Anti-surge combination air valve
Mod. ARGO 3F - RFP

The CSA surge dampening, anti-slam automatic air valve Mod. ARGO 3F RFP has been designed to allow the release of air pockets accumulated in working conditions, the entrance of large volumes of air in case of pipe draining or bursts and to prevent pipeline damages coming from pressure transients, associated with high air outflow velocities.

Technical features and benefits

- Uncontrolled pipeline filling operations and transient events will inevitably generate the rapid closure of the air valves installed along the system, with consequent damages. The CSA air valve ARGO 3F RFP, thanks to the additional anti-surge obturator, will automatically adjust the outflow capacity, thus reducing the velocity of the incoming water column minimizing the risk of water hammer.
- The spray effect during closing and the risk of drowning minimized.
- Single chamber body PN 16 bar rated, provided with internal ribs for accurate guiding of the float.
- Available kits with threaded outlet connection and for air discharge only (EO).
- Drainage valve for chamber control and pressure relief during maintenance available on request.
- Maintenance can be easily performed from the top, without removing the air valve from the pipe.
- Compact and reliable structure whose parts are fully corrosion, chemical resistant. Lower maintenance.
- Designed in compliance with EN 1074/4 standard.
- Approved for potable water use.
- Factory approval and quality control following ISO 9001:2008.

Applications

- Water distribution networks.
- Cooling systems, process and industrial plants.
- In general this model is used, in combination with CSA AS technology, on changes in slope and high points of the profile to provide the best air management and control with effective surge protection.

Operating principle

Discharge of large volumes of air

During the pipe filling it is necessary to discharge air as water flows in. The ARGO 3F RFP, thanks to the aerodynamic body and float, will make sure to avoid premature closures of the mobile block during this phase.

Controlled outflow

If the differential pressure of air, during pipe filling, increases above a certain value without control there is the risk of water hammer and damages to the system. Should that happen the RFP upper float will rise automatically, reducing the outflow and consequently the velocity of the approaching water column.

Air release during working conditions

During operation the air produced by the pipeline is accumulated in the upper part of the air valve. Little by little it is compressed and the pressure arrives to water pressure, therefore its volume increases pushing the water 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 to avoid negative pressure and serious damages to the pipeline, and to the entire system.

