

Combination air valve for industry

Mod. WAVE PRO 3S

The PF air valve Mod. WAVE PRO 3S will ensure the proper operation of the pipeline network allowing the release of air pockets during working conditions, the evacuation and entrance of large volumes of air during filling and draining operations.



Technical features and benefits

- Entirely made in high resistant materials suitable for industrial and aggressive environments.
- Mobile block composed of a cylindrical float and upper disk in solid polypropylene, that are joined together by the PF air release system. The solid cylindrical floats avoid deformations and ensure a great sliding precision.
- Nozzle and gasket holder, part of PF air release system, entirely made in AISI 316/Duplex and designed with gasket compression control to prevent aging process and consequent leakage during working conditions.
- Connection between the stand pipe and the components without any welded parts.
- Maintenance can be easily performed from the top, without removing the air valve from the pipe.
- Mesh and cap in stainless steel.
- High flow design with reduced turbulence thanks to the single chamber design.
- Supplied with flanged or threaded outlets including studs.

Applications

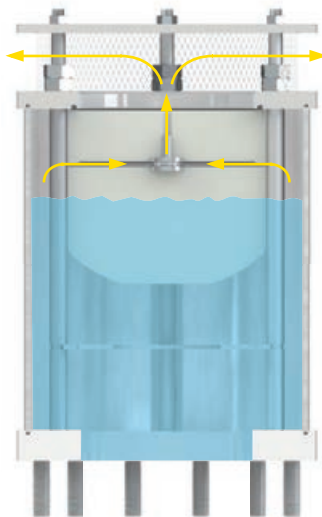
- Seawater main transmission lines.
- Desalination plants.
- Demineralized water.
- Mining.
- Refineries and petrochemical plants.

Operating principle



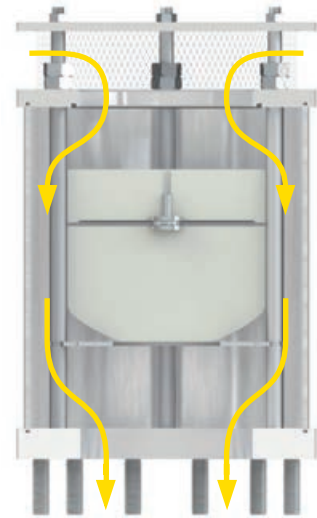
Discharge of large volumes of air

During the pipe filling it is necessary to discharge air as water flows in. The WAVE PRO 3S, thanks to an aerodynamic full port 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 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



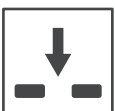
- **Vacuum breaker version Mod. WAVE PRO 2S**, to allow the entrance and discharge of large volumes of air only. This model is normally recommended in changes in slope ascending, long ascending segments, dry fire systems, and wherever the air release won't be required.



- **Version for submerged applications, SUB series**, available both for WAVE PRO 3S and 2S 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 discharge only EO series**, available both for WAVE PRO 3S and 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.

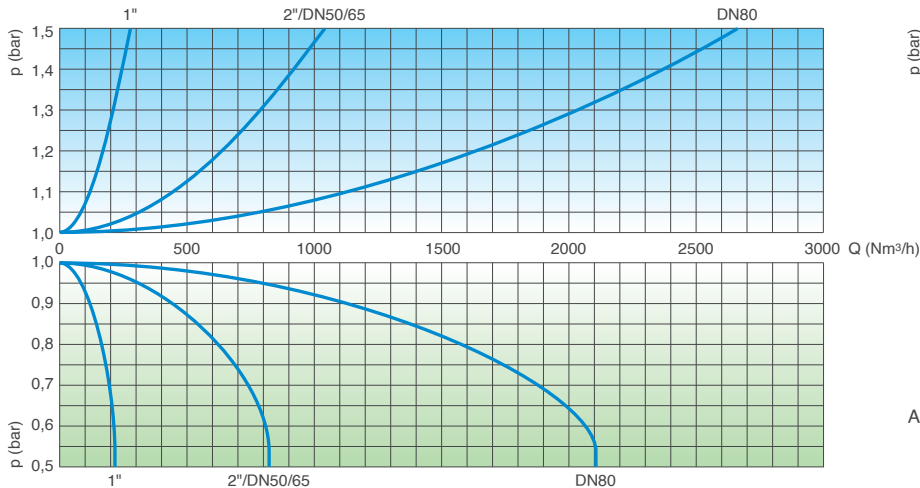


- **Version for air entrance only IO series**, available for WAVE PRO 2S model only. The most important application of IO is to allow the air valve installation in those locations of the system where, for project requirements, air discharge and release must be avoided.

