

Wastewater combination air valve

Mod. SWV TH 3S

The SWV TH 3S air valve guarantees the proper operation of sewage lines allowing the entrance of a large quantity of air in case of pipe burst or draining, the release of air pockets during working conditions and the discharge during pipe filling.



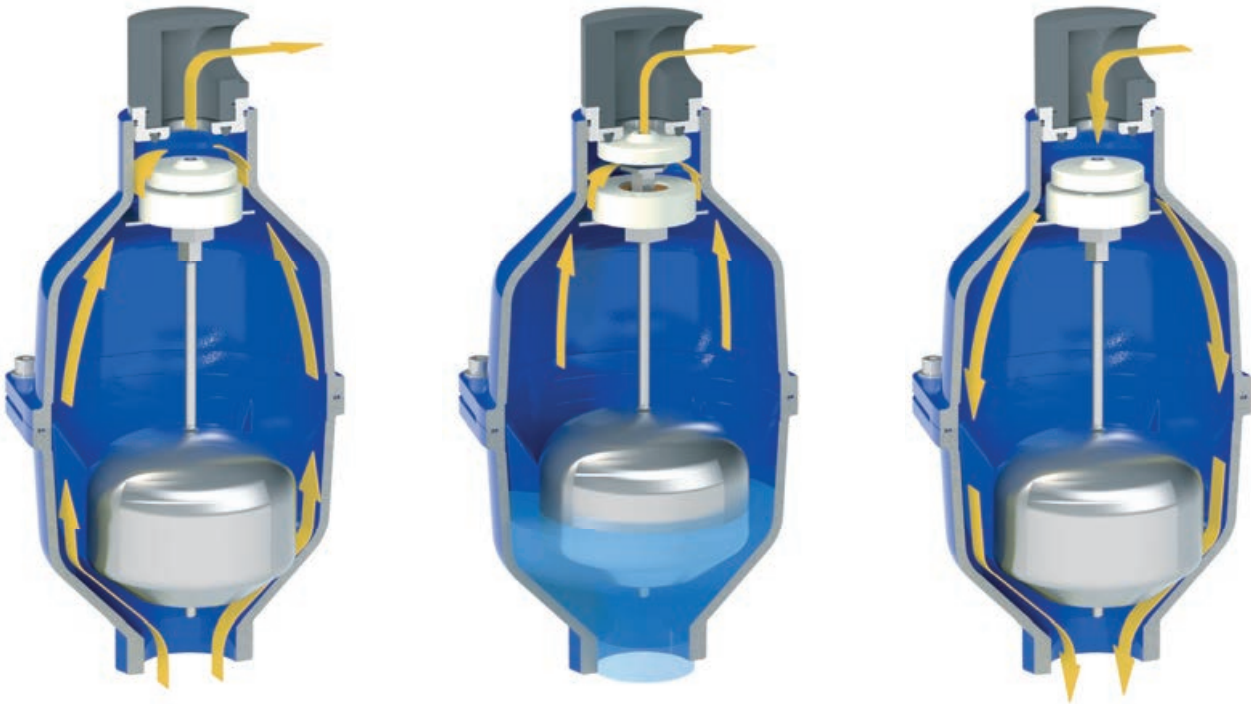
Technical features and benefits

- Lower body designed with strongly sloped funnel shaped walls to avoid deposit of grease or other material, it contains four ribs to guide the stainless steel float.
- Upper body containing the air release device which is protected by a stainless steel deflector against spurts caused by rapid filling.
- Mobile block, including a large AISI 316 stainless steel float, placed on the lower body and connected through a stainless steel rod to the air release mechanism.
- Compact and light, the SWV TH 3S features an innovative technology making it suitable even to the most demanding environments.
- Drainage valve for chamber control and draining.
- Maintenance can be easily performed from the top without removing the air valve from the pipe.
- Evacuation bend suitable for flooded environments with 1" elbow outlet.

Applications

- Sewage main transmission lines.
- Treatment plants.
- Irrigation systems in presence of solids/debris in suspension.
- Whenever the technology of air valves for treated water can't be used for the risk of clogging and damages to the internal components.

Operating principle



Discharge of large volumes of air

During the pipe filling it is necessary to discharge air as liquid flows in. The SWV TH 3S, thanks to an aerodynamic body and deflector, will make sure to avoid premature closures of the mobile block during this phase.

Air release during working conditions

During operation the air produced by the pipeline is accumulated in the upper part. Little by little it is compressed and its volume increases, pushing the liquid level downwards and allowing the air release through the nozzle.

Entrance of large volumes of air

During pipeline draining, or pipe bursts, it is necessary to bring in as much air as the quantity of outflowing liquid. This is to avoid negative pressure and serious damages to the pipeline and the entire system.

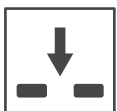
Optional



- **Vacuum breaker version Mod. SWV TH 2S**, to allow the entrance and discharge of large volumes of air only. This model is normally recommended on changes in slope ascending, long ascending segments, and wherever the air release won't be required.



