BAYARD BY TALIS

VANNAIR triple function air valve
Series F1 20

Double air valve, providing three functions:
- **High flow rate air discharge capacity for pipe-filling operation,**
- **High flow rate air inlet for pipe drainage operation and in case of pipe burst,**
- **Continuous evacuation of air under normal working conditions (small orifice function).**

Description

- Design:
  - Ductile iron design.
  - Patented reversible floating disc for closing under water or airflow conditions (type V1000 and V2000 only).
  - Powder epoxy and cataphoresis coating,
  - Available with or without built-in clockwise closing isolatingvalve,
  - Version with isolating valve :
    - 1/4 turn ball valve, with 19x19 lockable square cap on type V200,
    - Multi turns straight mounting valve, with 30x30 square cap on types V500 and V1000.
  - Ball basket in stainless steel.
  - Lateral body boss which can be drilled on request to enable the mounting of pressure gauges.
- Performance:
  - High aeraulic performances.
  - Smooth operation provided by the floating disk.
  - Minimum pressure 0,3 bar.
- Easy to operate and install:
  - Reduced space requirements.
  - Built-in operation controller.
- According to standard EN 1074-4.
- Options, on request:
  - Type V200 and V500 with closing under air flow conditions.
  - Reinforced coating.
  - Low pressure kit.
  - Piped outlet.

Technical data

- Range:
  - type V200: DN 40 to 100.
  - type V500: DN 80 and 100.
  - type V1000: DN 150 (and DN 200 with isolating valve).
  - type V2000: DN 200.
- Maximal working pressure: PN 16, 25, 40.
- Temperature limits: +0°C to +60°C.
- Seating: class A according to standard ISO 5208:2015.
- Flange drilling according to standards EN 1092-2 and ISO 7005-2:
  - ISO PN 10/16 for DN 40 to 150,
  - ISO PN 10 or 16 for DN 200,
  - ISO PN 25 or 40 for DN 40 to 200,

Applications

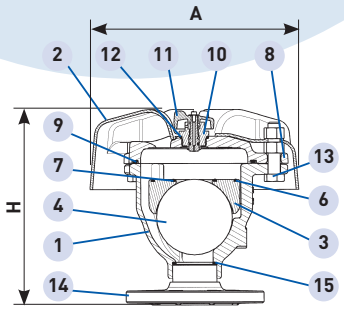
- Drinking water networks.
- Fire protection networks.
- Irrigation networks.

Tests

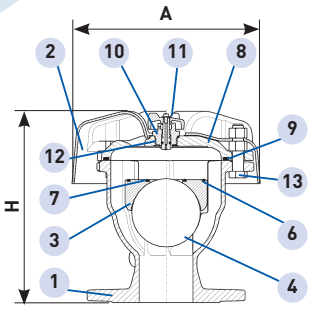
- Manufacturing fully tested according to ISO 5208:2015.

