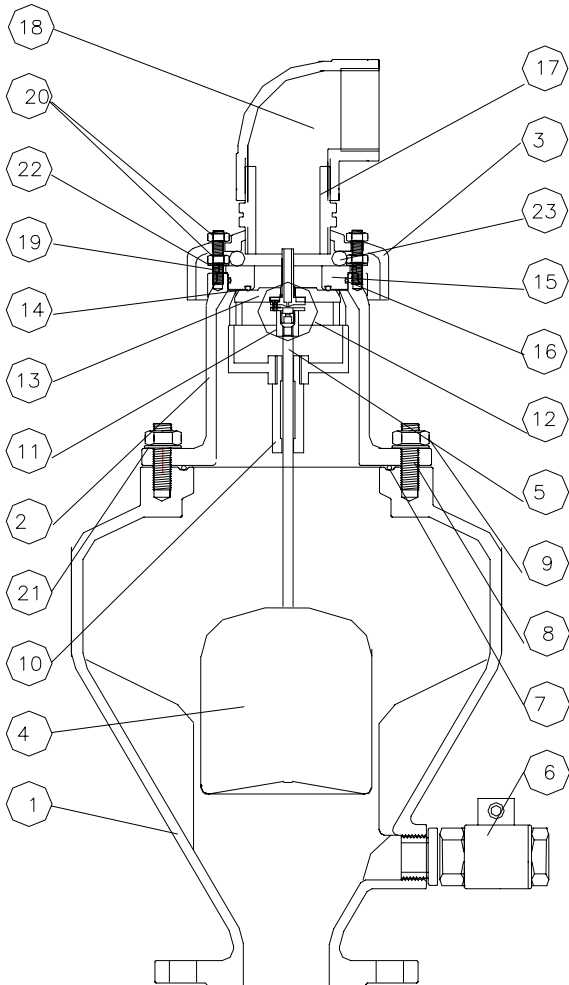


Maintenance, set up and installation instructions

Air valve for sewage series SCF



POS.	COMPONENT	MATERIAL
1	Lower body	GS 400-12
2	Upper body	GS 400-12
3	Cover	GS 400-12
4	Float	S. steel AISI 316
5	Main shaft	S. steel AISI 316
6	Ball cock valve 1"	OT 58
7	Lower body O-Ring	NBR
8	Stud	S. steel A2
9	Nuts	S. steel A2
10	Driving sleeve	S. steel AISI 316
11	Bearing nut	S. steel AISI 316
12	Nozzle/gasket holder subset	S. steel AISI 316
13	Main orifice obturator	Polypropylene
14	O-Ring	NBR
15	Sealing seat	Bronze/OT58
16	O-Ring	NBR
17	Nipple MM (only for 50T and 100R)	Polypropylene
18	Bend FF (only for 50T and 100R)	Polypropylene
19	Studs	S. steel A2
20	Nuts	S. steel A2
21	Washers	S. steel A2
22	Washers	S. steel A2
23	Gasket	NBR

Spare parts list
7-10-12-13-14-16

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 large 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 delrin, threaded into the upper receptacle meant to protect the releasing device from jets and spurts
- the internal mobile block composed of the float and the driving rod that are welded together.
- the connecting nut between driving rod and basket holder
- the air releasing device including a nozzle, which receives the upper flat threaded to it, and the basket holder.
- The cover in ductile cast iron .

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. All our air valves are equipped with a drainage cock (6) to relief the pressure during maintenance. Operated by a screwdriver, it will

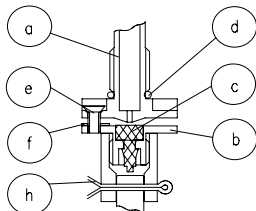
indicate us the perfect functioning of the product allowing the exit of water when opened, in case of air coming out there will be some problems that need to be solved. To do so it is mandatory to close the gate valve positioned below, and relief the pressure through the drainage cock. Now proceed operating on the internal components, easy to be replaced from above, as follows:

- Loosen the nuts(20) of the cover, take out the cover(3), now loosen the other nuts underneath(20) e pull out the washers (22);
 - Extract the sealing seat (15) and make sure the side o-ring (16) and the one (14) on the main orifice are not worn;
 - Loosen the nuts(9) and pull out the washers (21);
 - Lift carefully the upper body, with the float on it, and check for the o-ring (7) status, it doesn't have to be squeezed or ruined
 - Extract the upper flat(13) from above, set the main rod tight with a pincer just above the welding point (be careful not to draw on its sliding surface), and unscrew it from the nozzle cleaning it up
 - Always using a pincer pull out the pin (h), which is connecting the bearing nut (11) to the main rod of the float, and separate the subset nozzle-gasket holder (12)
 - For the DN 150-200 version the bearing nut is directly screwed on the rod;
 - 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.
- If the operation turned out as being difficult use a drill with a 8.5 mm bit which will clean it perfectly

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

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

How to service the “Nozzle- gasket holder subset” DN 50-80-100



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 bearing nut (11) 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.

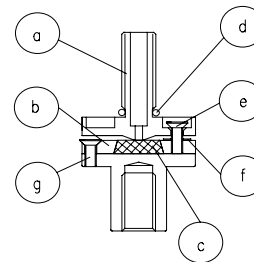
To reassemble the subset proceed as follows:

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

ow to service the “Nozzle- gasket holder subset” DN 150-200



Using the above picture proceed as follows:

- Loosen the 3 screws M4 (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 us the case, loosen the three screws that connect the bearing nut (11) to the gasket holder (b) , then replace it paying attention to position it correctly.

To reassemble the subset proceed as follows:

- put the gasket holder(b), with the o-ring, on the bearing nut. To do so make sure that the three threaded holes of the latter correspond to the flared ones of the gasket holder;
- Set tight the three screws (g) using a drop of Loctite 50;
- In the same way put a little bit of Loctite 50 on the M4 threaded holes, then wipe the surface which will have to receive the washers;
- Position the three washers in ss on the corresponding holes of the gasket holder;

Now place the nozzle, with its o-ring(d) to make its holes match the ones of the gasket holder.

- Set the three M4 screws tight so then they will lean on the bearing nut and their heads doesn't stick out of the nozze, 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	: 40 bar
Minimum pressure	: 0.5 bar