- **Version for air discharge only SWV TH EO series** (on request), available both for SWV TH 3S and SWV TH 2S models. The most important application of EO is to allow the air valve installation in those locations of the system where HGL may drop below the pipe profile, and to any other node where for project requirements air entrance must be avoided.

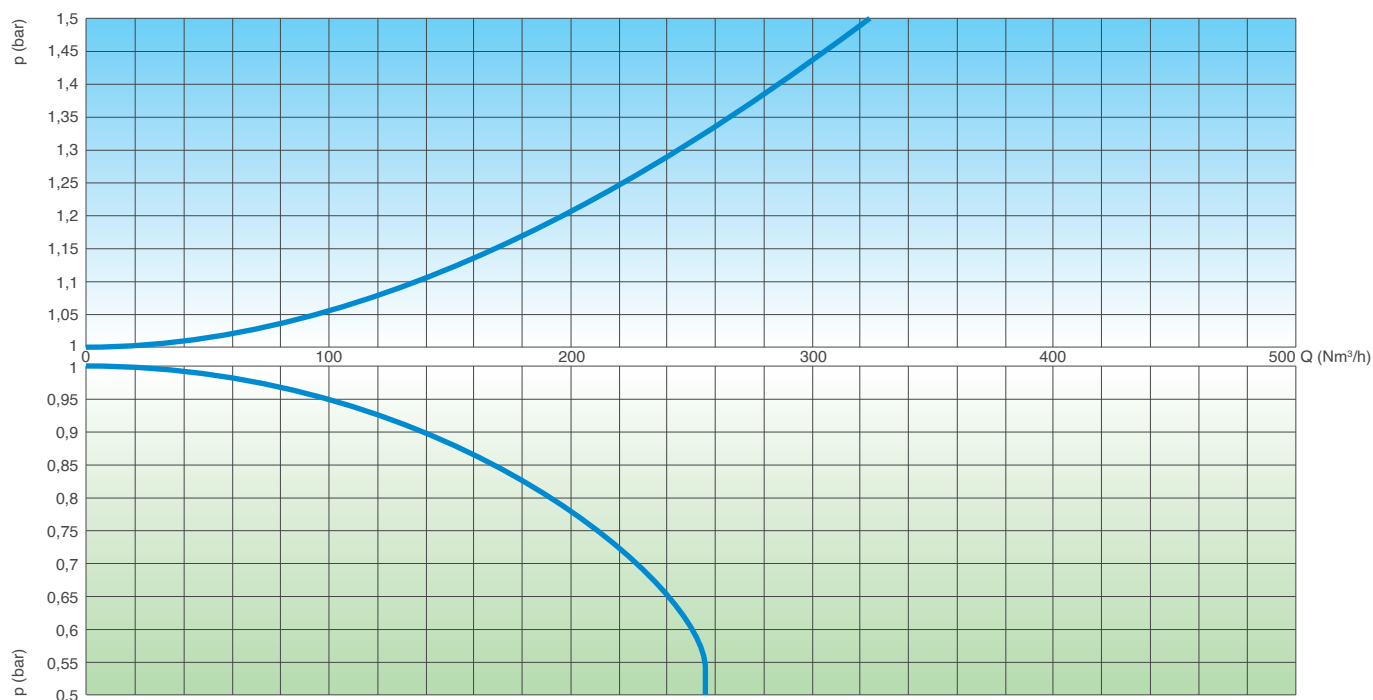


- **Version for air entrance only SWV TH 3S IO series**, available for vacuum breaker model only. The most important application of IO is to allow the air valve installation in those locations of the system where, for project requirements, air discharge and release must be avoided.

Technical data

Air flow performance charts

AIR DISCHARGE DURING PIPE FILLING



AIR ENTRANCE DURING PIPE DRAINING

The air flow charts were created in Kg/s from laboratory tests and numerical analysis, then converted in Nm³/h using a safety factor.

Working conditions

Water and waste water max. 60°C.

Maximum pressure 16 bar.

Minimum pressure 0,2 bar. Lower on request.

Standard

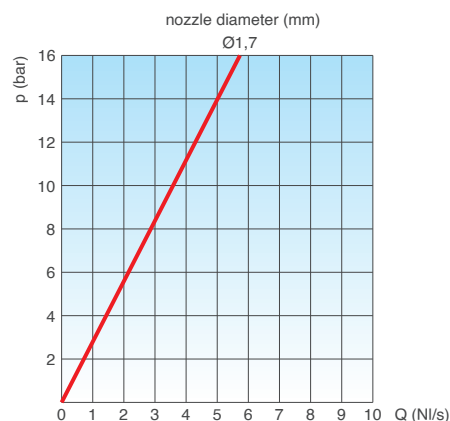
Certified and tested in compliance with EN-1074/4.

Manufactured with 2" inlet; supplied on request with flanges according to EN 1092/2 / ANSI.

Epoxy painting applied through fluidized bed technology blue RAL 5005.

Changes on the flanges and painting details available on request.