VANNAIR triple function air valve

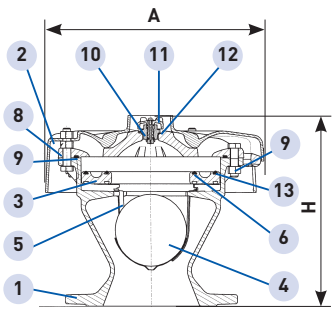
Vannair V200 SRA



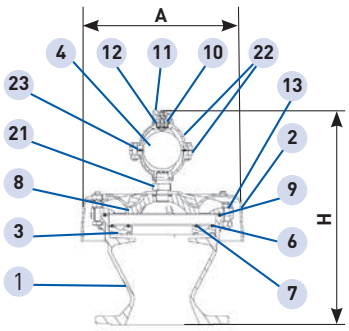
Vannair V500 SRA



Vannair V1000 SRA

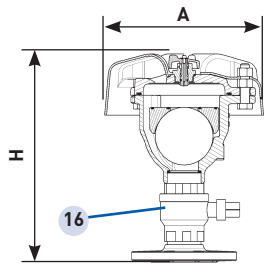


Vannair V2000

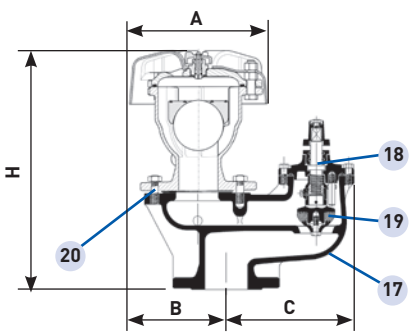


Item	Désignation	Qty	Materials	Standards
1	Body	1	Ductile iron / EN-GJS-450-10	EN 1563
2	Cover	1	ABS	
3	Floating disc	1	Polypropylene	
4	Floating Ball	1	Steel / S-235-JR coated with EPDM	EN 10025 (for steel)
5	Basket (V1000)	1	Stainless Steel 316 L / X2CrNiMo17-12-2	EN 10088
6	Disc outside O-ring	1	Elastomer / EPDM	
7	Disc inside O-ring	1	Elastomer / EPDM	
8	Bonnet	1	Ductile iron / EN-GJS-450-10	EN 1563
9	Bonnet O-ring	1	Elastomer / EPDM	
10	Controller / Orifice	1	DZR brass / CuZn36Pb2As	EN 12164
11	Controller Handwheel	1	Polyamide / PA6	
12	O-ring	1	Elastomer / EPDM	
13	Bolts and screws	acc/DN	Stainless steel / Stainless steel A2	EN ISO 3506
14	Flange (V200)	1	Ductile iron / EN-GJS-450-10	EN 1563
15	Flange gasket (V200)	1	Fibre	
16	1/4 ball valve (type V200 with stopcock)	1	Nickel plated brass	
17	Lower body (type V500 & V1000 with stopcock)	1	Ductile iron / EN-GJS-450-10	EN 1563
18	Operating stem (type V500 & V1000 with stopcock)	1	DZR brass / CuZn36Pb2As	EN 12164
19	Main valve gasket seat (type V500 & V1000 with stopcock)	1	Elastomer / EPDM	
20	Bolts (type V500 & V1000 with stopcock)	acc/DN	Stainless steel / Stainless steel A2	EN ISO 3506
21	Dismantling connection	1	Stainless steel / Stainless steel A4	
22	Body/Bonnet (V2000)	1	Ductile iron / EN-GJS-450-10	EN 1563
23	O-Ring (V2000)	1	Elastomer / EPDM	

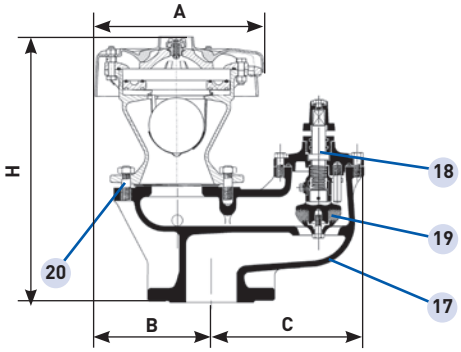
Type	Isolating valve	PN	DN	H mm	A mm	B mm	C mm	Handwheel controller color	Weight Kg
V200	Without (SRA)	16	40/60 - 50 - 60/65 - 80 - 100	262	280	-	-	Black	11.5 (13.2 for DN 80 and 100)
V200	Without (SRA)	25	50 - 60/65 - 80 - 100	262	280	-	-	Red	11.5 (13.2 for DN 80 and 100)
V200	Without (SRA)	40	50 - 60/65 - 80 - 100	262	280	-	-	Blue	11.5 (13.2 for DN 80 and 100)
V200	With (ARA)	16	40/60 - 50 - 60/65 - 80 - 100	368	280	-	-	Black	12.4 (15.1 for DN 80 and 100)
V200	With (ARA)	25	50 - 60/65 - 80 - 100	368	280	-	-	Red	12.4 (15.1 for DN 80 and 100)
V500	Without (SRA)	16	80 - 100	285	280	-	-	Black	18
V500	Without (SRA)	25	80 - 100	285	280	-	-	Red	18
V500	Without (SRA)	40	80 - 100	285	280	-	-	Blue	18
V500	With (ARA)	16	80 - 100	490	280	195	240	Black	43.5
V500	With (ARA)	25	80 - 100	490	280	195	240	Red	43.5
V1000	Without (SRA)	16	150	316	374	-	-	Black	32
V1000	Without (SRA)	25	150	316	374	-	-	Red	32
V1000	Without (SRA)	40	150	316	374	-	-	Blue	32
V1000	With (ARA)	16	200 ISO PN10 or PN16	590	374	280	230	Black	75
V1000	With (ARA)	25	200	590	374	280	230	Red	75
V2000	Without (SRA)	16	200 ISO PN10 or PN16	590	480	-	-	Black	65
V2000	Without (SRA)	25	200	590	480	-	-	Red	65
V2000	Without (SRA)	40	200	660	480	-	-	Blue	71