Technical data

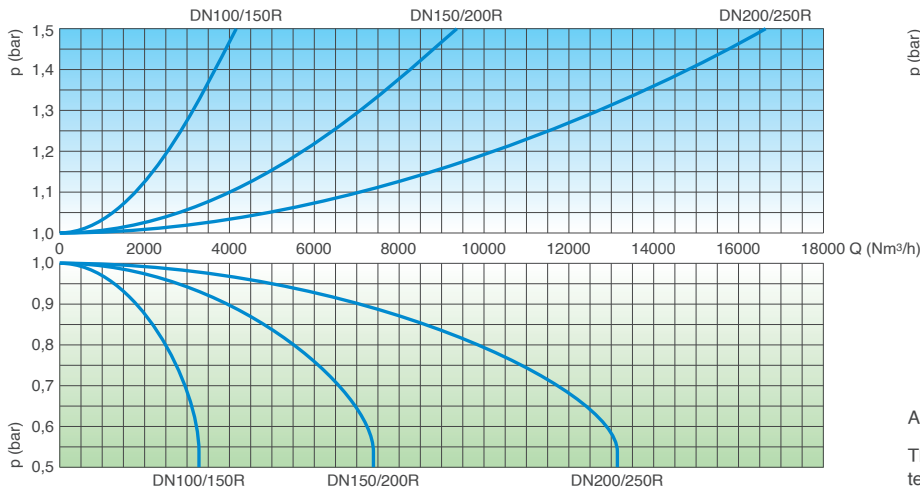
Air flow performance charts

AIR DISCHARGE DURING PIPE FILLING

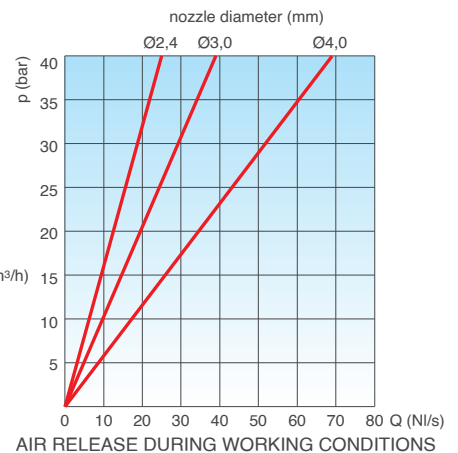
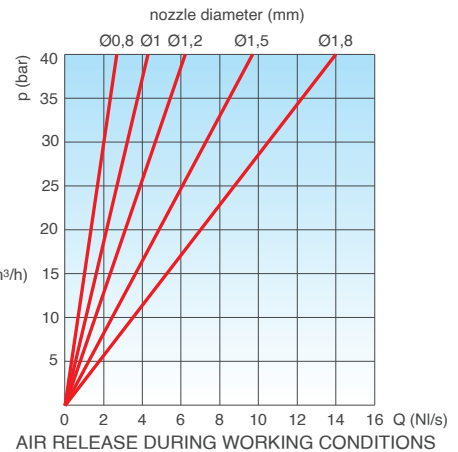


AIR ENTRANCE DURING PIPE DRAINING

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 without the screen, then converted in Nm³/h using a safety factor.

Working conditions

Treated water max. 60°C.
Max. pressure 40 bar.
Min. pressure 0,2 bar. Lower pressure on request.
Version for high temperatures on request.

Standard

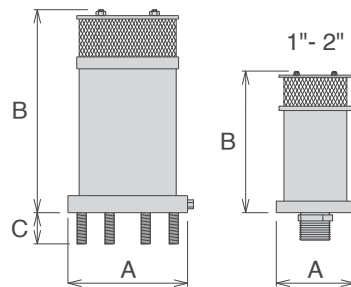
Designed in compliance with EN-1074/4 and AWWA C-512.
Flanges according to EN 1092/2 or ANSI.
Gaskets in NBR, EPDM or Viton.
Changes and variations on the flanges and gaskets on request.

Weights and dimensions

CONNECTION inch/mm	A mm	B mm	C mm	Weight Kg
Threaded 1"	95	200	-	6,4
Threaded 2"	165	255	-	6,4
Flanged 50	165	255	40	8,0
Flanged 65	185	255	40	8,0
Flanged 80	200	285	50	12,0
Flanged 100	235	335	50	17,0
Flanged 150R	235	385	50	27,0
Flanged 150	300	445	70	45,0
Flanged 200R	360	445	70	49,0
Flanged 200	360	515	70	62,0
Flanged 250R	405	515	70	72,0

R: reduced bore. Larger sizes available on request.