AIR RELEASE DURING WORKING CONDITIONS



Nozzle choice

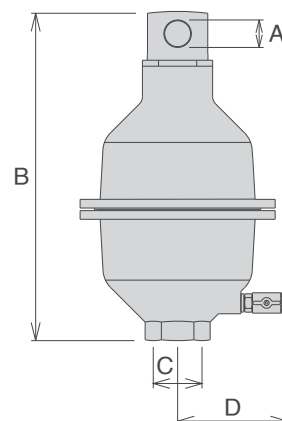
Nozzle diameter in mm according to the size of the air valve and the PN.

PN 10	PN 16
1,7	1,7

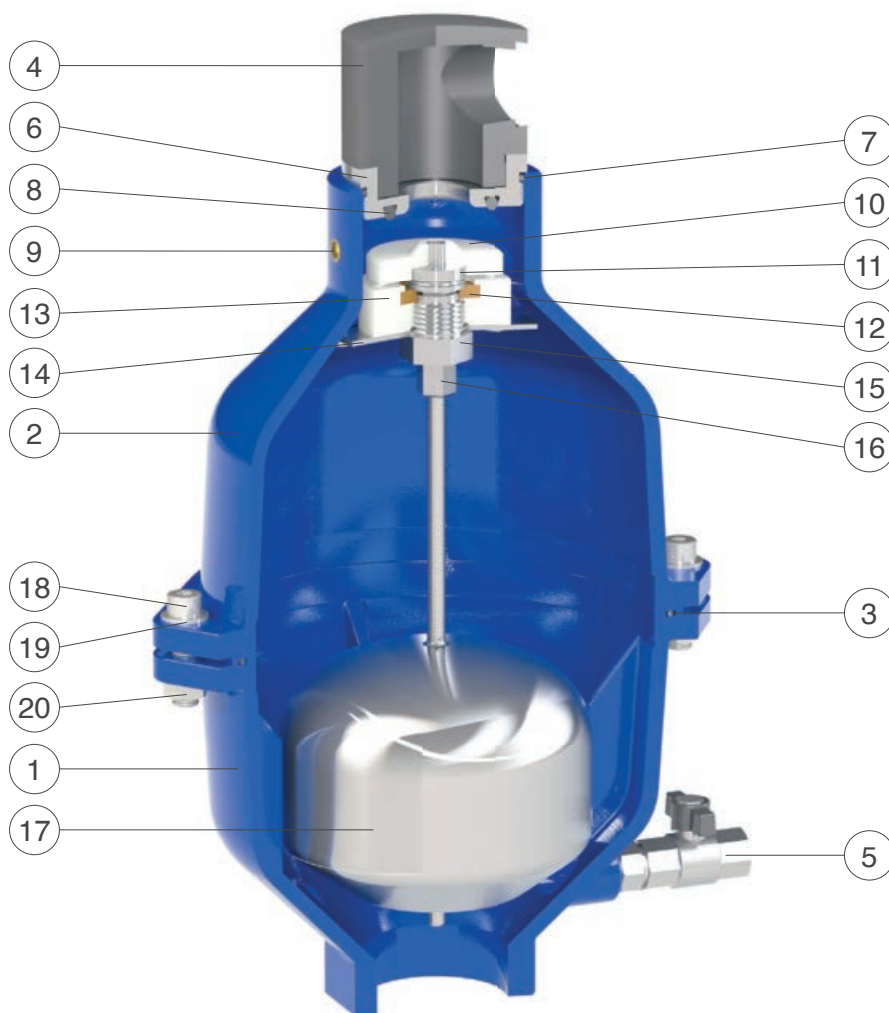
Weights and dimensions

C inch	A inch	B mm	D mm	Main orifice mm ²	Nozzle orifice mm ²	Weight Kg
2"	1"	380	137	490	2,3	10,5

All values are approximate, consult PF service for more details.



Technical details



N.	Component	Standard material	Optional
1	Lower body	ductile cast iron GJS 450-10	
2	Upper body	ductile cast iron GJS 450-10	
3	O-ring	NBR	EPDM/Viton/silicone
4	Cap	PVC	
5	Drain valve	stainless steel AISI 316	
6	Seat	stainless steel AISI 316	
7	O-ring	NBR	EPDM/Viton/silicone
8	Seat gasket	NBR	EPDM/Viton/silicone
9	Plug	brass	stainless steel AISI 316
10	Obturator	polypropylene	
11	Nozzle subset	stainless steel AISI 316	
12	Plane gasket	NBR	
13	Lower gasket holder	polypropylene	
14	Deflector	stainless steel AISI 316	
15	Guiding nut	stainless steel AISI 316	
16	Upper gasket holder	stainless steel AISI 316	
17	Float	stainless steel AISI 316	
18	Screws	stainless steel AISI 304	stainless steel AISI 316
19	Washers	stainless steel AISI 304	stainless steel AISI 316
20	Nuts	stainless steel AISI 304	stainless steel AISI 316

The list of materials and components is subject to changes without notice.