts due to air intake/discharge failure during system start-up, shut-off, and operation, our Double Chamber Air Valves feature two floats in different chambers at a predetermined height. The main float, guided by a ribbed cage, moves with changes in water elevation. Its aerodynamic design ensures stability during air intake/discharge, preventing premature closure. It only closes the valve when the water level rises and opens it when the water level drops, enabling the intake of large volumes of air. The second, pin-attached float provides a rapid reaction, allowing for air release while the system is operational.

#### Notes:

- 1. Different flange drillings are available, including ISO, EN, ANSI, and others.
- 2. The standard operating temperature range is  $-10^{\circ}$ C to  $+80^{\circ}$ C.
- **3.** All RAL Colors are available.
- 4. Potable water certified coating is available.
- **5.** Both thermoset and thermoplastic coatings are available.









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## **AIR VALVES** Double Chamber/Triple Function



## **DIMENSIONS (mm)**

DN	40	50	60	65	80	100	125	150	200	250	300	350	400	500
Height	255	260	260	260	260	320	320	320	450	700	812	1065	1065	1455
Width (PN 10/16)	150	165	175	185	200	220	250	285	340	395/405	525	615	700	880
Width (PN 25/40)	150	165	175	185	200	235	270	300	360/375	425/450	525	615	700	880
Length	325	325	325	325	325	370	370	370	370	633	685	880	880	1060
Weight (PN 10/16)	17	17	19	20	21	31	32	34	64	181	197	422	840	1040
Weight (PN 25/40)	17	17	20	21	22	34	35	37	69	187	207	435	-	-













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