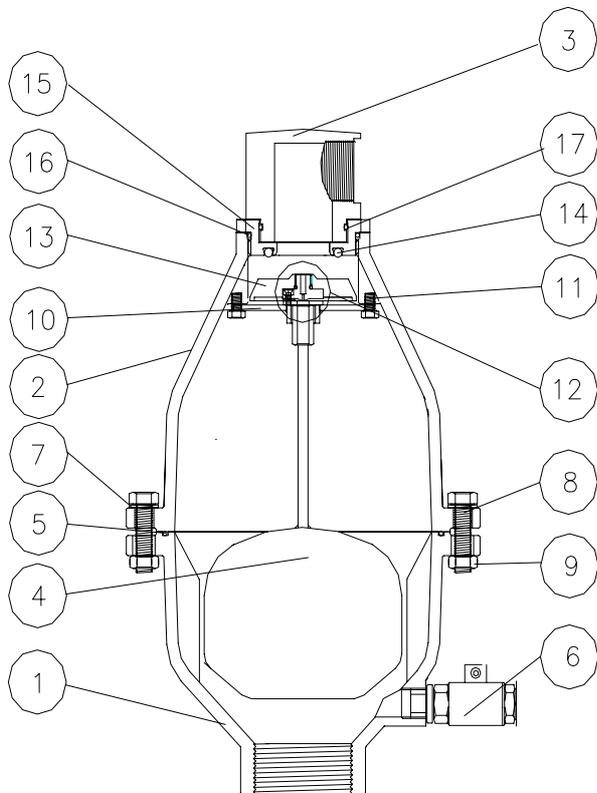


## Maintenance, set up and installation instructions

### Air valve for sewage series SCF-1”



Item	DESCRIPTION	MATERIAL
1	Lower body	GS 400-15
2	Upper body	GS 400-15
3	Cap	PVC
4	Float subset	S.S. AISI 316
5	O-Ring (Body)	NBR
6	Ball valve 3/8" +niple	S.S. AISI 316
7	Washer	S.S. AISI 304
8	Bolts M8	S.S. AISI 304
9	Nuts	S.S. AISI 304
10	Diffuser	S.S. AISI 304
11	Bolts M6	S.S. AISI 304
12	Nozzle subset	S.S. AISI 316/Silicone
13	Main orifice obturator	Polypropilene
14	O-Ring (Seat)	NBR
15	Seat	S.S. AISI 304
16	O-Ring	NBR
17	O-Ring	NBR
Spare parts 5-12-13-14-16-17		

This three functions air valve will guarantee the proper working of the sewage lines under pressure allowing the inflow and outflow of large quantities of air, during pipeline draining and filling, other than air release during working conditions. The air valve design that allowed us to achieve such a result is composed of:

- a lower body, with steep side walls to avoid the deposit of grease and other material, which has 4 ribs obtained by moulding to drive the float in stainless steel
- the upper body where the main orifice sealing seat takes place along with a sleeve in stainless steel, threaded into the upper disk meant to protect the releasing device from jets and spurts
- the internal mobile block composed of the float, the driving rod and the sleeve welded together.
- the air releasing device including a nozzle, which receives the upper flat threaded to it, and the gasket holder.
- The threaded evacuation bend in PVC.

This design makes sure the level of liquid inside the air valve will remain where the float is. As a matter of facts the latter, going up, pushes the air releasing device upwards closing the nozzle and the main orifice and creating an air pocket, with a pressure equal to the one of water, which prevents the liquid itself from further increase

#### Three functions principle

- 1) Outflow of large quantities(\*) of air during pipe filling
- 2) Air release during working conditions
- 3) Inflow of large quantities of air during pipe draining

(\*) it is very important to proceed slowly at the final stage of filling because the abrupt stop of water velocity will cause high overpressures that may damage the entire system.

#### Positioning

-on high points to release the air pockets and reduce the head losses, allowing at the same time faster draining and filling operations.

-on every changes in slope due to the different outflow rates of water, in case of draining or bursting, that may cause vacuum conditions

-basically every 500/600mt to prevent water hammer phenomena caused by uncontrolled movements of air pockets along the line.

-after every sectioning device to avoid vacuum as a result of rapid closures.

#### Set up and installation

Before installing the air valve it is necessary make sure that all the pipes of the system are properly cleaned to avoid that rubbles or debris could damage its internal part.

Make sure the pit is large enough and easy to access to carry out inspection procedures, it will be provided with a drain for maintenance. The air valve must be placed in a vertical position on a Te piece and separated by the main pipe by a gate valve.

The pipe must be filled with a max velocity of 0.6 m/sec, in particular during the final phase we have to pay attention slowing down the incoming water because its abrupt stop could cause high overpressures likely to damage the entire hydraulic system

#### Maintenance

The air valve design is quite simple and sturdy and for that it doesn't need a particular maintenance, we strongly recommend though to check it regularly at least twice per year. The valve is equipped with a drainage cock (6) to relief the pressure during maintenance. It will indicate us the perfect functioning of the product allowing the exit of water when opened, in case of air coming out there will be some problems that need to be solved. To do so it is mandatory to close the gate valve positioned below, and relief the pressure through the drainage cock. Now

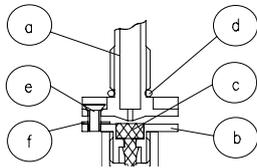
proceed operating on the internal components, easy to be replaced from above, as follows:

- Loosen the nuts(9) and remove washers (7) and bolts(8), take out the upper body(2);
- Unscrew the sealing seat (15) and make sure the side o-ring (14)-(16) are not worn;
- Unscrew the obturator (13) from the nozzle subset;
- Unscrew the nozzle subset from the float assembly ( float, rod,sleeve);
- Clean the float and the rod carefully, thanks to a small piece of sandpaper;
- Clean the internal surface of the sleeve (10) trying to remove grease and dirt without drawing on it.

**To reassemble the product just follows the steps backwards , do never grease or oil the surfaces and make sure the sleeve is sliding inside the diffuser (10) without any impediment**

Now work on the nozzle-gasket holder subset as follows:

**How to service the “Nozzle- gasket holder subset”**



Using the above picture proceed as follows:

- Loosen the three 3 M3 screws (e);
- Take out and clean the washers(f) underneath;

- Clean the nozzle (a), if necessary using sandpaper, along with the O-ring(d) and make sure the latter is not squeezed or ruined;
- Check the O-ring (c) status replacing it if necessary .

If that is the case unscrew the gasket holder(b) by means of a 13 wrench from the rod (part of the float assembly 4) and take firmly the gasket out of its seat. Then replace it and pay attention to the position of its swallowtailed through the orifice, then set it tight.

To reassemble the subset proceed as follows:

- Screw the gasket holder (b), with the gasket, onto the bearing nut adding a drop of Loctite 50 which you will put, just a little bit, on the M3 threaded holes, then clean the surface that will have to hold the washers;

- Lay the three washers in ss on the corresponding holes of the gasket holder;

Now position the nozzle with its O-ring (d) to make its holes match with the ones on the gasket holder;

- Set the three M3 screws tight so then their low point doesn't stick out of the subset bottom and their heads don't stick out of the nozzle when this is all flatten on the gasket holder. These steps have to be followed carefully and paying a particular attention to the Loctite, making sure it doesn't prevent the movement of the nozzle. Try once or twice to lift the nozzle manually and make sure you don't sense any friction or impediment.

Should you need any spare parts please refer to the legend

**Working conditions**

Maximum temperature	: 70°C
Maximum pressure	: 16 bar
Minimum pressure	: 0.5 bar