Optional

■ **Version for air discharge only EO series**. 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, such as in pump suction lines or siphons pipelines.
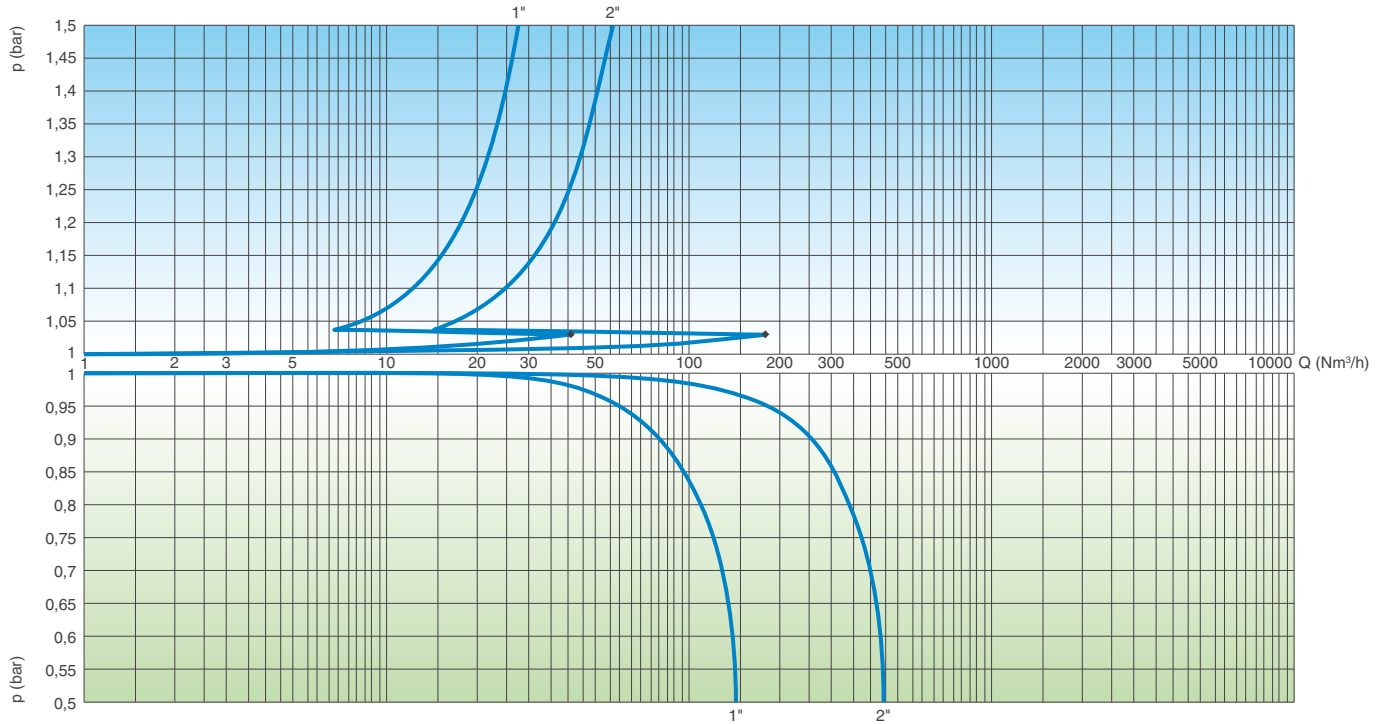
■ **Optional fitting with threaded outlet** to allow the connection to external pipes to convey possible spurts generated during operation cycles.

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

Treated water max. 60°C.
Max. pressure 16 bar.
Min. pressure 0,2 bar; lower on request.
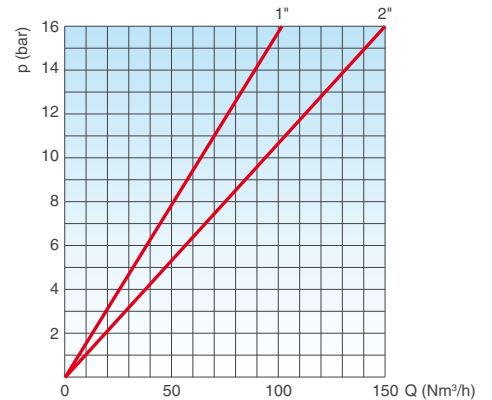
Valve selection

Body material: glass-reinforced PP.
Inlet size: DN 25, DN 50 (1", 2").
Connections: threaded male BSPT or NPT.
Certified in compliance with EN-1074/4.
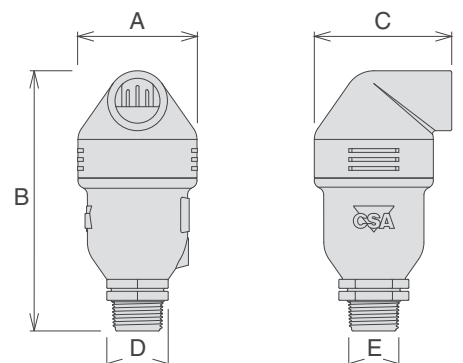
AIR RELEASE DURING WORKING CONDITIONS

Nozzle specification

air valve	kinetic orifice		autom. or.
size	d (mm)	A (mm²)	A (mm²)
1"	21	346	5
2"	45	1590	12

