## AUTOMATIC AIR RELEASE VALVE

The trifunctional air release valve are based on the kinetic concept of air removal in main water conduction systems.
The patented construction design is single chamber unlike other conventional models.
The same suction cup, depending on the assembly of the internal float block can perform various functions.

## Operation

## 1. AIR CIRCulation

During the filling of the main tube, the inlet flow of air and water must be released. The moving block* remains at the bottom and the air, passing through the circular guide inside the body, circulates through the main orifice at atmospheric pressure. When water enters the suction cup, the float rises and pushes the upper disc up against the seat of the main orifice, closing it tightly. The same pushing force causes the nozzle orifice (threaded on the upper disc) to close.
2. AIR BLOW

During operation, a pocket of air accumulates in the upper part of the suction cup. Gradually it is compressed and its pressure becomes equal to that of water and its volume increases, pushing the water down. According to Archimedes' principle, the float cannot be held by the buoyancy of the water and falls, thus freeing the nozzle orifice and helping to release the air pocket. When the air escapes, the water level rises, moving the float upwards and thus closing the nozzle orifice.


## 3. AIR INLET

When emptying or rupturing the main pipe, it is necessary to let out both air and water to avoid vacuum conditions. The movable block remains at the bottom of the suction cup in the absence of water, allowing air to enter through the main orifice.
*The mobile block is the assembly formed by the cylindrical polypropylene float, the upper disc and the retaining nozzle (see parts and materials).


Air circulation


Air vent


Air intake

## hinirnconta <br> WHEN WATER COUNTS

## Technical specifications

$\checkmark$-Screwed cover; easy on-site maintenance and spring replacement.
$\checkmark$ - Compact and resistant to corrosion; construction in GGG - 40 ductile cast iron with internal and external EPOXI powder coating, with a single chamber.
$\checkmark$ - Body with solid internal guides; they allow a high precision in the sliding of the float in the sliding of the float and vertical thrust while facilitating air circulation.

## Hydraulic characteristics <br> Hydraulic characteristics

## AIR

DISCHARGE
DURING PIPE FILLING

$\checkmark$ - Cylindrical float made of compact and finely machined polypropylene; avoids high sliding precision and prevents "venting" and "dynamic closing" phenomena during the air inlet and outlet phases.
$\checkmark$-PN16.
$\checkmark$ - Versatility of functions; depending on the mounting of the mobile float assembly, the same suction cup can perform up to 4 different functions.
$\checkmark$ - Tap for Purge Valve; control chamber check and liquid drainage.

AIR INLET DURING
PIPELINE DRAINAGE


## Installation instructions

Before installation, care must be taken to clean the ducts to prevent foreign particles such as stones or construction material from damaging the release valves.

They must be mounted vertically and on a tee with an inlet to the suction cup of at least half the DN of the main pipe.

The installation of a gate valve between the tee and the suction cup is recommended for sectioning the line during maintenance operations.

In case of installation in underground manholes, ventilation pipes of a DN equal to or larger than the suction cup should be installed.

A drainage area must be provided in the pit at the bottom of the main pipe in order to prevent flooding.

The suction cup should never be installed above the main line to prevent back drafting due to the vacuum filling the main line without an accumulation point to be pushed out when the pump starts. It is recommended that the suction cup be placed as high as possible in relation to the main line.

## Dimensions

DN
A
B
C
PESO
CONEXIONS

| mm | in | mm |  |  | kg |  |
| :---: | :--- | :--- | :--- | :--- | :--- | :--- |
| 25 | $1^{\prime \prime}$ | 113 | 205 | CH 45 | 3,7 | Thread |
| 50 | $2 \prime$ | 142 | 260 | CH 45 | 6,4 | Thread |



## Disassembly




| № | DESCRIPTION | MATERIAL |
| :---: | :---: | :---: |
| 1 | Exagonal bolt | Stainless steel |
| 2 | Hexagonal bolt | Stainless steel |
| 3 | Washer | Stainless steel |
| 4 | Suction cup cover | Cast iron GGG-40 |
| 5 | Lower cover | Bronze |
| 6 | O-ring | Nitrile |
| 7 | O-ring | Nitrile |
| 8 | Spacer shaft | Stainless steel |
| 9 | Spacer shaft puga | Stainless steel |
| 10 | Sealing washer | Polypropylene |
| 11 | Upper guide | Stainless steel ac. |
| 12 | Hexagonal bolt | Stainless steel ac. |
| 13 | Lock nut | Stainless steel ac. |
| 14 | Nut | Stainless steel ac. |
| 15 | Float lever | Stainless steel ac. |
| 16 | Washer | Stainless steel |
| 17 | Dancer | NBR |
| 18 | Float guide | Stainless steel ac. |
| 19 | Float lever shaft | Stainless steel |
| 20 | Float | Polypropylene |
| 21 | Lower guide | Stainless steel |
| 22 | Allen screw | Stainless steel |
| 23 | Suction cup body | Cast iron GGG-40 |
| 24 | Hexagonal plug | Brass |

