



# S-021

## PN 10



## Automatic Air Release Valve -Reclaimed and Non-Potable Water

### Description

The presence of air in a reclaimed and non-potable water system can reduce the effective cross sectional flow area, resulting in increased pressure loss and decreased flow.

Unwanted air may also cause water hammer and metering inaccuracies, while hastening corrosion.

The automatic air release valve discharges accumulated air from the system while it is under pressure.

### Applications

- Reclaimed water
- Raw water
- Effluent water
- Water with suspended solids
- Coolant water

### Operation

A.R.I. model S-021 is an automatic air release valve for reclaimed and non-potable water systems.

- As the fluid level rises and enters the valve, the float and the seal plug assembly also rise, closing the valve drip tight.
- The entrapped air, which is at system pressure, creates an air pocket between the liquid and the sealing mechanism. The conical shape of the valve body ensures complete separation of the liquid from the seal plug assembly.
- The spring-loaded connection of the float and sealing mechanism allows for minor increases and decreases in the system pressure without opening the sealing mechanism.
- As air and gas accumulate and displace the liquid in the valve body, the liquid level is lowered and the float loses buoyancy.
- As the float drops, the flexible rolling seal rolls away from the orifice opening. The accumulated air and gas is released through the open orifice.
- The liquid refills the valve and the float rises again, rolling back the flexible rolling seal against the orifice opening, which seals the orifice.
- The remaining air gap prevents the liquid from reaching the sealing mechanism and interfering with drip-tight sealing.

Note that automatic air release valves are specifically designed to release air as it accumulates at the high points of a pressurized, operating system. Because of their inherently small orifices, they are not recommended for vacuum protection or for venting large quantities of air or gas, although they will admit some air into the system under vacuum conditions.

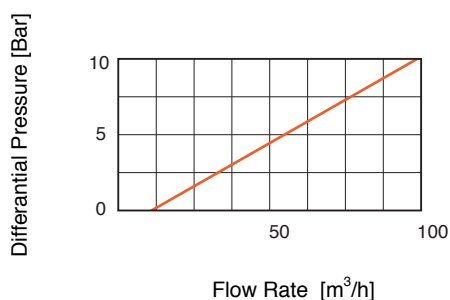
### Main Features

- Working pressure range: 0.2-10 bar Testing pressure: 16 bar
- Working Temperature: 60<sup>o</sup> C.
- Maximum short-term temperature: 90<sup>o</sup> C.
- Body made of composite plastic material, resistant to corrosion.
- Internal metal parts are made of corrosion-resistant stainless steel. Floats are made of composite materials.
- Flexible rolling seal provides smooth positive opening, closing, and leak-free sealing over a wide range of pressure differentials.
- 1/8" threaded discharge outlet enables removal of excess fluids.
- Drainage tap with ball valve is provided.
- The valve's unique design prevents any contact between the liquid and the sealing mechanism by creating an air gap at the top of the valve. This air gap is guaranteed even under extreme conditions.
- Spring-loaded float and seal plug connection assures that vibrations of the lower float will not unseat the air release orifice of the air valve
- Funnel-shaped lower body automatically drains the liquid into the system, allowing valve internals to remain clean and unobstructed.

### Valve Selection

- These valves are available with 1", 2" BSPT / NPT male threads.
- Additional one-way out check valve attachment allows air discharge, not allowing air intake.

## AUTOMATIC AIR DISCHARGE



## DIMENSIONS AND WEIGHTS

Model	Dimensions mm			Weight Kg.	Orifice Area mm <sup>2</sup>
	A	B	C		
1" 2"	216	324	<sup>3</sup> / <sub>8</sub> " BSP	1.78	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.	Body	Reinforced Nylon
8.	Float Stem	Stainless Steel SAE 316
9.	Clamp	Reinforced Nylon
10.	O-Ring	BUNA-N
11.	Bolt & Nut	Stainless Steel SAE 316
12.	Float	Foamed Polypropylene
13.	Base	Reinforced Nylon
14.	Ball Valve	Brass