Weights and dimensions

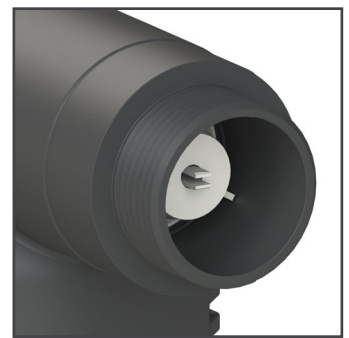| CONNECTION (E) inch	A mm	B mm	C mm	D mm	Weight Kg
Threaded 1"	80	167	92	CH 41	0,3
Threaded 2"	110	226	135	CH 65	0,75

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

Technical details
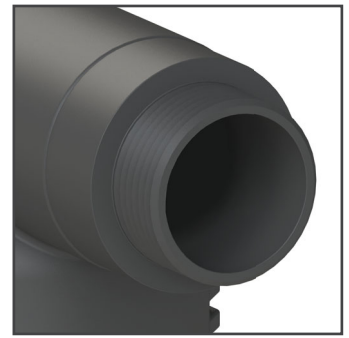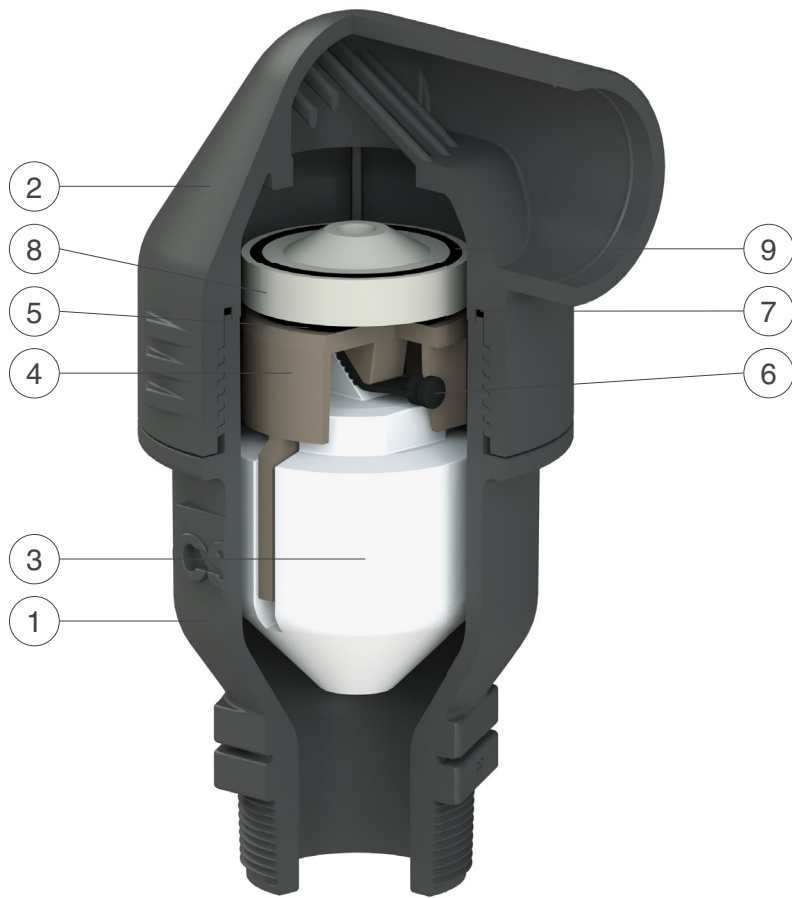
Fitting with threaded outlet connection in polypropylene.

EO device in polypropylene with threaded connection.

N.	Component	Material	Features
1	Body	glass reinforced polypropylene	provided with ribs for accurate guiding
2	Cap	glass reinforced polypropylene	provided with protection grid
3	Float	polypropylene	solid and resistant to high pressure
4	Kinetic plug	glass reinforced polyamide	with high air release capacity
5	Kinetic orifice seal	EPDM	
6	Automatic orifice seal	EPDM	
7	O-ring	EPDM	
8	RFP flat	polypropylene	
9	O-ring	EPDM	

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