



Anti water hammer combination air valve for sewage Mod. SCF - AS

The SCF-AS guarantees the proper operation of pressurized sewage systems allowing the release of air pockets in working conditions, the entrance of large quantities of air in case of pipe bursting or draining operations and a controlled air outflow speed to minimize the risk of water hammer events.



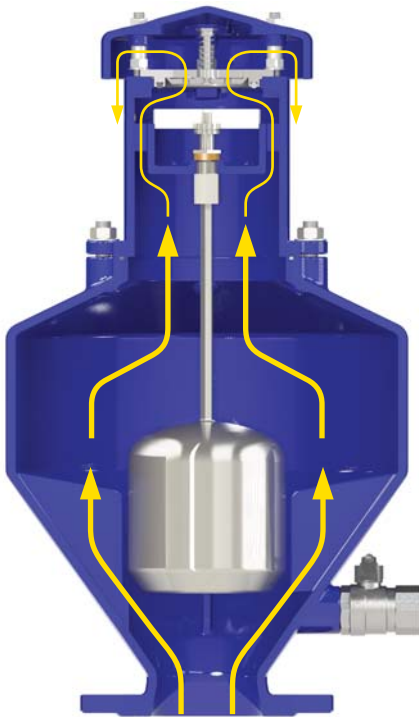
Technical features and benefits

- Large lower body designed with strongly sloped high walls to avoid deposit of grease and/or other material, and containing four ribs obtained by casting to guide the stainless steel float.
- Upper body containing an air release device protection cup against projections during rapid filling phases.
- 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 system.
- Anti Shock automatism composed of a metallic disk with 2 or more adjustable orifices, a guide bar and a counteracting spring in stainless steel.
- Drainage valve for chamber control and draining.
- Nozzle and gasket holder (pat. pending) wear resistant thanks to gasket compression control
- Maintenance can be easily performed from the top without removing the air valve from the pipe.

Applications

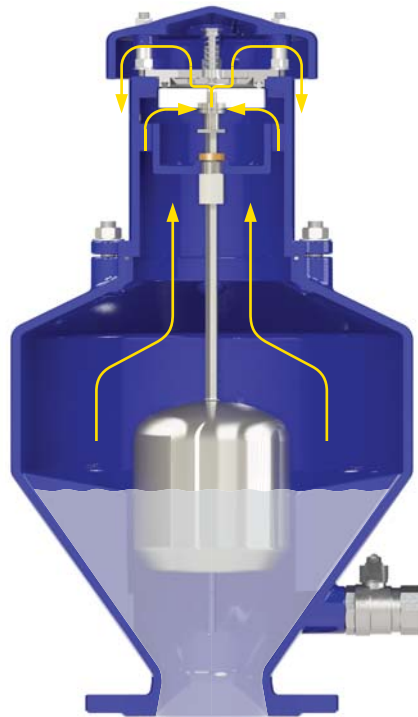
- To protect pumping stations of sewage main transmission lines, exposed to water hammer in case of pump failure.
- Treatment plants.
- Irrigation systems in presence of solids/debris in suspension.
- Whenever the technology of air valves for treated water can't be used and a protection against water hammer is needed.

Operating principle



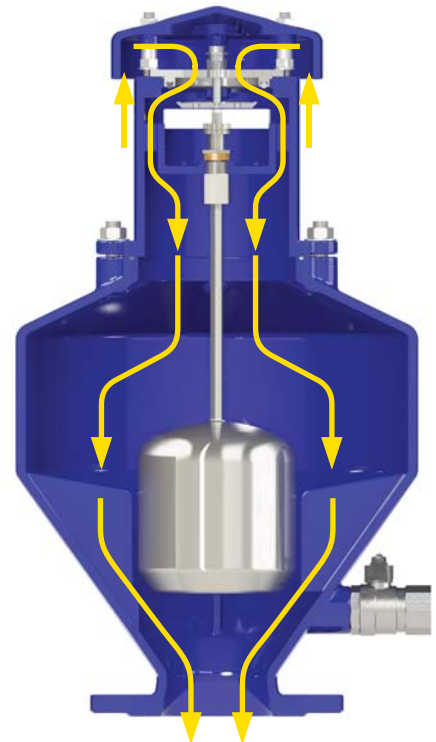
Controlled air discharge

During the pipe filling it is necessary to avoid rapid closures, responsible of water hammer effects. The SCF- AS, thanks to the anti-shock feature, will control the air outflow; the risk of overpressure will therefore be minimized.



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 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 water. This is to avoid negative pressure and serious damages of the pipeline and the entire system.

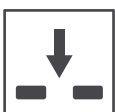
Optional



■ **Vacuum breaker version Mod. SCA**, to allow the entrance of large volumes of air only with the anti water hammer feature. This model is normally recommended near the pumps and in changes in slope ascending, long ascending segments exposed to transients events. More in general wherever air release won't be required still providing some protection against water hammer.