Vannair V200 ARA



Vannair V500 ARA



Vannair V1000 ARA

Operation

Description

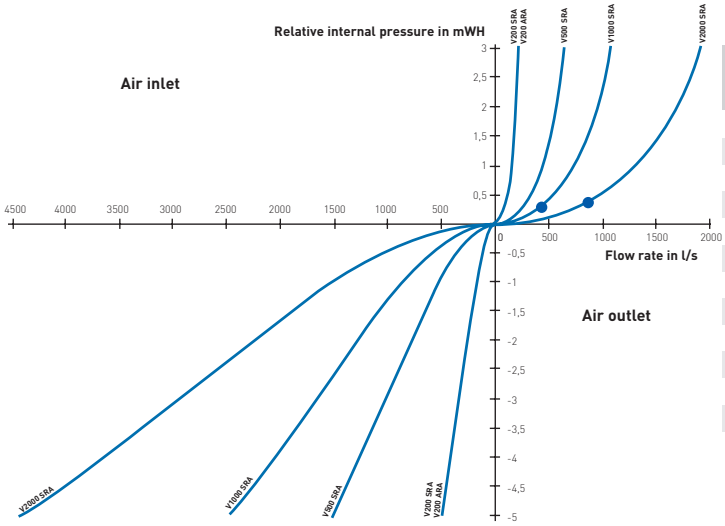
"Vannair" double orifice air valves are built according to an original compact design, with or without isolating valve. They are made of two floats mechanically free, operating in a single chamber body, aerodynamically shaped. One float is a ball fully covered with elastomer, the other is a disc in which are inserted two O-rings in a concentric way. Movements of the floats are guided in up and down direction. The floating ball ensure the shut-off of the small orifice, whereas the floating disc ensure the shut-off of the bonnet large orifices. These large orifices have a surface area calculated to insure free passage of the required quantities of air.
An exhaust controller placed in the middle of the bonnet allows to check if the small orifice is not filled up (device similar to the one use on single orifice air valve).
A cover protects the bonnet large orifices against dirt, and allows to direct air exhaust in downward direction.
The original concept ensure a safety operation without problems.

Operation

During pipe filling, air goes out freely at high flow rate through the bonnet large orifices. When the inlet of the valve fills gradually, with water replacing the air, the floating ball and disc rise and come into contact with the small and large orifices, shutting them off. During pipe drainage operation, or in case of pipe burst, the float-disc drops, thus opening the orifices and allowing air in-flow at large rate. Under normal working conditions, the floating ball acts as a single air relief valve, evacuating air under pressure which may accumulate in the pipe.
Types V1000 and V2000 are delivered in standard with reversible disc (patented). This original concept allows to choose to close under air flow rate or water flow rate (see graphic below for flow rate values in order to get closing under air flow conditions).
- closing under air flow rate → disc side with groove on the top.
- closing under water flow rate → flat disc side on the top.

Hydraulic characteristics

Inlet/outlet air flow rate performances, in pipeline internal conditions, for Vannair PN 16, 25 and 40 without isolating valve*



** Except type V200 ARA. Vannair with isolating valve or assembled with other valves gate valve, butterfly valve, etc...), please consult us.*
●: flow rate values in order to get closing under air flow conditions.