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

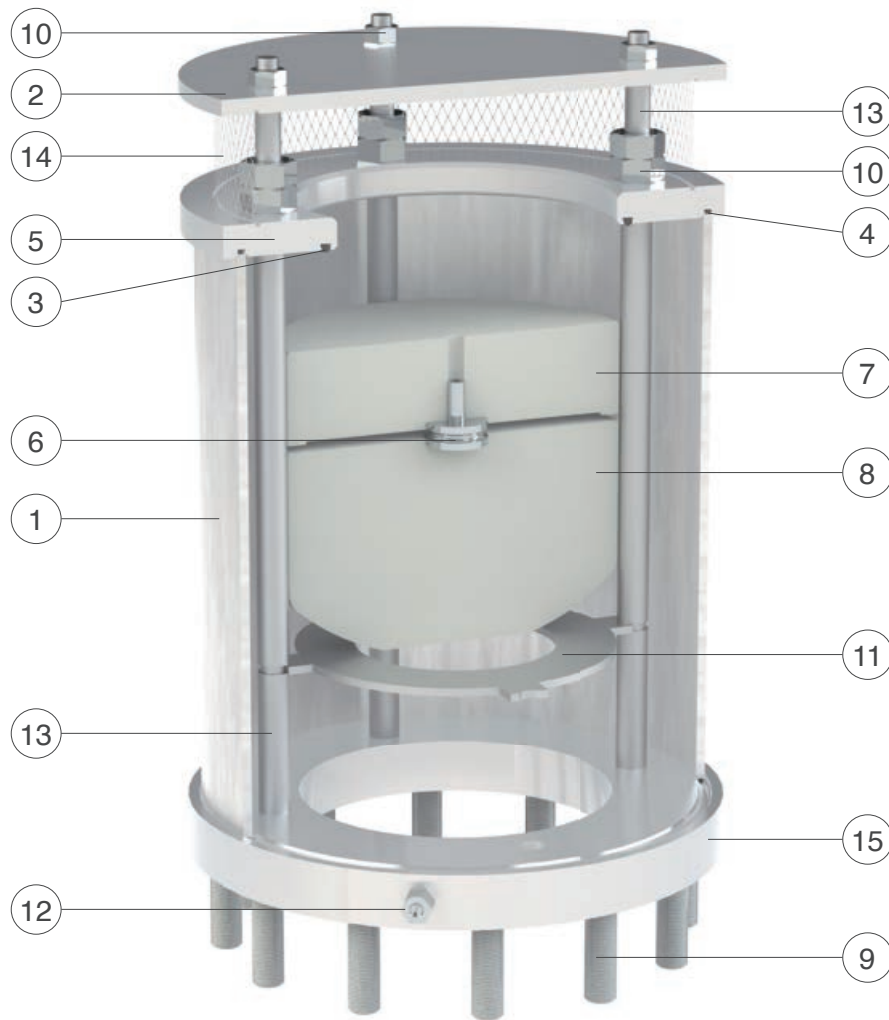


Nozzle choice

	PN 10	PN 16	PN 25	PN 40
1"	1,2	1,2	1	0,8
2"/DN 50/65	1,5	1,2	1	0,8
DN 80	1,8	1,5	1,2	1
DN 100/150R	2,4	1,8	1,8	1,2
DN 150/200R	4	3	2,4	1,8
DN 200/250R	4	4	4	3

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

Technical details



N.	Component	Standard material	Optional
1	Body	stainless steel AISI 316	s.s. Duplex/Super Dupl.
2	Cap	stainless steel AISI 304	stainless steel AISI 316
3	O-ring	NBR	EPDM/Viton/silicone
4	O-ring	NBR	EPDM/Viton/silicone
5	Seat	stainless steel AISI 316	s.s. Duplex/Super Dupl.
6	Nozzle Subset	stainless steel AISI 316	stainless steel Duplex
7	Upper flat	polypropylene	
8	Float	polypropylene	
9	Studs	stainless steel AISI 304	stainless steel AISI 316
10	Bolts	stainless steel AISI 316	
11	Deflector	stainless steel AISI 316	s.s. Duplex/Super Dupl.
12	Drain valve	stainless steel AISI 316	
13	Spacers	stainless steel AISI 316	s.s. Duplex/Super Dupl.
14	Screen	stainless steel AISI 304	stainless steel AISI 316
15	Flange	stainless steel AISI 316	s.s. Duplex/Super Dupl.

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