■ **Version for submerged applications, SUB series**, available both for SCF AS and SCA Models, with elbow for air conveyance. The design sprang from the necessity of having an air valve performing also in case of flood, without the risk of contaminated water entering the pipeline. Another benefit of SUB is to avoid the spray effect, conveying spurts coming from the rapid closure of the air valve

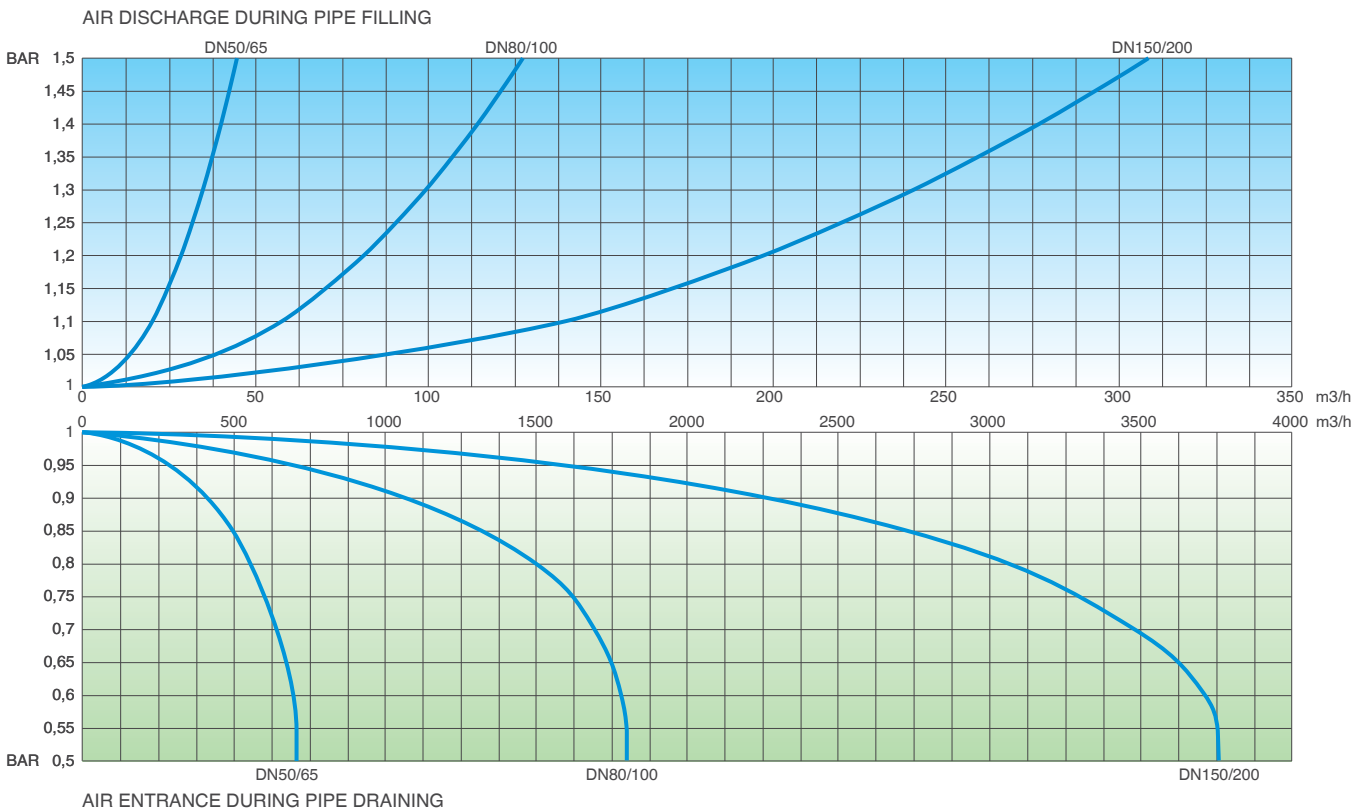


■ **Version for air entrance only SCF IO series**, available for vacuum breaker model only. The most important application of IO is to allow the air valve installation in those locations of the system where, for project requirements, air discharge and release must be avoided.



■ The counteracting spring force as well as the sonic nozzles, both responsible of the proper operation of the AS device, can be modified on request according to the project conditions and the transient analysis.

Air flow performance charts

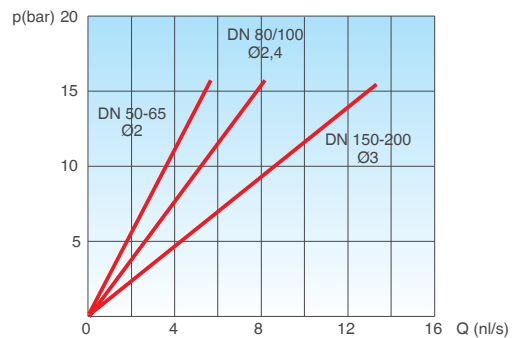


Working conditions

- Waste water 70° C max.;
- Maximum pressure 16 bar;
- Minimum pressure 0,3 bar;
- Lower pressure version on request.