Discharge capacity under pressure

Type	PN bar	Ø ball mm	Ø small orifice mm	Flow rate l/s
V200	16	102	1.8	0.5
V200	25	102	1.5	0.35
V200	40	102	1.2	0.2
V500	16	102	1.8	0.5
V500	25	102	1.5	0.35
V500	40	102	1.2	0.2
V1000	16	102	1.8	0.5
V1000	25	102	1.5	0.35
V1000	40	102	1.2	0.2
V2000	16	102	1.8	0.5
V2000	25	102	1.5	0.35
V2000	40	150	1.8	0.5

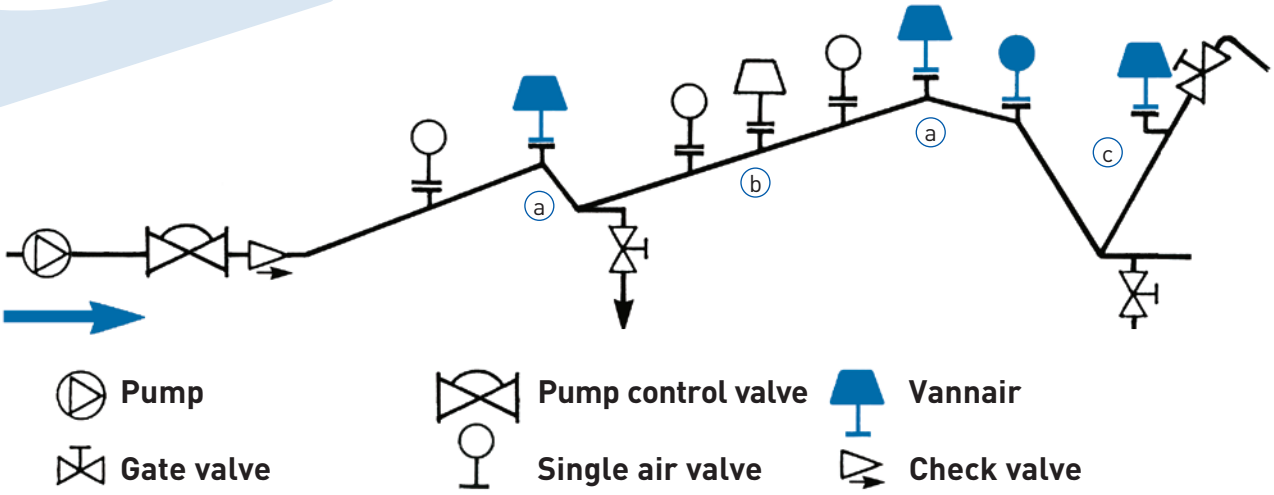
Vannair Sizing

For air inlet (pipe drainage operation, or in case of pipe burst): Vannair sizing must be done according to the theoretical calculated drainage flow rate and the acceptable depression in the pipeline.

For air outlet (pipe filling): Vannair sizing must be done according to the theoretical calculated filling flow rate. For obvious safety reasons , practical experience advises to use low filling velocity around 0.5 m/s. In simplified approach, use chart opposite for Vannair without isolating valve (except type V200 ARA - Vannair with isolating valve or assembled with other valves (gate valve, butterfly valve, etc...), please consult us).

Modèle	PN bar	Ø ball mm	For pipeline up to filling with V= 0,5 m/s	filling with V= 1 m/s
V200 SRA	16/25/40	102	DN 500	DN 400
V200 ARA	16 and 25	102	DN 500	DN 400
V500 SRA	16/25/40	102	DN 1000	DN 700
V1000 SRA	16/25/40	102	DN 1500	DN 1100
V2000 SRA	16/25	102	DN 2000	DN 1400
V2000 SRA	40	150	DN 2000	DN 1400

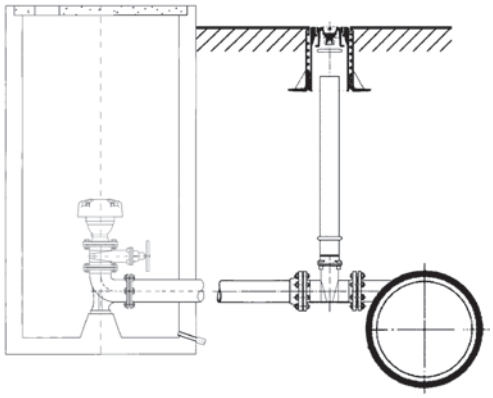
Installation of the Vannair on a pressurized pipeline



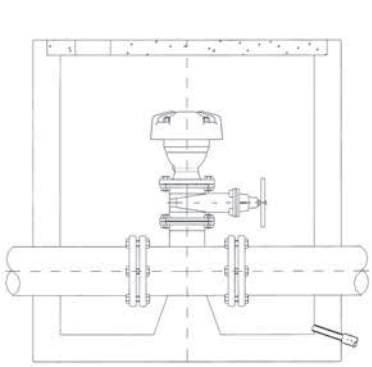
- (a) At each main high point to guarantee a fast filling of the pipelines. The advised filling speed is 0.5 m/s.
- (b) At regular intervals along the pipeline, at least every kilometre, to avoid entrapping of air pockets while filling up.
- (c) Before or after every isolating valves, depending on the slope of the pipeline, to avoid the negative pressurising of the pipe after closing the isolating valves.

Note: It is recommended to mount single orifice air valves (Series F1 10) at each geometrical high point, when sudden descending slope changes occur, and at every 500 metres.

Typical Installations

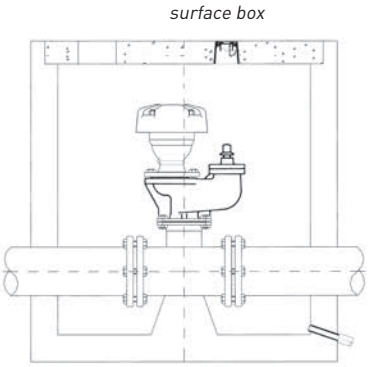


drain outlet



drain outlet

surface box



drain outlet

Installations

The chamber should be adequately sized to enable easy access to the air-valve (see typical installations) for maintenance operations to be carried out when necessary ; and must be fitted out with a drain-outlet in order to evacuate any water from the chamber.

The quantity of air to be evacuated upon filling operations, or drawn in upon emptying operations can be quite considerable. It is essential, then, to provide a pipe or suitable opening to the outside which has a cross-section at least equal to that of the inlet of the device.

Provide a manhole of adequate dimensions to allow installation of the device. **We advise you to install the Vannair on an isolation valve to avoid having to drain the pipe during the annual maintenance of the Vannair.**

Installation can be carried out either :

- With isolation valve, directly onto the vertical branch of a tee.
- With isolation valve, offset: In this case, a tee with tangential outlet, or equivalent, should be used so as to ensure correct functioning of the installation. It is also essential to respect a minimum slope of 5 mm/meter for the pipe leading upwards to the air valve.

When positioning the device, ensure that the flange is perfectly horizontal, and the absence of foreign bodies in the air valve and in the pipeline. Before operation, ensure that the built-in stop-cock, or isolating valve is in the "Open" position and the exhaust controller in the "Service" position (controller knob screwed down in clockwise direction).

Maintenance

Check visits should be carried out at regular intervals (normally once per year). To check that the device is functioning correctly, put the exhaust controller in the "test" position (turn the controller knob gently in an anti-clockwise direction until it blocks). Water should be ejected through the exhaust controller.

If, instead, air escapes, then either the working pressure is too great, or the floating ball is damaged and needs replacing. If neither air nor water is evacuated, ensure that the built-in stop-cock/isolating valve is opened or that the orifice is not blocked. In operation, the device should be perfectly watertight. If not, then the device should be dismantled and cleaned. The moving parts, gaskets and exhaust controller, should be replaced if necessary.

After a long period of working, we advise to carry out a general cleaning operation :

- Close the built-in stop-cock / isolating valve,
- Remove the exhaust controller, orifice plate and cover by unscrewing the appropriate nuts and bolts.
- Clean and rinse the moving parts, clean the exhaust controller mechanism, change if necessary the ball, etc...
- Replace the gaskets,
- Reassemble the device ,
- Open the built-in stop-cock / isolating valve.