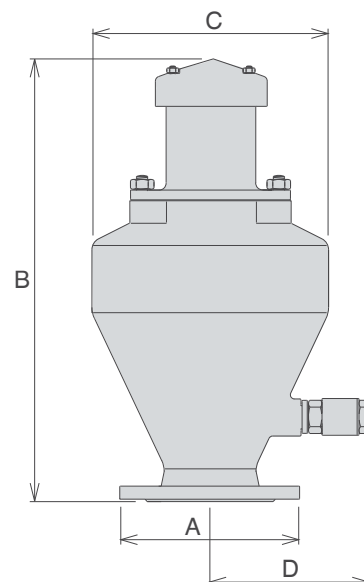
Standard

- Designed in compliance with EN-1074/4 and AWWA C-512.
- Flanges according to EN 1092/2.
- Epoxy painting applied through fluidized bed technology blue RAL 5005.
- Changes and variations on the flanges and painting details available on request.



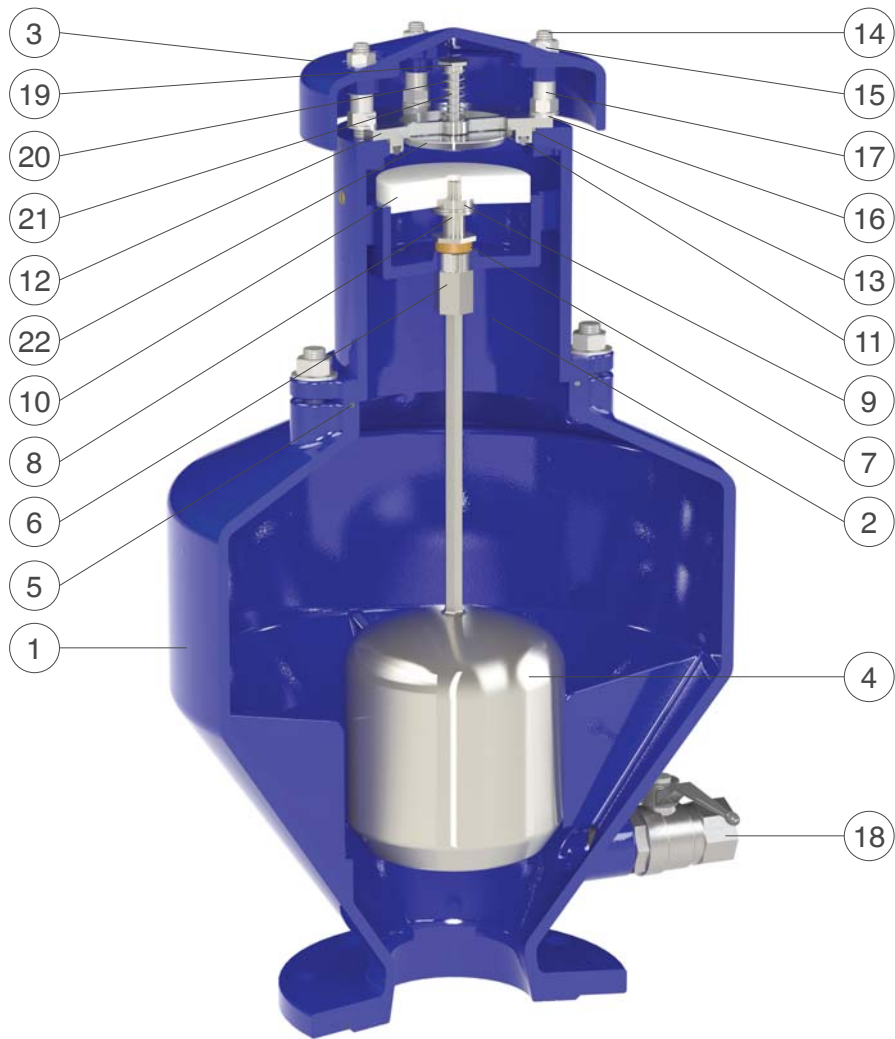
AIR RELEASE DURING WORKING CONDITIONS

DN mm	A mm	B mm	C mm	D mm	Weight Kg
50/65	185	550	300	202	29
80/100	220	600	350	190	40
150	285	850	488	243	78
200	340	850	488	243	82



The dimension B doesn't include the evacuation bend.

Technical details



N.	Component	Material	Standard
1	Lower body	ductile cast iron	GJS 500-7
2	Upper body	ductile cast iron	GJS 500-7
3	Cap	ductile cast iron	GJS 500-7
4	Float with shaft	stainless steel	AISI 316
5	O-ring	NBR	
6	Driving sleeve	stainless steel	AISI 316
7	Plane gasket	NBR/Polyurethane	
8	Gasket holder	stainless steel	AISI 316
9	Nozzle subset	stainless steel	AISI 316
10	Obturator flat	polypropylene	
11	Seat gasket	NBR	
12	AS seat	stainless steel	AISI 316
13	O-ring	NBR	
14	Studs	stainless steel	A2/A4/AISI 316
15	Nuts	stainless steel	A2/A4/AISI 316
16	Washers	stainless steel	A2/A4/AISI 316
17	Spacers	stainless steel	AISI 316
18	Ball valve 1"	stainless steel	AISI 316
19	Spring support	stainless steel	AISI 316
20	Spring	stainless steel	AISI 316
21	AS shaft	stainless steel	AISI 316
22	AS obturator	stainless steel	AISI 316